Stormwater Action Plan

City of Tarpon Springs

January 2022

Prepared for:
City of Tarpon Springs
324 E. Pine Street
Tarpon Springs, FL 34689

Stormwater Action Plan
Final Report - January 2022

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 Purpose

Development of a Stormwater Action Plan for the multiple stormwater problem areas located within the limits of the City. The project area, as shown on Figure 1 – Project Location Map, is generally bounded by the Gulf of Mexico (West), Klosterman Road (South), Lake Tarpon (East), and the Pinellas/Pasco County Line (North). The purpose of the project is to assess the flooding conditions that occur at numerous locations within the City limits, provide potential conceptual solutions to abate these flooding conditions, prepare a prioritized capital improvement plan for implementation, and enhance water quality by utilizing treatment systems and best management practices.

2.0 Scope of Work

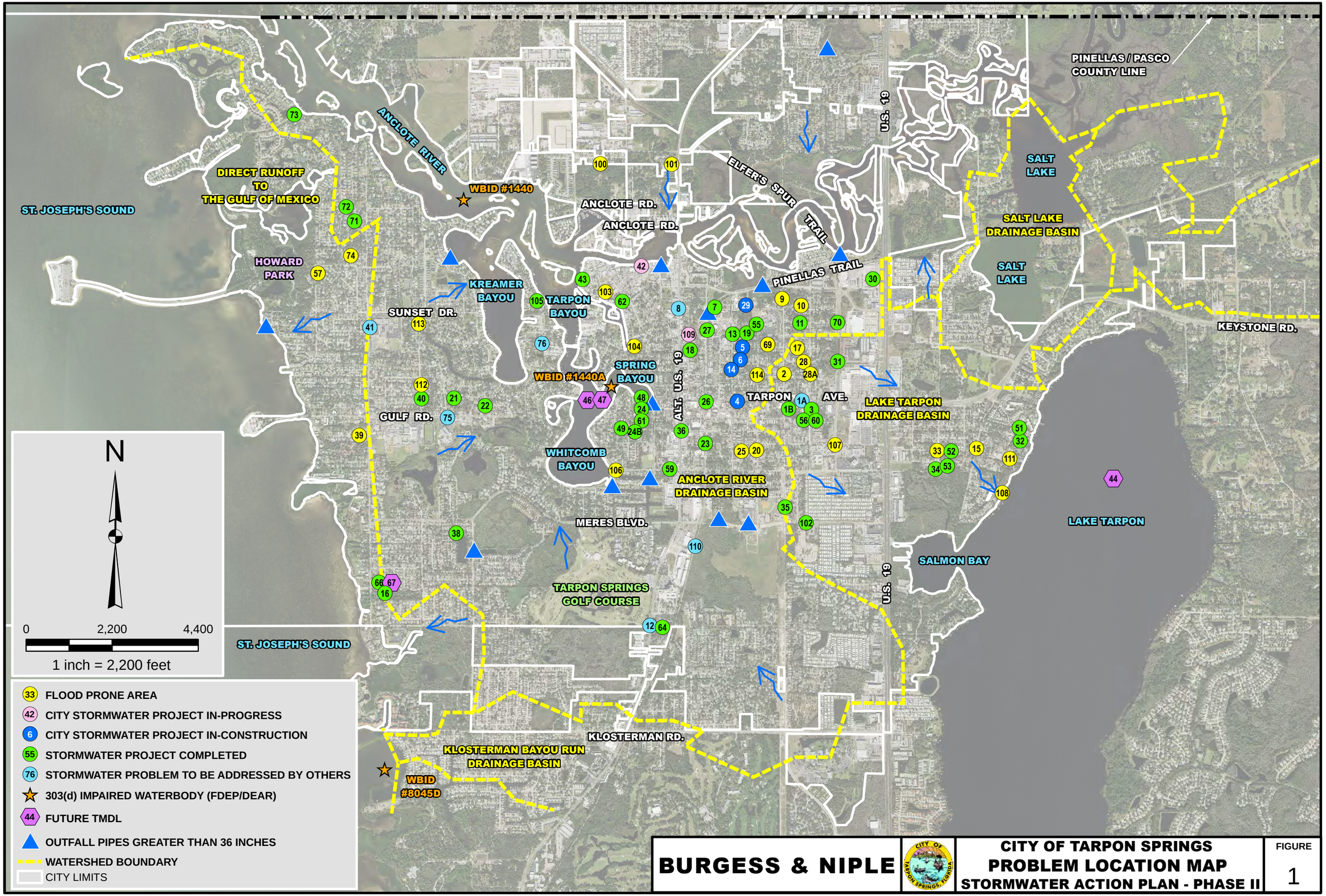
The following scope of work was developed for the Stormwater Action Plan Phase II and presents specific items, which were performed as services for this project.

2.1 Data Collection and Review

American Consulting Professional's performed a detailed review of the 1992 and 1993 Dames and Moore Master Drainage Study Phases I and II, American Consulting Professional's Stormwater Action Plan (SAP) Phase I, existing aerial photographs, and right-of-way maps as a prerequisite to field investigations and during development of the conceptual solutions. Available roadway design plans, as-built information, 1-foot contour maps, and other pertinent materials were obtained from the Florida Department of Transportation, City of Tarpon Springs Engineering Department, Pinellas County Environmental Management Department, and the Southwest Florida Water Management District (SWFWMD) for review.

2.2 Develop Conceptual Solutions

Upon completion of the data review and field investigations, conceptual solutions were developed for each of the stormwater Map ID areas identified in the Stormwater Action Plan Phase II to resolve the particular stormwater issue for each location. These conceptual solutions are not engineered solutions based on survey data, geotechnical investigations, or engineering calculations. The conceptual solutions are shown on aerial exhibits utilizing the latest available aerial imagery, Pinellas County 2007 and 2017 LIDAR contours with existing 1-foot contours, in addition to Pinellas County Property Appraiser parcel lines.



BURGESS & NIPLE		CITY OF TARPON SPRINGS PROBLEM LOCATION MAP STORMWATER ACTION PLAN - PHASE II	FIGURE 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\2020_City_Limit_Problem_Locations_20211216.mxd

2.3 Conceptual Solution Analysis

Each of the developed conceptual solutions were evaluated to reduce flooding and provide recommended system improvements. A cost/benefit analysis was utilized in the selection and prioritization of the recommendations. The City's stormwater consultant prepared preliminary cost estimates that included survey, geotechnical, final design and permitting services, estimated property costs, construction mobilization and materials and a twenty-five percent (25%) contingency for project unknowns.

2.4 Stormwater Capital Improvement Program (CIP)

Based on the available funding projections, a multi-year stormwater capital improvement program was developed. Consideration was also given to the potential for these recommendations to receive cooperative funding through the State of Florida (SWFWMD) or the Florida Department of Environmental Protection (FDEP)). **A Miscellaneous Service task has also been incorporated into the CIP program.**

2.5 Stormwater Action Plan Report

The Draft Stormwater Action Plan Report was reviewed by the City. City requested revisions were incorporated and the Final Stormwater Action Plan Report was prepared. The City's stormwater engineer continues to update the report periodically.

3.0 Data Collection and Review

The following review and actions were performed in the development of the Stormwater Action Plan Phase II and presents specific items, which were performed as services for this project.

3.1 Dames and Moore Master Drainage Study Phase I & II

The City's stormwater consultant obtained these two reports during the data collection task under the SAP Phase I. Both reports contain valuable information pertaining to the City's existing stormwater infrastructure, watershed drainage basins, hydrologic and hydraulic parameters, and potential solutions to several of the stormwater Map ID areas.

The reports were used as references throughout the development of the SAP Phase I and the SAP Phase II tasks.

3.2 Stormwater Action Plan Phase I

Phase I of the Stormwater Action Plan was the data collection and problem identification phase for the Stormwater Action Plan. It was in this phase where the City's stormwater consultant obtained the following to be used in the development of the SAP Phase I and II: all available stormwater data from past studies, reports, permits, regulatory requirements, plans, public complaints, City's Comprehensive and Capital Improvement Plan, and other information provided by the City.

After reviewing all the data obtained, the City's stormwater consultant documented the existing and resolved stormwater Map ID areas. A total of 73 stormwater Map ID areas were identified during this phase. After several meetings with the City, several stormwater Map ID areas were removed. There was a total of 32 locations removed from the original listing because the problem had either been addressed, completed, or was out of the City's jurisdiction. Five other stormwater Map ID areas were removed from the original listing because those locations will be governed by future regulatory regulations from the FDEP.

The City's stormwater consultant then performed site visits to all remaining 36 stormwater Map ID areas. Photographs were taken at all sites in addition to notes of the existing field conditions based on visual observations. Notes of the existing field conditions and descriptions of the problem areas are shown in Appendix A.

Each of the 36 stormwater Map ID areas identified in the SAP Phase I were then analyzed on the following criteria: traffic safety, emergency access/route, property impacts, environmental, problem documentation, maintenance, and City score. Using these criteria, a Stormwater Action Plan (SAP) Score was developed for each of the stormwater Map ID areas. The scoring criteria can be located within Appendix B. A summary of the stormwater Map ID areas that were identified as needing drainage improvements is shown on Table 1: Summary of Stormwater Map ID Areas. As the City continues to grow in size and density, additional stormwater problem areas are identified and added to the stormwater capital improvement program.

3.3 Field Investigation

During the SAP Phase I, the City's stormwater consultant conducted field investigations for all 36 stormwater Map ID areas within the City limits. Particular attention was given to the location, elevation, and condition of the existing infrastructure (if any) in the areas identified as having flooding problems. Existing field information was verified and updated if possible

as well as determining the impacts that contribute to the flooding. Surface water and topographical features were evaluated to identify any particular physical characteristics affecting current drainage patterns. The City's stormwater consultant also evaluated potential sites for flood attenuation and water quality improvement projects. Descriptions of the stormwater Map ID areas are shown in Appendix A.

3.4 Non-Jurisdictional Problem Areas

Pinellas County and the Florida Department of Transportation are two governmental agencies that own and maintain roadways/bridges within the City of Tarpon Springs. At times, the City receives complaints regarding stormwater flooding along these non-jurisdictional roadways. The City's stormwater consultant will perform a field review at these locations for problem documentation. These locations are given a SAP number for documentation purposes only. Conceptual solutions, related cost estimates, SAP scoring and the cost / benefit analyses are not performed for these locations. This problem documentation is provided to the agency who owns the facility. These documented locations are shown in Appendix E.

Table 1: Summary of Stormwater Map ID Areas

Map ID No.	SAP Total Score	Stormwater Focus Area	Problem	Reference
1B	34	Disston Ave. (south of Tarpon Ave.)	Street and private property flooding; roadway impassable	No. 1 CIP - Utility Element Table 9
2	23	Disston Ave. & Center St.	Street and private property flooding	No. 9 CIP - Utility Element Table 8/No. 5 Dames & Moore Master Drainage Study - Phase 1
3	26	Walton Ave. between Tarpon Ave. & Lime St. Phase III	Street flooding; impassable road	No. 10 CIP - Utility Element Table 8/No. 23 Dames & Moore Master Drainage Study - Phase 1
4	6	Tarpon Ave. 100' east of Grosse Ave.	Street flooding	No. 4 CIP - Utility Element Table 8/No. 1 Dames & Moore Master Drainage Study - Phase 1
5	60	Pent St. 200' east of Grosse Ave.	Street and private property flooding	No. 7 CIP - Utility Element Table 8/No. 15 Dames & Moore Master Drainage Study - Phase 1
6	5	Cypress St. 200' east of Grosse Ave.	Street & yard flooding	No. 6 CIP - Utility Element Table 8/No. 16 Dames & Moore Master Drainage Study - Phase 1
7	5	Outfall @ Pinellas Trail & Spruce St.	Needs maintenance/obstructing flow	Stormwater Consultant
9	9	Disston Ave. between Spruce St. & Live Oak St.	Street and yard flooding	No. 12 Dames & Moore Master Drainage Study -Phase I
10	2	Spruce St. between Disston Ave. & Walton Ave.	Street and yard flooding	No. 12 CIP - Utility Element Table 8/No. 8 Dames & Moore Master Drainage Study - Phase 1
11	13	Boston St. between Disston Ave. & Walton Ave.	Street and private property flooding	No. 13 CIP - Utility Element Table 8/No. 10 Dames & Moore Master Drainage Study - Phase 1
14	9	Grosse Ave. between Pine St. & Orange St.	Street & yard flooding	No. 5 CIP - Utility Element Table 8/No. 6 Dames & Moore Master Drainage Study - Phase 1
15	60	Highland Ave. and Vista Place	Street and private property flooding; roadway impassable	No. 8 CIP - Utility Element Table 8/No. 20 Dames & Moore Master Drainage Study - Phase 1
17	8	Pent St. between Disston Ave. & Walton Ave.	Street & yard flooding	No. 14 CIP - Utility Element Table 8/No. 9 Dames & Moore Master Drainage Study - Phase 1
18	11	Hibiscus St. & Park St.	Street & yard flooding	No. 15 CIP - Utility Element Table 8/No. 2 Dames & Moore Master Drainage Study - Phase 1
20	4	Levis Ave. between Lime St. & Oakwood St.	Minor street flooding	No. 17 CIP - Utility Element Table 8/No. 24 Dames & Moore Master Drainage Study - Phase 1
21	10	Palm Ave. between Tarpon Dr. & Glades Ave.	Street & private property flooding	No. 18 CIP - Utility Element Table 8/No. 33 Dames & Moore Master Drainage Study - Phase 1
22	5	Palm Ave. between Tarpon Dr. & Gulf Rd.	Private property flooding	No. 19 CIP - Utility Element Table 8/No. 32 Dames & Moore Master Drainage Study - Phase 1
24B	8	Bath St./Shaddock Ave. Alley	Private property flooding	Staff recommendation
25	8	Levis Ave. Alleyway	Rear yard flooding	No. 3 CIP - Utility Element Table 9
28	7	Cypress St. between Disston Ave. and Walton Ave.	Street and private property flooding	No. 11 Dames & Moore Master Drainage Study - Phase 1
28A	10	Walton Ave. & Center St.	Street and private property flooding	Staff recommendation
29	5	Spruce St. between Levis Ave. & Grosse Ave.	Street and private property flooding	No. 14 Dames & Moore Master Drainage Study - Phase 1
31	3	Huey Ave. north of Tarpon Ave.	Roadside flooding; ditch along Huey Ave. floods	No. 18 Dames & Moore Master Drainage Study - Phase 1
33	60	Jasmine Ave. & Lime St.	Street and private property flooding	No. 21 Dames & Moore Master Drainage Study - Phase 1
35	6	Disston Ave. south of Harrison St.	Street flooding	No. 25 Dames & Moore Master Drainage Study - Phase 1
39	12	Coburn Dr. 100' west of Florida Ave.	Street and yard flooding	No. 31 Dames & Moore Master Drainage Study - Phase 1
42	9	Intersection of Athens St. & Dodecanese Blvd.	Street flooding; inadequate infrastructure/backwater	No. 37 Dames & Moore Master Drainage Study - Phase 1

43	7	Island Dr. near Hill St.	Street and private property flooding	No. 38 Dames & Moore Master Drainage Study - Phase 1
57	30	Kenneth Way @ Seaside Dr.	Street flooding	Staff recommendation
62	7	Roosevelt Blvd.	Street flooding/water quality/property flooding	Staff recommendation
69	10	Pent St. 100' east of Levis Ave.	Street and private property flooding	Staff recommendation
70	6	East end of Boston St.	Street and private property flooding	Staff recommendation
71	18	Riverside Dr. at Hillside Dr.	Low spot - street flooding	Staff recommendation
72	3	1314 Riverside Dr.	Low spot - street flooding	Staff recommendation
73	6	Riverside Dr. at Seabreeze Dr.	Low spot - street flooding	Staff recommendation
74	6	Avoca Dr. 500' west of Florida Dr.	Low spot - street and property flooding	Staff recommendation
100	N/A	Marina Dr. & Anclote Rd.	Non-Jurisdictional Street flooding	Stormwater Consultant
101	N/A	Alt. US 19 & Anclote Rd.	Non-Jurisdictional Street Flooding	Stormwater Consultant
102	12	Mango St. & Mango Circle	Street flooding	Stormwater Consultant
103	14	Roosevelt Blvd. & Island Dr.	Tidal street flooding	Staff recommendation
104	43	Roosevelt Blvd. & Canal St.	Tidal street flooding	Staff recommendation
105	35	Chesapeake Dr.	Tidal street and private property flooding	Staff recommendation
106	54	Spring Dr. & MLK Jr. Dr.	Tidal street and private property flooding	Staff recommendation
107	40	Lime St. & Huey Ave.	Street and private property flooding	Staff recommendation
108	32	Lakeview Dr.	Street and private property flooding	Staff recommendation
109	38	Hibiscus Ave. & Pine St.	Street flooding	Staff recommendation
110	41	Pinellas Trail Culvert	Street and private property flooding	Staff recommendation
111	41	Grandview Drive	Street and private property flooding	Staff recommendation
112	13	Oleander Drive & Peninsula Ave.	Street and private property flooding	Staff recommendation (added with the Q4-2021 update)
113	24	Riverside Dr. & Sunset Dr.	Street and private property flooding	Staff recommendation (added with the Q4-2021 update)
114	11	North Levis Ave.	Street and private property flooding	Staff recommendation (added with the Q4-2021 update)

Added with the Q4-2021 Update

4.0 Conceptual Solution Recommendations

Upon completion of the data review and field investigations, conceptual solutions were developed for each of the 36 stormwater Map ID areas identified in the SAP Phase I to resolve the individual stormwater issue for each location. These conceptual solutions are not engineered solutions based on survey data, geotechnical investigations, or engineering calculations. The conceptual solutions are shown on aerial exhibits utilizing the Pinellas County 2007 LIDAR contour aerial with existing 1-foot contours, in addition to Pinellas County Property Appraiser parcel lines. The recommended conceptual solutions along with their descriptions are shown in Appendix A. Other evaluated conceptual Options and their respective cost estimates are shown in Appendix B.

4.1 Problem Areas Selected for Drainage Improvements

A total of 36 stormwater Map ID areas were identified as needing drainage improvements in the SAP Phase I. These locations were an accumulation of stormwater problem areas originally identified in the 1992 Dames and Moore Master Drainage Study Phase I, areas identified by City residents, areas identified by City staff, and those identified by the City's stormwater consultant during the initial field investigations for SAP Phase I.

As the City continues to grow, additional areas of concern will be identified, reviewed, and evaluated utilizing the same approach previously discussed. These new areas will then be added to the City's Stormwater CIP.

While developing conceptual solution(s) each of these locations was reviewed individually and collectively in order to join multiple stormwater Map ID areas into a common or phased project. Several of the conceptual solutions combined multiple stormwater Map ID areas.

4.2 Engineer's Preliminary Construction Cost Estimate

Preliminary construction cost estimates were developed for all conceptual solutions. The preliminary cost estimates included survey, geotechnical, final design and permitting services, estimated property costs, construction materials and a twenty-five percent (25%) contingency for project unknowns. Unit prices are based on the Florida Department of Transportation (FDOT) Item Average Unit Costs for Area 08 (includes Pinellas County). These unit prices are updated periodically with the stormwater contract. The preliminary cost estimates for all developed conceptual solutions are shown in Table 2: Summary of Evaluated Conceptual Solutions. The itemized preliminary cost estimates for each of the recommended conceptual solutions are shown in Appendix A. The

itemized preliminary cost estimates for the other alternative conceptual solutions are shown in Appendix C. **It is important to note that these preliminary cost estimates are included as a means to compare the various design Options and for preliminary budgeting purposes and do not necessarily represent actual anticipated construction costs. Actual development costs can only be accurately estimated once a detailed design is performed and quantity takeoffs can be obtained.**

Table 2: Summary of Evaluated Conceptual Solutions

Last Update: Jan. 2022

Map ID No.	Option No.	Appendix Location	Project Location	Resolved Map ID No.	Design & Construction Cost	ROW Acquisition Estimate	Total Cost	Total SAP Score	Total Cost/SAP Point	Level of Permitting
2	1	C	Disston Ave. & Center St.	2	$254,400	NA	$254,400	31	8,206	MEDIUM
2	2	A	Disston Ave. & Center St.	2, 17, 28, 28A	$1,149,492	0	$1,149,492	72	15,965	HIGH
5	1	A	Pent St. 200' east of Grosse Ave.	4, 5, 6, 14, 29	$2,539,485	$0	$2,539,485	93	27,306	HIGH
9	1	C	Disston Ave. between Spruce St. & Live Oak St.	9	$75,400	$0	$75,400	15	5,027	LOW
9	2	C	Disston Ave. between Spruce St. & Live Oak St.	9, 10, 11	$610,500	$0	$610,500	38	16,066	MEDIUM
9	3	A	Disston Ave. between Spruce St. & Live Oak St.	9, 10, 11	$1,195,164	$0	$1,195,164	38	31,452	MEDIUM
15	1	A	Highland Ave. & Vista Pl.	15, 33	$1,198,939	$0	$1,198,939	60	19,982	MEDIUM
15	2	C	Highland Ave. & Vista Pl.	15	$250,100	NA	$250,100	36	6,947	MEDIUM
25	1	C	Levis Ave. Alleyway/Levis Ave. between Lime St. & Oakwood St.	20, 25	$105,600	$0	$105,600	20	5,280	MEDIUM
25	2	C	Levis Ave. Alleyway/Levis Ave. between Lime St. & Oakwood St.	20, 25	$1,460,079	$0	$1,460,079	20	73,004	MEDIUM
39	1	A	Coburn Dr. 100' west of Florida Ave.	39	$312,916	$0	$312,916	18	17,384	MEDIUM
39	2	C	Coburn Dr. 100' west of Florida Ave.	39	$34,900	NA	$34,900	18	1,939	LOW
42	2	A	Sponge Docks Flooding - Phase 2: Pipe Upgrade & Stormwater Vault Pump Station	42	$2,184,403	$0	$2,184,403	52	42,008	MEDIUM
57	1	C	Kenneth Way at Seaside Dr.	57, 74	$21,300	NA	$21,300	30	710	MEDIUM
57	2	A	Kenneth Way at Seaside Dr.	57, 74	$589,434	$30,000	$619,434	30	20,648	MEDIUM
69	1	A	Pent St. 100' east of Levis	69	$398,987	NA	$398,987	28	14,250	LOW
103	1	A	Roosevelt Blvd. & Island Dr.	103	$181,120	NA	$181,120	14	12,937	LOW
104	1	A	Roosevelt Blvd. & Canal St.	104	$210,240	NA	$210,240	43	4,889	LOW
106	1	A	Spring Dr. & MLK Jr. Dr.	106	$361,324	NA	$361,324	54	6,691	HIGH
107	1	A	Lime St. & Huey Ave.	107	$488,158	NA	$488,158	40	12,204	MEDIUM
107	2	C	Lime St. & Huey Ave.	107	$484,271	NA	$484,271	40	12,107	MEDIUM
108	1	A	Lakeview Dr.	108	$265,470	NA	$265,470	32	8,296	MEDIUM
109	1	A	Hibiscus Ave. & Pine St.	109	$100,000	NA	$100,000	38	2,632	LOW
110	1	A	Pinellas Trail Culvert	110	$109,494	NA	$109,494	41	2,671	HIGH
111	1	C	Grandview Drive	111	$311,053	NA	$311,053	38	8,186	MEDIUM
111	2	A	Grandview Drive	111	$28,500	NA	$28,500	41	695	MEDIUM
112	1	A	Oleander Dr. & Peninsula Ave.	112	$237,120	NA	$237,120	13	18,240	LOW
112	2	C	Oleander Dr. & Peninsula Ave.	112	$1,351,464	NA	$1,351,464	13	103,959	MEDIUM
113	1	A	Riverside Drive and Sunset Drive	113	$880,322	NA	$880,322	24	36,680	MEDIUM
114	1	A	North Levis Avenue	114	$168,322	NA	$168,322	11	15,302	LOW
114	2	C	North Levis Avenue	114	$195,899	NA	$195,899	11	17,809	LOW

Recommended Alternative

4.3 Cost/Benefit Analysis

A cost/benefit analysis was performed using the SAP score for each of the stormwater Map ID areas and the preliminary cost estimates for the conceptual solutions. This analysis was used to assist with determining which conceptual Option provided the best solution to the problem for the least cost. From the original 36 stormwater Map ID areas a total of 24 individual stormwater projects were developed. **As the City continuous to grow in size and density, additional stormwater problem areas have been identified and added to the stormwater CIP.** Please see Table 3: Cost/Benefit Summary of Recommended Conceptual Solutions.

Table 3: Cost/Benefit Summary of Recommended Conceptual Solutions

Project Ranking	Map ID No.	Option No.	Project Location	Resolved Map ID No.	Design & Construction Cost	ROW Acquisition Estimate	Total Cost	Total SAP Score	Total Cost/SAP Point	Level of Permitting
1	109	1	Hibiscus Ave. & Pine St.	109	$100,000	NA	$100,000	38	2,632	LOW
2	110	1	Pinellas Trail Culvert	110	$109,494	NA	$109,494	41	2,671	HIGH
3	104	1	Roosevelt Blvd. & Canal St.	104	$210,240	NA	$210,240	43	4,889	LOW
4	111	2	Grandview Drive	11	$215,922	$0	$215,922	44	4,907	MEDIUM
5	106	1	Spring Dr. & MLK Jr. Dr.	106	$361,324	NA	$361,324	54	6,691	HIGH
6	108	1	Lakeview Dr.	108	$265,470	NA	$265,470	32	8,296	MEDIUM
7	107	1	Lime St. & Huey Ave.	107	$488,158	NA	$488,158	40	12,204	MEDIUM
8	103	1	Roosevelt Blvd. & Island Dr.	103	$181,120	NA	$181,120	14	12,937	LOW
9	69	1	Pent St. 100' east of Levis	69	$398,987	NA	$398,987	28	14,250	LOW
10	114	1	North Levis Avenue (Option-1)	114	$168,322	$0	$168,322	11	15,302	LOW
11	39	1	Coburn Dr. 100' west of Florida Ave.	39	$312,916	$0	$312,916	18	17,384	MEDIUM
12	114	2	North Levis Avenue (Option-2)	114	$195,899	$0	$195,899	11	17,809	LOW
13	112	1	Oleander Dr. and Peninsula Ave.	112	$237,120	NA	$237,120	13	18,240	LOW
14	2	2	Disston Ave. & Center St.	2, 17, 28, 28A	$1,149,492	0	$1,149,492	60	19,158	HIGH
15	15	1	Highland Ave. & Vista Pl.	15, 33	$1,198,939	$0	$1,198,939	60	19,982	MEDIUM
16	57	2	Kenneth Way at Seaside Dr.	57, 74	$750,617	$30,000	$780,617	30	26,021	MEDIUM
17	9	3	Disston Ave. between Spruce St. & Live Oak St.	9, 10, 11	$1,195,164	$0	$1,195,164	38	31,452	MEDIUM
18	113	2	Riverside Drive and Sunset Drive	113	$880,322	$0	$880,322	24	36,680	MEDIUM
19	42	2	Sponge Docks Flooding - Phase 2: Pipe Upgrade and Stormwater Vault Pump Station	42	$2,184,403	$0	$2,184,403	52	42,008	MEDIUM
20	5	1	Pent St. 200' east of Grosse Ave.	4, 5, 6, 14, 29	$2,539,485	$0	$2,539,485	60	42,325	HIGH
21	25	2	Levis Ave. Alleyway/Levis Ave. between Lime St. & Oakwood St.	20, 25	$1,460,079	$0	$1,460,079	20	73,004	MEDIUM

New projects introduced January 2022

4.4 Funding Implementation

The City uses an existing Stormwater Utility Fee in order to fund the design, permitting and to construct the recommended solutions outlined in the Stormwater Action Plan. The City's projected available funding based on this Stormwater Utility Fee is approximately $500,000 annually.

Recommended conceptual solutions that could qualify for additional funding through the SWFWMD Cooperative Funding Initiative Program, the FDEP Section 319(h) Nonpoint Source Management Grant Program, the FDEP TMDL Water Quality Restoration Grant Program, or other funding sources are shown in Table 4: Projects Eligible for Additional Funding.

Table 4: Projects Eligible for Additional Funding

Map ID No.	Project Location	Resolved Map ID No.	Design & Construction Cost	Total Cost	Discharges to Impaired Waterbody
2	Disston Ave. & Center St.	2, 17, 28, 28A	$1,149,492	$1,149,492	YES
9	Disston Ave. between Spruce St. & Live Oak St.	9, 10, 11	$1,195,164	$1,195,164	YES
15/33	Highland Ave. & Vista Pl. & Jasmine Ave & Lime St.	15, 33	$1,198,939	$1,198,939	YES
42	Sponge Docks Flooding - Phase 2: Pipe Upgrade & Stormwater Vault Pump Station	42	$2,184,403	$2,184,403	YES
106	Spring Dr. & MLK Jr. Dr.	106	$361,324	$361,324	YES
107	Lime St. & Huey Ave.	107	$488,158	$488,158	YES
110	PinellasTrail Culvert	110	$318,444	$318,444	YES
112	Oleander Dr. & Peninsula Ave.	112	$1,501,318	$1,501,318	YES
113	Riverside Dr. and Sunset Dr.	113	$880,322	$880,322	YES

4.5 Tidal Flooding

Frequent and chronic tidal flooding occurs throughout many locations within City limits due mostly to the low-lying nature of the roadways and nearby areas with hydraulic connections via storm sewer systems to adjacent tidally influenced waterbodies. During higher than normal tidal events, such as those associated with Spring or King Tide events (high tide events coinciding with a new or full moon, which can be further exaggerated by prevalent winds), roadway flooding occurs at these locations when tide

elevations exceed that of the existing roadway and adjacent ground surfaces. A review of the NOAA verified high tide elevations (Anclote River, Station 8726905), out of 706 verified high tide events during the 2016 calendar year, 31 (4.4%) caused tidally-influenced ponding/flooding in areas where existing grade elevations were at or near 1.90 feet NAVD88. On average, the duration of the high tides staging above this elevation was about 2.5 to 3.0 hours. Out of these 31events, seven (7) can be attributed to tropical storm events that occurred that year, with the remaining 24 events (3.4% of the total) occurring due to normal annual tidal fluctuations. When these "sunny-day" flooding events do occur there is significant effort on part of the City's Public Works staff and that of the City of Tarpon Springs Police Department to set up, maintain/enforce, and take down traffic barriers that prevent roadway traffic from becoming trapped/flooded and from creating "wakes" that have the real potential to cause very significant property damage in these low-lying developed areas.

To protect against tidal flooding through storm sewer systems, the City has installed or has requested developer installed backflow prevention valves within culverts that allow the tidal flooding. When installed, these valves prevent tidal waters from backflowing through said outfall pipes and are effective in preventing sunny-day floods. To prevent tidal flooding in all other low-lying areas where no barrier currently exists, current grades will need to be raised to elevations which are higher than the flood surge elevation, or a barrier such as the ones mentioned above, will need to be constructed. Table 5 below summarizes the current locations where the City is planning preventative measures towards tidally influenced flooding.

Table 5: Tidally Influenced Flooding Locations

Map ID No.	Project Location
42	Sponge Docks Flooding
103	Roosevelt Blvd. & Island Dr.
104	Roosevelt Blvd. & Canal St.
106	Spring Dr. & MLK Jr. Dr.
110	PinellasTrail Culvert
112	Oleander Dr. & Peninsula Ave.

4.6 Recommended Capital Improvements

Using the SAP score and the estimated cost estimates for the conceptual solutions a cost/benefit analysis was performed to assist with determining which conceptual Option provided the best solution to the problem for the least cost. These recommended Options were then implemented into a Capital Improvement Program. This program was developed using an initial stormwater account balance of approximately three million dollars and an approximate annual stormwater fee of five hundred thousand dollars. The recommended Option design, construction, and right-of-way costs are separated per fiscal calendar year. A summary of all projects (active, completed, and future projects) are shown in Table 6: Overall Stormwater Capital Improvement Program.

PROJECT/PHASE IN-PROGRESS

PROJECT IN-CONSTRUCTION

PROJECT/PHASE COMPLETED

BURGESS & NIPLE
Engineers ■ Architects ■ Planners

Table 6: City of Tarpon Springs - Stormwater Capital Improvement Program (Updated Jan. 2022)

			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024			FY 2025			FY 2026			FY 2027			FY 2028			FY 2029			FY 2030			FY 2031			FY 2032			FY 2033			FY 2034			FY 2035			
Map ID No.	Project Location	Resolved Map ID No.	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	Design	Const.	ROW	CIP Totals
5	Pent St. 200' east of Grosse Ave. (Costs account for $1,505,240 SWFWMD Grant)	4, 5, 6, 14, 29	$254,704	$389,771			$194,885			$194,885																																				$1,034,245
21 & 22	Palm Ave. between Tarpon Dr. & Gulf Rd. (Costs account for $43,395 DESIGN & $266,584 CONSTRUCTION SWFWMD Grant)	21,22	$88,197	$546,416	$77,136		$249,979																																						$961,728
42	Sponge Docks Flooding - Phase 1: Check Valves	42		$361,324																																										$361,324
NA	City Golf Course (Phase 2)	NA	$47,200				$155,000																																							$202,200
105	Chesapeake Dr. Tidal Valve	105		$6,034																																										$6,034
109	Hibiscus Ave. & Pine St.	109								$100,000																																					$100,000
110	Pinellas Trail Culvert	110							$51,200	$66,960																																					$118,240
102	Margo St. & Margo Ct. (Being addressed as part of the City's Meres Blvd Extension project)	102																																												$0
104	Roosevelt Blvd. & Canal St. Tidal Valve	104							$59,552	$158,545																																					$218,097
111	Grandview Drive	111							$137,929	$153,680																																					$291,609
106	Spring Dr. & M.L.K. Jr. Dr.	106										$101,584	$259,740																																		$361,324
108	Lakeview Dr.	108										$64,160	$201,310																																		$265,470
107	Lime St. & Huey Ave.	107										$82,838	$405,320																																		$488,158
103	Roosevelt Blvd. & Island Dr. Tidal Valve	103													$47,625	$133,495																															$181,120
69	Pent St. 100' east of Levis	69													$82,981	$316,006																															$398,987
114	North Levis Avenue (Option/Phase-1)	114																$31,032	$136,510																													$168,322
39	Coburn Dr. 100' west of Florida Ave.	39																			$56,636	$256,280																									$312,916
114	North Levis Avenue (Option/Phase-2)	114																$37,359	$158,540																													$195,899
112	Oleander Dr. and Peninsula Ave.	112																			$45,530	$191,590																									$237,120
2	Dixston Ave. & Center St.	2, 17, 28, 28A																						$231,132	$469,180			$469,180																			$1,149,492
15 & 33	Highland Ave. & Vista Pl. (Construction assumes SWFWMD CFI Grant 50/50)	15,33																												$40,000	$274,298			$274,299												$588,597
57 & 74	Kenneth Way at Seaside Dr.	57,74																												$98,235		$30,000		$491,199												$619,434
9	Dixston Ave. between Spruce St. & Live Oak St.	9,10,11																																	$155,892	$519,636			$519,636							$1,195,164
113	Riverside Drive and Sunset Drive	113																																$174,222	$494,270			$211,830							$668,492
42	Sponge Docks Flooding - Phase 2: Pipe Upgrades and Stormwater Vault Pump Station (Costs accounts for $1,738,390 C construction Federal Grant)	42							$306,887				$228,713																																	$535,600
20 & 25	Levis Ave. Alleyway/Levis Ave. between Lime St. & Oakwood St.	20,25																																									$223,198	$309,221		$309,221		$532,419
NA	City Golf Course Design (Phase I)																																														$0
71	Riverside Dr. & Hillside Dr.	71,72																																													$0
NA	GIS Stormwater Inventory	NA																																													$100,000
73	Riverside Dr. at Seabreeze Dr. (CITY STAFF IMPROVEMENTS - MONITOR)	73																																													$0
35	Dixston Ave. south of Harrison St. (CITY STAFF IMPROVEMENTS - MONITOR)	35																																													$0
24B	Ruth St./Shaddock Ave. Alley (CONST. BY CITY STAFF)	24B																																													$8,640
NA	North Parcel Recreational Stormwater Improvements (KAYAK)																																														$234,281
NA	Earl Street Stormwater Pond Permit																																														$29,785
NA	Earl St. Extension Eval.																																														$7,620
43	Island Dr. near Hill St.	43																																													$117,800
NA	Chesapeake Dr. Stormwater																																															$53,424
NA	MLK Jr. Drive Tech. Memo.																																														$4,041
NA	S. Dixston Ave. Pond Tech. Memo.																																														$4,050
NA	Charlotte Ave. Eval./Exhibit																																															$940
NA	City Golf Course Eval.																																															$2,455
NA	Golf Road Eval																																															$6,490
1B	Dixston Ave. south of Tarpon Ave.	1A, 1B, 1C																																														$680,762
7	Pinellas Trail Outfall Ditch (Safford Ave. Rec. Park)																																															$541,574
3	Walton Ave. between Tarpon Ave. & Lime St.																																															$193,577
1B	Hibiscus St. & Park St.																																															$98,110
70	East end of Boston St.																																															$0
31	Huey Ave. north of Tarpon Ave.																																															$0
62	Roosevelt Blvd.																																															$315,961
NA	Misc Services		$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$50,000			$1,015,000
NA	Street Sweeper																																															$375,000
NA	Vac-con																																															$275,000
NA	TMDL - Klusterman																																															$150,000
NA	Stormwater GIS for NPDES																																															$200,000
NA	Cemetery SW Improvements																																															$30,000
NA	Park St. West of Alt 19																																															$0
NA	Earl Street Pond Expansion																																															$115,000
																																															$0
			$440,101	$1,303,544	$77,136	$50,000	$599,864	$0	$605,648	$674,870	$0	$298,581	$1,095,083	$0	$180,606	$449,501	$0	$119,171	$295,050	$0	$152,166	$447,870	$0	$261,132	$469,180	$0	$50,000	$469,180	$0	$188,235	$274,298	$30,000	$50,000	$765,498	$0	$205,892	$519,636	$0	$50,000	$519,636	$0	$224,222	$494,270	$0	$273,198	$521,051	$0	$50,000	$309,221	$0	$15,743,514
	FY Budget		$5,000,951			$3,680,170			$3,530,306			$2,750,588			$1,856,924			$1,726,817			$1,812,596			$1,712,561			$1,482,249			$1,463,069			$1,470,536			$1,155,038			$929,510			$929,510			$859,874			$711,018		
	Total Yearly Expenditures		$1,820,781			$649,864			$1,279,718			$1,393,664			$630,107			$414,221			$600,036			$730,312			$519,180			$492,533			$815,498			$725,528			$569,636			$718,492			$794,249			$359,221			
	Balance Available for Next Year		$3,180,170			$3,030,306			$2,250,588			$1,356,924			$1,226,817			$1,312,596			$1,212,561			$982,249			$963,069			$970,536			$655,038			$429,510			$359,874			$211,018			$65,625			$351,797			
	Cumulative Money Spent in the CIP		$5,622,307			$6,272,171			$7,551,889			$8,945,553			$9,575,660			$9,989,881			$10,589,916			$11,320,228			$11,839,408			$12,331,941			$13,147,439			$13,872,967			$14,442,603			$14,591,459			$15,236,852			$14,950,680			

Initial Stormwater Acct. Balance
$3,000,000
Annual Stormwater Fee
$500,000

4.7 Permitting

The City's stormwater consultant met with SWFWMD on August 11, 2010 to discuss generally the permitting requirements in addition to discussing potential cooperative funding for several of the recommended solutions. The following are the highlights from the meeting:

- Re-routing any current closed basins to either an open basin (drains to Anclote River, Gulf of Mexico, or Lake Tarpon) or another closed basin will require demonstrating that the problem/issue is not being relocated.
- Projects that incorporate stormwater treatment options (ponds or other means – CDS units, Stormceptor/others) could be eligible for District funding consideration.
- There are no permit exemptions for the small addition of inlets/pipes to existing infrastructure.
- Individual project pre-application meetings should be held during the design phases for each project.
- Projects will be permitted individually.

5.0 Completed Projects

5.1 Record of Completed Projects

As projects are completed/constructed, the stormwater SAP will be updated to show a track record of completed projects. Table 7 below is the summary of completed projects. Completed project description, conceptual layout & cost estimate can be found in Appendix D.

Table 7: Summary of Completed Projects

Map ID No.	Project Location	Fiscal Year Completed	Total Cost	Notes
21	Palm Avenue Drainage Improvements Design	2021	$580,157	$206,584 SWFWMD CFI Grant (const.)
N/A	City Golf Course (Phase-2)	2021	$202,200	
105	Chesapeake Drive	2020	$8,750	Work Performed by City staff
42	Sponge Docks Flooding - Phase 1: Check Valves	2020	$116,824	First of three possible improvement phases
21	Palm Avenue Drainage Improvements Design	2019	$131,592	$43,395 SWFWMD CFI Grant (design)
5	Pent/Grosse Drainage Improvements Design	2019	$254,704	$1,505,240 SWFWMD CFI Grant for construction
42	Dodecanese Blvd/Athens Street Phase 1	2019	$38,879	Update SAP Map ID No. 42
NA	GIS Stormwater Infrastructure Inventory	2019	$200,000	$100,000 SWFWMD CFI Grant
NA	HSIP Grant Funding - Tarpon Avenue	2019	$10,000	$750,000 FDOT Construction Grant
NA	Bayshore Sunset Tidal Flooding	2018	$19,644	City Installed TideFlex Valve
71	Riverside Dr. & Hillside Dr.	2017	$114,725	
NA	Chesapeake Drive Tidal Flooding Evaluation	2017	$3,500	
NA	Golf Course Phase 1	2017	$45,127	
15/33	Jasmine/Highland 60% Design & Permit	2017	$101,743	SWFWMD Permit expires 10/05/22
25	Mt. Hermon Baptist Church Drainage Evaluation	2017	$8,000	Update SAP Map ID No. 25
NA	North Parcel Recreational Stormwater Improvements	2017	$172,722	Included City Kayak Launch
NA	Earl Street Stormwater	2016	$29,785	Work performed by City Staff
24B	Bath St/Shaddock Ave. Alley	2015	$8,640	Work performed by City Staff; $87,160 savings
35	Disston Ave south of Harrison St	2015	$5,000	Work performed by City Staff; $86,500 savings

Map ID No.	Project Location	Fiscal Year Completed	Total Cost	Notes
73	Riverside Dr at Seabreeze Dr	2015	$2,500	Work performed by City Staff; $68,371 savings
43	Island Drive near Hill Street	2014	$117,800	
1B	Disston Ave. South of Tarpon Ave.	2013	$680,762	
7	Pinellas Trail Outfall Ditch (Safford Rec Park)	2013	$541,574	
18	Hibiscus St. & Park St.	2013	$90,110	
70	East end of Boston St.	2013	$47,300	Lowe's Development
31	Huey Ave. north of Tarpon Ave.	2013	$31,700	Work performed by City Staff
3	Walton Ave. between Tarpon Ave. & Lime St.	2012	$193,577	
62	Roosevelt Blvd.	2011	$315,961	
NA	Chesapeake Drive	2011	$184,459	
NA	MLK Drive Technical Memorandum	2011	$19,041	
NA	S.Disston Ave. Pond Treatment Memorandum	2011	$4,050	
NA	Charlotte Ave. Evaluation/Exhibit	2011	$948	
NA	City Golf Course Evaluation	2011	$32,455	
NA	Gulf Road Evaluation	2011	$57,545	

Appendix A

Recommended Solutions, Problem Descriptions, and Cost Estimates

PENT ST.

PENT ST.

CYPRESS ST.

CYPRESS ST.

CENTER ST.

CENTER ST.

N. WALTON AVE.

N. DISSTON AVE.

17

28

2

28A

15"

18"

30"

24"

36"

POTENTIAL PROJECT EXTENSION TO RESOLVE ADDITIONAL FLOODING PROBLEM AREAS

CYPRESS SWAMP

1" = 120'

N

2016 AERIAL

LEGEND

- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- 5 CONTOUR
- 21 MAP ID NO. / LOCATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE. AND CENTER ST.

MAP ID NO. 2
OPTION 2 OF 2

James Greene 8/10/2020 10:27:02 AM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projetcs CADD files\TS_SAP 2 EXHIBITS1.dwg

Map ID No. 2 - Disston Ave. & Center St.

Problem:
Intersection is located in a closed basin; however, the low point is along the west side of Disston Ave. where it intersects with Center St. There is no stormwater infrastructure for the intersection. Ponding occurs within the entire intersection and with heavy or long duration storm events the intersection floods as well as adjacent properties. Several adjacent property owners have constructed earthen berms in the right-of-way to prevent flooding of their property.

Conceptual Solution(s):

Option 1
This conceptual solution would require installing a series of inlets at the intersection with a storm sewer collection system that would be routed to the west along Center St. At Levis Ave. the system would discharge into an existing dry detention system. This section of Center St. has been listed by the City as a future brick street replacement project therefore this system could be installed conventionally along the centerline of Center St. The existing City-owned dry detention pond would require an expansion. This conceptual solution would require a deep pipe installation approximately 14 to 16 feet deep due to the topography of Center St. between Levis Ave. and Disston Ave. An analysis to determine whether the pond expansion could provide the additional volume needed to accommodate the additional stormwater runoff would be required.

