

ASSESSMENT SUMMARY

Former Cape Coral Golf Course Cape Coral, Lee County, Florida

Purpose

The purpose of this document is to provide the Florida Department of Environmental Protection (FDEP) with a summary of assessment activities that have been recently conducted at the former Cape Coral Golf Course (CCGC). The CCGC is currently owned by Florida Gulf Venture (responsible party). Tetra Tech, Inc. (Tetra Tech, primary contact), on behalf of D.R. Horton (prospective purchaser), is seeking concurrence from the FDEP that historical maintenance activities at the former CCGC have not had an adverse effect on groundwater.

Site Information

The subject property consists of approximately 175 acres of idle land that was last used as a golf course in 2006. The property is located at 4003 Palm Tree Boulevard in Cape Coral, Lee County, Florida. The intent is to re-develop the subject property as a residential community.

Assessment Summary

In July 2016, soil and groundwater sampling was conducted as part of a Limited Environmental Site Assessment (ESA). The results of this assessment were provided to the FDEP in an email dated November 29, 2016 from Nicola Rivera (Tetra Tech). The data indicated the presence of elevated arsenic in the soil, groundwater, and on-site surface water and sediment, see attached Tables 1-5 and Figures 1-11. The data also indicated sporadic elevated detections of dieldrin in the soil and groundwater. Based on the review of the analytical data, the FDEP concluded that the data did not definitively point to a release from CCGC operations.

The primary concern of the FDEP was the arsenic concentrations detected in groundwater. If the arsenic concentrations in groundwater were a result of on-site operations, on-site delineation would be required and plume stability would need to be verified. If the arsenic concentrations in groundwater were due to natural variations related to background concentrations, data demonstrating an absence of an on-site source would be warranted.

A groundwater assessment was performed in March 2017 to determine the groundwater gradient and to verify arsenic concentrations in groundwater. The additional assessment included installation of ten permanent groundwater monitoring wells to a total depth between 24 feet and 27 feet below ground surface (bgs) and the collection of filtered groundwater samples for arsenic analysis. Monitoring wells, MW-1 through MW-8, were located around the perimeter of the property with MW-9 and MW-10 located in the

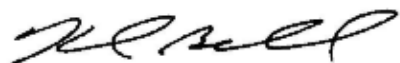
interior of the property, see Figure 12. Arsenic was detected at concentrations greater than the Groundwater Cleanup Target Level (GCTL) in up-gradient wells MW-1, MW-4, and MW-7. Arsenic also was detected at concentrations greater than the GCTL in MW-5 and MW-10, which are down-gradient from impacted perimeter wells, see Table 6.

Conclusion

The results of the groundwater assessment indicate that groundwater generally flows from west to east across the property, except near MW-4 where groundwater flows from southeast to the northwest. This creates a convergence zone near MW-10. On-site groundwater flow may be a combination of regional flow toward the nearby canals to the east and local groundwater elevation responses from surface irrigation by residential property owners. Groundwater concentrations of arsenic in up-gradient monitoring wells indicate that the presence of arsenic in groundwater is not a result of historical operations at the CCGC, but a reflection of natural variations of arsenic concentrations in groundwater.

Tetra Tech is requesting FDEP review of the provided data and concurrence with the presented conclusions.

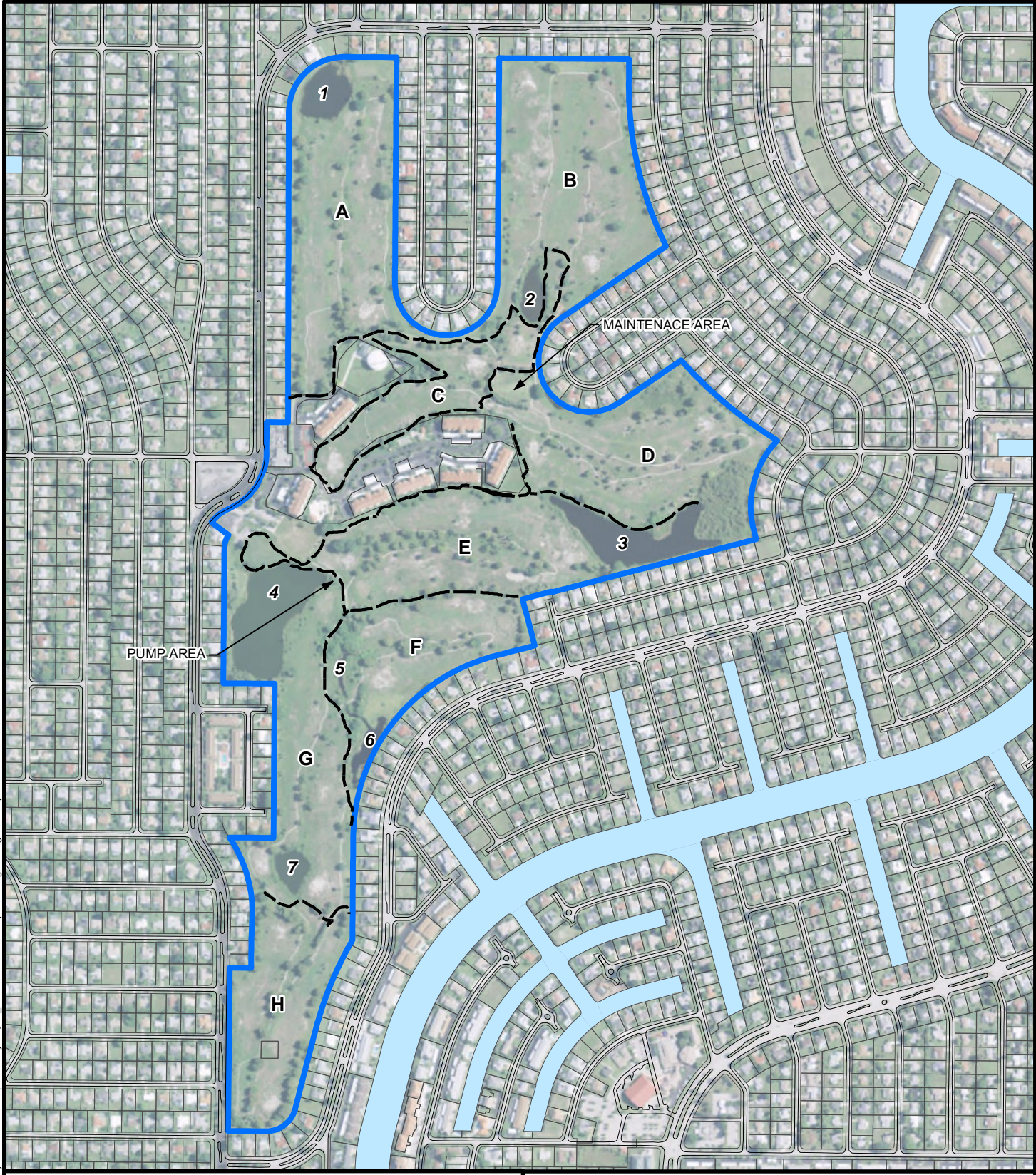
Sincerely,

A handwritten signature in black ink, appearing to read "K. Bell", written in a cursive style.

