DAVIDSON ENGINEERING
www.davidsonengineering.com

4365 Radio Road, Suite 201 ▪ Naples, FL 34104 ▪ P (239) 434.6060 ▪ F (239) 434.6084

ENGINEERING REPORT

NCH Healthcare Northeast- Temporary Office
SECTION 23, TOWNSHIP 48 S, RANGE 26 E
Collier County, Florida

PREPARED FOR:
NCH Healthcare System, Inc.
350 7th Street North
Naples, Florida

PREPARED BY:
Davidson Engineering, Inc.
4365 Radio Road, Suite 201
Naples, Florida 34104

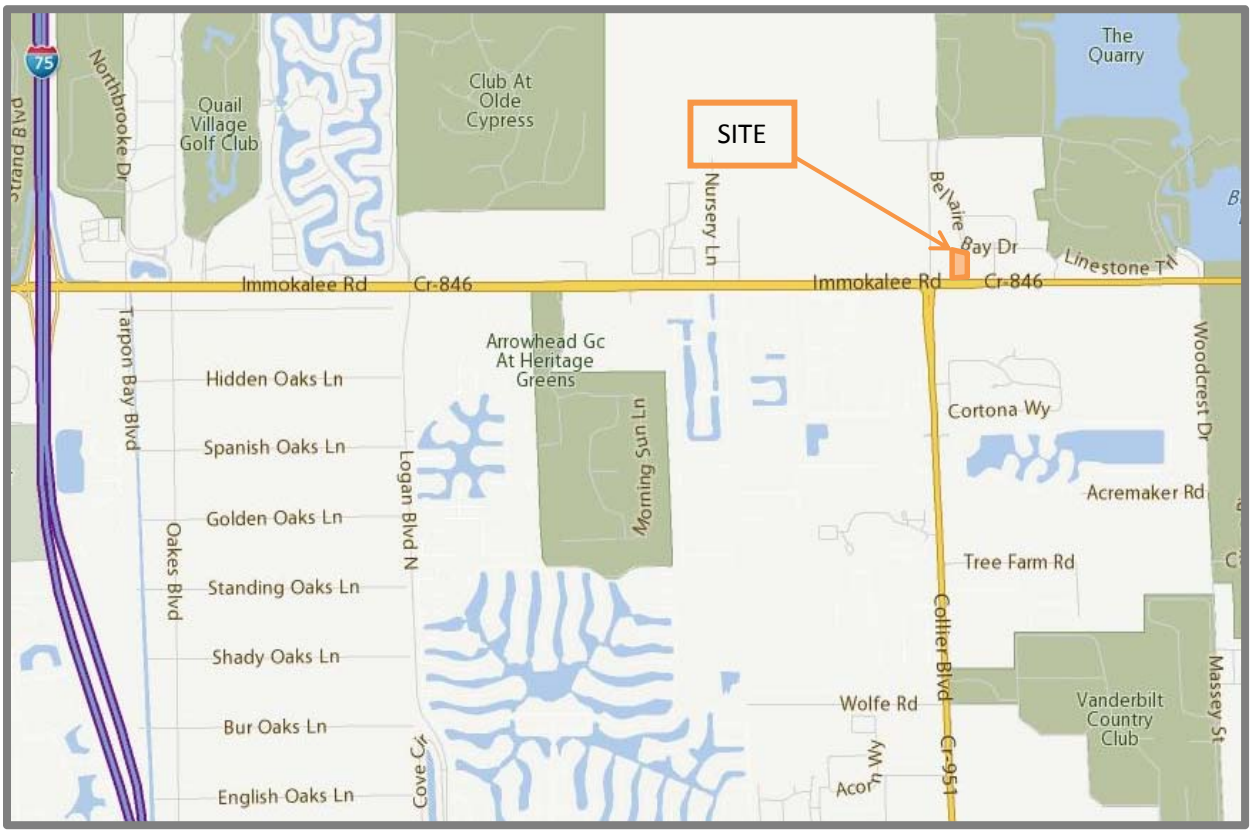
Ryan A. White, P.E., Registration No. 67400
Company ID No. 9496

October 30, 2014

TABLE OF CONTENTS

General

NCH Healthcare Northeast- Temporary Office (NCH) is a 1.01± acre parcel in the commercial plat of Cameron Commons Unit 1 within Heritage Bay PUD (Original Ordinance #03-40, revised Ordinance #10-24). The project is located in Section 23, Township 48 South, and Range 26 East of Collier County, Florida. It is bounded by Cameron Commons Unit 1 development on the north, east, and west sides and Immokalee Canal on the south with Immokalee Road right-of-way beyond.



Existing Conditions

The NCH property is also known as "Tract 3" under Cameron Commons Unit 1. It was cleared under PPL-AR-5877 and currently exists as vacant land. Also during under the approved PPL water management, underground utilities and a shared internal roadway with easements were constructed. Utilities on NCH site include one hydrant, 4-inch potable watermain stub out, and 6-inch sanitary stub out for connection. The property features access from C.R. 951 Extension and Bellaire Bay Drive.

Plan of Construction

The project proposes a temporary one-story modular building for medical office use. It is 3,480 square feet (SF) and will be constructed with associated parking, connection to existing underground utilities, and landscaping as required by Collier County land development code in phase one of the project. The future phase two portions will include an inter-connect driveway with the adjacent CVS site to the west and a permanent dumpster enclosure with masonry walls. An amendment to the SDP and an additional

modification to the SFWMD ERP will be required for the future phase two site improvements. This parcel was previously permitted with South Florida Water Management District (SFWMD) under modified permit #11-02234-P-05 and will provide storm water management accordingly.