Option 2
This conceptual solution would require installing a series of inlets at the intersection with a storm sewer collection system that would be routed to the east along Center St. At Walton Ave. the storm sewer and inlet system would continue to the east and discharge into the existing cypress swamp located at the east end of Center St. Inlets would be placed at the Walton Ave. & Center St. intersection and just south of this intersection within the low point along Walton Ave. (Map ID No. 28A – Walton Ave. & Center St.). The main trunk system along Center St. at Walton Ave. could be sized to convey stormwater runoff collected by future extension of the system that would be installed along Pent St. between Disston Ave. and Walton Ave. (Map ID No. 17 - Pent St. between Disston Ave. & Walton Ave.) as well as along Cypress St. between Disston Ave. & Walton Ave. (Map ID No. 28 - Cypress St. between Disston Ave. & Walton Ave.). This conceptual solution would require a deep pipe installation approximately 8 to 10 feet deep due to the topography of Center St. between Disston Ave. and Walton Ave. An analysis to determine whether the cypress swamp can handle the additional runoff would be required.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 2: (OPTION 2 - INCLUDES MAP ID NO. 28A): DISSTON AVE. AND CENTER ST. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	12	EA	$109.80	$1,318.00
2	STAKED SILT FENCE, TYPE III	1,270	LF	$1.82	$2,311.00
3	CLEARING & GRUBBING	0.362	AC	$26,784.68	$9,696.00
4	ROADWAY RECONSTRUCTION	14,100	SF	$6.57	$92,637.00
5	MANHOLE	2	EA	$5,245.30	$10,491.00
6	DITCH BOTTOM INLET	12	EA	$5,066.47	$60,798.00
7	36" ENDWALL	1	EA	$5,565.40	$5,565.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	841	LF	$108.33	$91,106.00
9	PIPE CULVERT REINFORCED CONCRETE, 25-36"	262	LF	$296.00	$77,552.00
10	SIDEWALK CONCRETE	293	SY	$60.09	$17,606.00
11	PERFORMANCE TURF, SOD	759	SY	$2.81	$2,133.00
				MAP ID NO. 2 CONSTRUCTION SUBTOTAL	**$371,213.00**

MAP ID NO. 28: CYPRESS ST. BETWEEN DISSTON AVE. AND WALTON AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
2	STAKED SILT FENCE, TYPE III	515	LF	$1.82	$937.00
3	CLEARING & GRUBBING	0.145	AC	$26,784.68	$3,884.00
4	ROADWAY RECONSTRUCTION	6,204	SF	$6.57	$40,760.00
5	MANHOLE	1	EA	$5,245.30	$5,245.00
6	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	240	LF	$108.33	$25,999.00
8	PIPE CULVERT REINFORCED CONCRETE, 25-36"	289	LF	$296.00	$85,544.00
9	SIDEWALK CONCRETE	281	SY	$60.09	$16,885.00
10	PERFORMANCE TURF, SOD	337	SY	$2.81	$947.00
				MAP ID NO. 28 CONSTRUCTION SUBTOTAL	**$191,212.00**

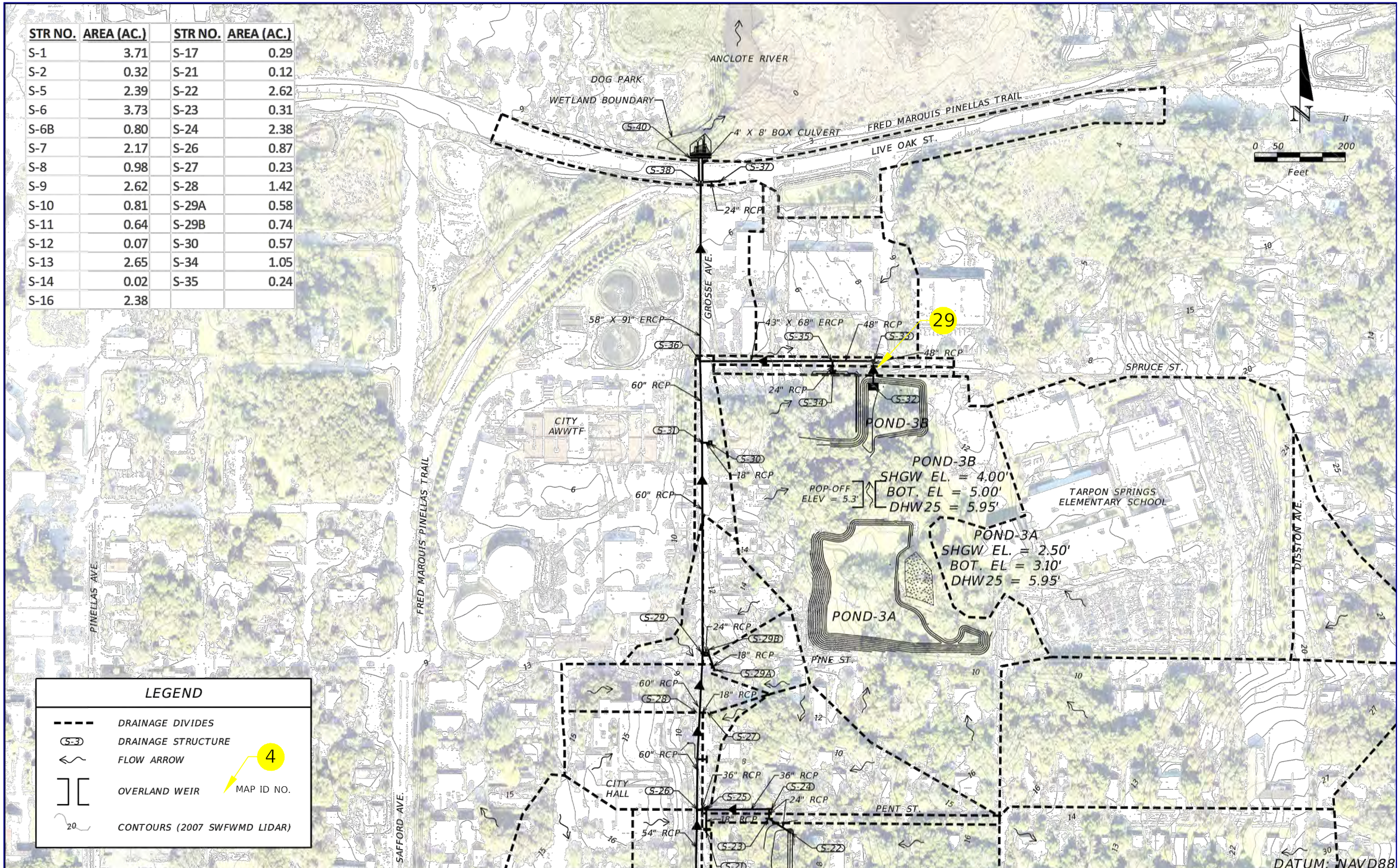
MAP ID NO. 17: PENT ST. BETWEEN DISSTON AVE. AND WALTON AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
2	STAKED SILT FENCE, TYPE III	537	LF	$1.82	$977.00
3	CLEARING & GRUBBING	0.152	AC	$26,784.68	$4,071.00
4	ROADWAY RECONSTRUCTION	6,468	SF	$6.57	$42,495.00
5	MANHOLE	1	EA	$5,245.30	$5,245.00
6	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24",	551	LF	$108.33	$59,690.00
8	CONCRETE CURB	293	LF	$27.83	$8,154.00
9	PERFORMANCE TURF, SOD	351	SY	$2.81	$986.00
				MAP ID NO. 17 CONSTRUCTION SUBTOTAL	**$132,629.00**

CONSTRUCTION SUBTOTAL	**$695,054.00**
MOBILIZATION	**$69,506.00**
25% CONTINGENCY	**$173,800.00**
CONSTRUCTION TOTAL	**$938,360.00**
SURVEY	**$28,151.00**
GEOTECHNICAL	**$14,076.00**
ENGINEERING	**$168,905.00**
GRAND TOTAL	**$1,149,492.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

STR NO.	AREA (AC.)		STR NO.	AREA (AC.)
S-1	3.71		S-17	0.29
S-2	0.32		S-21	0.12
S-5	2.39		S-22	2.62
S-6	3.73		S-23	0.31
S-6B	0.80		S-24	2.38
S-7	2.17		S-26	0.87
S-8	0.98		S-27	0.23
S-9	2.62		S-28	1.42
S-10	0.81		S-29A	0.58
S-11	0.64		S-29B	0.74
S-12	0.07		S-30	0.57
S-13	2.65		S-34	1.05
S-14	0.02		S-35	0.24
S-16	2.38			



LEGEND

- DRAINAGE DIVIDES
- S-3 DRAINAGE STRUCTURE
- FLOW ARROW
- OVERLAND WEIR
- 4 MAP ID NO.
- 20 CONTOURS (2007 SWFWMD LIDAR)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

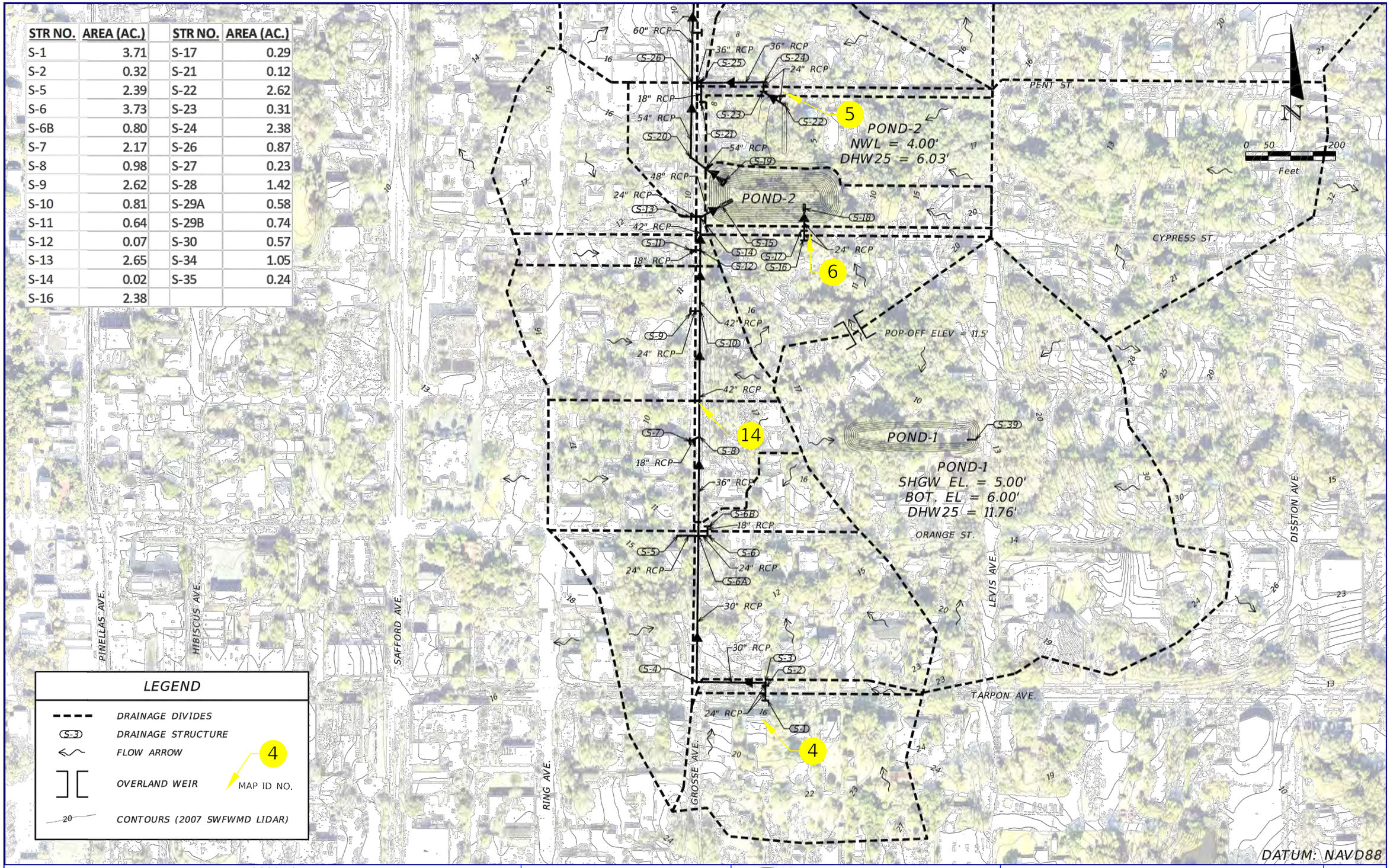
PENT STREET / GROSSE AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO. 5

OPTION 1 OF 1

Rick Aguiar 8/31/2020 2:04:52 PM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\05_Pent-Grosse\Pent-Grosse_20200831.dwg

STR NO.	AREA (AC.)		STR NO.	AREA (AC.)
S-1	3.71		S-17	0.29
S-2	0.32		S-21	0.12
S-5	2.39		S-22	2.62
S-6	3.73		S-23	0.31
S-6B	0.80		S-24	2.38
S-7	2.17		S-26	0.87
S-8	0.98		S-27	0.23
S-9	2.62		S-28	1.42
S-10	0.81		S-29A	0.58
S-11	0.64		S-29B	0.74
S-12	0.07		S-30	0.57
S-13	2.65		S-34	1.05
S-14	0.02		S-35	0.24
S-16	2.38			



LEGEND

- DRAINAGE DIVIDES
- S-3 DRAINAGE STRUCTURE
- FLOW ARROW
- 4 MAP ID NO.
- OVERLAND WEIR
- 20 CONTOURS (2007 SWFWMD LIDAR)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

PENT STREET / GROSSE AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO. 5

OPTION 1 OF 1

Rick Aguiar 8/31/2020 2:03:49 PM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\05_Pent-Grosse\Pent-Grosse_20200831.dwg

Map ID No. 5 - Pent St. 200’ east of Grosse Ave.

Problem:
This is a low spot within the road with no stormwater infrastructure. Street and property flooding is occurring according to City staff. Property damage is also occurring at 428 Pent St. causing the City to install pumps to address the problem several times throughout the wet season.

Conceptual Solution(s):

Option 1
The conceptual solution would involve installing a storm sewer collection system along Grosse Ave., utilizing the City-owned property at the northeast corner of the intersection of Grosse Ave. and Cypress St. for a stormwater pond, extending the system east along Pent St. and then north through an easement prior to discharging into the existing dry detention stormwater management facility currently serving the Tarpon Springs Elementary School. The existing dry detention stormwater management facility currently serving the Tarpon Springs Elementary School would require an expansion.

This conceptual system could resolve the following five flooding locations: Map ID No. 4 - Tarpon Ave. 100’ east of Grosse Ave., Map ID No. 5 - Pent St. 200’ east of Grosse Ave., Map ID No. 6 - Cypress St. 200’ east of Grosse Ave., Map ID No. 14 - Grosse Ave. between Pine St. & Orange St., and Map ID No. 69 – Pent St. 100’ east of Levis Ave.

The proposed system would begin with 2 inlets being installed along Tarpon Ave. The storm sewer system would convey the runoff from this location (Map ID No. 4 – Tarpon Ave. 100’ east of Grosse Ave.) to the north through a proposed easement. This system would then be directed to the west towards Grosse Ave. within the right-of-way between Tarpon Ave. and Orange St. Grosse Ave. After reaching Grosse Ave. the storm system would turn north along Grosse Ave. Additional inlets would be installed at the Grosse Ave. and Orange St. intersection and approximately half the distance between Orange St. and Cypress St. The storm sewer system would convey the runoff from this location (Map ID No. 14 - Grosse Ave. between Pine St. & Orange St.) to the north along Grosse Ave. up to Cypress St. where it would enter a structure with a diversion weir on the northeast corner at the intersection of Cypress St. and Grosse Ave. This diversion weir structure would divert low stormwater flows into a proposed wet detention stormwater pond utilizing the City-owned property at the northeast corner at the intersection of Grosse Ave. and Cypress St. This pond will provide attenuation and some water quality treatment for the runoff prior to discharging back into the proposed system along Grosse Ave. Two inlets and storm sewer are being proposed along Cypress St. approximately 200 feet east of Grosse Ave. These inlets will replace the existing 6-inch PVC outfall into the City-owned property located at the northeast corner of the intersection of Cypress St. and Grosse Ave. and alleviate the flooding occurring at Map ID No. 6 - Cypress St. 200’ east of Grosse Ave.

The diversion weir structure will divert low stormwater flows into the proposed wet detention stormwater pond but will permit high stormwater flows from larger storm events to by-pass the proposed pond and continue north along Grosse Ave. At the intersection of Grosse Ave. and Pent St. the system would split where the main line for this system is directed east at Pent St. and two

inlets are recommended approximately 200 feet east of Grosse Ave. These two inlets and the proposed stormwater pond could alleviate the flooding problem occurring at Map ID No. 5 - Pent St. 200' east of Grosse Ave. The main line storm sewer system continues east along Pent St. and then north through a proposed easement prior to discharging into the existing dry detention stormwater management facility currently serving the Tarpon Springs Elementary School. An extension of the storm sewer system could be constructed to the east along Pent St. where two inlets are recommended to alleviate the flooding occurring at Map ID No. 69 – Pent St. 100' east of Levis Ave. Where the main line of the storm sewer system is split at the intersection of Grosse Ave. and Pent St. a smaller outfall pipe is proposed along Grosse Ave. to connect into the existing storm sewer system serving the Grosse Ave. and Pine St. intersection. This split would serve two purposes; it will provide a higher discharge capacity for the proposed system for large storm events and possibly reduce the required pipe size for the outfall of the main line located within the proposed easement. Additional analysis would be required to determine whether or not the proposed connection to the existing storm sewer system serving the Grosse Ave. and Pine St. intersection would require further downstream modifications to the existing system.

An expansion of the existing dry detention stormwater management facility that currently serves the Tarpon Springs Elementary School would be required. There are several options/configurations for expanding this existing pond to provide the required volume for attenuation and treatment of the additional stormwater from the proposed stormwater collection system. The proposed pond utilizing the City-owned property at the northeast corner at the intersection of Grosse Ave. and Cypress St. will provide some attenuation and treatment for the stormwater runoff thus reducing the overall expansion needed at the existing dry detention stormwater management facility that currently serves the Tarpon Springs Elementary School. Coordination with the School Board to develop an optimal pond expansion that fits the school's future land use plans would be required along with a Southwest Florida Water Management District (SWFWMD) ERP permit modification.

2020 Q1 Update

With the exception of Map ID No. 69 – Pent St. 100' east of Levis Ave., the above listed drainage problems (Map ID No. 4, 5, 6 & 14) are being resolved by the City's Pent Street and Grosse Avenue Drainage and Roadway Improvements project with projected start of construction on August of 2020 and anticipated completion date being August of 2021. This project will also resolve the drainage problems outlined below in Map ID No. 29.

After conducting a detailed drainage analysis of the entire basin area, the previously anticipated drainage design was modified to include the expansion of the existing City pond located immediately west of Levis Avenue and north of Orange Street, a new dry detention area located within the Tarpon Elementary School property south of Spruce Street, all connected to a new 4' x 8' concrete box culvert outfall to the Anclote River at the projection of Grosse Avenue north of Live Oak Street. Map ID No. 69 – Pent St. 100' east of Levis Ave. was excluded from the overall Pent Street and Grosse Avenue Drainage and Roadway Improvements project due to budgetary constraints and is now shown as a separate project under Map ID No. 69.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 5: PENT ST. 200' EAST OF GROSSE AVE. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$114.00	$912.00
2	STAKED SILT FENCE, TYPE III	1,630	LF	$1.50	$2,445.00
3	CLEARING & GRUBBING	0.990	AC	$23,362.09	$23,128.00
4	POND EXCAVATION	6,024	CY	$3.82	$23,012.00
5	ROADWAY RECONSTRUCTION	10,224	SF	$6.70	$68,501.00
6	MANHOLE	4	EA	$4,498.00	$17,992.00
7	CURB INLET	2	EA	$5,265.00	$10,530.00
8	MITERED END SECTION	1	EA	$3,500.00	$3,500.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	27	LF	$111.00	$2,997.00
10	PIPE CULVERT REINFORCED CONCRETE, 25-36"	856	LF	$153.87	$131,713.00
11	CONCRETE CURB	478	LF	$16.70	$7,983.00
12	SIDEWALK CONCRETE	437	SY	$40.71	$17,790.00
13	PERFORMANCE TURF, SOD	350	SY	$3.13	$1,096.00
				MAP ID NO. 5 CONSTRUCTION SUBTOTAL	**$311,599.00**

MAP ID NO. 6: CYPRESS ST. 200' EAST OF GROSSE AVE. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
2	STAKED SILT FENCE, TYPE III	1,300	LF	$1.82	$2,366.00
3	CLEARING & GRUBBING	0.134	AC	$26,784.68	$3,589.00
4	POND EXCAVATION	6,944	CY	$6.48	$44,997.00
5	ROADWAY RECONSTRUCTION	4,224	SF	$6.57	$27,752.00
6	MANHOLE	2	EA	$5,245.30	$10,491.00
7	DITCH BOTTOM INLET	1	EA	$5,066.47	$5,066.00
8	CURB INLET	2	EA	$5,265.00	$10,530.00
9	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24"	415	LF	$111.00	$46,065.00
11	CONCRETE CURB	348	LF	$16.70	$5,812.00
12	SIDEWALK CONCRETE	193	SY	$45.66	$8,812.00
13	PERFORMANCE TURF, SOD	155	SY	$3.13	$485.00
				MAP ID NO. 6 CONSTRUCTION SUBTOTAL	**$168,843.00**

MAP ID NO. 14: GROSSE AVE. BETWEEN PINE ST. & ORANGE ST. **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$114.00	$912.00
2	STAKED SILT FENCE, TYPE III	549	LF	$1.50	$824.00
3	CLEARING & GRUBBING	0.150	AC	$23,362.09	$3,504.00
4	ROADWAY RECONSTRUCTION	5,988	SF	$6.90	$41,317.00
5	MANHOLE	1	EA	$4,498.00	$4,498.00
6	DIVERSION STRUCTURE	1	EA	$5,500.00	$5,500.00
7	CURB INLET	2	EA	$5,265.00	$10,530.00
8	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	519	LF	$111.00	$57,609.00
10	CONCRETE CURB	451	LF	$16.70	$7,532.00
11	SIDEWALK CONCRETE	251	SY	$45.66	$11,461.00
12	PERFORMANCE TURF, SOD	259	SY	$3.13	$811.00
				MAP ID NO. 14 CONSTRUCTION SUBTOTAL	**$146,498.00**

MAP ID NO. 4: TARPON AVE. 100' EAST OF GROSSE AVE. **06/03/2020**

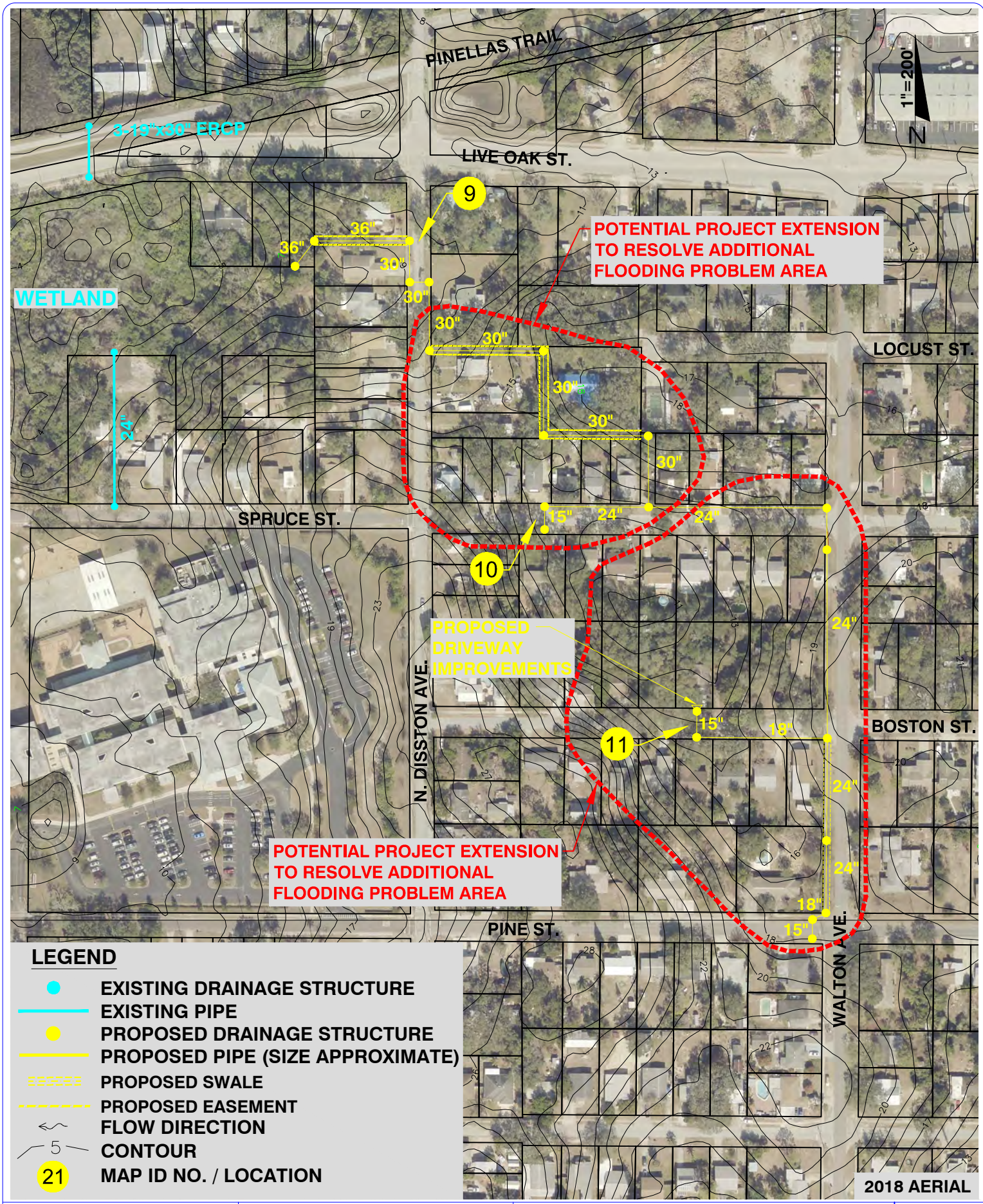
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$114.00	$912.00
2	STAKED SILT FENCE, TYPE III	78	LF	$1.50	$117.00
3	CLEARING & GRUBBING	0.033	AC	$23,362.09	$771.00
4	ROADWAY RECONSTRUCTION	1,200	SF	$6.90	$8,280.00
5	CURB INLET	2	EA	$5,265.00	$10,530.00
6	SUBSURFACE STORAGE SYSTEM	1.00	LS	$10,000.00	$10,000.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	52	LF	$111.00	$5,772.00
8	CONCRETE CURB	78	LF	$24.00	$1,872.00
9	SIDEWALK CONCRETE	43	SY	$45.66	$1,963.00
10	PERFORMANCE TURF, SOD	35	SY	$3.13	$110.00
				MAP ID NO. 4 CONSTRUCTION SUBTOTAL	**$40,327.00**

CONSTRUCTION SUBTOTAL	**$667,267.00**
MOBILZATION	**$40,037.00**
25% CONTINGENCY	**$166,817.00**
CONSTRUCTION TOTAL	**$874,121**
SURVEY	**$39,336.00**
GEOTECHNICAL	**$17,483.00**
ENGINEERING	**$87,413.00**
ROW	**$150,000.00**
GRAND TOTAL	**$1,168,353**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

BID PROPOSAL TABULATION/CITY OF TARPON SPRINGS **Note: This is a preliminary summary. THIS IS NOT AN AWARD**			OPENED: May 13,2020 @ 3:00 PM		**BID TITLE: Pent St & Grosse Ave Drainage & Roadway ImpWest Court Street**		READ BY: Jay Jackus	
					ADVERTISED: 4/12/2020		TABBED BY: Jay Jackus	
							DEPT: Public Works	
ITEM/ QUANTITY	DESCRIPTION	BIDDER>>>	Alto Construction Co., Inc.		McKenzie Contracting, LLV			
			UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
1 LS	Base Bid			$2,284,781.25		$3,830,000.00		
Bid Bond			Yes		Yes		Yes	
ITEM/ QUANTITY	DESCRIPTION	BIDDER>>>						
			UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
	Base Bid							
Bid Bond			Yes		Yes			



PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
BETWEEN SPRUCE ST. & LIVE OAK ST.

MAP ID NO.
9
OPTION 3 OF 3

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projects CADD files\TS_SAP 2 EXHIBITS1.dwg LAYOUT:MAP ID #9 (3) Last Saved:May. 21, 20 Plot Date: 5/21/2020 11:32 AM By: james greene

Map ID No. 9 - Disston Ave. between Spruce St. & Live Oak St.

Problem:
Low spot along Disston Ave. collects runoff which creates ponding to occur in roadway and residential yards. There is no stormwater infrastructure at this location. Runoff flows to the west into a wetland prior to discharging under Live Oak St. and the Pinellas Trail (3 – 19" x 30" ERCP) toward the Anclote River.

Conceptual Solution(s):

Option 1
The conceptual solution would involve installing three inlets and storm sewer pipe along Disston Ave. to collect and convey the stormwater runoff into the wetland west of Disston Ave. During a field review we were able to speak with the owner of the property (733 Disston Ave.) who said that he would work with the City to grant a drainage easement for the outfall pipe into the wetland.

Option 2
The conceptual solution would involve installing three inlets and storm sewer pipe along Disston Ave. to collect and convey the stormwater runoff into the wetland west of Disston Ave. During an additional field review we were able to speak with the owner of the property (733 Disston Ave.) who said that he would work with the City to grant a drainage easement for the outfall pipe into the wetland. The proposed pipe sizes for this option are larger than those in Option 1 to allow for solving multiple upstream problem areas as indicated below.

This conceptual solution has been developed so that a future expansion of the storm sewer system could be incorporated in order to resolve two additional flooding problem areas, Map ID No. 10 - Spruce St. between Disston Ave. & Walton Ave. and Map ID No. 11 - Boston St. between Disston Ave. & Walton Ave.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 9 (OPTION 3): DISSTON AVE. BETWEEN SPRUCE ST. & LIVE OAK ST. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
3	STAKED SILT FENCE, TYPE III	452	LF	$1.82	$823.00
4	CLEARING & GRUBBING	0.105	AC	$26,784.68	$2,812.00
5	ROADWAY RECONSTRUCTION	1,008	SF	$6.57	$6,623.00
6	MANHOLE	1	EA	$5,245.30	$5,245.00
7	CURB INLET	3	EA	$5,965.22	$17,896.00
8	MITERED END SECTION	1	EA	$3,526.11	$3,526.00
9	PIPE CULVERT REINFORCED CONCRETE, 25-36"	275	LF	$199.21	$54,783.00
10	CONCRETE CURB	70	LF	$27.83	$1,948.00
11	SIDEWALK CONCRETE	39	SY	$60.09	$2,344.00
12	PERFORMANCE TURF, SOD	31	SY	$2.81	$87.00
				MAP ID NO. 9 (OPTION 3) CONSTRUCTION SUBTOTAL	**$96,965.00**

MAP ID NO. 10 (OPTION 3): SPRUCE ST. BETWEEN DISSTON AVE. & WALTON AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
3	STAKED SILT FENCE, TYPE III	1,370	LF	$1.82	$2,493.00
4	CLEARING & GRUBBING	0.230	AC	$26,784.68	$6,160.00
5	ROADWAY RECONSTRUCTION	3,264	SF	$6.57	$21,444.00
6	MANHOLE	5	EA	$5,245.30	$26,227.00
7	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	184	LF	$118.30	$21,767.00
9	PIPE CULVERT REINFORCED CONCRETE, 25-36"	650	LF	$316.25	$205,563.00
10	CONCRETE CURB	260	LF	$27.83	$7,236.00
11	SIDEWALK CONCRETE	144	SY	$60.09	$8,653.00
12	PERFORMANCE TURF, SOD	849	SY	$2.81	$2,386.00
				MAP ID NO. 10 (OPTION 3) CONSTRUCTION SUBTOTAL	**$312,940.00**

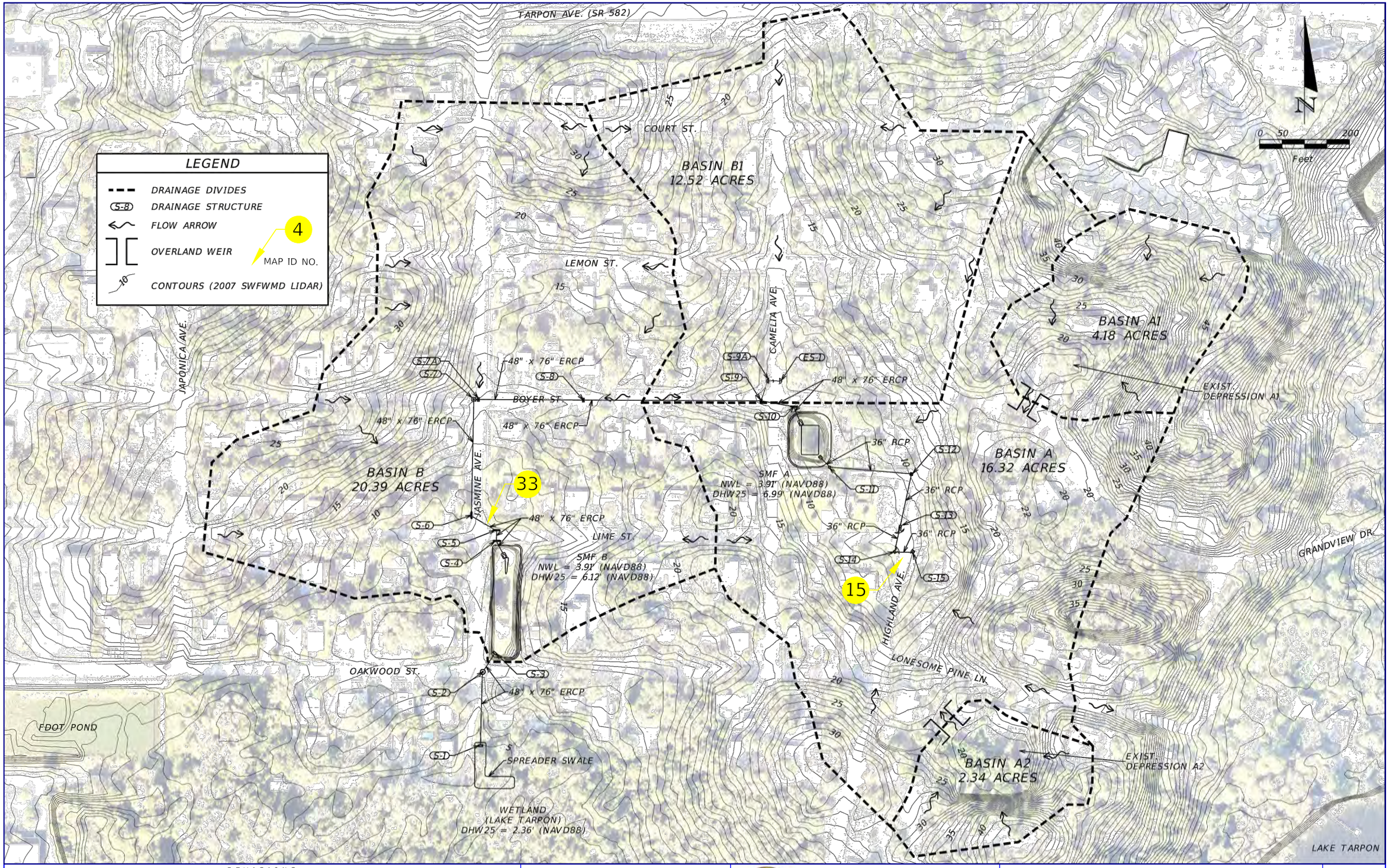
MAP ID NO. 11 (OPTION 3): BOSTON ST. BETWEEN DISSTON AVE. & WALTON AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	INLET PROTECTION SYSTEM	12	EA	$109.80	$1,318.00
3	STAKED SILT FENCE, TYPE III	1,171	LF	$1.82	$2,131.00
4	CLEARING & GRUBBING	0.337	AC	$26,784.68	$9,026.00
5	POND EXCAVATION	62	CY	$6.48	$402.00
6	ROADWAY RECONSTRUCTION	14,676	SF	$6.57	$96,421.00
7	MANHOLE	4	EA	$7,245.30	$28,981.00
8	DITCH BOTTOM INLET	5	EA	$7,066.47	$35,332.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	931	LF	$118.30	$110,137.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24" (DEPTH >10')	300	LF	$218.30	$65,490.00
11	SIDEWALK CONCRETE	647	SY	$60.09	$38,878.00
12	PERFORMANCE TURF, SOD	505	SY	$2.81	$1,419.00
				MAP ID NO. 11 (OPTION 3) CONSTRUCTION SUBTOTAL	**$389,535.00**

CONSTRUCTION SUBTOTAL	**$799,440.00**
MOBILIZATION	**$39,972.00**
25% CONTINGENCY	**$199,860.00**
CONSTRUCTION TOTAL	**$1,039,272**
SURVEY	**$46,768.00**
GEOTECHNICAL	**$25,982.00**
ENGINEERING	**$83,142.00**
GRAND TOTAL	**$1,195,164**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

JASMINE AVENUE / HIGHLAND AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO. 15
OPTION 1 OF 1

James Greene 8/31/2020 3:58:50 PM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\15_Jasmine-Highland\Jasmine_20200831.dwg

Map ID No. 15 - Highland Ave. & Vista Place

Problem:
Intersection is located within a depression and there is a stormwater collection system that collects and conveys the runoff to a City-owned stormwater pond located on the southeast corner of Boyer St. and Camelia Ave. According to the Dames and Moore Master Drainage Study Phase II this intersection experiences flooding up to 1 foot of water that has impacted private property during large storm events. This pond discharges to another City-owned pond located on the northeast corner of the intersection of Oakwood St. and Jasmine Ave.

Conceptual Solution(s):

Option 1
This conceptual solution would entail constructing a small wet detention pond in the northwest corner of the intersection of Highland Ave. and Lime St. The detention pond could provide flooding relief for the intersection and provide some additional water quality treatment for the stormwater runoff. Installation of a control structure and storm sewer to control and convey the discharge from the proposed pond to the existing wet detention pond located in the southeast corner of the intersection of Boyer St. and Camelia Ave. would also be required. Removal of non-native vegetation and accumulated sediment in this existing wet detention pond located in the southeast corner of the intersection of Boyer St. and Camelia Ave. is also recommended. Property acquisition or an easement would be required for the proposed wet detention pond in the northwest corner of the intersection of Highland Ave. and Lime St. An analysis would be required to determine whether or not the proposed improvements require further downstream modifications to the existing system.

Option 2
In the Dames and Moore Master Drainage Study Phase II it was shown that the existing collection system for the Highland Ave. and Vista Pl. intersection is undersized. This conceptual solution would involve upsizing this collection system to an equivalent 36-inch culvert as recommended in the Phase II study. In addition, a retaining wall could be constructed around the perimeter of the existing wet detention pond located in the southeast corner of the intersection of Boyer St. and Camelia Ave. The perimeter retaining wall would provide additional storage volume in addition to providing additional water quality treatment for the stormwater runoff. The improvements to the pond could also require modification or replacement of the existing control structure. Removal of non-native vegetation and accumulated sediment in this existing wet detention pond is also recommended. Property acquisition would not be required for this conceptual solution. An analysis would be required to determine whether or not the proposed improvements require further downstream modifications to the existing system.

Additional Notes (Map ID No. 15 & 33):
This system is part of a larger stormwater system that serves the residential area south of Court St., between Japonica Ave. and Highland Ave. A conceptual solution that is similar to alternative one as described in the Dames and Moore Master Drainage Study Phase II is also presented. This conceptual solution is based on improvements throughout the entire stormwater collection and conveyance system that could also resolve flooding that is occurring at the Map ID No. 33 -

Jasmine Ave. & Lime St. location. This conceptual solution would discharge to the south into the existing wetland via proposed storm drain. A spreader swale is also recommended at the discharge point. Due to possible wetland impacts at the discharge location wetland mitigation may be required for this conceptual solution.

2020 Q1 Update

The drainage problems identified above in Map ID No. 15 - Highland Ave. & Vista Place and Map ID No. 33 - Jasmine Ave. & Lime St. are to be resolved by the City's Jasmine Avenue and Highland Avenue Drainage Improvements project. This project has received all regulatory approvals needed but is not currently on the City's construction schedule due to the projected construction costs and current City budgetary constraints.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 15 (OPTION 1): HIGHLAND AVE. AND VISTA PLACE **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	26	EA	$109.80	$2,855.00
2	STAKED SILT FENCE, TYPE III	565	LF	$1.82	$1,028.00
3	CLEARING & GRUBBING	0.193	AC	$26,784.68	$5,169.00
4	POND EXCAVATION	2,073	CY	$6.48	$13,433.00
5	ROADWAY RECONSTRUCTION	1,655	SF	$6.57	$10,873.00
6	MANHOLE	2	EA	$9,406.10	$18,812.00
7	DITCH BOTTOM INLET	5	EA	$6,975.00	$34,875.00
8	MITERED END SECTION	2	EA	$9,929.09	$19,858.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	314	LF	$108.33	$34,016.00
10	PIPE CULVERT REINFORCED CONCRETE, 25-36"	30	LF	$199.21	$5,976.00
11	PERFORMANCE TURF, SOD	627	SY	$2.81	$1,762.00

CONSTRUCTION SUBTOTAL	**$148,700.00**
MOBILIZATION	**$14,870.00**
25% CONTINGENCY	**$37,200.00**
CONSTRUCTION TOTAL	**$200,770.00**
SURVEY	**$10,038.50**
GEOTECHNICAL	**$6,015.10**
ENGINEERING	**$50,192.50**
ROW	**$50,000.00**
GRAND TOTAL	**$317,016.10**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

Map ID No. 33 - Jasmine Ave. & Lime St.

Problem:
The intersection is located in a depression with stormwater infrastructure that is in good condition. According to the Dames and Moore Master Drainage Study Phase II this intersection floods up to 1 foot of water and has impacted private property during higher storm events. The infrastructure conveys the runoff to a City-owned pond located along the east side of Jasmine Ave. between Oakwood St. and Lime St.

Conceptual Solution(s):

Option 1
This conceptual solution would entail modification or replacement of the existing control structure and outfall pipe. A spreader swale is also recommended at the discharge location into the wetland. Impacts to the wetland at the spreader swale location may require mitigation. Removal of non-native vegetation and accumulated sediment in this existing wet detention pond is also recommended. There appears to be two berms or grassed weirs within the pond that could be removed that would provide additional volume and water quality treatment capacity. Property acquisition would not be required for this conceptual solution. An analysis would be required to determine whether or not the proposed improvements require further upstream modifications to the existing system.

Additional Notes (Map ID No. 33):
This system is part of a larger stormwater system that serves the residential area south of Court St., between Japonica Ave. and Highland Ave. A conceptual solution that is similar to alternative one as described in the Dames and Moore Master Drainage Study Phase II is also presented (shown on combined Map ID No. 15 & 33, Option 1 of 1). This conceptual solution is based on improvements throughout the entire stormwater system that could also resolve flooding that is occurring at the Map ID No. 15 – Highland Ave. & Vista Pl. location.

2020 Q1 Update
The drainage problems identified above in Map ID No. 15 - Highland Ave. & Vista Place and Map ID No. 33 - Jasmine Ave. & Lime St. are to be resolved by the City's Jasmine Avenue and Highland Avenue Drainage Improvements project. Detailed design drawings and drainage documentation were prepared, and the project received all regulatory approvals needed for construction, but is not currently on the City's active development schedule due to the projected construction costs and current City budgetary constraints.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 33 (OPTION 1): JASMINE AVE. AND LIME ST. **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
2	STAKED SILT FENCE, TYPE III	305	LF	$1.81	$552.00
3	TURBIDITY BARRIER	50	LF	$6.14	$307.00
4	CLEARING & GRUBBING	0.068	AC	$26,784.68	$1,821.00
5	REGULAR EXCAVATION	223	CY	$6.48	$1,445.00
6	POND EXCAVATION	1,734	CY	$6.48	$11,236.00
7	ROADWAY RECONSTRUCTION	2,760	SF	$6.57	$18,133.00
8	MANHOLE	1	EA	$5,245.30	$5,245.00
9	DITCH BOTTOM INLET	1	EA	$5,066.47	$5,066.00
10	MITERED END SECTION	1	EA	$6,000.00	$6,000.00
11	PIPE CULVERT REINFORCED CONCRETE, 25-36"	245	LF	$199.21	$48,806.00
12	CONCRETE CURB	120	LF	$27.83	$3,340.00
13	PERFORMANCE TURF, SOD	807	SY	$2.81	$2,268.00

CONSTRUCTION SUBTOTAL	**$105,100.00**
MOBILIZATION	**$10,510**
25% CONTINGENCY	**$26,300.00**
CONSTRUCTION TOTAL	**$141,910.00**
SURVEY	**$7,100.00**
GEOTECHNICAL	**$4,300.00**
ENGINEERING	**$25,555.80**
GRAND TOTAL	**$178,865.80**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

ENGINEER'S ESTIMATE

CITY OF TARPON SPRINGS - RIVERSIDE DRIVE

FINANCIAL PROJECT ID # :	
PROJECT DESCRIPTION:	JASMINE AVENUE & HIGHLAND AVENUE DRAINAGE IMPROVEMENTS 60% SUBMITTAL
PAY ITEM SPEC YEAR:	July 2016
SUBMITTAL TYPE:	Phase II Estimate
COUNTY:	Pinellas
DATE:	July 9, 2020
ENGINEERING CONSULTANT FIRM:	ICON Consultant Group, Inc.
CONTACT NAME:	Bryan A. Anderson, P.E.
PHONE NUMBER:	813.962.8689
FILE VERSION:	
PAGE NUMBER:	1 OF 2

COMPONENT GROUPS

100 - STRUCTURES	*NOT USED*		
200 - ROADWAY			$817,972.39
300 - SIGNING & PAVEMENT MARKINGS	*NOT USED*		
400 - LIGHTING	*NOT USED*		
500 - SIGNALIZATION	*NOT USED*		
550 - ITS	*NOT USED*		
600 - LANDSCAPE / PERIPHERALS	*NOT USED*		
700 - UTILITIES	*NOT USED*		
800 - ARCHITECTURAL	*NOT USED*		
900 - MASS TRANSIT	*NOT USED*		
1000 - INVALID & OTHER ITEMS	*NOT USED*		
	COMPONENT SUB-TOTAL		$817,972.39
(102-1) MOT (Maintenance of Traffic)		8%	$65,437.79
	SUB-TOTAL		$883,410.18
(101-1) MOB (Mobilization)		8%	$70,672.81
	SUB-TOTAL		$954,083.00
PU (Project Unknowns)		15%	$143,112.45
	SUB-TOTAL		$1,097,195.45
(999-25) Initial Contingency (Do Not Bid)			
	PROJECT GRAND TOTAL		**$1,097,195.45**

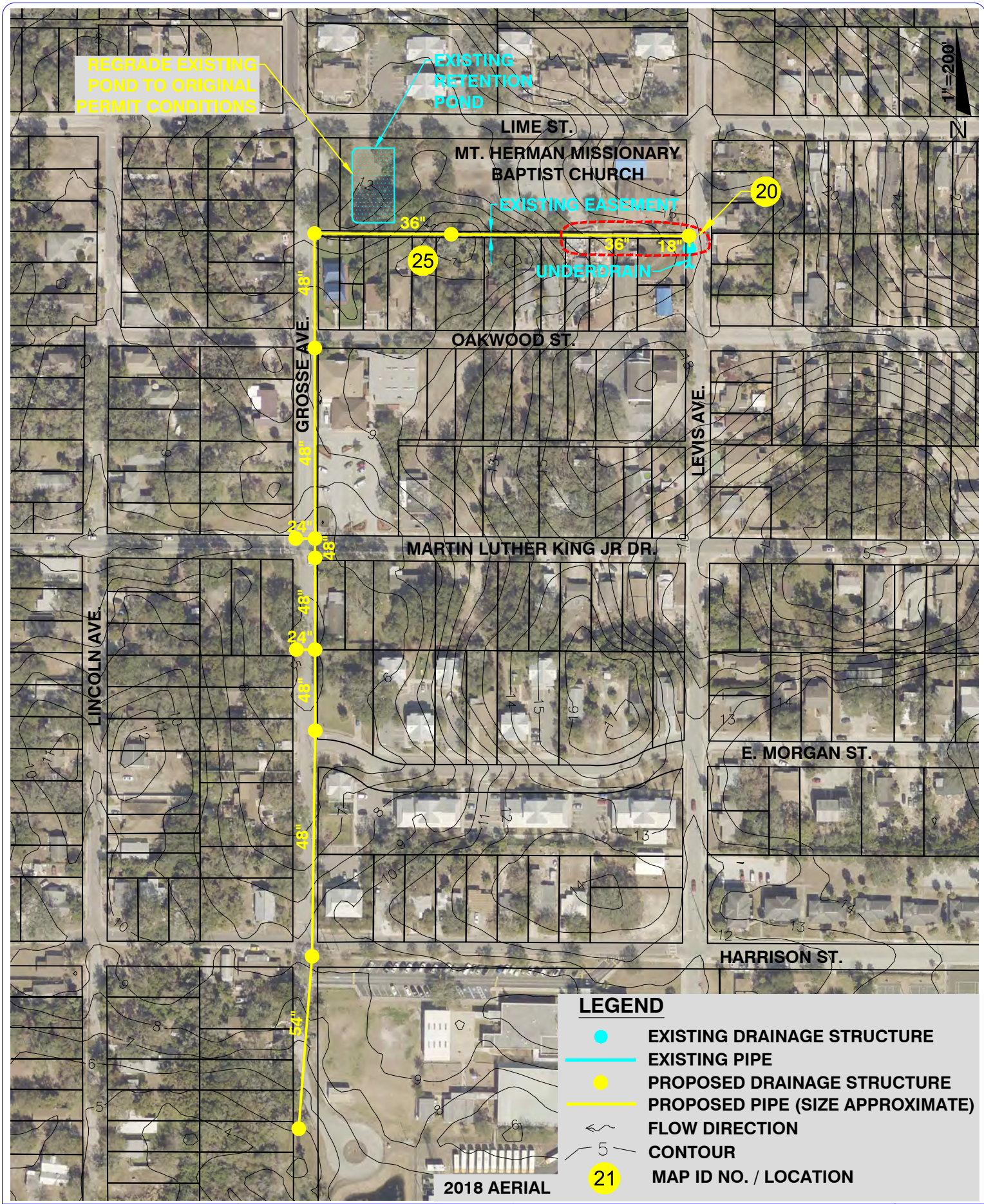
NOTES:

ENGINEER'S ESTIMATE

CITY OF TARPON SPRINGS - JASMINE AVE/HIGHLAND AVE

FINANCIAL PROJECT ID:	
FILE VERSION:	EE_03-15_Rev23
PAGE NUMBER:	

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	7/9/2020	TOTAL COST
0101 1	MOBILIZATION	LS		See Summary Sheet	
0102 1	MAINTENANCE OF TRAFFIC	LS		See Summary Sheet	
0104 10 3	SEDIMENT BARRIER	LF	1270	$1.50	$1,905.00
0104 11	FLOATING TURBIDITY BARRIER	LF	138	$11.00	$1,518.00
0104 12	STAKED TURBIDITY BARRIER- NYLON REINFORCED PVC	LF	138	$7.60	$1,048.80
0104 18	INLET PROTECTION SYSTEM	EA	2	$148.15	$296.30
0110 1 1	CLEARING & GRUBBING	AC	0.65	$11,742.00	$7,632.30
0120 1	REGULAR EXCAVATION	CY	884	$4.60	$4,066.40
0160 4	TYPE B STABILIZATION	SY	2637	$4.60	$12,130.20
0285709	OPTIONAL BASE, BASE GROUP 09	SY	118	$16.30	$1,923.40
0285711	OPTIONAL BASE, BASE GROUP 11 (RECYCLED CONCRETE AGGREGATE (RCA)	SY	2637	$21.00	$55,377.00
0334 1 13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	145	$91.20	$13,227.19
0425 1361	INLETS, CURB, TYPE P-6, <10'	EA	4	$5,463.00	$21,852.00
0425 1541	INLETS, DT BOT, TYPE D, <10'	EA	3	$4,141.00	$12,423.00
0425 1581	INLETS, DT BOT, TYPE H, <10'	EA	2	$6,128.00	$12,256.00
0425 2 61	MANHOLES, P-8, <10'	EA	1	$3,599.00	$3,599.00
0425 2 91	MANHOLES, J-8, <10'	EA	1	$6,607.00	$6,607.00
0425 2 92	MANHOLES, J-8, >10'	EA	4	$9,033.00	$36,132.00
0430175136	PIPE CULVERT, OPT MATERIAL, ROUND, 36"S/CD	LF	411	$140.00	$57,540.00
0430175260	PIPE CULVERT, OPT MATERIAL, OTHER SHAPE - ELIP/ARCH, 60"S/CD	LF	1299	$343.00	$445,557.00
0430982138	MITERED END SECTION, OPTIONAL ROUND, 36" CD	EA	1	$2,942.00	$2,942.00
0430982643	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 60" CD	EA	2	$12,000.00	$24,000.00
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	24	$19.20	$460.80
0520 2 4	CONCRETE CURB, TYPE D	LF	86	$22.00	$1,892.00
0520 3	VALLEY GUTTER- CONCRETE	LF	1703	$31.00	$52,793.00
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	14	$39.00	$546.00
0524 1 49	CONCRETE DITCH PAVEMENT, 6", REINFORCED	SY	468	$86.00	$40,248.00
		COMPONENT TOTAL			**$817,972.39**



PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

LEVIS AVE.
BETWEEN LIME ST. & OAKWOOD ST. AND LEVIS AVE. ALLEYWAY

MAP ID NO.
25
OPTION 2 OF 2

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projects CADD files\TS_SAP 2 EXHIBITS2.dwg LAYOUT:MAP ID #25 (3) Last Saved: Jun. 4, 20 Plot Date: 6/4/2020 2:27 PM By: james greene

Map ID No. 25 - Levis Ave. Alleyway

Problem:
Flooding is occurring in the backyards of the residents along Oakwood St. between Levis Ave. and Grosse St. It appears that this alleyway historically conveyed stormwater to the west where there is currently a stormwater pond that serves the Mt. Herman Missionary Baptist Church on Lime St. The alley does not have stormwater infrastructure or a positive outfall. There is an easement along the alley that could be utilized to install a stormwater collection system.