Keith D. Bell
Program Manager (Tetra Tech)

FIGURES

Date: 4/6/2016 S:\NEW Projects\DR Horton\Projects\212C-HN-16 (2016 Projects)\06_Florida\SWFL\011 Cape Golf\Figure 1 Cape Golf.mxd



APPROXIMATE TARGET PROPERTY BOUNDARY

CANALS

A

AREA IDENTIFIER

1

POND IDENTIFIER

N
W E
S

0 400 800

Approximate Scale in Feet

SITE MAP
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904

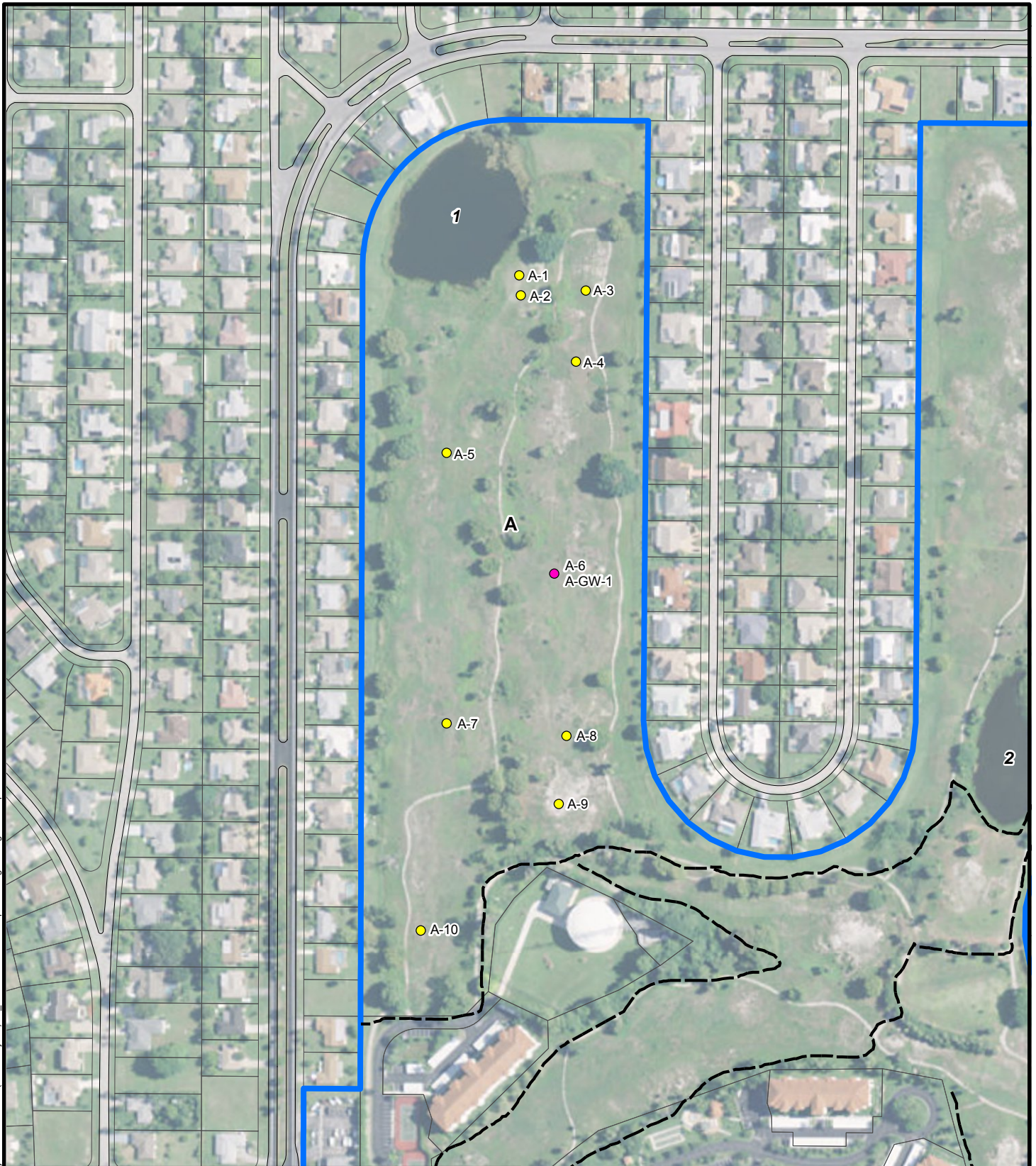
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FIGURE
1

Date: 4/7/2016 S:\NEW Projects\DR Horton\Projects\212C-HN-16 (2016 Projects)\06_Florida\SWFL011 Cape Golf\Figure 2 Cape Golf.mxd



APPROXIMATE TARGET PROPERTY BOUNDARY

CANALS

A

AREA IDENTIFIER

1

POND IDENTIFIER

10-POINT COMPOSITE SAMPLE LOCATION

SOIL/GROUNDWATER SAMPLE LOCATION

N

E

S

W

0

150

300

Approximate Scale in Feet

SAMPLE LOCATION MAP - AREA A
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904

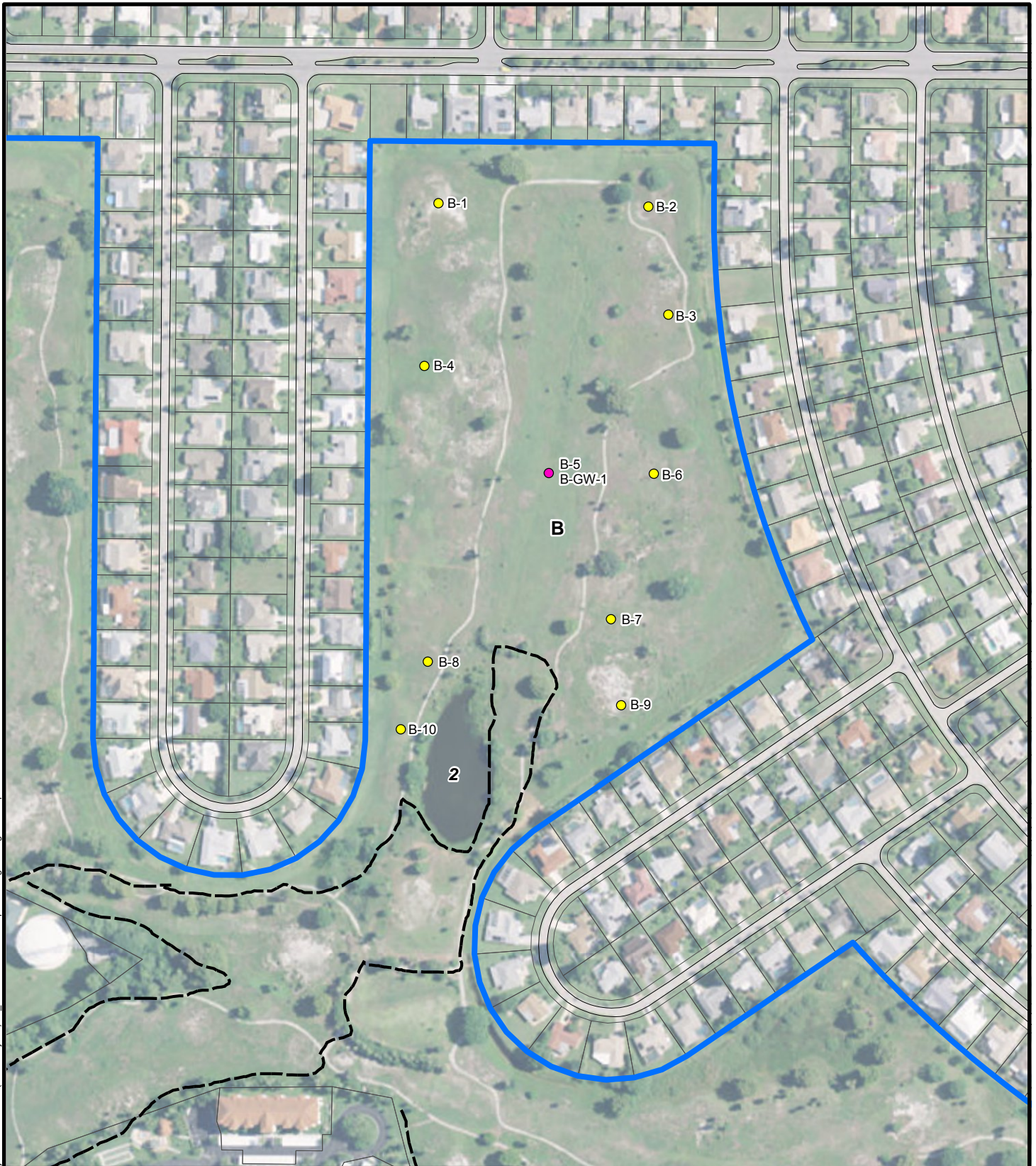
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Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A