The infrastructure construction will commence upon Collier County and SFWMD approval. A construction schedule will be provided to all interested parties prior to or at the time of pre-construction meeting.

Potable Water Supply

General Use & Irrigation

Potable water and irrigation will be provided by Collier County Utilities via the existing 4-inch watermain stubbed out for development during original PPL construction. The service line extends from the 4-inch main approximately 20 feet to the property line where stub-out is located. NCH proposes connection with a 2-inch line that will provide service for the proposed use. An existing potable master meter located in the southeast corner of Tract 5 was previously sized to accommodate all flows from Cameron Commons Unit 1. Appendix A offers the potable meter sizing worksheet for NCH.

Fire Protection

Water for fire protection will be provided by Collier County Utilities via the existing hydrant located on site. This hydrant was also constructed during the PPL phase of development and provides adequate flow for the proposed temporary non-sprinkled building. Using the NFPA fire flow table, the required fire flow for the proposed building type is as follows (see Appendix B for full table):

Construction IBC Type:	V-B (Temporary Modular Trailer)
Building Fire Area:	3,480 SF
Required Fire Flow:	1,500 GPM

Based on the hydrant test conducted by North Naples Fire District, provided in Appendix C, the overall hydrant system will provide adequate water supply to exceed the required minimum flow throughout the site.

Sanitary Sewer

General

Sanitary service will be provided by Collier County Utilities. The project proposes connection to the existing 6-inch PVC lateral located on the north property line. This existing stub-out connects to Cameron Commons Unit 1's gravity system which has ultimate discharge into the existing County lift station (No. 167.00) on the southeast corner of Bellaire Bay Drive and the shared internal access. This County station was designed to accommodate all wastewater flows (up to 20,000 sf commercial use plus 210 residential units) from the Cameron Commons Unit 1 commercial development. The lift station record drawings are provided in Appendix D. These flows were originally based on the Florida Building

Code and F.A.C. 64E-6. The following calculations have been utilized for sizing this project's sewer infrastructure; see Table 1 – Proposed Sewer Demands.

Table 1: Proposed Level of Service Demand

Description	Unit Type	GPD/Unit	# Units[1]	Average Daily Demand, GPD	Peak[2] Daily Demand, GPM
Doctor/Dentist Office	Practitioner	250	3	750	2.08
	Employee/8 hour shift	15	6	90	0.25
			Total:	590	2.33

Based on FAC: 64E.6.008 System Size Determination

[1]Conservatively calculated by assuming 1 practitioner per 2,000 sf and 3 employees per practitioner.

[2]Peak factor of 4.5 as calculated per Figure 1 – Ratio of Peak Hourly Flow to Design Average Flow, "Recommended Standards for Wastewater Faculties," 1997 Ed., Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

Storm Water Management

The proposed project was previously permitted under modification number 11-02234-P-05 known as Cameron Commons Unit 1. This entire commercial development was permitted as a phased project within Basin 8 of Heritage Bay PUD under master permit 11-02234-P. Table 2, below, summarizes the design criteria for Basin 8.

Table 2: Cameron Commons Unit 1 – Basin 8 Design Criteria

	Ft-NGVD	Ft-NAVD
Control Elevation	12.80	11.55
10-year, 1-day Storm Stage	14.60	13.35
25-year, 3-day Storm Stage	15.40	14.15
100-year, 3-day Storm Stage	16.50	15.25
Minimum Parking Lot Elevation	14.90	13.65
Minimum Road Crown /Perimeter Berm Elevation	15.60	14.35
Minimum Finish Floor Elevation	17.10	15.85

Datum Conversion- NAVD + 1.25 = NGVD

The required 1/2-inch dry pretreatment volume for Cameron Commons Unit 1 is 0.507 ac-ft. The entire phased project conceptually proposed a series of interconnected dry detention areas capable of storing 0.63 ac-ft of storm water. Please refer to Appendix E for the approved phased drainage plan.

NCH (Tract 3) is proposing to sheet flow all runoff into the on-site dry detention area for storm water conveyance to the existing control structure located in northeast corner of Cameron Commons Unit 1. The required pretreatment volume for NCH tract 3 is 0.042 ac-ft. The previous conceptually permitted volume was 0.05 ac-ft. Currently proposed on site is 0.087 ac-ft. (See Appendix F for existing/conceptually permitted versus proposed dry detention areas.)

APPENDIX A

Potable Meter Sizing Worksheet

Water Meter Sizing Form

One Form Per Meter

Please call Public Utilities Engineering (239) 252-2583 with any questions.

Preparer's Information:

Name ==========> Josh Fruth

Title ==========> Project Manager

Company=========> Davidson Engineering

Address ==========> 4365 Radio Road

Naples, Florida 34104

Phone ==========> 239-434-6060

Email Address =====> josh@davidsonengineering.com

Project Information:

Date ====> 28-Oct-14

Permit or AR Number

Name of Project ===> NCH Healthcare Northeast - Temporary Office

Project Address ===> T.B.D.

Please Note:

1. All commercial facilities must be metered separately from residential facilities with the exception of those commercial facilities that are within a master metered residential development and designed for the exclusive use of the residents within such development.