Conceptual Solution(s):

Option 1
Currently, the existing ditch bottom inlet on Levis Ave. discharges to an underdrain system that according to City staff is most likely clogged and non-functional (please see Map ID No. 20 - Levis Ave. between Lime St. & Oakwood St.). The conceptual solution would include installing a storm sewer system beginning at the existing inlet on Levis Ave. and two ditch bottom inlets and storm sewer system along the alley that would discharge into the existing pond currently serving the Mt. Herman Missionary Baptist Church. This proposed system could resolve the flooding that is occurring along the Levis Ave. alley in addition to the flooding as identified in Map ID No. 20 – Levis Ave. between Lime St. & Oakwood St. The existing stormwater pond currently serving the Mt. Herman Missionary Baptist Church would require expansion to accommodate the additional runoff. This proposed expansion of the pond would also require modification of the circular drive within the church property. An easement over the proposed pond may be desired for proper maintenance.

2020 Q1 Update
A regional drainage analysis was conducted in June of 2017, by the City stormwater consultant (ICON Consultant Group, Inc.), to analyze the above-mentioned options, as well as new potential ones that include drainage improvements downstream of the problem areas identified in Map ID No. 20 & 25. The recommended Option includes re-grading the existing Mt. Herman Church pond and conveyance swale to resolve existing SWFWMD permit violations, the addition of stormwater inlets at Levis Ave. and at the depression area located immediately south of the church parking lot, and improving/extending the existing downstream storm sewer system south on Grosse Ave. to outfall at the wetland area located southeast of the Tarpon Springs Fundamental School property.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 25 (OPTION 2): LEVIS AVE. BETWEEN LIME ST. & OAKWOOD ST. **12/13/2021**

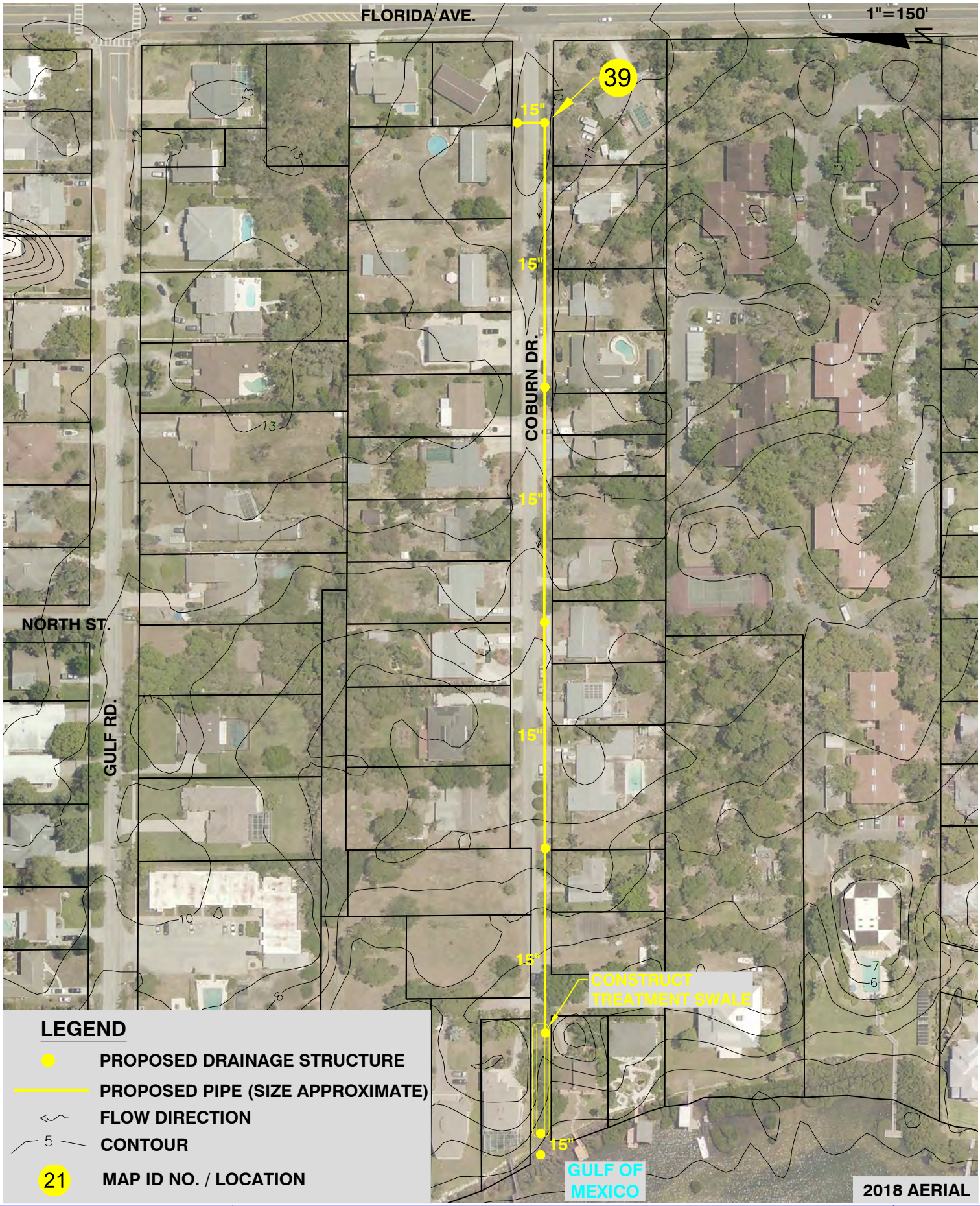
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	8	EA	$109.80	$878.00
2	STAKED SILT FENCE, TYPE III	1,500	LF	$1.82	$2,730.00
3	CLEARING & GRUBBING	1	LS	$26,784.68	$26,785.00
4	ROADWAY RECONSTRUCTION	14,250	SF	$6.57	$93,623.00
5	CURB INLET	9	EA	$5,965.22	$53,687.00
6	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
7	MITERED END SECTION, 54"	1	EA	$8,252.44	$8,252.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	80	LF	$108.33	$8,666.00
9	PIPE CULVERT REINFORCED CONCRETE, 36"	605	LF	$199.21	$120,522.00
10	PIPE CULVERT REINFORCED CONCRETE, 48"	1,170	LF	$359.05	$420,089.00
11	PIPE CULVERT REINFORCED CONCRETE, 54"	280	LF	$467.00	$130,760.00
12	SIDEWALK CONCRETE	800	SY	$60.09	$48,072.00
13	PERFORMANCE TURF, SOD	2,060	SY	$2.81	$5,789.00

MAP ID NO. 20 (OPTION 2) CONSTRUCTION SUBTOTAL **$929,986.00**

CONSTRUCTION SUBTOTAL	**$929,986.00**
MOBILIZATION	**$74,399**
25% CONTINGENCY	**$232,497**
CONSTRUCTION TOTAL	**$1,236,881**
SURVEY	**$46,500.00**
GEOTECHNICAL	**$27,900.00**
ENGINEERING	**$148,798.00**
GRAND TOTAL	**$1,460,079**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

COBURN DR.
100' WEST OF FLORIDA AVE.

MAP ID NO.
39
OPTION 1 OF 2

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projects CADD files\TS_SAP 2 EXHIBITS4.dwg LAYOUT:MAP ID #39 Last Saved:Apr. 17, 20 Plot Date: 5/22/2020 11:57 PM By: James greene

Map ID No. 39 - Coburn Dr. 100 feet west of Florida Ave.

Problem:
There is a low point on Coburn Dr. just west of the intersection with Florida Ave. with no stormwater infrastructure. Minor roadway and private property flooding appear to be occurring.

Conceptual Solution(s):

Option 1
This conceptual solution would consist of installing two ditch bottom inlets within the right-of-way at the low spot and routing the storm sewer conveyance system west. This system would outfall into a linear treatment swale located in the Coburn Dr. right-of-way prior to discharging into the Gulf of Mexico.

Option 2
This conceptual solution would involve constructing a small roadside ditch along the north side of Coburn Dr. to convey the stormwater runoff towards the west where it would be treated in a linear swale prior to discharging into the Gulf of Mexico. This conceptual solution would involve reconstruction of several residential driveways to provide positive discharge of the swale.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 39 (OPTION 1): COBURN DR. 100' WEST OF FLORIDA AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	4	EA	$109.80	$439.00
2	STAKED SILT FENCE, TYPE III	1,025	LF	$1.82	$1,866.00
3	CLEARING & GRUBBING	0.251	AC	$26,784.68	$6,723.00
4	REGULAR EXCAVATION	153	CY	$6.48	$991.00
5	ROADWAY RECONSTRUCTION	480	SF	$6.57	$3,154.00
6	MANHOLE	3	EA	$4,881.20	$14,644.00
7	DITCH BOTTOM INLET	2	EA	$4,016.56	$8,033.00
8	MITERED END SECTION	1	EA	$1,808.89	$1,809.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	860	LF	$108.33	$93,164.00
10	SIDEWALK CONCRETE	914	SY	$60.09	$54,922.00
11	PERFORMANCE TURF, SOD	1,452	SY	$2.81	$4,080.00

CONSTRUCTION SUBTOTAL	**$189,800.00**
MOBILIZATION	**$18,980**
25% CONTINGENCY	**$47,500.00**
CONSTRUCTION TOTAL	**$256,280.00**
SURVEY	**$12,809.00**
GEOTECHNICAL	**$7,700.00**
ENGINEERING	**$36,127.00**
GRAND TOTAL	**$312,916.00**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

INSTALL 19"x30" TIDEFLEX VALVE WITHIN INLET (PHASE 1)

INSTALL 42" TIDEFLEX VALVE (PHASE 2)

PROPOSED STORMWATER VAULT AND PUMP STATION (PHASE 2)

ANCLOTE RIVER

1"=100'

N

INSTALL 42" TIDEFLEX VALVE WITHIN INLET (PHASE 1)

INSTALL NEW DRAINAGE SYSTEM (PHASE 2)

INSTALL NEW DRAINAGE SYSTEM (PHASE 2)

DODECANESE BLVD.

DODECANESE BLVD.

ATHENS ST.

CROSS ST.

HILL ST.

HOPE ST.

ALDERMAN ST.

MILL ST.

ATHENS ST.

ACACIA ST.

ARFARAS ST.

LIVE OAK ST.

42

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED PUMP
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- 5 CONTOUR
- 21 MAP ID NO. / LOCATION

2018 AERIAL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

SPONGE DOCKS FLOODING DRAINAGE IMPROVEMENTS

MAP ID NO. 42

OPTION 2 OF 2

James Greene

9/10/2020 10:26:00 AM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projetcs CADD files\TS_SAP 2 EXHIBITS7.dwg

Map ID No. 42 - Sponge Docks Flooding

Problem:
Street flooding occurs at the intersection and is most likely attributed to the tidal influences from the Anclote River. Infrastructure is in good condition and appears to be adequately sized. A field visit on June 23, 2009 during high tide (3.6 ft @ 1:07 PM; Datum – Cedar Key MLLW) found the inlets at the intersection completely filled with water from the river. According to the closest tide station (Station ID 872-6905) the Mean Low Water (MLW) and the Mean High Water (MHW) elevations are -1.27 feet and 0.82 feet, respectively. These elevations are based on the NAVD 88 datum.

Conceptual Solution(s):

Option 1
This conceptual solution would include replacing the inlets at the intersection of Athens St. and Cross St. and installing a subsurface stormwater storage system along Athens St. south of the intersection with Dodecanese Blvd. The new inlets would collect more runoff than the existing ones, and route it to the stormwater vault, thereby reducing the amount of water converging on the inlets at the intersection of Athens St. and Dodecanese Blvd. The last manhole within the existing system could be retrofitted with a Tideflex check valve (or equivalent) to prevent tidal influence from the Anclote River to the existing storm sewer system. Discharge from the stormwater vault could then occur when the tide recedes. Having the check valve located inside this manhole would allow periodic maintenance in addition to preventing damage to the valve from docking vessels.

Option 2
This conceptual solution would entail installing a stormwater vault outfitted with a submersible pump and 4-inch force main. The pump and 4-inch force main could be designed to turn on when the existing storm sewer system reaches a determined capacity. The last manhole within the existing system could be retrofitted with a Tideflex check valve (or equivalent) to prevent tidal influence from the Anclote River to the existing storm sewer system. Having the check valve located inside this manhole would allow periodic maintenance in addition to preventing damage to the valve from docking vessels.

2020 Q1 Update
A detailed drainage analysis was conducted in November of 2019 by the City stormwater consultant (ICON Consultant Group, Inc.), for the intersection of Athens St. and Dodecanese Blvd. The recommended approach listed in the report for resolving the various flooding conditions affecting the Sponge Dock area, involved three phases of varying improvements. The first phase was to install TideFlex backflow prevention valves at each of the three piped outfalls located within the historic Sponge Dock area to prevent tidally influenced “sunny-day” flooding associated with higher than normal “Spring” or “King” tides. The three outfall locations are currently located at the intersection of Dodecanese Blvd. and Hope St., Athens St. and Arfaras St. As explained in the report, although these TideFlex valves are needed to prevent tidal backflow/flooding, it would not resolve flooding due to the inadequate capacity of the existing storm sewer system serving the area. The second phase of improvements would then replace the existing storm sewer system serving the three outfalls to enhance the conveyance capacity and thereby improve the current

drainage level of service. Unfortunately, even with improved conveyance capacity and backflow prevention, these areas would still flood during storm events that coincide with “Spring” or “King” tides. Therefore, in order to resolve all flooding conditions, the second phase would also include the construction of a stormwater vault combined with a stormwater pump station that could provide adequate positive drainage during extreme downstream tidal conditions.

2021 Q4 Update

The first phase TideFlex valve installation at all three locations already occurred during the first quarter of 2020. A separate federal grant application was also submitted for the Phase 2 improvements which has since been approved. The design and permitting of the needed improvements will therefore commence in year 2022, with construction to follow.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 42 : SPONGE DOCKS FLOODING (PHASE 1: CHECK VALVES) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$10,000.00	$10,000.00
2	MAINTENANCE OF TRAFFIC	1	LS	$10,000.00	$10,000.00
3	FLOATING TURBIDITY BARRIER	150	LF	$10.00	$1,500.00
4	INLET PROTECTION SYSTEM	4	EA	$100.00	$400.00
5	PIPE CULVERT REINFORCED CONCRETE,19" X 30" ERCP	16	LF	$2,225.50	$35,608.00
6	PIPE CULVERT REINFORCED CONCRETE, 42"	8	LF	$2,225.50	$17,804.00
7	TIDEFLEX VALVE* (19" X 30")	2	EA	$10,000.00	$20,000.00
8	TIDEFLEX VALVE* (42")	1	EA	$10,000.00	$10,000.00
9	SIDEWALK CONCRETE	27	SY	$56.00	$1,512.00

*Tideflex technologies (www.tideflex.com)

CONSTRUCTION SUBTOTAL	**$106,824.00**
CONTINGENCY	**$10,000.00**
CONSTRUCTION TOTAL	**$116,824.00**

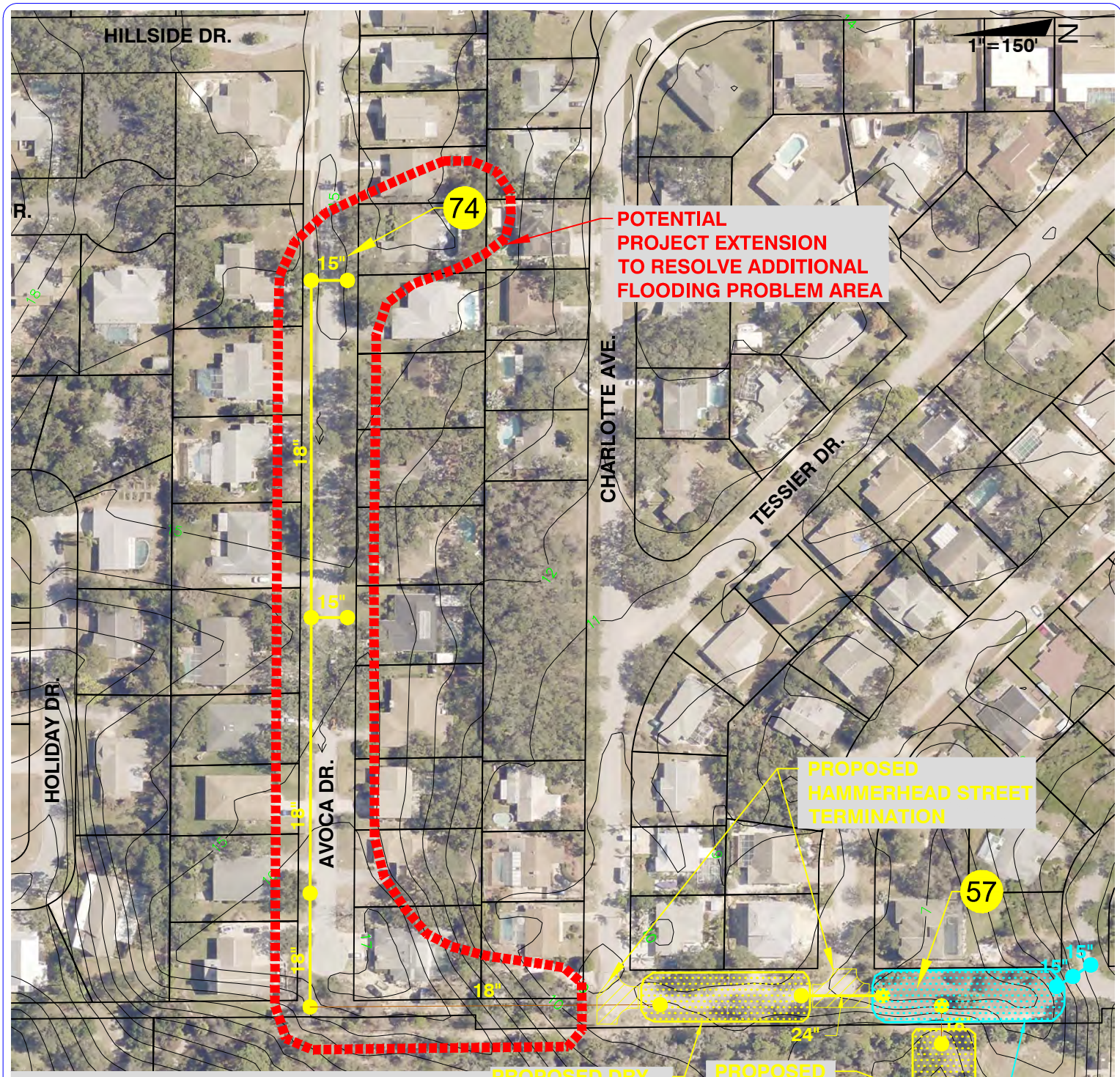
Notes:

1. Unit Prices based on bid schedule submitted by Right of Way Contracting LLC on June 14,2019.

MAP ID NO. 42: SPONGE DOCKS FLOODING (PHASE 2: PIPE UPGRADE AND STORMWATER VAULT PUMP STATION) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	1500	LF	$1.82	$2,730.00
2	FLOATING TURBIDITY BARRIER	400	LF	$6.14	$2,456.00
3	INLET PROTECTION SYSTEM	7	EA	$109.80	$769.00
4	TYPE B STABILIZATION	1600	SY	$7.03	$11,248.00
5	OPTIONAL BASE, BASE GROUP 11 (RECYCLED CONCRETE AGGREGATE (RCA)	1600	SY	$41.70	$66,720.00
6	SUPERPAVE ASPHALTIC CONC. TRAFFIC C	132.00	TN	$114.91	$15,168.00
7	CONCRETE CURB, TYPE D	1200	LF	$26.25	$31,500.00
8	CONCRETE SIDEWALK AND DRIVEWAY, 4" THICK	730	SY	$43.31	$31,616.00
9	CONCRETE SIDEWALK AND DRIVEWAY, 6" THICK	140	SY	$60.09	$8,413.00
10	MANHOLE, P7, >10'	4	EA	$5,696.61	$22,786.44
11	MANHOLE, J8, <10'	2	EA	$9,406.10	$18,812.00
12	INLETS, CURB, TYPE P-5, <10'	3	EA	$5,608.77	$16,826.00
13	INLETS, CURB, TYPE P-6, <10'	11	EA	$5,965.22	$65,617.00
14	INLETS, CURB, TYPE J-6, <10'	1	EA	$12,925.36	$12,925.00
15	PIPE CULVERT REINFORCED CONCRETE, 18"	315	LF	$103.31	$32,543.00
16	PIPE CULVERT REINFORCED CONCRETE, 24"	398	LF	$118.30	$47,083.00
17	PIPE CULVERT REINFORCED CONCRETE, 30"	76	LF	$188.71	$14,342.00
18	PIPE CULVERT REINFORCED CONCRETE, 36"	276	LF	$316.25	$87,285.00
19	PIPE CULVERT REINFORCED CONCRETE, 42"	42	LF	$208.47	$8,756.00
20	20' x 7' CONCRETE BOX CULVERT	80	LF	$5,000.00	$400,000.00
21	STORMWATER PUMP STATION	1	LS	$400,000.00	$400,000.00
22	SEAWALL RECONSTRUCTION	1	LS	$60,000.00	$60,000.00
23	TIDEFLEX VALVE, 42" (INSTALLED)	1	LS	$18,000.00	$18,000.00

CONSTRUCTION SUBTOTAL	**$1,375,595.44**
MAINTENANCE OF TRAFFIC	**$110,048**
MOBILIZATION	**$137,560**
25% CONTINGENCY	**$343,900.00**
CONSTRUCTION TOTAL	**$1,967,102.62**
SURVEY	**$29,500.00**
GEOTECHNICAL	**$10,800.00**
ENGINEERING	**$177,000.00**
TOTAL	**$2,184,402.62**



LEGEND

- PROPOSED RECONSTRUCTION
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- 5 — CONTOUR
- EXISTING DRY STORMWATER POND
- FLOW DIRECTION
- 21 — MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

KENNETH WAY & SEASIDE DR.

MAP ID NO.
57
OPTION 2 OF 2

Map ID No. 57 - Kenneth Way at Seaside Dr.

Problem:
According to the City roadway flooding is occurring at this location. The CIP Project List states that in 2002 the City constructed a surface water treatment facility (SWTF) with an outfall structure (adjacent to Baynard Dr.) and provided bank stabilization. Some minor street ponding does appear to be taking place on the north side of the SWTF. Per a meeting with the City on July 28, 2009 the SWTF may be undersized which is causing flooding to occur along Seaside Dr.

Conceptual Solution(s):

Option 1
This conceptual solution would involve constructing a dry detention stormwater pond within the right-of-way of Kenneth Way between Charlotte Ave. and Kenneth Way. This would require hammer head style street terminations for both Charlotte Ave. and Kenneth Way.

Option 2
This conceptual solution would involve installing a control structure to discharge excess runoff from the existing stormwater treatment facility to the west and into an existing pond owned and maintained by Pinellas County. An expansion of the County owned pond is also proposed in order to accommodate the increased flow from the City-owned pond. The County owned outfall system would require an analysis to determine whether or not the increased flow can be accommodated without adversely impacting the surrounding properties.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 57 (OPTION 2): KENNETH WAY & SEASIDE DR. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	4	EA	$114.00	$456.00
2	STAKED SILT FENCE, TYPE III	690	LF	$1.50	$1,035.00
3	CLEARING & GRUBBING	0.293	AC	$23,362.09	$6,845.00
4	POND EXCAVATION	1,709	CY	$8.34	$14,253.00
5	ROADWAY RECONSTRUCTION	3,551	SF	$8.75	$31,071.00
6	DITCH BOTTOM INLET	2	EA	$3,417.00	$6,834.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	78	LF	$111.00	$8,658.00
8	PERFORMANCE TURF, SOD	1,025	SY	$3.13	$3,208.00

MAP ID NO. 57 (OPTION 2) CONSTRUCTION SUBTOTAL **$72,360.00**

CONSTRUCTION SUBTOTAL	**$72,360.00**
MOBILIZATION	**$7,236.00**
25% CONTINGENCY	**$18,090.00**
CONSTRUCTION TOTAL	**$97,686.00**
SURVEY	**$14,653.00**
GEOTECHNICAL	**$9,769.00**
ENGINEERING	**$39,075.00**
ROW	**$0.00**
GRAND TOTAL	**$161,183.00**

MAP ID NO. 74: (OPTION 2) AVOCA DR. 500' WEST OF FLORIDA AVE. **12/13/2021**

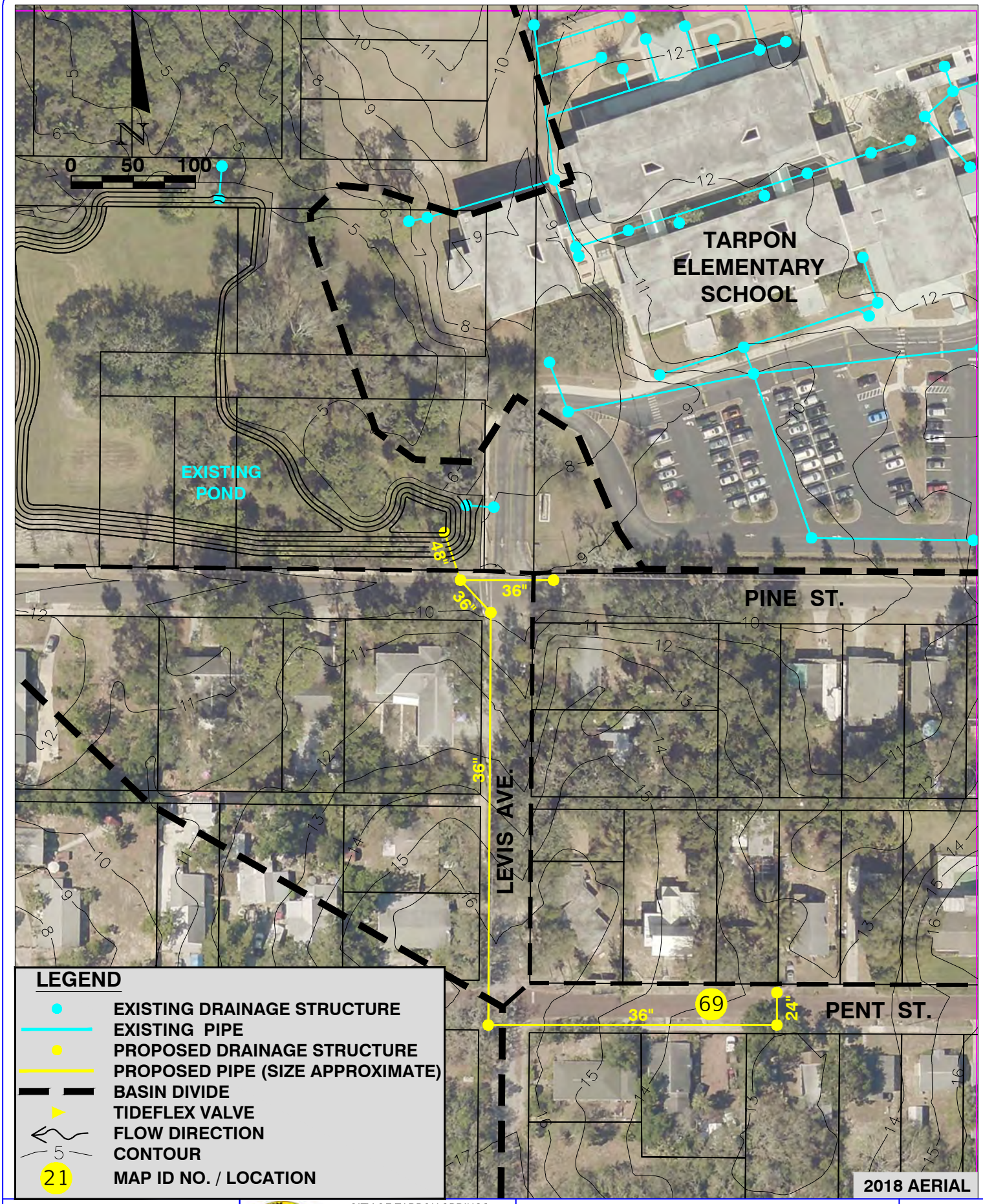
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	4	EA	$109.80	$439.00
2	STAKED SILT FENCE, TYPE III	1,685	LF	$1.82	$3,067.00
3	CLEARING & GRUBBING	0.353	AC	$26,784.68	$9,455.00
4	ROADWAY RECONSTRUCTION	9,468	SF	$6.57	$62,205.00
5	MANHOLE	2	EA	$4,881.20	$9,762.00
6	DITCH BOTTOM INLET	5	EA	$3,952.01	$19,760.00
7	MITERED END SECTION	2	EA	$1,668.11	$3,336.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	1,380	LF	$108.33	$149,495.00
9	SIDEWALK CONCRETE	516	SY	$60.09	$31,006.00
10	PERFORMANCE TURF, SOD	1,054	SY	$2.81	$2,962.00

MAP ID NO. 74 (OPTION 2) CONSTRUCTION SUBTOTAL **$291,487.00**

CONSTRUCTION SUBTOTAL	**$363,847.00**
MOBILIZATION	**$36,385.00**
25% CONTINGENCY	**$90,962.00**
CONSTRUCTION TOTAL	**$491,194.00**
SURVEY	**$24,560.00**
GEOTECHNICAL	**$14,736.00**
ENGINEERING	**$58,944.00**
ROW	**$30,000.00**
GRAND TOTAL	**$619,434.00**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- BASIN DIVIDE
- TIDEFLEX VALVE
- FLOW DIRECTION
- CONTOUR
- MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

PENT ST. / LEVIS AVE. DRAINAGE IMPROVEMENTS

MAP ID NO.
69
OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\69_Pent-Levis\Exhibit-A_Pent-Levis_20200519.dwg LAYOUT:Layout1 Last Saved: Sep. 2, 20 Plot Date: 9/2/2020 5:53 PM By: rick agular

SAP No. 69: Pent Street east of Levis Avenue

Problem:

Chronic roadway and private property flooding occur along Pent Street, east of Levis Avenue, in the vicinity of the residence located at 530 Pent Street, due mostly to the absence of a storm sewer collection system to provide positive drainage for this portion of the roadway.

Conceptual Solution(s):

To resolve said flooding and provide positive drainage to this portion of Pent Street, a new storm sewer system is proposed to be constructed along portions of Pent Street and Levis Avenue, with new inlets added at the intersection of Pine Street and Levis Avenue, to convey flows downstream and discharge to the existing Tarpon Springs Elementary School pond located at the northwest corner of Pine Street and Levis Avenue. This existing pond is being expanded as part of the SAP 5 Pent Street / Grosse Avenue improvements and can accommodate flows form the proposed SAP No. 69 improvements.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

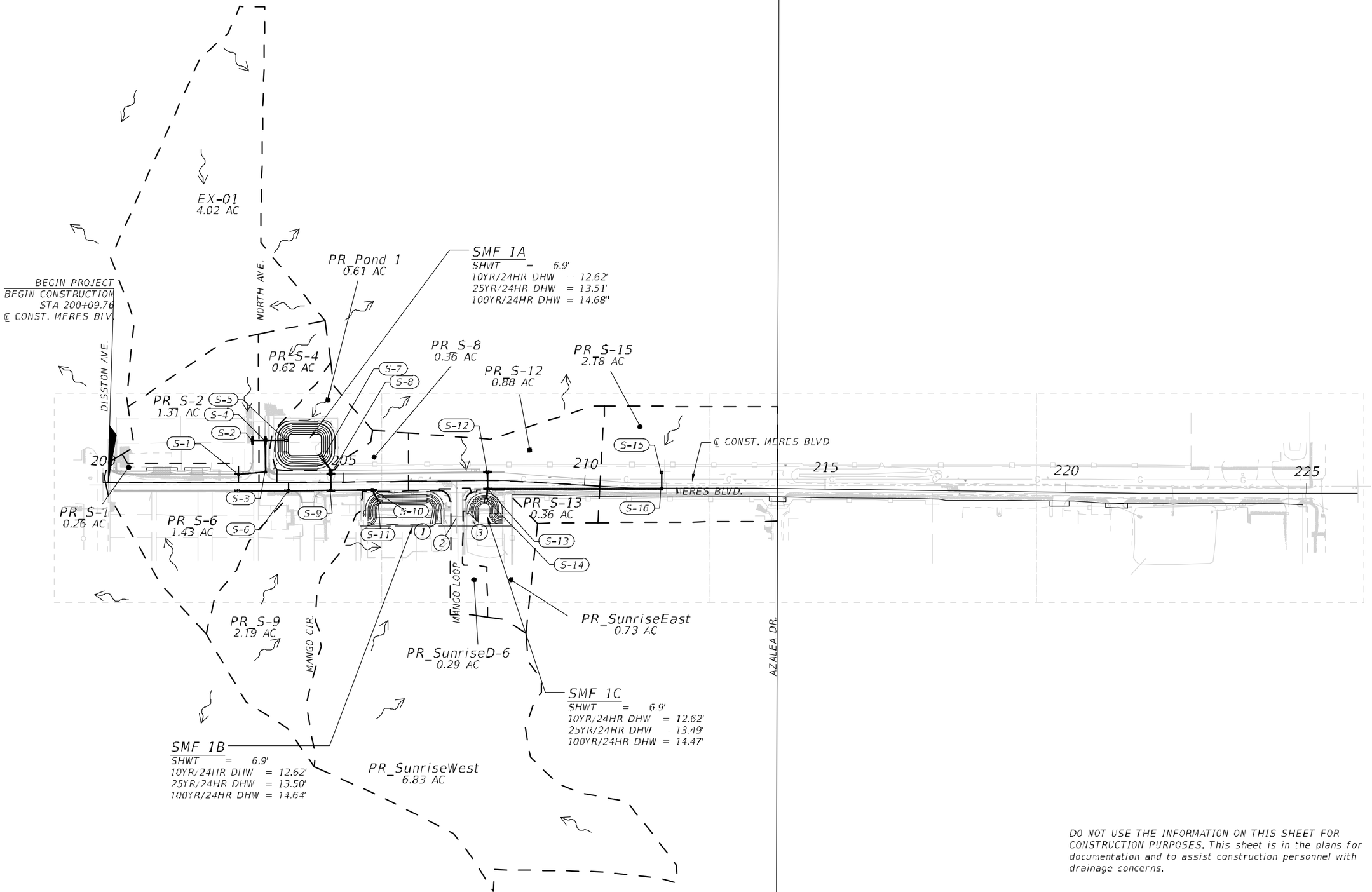
MAP ID NO. 69: PENT ST. 100' EAST OF LEVIS AVE. **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	3	EA	$109.80	$329.00
2	STAKED SILT FENCE, TYPE III	700	LF	$1.82	$1,274.00
3	CLEARING & GRUBBING	0.250	AC	$26,784.68	$6,696.00
4	ROADWAY RECONSTRUCTION	550	SF	$6.57	$3,614.00
5	ROADWAY BRICK RECONSTRUCTION	280	SY	$14.00	$3,920.00
6	CURB INLET	6	EA	$5,965.22	$35,791.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	24	LF	$108.33	$2,600.00
8	PIPE CULVERT REINFORCED CONCRETE, 24"-36"	700	LF	$199.21	$139,447.00
9	PIPE CULVERT REINFORCED CONCRETE, 36"-48"	40	LF	$359.05	$14,362.00
10	CONCRTETE MES - 36"-48"	1	EA	$7,200.00	$7,200.00
11	SIDEWALK CONCRETE	310	SY	$60.09	$18,628.00
12	PERFORMANCE TURF, SOD	84	SY	$2.80	$235.00

CONSTRUCTION SUBTOTAL	**$234,096.00**
MOBILIZATION	**$23,409.60**
25% CONTINGENCY	**$58,500.00**
CONSTRUCTION TOTAL	**$316,005.60**
SURVEY	**$22,115.39**
GEOTECHNICAL	**$6,300.00**
ENGINEERING	**$54,566.01**
GRAND TOTAL	**$398,987.00**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004,F.A.C.

REVISIONS	BY	DATE		BY	DATE
			DESIGNED	EKN	6/1/20
			DRAWN	EKN	6/1/20
			CHECKED	DAI	6/1/20

MERES BLVD. EXTENSION FROM S. DISSTON AVE. TO WEST OF AZALEA DR.

CITY OF TARPON SPRINGS

DRAINAGE MAP (2)

American Consulting Engineers of Florida, LLC
2816 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
ERIC K. NELSON, JR., P.E. No. 49361

DATE: 6/9/2020
SCALE: 1" = 200'
SHEET: 3 of 50

Jun 09, 2020 - 11:01am F:\PROJECT\5169367\005_-_Meres_Blvd\CADD\drainage\DRMPRD102.dwg

Map ID No. 102 – Mango Street and Mango Circle

Problem:
Location is at the intersection of Mango Street and Mango Circle. A depressed area in Mango Street at the western edge of Mango Circle creates a flooding hazard along Mango Street. Roadway does not have storm infrastructure.

Conceptual Solution(s):

Option 1
This conceptual solution would include installing a ditch bottom inlet within the right-of-way of Mango Street at the southwestern portion of Mango Street and Mango Circle and routing the stormwater runoff to the north side of Mango Street to a proposed swale. The proposed swale would be connected to an existing swale that runs on the north side of Mango Street.

Option 2
This conceptual solution would involve adding shoulder gutter along Mango Street for approx. 225 feet on both sides of the roadway to collect the stormwater runoff and direct it into ditch bottom inlets in the shoulder gutter. On the north side of the roadway spillways will allow the stormwater runoff to flow into a proposed swale that would be connected to an existing swale. In the shoulder gutter on the south side of Mango Street, ditch bottom inlets will collect the stormwater runoff and take it to an existing stormwater treatment facility located to the west of Mango Circle.

Recommended Option
The recommended option for this project will be option 1. Option 1 will provide the needed relief from the flooding issue at a reduced cost while maintaining the aesthetics of the surrounding area.

2020 Q1 Update
This existing drainage problem is being resolved by the City's Meres Boulevard Extension project (City project number TR1705), with estimated date for design completion being May 21, 2020, start of construction scheduled for August of 2020 and anticipated completion date being March of 2021.

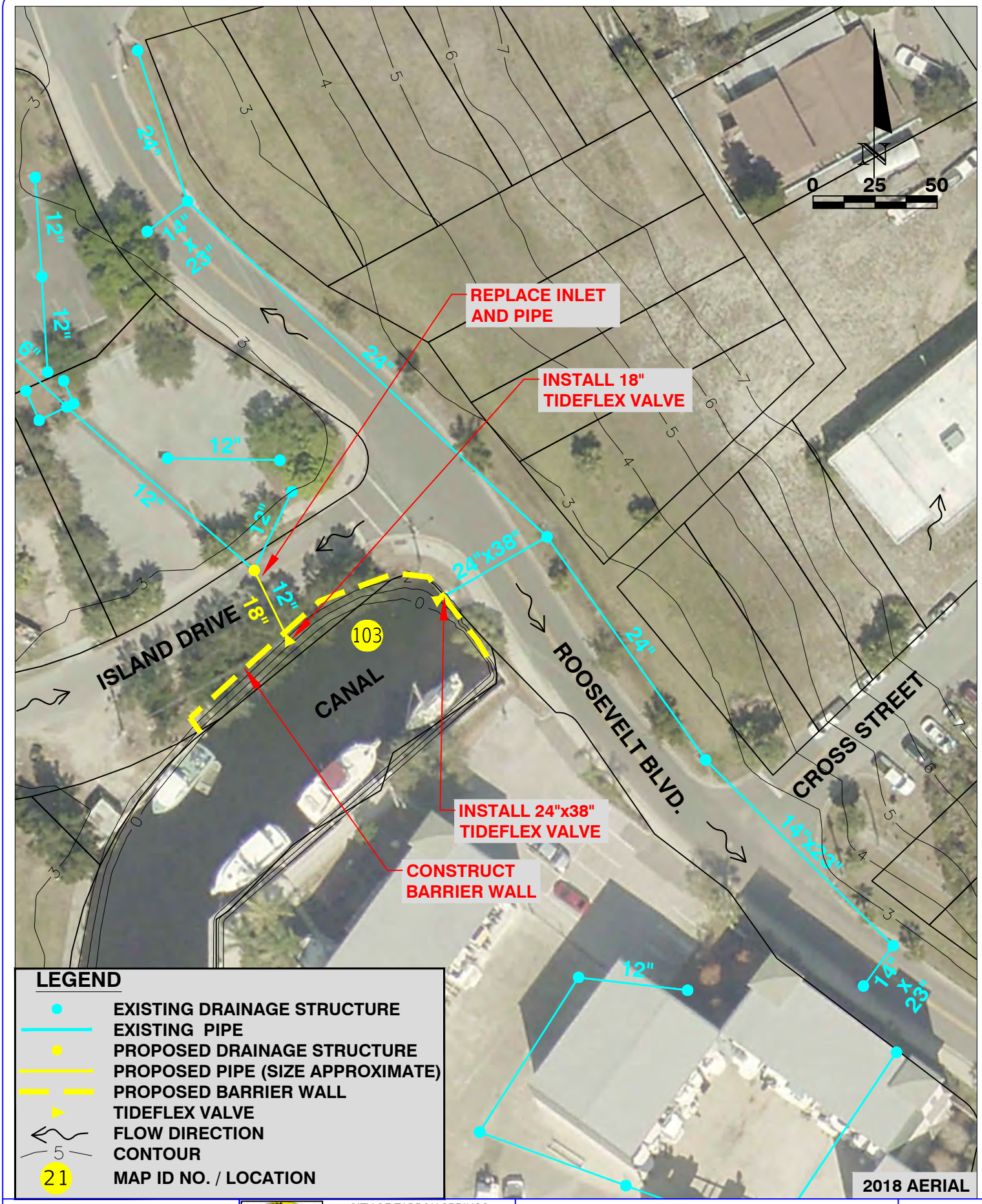
ENGINEER'S ESTIMATE

Meres Boulevard Extension from S Disston Ave to US 19 **Date:** 7/30/2020

COMPANY NAME: American Consulting Professionals

ITEM	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	TOTAL PRICE
	ROADWAY AND MISCELLANEOUS ITEMS				
1	Maintenance of Traffic (10%)	LS	1	$72,404.62	$72,404.62
2	Mobilization (10%)	EA	1	$72,404.62	$72,404.62
3	Clearing and Grubbing	AC	2.4	$18,391.94	$44,329.81
4	Mailbox, F&I, Single	EA	1.0	$351.96	$351.96
5	Removal of Existing Concrete (Sidewalk, Curb, Gutter)	SY	477	$22.61	$10,784.97
6	Sediment Barrier	LF	1,958	$3.12	$6,108.96
7	Inlet Protections Sytems	EA	10	$340.05	$3,400.50
8	Excavation, Regular	CY	4,086	$8.48	$34,649.28
9	Embankment	CY	1,865	$9.61	$17,922.65
10	Stabilization (Type B) (LBR 40 Min.) (12")	SY	4,972	$15.22	$75,673.84
11	Roadway Base, Recycled Crushed Concrete/Graded Aggregate (10.5")	SY	4,509	$16.46	$74,218.14
12	Asphaltic Concrete (SP-12.5) (Traffic C) (3")	TN	744	$181.64	$135,140.16
13	Type D Curb	LF	140	$26.93	$3,770.20
14	Type F Curb & Gutter	LF	1,735	$32.23	$55,919.05
15	Valley Gutter - Concrete	LF	61	$40.94	$2,497.34
16	Concrete Sidewalk (4" Thick)	SY	444	$68.59	$30,453.96
17	Concrete Sidewalk (Curb Ramps) (6" Thick)	SY	51	$132.17	$6,740.67
18	Concrete Driveway (6" Thick)	SY	30	$70.97	$2,129.10
19	Fencing	LF	399	$19.56	$7,804.44
20	Fence Gate, Typ B, DBL, 6.1-12.0' Opening	EA	2	$2,100.00	$4,200.00
21	Sodding	SY	4,909	$3.21	$15,757.89
22	Single Post Sign, Remove	EA	10	$41.03	$410.30
23	Single Post Sign, F&I GM, 12-20 SF	EA	10	$421.50	$4,215.00
24	Pavement Markings (Thermoplastic 6" White Solid)	GM	0.387	$5,926.13	$2,294.13
25	Pavement Markings (Thermoplastic 6" White Guide)	GM	0.042	$2,174.68	$90.61
26	Pavement Markings (Thermoplastic 6" Yellow Solid)	GM	0.372	$4,507.16	$1,676.53
27	Pavement Markings (Thermoplastic 24" White)	LF	172	$3.77	$648.44
28	Pavement Markings (Thermoplastic 12" White)	LF	169	$10.98	$1,855.62
29	Pavement Markings (Thermoplastic Bicycle)	EA	5	$211.95	$1,059.75
30	Pavement Markings (Thermoplastic Arrow)	EA	5	$123.26	$616.30
31	**ROADWAY AND MISCELLANEOUS ITEMS SUBTOTAL**			**$689,528.84**	
	DRAINAGE ITEMS				
32	Manhole Type 8 (<10)	EA	3	$4,419.53	$13,258.59
33	Inlet, Curb, Type P-5 (<10')	EA	2	$4,613.26	$9,226.52
34	Inlet, Curb, Type P-6 (<10')	EA	5	$5,108.33	$25,541.65
35	Inlet, Curb, Type J-6 Modified (<10')	EA	1	$10,697.03	$10,697.03
36	Inlet, Ditch Bottom, Type D, <10'	EA	1	$4,359.56	$4,359.56
37	18" Mitered End	EA	1	$2,165.74	$2,165.74
38	24" Mitered End	EA	3	$1,933.53	$5,800.59
39	18" Concrete Pipe	LF	347	$82.54	$28,600.11
40	24" Concrete Pipe	LF	570	$102.84	$58,567.38
41	Utility Pipe- Steel, F&I, Casing, 42"	LF	15	$1,418.61	$21,279.15
42	**DRAINAGE SUBTOTAL**			**$179,496.32**	
43	**CONTINGENCY**				
44	**TOTAL BASE BID**			**$869,025.16**	

DRAINAGE TOTAL = $182,896.80



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- PROPOSED BARRIER WALL
- TIDEFLEX VALVE
- FLOW DIRECTION
- CONTOUR
- MAP ID NO. / LOCATION

PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

ISLAND DR. / ROOSEVELT BLVD. DRAINAGE IMPROVEMENTS

MAP ID NO. 103
OPTION 1 OF 1

SAP 103: Island Drive / Roosevelt Boulevard intersection

Problem:

The intersection of Island Drive and Roosevelt Boulevard has suffered frequent and chronic roadway flooding due mostly to the low-lying areas within and adjacent to the intersection and the two hydraulic connections to the adjacent tidally influenced canal. During Spring or King Tides (high tide events coinciding with a new or full moon), which can be further exaggerated by prevailing western and/or southern winds, roadway flooding occurs at the intersection when tide elevations exceed that of the existing roadway and adjacent ground surface.

The first storm sewer outfall is located on Island Drive, approximately 80-feet southwest of the intersection, where a storm grate inlet collects roadway runoff and coveys it southeast through a 12" PVC culvert to the adjacent canal. Per information shown on the Turtle Cove Marina Expansion Phase II development plans, the inlet grate is currently at elevation 1.98 NAVD 88, with the 12-inch PVC pipe invert shown to be at elevation -0.39 at the inlet and -0.66 at the outfall. While the inlet grate elevation is shown to be at elevation 1.98, the adjacent roadway low edge of pavement grade ranges from elevation 2.79 to 2.87. The pipe is therefore submerged most of the time while the roadway is inundated regularly when tide elevations exceed the grate elevation of 1.98 NAVD 88. The Turtle Cove Marina's stormwater management system also discharges to this existing grate inlet.

The second outfall is located approximately 45-feet southeast of the intersection, where the storm sewer system discharges under Roosevelt Boulevard via an existing 24"x 38" ERCP pipe to the adjacent canal. Per the Roosevelt Boulevard Roadway Improvement plans, the grate elevation at this inlet (S-108) is shown to be 2.44 NAVD, with a 3-foot slot at elevation 2.19 NAVD 88. Tide events exceeding the grate and slot elevations would then also backflow from the inlet onto the roadway and contribute to said roadway flooding.