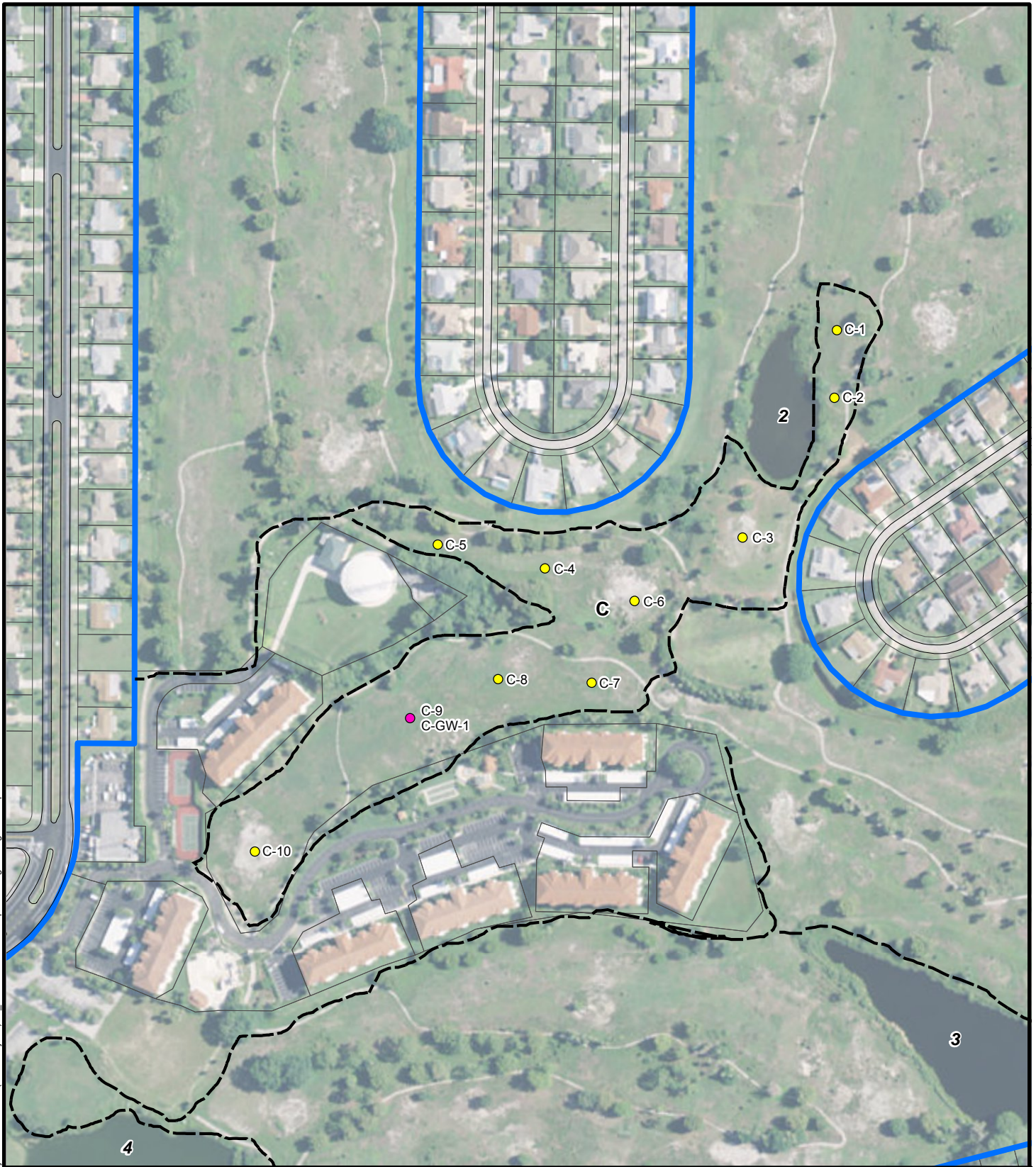
FIGURE
2

Date: 4/7/2016 S:\NEW Projects\DR Horton\Projects\212C-HN-16 (2016 Projects)\06_Florida\SWFL011 Cape Golf\Figure 3 Cape Golf.mxd



<div><div><div></div><div>APPROXIMATE TARGET PROPERTY BOUNDARY</div></div><div><div></div><div>CANALS</div></div><div><div>B</div><div>AREA IDENTIFIER</div></div><div><div>2</div><div>POND IDENTIFIER</div></div><div><div></div><div>10-POINT COMPOSITE SAMPLE LOCATION</div></div><div><div></div><div>SOIL/GROUNDWATER SAMPLE LOCATION</div></div></div> <div data-bbox="535 1764 779 2005"><div><div>N</div><div>W</div><div>E</div><div>S</div></div><div><div>0</div><div>150</div><div>300</div></div><div>Approximate Scale in Feet</div></div> <div data-bbox="812 1724 1534 2005"><div><div>SAMPLE LOCATION MAP - AREA B</div><div>CAPE GOLF</div><div>4003 PALM TREE BOULEVARD</div><div>CAPE CORAL, LEE COUNTY, FLORIDA 33904</div></div><div><div><div>D·R·HORTON</div><div><div>Tt</div><div>Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A</div></div></div></div><div><div>FIGURE</div><div>3</div></div></div>
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APPROXIMATE TARGET PROPERTY BOUNDARY