2. Meters that include fire service shall be selected to allow a maximum pressure loss at design flow of 5 psi except the 3-inch meter shall be a maximum pressure loss of 5.5 psi.

3. Additional fees may apply if a backflow device is deemed necessary by the Water Distribution Department.

4. The Design Engineer/Architect must submit signed and sealed documentation supporting meter sizing. For meters 4-inch and smaller the sizing shall be based upon Fixture Flow Values as shown on the following page and sized as per the Table on page 3 unless approved otherwise by the Collier County Utilities Engineering Department. For all meters the Engineer/Architect must consider all relevant factors before selecting the final meter size.

5. For remodeling projects this form must be submitted only if there is a net increase in Fixture Flow Value.

This Section to be filled out by Engineer/Architect of Record:

Demand in accordance with the Fixture Flow Value Worksheet and the Table for Estimating Demand
(Engineer/Architect must attach a completed Fixture Flow Value Worksheet)

25.85 GPM

Meter Size in Inches
(If the meter is existing, Engineer/Architect must identify the meter manufacturer and model number)

Connecting to Master Meter

Demand Range (GPM)	Meter Size
0 to 24	3/4"
24.1 to 40	1"
40.1 to 80	1 1/2"
80.1 to 144	2"
144.1 to 405	3"
405.1 to 900	4"

Type or Print Name of Engineer/Architect of Record for Project

Signature of Engineer/Architect of Record for Project and Date

[Affix Engineering/Architect Stamp Here]

Fixture Flow Value Worksheet

Supporting Documentation

Please call Public Utilities Engineering (239) 252-2583 with any questions.

Enter # of Fixtures of each Fixture Type, per unit, then multiply by appropriate Flow Rate to get Fixture Value

Fixture				Flow Rate		# of Fixtures Per Unit		Fixture Flow Value
Automatic clothes Washer								
Commercial				3	x		=	
Residential				2	x		=	
Bathroom group								
As defined in FL Plumbing Code Section 202 (1.6 gpf water closet)				5	x		=	
As defined in FL Plumbing Code Section 202 (water closet flushing greater than 1.6 gpf)				6	x		=	
Bathtub				4	x		=	
Bidet				2	x		=	
Dental unit or cuspidor				1	x		=	
Dishwasher, residential				2.75	x		=	
Drinking fountain				0.75	x		=	
Shower				3	x		=	
Sillcock, hose bibb				5	x		=	
Sink (per faucet)								
Kitchen, residential				2	x	1	=	2
Laundry tray				4	x		=	
Lavatory				2	x	4	=	8
Service				3	x	1	=	3
Wash				2	x	9	=	18
Urinal								
Standard				4	x		=	
Flushless				0	x		=	
Valve*	Gallons/Flush =	0.16	x10	1.6	x		=	
Water Closet								
Flushometer valve*	Gallons/Flush =		x10		x		=	
Flushometer tank				1.6	x	4	=	6.4
Tank				4	x		=	
For any fixtures not listed, submit manufacturer's data sheets and enter appropriate description and value:								
Other: ICE MAKER				1	x	1	=	1
Other:					x		=	
Other:					x		=	
Other:					x		=	
Other:					x		=	

Total Fixture Value Per Unit =====>	**38.4**
Number of Units with this Fixture Count =====>	1
Grand Total of Fixture Flow Value (Per Unit Total x Number of Units) =====>**	**38.4**

*Valves are calculated using a flush rate of 10 flushes per minute (according to Florida Plumbing Code).
The flow rate is 10 times the gallons per flush.
The fixture flow value is calculated as follows:

Number of Valves	Calculation
1 - 2	Flow Rate **times** Number of Fixtures.
3 - 10	Flow Rate **times** two **plus** two **times** the Number of Fixtures.
11 or more	Flow Rate **times** Number of Fixtures **divided** by two.

**Use total Fixture Flow Value on "Table for Estimating Demand" to estimate water meter demand.

Table for Estimating Demand

Supporting Documentation

Please call Public Utilities Engineering (239) 252-2583 with any questions.

SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH TANKS		SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH VALVES	
Load	**Demand**	**Load**	**Demand**
Fixture Flow Value	Gallons per minute	Fixture Flow Value	Gallons per minute
1	3.0	---	---
2	5.0	---	---
3	6.5	---	---
4	8.0	---	---
5	9.4	5	15.0
6	10.7	6	17.4
7	11.8	7	19.8
8	12.8	8	22.2
9	13.7	9	24.6
10	14.6	10	27.0
11	15.4	11	27.8
12	16.0	12	28.6
13	16.5	13	29.4
14	17.0	14	30.2
15	17.5	15	31.0
16	18.0	16	31.8
17	18.4	17	32.6
18	18.8	18	33.4
19	19.2	19	34.2
20	19.6	20	35.0
25	21.5	25	38.0
30	23.3	30	42.0
35	24.9	35	44.0
40	26.3	40	46.0
45	27.7	45	48.0
50	29.1	50	50.0
60	32.0	60	54.0
70	35.0	70	58.0
80	38.0	80	61.2
90	41.0	90	64.3
100	43.5	100	67.5
120	48.0	120	73.0
140	52.5	140	77.0
160	57.0	160	81.0
180	61.0	180	85.5
200	65.0	200	90.0
225	70.0	225	95.5
250	75.0	250	101.0
275	80.0	275	104.5
300	85.0	300	108.0
400	105.0	400	127.0
500	124.0	500	143.0
750	170.0	750	177.0
1,000	208.0	1,000	208.0
1,250	239.0	1,250	239.0
1,500	269.0	1,500	269.0
1,750	297.0	1,750	297.0
2,000	325.0	2,000	325.0
2,500	380.0	2,500	380.0
3,000	433.0	3,000	433.0
4,000	535.0	4,000	535.0
5,000	593.0	5,000	593.0