Conceptual Solution(s):

Install a backflow prevention device, such as a TideFlex Valve or equivalent to prevent high tidal conditions from surcharging and backflowing into the existing roadways. As a secondary measure, it is also recommended to construct a seawall along the southern section of Island Drive, with top of wall elevation high enough to prevent the canal from overtopping the existing bank and flooding the roadway. The seawall addition would also prevent future bank erosion that could ultimately threaten the roadway integrity.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

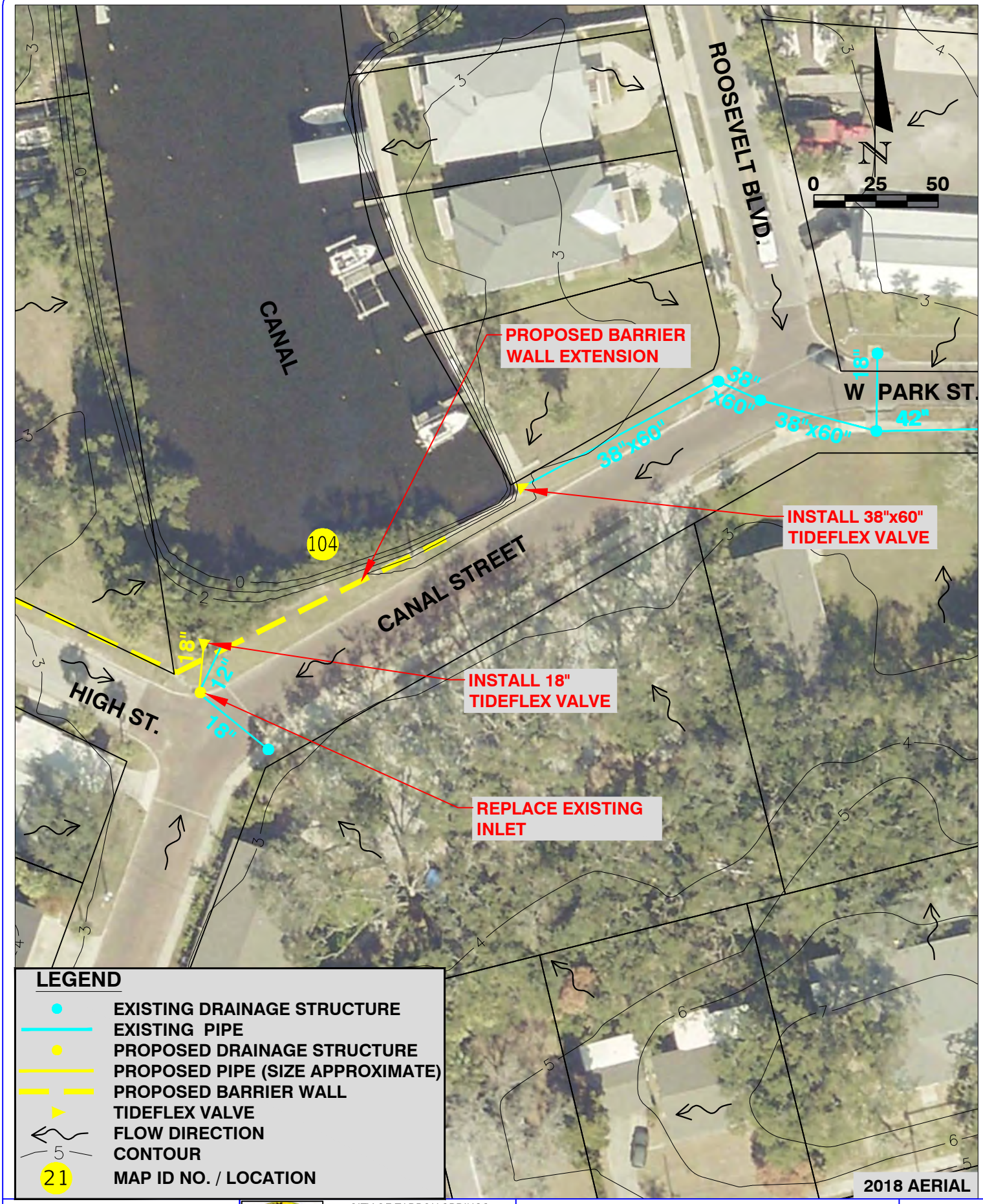
MAP ID NO. 103: Roosevelt Boulevard & Island Drive **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	250	LF	$1.82	$455.00
2	FLOATING TURBIDITY BARRIER	200	LF	$6.14	$1,228.00
3	CLEARING & GRUBBING	0.200	AC	$26,784.68	$5,357.00
4	ROADWAY RECONSTRUCTION	300	SF	$6.57	$1,971.00
5	MITERED END SECTION - 18"	1	EA	$1,808.89	$1,809.00
6	PIPE CULVERT REINFORCED CONCRETE - 18"	24	LF	$93.58	$2,246.00
7	TIDEFLEX VALVE (18" RCP)	1	1	$6,000.00	$6,000.00
8	TIDEFLEX VALVE (24" x 38" ERCP)	1	1	$16,500.00	$16,500.00
9	DITCH BOTTOM INLET	1	EA	$5,066.47	$5,066.00
10	CONCRETE RETAINING WALL	165	LF	$350.00	$57,750.00
11	PERFORMANCE TURF, SOD	200	SY	$2.80	$560.00

CONSTRUCTION SUBTOTAL	**$98,900.00**
MOBILIZATION	**$9,890.00**
25% CONTINGENCY	**$24,700.00**
CONSTRUCTION TOTAL	**$133,490.00**
SURVEY	**$13,349.00**
GEOTECHNICAL	**$2,243.00**
ENGINEERING	**$32,037.60**
GRAND TOTAL	**$181,119.60**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- PROPOSED BARRIER WALL
- TIDEFLEX VALVE
- FLOW DIRECTION
- CONTOUR
- MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

ROOSEVELT BLVD. / CANAL ST. DRAINAGE IMPROVEMENTS

MAP ID NO.
104
OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\104_Roosevelt Blvd_Canal St\Exhibit-A_Roosevelt-Canal_20200519.dwg LAYOUT:Layout1 Last Saved: Aug. 26, 20 Plot Date: 8/26/2020 9:54 PM By: James greene

SAP 104: Roosevelt Boulevard / Canal Street intersection

Problem:

The intersections of Canal Street with Roosevelt Boulevard and High Street have suffered frequent and chronic flooding due mostly to the low-lying elevation of the roadway surface at these intersections and the two hydraulic connections to the adjacent tidally influenced canal. During Spring or King Tide events (high tide events coinciding with a new or full moon), which can be further exaggerated by a prevalent southern wind flow, roadway flooding occurs at these intersections when tide elevations exceed the that of the existing roadway and adjacent ground surface.

The first storm sewer outfall is located approximately 100-feet southwest of the Roosevelt Boulevard and Canal Street intersection. Here the roadway storm sewer collects street runoff from the intersection and upstream areas and conveys flows west, by way of the existing 38" x 60" ERCP culvert, through the existing seawall to the adjacent canal. Existing edge of pavement elevations at the intersection range from 2.50 to 3.00 NAVD 88, while the main trunk line invert ranges in elevation from -2.0 to -3.5 NAVD 88. The pipes at this location are likewise submerged most of the time while the roadway floods when the tide elevation exceeds the edge of pavement elevations near the three roadside inlets.

The second storm sewer outfall is located at the northeastern corner of Canal Street and High Street intersection. At this location two existing storm inlets collect surface runoff from the roadway and then convey flows north to the adjacent canal by way of an existing 15" RCP storm sewer outfall pipe. Per information shown on the City's Canal Street Brick Pavement Rehabilitation plans, the existing edge of pavement elevation at the north and southeast inlets is 2.36 and 2.51 NAVD 88 respectively, with the 15" RCP outfall pipe invert shown on the City GIS database as being at elevation -0.15 NAVD 88. The pipe is therefore submerged most of the time while the roadway is inundated when tide elevations exceed the edge of pavement elevations at each inlet.

Conceptual Solution(s):

Install a backflow prevention device, such as a TideFlex Valve or equivalent to prevent high tidal conditions from surcharging the storm sewer pipes which then backflows into the existing roadways. Due to the age/condition of the outfall at Canal Street/High Street intersection, it is recommended to replace the existing outfall pipe and inlet. This replacement would also facilitate the valve installation and allow lowering of the pipe invert to provide adequate cover. As a secondary measure, it is also recommended to construct a seawall along the northern section of Canal Street, with top of wall elevation high enough to prevent the canal from overtopping the existing bank and flooding the roadway. The seawall addition would also prevent future bank erosion that could ultimately threaten the roadway integrity.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

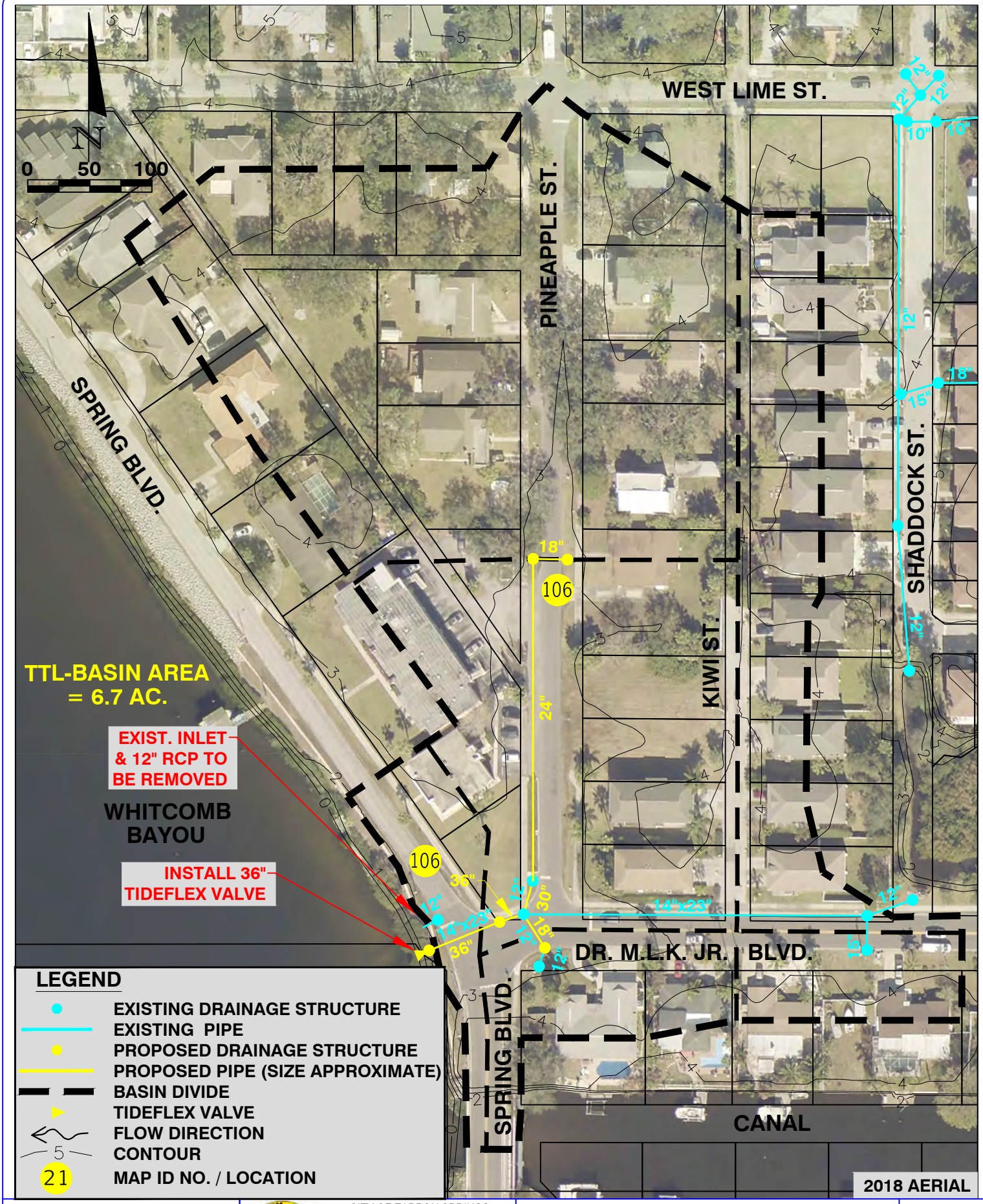
Preliminary Construction Cost Estimate

MAP ID NO. 104: Roosevelt Boulevard & Canal Street **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	STAKED SILT FENCE, TYPE III	250	LF	$1.82	$455.00
3	FLOATING TURBIDITY BARRIER	200	LF	$6.14	$1,228.00
4	CLEARING & GRUBBING	0.200	AC	$26,784.68	$5,357.00
5	MITERED END SECTION - 18"	1	EA	$1,808.89	$1,809.00
6	ROADWAY BRICK RECONSTRUCTION	300	SF	$14.00	$4,200.00
7	PIPE CULVERT REINFORCED CONCRETE - 18"	24	LF	$93.58	$2,246.00
8	TIDEFLEX VALVE (18" RCP)	1	1	$6,000.00	$6,000.00
9	TIDEFLEX VALVE (38" x 60" ERCP)	1	1	$19,500.00	$19,500.00
10	CURB INLET	1	EA	$5,965.22	$5,965.00
11	CONCRETE RETAINING WALL	200	LF	$350.00	$70,000.00
12	PERFORMANCE TURF, SOD	220	SY	$2.81	$618.00
				CONSTRUCTION SUBTOTAL	**$117,400.00**
				MOBILIZATION	**$11,740.00**
				25% CONTINGENCY	**$29,400.00**
				CONSTRUCTION TOTAL	**$158,540.00**
				SURVEY	**$12,683.20**
				GEOTECHNICAL	**$2,553.00**
				ENGINEERING	**$36,464.20**
				GRAND TOTAL	**$210,240.40**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- BASIN DIVIDE
- TIDEFLEX VALVE
- FLOW DIRECTION
- CONTOUR
- MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

SPRING BLVD. / DR. M.L.K. JR. DR. DRAINAGE IMPROVEMENTS

MAP ID NO.
106
OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\106_Spring Dr_MLK Jr Dr\Exhibit-A_Spring-MLK_20200519.dwg LAYOUT:Layout1 Last Saved: Aug. 26, 20 Plot Date: 8/26/2020 9:56 PM By: james greene

SAP 106: S. Spring Boulevard / Dr. Martin Luther King Junior Drive intersection

Problem:

The intersection of S. Spring Boulevard and Dr. Martin Luther King Junior Drive (MLK Jr. Drive) has suffered frequent and chronic roadway flooding due mostly to the low-lying nature of the intersection and the two hydraulic connections to the tidally influenced Whitcomb Bayou. During Spring or King Tide events (high tide events coinciding with a new or full moon), which can be further exaggerated by prevalent strong winds from the west, roadway flooding occurs at this intersection when tide elevations exceed that of the existing roadway and adjacent ground surface. During the more extreme tidal conditions, tidal waters have also encroached over the existing grass bank on the west side of the intersection which exacerbates the tidally influenced roadway flooding at this intersection.

The first outfall is a 12" RCP pipe which outfalls from a grate inlet, located at the northwestern corner of S Spring Boulevard and MLK Jr. Drive, to the Bayou. Per the City's Lake Street As-built plans, the inlet grate elevation and related roadway edge of pavement is at elevation 2.55, the pipe invert is at elevation 1.38 and the Spring Boulevard roadway crown is at elevation 2.80 (datum unknown).

The second outfall is a 14" x 23" ERCP pipe located immediately west of the intersection and south of the first outfall pipe, where the existing Dr. M.L.K. storm sewer system discharges to the Bayou. This existing system collect runoff from approximately 6.7-acres of basin area and may be undersized for the contributing basin area. The intersection inlets grate elevations range from 2.67 to 2.72 and the roadway crown is at elevation 2.90 (datum unknown).

Conceptual Solution(s):

To adequately convey basin runoff to the Bayou, the existing storm sewer system will require upgrading. At a minimum, additional inlets will need to be constructed on Pineapple Street, north of Dr. M.L.K. Drive, to capture runoff from the upper portion of the basin and to provide positive drainage. The M.L.K. Drive storm sewer west of Pineapple Drive will also need upgrading to adequately convey the additional runoff from Pineapple Drive; a 36" RCP trunk line should suffice for this purpose.

With the installation of the new intersection inlets, the existing roadway should also be raised, as part of the re-construction design, to provide additional safeguards from flooding.

Install backflow prevention devices, such as a TideFlex Valve or equivalent to prevent high tidal conditions from surcharging and backflowing into the existing roadways.

The above improvements should protect against tidal backflow through the storm sewer, but not against surges that overtop the existing grass bank. The only protection against these more extreme surges would be to construct a new seawall (extending from the existing) along the west side of S. Spring Boulevard and have it tie into the bulkhead for the existing bridge.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

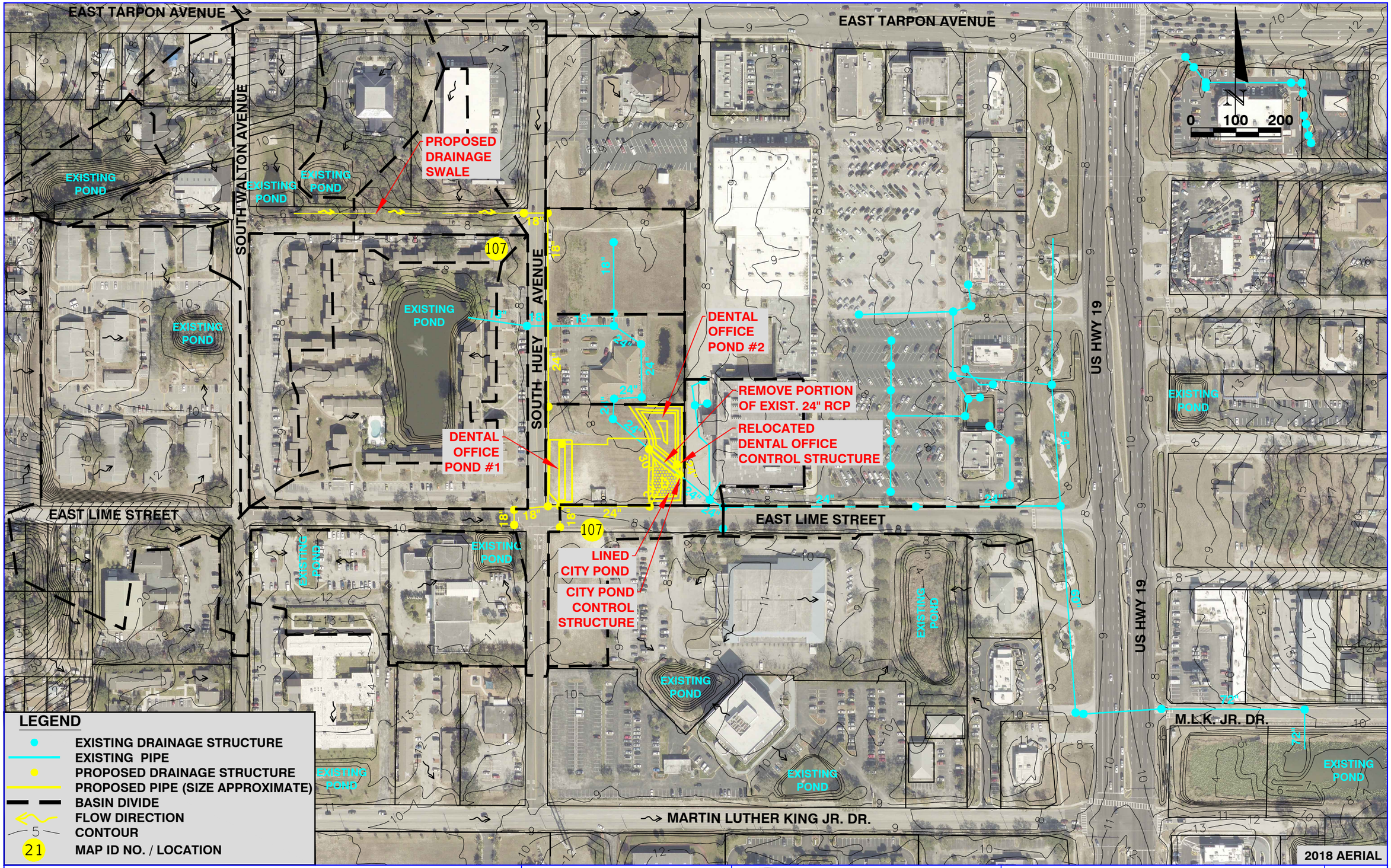
MAP ID NO. 106: Dr. Martin Luther King Jr Drive and Spring Blvd **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION	3	EA	$109.80	$329.00
2	STAKED SILT FENCE, TYPE III	200	LF	$1.82	$364.00
3	FLOATING TURBIDITY BARRIER	50	LF	$6.14	$307.00
4	CLEARING & GRUBBING	0.680	AC	$26,784.68	$18,214.00
5	ROADWAY RECONSTRUCTION	5500	SF	$6.57	$36,135.00
6	DITCH BOTTOM INLET	1	EA	$5,066.47	$5,066.00
7	CURB INLET	7	EA	$5,965.22	$41,757.00
8	MITERED END SECTION - 36"	1	EA	$3,526.11	$3,526.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-18"	48	LF	$93.58	$4,492.00
10	PIPE CULVERT REINFORCED CONCRETE, 24"	290	LF	$108.33	$31,416.00
11	PIPE CULVERT REINFORCED CONCRETE, 30"	30	LF	$139.43	$4,183.00
12	PIPE CULVERT REINFORCED CONCRETE, 36"	80	LF	$199.21	$15,937.00
13	TIDEFLEX VALVE - 36" RCP	1	EA	$25,000.00	$25,000.00
14	CONCRETE WALL PENETRATION/REPAIR	1	LS	$5,000.00	$5,000.00
15	PERFORMANCE TURF, SOD	250	SY	$2.81	$703.00

CONSTRUCTION SUBTOTAL	**$192,400.00**
MOBILIZATION	**$19,240.00**
25% CONTINGENCY	**$48,100.00**
CONSTRUCTION TOTAL	**$259,740.00**
SURVEY	**$18,176.80**
GEOTECHNICAL	**$7,800.00**
ENGINEERING	**$75,607.00**
GRAND TOTAL	**$361,323.80**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

LIME STREET / HUEY AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO.

107

OPTION 2 OF 2

James Greene

8/26/2020 9:48:01 PM P:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\107_Lime St_Huey Ave\Exhibit-B_Lime-Huey_20200601.dwg

SAP 107: Lime Street / Huey Avenue intersection

Problem:

Huey Avenue, from Lime Street to Tarpon Avenue, suffers from roadway flooding due mostly to its lack of a storm sewer system to collect the roadway runoff and possibly from an undersized storm sewer system that conveys the runoff east along Lime Street to the US 19 drainage system (owned by FDOT). The Lime Street / Huey Avenue intersection is a low point for the area hydrology, and this intersection lacks a storm sewer collection system that has positive outfall to the existing Lime Street storm sewer system. Due to this lack of positive drainage, with nominal rainfall, stormwater runoff currently collects along Huey Avenue and at the Lime Street / Huey Avenue intersection causing unsafe driving conditions and contributing to the degradation of the roadway pavement.

Contributing to the roadway runoff are several stormwater management facilities (SMF) that currently overflow and discharge onto Huey Avenue. One of these SMFs is located on the east side of Walton Avenue, south of Tarpon Avenue. This existing pond was expanded in 2012 as part of the City's South Walton Avenue Stormwater Improvements project and currently discharges east to Huey Avenue, by way of an existing upland cut ditch that runs east along the vacated northern Lemon Street right-of-way from the existing pond to Huey Avenue. Also discharging to this existing ditch and Huey Avenue are portions of the Tarponwood Lake Apartments complex, located at the northwest corner of Huey Avenue and Lime Street. The complex's north parking area drive also suffers from frequent flooding, aggravating the resident's access to their units. The existing apartment complex pond also outfalls to the existing Huey Avenue storm sewer that traverses the Health Clinic located immediately east of the roadway.

A third SMF serves the Tarpon Springs Public Safety Facility site located at the southwest corner of Huey Avenue and Lime Street. This SMF, incorporates several interconnected on-site ponds that collect site runoff and discharge east to Huey Avenue by way of a stabilized earthen overflow weir located southwest of the intersection. Two existing grate inlets are located west of the intersection, on the north and south side of East Lime Street and are connected to an existing French Drain system that lacks positive drainage. This system is not adequate to provide flood relief and is frequently overcome during the summer rainy season by nominal rainfall events.

Conceptual Solution(s):

Option 1

To provide positive drainage to Huey Avenue a new SMF is proposed to be constructed within the City owned parcel located at the northeast corner of Huey Avenue and East Lime Street. This City parcel is part of an overall parent tract with previously master-planned drainage facilities that provides positive drainage for the existing St. Timothy Church parcel and the Community Health Center site abutting the City owned parcel to the north. This existing storm sewer system commences at the southern portion of the developed church site, traverses the vacant parcel south of the church, the Community Center south of that and the City parcel, while conveying flows to

the existing Limes Street storm sewer. The existing storm sewer also provides an outlet for the Tarponwood Apartments pond, located northeast of the Huey/Lime intersection, which outfalls east to the Huey Avenue inlets. These inlets drain to the east through the Health Clinic site and City Parcel to the Lime Street storm sewer. The Lime Street storm sewer then flows east and connects to the FDOT US 19 storm sewer that conveys US 19 roadway drainage to the existing stormwater pond located east of US 19, on the south side of Oakwood Street, which then discharges to Lake Tarpon. The existing City owned parcel is partially encumbered by a power line easement as well as several underground utilities but can still serve to provide the SMF needed to attenuate flows and maintain positive drainage for the area. Given ambient soils conditions and that of the adjacent permitted site, in order for the SMF to be functional and serve the upstream off-site areas mentioned above, the SMF control elevation will need to be set lower than the anticipated groundwater seasonal high elevation and the deeper portion of the pond will then need to be hydraulically separated from groundwater influence by means of an impermeable liner.

This proposed lined wet-detention pond can then serve to provide positive drainage for the upstream tributary basins, and thereby alleviate prolonged flooding within these portions of the basin, while also attenuating the added upstream flows so as not to adversely affect the downstream drainage facilities.

Option 2

Recently proposed site improvements within the City owned parcel (proposed Tarpon Dental Office) will limit the proposed area needed for a regional pond but could still be designed to provide the needed positive drainage to improve the recovery time of the upstream basin and Huey Avenue. Since permits have currently been issued for the proposed dental office development, this second option will be used as the preferred option.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

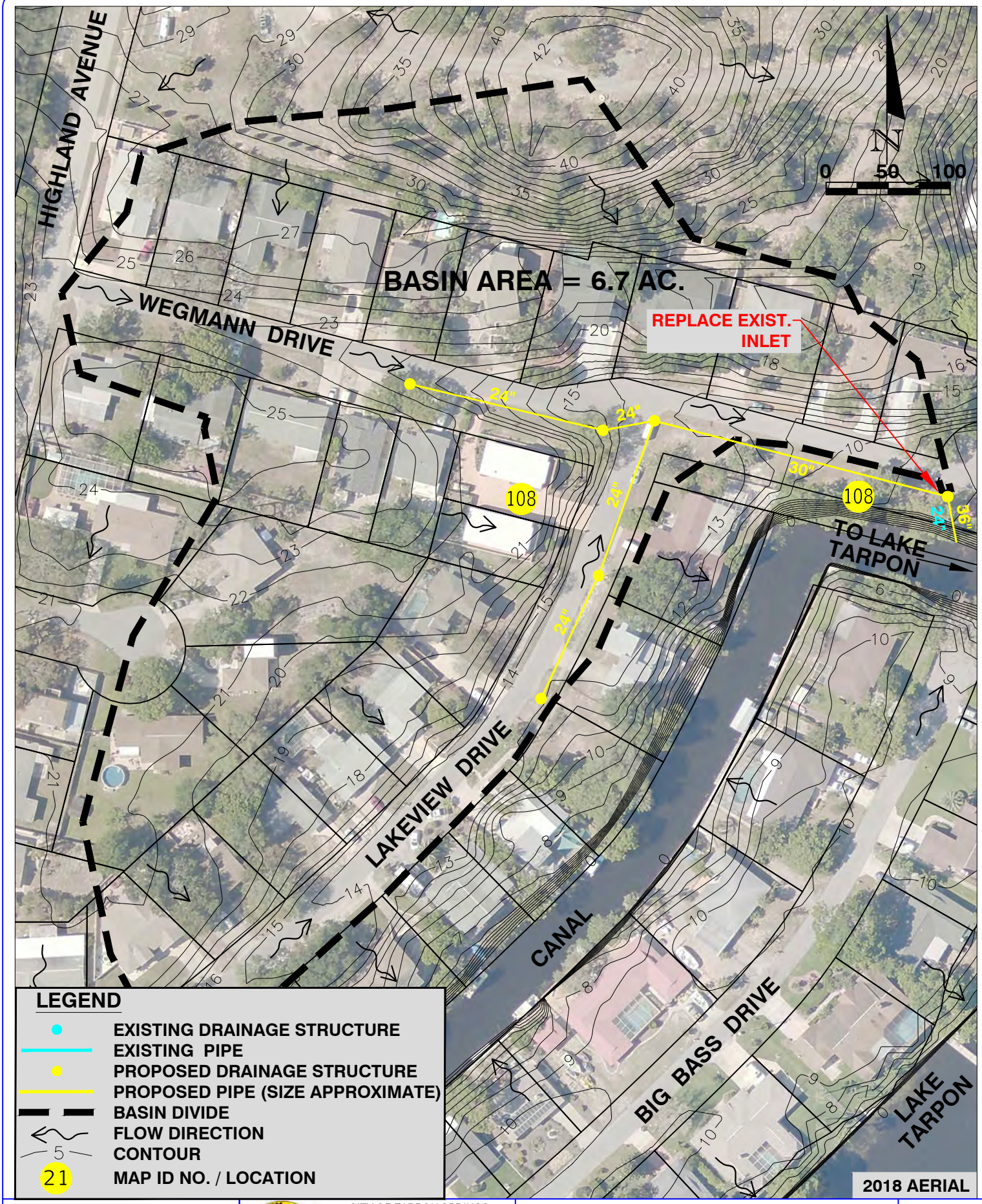
MAP ID NO. 107: Huey Avenue and Lime Street - OPTION 2 **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION	4	EA	$109.80	$439.00
2	STAKED SILT FENCE, TYPE III	1,500	LF	$1.82	$2,730.00
3	CLEARING & GRUBBING	0.520	AC	$26,784.68	$13,928.00
4	REGULAR EXCAVATION (INCLUDES OVEREXCAVATION FOR POND LINER)	1,580	CY	$6.48	$10,238.00
5	EMBANKMENT (INCLUDES 2-FT FILL OVER LINER)	580	CY	$6.10	$3,538.00
6	ROADWAY RECONSTRUCTION	1,650	SF	$6.57	$10,841.00
7	DITCH BOTTOM INLET	1	EA	$5,066.47	$5,066.00
8	CURB INLET	7	EA	$5,965.22	$41,757.00
9	MANHOLE	2	EA	$4,881.20	$9,762.00
10	MITERED END SECTION, 24"	2	EA	$2,005.10	$4,010.00
11	CONTROL STRUCTURE	2	EA	$5,066.47	$10,133.00
12	PIPE CULVERT REINFORCED CONCRETE, 0-24"	1,130	LF	$108.33	$122,413.00
13	PIPE CULVERT REINFORCED CONCRETE, 24"-36"	40	LF	$199.21	$7,968.00
14	PVC POND LINER	700	SY	$10.00	$7,000.00
15	SIDEWALK CONCRETE	600	SY	$60.09	$36,054.00
16	PERFORMANCE TURF, SOD	1,800	SY	$2.81	$5,058.00

CONSTRUCTION SUBTOTAL	**$290,900.00**
MOBILIZATION	**$29,090.00**
25% CONTINGENCY	**$72,700.00**
CONSTRUCTION TOTAL	**$392,690.00**
SURVEY	**$21,592.95**
GEOTECHNICAL	**$13,400.00**
ENGINEERING	**$56,588.50**
GRAND TOTAL	**$484,271.45**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- BASIN DIVIDE
- FLOW DIRECTION
- 5 CONTOUR
- 21 MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

WEGMANN DR. / LAKEVIEW DR. DRAINAGE IMPROVEMENTS

MAP ID NO. 108

OPTION 1 OF 1

SAP 108: Lakeview Drive

Problem:

Reported chronic roadway and private property flooding occurs along Lakeview Drive, south of Wegmann Drive, in the vicinity of the residence located at 1474 Lakeview Drive. According to the current resident, stormwater runoff from Wegmann Drive and from the homes located along the north side of the street, drains to a low point on Lakeview that extends from the adjacent vacant lot north to the corner property. Due to the absence of a storm sewer collection system, stormwater runoff collects along the lower portions of Lakeview prior to reaching the overtopping elevation and draining southeast by overland flow across the abutting private properties and discharging to the existing canal located along the rear of the lots. The canal is hydraulically connected and discharges to Lake Tarpon.

Conceptual Solution(s):

To resolve said flooding and provide positive drainage to Lakeview Drive, a new storm sewer system is proposed to be constructed along portions of Wegmann Drive and Lakeview Drive to collect the basin runoff. These flows will then be routed southeast along the south side of Wegmann to the current inlet and outfall located southeast on the intersection. The existing storm sewer inlet and outfall pipe will also need to be replaced as part of the proposed drainage improvements.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

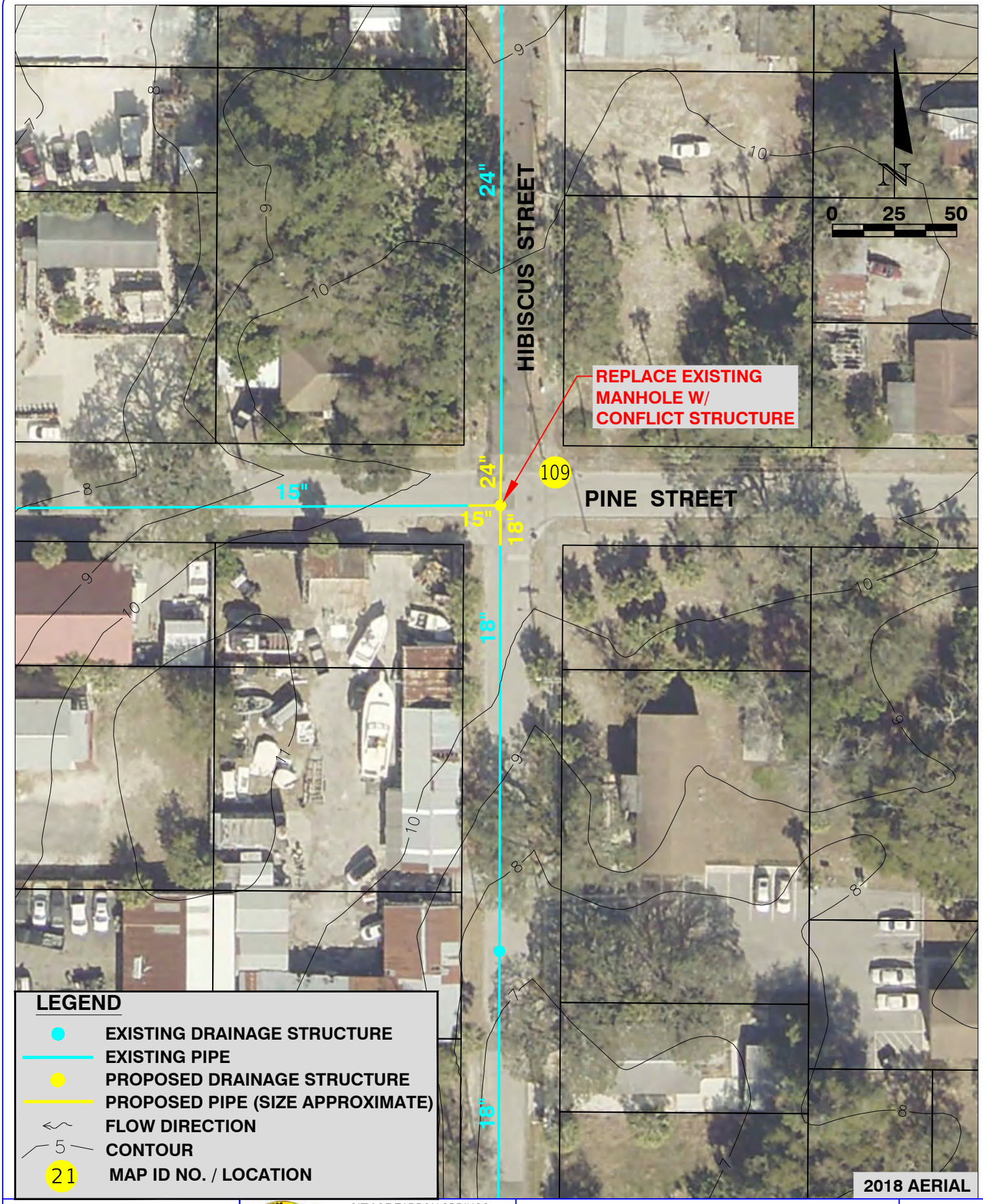
MAP ID NO. 108: Lakeview Drive **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION	1	EA	$109.80	$110.00
2	STAKED SILT FENCE, TYPE III	550	LF	$1.82	$1,001.00
3	FLOATING TURBIDITY BARRIER	50	LF	$6.14	$307.00
4	CLEARING & GRUBBING	0.250	AC	$26,784.68	$6,696.00
5	ROADWAY RECONSTRUCTION	550	SF	$6.57	$3,614.00
6	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
7	CURB INLET	4	EA	$5,965.22	$23,861.00
8	MITERED END SECTION, 36"	1	EA	$3,526.11	$3,526.00
9	PIPE CULVERT REINFORCED CONCRETE, 24"	440	LF	$108.33	$47,665.00
10	PIPE CULVERT REINFORCED CONCRETE, 30"	242	LF	$139.43	$33,742.00
11	PIPE CULVERT REINFORCED CONCRETE, 36"	40	LF	$199.21	$7,968.00
12	SIDEWALK CONCRETE	100	SY	$60.09	$6,009.00
13	PERFORMANCE TURF, SOD	1,580	SY	$2.81	$4,440.00

CONSTRUCTION SUBTOTAL	**$149,100.00**
MOBILIZATION	**$14,910.00**
25% CONTINGENCY	**$37,300.00**
CONSTRUCTION TOTAL	**$201,310.00**
SURVEY	**$14,086.70**
GEOTECHNICAL	**$8,100.00**
ENGINEERING	**$41,973.20**
GRAND TOTAL	**$265,469.90**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

PINE STREET / HIBISCUS STREET INTERSECTION DRAINAGE IMPROVEMENTS

MAP ID NO. 109

OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\109_Hibiscus and Pine\Exhibit-A_Pine-Hibiscus_20200604.dwg LAYOUT:Layout1 Last Saved:Jun. 4, 20 Plot Date: 8/26/2020 10:00 PM By: james greene

SAP 109: Hibiscus Street and Pine Street

Problem:

Chronic flooding has been reported along Hibiscus Street upstream of the Hibiscus Street / Pine Street intersection. At this intersection an 8" sanitary gravity line conflicts with an existing 18" RCP storm line. Both utilities are owned and maintained by the City. An existing brick manhole located at the utility crossing currently functions as a conflict structure. Due to the elevation of the 8" sanitary gravity line, there is inadequate clearance to properly convey stormwater runoff from the 18" RCP storm line across the conflict manhole. The manhole eventually clogs with debris, resulting in reduced conveyance capacity of the storm sewer, ultimately flooding the roadway upstream of the existing manhole.

Conceptual Solution(s):

To resolve the problem, a proper utility conflict structure should be constructed to replace the existing brick manhole. Construction plans have been prepared and the City plans to advertise the construction project in FY 2020.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 109: Hibiscus Steet & Pine Street **01/30/18**

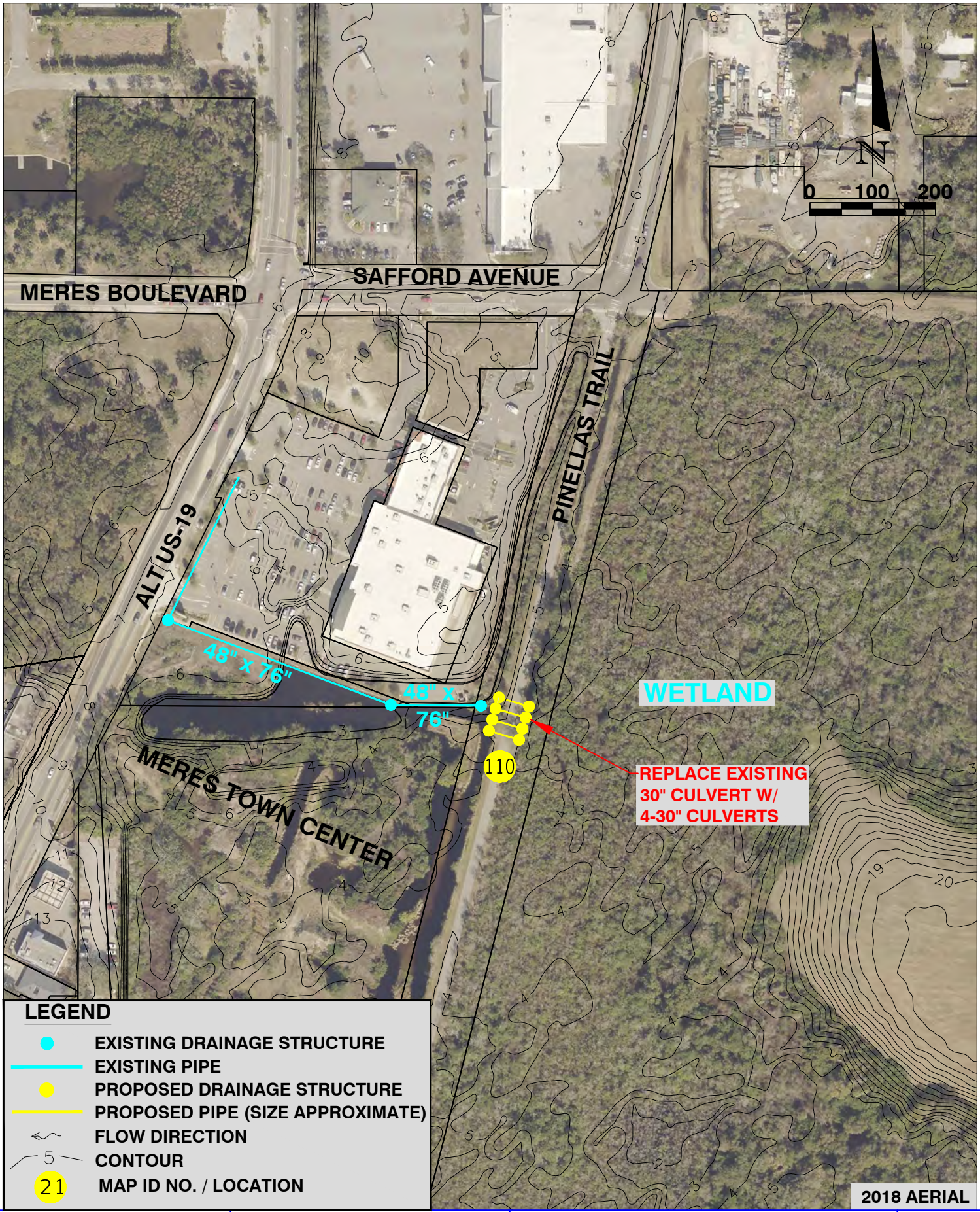
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$4,250.00	$4,250.00
2	CLEARING & GRUBBING	1	LS	$8,360.00	$8,360.00
3	FLOWABLE FILL	5	CY	$165.00	$825.00
4	TYPE B STABILIZATION	154	SY	$7.03	$1,083.00
5	OPTIONAL BASE, BASE GROUP 4 (RECYCLED CONCRETE AGGREGATE (F	148	SY	$14.07	$2,082.00
6	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	12.18	TN	$114.91	$1,400.00
7	MANHOLE, J8 <10'	1	EA	$9,406.10	$9,406.00
8	MANHOLE, ADJUST	1	EA	$865.29	$865.00
9	VALVE BOXES, ADJUST	2	EA	$80.44	$161.00
10	PIPE CULVERT REINFORCED CONCRETE, 15" SD	8	LF	$139.26	$1,114.00
11	PIPE CULVERT REINFORCED CONCRETE, 18" SD	8	LF	$103.31	$826.00
12	PIPE CULVERT REINFORCED CONCRETE, 24" SD	20	LF	$118.30	$2,366.00
13	CONCRETE CURB, TYPE D	76	LF	$26.25	$1,995.00
14	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	62	SY	$43.31	$2,685.00
15	DETECTABLE WARNINGS	64	SF	$26.18	$1,676.00
16	THERMOPLASTIC, STANDARD, WHITE SOLID, 14" FOR STOP LINE AND CR	10	LF	$5.27	$53.00
17	HEADER CURB SPECIAL	20	LF	$120.00	$2,400.00
18	BRICK PAVEMENT REMOVAL	16	SY	$75.63	$1,210.00
19	BRICK PAVEMENT INSTALLATION (REUSE BRICK)	16	SY	$75.63	$1,210.00
20	BRICK PAVEMENT INSTALLATION (CITY SUPPLIED BRICK)	3	SY	$220.00	$660.00

CONSTRUCTION SUBTOTAL	**$44,600.00**
MOBILIZATION	**$4,460.00**
25% CONTINGENCY	**$11,200.00**
CONSTRUCTION TOTAL	**$60,260.00**
SURVEY	**$3,008.00**
GEOTECHNICAL	**$1,800.00**
ENGINEERING	**$7,929.20**
GRAND TOTAL	**$72,997.20**

Notes:

1. Unit Prices based on bid documernts submitted to City on 1/30/2018
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

BID PROPOSAL TABULATION/CITY OF TARPON SPRINGS **Note: This is a preliminary summary. THIS IS NOT AN AWARD**		OPENED: 3:00 p.m. Thursday, February 1, 2018		180047-B-CM Hibiscus Street and Pine Street Drainage Improvements		READ BY: C Morgan	
						TABBED BY: C Morgan	
				ADVERTISED: 1/11/2018		DEPT: Public Works	
	DESCRIPTION BIDDER>>>	Carl Hankins, Inc.		YD Contractors Inc.		Marolf Environmental Inc.	
1 JB	Hibiscus Street and Pine Street Drainage Improvements		$94,579.50		$95,834.80		$98,705.48
	DESCRIPTION BIDDER>>>	Gator Grading & Paving LLC		Right of Way Contracting LLC		All American Concrete Inc.	
1 JB	Hibiscus Street and Pine Street Drainage Improvements		$189,389.20		$263,613.89		$292,500.00



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- 5 CONTOUR
- 21 MAP ID NO. / LOCATION

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

PINELLAS TRAIL CROSS-DRAIN DRAINAGE IMPROVEMENTS

MAP ID NO. 110
OPTION 1 OF 1

SAP 110: Pinellas Trail Culvert Replacement

Problem:

Chronic flooding has been reported along the existing wetland system located east of the Pinellas Trail, from Harrison Street south to East Curlew Place. The wetland system collects runoff from over 500-acres of tributary basin area and drains west across the Pinellas Trail, through private property, to US Alt-19. Flows are then routed north and west by the Alt-19 storm sewer that ultimately discharges to Whitcomb Bayou north of Meres Boulevard. During low flow conditions wetland discharge is conveyed west under the Pinellas Trail by means of an existing 30-inch culvert, located approximately 700 ft. south of Safford Avenue. This culvert is also the primary means by which the wetland recovers (bleeds-down) during the wet rainy season from peak storm stages to the normal wetland water levels. With high flow conditions, those exceeding the existing 30-inch pipe capacity, drainage flows then overtop the trail and discharge directly to the Meres Town Center Property located immediately to the west and are conveyed to Alt-19 by means of the site bypass storm sewer system. The lone 30-inch pipe restricts upstream drainage flows and delays wetland recovery. A result of prolonged wetland inundation, stages higher than normal seasonal high-water levels, is that upstream SMF's currently draining to the wetland also experience longer than normal recovery periods. This causes these SMF's to back-up and flood the adjacent low-lying roads and private properties for extended periods of time until the wetland levels recover. The flooding and prolonged recovery periods hinders neighborhood access and damages the roadways and adjacent private properties.

Conceptual Solution(s):

To resolve this problem, the existing 30-inch trail cross-drain will need to be improved to minimize trail overtopping and to decrease the wetland recovery periods, without causing adverse drainage impacts downstream. A detailed hydro-dynamic model of the basin will need to be conducted to ensure no adverse drainage impacts will occur downstream or to the wetland.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

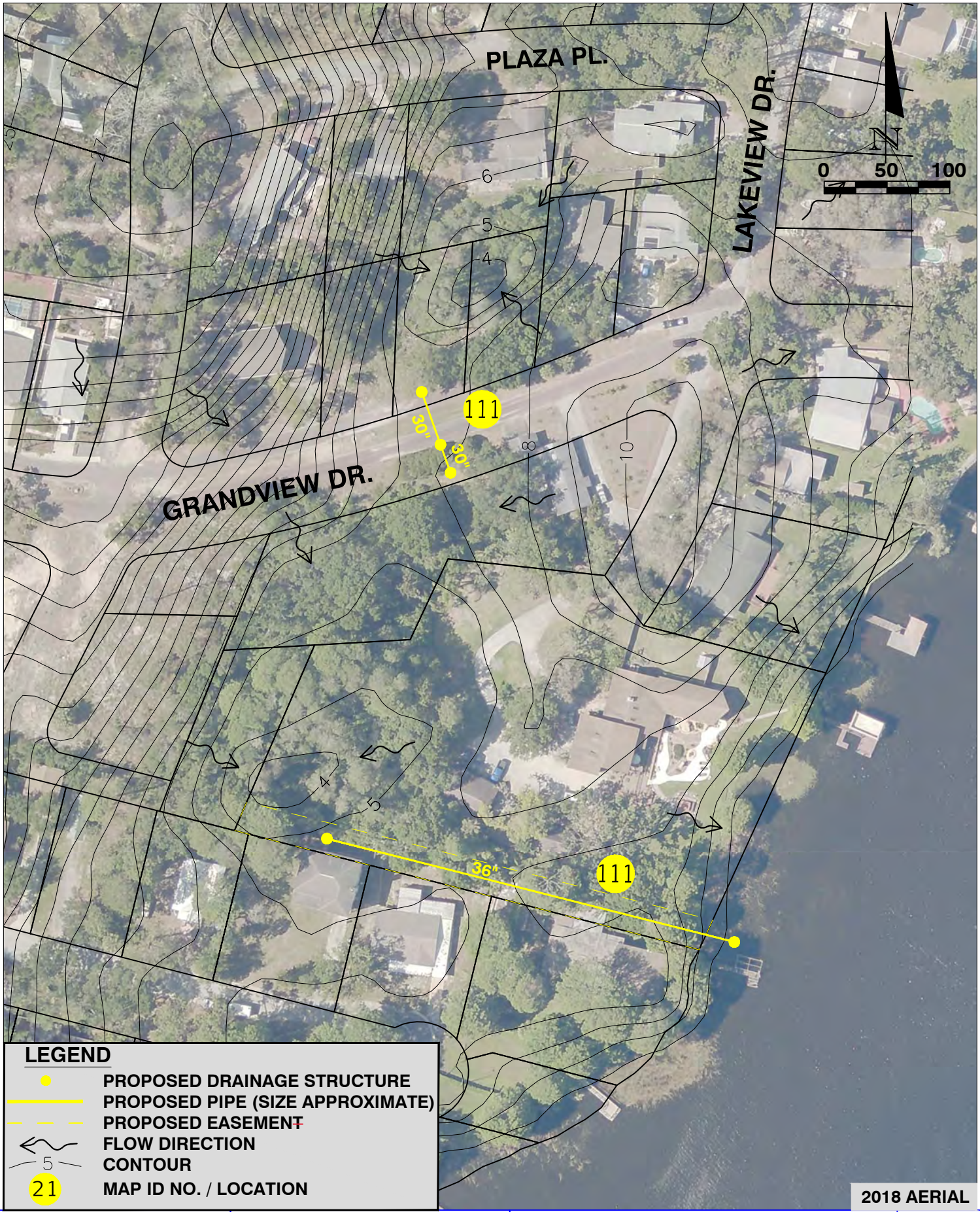
MAP ID NO. 110: Pinellas Trail Culvert **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	100	LF	$1.82	$182.00
2	FLOATING TURBIDITY BARRIER	100	LF	$6.14	$614.00
3	CLEARING & GRUBBING	0.250	AC	$26,784.68	$6,696.00
4	TRAIL RECONSTRUCTION	133	SY	$8.75	$1,164.00
5	MITERED END SECTION, 30"	8	EA	$2,979.58	$23,837.00
6	PIPE CULVERT REINFORCED CONCRETE, 30"	120	LF	$139.43	$16,732.00
7	PERFORMANCE TURF, SOD	130	SY	$2.81	$365.00

CONSTRUCTION SUBTOTAL	**$49,600.00**
MOBILIZATION	**$4,960.00**
25% CONTINGENCY	**$12,400.00**
CONSTRUCTION TOTAL	**$66,960.00**
SURVEY	**$9,369.40**
GEOTECHNICAL	**$2,000.00**
ENGINEERING	**$31,165.00**
GRAND TOTAL	**$109,494.40**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

GRANDVIEW DRIVE
DRAINAGE IMPROVEMENTS

MAP ID NO.
111
OPTION 2 OF 2

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\111_Grandview Drive\EXHIBIT-A-Grandview-Lakeview_20200826.dwg LAYOUT:Opt 2 of 2 Last Saved: Aug. 28, 20 Plot Date: 8/28/2020 1:06 PM By: James greene

SAP 111: Grandview Drive

Problem:

Frequent and chronic flooding has been reported near the Grandview Drive roadway sag low point located east of Sunshine Drive and west of Lakeview Drive. Also present near the roadway low point are two depressional areas located immediately north and south of Grandview Drive, within private property, that also provides stormwater runoff storage for the neighborhood. The northern depression drainage basin encompasses 4.0-acres of mostly residential use. The southern depression basin is 5.0-acres of mostly developed residential use. The roadway sag area has a tributary basin of 2.7-acres. Stormwater runoff from these basin areas accumulates at the common depression until they reach the basin overtopping elevation that allows surplus flows to drain southeast across private property by overland flow to Lake Tarpon. This depressional storage can only recover by means of percolation or evaporation/transpiration and the resulting flooding is aggravated by frequent rainfall occurring daily during the rainy season. Frequent flooding due to the lack of a storm sewer system limits neighborhood access and causes the degradation of the existing roadway base and brick pavement.