CANALS

C

AREA IDENTIFIER

2

POND IDENTIFIER

10-POINT COMPOSITE SAMPLE LOCATION

SOIL/GROUNDWATER SAMPLE LOCATION

N
W E
S

0 150 300

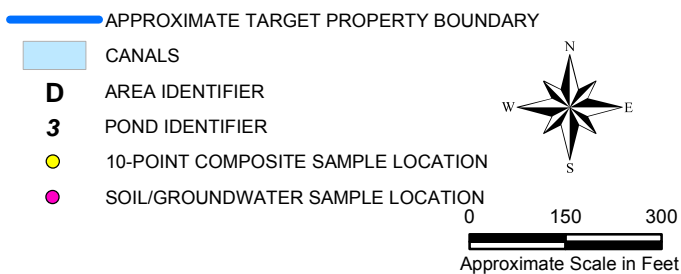
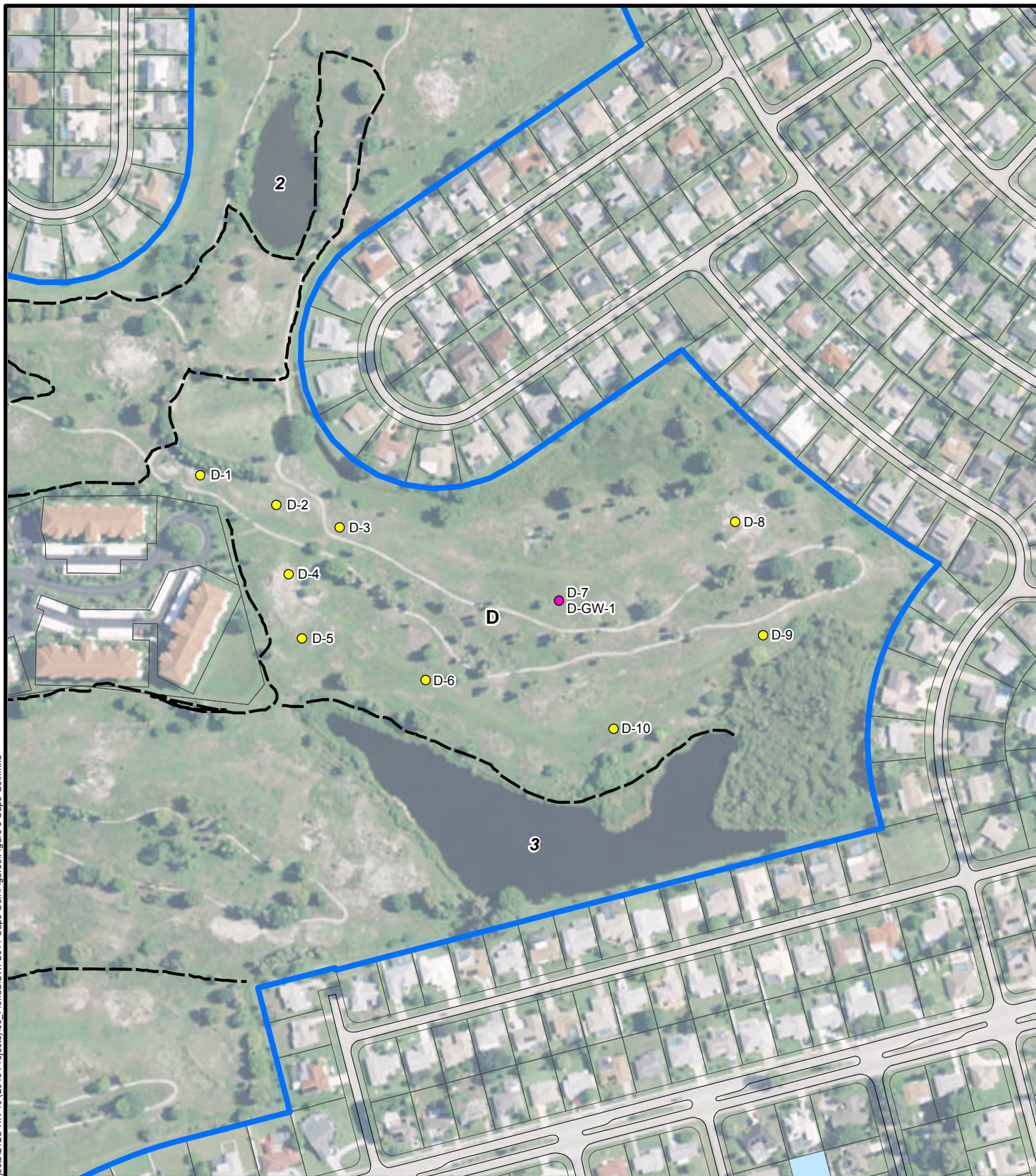
Approximate Scale in Feet

SAMPLE LOCATION MAP - AREA C
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904

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Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A

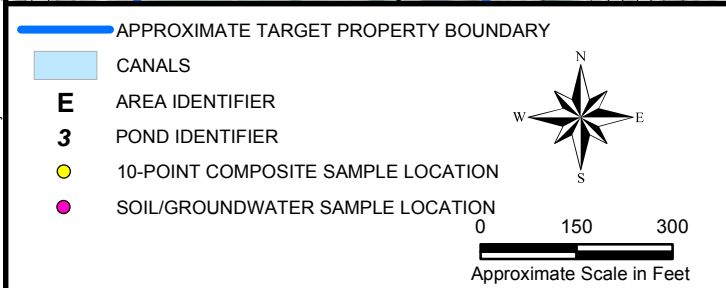
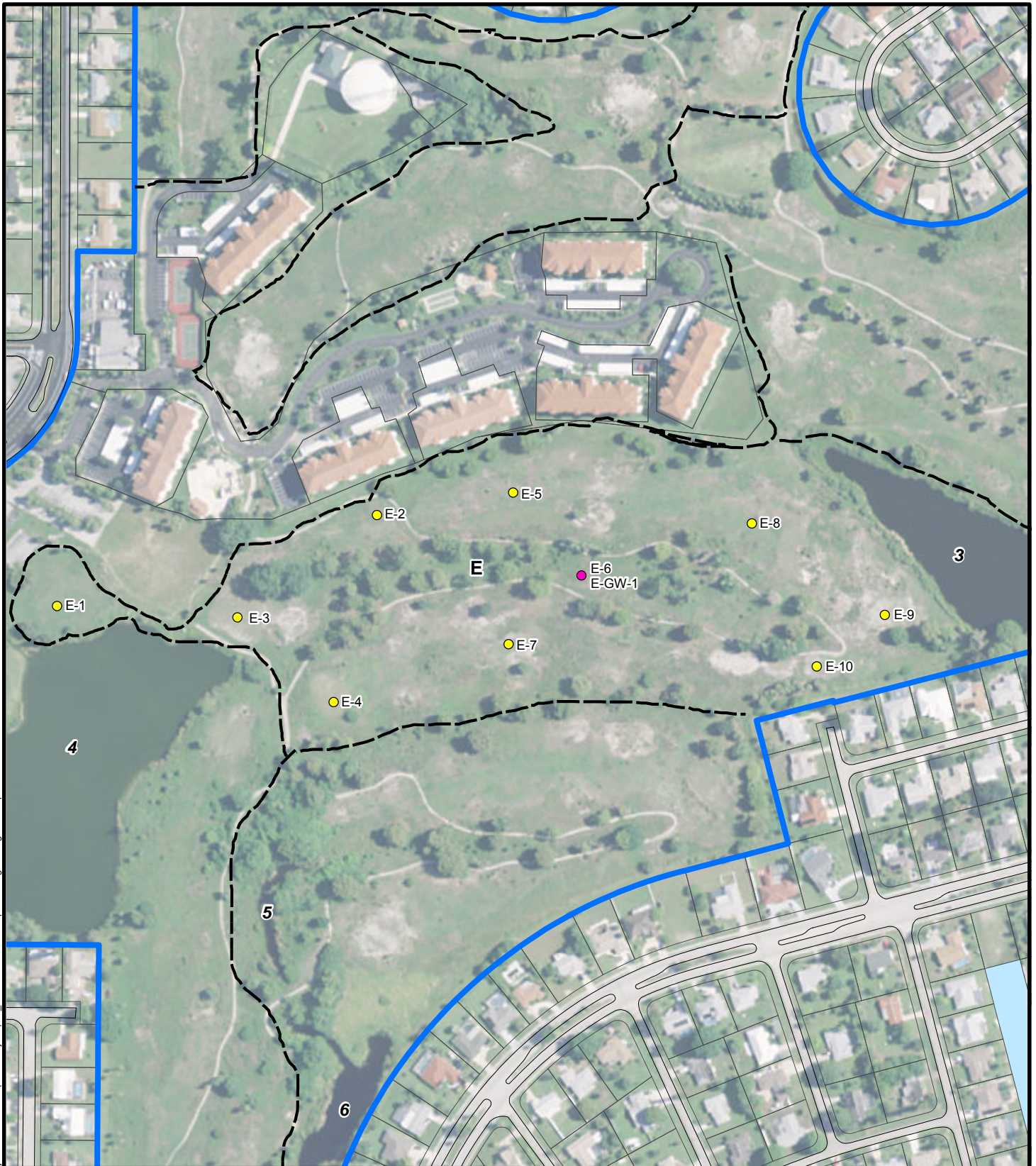
FIGURE
4