APPENDIX B

NFPA Require Fire Flow Worksheet

CROSS-REFERENCE OF BUILDING CONSTRUCTION TYPES

NFPA 220	I(442)	I(332)	II(222)	II(111)	II(000)	III(211)	III(200)	IV(2HH)	V(111)	V(000)
IBC	----	IA	IB	IIA	IIB	IIIA	IIIB	IVHT	VA	VB

Table H.5.1 Minimum Required Fire Flow and Flow Duration for Buildings

Fire Area ft² (×0.0929 for m²)					Fire Flow gpm[2] (× 3.785 for L/min)	Flow Duration (hours)
I(443),I(332), II(222)[1]	II(111), III(211)[1]	IV(2HH), V(111)[1]	II(000),III(200), III(000)[1]	V(000)[1]		
0–22,700	0–12,700	0–8,200	0–5,900	0–3,600	1,500	2
22,701–30,200	12,701–17,000	8,201–10,900	5,901–7,900	3,601–4,800	1,750	
30,201–38,700	17,001–21,800	10,901–12,900	7,901–9,800	4,801–6,200	2,000	
38,701–48,300	21,801–24,200	12,901–17,400	9,801–12,600	6,201–7,700	2,250	
48,301–59,000	24,201–33,200	17,401–21,300	12,601–15,400	7,701–9,400	2,500	
59,001–70,900	33,201–39,700	21,301–25,500	15,401–18,400	9,401–11,300	2,750	
70,901–83,700	39,701–47,100	25,501–30,100	18,401–21,800	11,301–13,400	3,000	3
83,701–97,700	47,101–54,900	30,101–35,200	21,801–25,900	13,401–15,600	3,250	
97,701–112,700	54,901–63,400	35,201–40,600	25,901–29,300	15,601–18,000	3,500	
112,701–128,700	63,401–72,400	40,601–46,400	29,301–33,500	18,001–20,600	3,750	
128,701–145,900	72,401–82,100	46,401–52,500	33,501–37,900	20,601–23,300	4,000	4
145,901–164,200	82,101–92,400	52,501–59,100	37,901–42,700	23,301–26,300	4,250	
164,201–183,400	92,401–103,100	59,101–66,000	42,701–47,700	26,301–29,300	4,500	
183,401–203,700	103,101–114,600	66,001–73,300	47,701–53,000	29,301–32,600	4,750	
203,701–225,200	114,601–126,700	73,301–81,100	53,001–58,600	32,601–36,000	5,000	
225,201–247,700	126,701–139,400	81,101–89,200	58,601–65,400	36,001–39,600	5,250	
247,701–271,200	139,401–152,600	89,201–97,700	65,401–70,600	39,601–43,400	5,500	
271,201–295,900	152,601–166,500	97,701–106,500	70,601–77,000	43,401–47,400	5,750	
295,901–Greater	166,501–Greater	106,501–115,800	77,001–83,700	47,401–51,500	6,000	
295,901–Greater	166,501–Greater	115,801–125,500	83,701–90,600	51,501–55,700	6,250	
295,901–Greater	166,501–Greater	125,501–135,500	90,601–97,900	55,701–60,200	6,500	
295,901–Greater	166,501–Greater	135,501–145,800	97,901–106,800	60,201–64,800	6,750	
295,901–Greater	166,501–Greater	145,801–156,700	106,801–113,200	64,801–69,600	7,000	
295,901–Greater	166,501–Greater	156,701–167,900	113,201–121,300	69,601–74,600	7,250	
295,901–Greater	166,501–Greater	167,901–179,400	121,301–129,600	74,601–79,800	7,500	
295,901–Greater	166,501–Greater	179,401–191,400	129,601–138,300	79,801–85,100	7,750	
295,901–Greater	166,501–Greater	191,401–Greater	128,301–Greater	85,101–Greater	8,000	

[1] Types of construction are based on NFPA 220.
[2] Measured at 20 psi (139.9 kPa).

APPENDIX C

North Naples Fire District Hydrant Flow Results

Fire Prevention Bureau
6495 Taylor Road
Naples, FL 34109
239-597-9227 Phone
239-597-3522 Fax

North Naples Fire Control and Rescue District

June 9, 2014

Ms. Jessica Harrelson
Davidson Engineering
4365 Radio Road #201
Naples, FL 34104

Fax: 239-434-6084

Re: Flow Test @ Heritage Bay Commons – Bellaire Bay Drive

(Flow Hydrant #55-68-042 – Static Residual #68-041)

The North Naples Fire Control and Rescue District has conducted a flow test at the above location. This also will serve as an invoice in the amount of $100.00 to cover the cost of the test. (#10827).

Please make your check payable to North Naples Fire District and please reference the name of the project on your check.

Following are the results of the flow test:

Static:	77	Residual:	54
Total Flow GPM:	2,276	Pitot:	46 x 2 Ports
Flow @ 20 PSI GPM:	3,716	Time:	10:30 AM – 6-6-14

If you have any questions, please do not hesitate to contact me @ (239) 597-9227.