Conceptual Solution(s):

Option 1

This conceptual solution includes the installation of a closed storm sewer collection system consisting of dual ditch bottom inlets, to be located near the roadway sag, and the needed outfall conveyance that would route flows east and outfall to Lake Tarpon.

Option 2

This preferred conceptual solution includes the installation of dual ditch bottom inlets near the roadway sag with an outfall to the south depression. A separate inlet would then be constructed along the south side of the south depression, within the Oak Court right-of-way, with an outfall pipe running east to Lake Tarpon. A drainage easement will be needed for this second option and City negotiations with the affected landowner are currently on-going.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 111: Grandview Drive (Option 1) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	500	LF	$1.82	$910.00
2	FLOATING TURBIDITY BARRIER	100	LF	$6.14	$614.00
3	CLEARING & GRUBBING	0.250	AC	$26,784.68	$6,696.00
4	ROADWAY RECONSTRUCTION	5,625	SF	$6.57	$36,956.00
5	DITCH BOTTOM INLET	2	EA	$5,066.47	$10,133.00
6	MANHOLE	2	EA	$4,881.20	$9,762.00
7	MITERED END SECTION, 36"	1	EA	$3,526.11	$3,526.00
8	PIPE CULVERT REINFORCED CONCRETE, 30"	54	LF	$139.43	$7,529.00
9	PIPE CULVERT REINFORCED CONCRETE, 36"	485	LF	$199.21	$96,617.00
10	ROADWAY BRICK RECONSTRUCTION	55	SY	$14.00	$770.00
11	PERFORMANCE TURF, SOD	800	SY	$2.81	$2,248.00

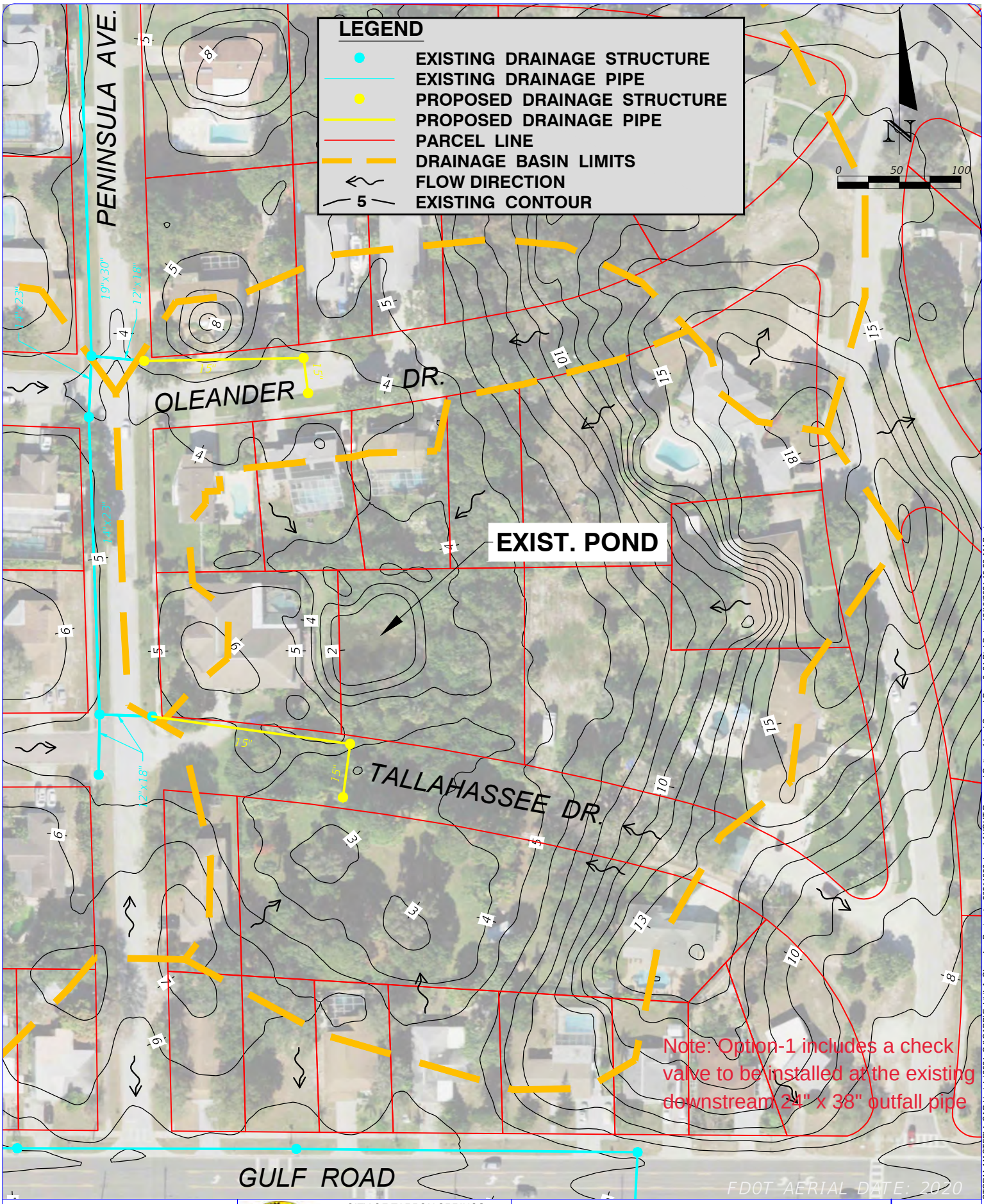
CONSTRUCTION SUBTOTAL	**$175,800.00**
MOBILIZATION	**$17,580.00**
25% CONTINGENCY	**$44,000.00**
CONSTRUCTION TOTAL	**$237,380.00**
SURVEY	**$16,611.60**
GEOTECHNICAL	**$11,900.00**
ENGINEERING	**$45,161.00**
GRAND TOTAL	**$311,052.60**

MAP ID NO. 111: Grandview Drive (Option 2) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	500	LF	$1.50	$750.00
2	FLOATING TURBIDITY BARRIER	100	LF	$10.20	$1,020.00
3	CLEARING & GRUBBING	0.100	AC	$23,362.09	$2,336.00
4	DITCH BOTTOM INLET	4	EA	$5,181.00	$20,724.00
5	MITERED END SECTION, 36"	1	EA	$3,405.00	$3,405.00
6	PIPE CULVERT REINFORCED CONCRETE, 30"	54	LF	$141.30	$7,630.00
7	PIPE CULVERT REINFORCED CONCRETE, 36"	485	LF	$153.87	$74,627.00
8	ROADWAY BRICK RECONSTRUCTION	55	SY	$14.00	$770.00
9	PERFORMANCE TURF, SOD	800	SY	$3.13	$2,504.00

CONSTRUCTION SUBTOTAL	**$113,800.00**
MOBILIZATION	**$11,380.00**
25% CONTINGENCY	**$28,500.00**
CONSTRUCTION TOTAL	**$153,680.00**
SURVEY	**$10,752.60**
GEOTECHNICAL	**$7,700.00**
ENGINEERING	**$43,789.00**
GRAND TOTAL	**$215,921.60**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN
PHASE II
OLEANDER & PENINSULA

MAP ID NO.
112
OPTION 1 OF 2

F:\Projects\TARPON_STORM_MASTER\4_SAP Update\2021_Q4\CADD\Exhibit-A_Oleander_Peninsula_20211206.dwg LAYOUT:Proposed Option 1 Last Saved:Dec. 8, 21 Plot Date: 12/16/2021 10:29 AM By: james greene

SAP No. 112: Oleander Drive and Peninsula Avenue

Problem:

Chronic roadway and private property flooding occur along Oleander Drive and Peninsula Avenue, in the vicinity of the residences located at 1309 Oleander Drive, 284 & 298 Peninsula Avenue, due mostly to the absence of adequate storm sewer systems to provide positive drainage for this portion of the roadway and parcels. The homes and roadways were built in a historically depressed area or bowl that collects runoff from adjacent developed areas but lacks the necessary drainage facilities to provide adequate positive drainage.

Conceptual Solution(s):

Option 1

This conceptual solution would include installing ditch bottom inlets within the Tallahassee Drive right-of-way and a new culvert that runs west along the north side of the roadway and connects to the existing Peninsula Avenue storm sewer. It also includes replacing the existing Oleander Drive storm sewer, to better accommodate drainage flows, and a check valve to be installed at the downstream outfall to prevent tidal backflows. This option does not prevent flooding within the affected areas but does significantly improve the flooding recovery periods.

Option 2

This conceptual solution would include all Option 1 improvements plus would upgrade the existing Peninsula Avenue storm sewer, which is currently undersized, to adequately convey basin flows to Sunset Lagoon. As with Option 1, a check valve will also be needed to prevent tidal backflows and related flooding.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 112: Oleander & Peninsula (Option 1) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$25,705.43	$25,705.00
2	SEDIMENT BARRIER	704	LF	$1.82	$1,281.00
3	INLET PROTECTION SYSTEM	6	EA	$109.80	$659.00
4	CLEARING & GRUBBING	0.198	LS/AC	$26,784.68	$5,303.00
5	REMOVAL OF EXISTING CONCRETE	55	SY	$20.87	$1,148.00
6	TREE REMOVAL	3	EA	$1,500.00	$4,500.00
7	TYPE B STABILIZATION	72	SY	$7.03	$506.00
8	OPTIONAL BASE, BASE GROUP 7 (RECYCLED CONCRETE AGGREGATE (RCA))	72	SY	$33.16	$2,388.00
9	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	11.88	TN	$114.91	$1,365.00
10	DITCH BOTTOM INLET	4	EA	$3,952.01	$15,808.00
11	CURB INLET	1	EA	$5,600.00	$5,600.00
12	PIPE CULVERT REINFORCED CONCRETE, 15" S/CD	20	LF	$124.80	$2,496.00
13	PIPE CULVERT REINFORCED CONCRETE, 18" S/CD	193	LF	$124.80	$24,086.00
14	PIPE CULVERT REINFORCED CONCRETE, 24" S/CD	205	LF	$108.33	$22,208.00
15	TIDEFLEX VALVE (24" x 38" ERCP)	1	1	$16,500.00	$16,500.00
16	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	55	SY	$60.09	$3,305.00
17	RECONSTRUCT BRICK DRIVEWAY	72	SY	$80.00	$5,760.00
18	VALLEY GUTTER - CONCRETE	15	LF	$31.24	$469.00
19	DETECTABLE WARNINGS	32	SF	$26.18	$838.00
20	SOD	700	SY	$2.81	$1,967.00

CONSTRUCTION SUBTOTAL	**$141,900.00**
MOBILIZATION	**$14,190.00**
25% CONTINGENCY	**$35,500.00**
CONSTRUCTION TOTAL	**$191,590.00**
SURVEY	**$9,574.50**
GEOTECHNICAL	**$5,700.00**
ENGINEERING	**$30,255.30**
GRAND TOTAL	**$237,119.80**

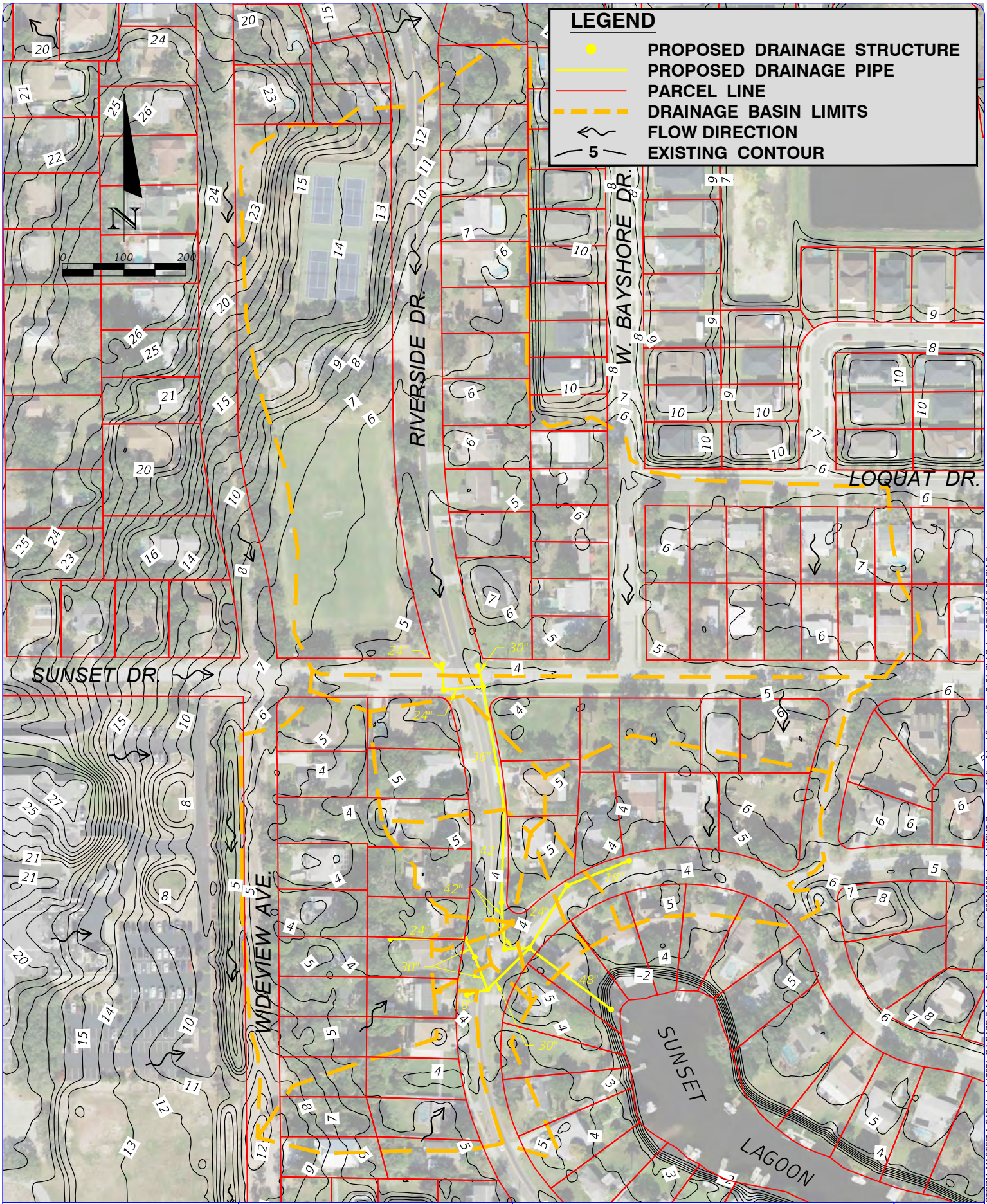
MAP ID NO. 112: Oleander & Peninsula (Option 2) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$115,224.59	$115,225.00
2	SEDIMENT BARRIER	933	LF	$1.82	$1,698.00
3	INLET PROTECTION SYSTEM	21	EA	$109.80	$2,306.00
4	CLEARING & GRUBBING	1.050	LS/AC	$26,784.68	$28,124.00
5	REMOVAL OF EXISTING CONCRETE	943	SY	$20.87	$19,680.00
6	TREE REMOVAL	5	EA	$1,500.00	$7,500.00
7	TYPE B STABILIZATION	858	SY	$7.03	$6,032.00
8	OPTIONAL BASE, BASE GROUP 7 (RECYCLED CONCRETE AGGREGATE (RCA))	858	SY	$33.16	$28,451.00
9	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	141.57	TN	$114.91	$16,268.00
10	DITCH BOTTOM INLET	1	EA	$6,975.00	$6,975.00
11	CURB INLET	11	EA	$5,965.22	$65,617.00
12	MANHOLE	1	EA	$12,194.76	$12,195.00
13	PIPE CULVERT REINFORCED CONCRETE, 18" S/CD	50	LF	$93.58	$4,679.00
14	PIPE CULVERT REINFORCED CONCRETE, 24" S/CD	205	LF	$108.33	$22,208.00
15	PIPE CULVERT REINFORCED CONCRETE, 30" S/CD	290	LF	$139.43	$40,435.00
16	PIPE CULVERT REINFORCED CONCRETE, 36" S/CD	350	LF	$199.21	$69,724.00
17	PIPE CULVERT REINFORCED CONCRETE, 42" S/CD	660	LF	$223.74	$147,668.00
18	PIPE CULVERT REINFORCED CONCRETE, 48" S/CD	317	LF	$359.05	$113,819.00
19	MITERED END SECTION (48")	1	EA	$6,630.00	$6,630.00
20	TIDEFLEX VALVE (48" RCP)	1	1	$19,500.00	$19,500.00
21	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	637	SY	$60.09	$38,277.00
22	RECONSTRUCT BRICK DRIVEWAY	72	SY	$80.00	$5,760.00
23	VALLEY GUTTER - CONCRETE	500	LF	$31.24	$15,620.00
24	DETECTABLE WARNINGS	104	SF	$26.18	$2,723.00
25	SOD	1,820	SY	$2.81	$5,114.00

CONSTRUCTION SUBTOTAL	**$802,200.00**
MOBILIZATION	**$80,220.00**
25% CONTINGENCY	**$200,600.00**
CONSTRUCTION TOTAL	**$1,083,020.00**
SURVEY	**$54,146.00**
GEOTECHNICAL	**$32,500.00**
ENGINEERING	**$181,798.40**
GRAND TOTAL	**$1,351,464.40**

Notes:

1. Unit Prices based on FDOT historical averages from 11-01-2020 to 10/31/2021
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN
PHASE II
RIVERSIDE & SUNSET

MAP ID NO.
113
OPTION 1 OF 1

F:\Projects\TARPON_STORM_MASTER\4_SAP Update\2021_Q4\CADD\Exhibit-A_Riverside_Sunset_20211209.dwg LAYOUT:Proposed Option 1 Last Saved:Dec. 9, 21 Plot Date: 12/9/2021 2:57 PM By: james greene

SAP 113: Riverside Drive and Sunset Drive

Problem:

Frequent flooding is currently causing adverse impacts at the intersection of Sunset Drive and Riverside Drive and at areas located south of the intersection, due mostly to existing drainage facilities that are undersized and unable to adequately convey basin flows south to Sunset Lagoon.

Conceptual Solution:

The conceptual solution would upgrade the existing basin storm sewer system to adequately convey basin runoff flows south to Sunset Lagoon. The Lagoon is tidally influenced and therefore has unlimited drainage capacity

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 113: Riverside & Sunset **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$8,357.06	$8,357.00
2	SEDIMENT BARRIER	1,400	LF	$1.82	$2,548.00
3	FLOATING TURBIDITY BARRIER	55	LF	$6.14	$338.00
4	INLET PROTECTION SYSTEM	15	EA	$109.80	$1,647.00
5	CLEARING & GRUBBING	0.717	LS/AC	$26,784.68	$19,205.00
6	REMOVAL OF EXISTING CONCRETE	669	SY	$20.87	$13,962.00
7	TREE REMOVAL	3	EA	$1,500.00	$4,500.00
8	TYPE B STABILIZATION	1,290	SY	$7.03	$9,069.00
9	OPTIONAL BASE, BASE GROUP 7 (RECYCLED CONCRETE AGGREGATE (RCA))	1,290	SY	$33.16	$42,776.00
10	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	212.85	TN	$114.91	$24,459.00
11	DITCH BOTTOM INLET	14	EA	$5,066.47	$70,931.00
12	MANHOLE, J-7	2	EA	$12,194.76	$24,390.00
13	VALVE BOXES, ADJUST	2	EA	$80.44	$161.00
14	PIPE CULVERT REINFORCED CONCRETE, 18" S/CD	144	LF	$93.58	$13,476.00
15	PIPE CULVERT REINFORCED CONCRETE, 24" S/CD	346	LF	$108.33	$37,482.00
16	PIPE CULVERT REINFORCED CONCRETE, 30" S/CD	221	LF	$139.43	$30,814.00
17	PIPE CULVERT REINFORCED CONCRETE, 36" S/CD	197	LF	$199.21	$39,244.00
18	PIPE CULVERT REINFORCED CONCRETE, 42" S/CD	272	LF	$223.74	$60,857.00
19	PIPE CULVERT REINFORCED CONCRETE, 48" S/CD	165	LF	$359.05	$59,243.00
20	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	669	SY	$60.09	$40,200.00
21	STRAIGHT CONC. ENDWALLS, 48" SINGLE, 0 DEGREES, ROUND	1	EA	$8,550.00	$8,550.00
22	VALLEY GUTTER - CONCRETE	174	LF	$31.24	$5,436.00
23	DETECTABLE WARNINGS	32	SF	$26.18	$838.00
24	SOD	1,608	SY	$2.81	$4,518.00

CONSTRUCTION SUBTOTAL	**$523,000.00**
MOBILIZATION	**$52,300.00**
25% CONTINGENCY	**$130,800.00**
CONSTRUCTION TOTAL	**$706,100.00**
SURVEY	**$35,300.00**
GEOTECHNICAL	**$21,200.00**
ENGINEERING	**$117,722.00**
GRAND TOTAL	**$880,322.00**

Notes:

1. Unit Prices based on FDOT historical averages from 11-01-2020 to 10/31/2021
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

CYPRESS ST.

N. LEVIS AVE.

N. GROSSE AVE.

E. CENTER ST.

E. ORANGE ST.

N. DISSTON AVE.

E. TARPON AVE.

0 60 120

LEGEND

- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE
- PARCEL LINE
- DRAINAGE BASIN LIMITS
- FLOW DIRECTION
- 5 EXISTING CONTOUR

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
JOYCE C. A. GOULAS, P.E. NO. 90816

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

STORMWATER ACTION PLAN
PHASE II
N. LEVIS AVENUE

MAP ID NO. 114 OPTION 1 OF 2

James Greene 12/8/2021 3:31:08 PM F:\Projects\TARPON_STORM_MASTER\4_SAP Update\2021_04\CADD\Exhibit-A_Levis-Orange_Pond_20211208.dwg

CYPRESS ST.

N. LEVIS AVE.

N. GROSSE AVE.

E. CENTER ST.

E. ORANGE ST.

N. DISSTON AVE.

E. TARPON AVE.

0 60 120

LEGEND

- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE
- PARCEL LINE
- DRAINAGE BASIN LIMITS
- FLOW DIRECTION
- 5 EXISTING CONTOUR

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
JOYCE C. A. GOULAS, P.E. NO. 90816

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

STORMWATER ACTION PLAN
PHASE II
N. LEVIS AVENUE

MAP ID NO. 114 OPTION 2 OF 2

James Greene 12/8/2021 3:35:10 PM F:\Projects\TARPON_STORM_MASTER\4_SAP Update\2021_04\CADD\Exhibit-A_Levis-Orange_Pond_20211208.dwg

SAP 114: North Levis Avenue

Problem:

Frequent flooding currently causes adverse impacts on Levis Avenue near the roadway low point located adjacent to 104 N. Levis, due mostly to the lack of adequate drainage facilities. Basin runoff currently drains by overland flow to the roadway low point mentioned where it then ponds until flood depths reach the sidewalk overtopping elevation and discharge to the adjacent City pond.

Conceptual Solution(s):

Option 1

This conceptual solution includes installing curb inlets at the roadway low point and new storm sewer along the west side of the roadway to convey basin flows to the existing City pond. This option does not prevent roadway flooding altogether but does significantly improve the flood recovery times.

Option 2

This conceptual solution would include all Option 1 improvements plus would extend the proposed storm sewer system south and add inlets at the intersection of East Orange Street and North Levis Avenue to alleviate flooding there.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 114: N. Levis Ave. (Option 1) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$4,543.99	$4,544.00
2	SEDIMENT BARRIER	70	LF	$1.82	$127.00
3	FLOATING TURBIDITY BARRIER	50	LF	$6.14	$307.00
4	INLET PROTECTION SYSTEM	3	EA	$109.80	$329.00
5	CLEARING & GRUBBING	0.068	LS/AC	$26,784.68	$1,821.00
6	REMOVAL OF EXISTING CONCRETE	104	SY	$20.87	$2,170.00
7	TREE REMOVAL	1	EA	$1,500.00	$1,500.00
8	TYPE B STABILIZATION	218	SY	$7.03	$1,533.00
9	OPTIONAL BASE, BASE GROUP 6 (RECYCLED CONCRETE AGGREGATE (RCA))	218	SY	$15.40	$3,357.00
10	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	35.97	TN	$114.91	$4,133.00
11	CURB INLET, TYPE J-6	4	EA	$12,925.36	$51,701.00
14	PIPE CULVERT REINFORCED CONCRETE, 30" S/CD	75	LF	$139.43	$10,457.00
15	PIPE CULVERT REINFORCED CONCRETE, 36" S/CD	35	LF	$199.21	$6,972.00
16	MITERED END SECTION (36")	1	EA	$3,526.11	$3,526.00
17	CONCRETE CURB, TYPE D	80	LF	$26.25	$2,100.00
18	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	104	SY	$60.09	$6,249.00
19	SOD	98	SY	$2.81	$275.00

CONSTRUCTION SUBTOTAL	**$101,100.00**
MOBILIZATION	**$10,110.00**
25% CONTINGENCY	**$25,300.00**
CONSTRUCTION TOTAL	**$136,510.00**
SURVEY	**$6,820.50**
GEOTECHNICAL	**$4,100.00**
ENGINEERING	**$20,891.70**
GRAND TOTAL	**$168,322.20**

MAP ID NO. 114: N. Levis Ave. (Option 2) **12/13/2021**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MAINTENANCE OF TRAFFIC	1	LS	$4,790.79	$4,791.00
2	SEDIMENT BARRIER	100	LF	$1.82	$182.00
3	FLOATING TURBIDITY BARRIER	50	LF	$6.14	$307.00
4	INLET PROTECTION SYSTEM	7	EA	$109.80	$769.00
5	CLEARING & GRUBBING	0.120	LS/AC	$26,784.68	$3,214.00
6	REMOVAL OF EXISTING CONCRETE	115	SY	$20.87	$2,400.00
7	TREE REMOVAL	2	EA	$1,500.00	$3,000.00
8	TYPE B STABILIZATION	421	SY	$7.03	$2,960.00
9	OPTIONAL BASE, BASE GROUP 6 (RECYCLED CONCRETE AGGREGATE (RCA))	421	SY	$15.40	$6,483.00
10	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	75	TN	$114.91	$8,618.00
11	CURB INLET, TYPE P-6	3	EA	$5,965.22	$17,896.00
12	CURB INLET, TYPE J-6	1	EA	$12,925.36	$12,925.00
13	PIPE CULVERT REINFORCED CONCRETE, 18" S/CD	40	LF	$93.58	$3,743.00
14	PIPE CULVERT REINFORCED CONCRETE, 24" S/CD	65	LF	$108.33	$7,041.00
15	PIPE CULVERT REINFORCED CONCRETE, 30" S/CD	185	LF	$139.43	$25,795.00
18	CONCRETE CURB, TYPE D	333	LF	$26.25	$8,741.00
19	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	115	SY	$60.09	$6,910.00
20	DETECTABLE WARNINGS	24	SF	$26.18	$628.00
21	SOD	350	SY	$2.81	$984.00

CONSTRUCTION SUBTOTAL	**$117,400.00**
MOBILIZATION	**$11,740.00**
25% CONTINGENCY	**$29,400.00**
CONSTRUCTION TOTAL	**$158,540.00**
SURVEY	**$7,922.00**
GEOTECHNICAL	**$4,800.00**
ENGINEERING	**$24,636.80**
GRAND TOTAL	**$195,898.80**

Notes:

1. Unit Prices based on FDOT historical averages from 11-01-2020 to 10/31/2021
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

Appendix B

Stormwater Map ID Area Scoring Criteria

CONSULTANT GRADING CRITERIA	MAX POINTS
TRAFFIC SAFETY	10
EMERGENCY ACCESS/ROUTE	10
PROPERTY IMPACTS	10
ENVIRONMENTAL	10
PROBLEM DOCUMENTATION	5
MAINTENANCE	5
CITY SCORE	10
TOTAL POSSIBLE POINTS	**60**

Traffic Safety

0-5 points for a problem that impedes standard traffic flow rates. These locations are more of a nuisance due to partial roadside flooding.
6-10 points for a problem that poses a threat to life, impedance to major arterial road or hurricane evacuation route, or flooding near electrical equipment.

Emergency Access/Route

0-3 points for a problem that may cause an emergency vehicle some delay
4-7 point for a problem that may cause an emergency vehicle to change course while responding to an emergency.
8-10 points for a problem that impedes an evacuation route or route to emergency shelter.

Property Impacts

0-3 points for a problem that is primarily minor street and private property ponding.

4-7 points for a problem that impedes access to or from private property or causes flooding on more than one property; for a problem that occurs no more than 6 times a year and has a duration of less than 48 hours.

8-10 points for a problem that poses threat to flooding a structure or causing erosion threatening a structure; for a problem that occurs at least 6 times a year and has a duration of more than 48 hours.

Environmental

0-3 points for a problem that impacts the local proximity.
4-7 points for a problem that has potential water quality impacts to impaired waterbody.
8-10 points for a problem that is mandated by the FDEP or EPA and/or discharges to an impaired waterbody.

Problem Area Documentation

0-2 points for a problem that has been identified by City Staff and/or the Dames and Moore Master Drainage Study.
3-5 points for a problem that has public complaints and/or photographs filed with the City.

Maintenance

0-2 points for a problem that in the past has cost the City to maintain or retrofit.
3-5 points for a problem that annually costs the City to maintain or for a problem that if not properly maintained causes flooding.

CITY GRADING CRITIERA

Level A (10 points)
● Represent a **significant and immediate** threat to life, health, and/or property.
● Completely blocks the flow of traffic through **main thoroughfares** (traffic cannot safely pass and muse be re-routed). Blocks access to neighborhoods or areas of the City.
● Water enters a structure.
● Represents a significant and severe contribution to surface water pollution.

Level B (8 points)
● Represent a **potential** threat to life, health, and/or property.
● Blocks the flow of traffic **on a single street,** several structures, or business access.
● Water surrounds but does not enter a structure.
● Represents a potential contribution to surface water pollution.

Level C (6 points)
- Represent a **possible** threat to life, health, and/or property.
- Blocks traffic access to a **single home.**
- Water surrounds or pools on a portion of a homeowner's or business owner's property.
- Represents a possible contribution to surface water pollution.

Level D (4 points)
- **Nuiance flooding** that does not pose any threat to life, health, and/or property.
- Does not block traffic access to homes, businesses, or streets.
- Water does not threaten a structure.
- Does not contribute to surface water pollution.

Level E (2 points)
- Project is complete or remedy is underway (currently undergoing design or construction).

Level F (0 points)
- Non-jurisdictional

Appendix C

Secondary Options and Cost Estimates

LEGEND

- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- 5 — CONTOUR
- 21 — MAP ID NO. / LOCATION

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE. AND CENTER ST.

MAP ID NO. 2
OPTION 1 OF 2

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBIT51.dwg LAYOUT: MAP ID #2 Last Saved: Oct. 28, 10 Plot Date: 10/28/2010 4:17 PM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

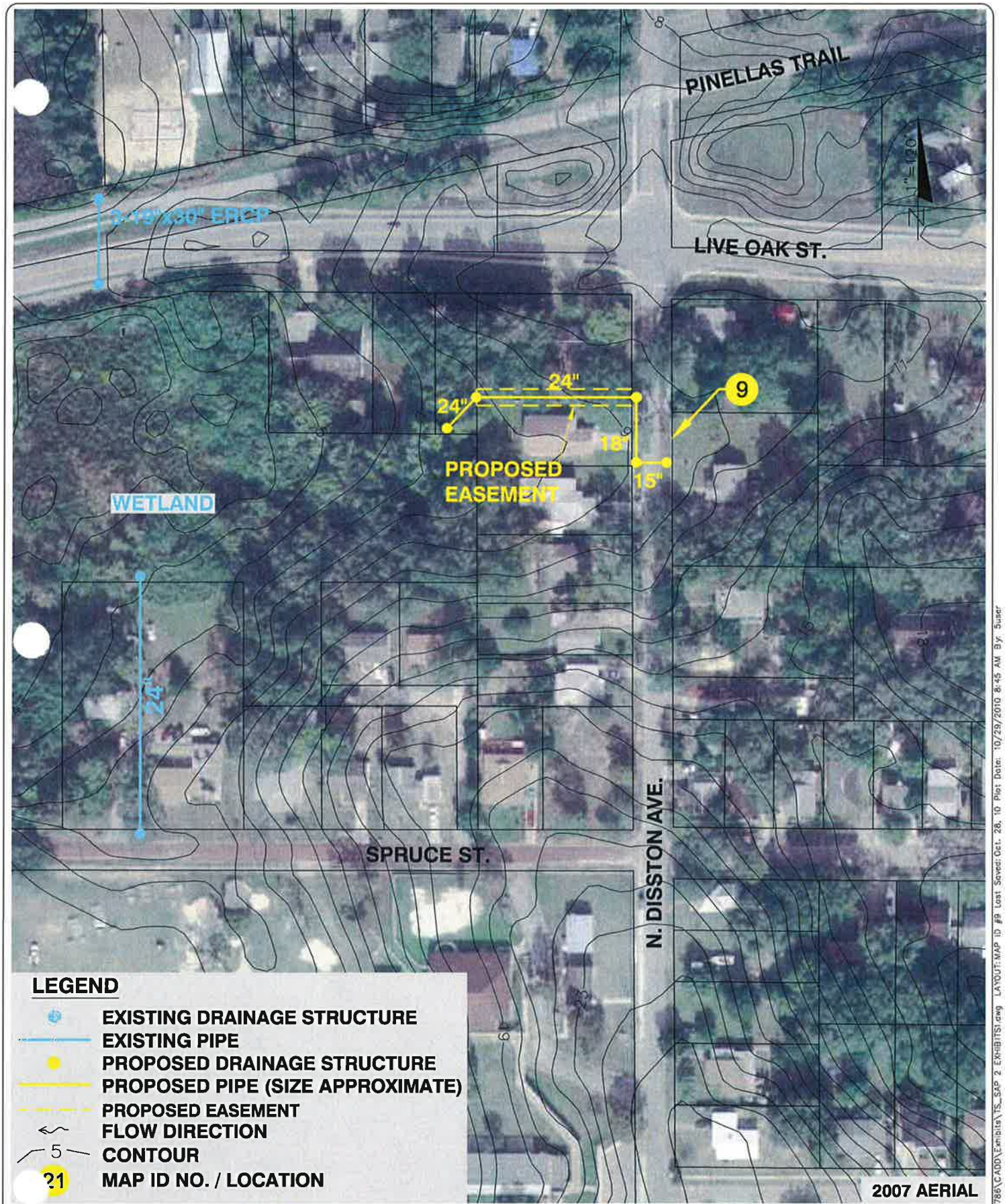
Preliminary Construction Cost Estimate

MAP ID NO. 2 (OPTION 1 - STANDARD METHOD): DISSTON AVE. AND CENTER ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$14,680.00	$14,680.00
2	SYNTHETIC BALES	128	LF	$16.00	$2,048.00
3	STAKED SILT FENCE, TYPE III	1,842	LF	$1.00	$1,842.00
4	CLEARING & GRUBBING	0.742	AC	$8,140.00	$6,040.00
5	POND EXCAVATION	2,254	CY	$3.50	$7,889.00
6	ROADWAY RECONSTRUCTION	16,464	SF	$3.75	$61,740.00
7	MANHOLE	3	EA	$4,200.00	$12,600.00
8	DITCH BOTTOM INLET	4	EA	$2,500.00	$10,000.00
9	CONCRETE CLASS I, ENDWALLS	1.23	CY	$600.00	$738.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24"	794	LF	$51.00	$40,494.00
11	PERFORMANCE TURF, SOD	1,690	SY	$2.00	$3,380.00

CONSTRUCTION SUBTOTAL	**$161,500.00**
25% CONTINGENCY	**$40,400.00**
CONSTRUCTION TOTAL	**$201,900.00**
SURVEY	**$10,100.00**
GEOTECHNICAL	**$6,100.00**
ENGINEERING	**$36,300.00**
GRAND TOTAL	**$254,400.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
BETWEEN SPRUCE ST. & LIVE OAK ST.

MAP ID NO.
9
OPTION 1 OF 3

F:\PROJECT\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT:MAP ID #9 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:45 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

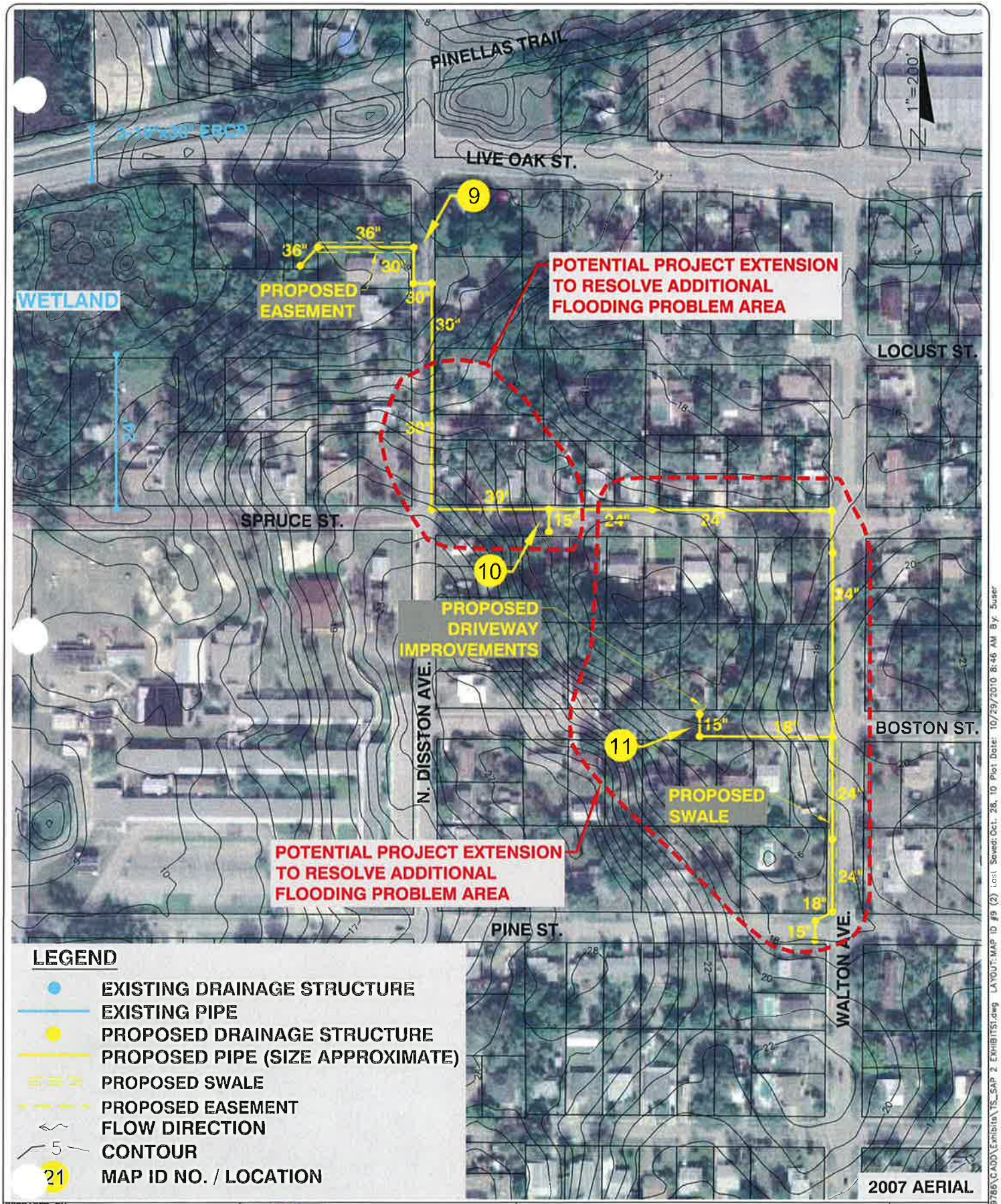
Preliminary Construction Cost Estimate

MAP ID NO. 9 (OPTION 1): DISSTON AVE. BETWEEN SPRUCE ST. & LIVE OAK ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,280.00	$4,280.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	452	LF	$1.00	$452.00
4	CLEARING & GRUBBING	0.105	AC	$8,140.00	$855.00
5	ROADWAY RECONSTRUCTION	1,008	SF	$3.75	$3,780.00
6	MANHOLE	1	EA	$4,200.00	$4,200.00
7	CURB INLET	3	EA	$4,500.00	$13,500.00
8	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	275	LF	$51.00	$14,025.00
10	CONCRETE CURB	70	LF	$15.00	$1,050.00
11	SIDEWALK CONCRETE	39	SY	$35.00	$1,365.00
12	PERFORMANCE TURF, SOD	31	SY	$2.00	$62.00

CONSTRUCTION SUBTOTAL	**$47,100.00**
25% CONTINGENCY	**$11,800.00**
CONSTRUCTION TOTAL	**$58,900.00**
SURVEY	**$2,900.00**
GEOTECHNICAL	**$1,800.00**
ENGINEERING	**$11,800.00**
GRAND TOTAL	**$75,400.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



F:\PROJECTS\5099785\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT:MAP ID #9 (2) Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:46 AM By: Suser

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
BETWEEN SPRUCE ST. & LIVE OAK ST.