SAMPLE LOCATION MAP - AREA D
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904



FIGURE
5

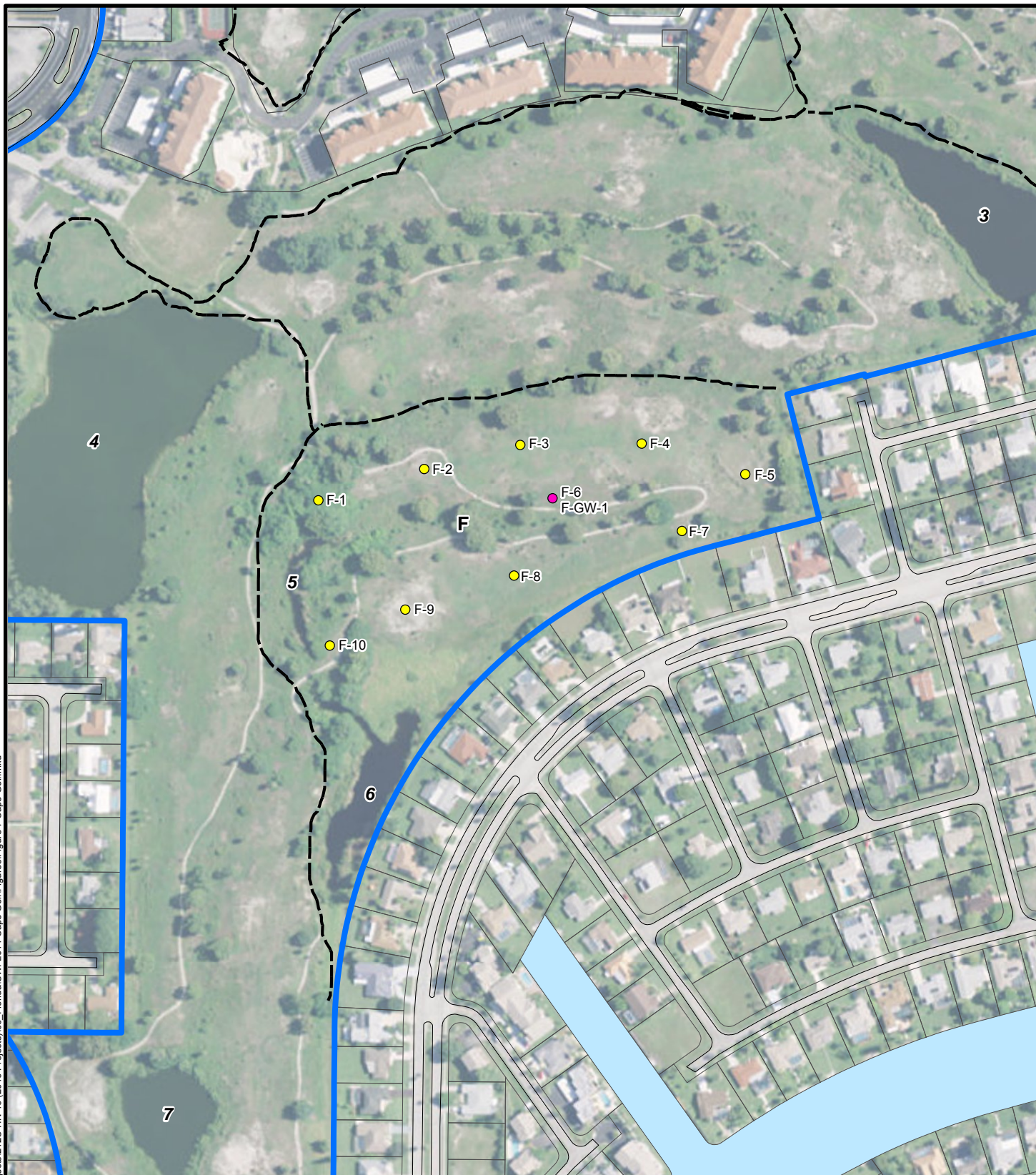


SAMPLE LOCATION MAP - AREA E
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904

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FIGURE
6

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— APPROXIMATE TARGET PROPERTY BOUNDARY

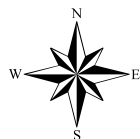
— CANALS

F AREA IDENTIFIER

5 POND IDENTIFIER

● 10-POINT COMPOSITE SAMPLE LOCATION

● SOIL/GROUNDWATER SAMPLE LOCATION



0 150 300
Approximate Scale in Feet

SAMPLE LOCATION MAP - AREA F

CAPE GOLF

4003 PALM TREE BOULEVARD

CAPE CORAL, LEE COUNTY, FLORIDA 33904

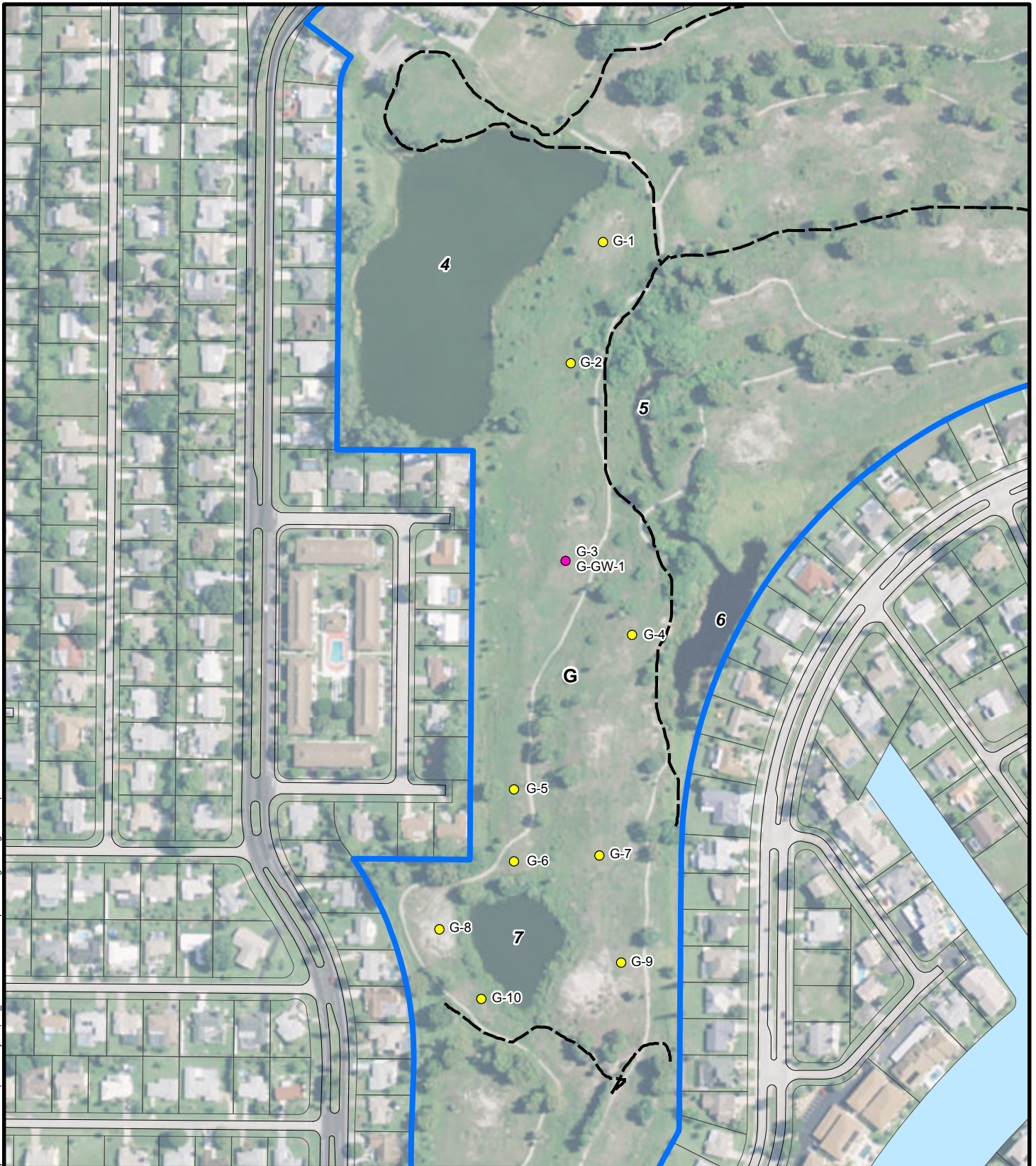
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Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A