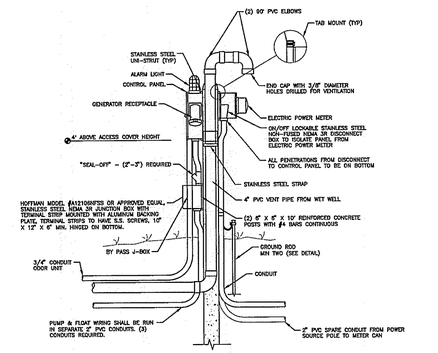
Sincerely,

Don Baer, Battalion Commander Fire Prevention
North Naples Fire District

DB:ds

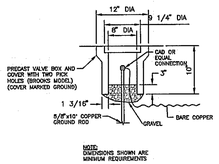
APPENDIX D

Collier County Lift Station No. 167.00 – Record Drawings



NOTES:

1. #10 STRAND MINIMUM FROM CONTROL PANEL TO J-BOX.
2. SQUARE D MODEL SDSA-2650 (3 PHASE) AND SDSA-1175 (SINGLE PHASE) LIGHTNING ARRESTER MUST BE INSTALLED EXTERNALLY ON LOAD SIDE OF DISCONNECT BETWEEN DISCONNECT AND MAIN BREAKER. THE PENETRATION THROUGH THE DISCONNECT MUST BE MADE BELOW THE WORKING MECHANISM OF THE DISCONNECT. (AS REQUIRED BY COLLIER COUNTY PUBLIC WORKS DIVISION
3. CONTROL PANEL SHALL BE QUALITY CONTROL INC. NO. 1823, 1 PHASE OR 3825, 3 PHASE WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; STRUTHERS-DUNN ALTERNATOR RELAYS, 200 AMPERE RUSSELL & STOLL GENERATOR RECEPTACLE AND ANGLE ADAPTER, MODEL NUMBER JRS-2044 AND NEMA 3R STAINLESS STEEL ENCLOSURE.
4. SEE DETAIL WW-17 FOR ANTENNA MOUNT DETAIL.



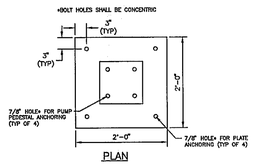
NOTE:
DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS

LIFT STATION CONTROL PANEL DETAIL ⚠

N.T.S.

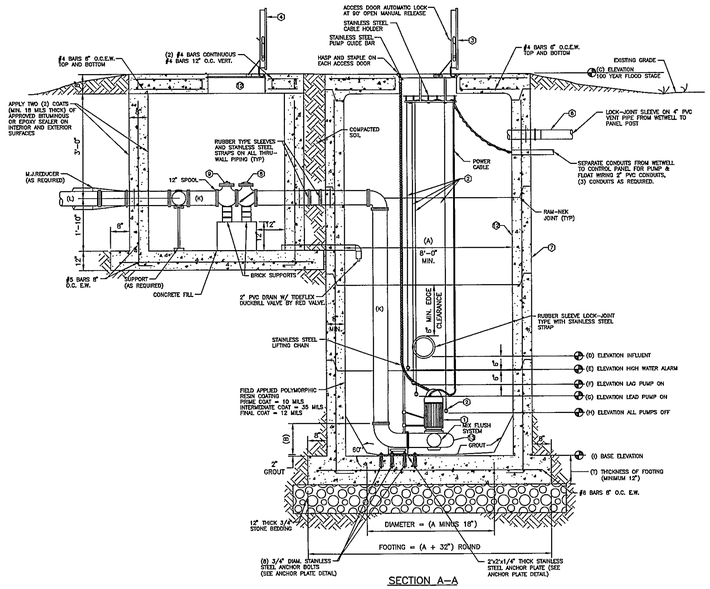
WW-9
REVISED: 4/12/04

SECTION



PLAN

ANCHOR PLATE DETAIL
N.T.S.

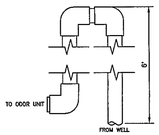


SECTION A-A

PUMP STATION DETAIL - PROFILE ⚠

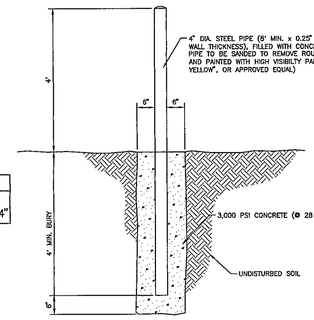
N.T.S.

WW-7
REVISED: 4/12/04



P-TRAP DETAIL

PUMP STATION No. 4
LATITUDE: 26°16'29.492"
LONGITUDE: -81°41'13.424"