MAP ID NO.
9
OPTION 2 OF 3

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 9 (OPTION 2): DISSTON AVE. BETWEEN SPRUCE ST. & LIVE OAK ST. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,720.00	$4,720.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	452	LF	$1.00	$452.00
4	CLEARING & GRUBBING	0.105	AC	$8,140.00	$855.00
5	ROADWAY RECONSTRUCTION	1,008	SF	$3.75	$3,780.00
6	MANHOLE	1	EA	$4,200.00	$4,200.00
7	CURB INLET	3	EA	$4,500.00	$13,500.00
8	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 25-36"	275	LF	$67.00	$18,425.00
10	CONCRETE CURB	70	LF	$15.00	$1,050.00
11	SIDEWALK CONCRETE	39	SY	$35.00	$1,365.00
12	PERFORMANCE TURF, SOD	31	SY	$2.00	$62.00

CONSTRUCTION SUBTOTAL	$51,900.00
25% CONTINGENCY	$13,000.00
CONSTRUCTION TOTAL	$64,900.00
SURVEY	$3,200.00
GEOTECHNICAL	$1,900.00
ENGINEERING	$11,700.00
GRAND TOTAL	$81,700.00

MAP ID NO. 10 (OPTION 2): SPRUCE ST. BETWEEN DISSTON AVE. & WALTON AVE. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$9,990.00	$9,990.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	563	LF	$1.00	$563.00
4	CLEARING & GRUBBING	0.160	AC	$8,140.00	$1,302.00
5	ROADWAY RECONSTRUCTION	6,924	SF	$3.75	$25,965.00
6	MANHOLE	1	EA	$4,200.00	$4,200.00
7	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	24	LF	$51.00	$1,224.00
9	PIPE CULVERT REINFORCED CONCRETE, 25-36"	353	LF	$67.00	$23,651.00
10	PIPE CULVERT REINFORCED CONCRETE, 25-36" (DEPTH >10')	200	LF	$87.00	$17,400.00
11	CONCRETE CURB	553	LF	$15.00	$8,295.00
12	SIDEWALK CONCRETE	307	SY	$35.00	$10,745.00
13	PERFORMANCE TURF, SOD	246	SY	$2.00	$492.00

CONSTRUCTION SUBTOTAL	$109,900.00
25% CONTINGENCY	$27,500.00
CONSTRUCTION TOTAL	$137,400.00
SURVEY	$6,900.00
GEOTECHNICAL	$4,100.00
ENGINEERING	$24,700.00
GRAND TOTAL	$173,100.00

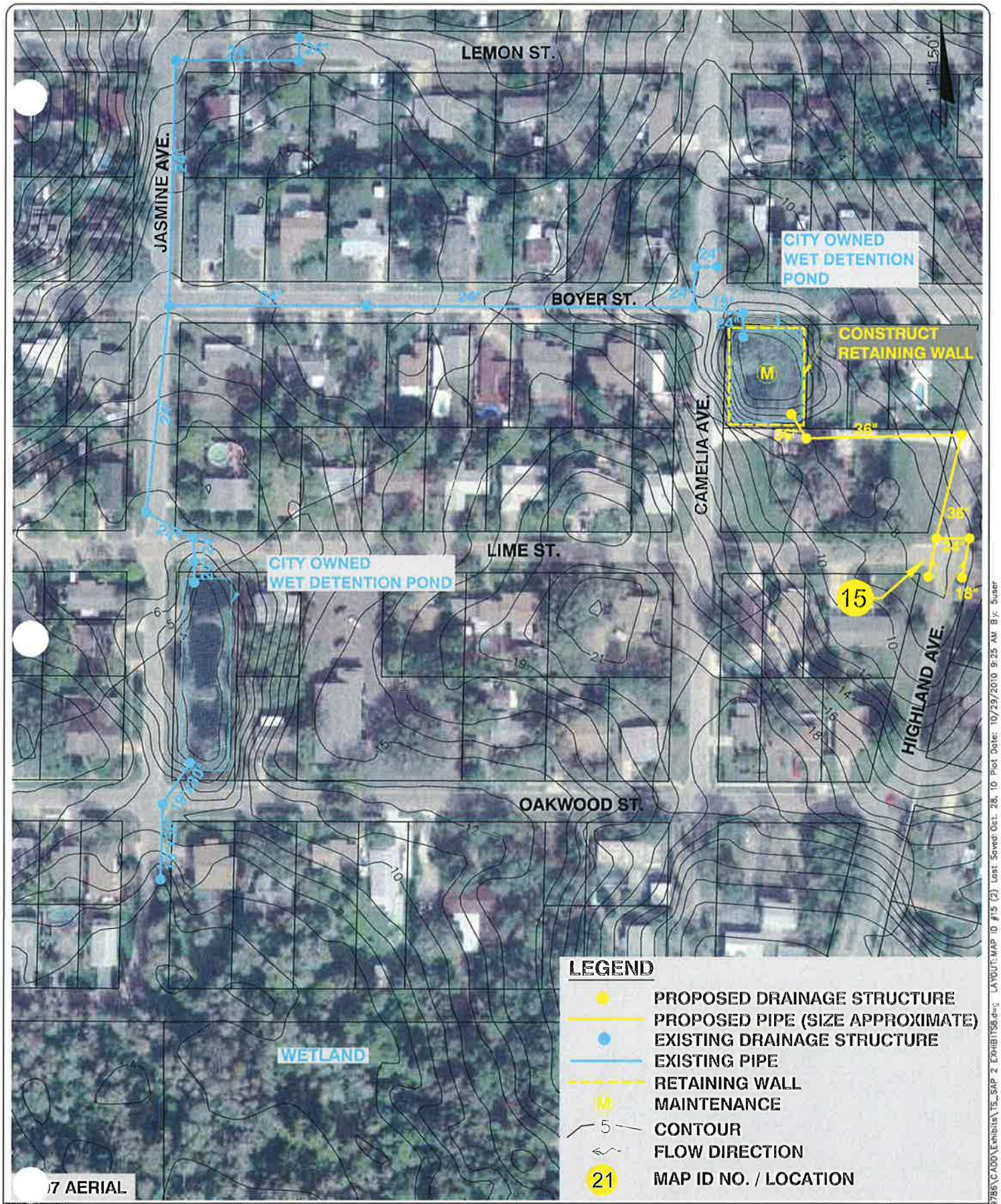
MAP ID NO. 11 (OPTION 2): BOSTON ST. BETWEEN DISSTON AVE. & WALTON AVE. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$20,530.00	$20,530.00
2	SYNTHETIC BALES	160	LF	$16.00	$2,560.00
3	STAKED SILT FENCE, TYPE III	1,331	LF	$1.00	$1,331.00
4	CLEARING & GRUBBING	0.381	AC	$8,140.00	$3,101.00
5	POND EXCAVATION	62	CY	$3.50	$217.00
6	ROADWAY RECONSTRUCTION	16,596	SF	$3.75	$62,235.00
7	MANHOLE	5	EA	$4,200.00	$21,000.00
8	DITCH BOTTOM INLET	5	EA	$2,500.00	$12,500.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	1,091	LF	$51.00	$55,641.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24" (DEPTH >10')	300	LF	$66.00	$19,800.00
11	SIDEWALK CONCRETE	736	SY	$35.00	$25,760.00
12	PERFORMANCE TURF, SOD	576	SY	$2.00	$1,152.00

CONSTRUCTION SUBTOTAL	$225,800.00
25% CONTINGENCY	$56,500.00
CONSTRUCTION TOTAL	$282,300.00
SURVEY	$14,100.00
GEOTECHNICAL	$8,500.00
ENGINEERING	$50,800.00
GRAND TOTAL	$355,700.00

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



7 AERIAL

PREPARED BY:
American
Consulting Engineers of Florida, LLC
253 Pine Ave, North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

HIGHLAND AVE. & VISTA PLACE

MAP ID NO.
15
OPTION 2 OF 2

F:\PROJECT\5099786\CADD\Exhibits\TS_SAP 2 EXHIBIT58.dwg LAYOUT:MAP ID #15 (2) Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:25 AM By: tuser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 15 (OPTION 2): HIGHLAND AVE. AND VISTA PLACE **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$14,440.00	$14,440.00
2	SYNTHETIC BALES	160	LF	$16.00	$2,560.00
3	STAKED SILT FENCE, TYPE III	930	LF	$1.00	$930.00
4	CLEARING & GRUBBING	0.240	AC	$8,140.00	$1,954.00
5	POND EXCAVATION	173	CY	$3.50	$606.00
6	ROADWAY RECONSTRUCTION	3,216	SF	$3.75	$12,060.00
7	MANHOLE	1	EA	$4,200.00	$4,200.00
8	DITCH BOTTOM INLET	5	EA	$2,500.00	$12,500.00
9	CONCRETE CLASS I, ENDWALLS	4.53	CY	$600.00	$2,718.00
10	CONCRETE CLASS I, RETAINING WALL	122	CY	$600.00	$73,200.00
11	PIPE CULVERT REINFORCED CONCRETE, 0-24"	138	LF	$51.00	$7,038.00
12	PIPE CULVERT REINFORCED CONCRETE, 25-36"	355	LF	$67.00	$23,785.00
13	PERFORMANCE TURF, SOD	403	SY	$2.00	$806.00
14	MISC. WET DETENTION POND MAINTENANCE	1	LS	$2,000.00	$2,000.00

CONSTRUCTION SUBTOTAL	**$158,800.00**
25% CONTINGENCY	**$39,700.00**
CONSTRUCTION TOTAL	**$198,500.00**
SURVEY	**$9,900.00**
GEOTECHNICAL	**$6,000.00**
ENGINEERING	**$35,700.00**
GRAND TOTAL	**$250,100.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

LEVIS AVE.
BETWEEN LIME ST. & OAKWOOD ST. AND LEVIS AVE. ALLEYWAY

MAP ID NO.
25
OPTION 1 OF 2

F:\PROJECT\50997865\CADD\Exhibits\TS_SAP 2 EXHIBIT52.dwg LAYOUT:MAP ID #25 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:59 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 25 (OPTION 1): LEVIS AVE. ALLEY **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$3,918.00	$3,918.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	798	LF	$1.00	$798.00
4	CLEARING & GRUBBING	0.385	AC	$8,140.00	$3,134.00
5	ROADWAY RECONSTRUCTION	2,356	SF	$3.75	$8,835.00
6	POND EXCAVATION	1,219	CY	$3.50	$4,267.00
7	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
8	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	214	LF	$51.00	$10,914.00
10	PERFORMANCE TURF, SOD	1,602	SY	$2.00	$3,204.00

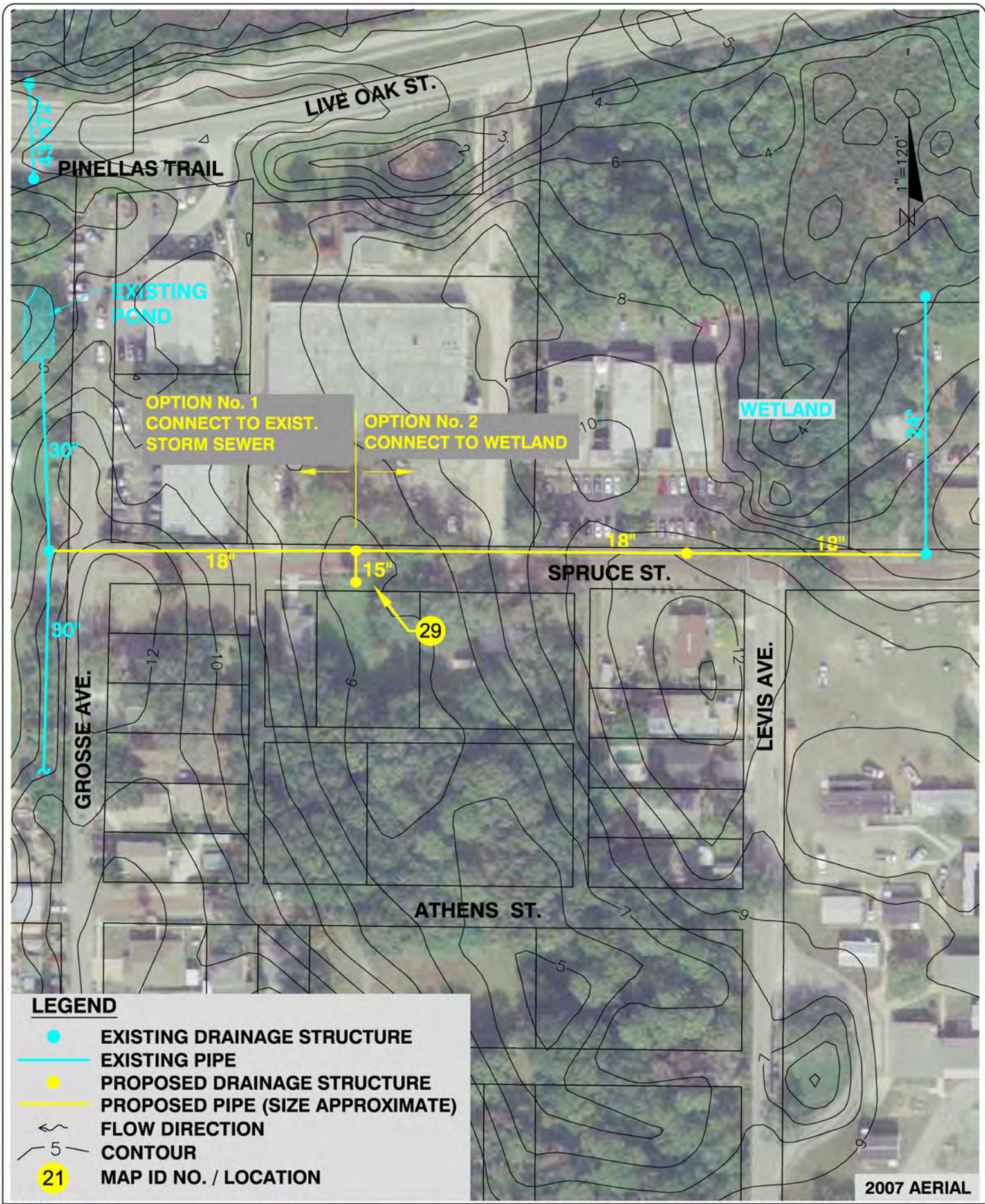
CONSTRUCTION SUBTOTAL	**$43,100.00**
25% CONTINGENCY	**$10,800.00**
CONSTRUCTION TOTAL	**$53,900.00**
SURVEY	**$2,700.00**
GEOTECHNICAL	**$1,600.00**
ENGINEERING	**$15,100.00**
GRAND TOTAL	**$73,300.00**

MAP ID NO. 20 (OPTION 1): LEVIS AVE. BETWEEN LIME ST. & OAKWOOD ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$1,861.00	$1,861.00
2	STAKED SILT FENCE, TYPE III	448	LF	$1.00	$448.00
3	CLEARING & GRUBBING	0.064	AC	$8,140.00	$521.00
4	ROADWAY RECONSTRUCTION	192	SF	$3.75	$720.00
5	MANHOLE	1	EA	$4,200.00	$4,200.00
6	PIPE CULVERT REINFORCED CONCRETE, 0-24"	232	LF	$51.00	$11,832.00
7	SIDEWALK CONCRETE	9	SY	$35.00	$315.00
8	PERFORMANCE TURF, SOD	288	SY	$2.00	$576.00

CONSTRUCTION SUBTOTAL	**$20,500.00**
25% CONTINGENCY	**$5,100.00**
CONSTRUCTION TOTAL	**$25,600.00**
SURVEY	**$1,300.00**
GEOTECHNICAL	**$800.00**
ENGINEERING	**$4,600.00**
GRAND TOTAL	**$32,300.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

SPRUCE ST.
BETWEEN LEVIS AVE. & GROSSE AVE.

MAP ID NO.
29
OPTION 1 & 2

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

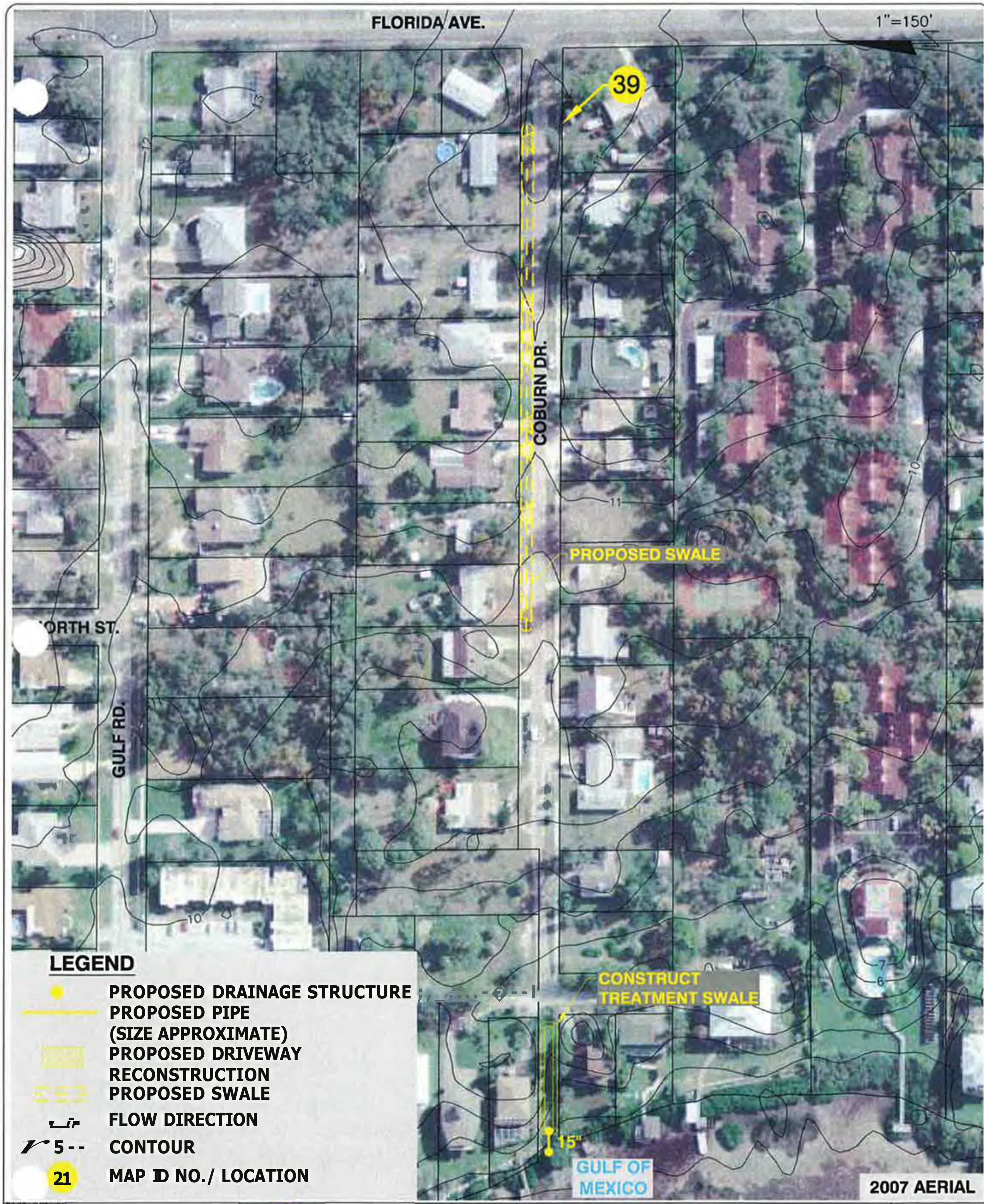
Preliminary Construction Cost Estimate

MAP ID NO. 29 (OPTION 1): SPRUCE ST. BETWEEN LEVIS AVE. & GROSSE AVE. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$2,598.00	$2,598.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	302	LF	$1.00	$302.00
4	CLEARING & GRUBBING	0.087	AC	$8,140.00	$708.00
5	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
6	PIPE CULVERT REINFORCED CONCRETE, 0-24"	316	LF	$51.00	$16,116.00
7	SIDEWALK CONCRETE	73	SY	$35.00	$2,555.00
8	PERFORMANCE TURF, SOD	136	SY	$2.00	$272.00

CONSTRUCTION SUBTOTAL	**$28,600.00**
25% CONTINGENCY	**$7,200.00**
CONSTRUCTION TOTAL	**$35,800.00**
SURVEY	**$1,800.00**
GEOTECHNICAL	**$1,100.00**
ENGINEERING	**$9,700.00**
GRAND TOTAL	**$48,400.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



F:\PROJECT\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS4.dwg LAYOUT: MAP ID #39 (2) Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:06 AM By: 5user

PREPARED BY: "f&lconourtlng Engineers Florida, LLC 210 Pine Ave, Unit A Oldsmar, FL 34677 Phone: (127) -499-5750 Fax: (727) 499-5751 Certificate of Authorization No. 9302		CITY OF TARPON SPRINGS PUBLIC SERVICES DEPARTMENT 324 E PINE STREET TARPON SPRINGS, FL 34689 (727) 942-5610	STORMWATER ACTION PLAN - PH II COBURN DR. 100' WEST OF FLORIDA AVE.

39
2 2

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

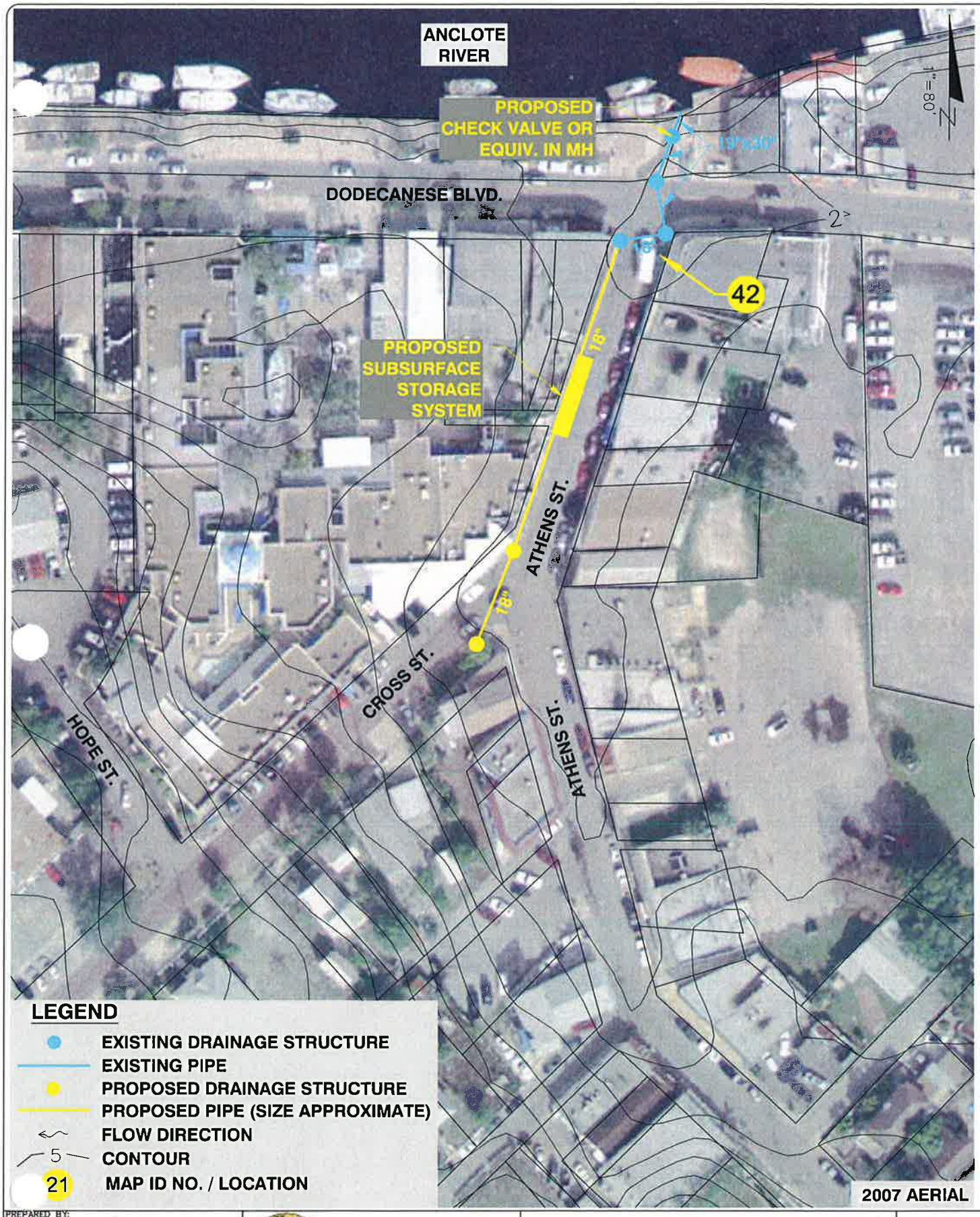
Preliminary Construction Cost Estimate

MAP ID NO. 39 (OPTION 2): COBURN DR. 100' WEST OF FLORIDA AVE. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS		$0.00
2	STAKED SILT FENCE, TYPE III	615	LF	$1.00	$615.00
3	CLEARING & GRUBBING	0.197	AC	$8,140.00	$1,604.00
4	REGULAR EXCAVATION	381	CY	$3.50	$1,334.00
5	DITCH BOTTOM INLET	1	EA	$2,500.00	$2,500.00
6	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	15	LF	$51.00	$765.00
8	SIDEWALK CONCRETE (DRIVEWAY REPLACEMENT)	171	SY	$35.00	$5,985.00
9	PERFORMANCE TURF, SOD	1,090	SY	$2.00	$2,180.00

CONSTRUCTION SUBTOTAL	**$17,000.00**
25% CONTINGENCY	**$4,300.00**
CONSTRUCTION TOTAL	**$21,300.00**
SURVEY	**$1,100.00**
GEOTECHNICAL	**$600.00**
ENGINEERING	**$11,900.00**
GRAND TOTAL	**$34,900.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition



PREPARED BY:
American Consulting Engineers of Florida, LLC
263 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

ATHENS ST. & DODECANESE BLVD.

MAP ID NO. 42
OPTION 1 OF 2

F:\PROJECT\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS7.dwg LAYOUT: MAP ID #42 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:19 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

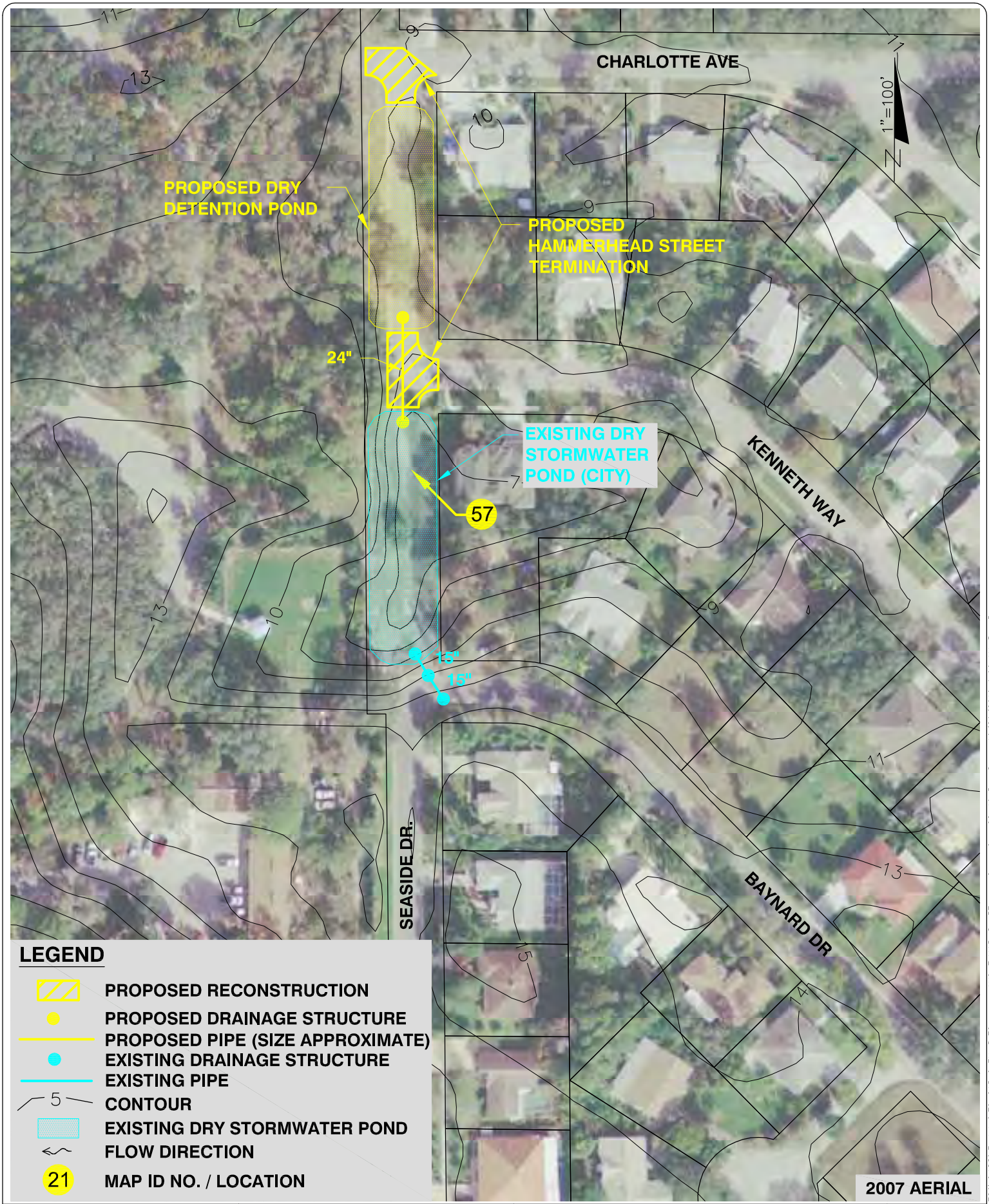
MAP ID NO. 42 (OPTION 1): ATHENS ST. & DODECANESE BLVD. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$5,880.00	$5,880.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	CLEARING & GRUBBING	0.091	AC	$8,140.00	$741.00
4	ROADWAY RECONSTRUCTION	3,960	SF	$3.75	$14,850.00
5	CURB INLET	2	EA	$4,500.00	$9,000.00
6	SUBSURFACE STORAGE SYSTEM	1.00	LS	$10,000.00	$10,000.00
7	TIDEFLEX STORMWATER VALVE*	1.00	EA	$2,500.00	$2,500.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	220	LF	$51.00	$11,220.00
9	CONCRETE CURB	275	LF	$15.00	$4,125.00
10	SIDEWALK CONCRETE	153	SY	$35.00	$5,355.00

*Tideflex technologies (www.tideflex.com)

CONSTRUCTION SUBTOTAL	**$64,700.00**
25% CONTINGENCY	**$16,200.00**
CONSTRUCTION TOTAL	**$80,900.00**
SURVEY	**$4,000.00**
GEOTECHNICAL	**$2,400.00**
ENGINEERING	**$17,800.00**
GRAND TOTAL	**$105,100.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American
Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

KENNETH WAY & SEASIDE DR.

MAP ID NO.
57
OPTION 1 OF 2

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS4.dwg LAYOUT: MAP ID #57 Last Saved Oct. 28, 10 Plot Date: 10/29/2010 9:06 AM By: Suser

Stantec

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 57 (OPTION 1): KENNETH WAY & SEASIDE DR. 09/04/2014

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$870.00	$870.00
2	SYNTHETIC BALES	32	LF	$16.00	$512.00
3	STAKED SILT FENCE, TYPE III	66	LF	$1.00	$66.00
4	CLEARING & GRUBBING	0.010	AC	$23,362.09	$234.00
5	DITCH BOTTOM INLET	1	EA	$2,862.52	$2,863.00
6	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	33	LF	$67.08	$2,214.00
8	PERFORMANCE TURF, SOD	44	SY	$3.13	$138.00

CONSTRUCTION SUBTOTAL	**$8,900.00**
25% CONTINGENCY	**$2,200.00**
CONSTRUCTION TOTAL	**$11,100.00**
SURVEY	**$600.00**
GEOTECHNICAL	**$300.00**
ENGINEERING	**$9,300.00**
GRAND TOTAL	**$21,300.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

EAST TARPON AVENUE

EAST TARPON AVENUE

SOUTH WALTON AVENUE

SOUTH HUEY AVENUE

US HWY 19

US HWY 19

EAST LIME STREET

EAST LIME STREET

M.L.K. JR. DR.

MARTIN LUTHER KING JR. DR.

PROPOSED DRAINAGE SWALE

PROPOSED DRY DETENTION POND

PROPOSED 24" M.E.S.

PROPOSED LINED WET - POND

PROPOSED 24" M.E.S.

REMOVE PORTION OF EXIST. 24" RCP

PROPOSED CONTROL STRUCTURE

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

107

107

0 100 200

2018 AERIAL

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- BASIN DIVIDE
- FLOW DIRECTION
- 5 CONTOUR
- 21 MAP ID NO. / LOCATION

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

LIME STREET / HUEY AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO.

107

OPTION 1 OF 2

James Greene

8/26/2020 9:50:23 PM J:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\107_Lime St_Huey Ave\Exhibit-A_Lime-Huey_20200519.dwg

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

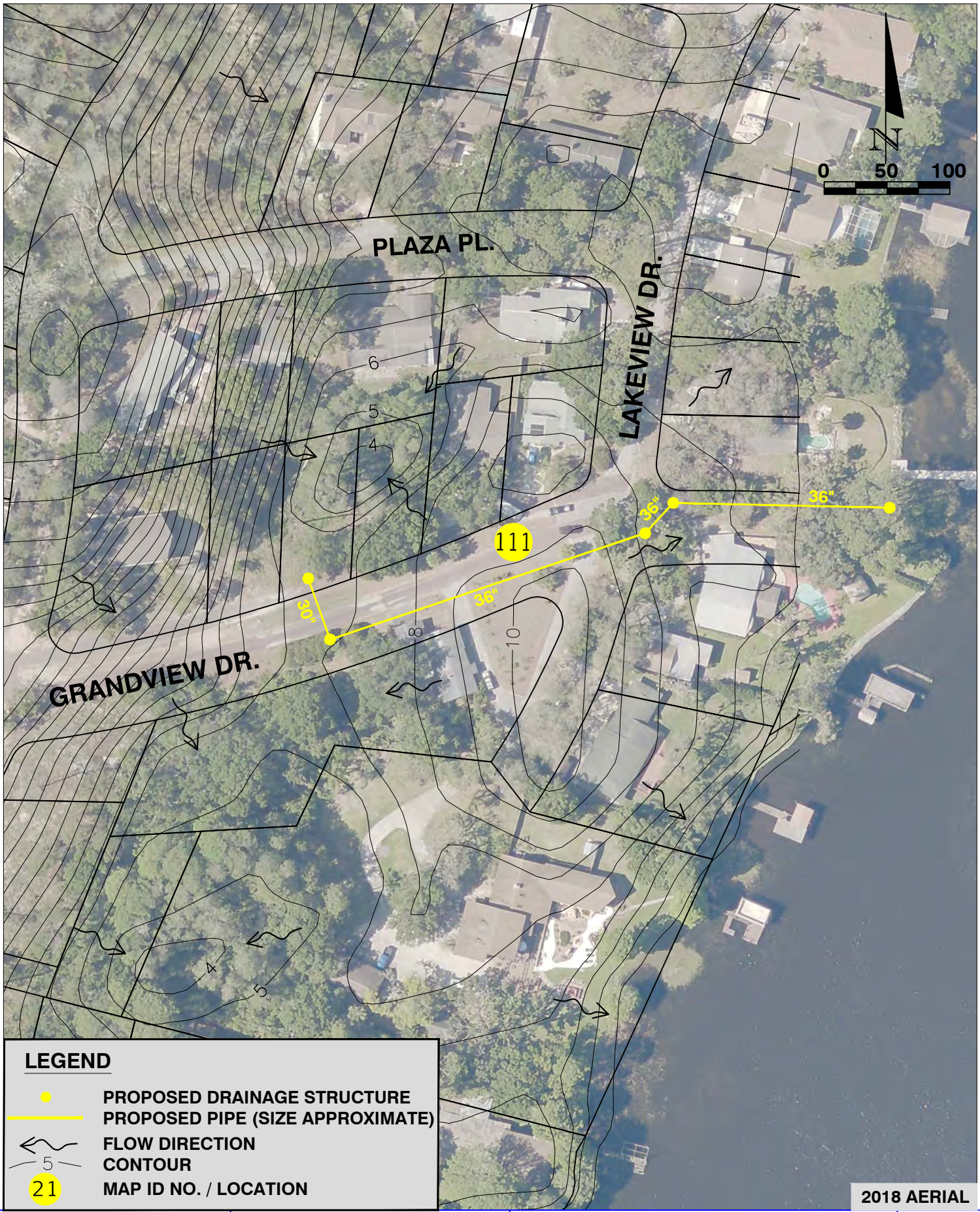
MAP ID NO. 107: Huey Avenue and Lime Street - OPTION-1 **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION	4	EA	$114.00	$456.00
2	STAKED SILT FENCE, TYPE III	1,700	LF	$1.50	$2,550.00
3	CLEARING & GRUBBING	0.520	AC	$23,362.09	$12,148.00
4	REGULAR EXCAVATION (INCLUDES OVEREXCAVATION FOR POND LINER)	7,500	CY	$8.34	$62,550.00
5	EMBANKMENT (INCLUDES 2-FT FILL OVER LINER)	1,950	CY	$12.26	$23,907.00
6	ROADWAY RECONSTRUCTION	1,380	SF	$8.75	$12,075.00
7	MANHOLE	1	EA	$4,498.00	$4,498.00
8	DITCH BOTTOM INLET	1	EA	$5,181.00	$5,181.00
9	CURB INLET	7	EA	$5,265.00	$36,855.00
10	MITERED END SECTION, 24"	3	EA	$2,000.00	$6,000.00
11	CONTROL STRUCTURE	1	EA	$5,200.00	$5,200.00
12	PIPE CULVERT REINFORCED CONCRETE, 0-24"	900	LF	$111.00	$99,900.00
13	PVC POND LINER	2,500	SY	$10.00	$25,000.00
14	SIDEWALK CONCRETE	280	SY	$45.66	$12,785.00
15	PERFORMANCE TURF, SOD	3,900	SY	$3.13	$12,207.00

CONSTRUCTION SUBTOTAL	**$321,300.00**
MOBILIZATION	**$32,130.00**
25% CONTINGENCY	**$80,300.00**
CONSTRUCTION TOTAL	**$433,730.00**
SURVEY	**$21,681.50**
GEOTECHNICAL	**$13,000.00**
ENGINEERING	**$54,069.90**
GRAND TOTAL	**$522,481.40**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



LEGEND

- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- CONTOUR
- MAP ID NO. / LOCATION

2018 AERIAL

PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

GRANDVIEW DRIVE DRAINAGE IMPROVEMENTS

MAP ID NO.
111
OPTION 1 OF 2

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\111_Grandview Drive\EXHIBIT-A-Grandview-Lakeview_20200826.dwg LAYOUT:Opt 1 of 2 Last Saved:Aug. 28, 20 Plot Date: 8/28/2020 1:06 PM By: James greene

LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING DRAINAGE PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE
- PARCEL LINE
- DRAINAGE BASIN LIMITS
- FLOW DIRECTION
- 5 EXISTING CONTOUR

GARDEN AVE.

POINSETTIA AVE.

FORDE AVE.

TALLAHASSEE DR.

OLEANDER DR.

PENINSULA AVE.

RIVERSIDE DR.

GLADES AVE.

SUNSET LAGOON

12"x18"

Note: Option-2 includes a check valve to be installed at the proposed 48" outfall pipe

FDOT AERIAL DATE: 2020

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

STORMWATER ACTION PLAN
PHASE II
OLEANDER & PENINSULA

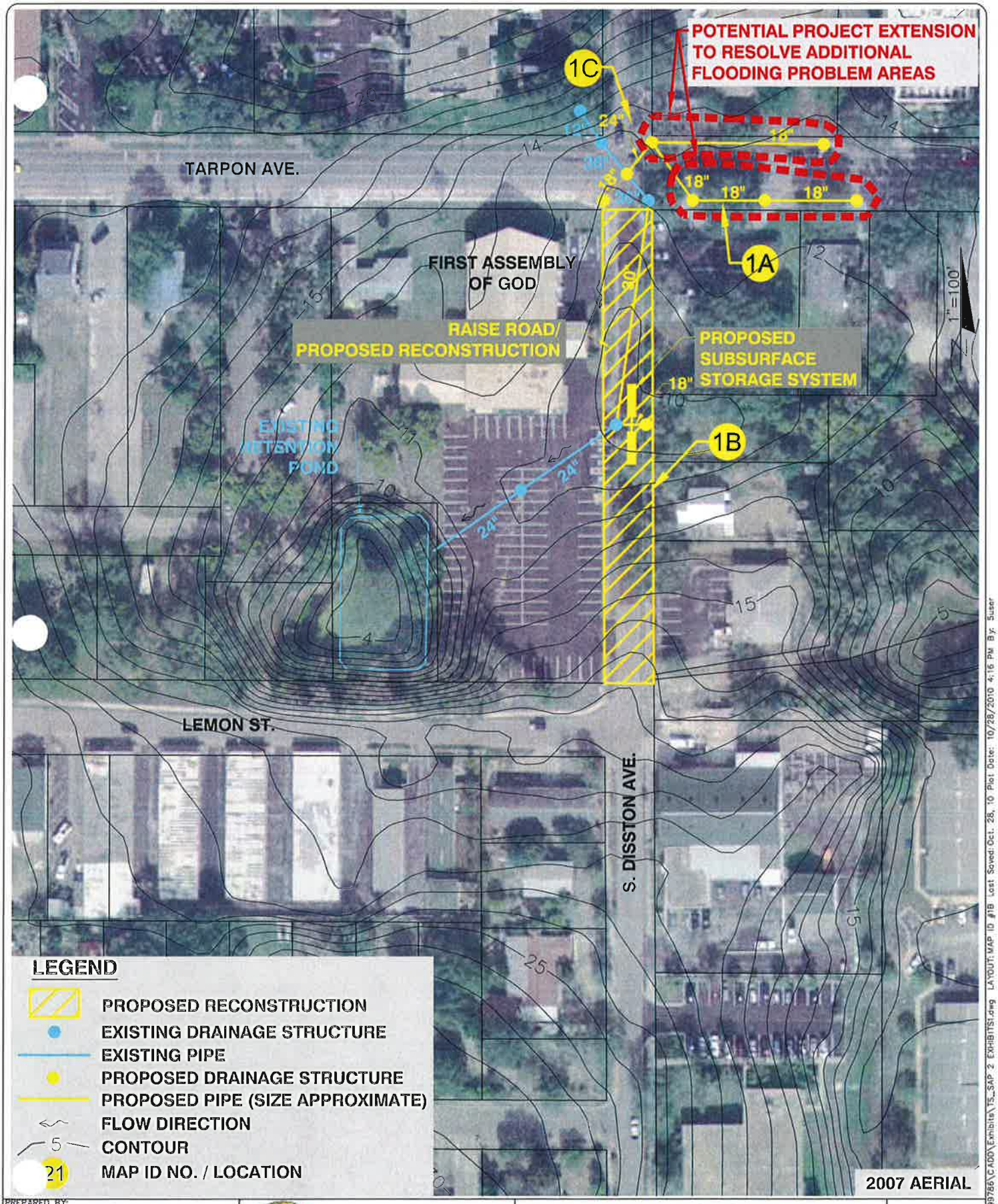
MAP ID NO. 112

OPTION 2 OF 2

James Greene 12/16/2021 10:30:22 AM F:\Projects\TARPON_STORM_MASTER\4_SAP Update\2021_04\CADD\Exhibit-A_Oleander_Peninsula_20211206.dwg

Appendix D

Completed/Constructed Projects



F:\PROJECT\50997866\CADD\Exhibits\TS_SAP 2 EXHIBIT(S).dwg LAYOUT: MAP ID #1B Last Saved: Oct. 28, 10 Plot Date: 10/28/2010 4:16 PM By: Suser

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave., North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
SOUTH OF TARPON AVE.

MAP ID NO.
1B
OPTION 1 OF 1

Map ID No. 1B - Disston Avenue (south of Tarpon Drive)

Problem:
Site is located in a depression in a closed drainage basin. Stormwater infrastructure is in place with curb inlets collecting and discharging to the City-owned stormwater pond. The City-owned stormwater pond has no positive outfall. There is significant flooding along Disston Ave. which occurs frequently and causes the road to be impassable. The flooding appears to be caused by the pond being undersized for the volume of runoff it receives and having no positive outfall or the elevation of Disston Ave. is too low.

Conceptual Solution(s):

Option 1
To alleviate the flooding occurring along Disston Ave. based on the runoff generated from the 2-year, 24-hour storm event this conceptual solution would require raising the road to elevation 11.10 feet (NAVD 88 - Profile Grade Line) as indicated in the Tarpon Ave./Disston Ave. SMF Evaluation that American provided to the City on January 28th, 2010. This would require elevating the roadway a maximum of 2 feet at the roadway low point. Additional flood storage volume may be required to be added below the roadway in a pipe/vault system. In addition to raising the road this conceptual solution would involve installing new inlets at the Tarpon Ave. and Disston Ave. intersection to resolve flood problem area Map ID No. 1A - Tarpon Avenue (at Disston Ave. within Tarpon Ave. ROW) (see above for description of problem). This conceptual solution will also address the flooding occurring at the northwest corner of the Tarpon Ave. and Disston Ave. intersection, Map ID No. 1C, which was identified during a previous review of *Drainage flooding Complaint Inventory Sheet*, dated November 10, 2009 (Drainage Report) prepared by the Florida Department of Transportation (FDOT). New inlets are also proposed for the sag location along Disston Ave. and the new storm drain system would connect into the existing 24-inch RCP outfall pipe that discharges into the existing stormwater pond.

Stantec

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 1B: DISSTON AVE. SOUTH OF TARPON AVE. 09/04/2014

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$12,760.00	$12,760.00
2	SYNTHETIC BALES	32	LF	$16.00	$512.00
3	STAKED SILT FENCE, TYPE III	770	LF	$1.00	$770.00
4	CLEARING & GRUBBING	0.353	AC	$23,362.09	$8,247.00
5	EMBANKMENT	570	CY	$4.88	$2,782.00
6	ROADWAY RECONSTRUCTION	9,240	SF	$3.75	$34,650.00
7	MANHOLE	1	EA	$4,200.00	$4,200.00
8	CURB INLET	1	EA	$5,706.33	$5,706.00
9	SUBSURFACE STORAGE SYSTEM	1	LS	$10,000.00	$10,000.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24"	30	LF	$67.08	$2,012.00
11	PIPE CULVERT REINFORCED CONCRETE, 25-36"	175	LF	$138.14	$24,175.00
12	CONCRETE CURB	770	LF	$16.70	$12,859.00
13	SIDEWALK CONCRETE	213	SY	$40.71	$8,671.00
14	PERFORMANCE TURF, SOD	171	SY	$3.13	$535.00

CONSTRUCTION SUBTOTAL	**$127,900.00**
25% CONTINGENCY	**$32,000.00**
CONSTRUCTION TOTAL	**$159,900.00**
SURVEY	**$8,000.00**
GEOTECHNICAL	**$4,800.00**
ENGINEERING	**$28,800.00**
GRAND TOTAL	**$201,500.00**

MAP ID NO. 1C: TARPON AVE. AT DISSTON AVE. WITHIN TARPON AVE. ROW 09/04/2014

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,170.00	$4,170.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	135	LF	$1.00	$135.00
4	CLEARING & GRUBBING	0.045	AC	$23,362.09	$1,051.00
5	ROADWAY RECONSTRUCTION	1,980	SF	$3.75	$7,425.00
6	CURB INLET	2	EA	$5,706.33	$11,413.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24",	165	LF	$67.08	$11,068.00
8	CONCRETE CURB	135	LF	$16.70	$2,255.00
9	SIDEWALK CONCRETE	75	SY	$40.71	$3,053.00
10	PERFORMANCE TURF, SOD	60	SY	$3.13	$188.00

CONSTRUCTION SUBTOTAL	**$41,800.00**
25% CONTINGENCY	**$10,500.00**
CONSTRUCTION TOTAL	**$52,300.00**
SURVEY	**$2,600.00**
GEOTECHNICAL	**$1,600.00**
ENGINEERING	**$9,400.00**
GRAND TOTAL	**$65,900.00**

MAP ID NO. 1A: TARPON AVE. AT DISSTON AVE. WITHIN TARPON AVE. ROW 09/04/2014

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,560.00	$4,560.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	120	LF	$1.00	$120.00
4	CLEARING & GRUBBING	0.047	AC	$23,362.09	$1,098.00
5	ROADWAY RECONSTRUCTION	2,040	SF	$3.75	$7,650.00
6	CURB INLET	3	EA	$5,706.33	$17,119.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24",	170	LF	$67.08	$11,404.00
8	CONCRETE CURB	120	LF	$16.70	$2,004.00
9	PERFORMANCE TURF, SOD	80	SY	$3.13	$250.00

CONSTRUCTION SUBTOTAL	**$45,700.00**
25% CONTINGENCY	**$11,400.00**
CONSTRUCTION TOTAL	**$57,100.00**
SURVEY	**$2,900.00**
GEOTECHNICAL	**$1,700.00**
ENGINEERING	**$10,300.00**
GRAND TOTAL	**$72,000.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

WALTON AVE.
BETWEEN TARPON AVE. & LIME ST.

MAP ID NO.
3
OPTION 2 OF 2

F:\PROJECT\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #3 OP 2 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:38 AM By: Suser

Map ID No. 3 - Walton Ave. between Tarpon Ave. & Lime St.

Problem:
Flooding is occurring on Walton Ave. adjacent to a City-owned stormwater pond. Dames and Moore Master Drainage Study Phase I and II noted that the City-owned pond may be undersized.

Conceptual Solution(s):

Option 1
This conceptual solution would involve expanding the existing pond to the north into the vacant lot. The expansion could provide flooding relief for Walton Ave. in addition to providing additional water quality treatment. Further analysis would be required to determine whether the additional volume provided by this expansion would provide flooding relief for Walton Ave. This expansion would require a property acquisition from the First National Bank.

Option 2
This conceptual solution would involve expanding the existing pond to the east into the existing right-of-way for Lemon St. The expansion could provide flooding relief for Walton Ave. in addition to providing additional water quality treatment. Further analysis would be required to determine whether the additional volume provided by this expansion would provide flooding relief for Walton Ave. This expansion would not require property acquisition.

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

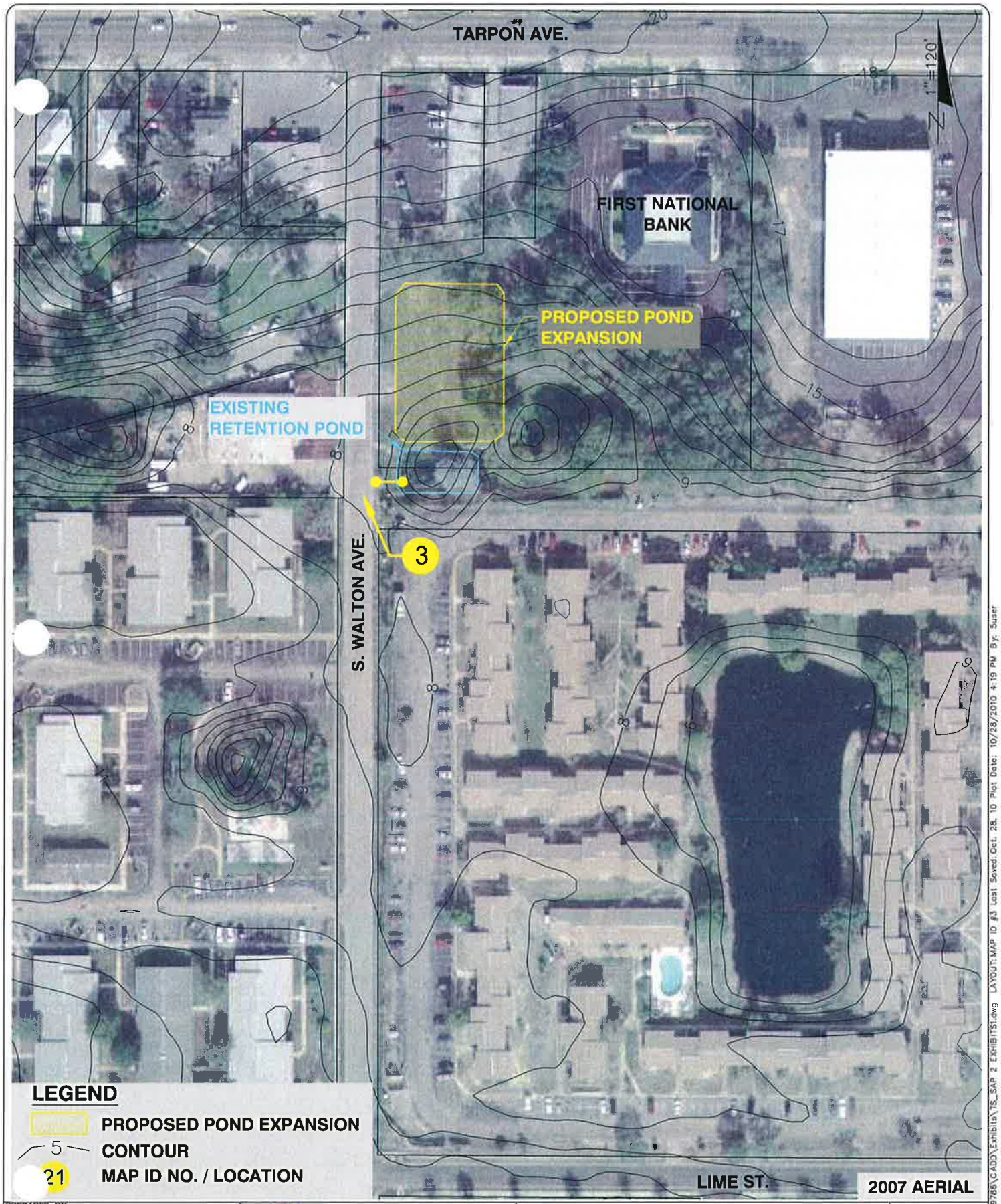
Preliminary Construction Cost Estimate

MAP ID NO. 3 (OPTION 2): WALTON AVE. BETWEEN TARPON AVE. & LIME ST. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$5,122.00	$5,122.00
2	STAKED SILT FENCE, TYPE III	1,121	LF	$1.00	$1,121.00
3	CLEARING & GRUBBING	0.592	AC	$8,140.00	$4,819.00
4	POND EXCAVATION	3,818	CY	$3.50	$13,363.00
5	CURB INLET	1	EA	$4,500.00	$4,500.00
6	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
7	PIPE CULVERT REINFORCED CONCRETE, 25-36"	25	LF	$67.00	$1,675.00
8	FENCING, TYPE B	1,068	LF	$15.00	$16,020.00
9	FENCE GATE, TYPE B	1	EA	$2,000.00	$2,000.00
10	PERFORMANCE TURF, SOD	2,863	SY	$2.00	$5,726.00

CONSTRUCTION SUBTOTAL	**$56,300.00**
25% CONTINGENCY	**$14,100.00**
CONSTRUCTION TOTAL	**$70,400.00**
SURVEY	**$3,500.00**
GEOTECHNICAL	**$2,100.00**
ENGINEERING	**$27,000.00**
GRAND TOTAL	**$103,000.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

WALTON AVE.
BETWEEN TARPON AVE. & LIME ST.