FIGURE
7

Date: 4/7/2016 S:\NEW Projects\DR Horton\Projects\212C-HN-16 (2016 Projects)\06_Florida\SWFL011 Cape Golf\Figure 8 Cape Golf.mxd



APPROXIMATE TARGET PROPERTY BOUNDARY

CANALS

G

AREA IDENTIFIER

7

POND IDENTIFIER

10-POINT COMPOSITE SAMPLE LOCATION

SOIL/GROUNDWATER SAMPLE LOCATION

N

E

S

W

0

150

300

Approximate Scale in Feet

SAMPLE LOCATION MAP - AREA G

CAPE GOLF

4003 PALM TREE BOULEVARD

CAPE CORAL, LEE COUNTY, FLORIDA 33904

D

R

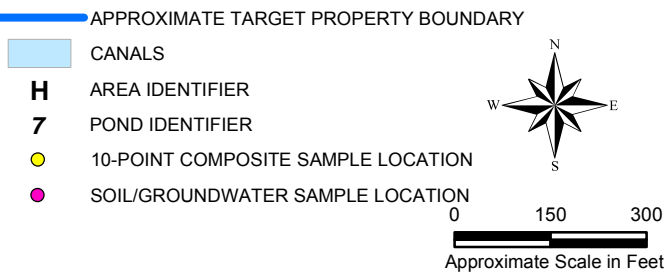
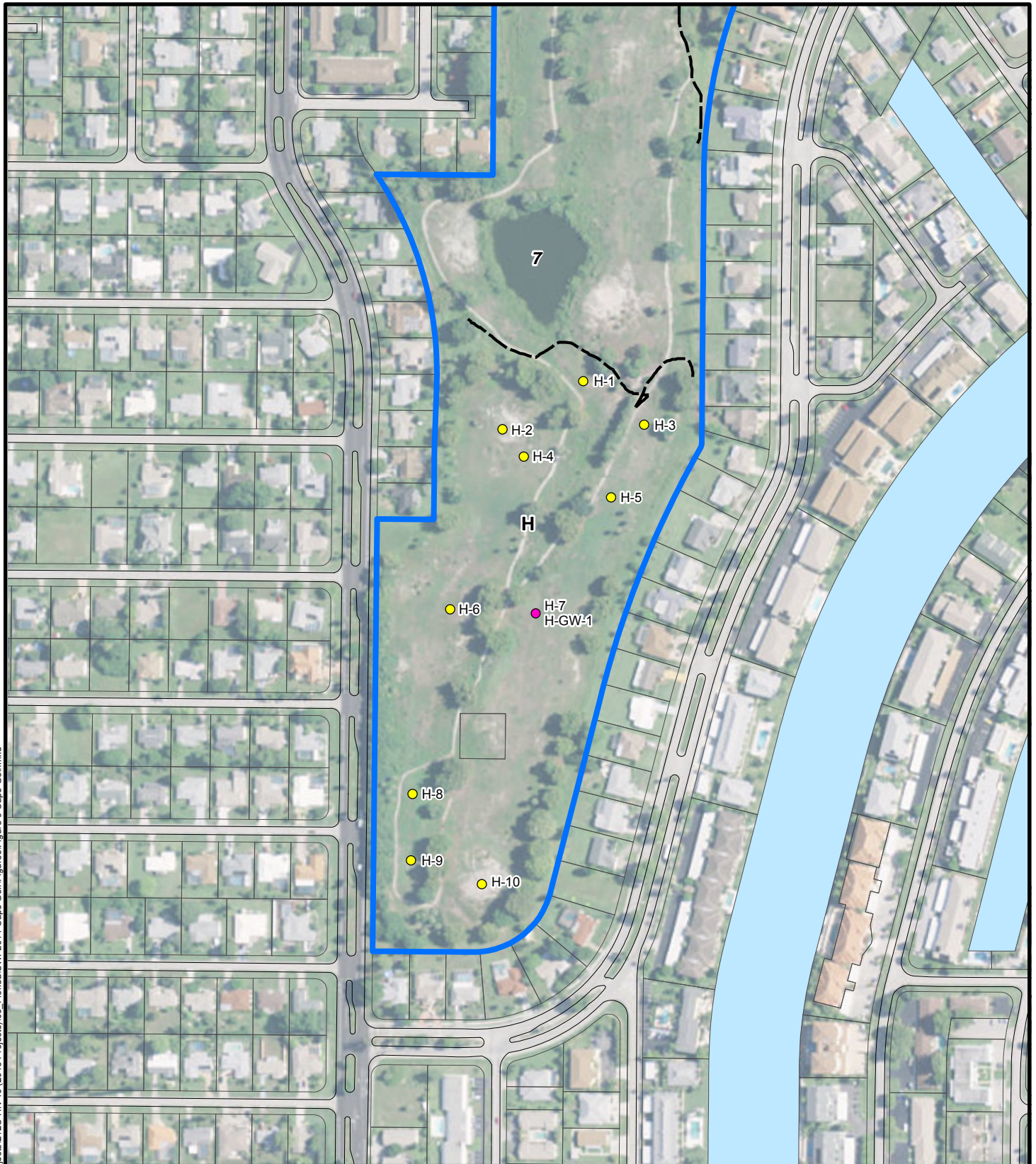
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Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A

FIGURE

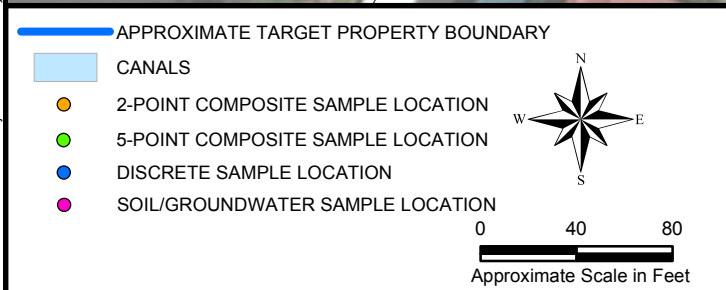
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SAMPLE LOCATION MAP - AREA H
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904