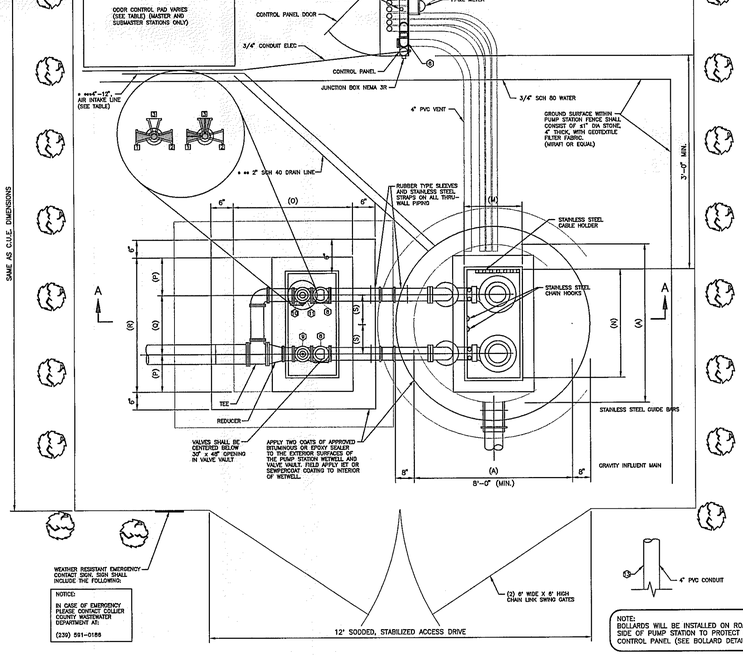
TYPICAL BOLLARD DETAIL ⚠

N.T.S.

ODOR CONTROL UNITS - U.S. FILTER ZABOCS

UNIT	CFM	PIPING SIZE	TYPE	NUMBER OF BEDS
ZB-8000	500	12"	10'x13'	1
ZB-7500	1100	12"	9'x12'	1
ZB-6000	550	10"	8'x11'	1
ZB-5000	500	8"	7'x9.5'	2
ZB-4000	350	6"	6'x9.5'	1
ZB-42	1140	4"	5'x5'	3
ZB-20	570	4"	4'x4'	3

• SLOPE DRAIN LINE AND INTAKE LINE 1/4" PER FOOT.
•• EXTEND DRAIN LINE TO INTAKE.
••• INTAKE LINE FLUSH WITH WALL.
•••• VOLTAGE WILL BE 230 OR 460 DEPENDING ON VOLTAGE AT STATION.



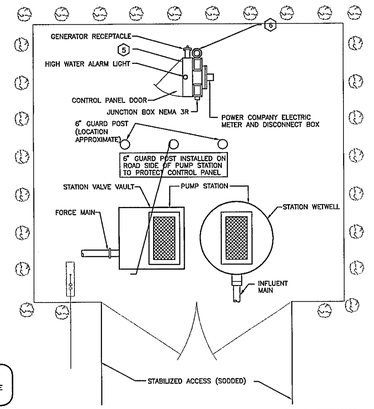
PLAN

PUMP STATION DETAIL - PLAN ⚠

N.T.S.

WW-8
REVISED: 4/12/04

PUMP STATION LOCATION ⚠
LATITUDE:
26°16'29.492"
LONGITUDE:
-81°41'29.492"



CONTROL PANEL LOCATION DETAIL ⚠

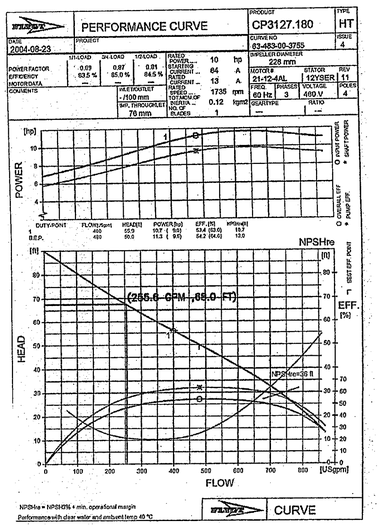
N.T.S.

ALL PANELS SHALL CONFORM TO FLORIDA DEP 17-604.400

1. GENERATOR RECEPTACLE FOR EMERGENCY POWER CONNECTION W/ INTERLOCK
2. SURGE PROTECTION AND LIGHTNING PROTECTION ON ALL INCOMING LEGS
3. PHASE PROTECTION SHALL BE PROVIDED

PANEL MANUFACTURER SHALL BE A "UL" LISTED SHOP.

NOTE:
BOLLARDS WILL BE INSTALLED ON ROAD SIDE OF PUMP STATION TO PROTECT THE CONTROL PANEL. (SEE BOLLARD DETAIL).



PUMP CURVE & OPERATING POINT ⚠

N.T.S.

PUMP STATION WETWELL DATA

PUMP STATION NO.	DIMENSIONS AND ELEVATIONS																	
	(A) FEET	(B) INCHES	(C) NGVD	(D) NGVD	(E) NGVD	(F) NGVD	(G) NGVD	(H) NGVD ⚠	(I) NGVD ⚠	(J) NGVD	(K) INCHES	(L) INCHES	(M) INCHES	(N) INCHES	(O) INCHES	(P) INCHES	(Q) INCHES	(R) INCHES	(S) INCHES ⚠	(T) INCHES
PS #4	8	15-3/4 ⚠	17.1 ⚠	1.56 ⚠	1.06 ⚠	0.56 ⚠	0.06 ⚠	-0.94	-2.94	21.1	4.0	4.0	30	48	*	*	*	*	10	18

• Per Manufacturer

PUMP DESIGN DATA

PUMP STA NO.	MODEL NUMBER	H.P.	IMPELLER NUMBER	R.P.M.
PS #4	CP 3127 ⚠	10 ⚠	483 ⚠	1735 ⚠

DESIGN FLOW DATA

P.S. NO.	DWELLING UNITS SERVED	AVG. DAILY FLOW (GPD)	PEAK DESIGN FLOW (GPM)
PS #4	210 MULTI-FAMILY	37,800	92 ⚠
	210,000 sf Commercial	42,000	102 ⚠
	TOTAL:	79,800	194 ⚠