MAP ID NO.
3
OPTION 1 OF 2

F:\PROJECTS\5099785\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #3 Last Saved: Oct. 28, 10 Plot Date: 10/28/2010 4:19 PM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 3 (OPTION 1): WALTON AVE. BETWEEN TARPON AVE. & LIME ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$1,906.00	$1,906.00
2	STAKED SILT FENCE, TYPE III	439	LF	$1.00	$439.00
3	CLEARING & GRUBBING	0.295	AC	$8,140.00	$2,401.00
4	POND EXCAVATION	3,818	CY	$3.50	$13,363.00
5	PERFORMANCE TURF, SOD	1,427	SY	$2.00	$2,854.00

CONSTRUCTION SUBTOTAL	**$21,000.00**
25% CONTINGENCY	**$5,300.00**
CONSTRUCTION TOTAL	**$26,300.00**
SURVEY	**$1,300.00**
GEOTECHNICAL	**$1,000.00**
ENGINEERING	**$11,900.00**
GRAND TOTAL	**$40,500.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

OUTFALL AT PINELLAS TRAIL & SPRUCE ST.

MAP ID NO. 7
OPTION 1 OF 1

F:\PROJECTS\50997861\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #7 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:42 AM By: Suser

Map ID No. 7 - Outfall ditch located on the northwest side of the Pinellas Trail across from Spruce St. and Safford Avenue.

Problem:
This outfall ditch serves the stormwater collection systems on Spruce St., Safford Ave., Athens St., Pine St., US Alt. 19, and W. Park St. There are 4 flooding areas that discharge to this outfall, Map ID No. 8 – US Alt. 19 & Spruce St., Map ID No. 18 – Hibiscus St. & Park St., Map ID No. 26 – Tarpon Ave. and Safford Ave., and Map ID No. 27 – Pine St. and Safford Ave. The outfall ditch has a large amount of non-native vegetation, debris, and silt.

Conceptual Solution(s):

Option 1
This conceptual solution would involve removing non-native vegetation and debris from the existing outfall ditch. Re-grading the ditch banks and widening the ditch bottom would improve flow conditions through the ditch to the 2 – 5' X 10' box culverts under Live Oak St. and into the Anclote River.

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

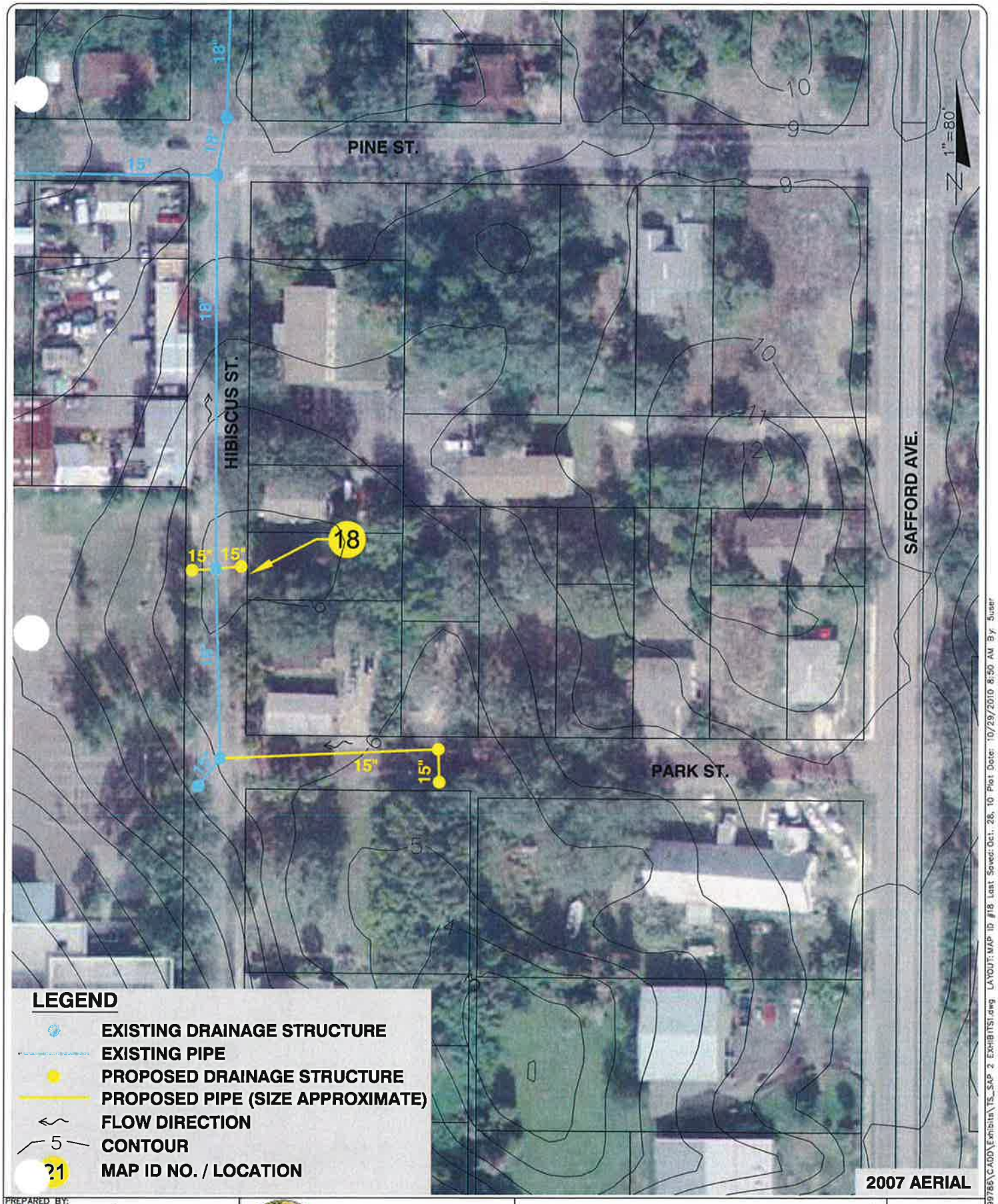
Preliminary Construction Cost Estimate

MAP ID NO. 7 (OPTION 1): OUTFALL AT PINELLAS TRAIL & SPRUCE ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$914.00	$914.00
2	STAKED SILT FENCE, TYPE III	1,280	LF	$1.00	$1,280.00
3	CLEARING & GRUBBING	0.441	AC	$8,140.00	$3,590.00
4	PERFORMANCE TURF, SOD	2,133	SY	$2.00	$4,266.00

CONSTRUCTION SUBTOTAL	**$10,100.00**
25% CONTINGENCY	**$2,500.00**
CONSTRUCTION TOTAL	**$12,600.00**
SURVEY	**$1,000.00**
ENGINEERING	**$10,000.00**
GRAND TOTAL	**$23,600.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

HIBISCUS ST. AND PARK ST.

MAP ID NO.
18
OPTION 1 OF 1

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #18 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:50 AM By: Suser

Map ID No. 18 - Hibiscus St. & Park St.

Problem:
According to the Dames and Moore Master Drainage Study Phase II this intersection is experiencing severe street and yard flooding. Low point is located just north of the Park St. intersection on Hibiscus St. The infrastructure at this intersection collects and conveys the runoff to the north to Athens St. where according to the Dames and Moore Master Drainage Study Phase I there is a crushed 18-inch clay pipe. Flooding at this intersection could be a result of or combination of the following: the crushed 18-inch clay pipe, inadequate inlets at the intersection, ineffective flow through the outfall ditch (Map ID No. 7) at the Pinellas Trail, and high tides at the Anclote River.

Conceptual Solution(s):

Option 1
Prior to any design an inspection of the existing downstream system is suggested to identify any crushed pipes or severe blockage of the storm sewer system. If there are obstructions these would require repair or replacement. Replacing the two existing inlets located on Hibiscus St. just north of the intersection of Hibiscus St. and Park St. is recommended to provide higher inlet capacity to assist in alleviating the flooding occurring at this location. According to City staff the 15-inch culvert located along Park St. was plugged for installation of a water main. Two inlets with a storm sewer conveyance system tying into the existing storm drain system at the intersection of Hibiscus St. and Park St. is also suggested to assist in alleviating the flooding occurring at this location. The downstream capacity of the existing storm sewer system may also need to be analyzed to ensure no additional improvements are required.

Additional Notes (Map ID No. 18):
Inadequate discharge through the outfall ditch (Map ID No. 7) along the Pinellas Trail in combination with tidal influences from the Anclote River could also be impacting the conveyance ability and capacity of this existing system. A more detailed analysis of this existing system is recommended.

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

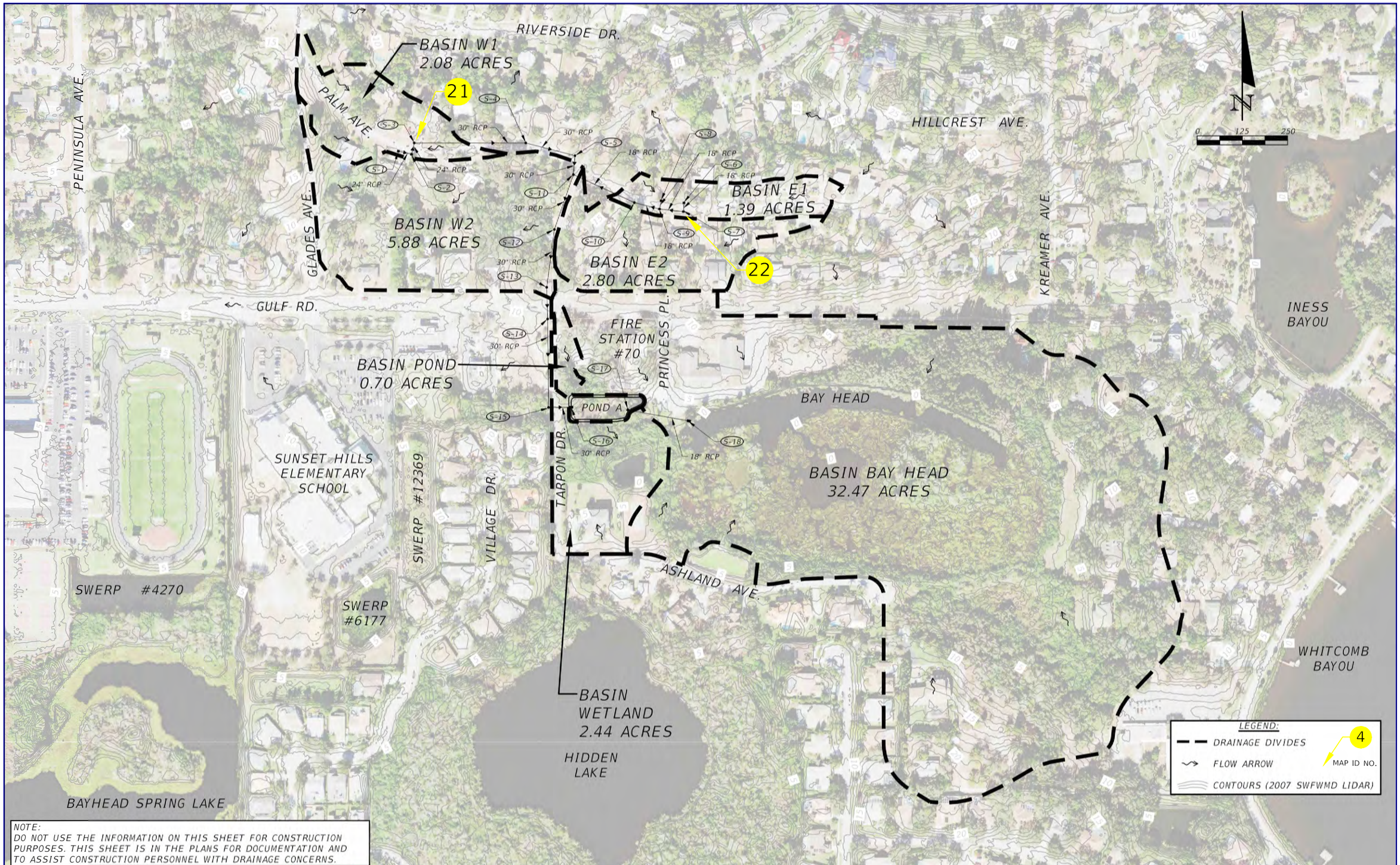
Preliminary Construction Cost Estimate

MAP ID NO. 18: HIBISCUS ST. AND PARK ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$3,450.00	$3,450.00
2	SYNTHETIC BALES	128	LF	$16.00	$2,048.00
3	STAKED SILT FENCE, TYPE III	178	LF	$1.00	$178.00
4	CLEARING & GRUBBING	0.051	AC	$8,140.00	$415.00
5	ROADWAY RECONSTRUCTION	2,232	SF	$3.75	$8,370.00
6	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
7	CURB INLET	2	EA	$4,500.00	$9,000.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	186	LF	$51.00	$9,486.00

CONSTRUCTION SUBTOTAL	**$37,900.00**
25% CONTINGENCY	**$9,500.00**
CONSTRUCTION TOTAL	**$47,400.00**
SURVEY	**$2,400.00**
GEOTECHNICAL	**$1,400.00**
ENGINEERING	**$10,000.00**
GRAND TOTAL	**$61,200.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



NOTE:
DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. THIS SHEET IS IN THE PLANS FOR DOCUMENTATION AND TO ASSIST CONSTRUCTION PERSONNEL WITH DRAINAGE CONCERNS.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

BURGESS & NIPLE
10006 N. DALE MABRY HWY., SUITE 201
CERTIFICATE OF AUTHORIZATION NO. 8230
ENGINEER OF RECORD:
BRYAN A. ANDERSON, P.E. NO. 64617

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL
34689
(727) 942-5610

PALM AVENUE DRAINAGE IMPROVEMENTS

MAP ID NO.
21
OPTION 1 OF 1

James Greene 8/31/2020 4:10:48 PM F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\21_Palm\Palm_20200831.dwg

Map ID No. 22 - Palm Ave. between Tarpon Dr. and Gulf Rd.

Problem:
There is a low point along Palm Ave. with no stormwater infrastructure. Street and private property flooding is occurring.

Conceptual Solution(s):

Option 1
This conceptual solution would require installing two ditch bottom inlets within the right-of-way of Palm Ave. at the low point in the road (adjacent to private residence at 712 Palm Ave.). This proposed system would extend west along Palm Ave. and cross under Tarpon Dr. After crossing under Tarpon Dr. the system would turn south to Gulf Rd. where it would then turn to the west and connect into an existing storm sewer system along Gulf Rd. New inlets and pipe would replace the existing 6-inch underdrain system currently serving this portion of Gulf Rd. and adjacent offsite area. The existing stormwater system on Gulf Rd. would require an analysis to determine whether or not the increased flow will require further downstream modifications to the existing system.

The proposed system along Tarpon Dr. and Gulf Rd. could be sized to provide flooding relief to existing stormwater focus area Map ID No. 21 - Palm Ave. between Tarpon Dr. and Glades Ave. A future extension along Palm Ave. from this trunk line on Tarpon Dr. could be constructed to resolve the flooding issue at this location. Again, the existing storm drain system on Gulf Rd. would require an analysis to determine whether or not the increased flow will require further downstream modifications to the existing system.

Option 2
This conceptual solution would require installing two ditch bottom inlets within the right-of-way of Palm Ave. at the low point in the road (adjacent to private residence at 712 Palm Ave.). This proposed system would extend west along Palm Ave. and to Tarpon Dr. At Tarpon Dr. the system would turn south and run along the east side of Tarpon Dr. and cross under Gulf Rd. where it would continue south and discharge into a proposed wet retention stormwater pond. Property acquisition would be required for the proposed wet retention stormwater pond. The proposed pond could provide flooding relief in addition to water quality treatment. The proposed system along Tarpon Dr. could be sized to provide flooding relief to existing stormwater focus area Map ID No. 21 – Palm Ave. between Tarpon Dr. and Glades Ave. A future extension along Palm Ave. from this trunk line along Tarpon Dr. could be constructed to resolve the flooding issue at this location.

2020 Q1 Update
The drainage problems identified above in Map ID No. 21 – Palm Ave. between Tarpon Dr. and Glades Ave. and Map ID No. 22 – Palm Avenue between Tarpon Drive and Gulf Rd. are to be resolved by the City's Palm Avenue Drainage Improvements project currently under construction with an anticipated completion date of Fall 2020.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 22 (OPTION 2): PALM AVE. BETWEEN TARPON DR. & GULF RD. **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	INLET PROTECTION SYSTEM	4	EA	$114.00	$456.00
2	STAKED SILT FENCE, TYPE III	1,598	LF	$1.50	$2,397.00
3	CLEARING & GRUBBING	0.791	AC	$23,362.09	$18,479.00
4	POND EXCAVATION	3,377	CY	$8.34	$28,164.00
5	ROADWAY RECONSTRUCTION	10,464	SF	$8.75	$91,560.00
6	MANHOLE	5	EA	$4,498.00	$22,490.00
7	DITCH BOTTOM INLET	3	EA	$3,417.00	$10,251.00
8	MITERED END SECTION	2	EA	$2,000.00	$4,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	270	LF	$111.00	$29,970.00
10	PIPE CULVERT REINFORCED CONCRETE, 25-36"	701	LF	$153.87	$107,863.00
11	SIDEWALK CONCRETE	80	SY	$45.66	$3,653.00
12	PERFORMANCE TURF, SOD	3,180	SY	$3.13	$9,953.00
				MAP ID NO. 22 (OPTION 2) CONSTRUCTION SUBTOTAL	**$329,236.00**

MAP ID NO. 21 (OPTION 2): PALM AVE. BETWEEN TARPON DR. & GLADES AVE. **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	STAKED SILT FENCE, TYPE III	500	LF	$1.50	$750.00
2	CLEARING & GRUBBING	0.152	AC	$23,362.09	$3,551.00
3	ROADWAY RECONSTRUCTION	6,624	SF	$8.75	$57,960.00
4	MANHOLE	2	EA	$4,498.00	$8,996.00
5	DITCH BOTTOM INLET	2	EA	$3,417.00	$6,834.00
6	PIPE CULVERT REINFORCED CONCRETE, 0-24"	552	LF	$111.00	$61,272.00
7	SIDEWALK CONCRETE	64	SY	$45.66	$2,922.00
8	PERFORMANCE TURF, SOD	333	SY	$3.13	$1,042.00
				MAP ID NO. 21 (OPTION 2) CONSTRUCTION SUBTOTAL	**$143,327.00**

CONSTRUCTION SUBTOTAL	**$472,563.00**
MOBILIZATION	**$28,354.00**
25% CONTINGENCY	**$118,140.75**
CONSTRUCTION TOTAL	**$619,058**
SURVEY	**$21,668.00**
GEOTECHNICAL	**$12,382.00**
ENGINEERING	**$49,525.00**
ROW	**$350,000.00**
GRAND TOTAL	**$1,052,633**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2019 to 02/29/2020.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
321 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

PALM AVE. BETWEEN TARPON DR. & GULF RD.

MAP ID NO. 22
OPTION 1 OF 2

F:\PROJECT\50997861\CADD\Exhibits\TS_SAP 2 EXHIBITS3.dwg LAYOUT:MAP ID #22 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:01 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 22 (OPTION 1): PALM AVE. BETWEEN TARPON DR. & GULF RD. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$15,650.00	$15,650.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	1,157	LF	$1.00	$1,157.00
4	CLEARING & GRUBBING	0.319	AC	$8,140.00	$2,597.00
5	ROADWAY RECONSTRUCTION	13,884	SF	$3.75	$52,065.00
6	MANHOLE	4	EA	$4,200.00	$16,800.00
7	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	351	LF	$51.00	$17,901.00
10	PIPE CULVERT REINFORCED CONCRETE, 25-36"	782	LF	$67.00	$52,394.00
11	PIPE CULVERT REINFORCED CONCRETE, 25-36" (DEPTH >10')	24	LF	$87.00	$2,088.00
12	SIDEWALK CONCRETE	112	SY	$35.00	$3,920.00
13	PERFORMANCE TURF, SOD	771	SY	$2.00	$1,542.00

CONSTRUCTION SUBTOTAL	**$172,100.00**
25% CONTINGENCY	**$43,000.00**
CONSTRUCTION TOTAL	**$215,100.00**
SURVEY	**$10,800.00**
GEOTECHNICAL	**$6,500.00**
ENGINEERING	**$38,700.00**
GRAND TOTAL	**$271,100.00**

MAP ID NO. 21 (OPTION 1): PALM AVE. BETWEEN TARPON DR. & GLADES AVE. 05/13/2010

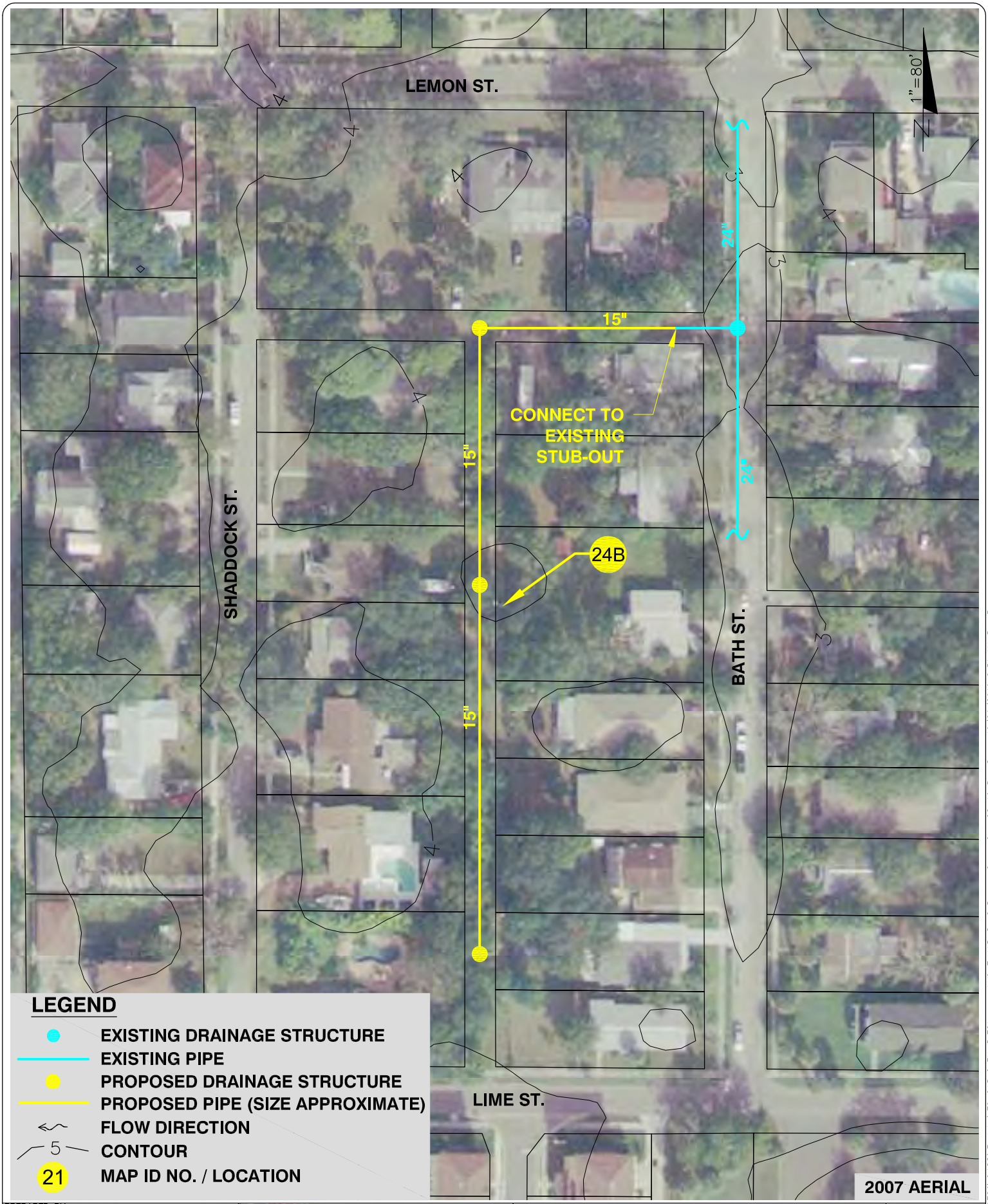
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$6,720.00	$6,720.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	500	LF	$1.00	$500.00
4	CLEARING & GRUBBING	0.138	AC	$8,140.00	$1,123.00
5	ROADWAY RECONSTRUCTION	6,000	SF	$3.75	$22,500.00
6	MANHOLE	2	EA	$4,200.00	$8,400.00
7	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	485	LF	$51.00	$24,735.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24" (DEPTH >10')	15	LF	$66.00	$990.00
10	SIDEWALK CONCRETE	64	SY	$35.00	$2,240.00
11	PERFORMANCE TURF, SOD	333	SY	$2.00	$666.00

CONSTRUCTION SUBTOTAL	**$73,900.00**
25% CONTINGENCY	**$18,500.00**
CONSTRUCTION TOTAL	**$92,400.00**
SURVEY	**$4,600.00**
GEOTECHNICAL	**$2,800.00**
ENGINEERING	**$16,600.00**
GRAND TOTAL	**$116,400.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.

580,000

BID PROPOSAL TABULATION/CITY OF TARPON SPRINGS **Note: This is a preliminary summary. THIS IS NOT AN AWARD**		OPENED: December 5, 2019 @ 3:00 PM		**BID TITLE: Palm Avenue Drainage Improvements** ADVERTISED: 11/4/19		READ BY: Jay Jackus TABBED BY: Jay Jackus DEPT: Public Works	
ITEM/ QUANTITY	DESCRIPTION BIDDER>>>	Harris-McBurney Co.		McKenzie Contracting, LLC		Kasminga & Roodvoets, Inc.	
				UNIT	TOTAL	UNIT	TOTAL
1 LS	Base Bid		$764,827.64		$753,000.00		$789,350.00
	Alt 1		$16,530.00		$8,550.00		$17,670.00
	Alt 2		$14,020.00		$6,659.50		$35,050.00
Bid Bond		Yes		Yes		Yes	
ITEM/ QUANTITY	DESCRIPTION BIDDER>>>	Timm Group					
		UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
1 LS	Base Bid		$468,371.00				
	Alt 1		$19,950.00				
	Alt 2		$12,618.00				
Bid Bond		Yes					



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

BATH ST./SHADDOCK AVE. ALLEY

MAP ID NO.
24B
OPTION 1 OF 1

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #24B Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:51 AM By: Suser

Map ID No. 24B – Bath St./Shaddock Ave. Alley

Problem:

According to City staff backyard flooding is occurring along this alleyway and during the summer months this problem area creates an insect (mosquito) problem. When improvements to Bath St. were previously constructed, a stub out into the alley from the storm sewer system along Bath St. was constructed for future use to assist in alleviating the flooding in this area.

Conceptual Solution(s):

Option 1

The existing stormwater infrastructure along Bath St. has been stubbed out with a 15" pipe extending into the east entrance of the alley from Bath St. A system of ditch bottom inlets and connecting storm sewer is recommended along the north-south portion of the alley and could tie into the existing infrastructure along Bath St. to alleviate this flooding and insect problem.

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 24B: BATH ST. / SHADDOCK AVE. ALLEY **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$5,690.00	$5,690.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	1,052	LF	$1.00	$1,052.00
4	CLEARING & GRUBBING	0.145	AC	$23,362.09	$3,388.00
5	MANHOLE	1	EA	$4,200.00	$4,200.00
6	DITCH BOTTOM INLET	2	EA	$2,862.52	$5,725.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	526	LF	$67.08	$35,284.00
8	PERFORMANCE TURF, SOD	701	SY	$3.13	$2,194.00

CONSTRUCTION SUBTOTAL	**$58,600.00**
25% CONTINGENCY	**$14,700.00**
CONSTRUCTION TOTAL	**$73,300.00**
SURVEY	**$3,700.00**
GEOTECHNICAL	**$2,200.00**
ENGINEERING	**$16,600.00**
GRAND TOTAL	**$95,800.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 10/01/2013 to 09/30/2014.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

PREPARED BY:
American
Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

HUEY AVE.
NORTH OF TARPON AVE.

MAP ID NO.
31
OPTION 1 OF 1

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #31 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:54 AM By: Suser

Map ID No. 31 - Huey Ave. north of Tarpon Ave.

Problem:
During a meeting with City staff on June 23rd, 2009 it was identified that the swale south of the Cypress Place Apartments along Huey Ave. floods causing roadway flooding in the area where there is a 30-inch RCP crossdrain.

Conceptual Solution(s):

Option 1
This conceptual solution would consist of removing non-native vegetation and accumulated sediment from the roadside swale adjacent to Cypress St. and the swale west of Huey Ave. that connects to the existing cypress swamp. This maintenance will provide greater conveyance to the cypress swamp and additional storage volume. In addition to the swale maintenance it is recommended to extend the roadside swale to the south along Huey Ave. to provide additional storage for the runoff generated from Huey Ave. and the adjacent shopping center.

Additional Notes (Map ID No. 31):
A positive outfall location for the cypress swamp could not be identified through field investigation or through the data we have obtained for the Stormwater Action Plan Phase I, nor through the Dames and Moore Master Drainage Study Phases I and II. SWFWMD 1-foot contour maps indicate that the cypress swamp discharges to the east and ultimately into Lake Tarpon. Figure B-3B - Drainage Systems Locations, from the Dames and Moore Master Drainage Study Phase I shows a pipe connecting the roadside swale along Cypress St. to the drainage system that serves the US 19 corridor and ultimately discharges into the FDOT owned stormwater management facility located on the southeast corner of the Oakwood St. and US 19 intersection. Field investigations of this area could not locate this pipe.

FDOT plans for intersection improvements for US 19 with Tarpon Dr. showed a future outlet connection to the cypress swamp however these improvements were never constructed. A drainage map obtained from Pinellas County, that was used in the alum-injection improvements to the FDOT stormwater management facility located on the southeast corner of the Oakwood St. and US 19 intersection, also shows this cypress head as being included in the overall drainage basin area for the FDOT stormwater management facility (and ultimately Lake Tarpon). Given this information, the installation of a control structure and outfall pipe that would discharge to the existing drainage system that serves the US 19 corridor and ultimately discharges into the FDOT owned stormwater management facility would be a conceptual solution for the City to consider. Not only could this control structure reduce the flooding the problem along Huey Ave. but it would provide a positive outfall for the cypress swamp.

Additional storage could also be provided within the small triangular area located between Huey St. and the cypress swamp. A property ownership search for this location on the Pinellas County Property Appraiser Website could not determine ownership

information. Another location for additional storage is the grassed area between the shopping center parking and Huey St. Property acquisition of the property or an easement would be required in order to construct a stormwater pond in this location.

Since the cypress swamp currently may not have a positive outfall, the construction of additional storage in this location to provide flooding relief would only be beneficial for small rainfall events. Without a positive outfall this area will still be subject to flooding with small repetitive storm events and larger storm events.

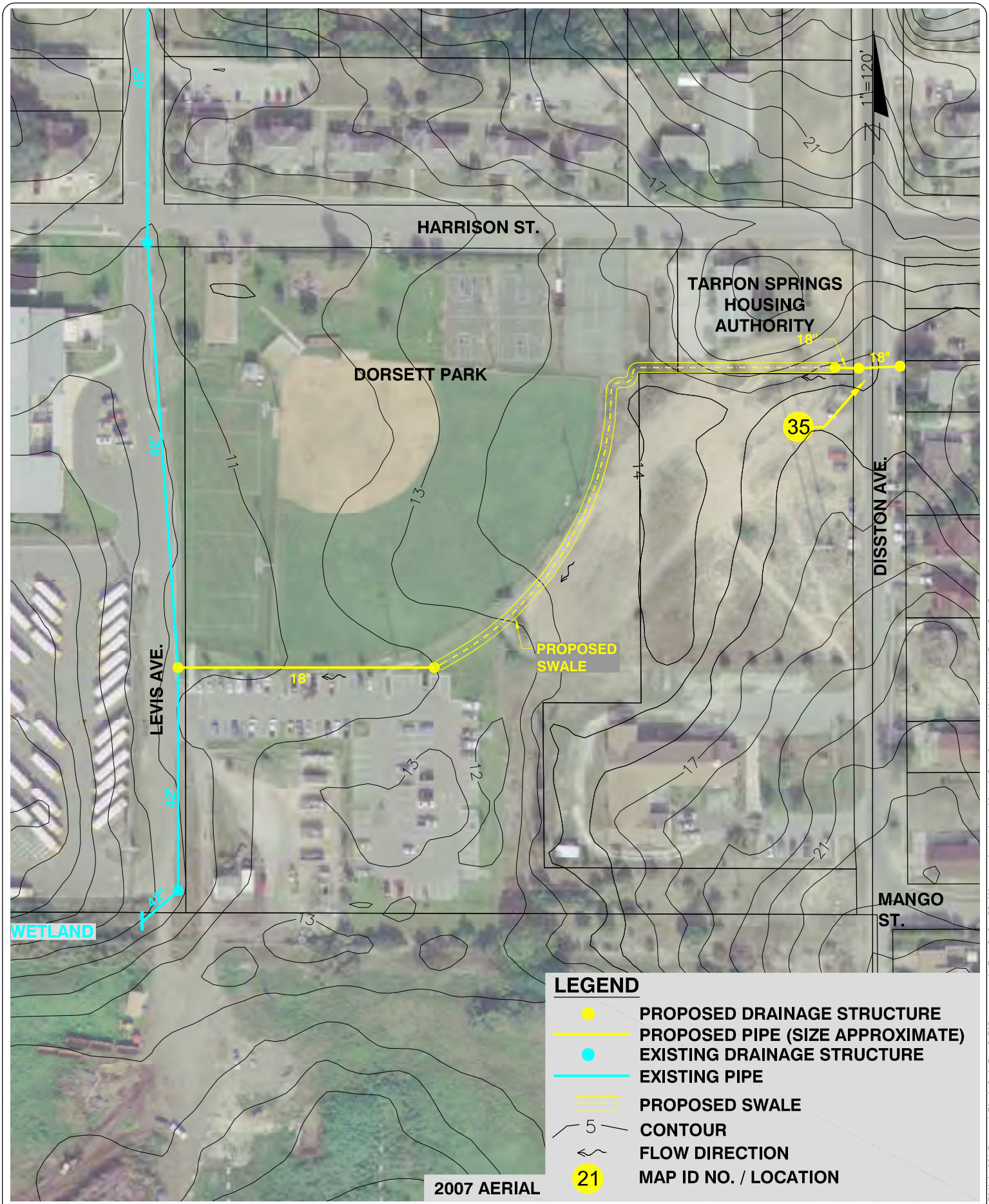
Preliminary Construction Cost Estimate

MAP ID NO. 31: HUEY AVE. NORTH OF TARPON AVE. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$1,596.00	$1,596.00
2	STAKED SILT FENCE, TYPE III	2,247	LF	$1.00	$2,247.00
3	CLEARING & GRUBBING	0.617	AC	$8,140.00	$5,022.00
4	POND EXCAVATION	777	CY	$3.50	$2,720.00
5	PERFORMANCE TURF, SOD	2,985	SY	$2.00	$5,970.00

CONSTRUCTION SUBTOTAL	**$17,600.00**
25% CONTINGENCY	**$4,400.00**
CONSTRUCTION TOTAL	**$22,000.00**
SURVEY	**$1,100.00**
GEOTECHNICAL	**$700.00**
ENGINEERING	**$7,900.00**
GRAND TOTAL	**$31,700.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:
American
Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
SOUTH OF HARRISON ST.

MAP ID NO.
35
OPTION 2 OF 2

Map ID No. 35 - Disston Ave. south of Harrison St.

Problem:
There is a low point along Disston Ave. at this location with no stormwater infrastructure. According to the Dames and Moore Master Drainage Study Phase I minor street flooding occurs until the runoff can flow southwest into a vacant lot adjacent to a church.

Conceptual Solution(s):

Option 1
This conceptual solution would consist of adding ditch bottom inlets along Disston Ave. in the location of the low point. These inlets would connect to a proposed storm sewer system that would be routed along the south side of the Tarpon Springs Housing Authority property and discharge into a proposed dry detention pond located within Dorsett Park. A proposed control structure and outfall system for the pond would convey discharge from the pond into an outfall pipe to the west and into the storm sewer system along Levis Ave. The affected properties are City-owned, therefore; a drainage easement would not be required.

Option 2
This conceptual solution would consist of adding ditch bottom inlets along Disston Rd. in the location of the low point. These inlets would discharge into a proposed swale along the south side of the Tarpon Springs Housing Authority property which would continue along the eastern boundary of the Dorsett Park property until discharging in a proposed spreader swale located east of the existing parking lot. The spreader swale would discharge into an outfall pipe to the west and into the storm sewer system along Levis Ave. An easement would not be required since the affected properties are City-owned.

Stormwater Action Plan - Phase II

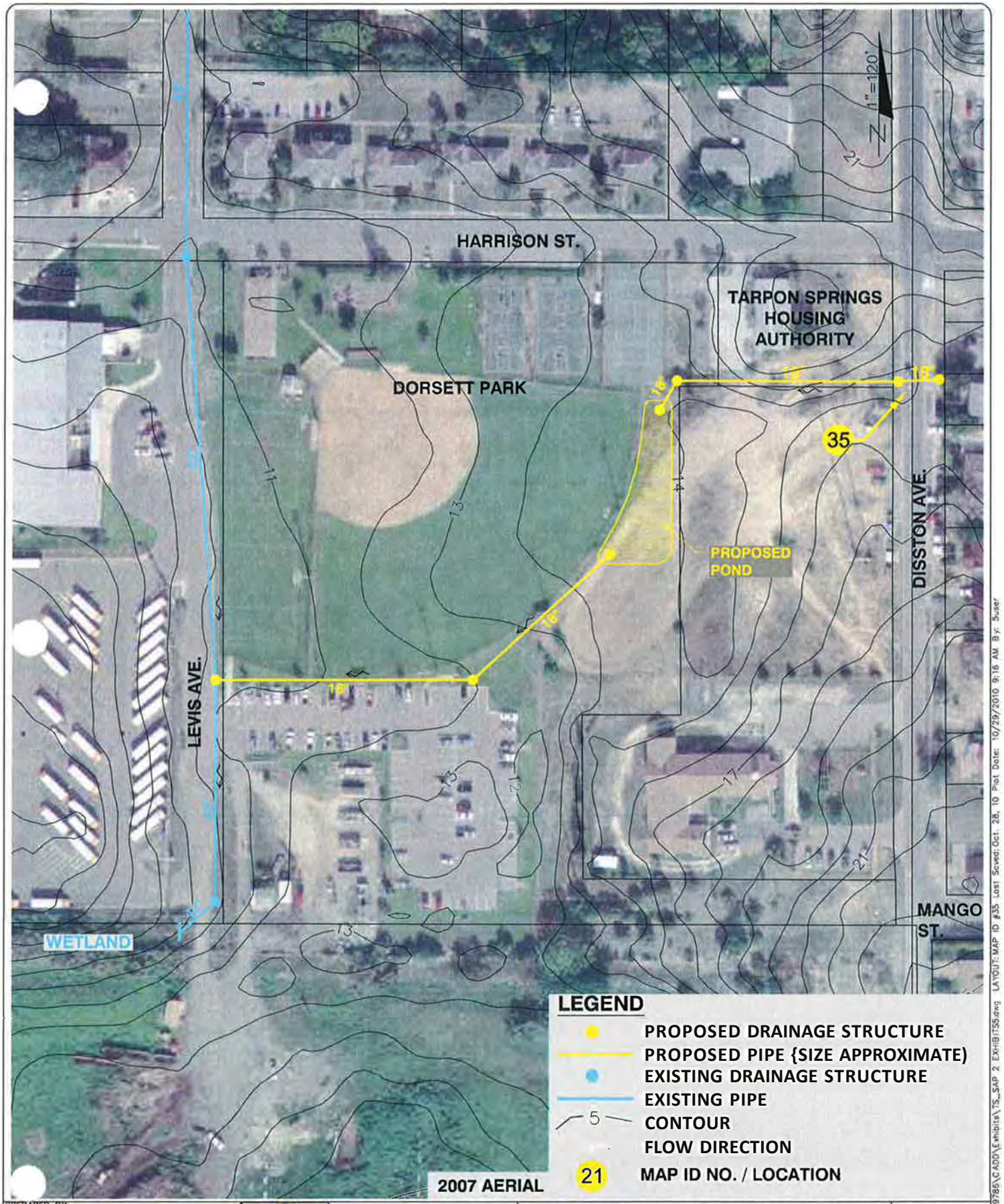
Preliminary Construction Cost Estimate

MAP ID NO. 35 (OPTION 2): DISSTON AVE. SOUTH OF HARRISON ST. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$5,370.00	$5,370.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	1,654	LF	$1.00	$1,654.00
4	CLEARING & GRUBBING	0.239	AC	$23,362.09	$5,584.00
5	REGULAR EXCAVATION	310	CY	$3.82	$1,184.00
6	ROADWAY RECONSTRUCTION	240	SF	$4.75	$1,140.00
7	MANHOLE	1	EA	$4,200.00	$4,200.00
8	DITCH BOTTOM INLET	3	EA	$2,862.52	$8,588.00
9	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
10	PIPE CULVERT REINFORCED CONCRETE, 0-24"	309	LF	$67.08	$20,728.00
11	PERFORMANCE TURF, SOD	1,103	SY	$3.13	$3,452.00

CONSTRUCTION SUBTOTAL	**$55,400.00**
25% CONTINGENCY	**$13,900.00**
CONSTRUCTION TOTAL	**$69,300.00**
SURVEY	**$3,500.00**
GEOTECHNICAL	**$2,100.00**
ENGINEERING	**$16,600.00**
GRAND TOTAL	**$91,500.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 10/01/2013 to 09/30/2014.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:
American Consulting Engineers of Florida, LLC
263 Pine Ave, North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

DISSTON AVE.
SOUTH OF HARRISON ST.

MAP ID NO.
35
OPTION 1 OF 2

F:\PROJECTS\5099788\CADD\Exhibits\TS_SAP 2 EXHIBIT35.dwg LAYOUT: MAP ID #35 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:16 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

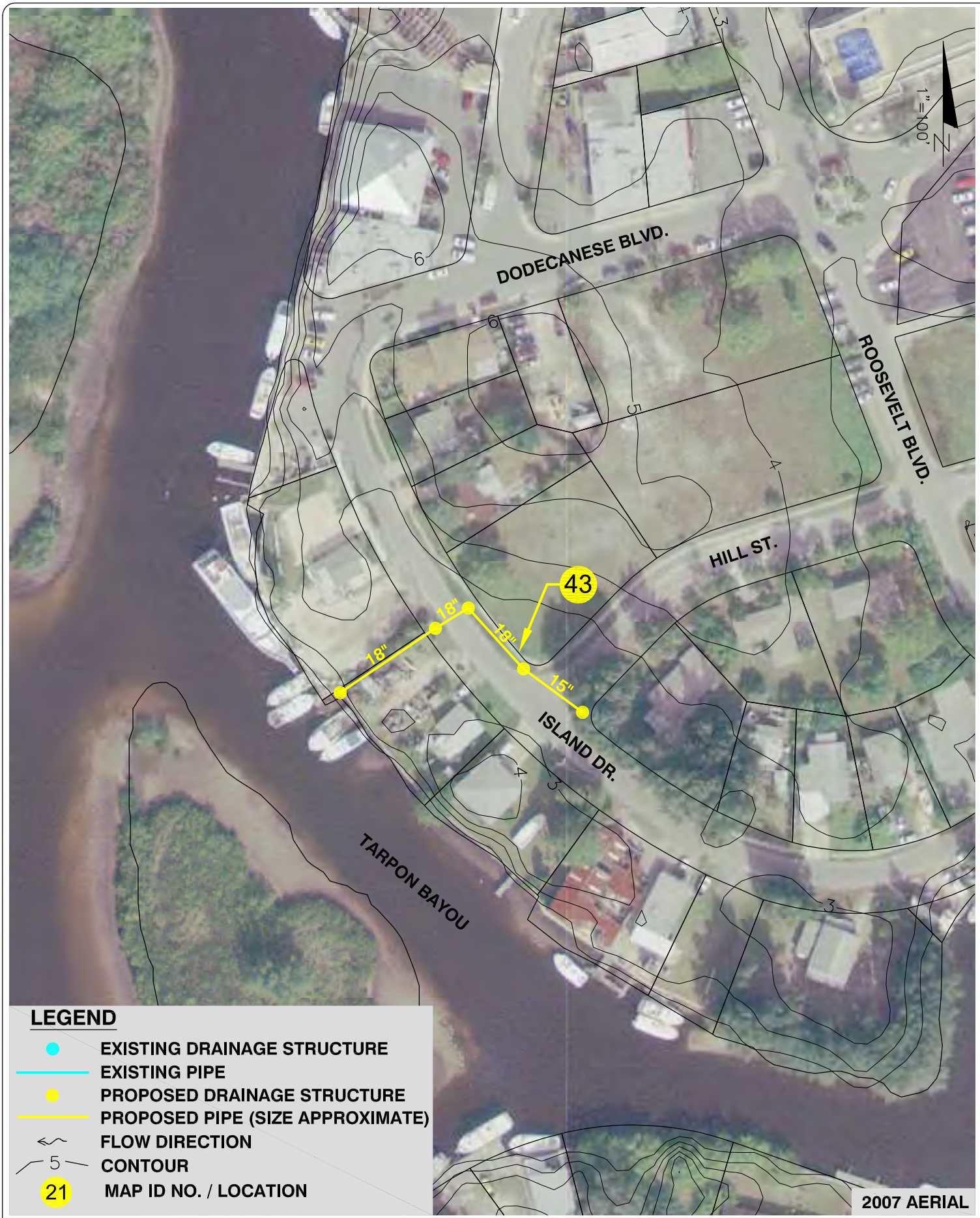
MAP ID NO. 35 (OPTION 1): DISSTON AVE. SOUTH OF HARRISON ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$7,130.00	$7,130.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	1,757	LF	$1.00	$1,757.00
4	CLEARING & GRUBBING	0.345	AC	$8,140.00	$2,808.00
5	POND EXCAVATION	745	CY	$3.50	$2,608.00
6	EMBANKMENT	174	CY	$5.00	$870.00
7	ROADWAY RECONSTRUCTION	240	SF	$3.75	$900.00
8	MANHOLE	3	EA	$4,200.00	$12,600.00
9	DITCH BOTTOM INLET	3	EA	$2,500.00	$7,500.00
10	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
11	PIPE CULVERT REINFORCED CONCRETE, 0-24"	694	LF	$51.00	$35,394.00
12	PERFORMANCE TURF, SOD	1,644	SY	$2.00	$3,288.00

CONSTRUCTION SUBTOTAL	**$78,400.00**
25% CONTINGENCY	**$19,600.00**
CONSTRUCTION TOTAL	**$98,000.00**
SURVEY	**$4,900.00**
GEOTECHNICAL	**$2,900.00**
ENGINEERING	**$17,600.00**
GRAND TOTAL	**$123,400.00**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



LEGEND

- EXISTING DRAINAGE STRUCTURE
- EXISTING PIPE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED PIPE (SIZE APPROXIMATE)
- FLOW DIRECTION
- 5 — CONTOUR
- 21 — MAP ID NO. / LOCATION

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

ISLAND DR. NEAR HILL ST.

MAP ID NO.
43
OPTION 1 OF 1

Map ID No. 43 - Island Dr. near Hill Street

Problem:
Intersection is a low spot with no stormwater infrastructure. The stormwater runoff collects in the small roadside swales and floods the intersection during small and large storm events.

Conceptual Solution(s):

Option 1
This conceptual solution would include installing ditch bottom inlets along the roadside swales north and south of the intersection along Island Dr. and replacing the existing 12-inch steel outfall pipe under Island Dr. and the existing 8-inch PVC outfall pipe into Tarpon Bayou.

Stantec

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 43: ISLAND DR. NEAR HILL ST. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,180.00	$4,180.00
2	SYNTHETIC BALES	128	LF	$16.00	$2,048.00
3	STAKED SILT FENCE, TYPE III	254	LF	$1.00	$254.00
4	TURBIDITY BARRIER	50	LF	$10.00	$500.00
5	CLEARING & GRUBBING	0.068	AC	$23,362.09	$1,596.00
6	ROADWAY RECONSTRUCTION	888	SF	$3.75	$3,330.00
7	DITCH BOTTOM INLET	4	EA	$2,500.00	$10,000.00
8	CONCRETE CLASS I, ENDWALLS	1.56	CY	$1,351.95	$2,109.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	248	LF	$67.08	$16,636.00
10	SIDEWALK CONCRETE	39	SY	$40.71	$1,588.00
11	PERFORMANCE TURF, SOD	170	SY	$3.13	$532.00

CONSTRUCTION SUBTOTAL	**$42,800.00**
25% CONTINGENCY	**$10,700.00**
CONSTRUCTION TOTAL	**$53,500.00**
SURVEY	**$2,700.00**
GEOTECHNICAL	**$1,600.00**
ENGINEERING	**$12,300.00**
GRAND TOTAL	**$70,100.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

ROOSEVELT BLVD.

MAP ID NO. 62

OPTION 1 OF 1

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS1.dwg LAYOUT: MAP ID #62 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 8:55 AM By: Suser

Map ID No. 62 – Roosevelt Blvd.

Problem:
The road is in need of repair due to high groundwater conditions, poor subsoil conditions, and poorly functioning stormwater infrastructure. The City also desires to incorporate stormwater renovations to the existing stormwater infrastructure due to the proximity to Spring Bayou and Whitcomb Bayou, both of which are considered impaired (high nitrogen) water bodies by the Florida Department of Environmental Protection (DEP). There are several ditch bottom inlets along Roosevelt Blvd. that collect and directly discharge the stormwater runoff into the Tarpon Bayou.

Conceptual Solution(s):

Option 1
Roosevelt Blvd. is proposed to be improved between Spruce St. and Dodecanese Blvd. under a separate task order. This project will include reconstruction of the roadway and stormwater infrastructure improvements. For additional information, please see the Roosevelt Boulevard Pavement and Stormwater Rehabilitation Improvements construction plans.