FIGURE
9

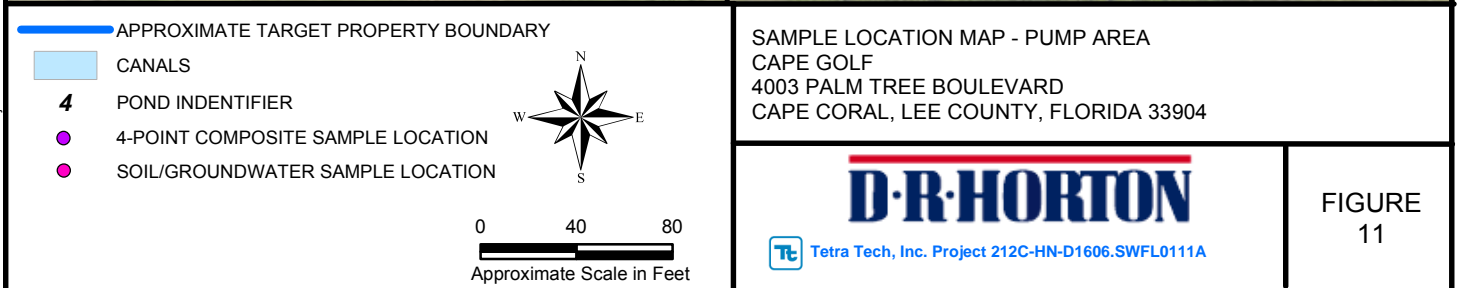


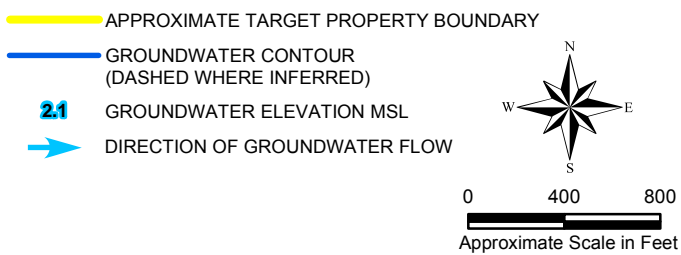
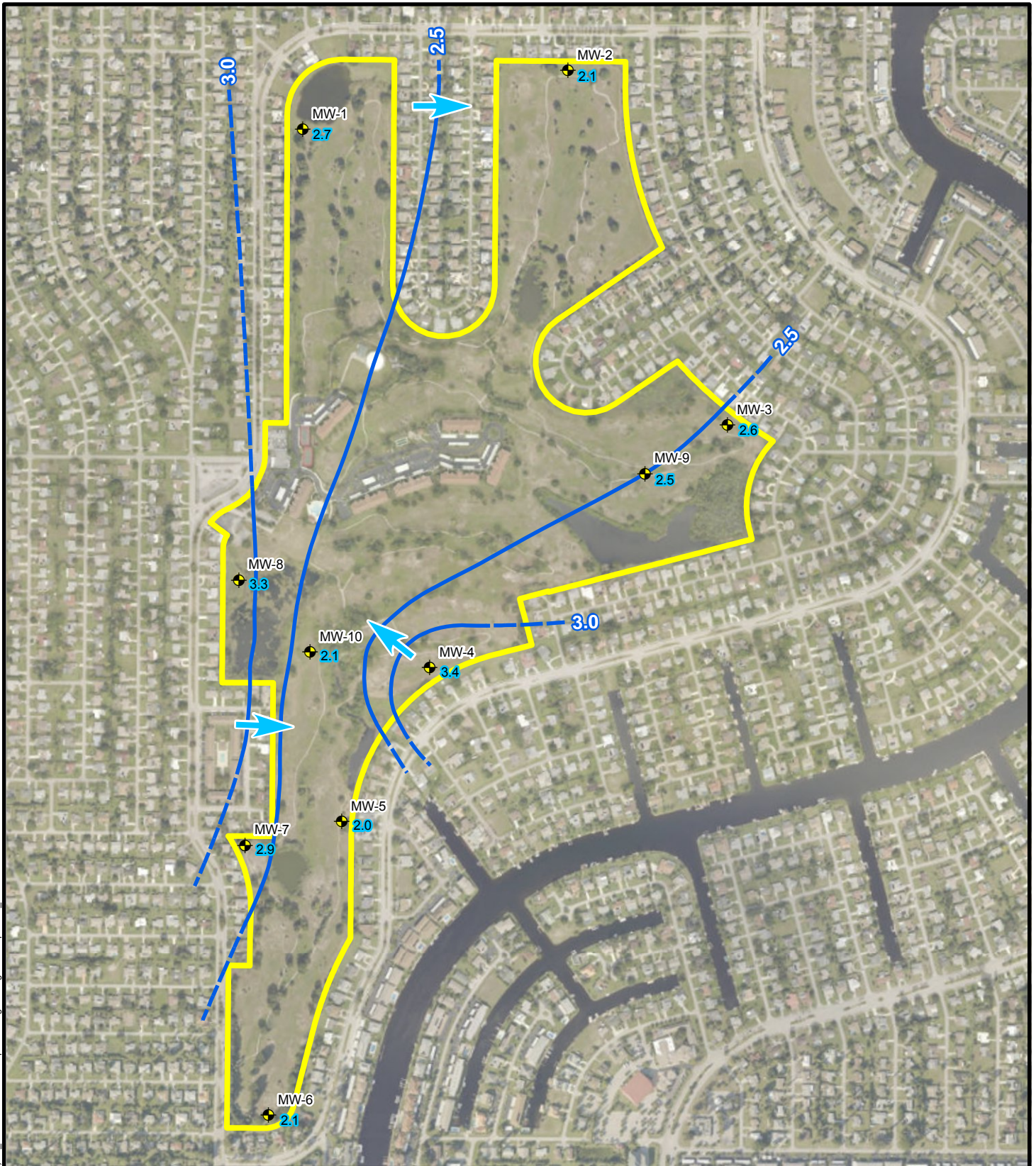
SAMPLE LOCATION MAP - MAINTENANCE AREA
CAPE GOLF
4003 PALM TREE BOULEVARD
CAPE CORAL, LEE COUNTY, FLORIDA 33904

D·R·HORTON

Tetra Tech, Inc. Project 212C-HN-D1606.SWFL0111A

FIGURE 10





GROUNDWATER GRADIENT MAP
 CAPE GOLF
 4003 PALM TREE BOULEVARD
 CAPE CORAL, LEE COUNTY, FLORIDA 33904



FIGURE 12

TABLES

Soil Sample Analytical Results - Golf Course
Cape Golf, Cape Coral, Florida

[illegible]

Analyte ⁽¹⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)											
			CCGC-B		CCGC-B-1	CCGC-B-2	CCGC-B-3	CCGC-B-4	CCGC-B-5	CCGC-B-6	CCGC-B-7	CCGC-B-8	CCGC-B-9	CCGC-B-10
			Composite	Composite	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
			0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Arsenic	mg/kg	2.1	1.63 J	--	--	--	--	--	--	--	--	--	--	
Dieldrin	mg/kg	0.06	0.0175 J	0.00182 U	0.00162 U	0.00192 U	0.194	0.00188 U	0.00189 U	0.014 J	0.00186 U	0.0246	0.00181 U	0.00188 U

[illegible]

Analyte ⁽¹⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)												
			CCGC-D		CCGC-D-1	CCGC-D-2	CCGC-D-3	CCGC-D-4	CCGC-D-5	CCGC-D-6	CCGC-D-7	CCGC-D-8	CCGC-D-9	CCGC-D-10	
			Composite	Composite	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	
			0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	
Arsenic	mg/kg	2.1	3.53	2.74	4.7	9.32	9.15	0.751 J	6.16	3.42	2.54	2.54	0.723 U	8.24	
Dieldrin	mg/kg	0.06	0.00559 J	0.00259 J	0.0289	0.0504	0.0169 J	0.00161 U	0.00169 U	0.00167 U	0.00184 U	0.00188 U	0.00169 U	0.00183 U	

[illegible]

Table 1 (Continued)

Soil Sample Analytical Results - Golf Course
Cape Golf, Cape Coral, Florida

Area F (See Figure 7)