EQUIPMENT SPECIFICATIONS

MARK	QTY	
1	2	DUPLEX FLYGT " DISCHARGE SUBMERSIBLE SEWAGE PUMPS EQUIPPED WITH 230/460 VOLT MOTORS. EACH PUMP SHALL HAVE THE CAPACITY AND RANGE SET FORTH ON THIS SHEET AS THE "REQUIRED PUMP PERFORMANCE CURVE" OR APPROVED EQUAL. PUMP PERFORMANCE DATA WILL BE REQUIRED AS SET FORTH IN THE SPECIFICATIONS. CONTRACTOR SHALL VERIFY LOCAL VOLTAGE PRIOR TO PLACEMENT OF PUMP ORDER.
2	4	ROTO-FLOAT MODEL S 40 N 0 LIQUID LEVEL REGULATORS, EACH PROVIDED WITH 40 FEET OF ELECTRICAL CABLE.
3	1	U.S. FOUNDRY MODEL AHD-3048 ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER, TWO UPPER GUIDE HOLDERS, CHAIN HOLDERS AND CABLE HOLDERS. ACCESS FRAMES SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.
4	1	U.S. FOUNDRY MODEL AHD-3048 ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER. ACCESS FRAME SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.
5	1	CONTROL PANEL SHALL BE QUALITY CONTROL INC. NO. 1825, 1 PHASE OR 3825, 3 PHASE WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; STRUTHERS-DUNN ALTERNATOR RELAYS, 200 AMPERE RUSSELL & STOLL GENERATOR RECEPTACLE AND ANGLE ADAPTER, MODEL NUMBER JRS-2044 AND NEMA 3R STAINLESS STEEL ENCLOSURE.
6	1	4" PVC VENT PIPE, WITH 90° ELBOWS AND END CAP WITH 3/8" DIAMETER DRILLED HOLES FOR VENTILATION.
7	1	WETWELL: REINFORCED CONCRETE PIPE CONFORMING TO TABLE II, WALL B OF A.S.T.M. C-76, O-RING JOINTS SHALL CONFORM TO A.S.T.M. C-443 OR APPROVED EQUAL. WETWELL CONSTRUCTION: APPLY TWO COATS OF APPROVED BITUMINOUS OR EPOXY SEALER ON EXTERIOR SURFACES OF THE WETWELL.
8	2	CHECK VALVE, (4") IRON BODY, FLANGED, BRONZE MOUNTED WITH BRONZE FACED DISC. WEIGHT AND LEVER TYPE HORIZONTAL SWING CHECK VALVE BY KENNEDY VALVE MANUFACTURING COMPANY.
9	1	PLUG VALVE (4") NON-LUBRICATED NICKEL IRON, NEOPRENE COATED PLUG, 100% OPENING VALVE AS MANUFACTURED BY THE HOMESTEAD VALVE COMPANY AND SHALL BE COMPLETE WITH WRENCH.
10	1	3-WAY PLUG VALVE, (4") - 3 PORT, FLANGED, LEVER ACTIVATED, AS MANUFACTURED BY MILLIKEN VALVE CO. OR APPROVED EQUAL. VALVE SHALL BE MOUNTED SO THAT THE THIRD PORT IS ON TOP.
11	1	3" QUICK-COUPLING UNIT COMPLETE. CONNECT TO THIRD PORT OF 3-WAY VALVE WITH A BRONZE MALE THREAD ADAPTER EQUAL TO ANDREWS PART NUMBER 300-F AND 2-HANDLE BRONZE LOCKING CAP EQUAL TO ANDREWS PART NUMBER 300 DC.
12	3	ALL PUMP STATION INTERIORS SHALL BE COATED WITH FIELD APPLIED POLYMORPHIC RESIN COATING. (PRIME COAT = 10 MILS; INTERMEDIATE COAT = 35 MILS; FINAL COAT = 12 MILS)
13	1	THE IMPELLER SHALL BE A SINGLE VANE, NON-CLOG DESIGN, CAPABLE OF PASSING 3 INCH SOLIDS, FIBROUS MATERIAL, AND HEAVY SLUDGE, AND CONSTRUCTED WITH A LONG THROUGHWAY WITH NO ACUTE TURNS AS SET FORTH IN THE SPECIFICATIONS.