American Consulting Engineers of Florida, LLC

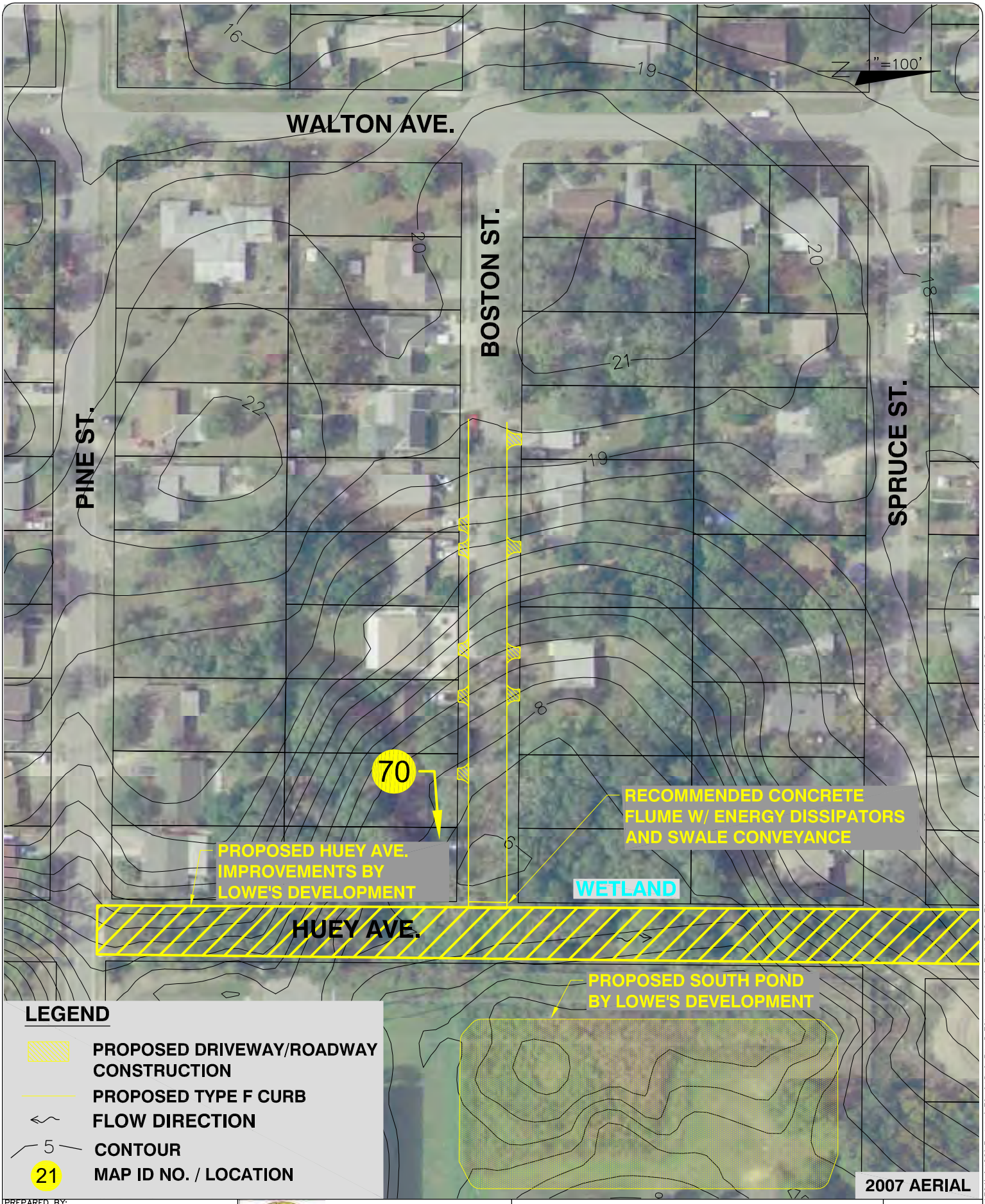
Roadway & Drainage Construction Cost Estimate

Roosevelt Boulevard (Spruce Street to Dodecanese Boulevard) **10/26/2010 (100% Plans Submittal)**

Pay Item No.	BID ITEM NO.	Description	Quantity	Units	Unit price	Amount
101-1	1	MOBILIZATION	1	LS	$38,046.32	$38,046.32
102-1	2	MAINTENANCE OF TRAFFIC	1	LS	$22,646.62	$22,646.62
104-10-2	3	SYNTHETIC BALES	678	LF	$15.89	$10,773.42
104-11	4	FLOATING TURBIDITY BARRIER	76	LF	$7.61	$578.36
104-13-1	5	STAKED SILT FENCE, TYPE III	409	LF	$0.97	$396.73
104-16	6	ROCK BAGS	140	EA	$5.68	$795.20
110-1-1	7	CLEARING & GRUBBING	1/1.87	LS/AC	$8,138.94	$15,219.82
110-7-1	8	MAILBOX, F&I SINGLE	3.00	EA	$82.00	$153.34
120-1	9	REGULAR EXCAVATION	543	CY	$3.40	$1,846.20
120-4	10	SUBSOIL EXCAVATION	4,146	CY	$5.74	$23,798.04
120-6	11	EMBANKMENT	4,859	CY	$4.79	$23,274.61
160-4	12	STABILIZATION TYPE B (LBR 40) (12")	5,101	SY	$2.77	$14,129.77
285-704	13	CRUSHED CONCRETE BASE COURSE (6")	4,495	SY	$9.00	$40,455.00
327-70-6	14	MILLING EXIST ASPH PAVT, 1 1/2" AVG DEPTH	22	SY	$1.39	$30.58
334-1-12	15	SUPERPAVE TYPE SP STRUCTURAL COURSE, (TRAFFIC B) (1.0") (PARKING)	12	TN	$70.98	$851.76
334-1-12	16	SUPERPAVE TYPE SP STRUCTURAL COURSE, (TRAFFIC B) (2.0")	473	TN	$70.98	$33,573.54
400-1-2	17	CONCRETE CLASS I, ENDWALLS	6	CY	$596.11	$3,576.66
400-1-15	18	CONCRETE CLASS I, MISCELLANEOUS	10	CY	$709.00	$7,090.00
425-1-351	19	INLETS, CURB, TYPE P-5, <10'	3	EA	$3,327.97	$9,983.91
425-1-361	20	INLETS, CURB, TYPE P-6, <10'	3	EA	$3,638.47	$10,915.41
425-1-521	21	INLETS, DT BOT, TYPE C, <10'	2	EA	$2,606.55	$5,213.10
425-1-541	22	INLETS, DT BOT, TYPE D, <10'	2	EA	$2,181.54	$4,363.08
425-1-543	23	INLETS, DITCH BOTTOM, TYPE D, J BOT, <10'	4	EA	$4,641.67	$18,566.68
425-1-549	24	INLETS, DT BOT, TYPE D, MODIFIED	4	EA	$3,551.43	$14,205.72
425-1-551	25	INLETS, DT BOT, TYPE E, <10'	2	EA	$2,443.33	$4,886.66
425-1-559	26	INLETS, DT BOT, TYPE E, MODIFIED	1	EA	$1,612.50	$1,612.50
425-1-711	27	INLETS, GUTTER, TYPE V, <10'	1	EA	$2,393.36	$2,393.36
425-1-910	28	INLETS, CLOSED FLUME	1	EA	$3,000.00	$3,000.00
425-2-61	29	MANHOLES, P-8, <10'	1	EA	$4,227.91	$4,227.91
425-2-71	30	MANHOLES, J-7, <10'	1	EA	$4,538.68	$4,538.68
430-175-101	31	PIPE CULVERT REINFORCED CONCRETE, ROUND - SHAPE, 0-24",	362	LF	$50.72	$18,360.64
430-175-201	32	PIPE CULV, REINFORCED CONCRETE, OTHER - ELIP / ARCH, 0-24"SS	776	LF	$58.37	$45,295.12
430-175-202	33	PIPE CULV, REINFORCED CONCRETE, OTHER - ELIP / ARCH, 25-36"SS	157	LF	$140.00	$21,980.00
515-2-201	34	PED/BICYCLE RAILING, STEEL, 42" PICKET RAIL	40	LF	$53.73	$2,149.20
520-1-10	35	CONCRETE CURB & GUTTER, TYPE F	2,879	LF	$13.82	$39,787.78
520-2-4	36	CONCRETE CURB, TYPE D	138	LF	$22.71	$3,133.98
520-2-9	37	CONCRETE CURB, SPECIAL (MIAMI CURB)	234	LF	$18.25	$4,270.50
522-1	38	SIDEWALK CONCRETE, 4" THICK	843	SY	$31.15	$26,259.45
522-2	39	SIDEWALK CONCRETE, 6" THICK	536	SY	$39.82	$21,343.52
524-1-1	40	CONCRETE DITCH PAVT, NR, 3"	4	SY	$28.04	$112.16
570-1-2	41	PERFORMANCE TURF, SOD	2,509	SY	$1.75	$4,390.75
700-20-11	42	SINGLE POST SIGN, F&I, LESS THAN 12 SF	9	AS	$306.88	$2,761.92
700-20-40	43	SINGLE POST SIGN, RELOCATE	2	AS	$110.16	$220.32
700-20-60	44	SINGLE POST SIGN, REMOVE	6	AS	$17.23	$103.38
171-11-111	45	THERMOPLASTIC, STD, WHITE, SOLID, 6"	0.03	NM	$2,994.04	$89.82
711-11-123	46	THERMOPLASTIC, STD, WHITE, SOLID, 12"	257	LF	$1.57	$403.49
711-11-125	47	THERMOPLASTIC, STD, WHITE, SOLID, 24"	86	LF	$3.10	$266.60
711-11-211	48	THERMOPLASTIC, STD, YELLOW, SOLID, 6"	0.53	NM	$2,931.63	$1,553.76

ROADWAY SUBTOTAL	**$513,625.38**
5% CONTINGENCY	**$25,681.27**
GRAND TOTAL	**$539,306.65**

Note: Unit Prices taken from FDOT Item Average Unit Cost for Area 08 from 03/01/2008 to 02/28/2009 when available.
Unit Prices unavailable from Area 08 Average Unit Cost were taken from FDOT Statewide Item Average Unit Cost from 03/01/2008 to 02/28/2009.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

EAST END OF BOSTON ST.

MAP ID NO.
70
OPTION 1 OF 1

Map ID No. 70 – East end of Boston St.

Problem:
East end of Boston St. is a dead end road located adjacent to a wetland. No stormwater infrastructure is in place along this section of Boston St. This section of the road has an elevation change from approximately elevation 21 to elevation 6 within 400 feet. Runoff from Boston St. (high point located east of Walton Ave.) flows east along edge of pavement and through private property and into the wetland. The front yard of the resident located at 721 Boston St. has large (some are 8 to 10 inches in depth) stormwater ruts that are the result of high velocity flows. North edge of the road at 721 Boston St. is beginning to deteriorate and the sub-base is being exposed. During field review the resident at 721 Boston St. stated he has never had a structure flooding problem.

Conceptual Solution(s):

Option 1
This conceptual solution would involve adding curb and gutter to both sides of Boston St. beginning at the high point approximately 250' east of Walton Ave. and continuing to the east end of the road. A concrete flume with energy dissipaters and a spreader swale are proposed at the east end of Boston St. to reduce the velocity of the runoff and direct the stormwater towards the wetland to the northeast. The driveways along the curbed section will need to be reconstructed to ensure that runoff from Boston St. does not enter private property.

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

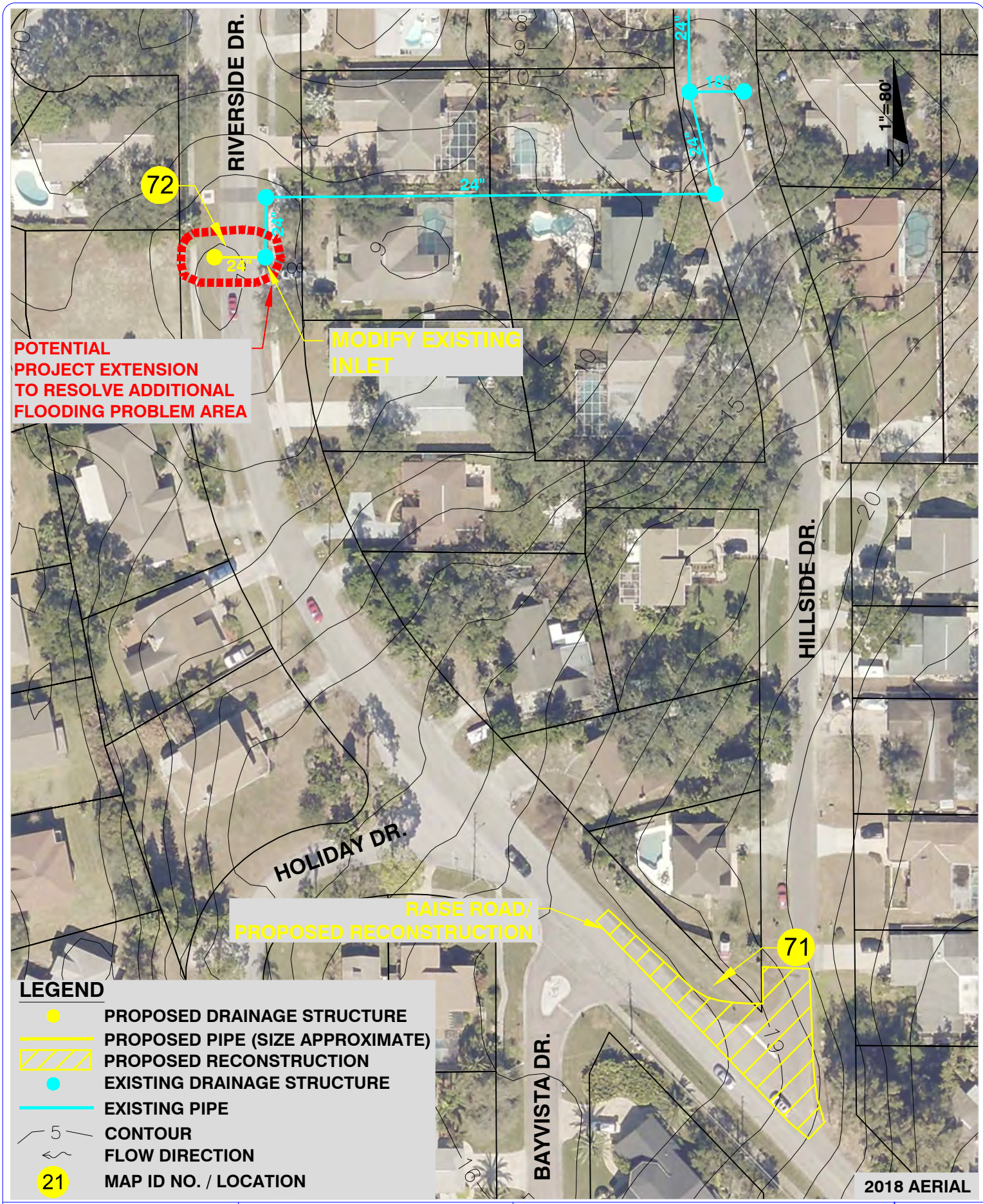
MAP ID NO. 70: EAST END OF BOSTON ST. **05/13/2010**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$2,489.00	$2,489.00
2	STAKED SILT FENCE, TYPE III	1,262	LF	$1.00	$1,262.00
3	CLEARING & GRUBBING	0.190	AC	$8,140.00	$1,547.00
4	POND EXCAVATION	1,072	CY	$3.50	$3,752.00
5	CONCRETE DITCH PAVEMENT, 4" (FLUME)	24	SY	$22.00	$528.00
6	CONCRETE CURB	800	LF	$15.00	$12,000.00
7	SIDEWALK CONCRETE, DRIVEWAYS	120	SY	$35.00	$4,200.00
8	PERFORMANCE TURF, SOD	802	SY	$2.00	$1,604.00

CONSTRUCTION SUBTOTAL	**$27,400.00**
25% CONTINGENCY	**$6,900.00**
CONSTRUCTION TOTAL	**$34,300.00**
SURVEY	**$1,700.00**
GEOTECHNICAL	**$1,000.00**
ENGINEERING	**$10,300.00**
GRAND TOTAL	**$47,300.00**

Notes:

1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

RIVERSIDE DR. & HILLSIDE DR.

MAP ID NO.
71
OPTION 2 OF 2

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projects CADD files\TS_SAP 2 EXHIBITS4.dwg LAYOUT:MAP ID #71 (2) Last Saved:Apr. 17, 20 Plot Date: 5/23/2020 12:18 AM By: James greene

Map ID No. 71 – Riverside Dr. and Hillside Dr.

Problem:
Location is a low point along Riverside Dr. with no stormwater infrastructure. Roadway flooding is occurring and is most likely impeding traffic and is a concern due to the roadway geometry for traffic approaching from the north and south.

Conceptual Solution(s):

Option 1
This conceptual solution would include installing a ditch bottom inlet at the northwest corner of the Riverside Dr. and Hillside Dr. intersection. The inlet and storm sewer system would be routed north along Riverside Dr. where it would connect into an existing inlet at 1314 Riverside Dr. (Map ID No. 72 – 1314 Riverside Dr.). This existing system flows into an existing stormwater pond which outfalls into the Anclote River. The existing stormwater system would require an analysis to determine whether or not the increased flow will require further downstream modifications to the existing system. This conceptual solution could be combined with the conceptual solution for Map ID No. 72.

Option 2
This conceptual solution would include reconstructing/regrading the low point in the roadway within the intersection of Riverside Dr. and Hillside Dr. This would allow runoff to drain to the north along Riverside Dr. until reaching the existing inlet in front of 1314 Riverside Dr. In addition to regrading the low point in the roadway this conceptual solution could involve installing a new inlet and storm drain to connect into the existing inlet located at 1314 Riverside Dr. This conceptual improvement could also resolve the flooding problem area Map ID No. 72 – 1314 Riverside Dr.

Preliminary Construction Cost Estimate

MAP ID NO. 71 (OPTION 2): RIVERSIDE DR. & HILLSIDE DR. **09/04/2014**

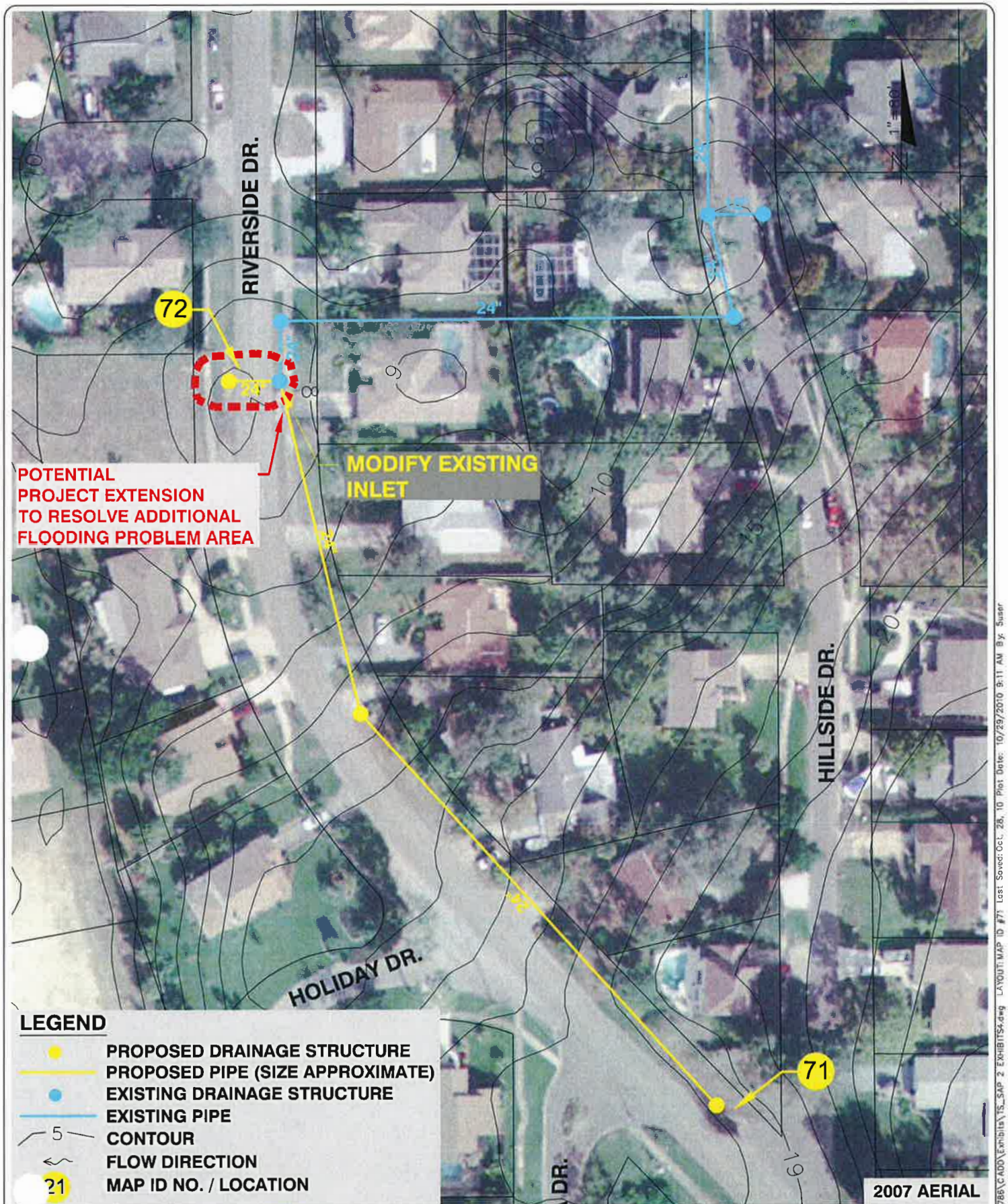
Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	SYNTHETIC BALES	32	LF	$16.00	$512.00
3	STAKED SILT FENCE, TYPE III	298	LF	$1.00	$298.00
4	CLEARING & GRUBBING	0.139	AC	$23,362.09	$3,247.00
5	ROADWAY RECONSTRUCTION	6,045	SF	$4.75	$28,714.00
6	PERFORMANCE TURF, SOD	199	SY	$3.13	$623.00
				MAP ID NO. 71 (OPTION 2) CONSTRUCTION SUBTOTAL	**$33,394.00**

MAP ID NO. 72 (OPTION 2): 1314 RIVERSIDE DR. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	20	LF	$1.00	$20.00
4	CLEARING & GRUBBING	0.007	AC	$23,362.09	$164.00
5	ROADWAY RECONSTRUCTION	288	SF	$4.75	$1,368.00
6	INLET MODIFICATION	1	LS	$1,000.00	$1,000.00
7	DITCH BOTTOM INLET	1	EA	$2,862.52	$2,863.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	24	LF	$67.08	$1,610.00
9	PERFORMANCE TURF, SOD	13	SY	$3.13	$41.00
				MAP ID NO. 72 (OPTION 2) CONSTRUCTION SUBTOTAL	**$8,090.00**

CONSTRUCTION SUBTOTAL	**$41,484.00**
MOBILIZATION	**$6,223.00**
25% CONTINGENCY	**$10,371.00**
CONSTRUCTION TOTAL	**$58,078.00**
SURVEY	**$2,904.00**
GEOTECHNICAL	**$1,743.00**
ENGINEERING	**$26,136.00**
GRAND TOTAL	**$88,861.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 10/01/2013 to 09/30/2014.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:
American Consulting Engineers of Florida, LLC
253 Pine Ave. North Unit A
Oldsmar, FL 34677
Phone: (727) 499-5750 Fax: (727) 499-5751
Certificate of Authorization No. 9302

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

RIVERSIDE DR. & HILLSIDE DR.

MAP ID NO.
71
OPTION 1 OF 2

F:\PROJECTS\5099786\CADD\Exhibits\TS_SAP 2 EXHIBITS4.dwg LAYOUT: MAP ID #71 Last Saved: Oct. 28, 10 Plot Date: 10/29/2010 9:11 AM By: Suser

American Consulting Engineers of Florida, LLC

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 71 (OPTION 1): RIVERSIDE DR. & HILLSIDE DR. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$6,306.00	$6,306.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	562	LF	$1.00	$562.00
4	CLEARING & GRUBBING	0.155	AC	$8,140.00	$1,262.00
5	ROADWAY RECONSTRUCTION	6,744	SF	$3.75	$25,290.00
6	DITCH BOTTOM INLET	2	EA	$2,500.00	$5,000.00
7	PIPE CULVERT REINFORCED CONCRETE, 0-24"	562	LF	$51.00	$28,662.00
8	PERFORMANCE TURF, SOD	375	SY	$2.00	$750.00

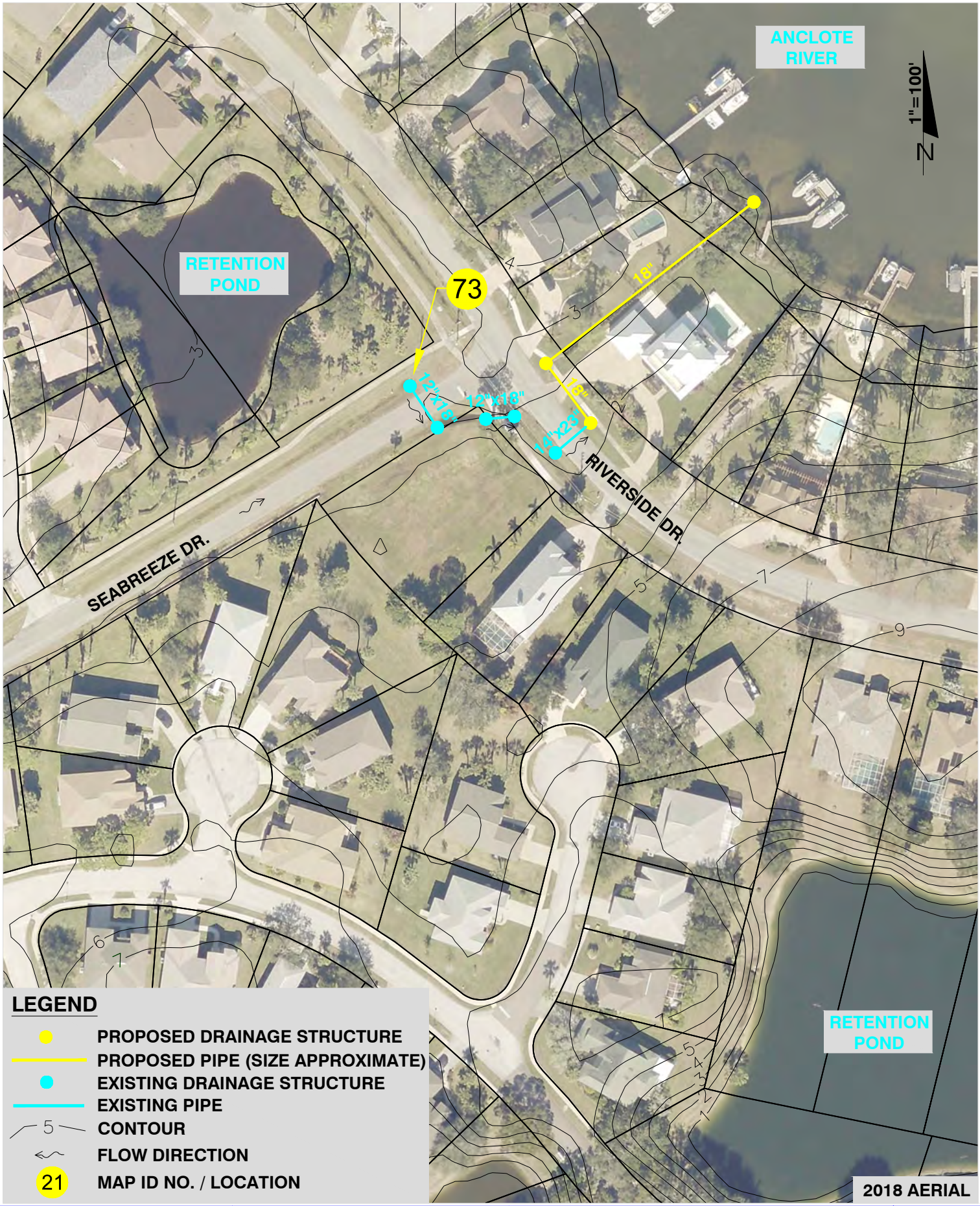
CONSTRUCTION SUBTOTAL	$69,400.00
25% CONTINGENCY	$17,400.00
CONSTRUCTION TOTAL	$86,800.00
SURVEY	$4,300.00
GEOTECHNICAL	$2,600.00
ENGINEERING	$15,600.00
GRAND TOTAL	$109,300.00

MAP ID NO. 72 (OPTION 1): 1314 RIVERSIDE DR. 05/13/2010

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$690.00	$690.00
2	SYNTHETIC BALES	64	LF	$16.00	$1,024.00
3	STAKED SILT FENCE, TYPE III	20	LF	$1.00	$20.00
4	CLEARING & GRUBBING	0.007	AC	$8,140.00	$57.00
5	ROADWAY RECONSTRUCTION	288	SF	$3.75	$1,080.00
6	INLET MODIFICATION	1	LS	$1,000.00	$1,000.00
7	DITCH BOTTOM INLET	1	EA	$2,500.00	$2,500.00
8	PIPE CULVERT REINFORCED CONCRETE, 0-24"	24	LF	$51.00	$1,224.00
9	PERFORMANCE TURF, SOD	13	SY	$2.00	$26.00

CONSTRUCTION SUBTOTAL	$7,600.00
25% CONTINGENCY	$1,900.00
CONSTRUCTION TOTAL	$9,500.00
SURVEY	$500.00
GEOTECHNICAL	$300.00
ENGINEERING	$5,000.00
GRAND TOTAL	$15,300.00

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 03/01/2008 to 02/28/2009.
2. Conceptual Cost Estimate does not include the cost of Right-of-Way Acquisition.



PREPARED BY:

BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

RIVERSIDE DR. & SEABREEZE DR.

MAP ID NO.
73
OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\Old Projects CADD files\TS_SAP 2 EXHIBITS4.dwg LAYOUT:MAP ID #73 Last Saved:May. 23, 20 Plot Date: 5/25/2020 12:33 PM By: James greene

Map ID No. 73 – Riverside Dr. and Seabreeze Dr.

Problem:
According to City staff roadside flooding is occurring at this location. During a field visit standing water was visible at the entrance to the apartments along the north side of Seabreeze Dr. as well as along the roadside swales. There is an existing stormwater collection and conveyance system serving the intersection.

Conceptual Solution(s):

Option 1
During a field visit it appeared that the invert for the downstream pipe of the inlet on the east side of Riverside Drive was considerably higher that the upstream invert. This invert change also appeared to be causing the water to back up into the roadside swale along Riverside Dr. and Seabreeze Dr. The conceptual solution for this location would include survey for the existing stormwater system and possible replacement of the last two outfall pipes for the existing system.

Stormwater Action Plan - Phase II

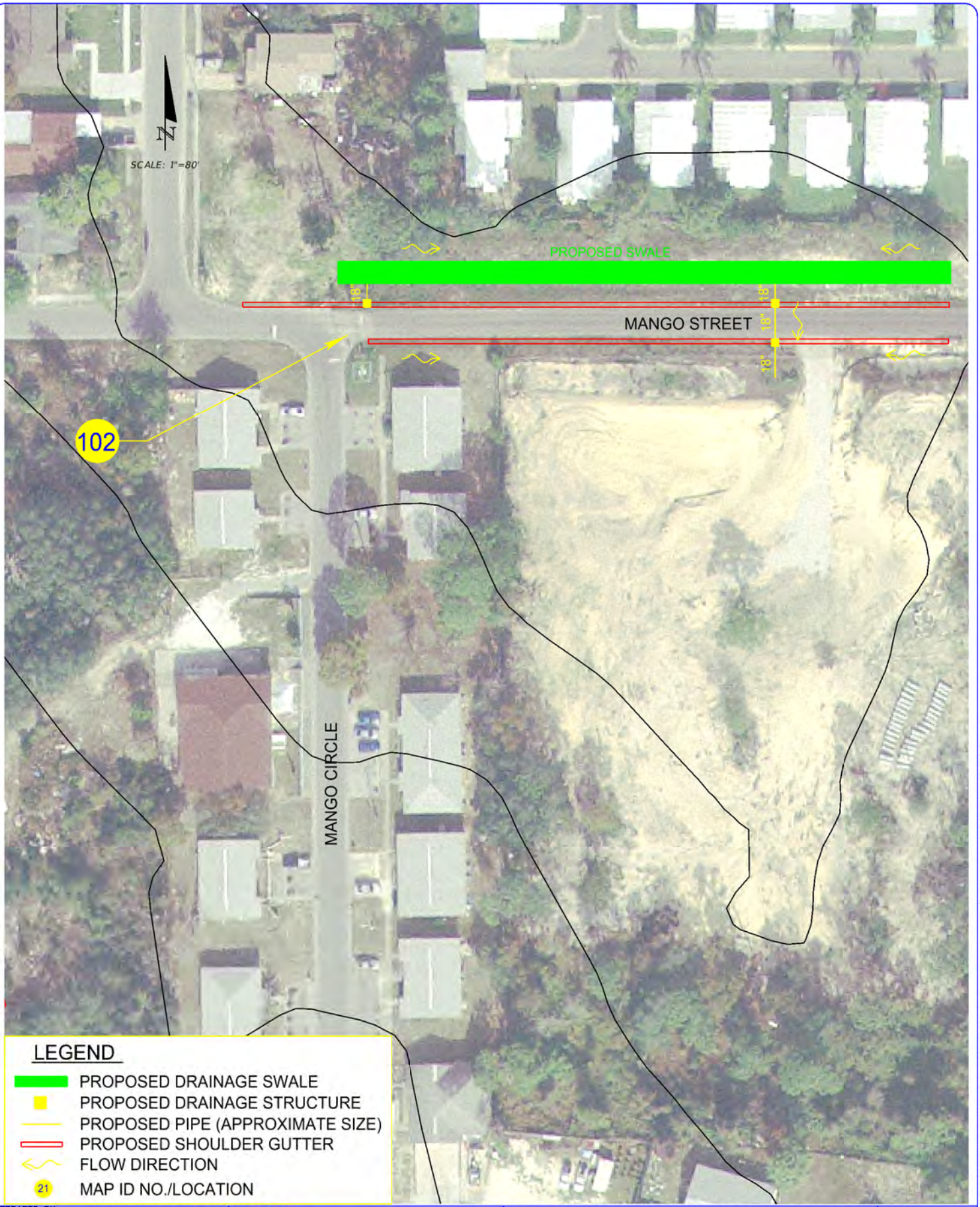
Preliminary Construction Cost Estimate

MAP ID NO. 73: RIVERSIDE DR. & SEABREEZE DR. **09/04/2014**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$4,150.00	$4,150.00
2	SYNTHETIC BALES	96	LF	$16.00	$1,536.00
3	STAKED SILT FENCE, TYPE III	1,207	LF	$1.00	$1,207.00
4	CLEARING & GRUBBING	0.140	AC	$23,362.09	$3,271.00
5	POND EXCAVATION	105	CY	$3.82	$401.00
6	ROADWAY RECONSTRUCTION	720	SF	$4.75	$3,420.00
7	DITCH BOTTOM INLET	2	EA	$2,862.52	$5,725.00
8	MITERED END SECTION	1	EA	$2,000.00	$2,000.00
9	PIPE CULVERT REINFORCED CONCRETE, 0-24"	271	LF	$67.08	$18,179.00
10	SIDEWALK CONCRETE	33	SY	$40.71	$1,343.00
11	PERFORMANCE TURF, SOD	676	SY	$3.13	$2,116.00

CONSTRUCTION SUBTOTAL	**$43,300.00**
25% CONTINGENCY	**$10,800.00**
CONSTRUCTION TOTAL	**$54,100.00**
SURVEY	**$2,705.00**
GEOTECHNICAL	**$1,623.00**
ENGINEERING	**$12,443.00**
GRAND TOTAL	**$70,871.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 10/01/2013 to 09/30/2014.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.



PREPARED BY:

Stantec

2205 North 20th Street
Tampa, FL 34605
Phone: (813) 223-9500 Fax: (813) 223-0009
Certificate of Authorization No. 27013

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT

324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

INTERSECTION OF MANGO STREET AND MANGO CIRCLE

MAP ID NO.

102

OPTION 2 OF 2

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 14-3 (OPTION 2): Mango Street and Mango Circle 09/03/2014

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
1	MOBILIZATION	1	LS	$3,160.00	$3,160.00
2	STAKED SILT FENCE, TYPE III	70	LF	$1.00	$70.00
3	CLEARING & GRUBBING	0.016	AC	$23,362.09	$374.00
4	SHOULDER GUTTER - CONCRETE	450.0	LF	$19.17	$8,627.00
5	DITCH BOTTOM INLET TYPE "C"	2	EA	$2,230.17	$4,460.00
6	18" PIPE CULVERT	250	LF	$46.43	$11,608.00
7	18" (1:4) MES	1	EA	$2,000.00	$2,000.00
8	MISCELLANEOUS CONCRETE - SPILLWAYS	5	CY	$90.00	$450.00
9	PERFORMANCE TURF, SOD	240	SY	$3.13	$751.00
				CONSTRUCTION SUBTOTAL	**$31,500.00**
				25% CONTINGENCY	**$7,900.00**
				CONSTRUCTION TOTAL	**$39,400.00**
				SURVEY	**$2,000.00**
				GEOTECHNICAL	**$1,500.00**
				ENGINEERING	**$17,800.00**
				GRAND TOTAL	**$60,700.00**

Notes:
1. Unit Prices based on FDOT Item Average Unit Costs for Area 08 from 08/01/2013 to 07/31/2014.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.

Appendix E

Non-Jurisdictional Problem Areas

PREPARED BY:

Stantec

2205 North 20th Street
Tampa, FL 34605
Phone: (813) 223-9500 Fax: (813) 223-9009
Certificate of Authorization No. 27013

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT

324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

INTERSECTION OF MARINA DRIVE & ANCLOTE RD.

MAP ID NO.

100

OPTION 1 OF 2

Map ID No. 100 – Intersection of Marina Drive and Anclote Road

Problem:
Location is in the low side of a superelevated curve on Anclote Road (Pinellas County). Roadway flooding is occurring and is most likely impeding traffic and is a concern due to the roadway geometry for traffic approaching from the east. Roadway does not have storm infrastructure.

PREPARED BY:

Stantec

2205 North 20th Street
Tampa, FL 34605
Phone: (813) 223-9500 Fax: (813) 223-9009
Certificate of Authorization No. 27013

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT

324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

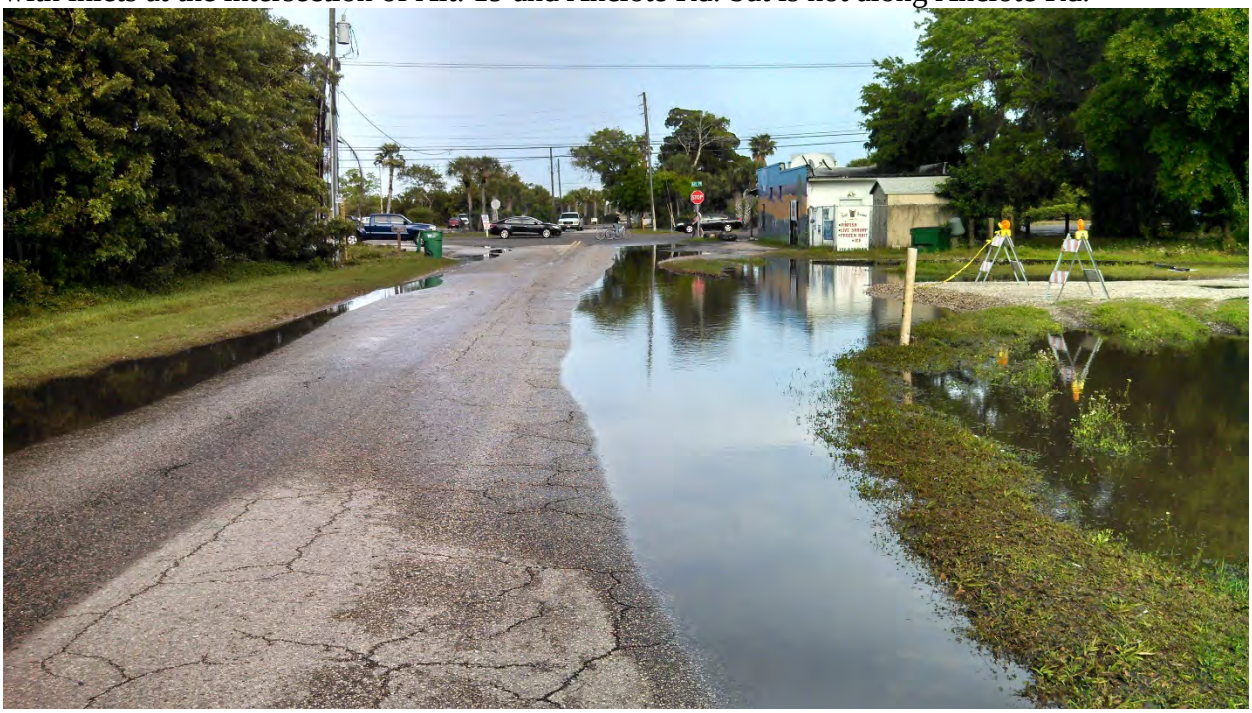
INTERSECTION OF
ALT. US 19 & ANCLOTE RD.

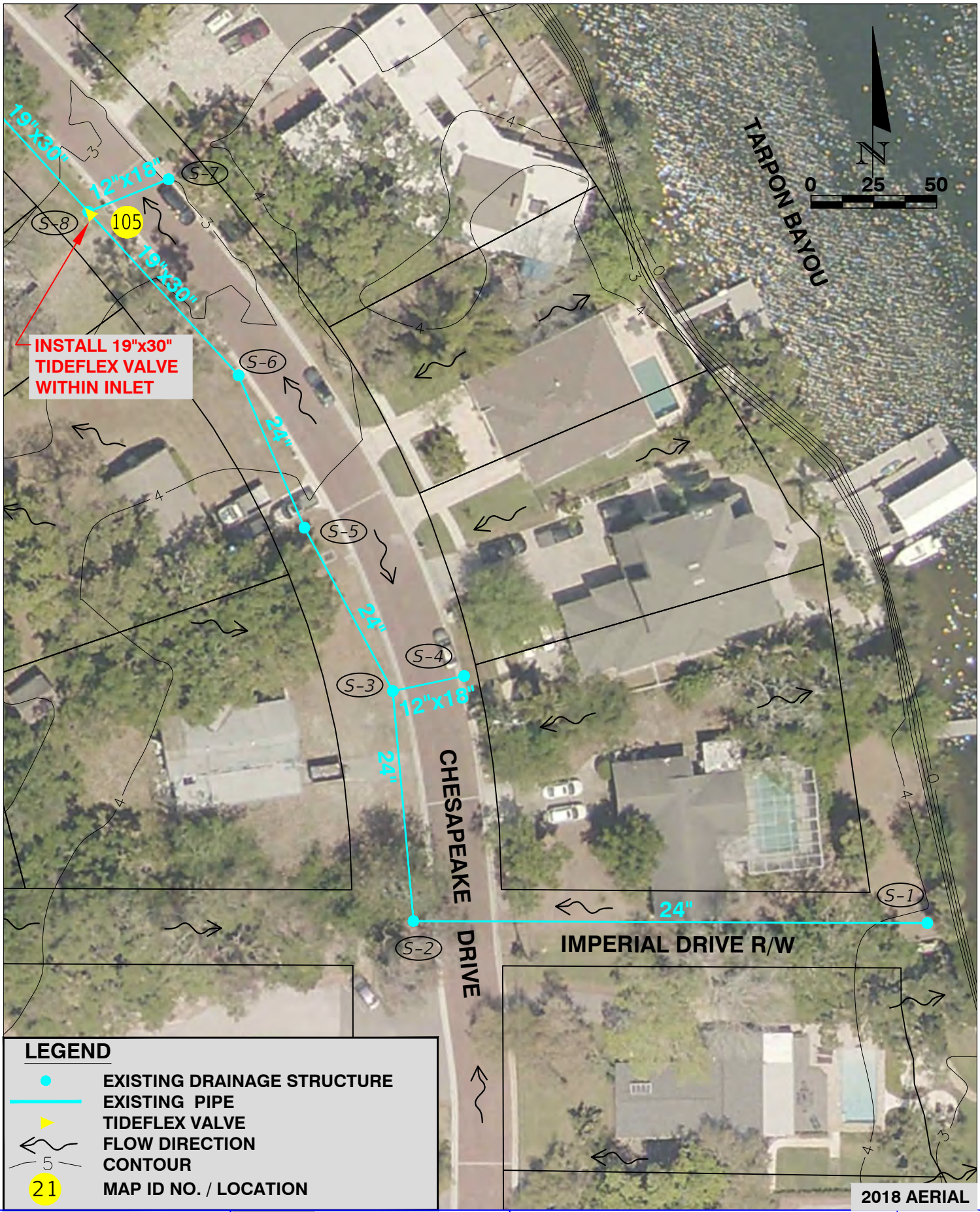
MAP ID NO.
101
OPTION 2 OF 2

Map ID No. 101 – Alternate US 19 & Anclote Road

Problem:

Location is at a depressional area on Anclote Road (Pinellas County) at the driveway of an open lot that is used as parking for Captain Jacks Sunset Grill. The driveway is a hard crushed limestone material with a depression at Anclote Rd. Roadway flooding is occurring along Anclote Rd. and is most likely impeding traffic and is a concern due to the roadway geometry for traffic approaching from the east and west. An existing stormwater infrastructure is located along Alt. 19 with inlets at the intersection of Alt. 19 and Anclote Rd. but is not along Anclote Rd.





PREPARED BY:
BURGESS & NIPLE
10006 N. DALE MABRY HIGHWAY
SUITE 201, TAMPA, FL. 33618
813-962-8689

CITY OF TARPON SPRINGS
PUBLIC SERVICES DEPARTMENT
324 E. PINE STREET
TARPON SPRINGS, FL 34689
(727) 942-5610

STORMWATER ACTION PLAN - PH II

CHESAPEAKE DR. / IMPERIAL DR. DRAINAGE IMPROVEMENTS

MAP ID NO. 105

OPTION 1 OF 1

F:\Projects\STAN0002_Tarpon\7_SAP Update\3_00_SAP Update\1_SAP Evaluations\105_Chesapeake Dr\Exhibit-A_Chesapeake-Imperial_20200519.dwg LAYOUT:Layout1 Last Saved: Aug. 31, 20 Plot Date: 8/31/2020 2:55 PM By: James greene

SAP 105 – Chesapeake Drive

Problem:

Chesapeake Drive south of Royal Drive has suffered frequent and chronic roadway flooding due low roadway profile at this location and the hydraulic connection to the tidally influenced Tarpon Bayou. During Spring or King Tide events (high tide events coinciding with a new or full moon), which can be further exaggerated by prevailing winds, roadway flooding occurs at this low area when tide elevations exceed the that of the existing roadway and adjacent ground surface.

The low point of the Chesapeake Drive is approximately 200-feet south of the Royal Drive / Chesapeake Drive intersection. At this location there are roadside inlets and grate inlets located within the roadside ditch / stormwater management area on the west side of the roadway. There are three (3) roadside drainage swales (Cell 1, Cell 2, and Cell 3) that provide stormwater treatment and convey roadway runoff into the closed stormwater collection system. Cell 2 is the lowest and during high tide events, tends to trap tidal waters up to elevation 2.56 feet NAVD 88, where flows then begin to encroach into the southbound travel lane of Chesapeake Drive via a concrete flume. Directly across the street is the stormwater inlet Structure S-5 along the northbound lane of Chesapeake Drive, with an edge of pavement elevation of 2.56 feet NAVD 88.

In September 2017, several residents from Chesapeake Drive provided the following public comments to the City Commission regarding their concerns:

- Roadway is not flooding from typical rainfall events
- Prior to addition of storm sewer system, tidally influenced flooding did not occur
- Roadway storm sewer system works for storms, but not “spring” or “king” tides
- Residents are periodically driving through saltwater

On September 26, 2017, the City’s stormwater consultant provided a technical memorandum that evaluated the Chesapeake Drive tidally influenced roadway flooding (attached for reference).

Conceptual Solution(s):

The September 26, 2017 technical memorandum identified two options to resolve the tidally influenced roadway flooding:

Option 1

Mitigate against tidally influenced ponding/flooding by raising the roadway through the sag (low point). Additional right-of-way may be required to achieve this. This option would therefore be costly, time consuming and adversely affect local residents.

Option 2

Install a Tideflex Valve or equivalent product in the existing outfall storm sewer pipe. A 19” X 30” inline check valve would be “slip lined” into the existing storm sewer pipe at a convenient location, within the Chesapeake Drive right-of-way.

BURGESS & NIPLE

Stormwater Action Plan - Phase II

Preliminary Construction Cost Estimate

MAP ID NO. 105: Chesapeake Drive **06/03/2020**

Bid Item No.	Description	Quantity	Units	Unit Price	Amount
5	TIDEFLEX VALVE (19" X 30" ERCP)	1	1	$5,386.33	$5,386.00
				CONSTRUCTION SUBTOTAL	**$5,400.00**
				MOBILIZATION (SHIPPING)	**$634.00**
				25% CONTINGENCY	**$0.00**
				CONSTRUCTION TOTAL	**$6,034.00**
				SURVEY	**$0.00**
				GEOTECHNICAL	**$0.00**
				ENGINEERING	**$0.00**
				GRAND TOTAL	**$6,034.00**

Notes:

1. Unit Prices based on manufacturer costs.
2. Conceptual Cost Estimate does not include the costs of Right-of-Way Acquisition or Permitting.