Analyte ⁽¹⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)											
			CCGC-F		CCGC-F-1	CCGC-F-2	CCGC-F-3	CCGC-F-4	CCGC-F-5	CCGC-F-6	CCGC-F-7	CCGC-F-8	CCGC-F-9	CCGC-F-10
			Composite	Composite	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
			0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Arsenic	mg/kg	2.1	4.66	3.63	2.19 J	1.51 J	1.54 J	1.95 J	0.836 U	0.727 U	11.9	1.84 J	1.95 J	3
Dieldrin	mg/kg	0.06	0.00237 J,J3	0.00184 U	0.00169 U	0.00164 U	0.00197 U	0.00164 U	0.00196 U	0.0017 U	0.0141 J	0.00168 U	0.00166 U	0.0102 J

Area G (See Figure 8)

Analyte ⁽¹⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)											
			CCGC-G		CCGC-G-1	CCGC-G-2	CCGC-G-3	CCGC-G-4	CCGC-G-5	CCGC-G-6	CCGC-G-7	CCGC-G-8	CCGC-G-9	CCGC-G-10
			Composite	Composite	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
			0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Arsenic	mg/kg	2.1	9.14	1.59 J	1.33 J	2.08 J	2.99	1.23 J	3.92	8.05	0.813 J	0.715 U	5.07	5.73
Dieldrin	mg/kg	0.06	0.00353 J,J3	0.00721 J	0.00169 U	0.0018 U	0.00167 U	0.00184 U	0.192	0.00176 U	0.00164 U	0.00167 U	0.0601	0.00168 U

Area H (See Figure 9)

Analyte ⁽¹⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)											
			CCGC-H		CCGC-H-1	CCGC-H-2	CCGC-H-3	CCGC-H-4	CCGC-H-5	CCGC-H-6	CCGC-H-7	CCGC-H-8	CCGC-H-9	CCGC-H-10
			Composite	Composite	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
			0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Arsenic	mg/kg	2.1	5.68	1.16 J	7.25	7.91	6.53	3.82	2.83	3.31	2.79	9.19	4.43	1.05 J
Dieldrin	mg/kg	0.06	0.0138 J,J3	0.0019 U	0.0209 J	0.00185 U	0.0168	0.00182 U	0.0183	0.00186 U	0.00159 U	0.00199 U	0.00164 U	0.00188 U

Key:

bgs - below ground surface

J - The identification of the analyte is acceptable; the reported value is an estimate

J3 - The associated batch quality control was outside the established quality control range for precision.

NA - Not analyzed

mg/kg - milligrams per kilogram

SCTL - Soil Cleanup Target Level

U - Not detected at the sample detection limit

-- Not analyzed

Notes:

(1) Only analytes detected at a concentration greater than the SCTL are listed on the table.

 = Detected concentration is greater than the SCTL

Table 2

Groundwater Analytical Results
Cape Golf, Cape Coral, Florida

Golf Course (See Figures 2 through 9 for sample locations)

Analyte ⁽¹⁾	Units	GCTL	CCGC-A-GW-1	CCGC-B-GW-1	CCGC-C-GW-1	CCGC-D-GW-1	CCGC-E-GW-1	CCGC-F-GW-1	CCGC-G-GW-1	CCGC-H-GW-1
Arsenic	mg/L	0.01	0.0503	0.0106	0.0762	0.00948 J	0.051	0.021	0.00706 J	0.0467
Dieldrin	mg/L	0.000002	0.00000751 U	0.00000751 U	0.0000169 J	0.00000751 U	0.00000751 U	0.00000751 U	0.00000751 U	0.00000751 U

Maintenance Area (See Figure 10 for sample location)

Analyte ⁽¹⁾	Units	SCTL	CCGC-MAIN-GW-4-2
Arsenic	mg/L	0.01	0.125

Pump Area (See Figure 11 for sample location)

Analyte ⁽¹⁾	Units	GCTL	CCGC-PUMP-GW-1-1
Arsenic	mg/L	0.01	0.091

Key:

GCTL - Groundwater Cleanup Target Level

J - The identification of the analyte is acceptable; the reported value is an estimate

mg/L - milligrams per liter

U - Not detected at the sample detection limit

Notes:

(1) Only analytes detected at a concentration greater than the GCTL are listed on the table.

= Detected concentration is greater than the GCTL

Table 3

Soil Sample Analytical Results - Maintenance Area⁽¹⁾
Cape Golf, Cape Coral, Florida

Analyte ⁽²⁾	Units	SCTL	Sample Location, Type and Collection Depth (feet bgs)							
			CCGC-MAIN-1	CCGC-MAIN-2	CCGC-MAIN-3	CCGC-MAIN-4-1	CCGC-MAIN-4-2	CCGC-MAIN-5-1		CCGC-MAIN-6-1
			5-point composite	2-point composite	2-point composite	Discrete	Discrete	Discrete	Discrete	Discrete
			0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0
Arsenic	mg/kg	2.1	1.15 J	2.04 J	1.54 J	NA	NA	2.95	0.805 J	NA

Key:

bgs - below ground surface

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not analyzed

mg/kg - milligrams per kilogram

SCTL - Soil Cleanup Target Level

Notes:

(1) Sample locations are shown on Figure 10.

(2) Only analytes detected at a concentration greater than the SCTL are listed on the table.

 = Detected concentration is greater than the SCTL

Table 4

**Soil Sample Analytical Results - Pump Area ⁽¹⁾
Cape Golf, Cape Coral, Florida**

Analyte ⁽²⁾	Units	SCTL	Sample Location and Collection Depth (feet bgs)	
			CCGC-PUMP-1 ⁽³⁾	
			0.0 - 2.0	2.0 - 4.0
Arsenic	mg/kg	2.1	2.61	5.7

Key:

bgs - below ground surface

mg/kg - milligrams per kilogram

SCTL - Soil Cleanup Target Level

Notes:

(1) Sample locations are shown on Figure 11.

(2) Only analytes detected at a concentration greater than the SCTL are listed on the table.

(3) Four-point composite sample

 = Detected concentration is greater than the SCTL

Table 5

Sediment and Surface Water Sample Analytical Results⁽¹⁾
Cape Golf, Cape Coral, Florida

Sediment Samples

Analyte ⁽²⁾	Units	SCTL	CCGC-SED-1	CCGC-SED-2	CCGC-SED-3	CCGC-SED-4	CCGC-SED-5	CCGC-SED-6	CCGC-SED-7
Arsenic	mg/kg	2.1	3.16	1.99 J	2.21 J	7.59	7.3	1.97 J	6.21

Surface Water Samples

Analyte ⁽²⁾	Units	SWCTL	CCGC-SW-1	CCGC-SW-2	CCGC-SW-3	CCGC-SW-4	CCGC-SW-5	CCGC-SW-6	CCGC-SW-7
Arsenic	mg/L	0.05	0.0132	0.0173	0.0514	0.0189	0.031	0.0225	0.0219

Key:

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not analyzed

mg/kg - milligrams per kilogram

mg/L - milligrams per liter

SCTL - Soil Cleanup Target Level

SWCTL - Surface Water Cleanup Target Level

Notes:

(1) Pond locations are shown on Figure 1.

(2) Only analytes detected at a concentration greater than the SCTL or the SWCTL are listed on the table.

= Detected concentration is greater than the SCTL or the SWCTL

Table 6

**Additional Groundwater Analytical Results
Cape Golf, Cape Coral, Florida**

Analyte	Units	GCTL	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10
			03/07/17	03/07/17	03/07/17	03/07/17	03/07/17	03/07/17	03/06/17	03/06/17	03/07/17	03/06/17
Arsenic	mg/L	0.01	0.0104	0.01 U	0.01 U	0.102	0.0103	0.01 U	0.0161	0.01 U	0.01 U	0.0262

Key:

GCTL - Groundwater Cleanup Target Level

mg/L - milligrams per liter

U - Not detected at the sample detection limit

Notes:

= Detected concentration is greater than the GCTL