GENERAL NOTES

1. INSTALLATION OF COVER, PUMP ANCHOR BOLTS, GUIDE RAILS, ETC. MUST BE COORDINATED WITH THE DETAILS AND SPECIFICATIONS AS PROVIDED BY THE MANUFACTURER.
2. THE CLAUSE "OR APPROVED EQUAL" SHALL BE UNDERSTOOD TO APPLY TO ALL SPECIFIED ITEMS EXCEPT PUMPS AND THEIR CONTROL PANEL.
3. ALL ELEVATIONS ARE BASED ON NGVD; NATIONAL GEODETIC VERTICAL DATUM.
4. PUMP STATION SHALL INCLUDE VALVE VAULT AND WETWELL, COMPLETE WITH WALL AND SLAB CONSTRUCTION, ACCESS FRAMES WITH DOORS AND ALL OTHER APPURTENANT CONSTRUCTION ITEMS AND MATERIALS.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES FOR CONSTRUCTION AND MAINTENANCE OF ALL EQUIPMENT AND PARTS.
6. ALL ELECTRICAL WIRING, INCLUDING ELECTRIC SERVICE SHALL BE COPPER.
7. ELECTRICAL COMPONENTS SHALL BE EQUIPPED WITH NATIONAL ELECTRIC CODE AND BUILDING DEPARTMENT APPROVED CONDUIT PIPE "SEAL-OFF" BETWEEN THE CONTROL PANEL AND THE PUMP STATION WETWELL. THREE SEAL-OFFS ARE REQUIRED.
8. CONTRACTOR SHALL PROVIDE PROTECTION AGAINST COATING OVERSPRAY ON PLUMBING ITEMS IN THE VALVE VAULT AND ON THE STAINLESS STEEL LIFT CHAIN, GUIDE BAR, LIQUID SENSORS AND PUMPS IN THE PUMP STATION WETWELL.
9. CONTROL PANEL TIE BARS SHALL BE STAINLESS STEEL UNI-STRUT, EVENLY CUT TO THE WIDTH OF THE PANEL BOX. ALL HARDWARE SHALL BE STAINLESS STEEL.
10. THE ELECTRIC SERVICE TO THE PUMP STATION CONTROL PANEL SHALL BE SIZED BY THE ELECTRICAL CONTRACTOR, TO PROVIDE A VOLTAGE DROP NOT GREATER THAN 5% OF THE LINE VOLTAGE FROM THE POWER COMPANY, WHEN ALL PUMPS ARE AT MAXIMUM START-UP LOAD.
11. ALL NUTS, BOLTS, WASHERS AND OTHER HARDWARE SHALL BE STAINLESS STEEL.
12. THE IMPELLER SHALL BE A SINGLE VANE, NON-CLOG DESIGN, CAPABLE OF PASSING 3-INCH SOLIDS, FIBROUS MATERIAL, AND HEAVY SLUDGE, AND CONSTRUCTED WITH NO ACUTE TURNS AS SET FORTH IN THE SPECIFICATIONS.
13. IN CASES WHERE PUMP STATION IS ON OPPOSITE SIDE OF STREET FROM WATER MAIN, A 4" PVC CONDUIT SHALL BE INSTALLED FROM THE NEAREST LOT CORNER ON OPPOSITE SIDE OF STREET TO A POINT 5 FT BEYOND BACK OF SIDEWALK ON SAME SIDE OF STREET AS PUMP STATION.
14. CHAIN LINK FENCE SHALL BE NEW, HOT DIP GALVANIZED AFTER FABRICATION WITH MIN. 1.2 OUNCES PER SQUARE FT OF ZINC COATING. FENCE FABRIC SHALL BE WOVEN #9 GAUGE WIRE WITH 2 INCH DIAMOND MESH AND KNUCKLED SELVAGES. FENCE SHALL HAVE TOP RAIL AND BOTTOM TENSION WIRE WITH TIE CLIPS AT MAX. 24 INCH SPACING. FENCE SHALL HAVE WEATHER-TIGHT POST CAPS ON EACH POST. GATE FRAMES SHALL BE CONSTRUCTED OF TUBULAR MEMBERS WELDED AT ALL CORNERS. GATE POSTS AND CORNER POSTS SHALL BE EMBEDDED IN CONCRETE (30" MIN EMBEDMENT). INSTALLATION SHALL MEET ASTM F567.
15. BUOYANCY CALCULATIONS SHOW A NET FORCE DOWN ON PUMP STATION W/ ALL DIMENSIONS AS SHOWN.

⚠ WATER AND SEWER ONLY
RECORD DRAWINGS
DATE: JUNE 20, 2005

THESE RECORD DRAWINGS ARE INTENDED TO DISPLAY THE COMPLETED WORK SUBSTANTIALLY AS CONSTRUCTED. THEY ARE BASED ON DATA PROVIDED TO THE ENGINEER, AND CERTIFIED BY, A REGISTERED PROFESSIONAL SURVEYOR AND MAPPER. FIELD VERIFICATION OF CONDITIONS AND LOCATIONS SHOULD BE UNDERTAKEN PRIOR TO ALTERATION OR CONSTRUCTION IN THE PROJECT AREA. 01/27/03

RECEIVED
OCT 07 2005
WilsonMiller, Inc.

REV NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.
8	REVISED PER RECORD DRAWING INFORMATION	06/20/05	L.M.L./1950	
5	UPDATED PUMP STATION DETAILS	01/12/05	C.M.P./1193	
2	REVISED PER COLLIER COUNTY AND ENGINEER COMMENTS	09/10/04	A.L.R./1708	
1	REVISED PER COLLIER COUNTY COMMENTS	07/13/04	A.L.R./1708	
△REV NO.	REVISION	Sep 29, 2005 - 14:14:54	L:\ETTAU\X\ENG\N0442\L110-Commercial Entry Road\Rev08(Asbuilts)\N04421017.dwg	

ACTIVITY	INITIALS/EMP. NO.	DATE
DESIGNED BY:	A.F.C./1314	04/04
DRAWN BY:	C.M.P./1193	04/04
CHECKED BY:		
CONTRACT ADMIN. BY:		
WM APPROVED BY:		

WilsonMiller
WilsonMiller, Inc. - FL Lic.# LC-C000170
WilsonMiller, Inc. - Certificate of Authorization #AA
Planners • Engineers • Ecologists • Surveyors • Landscape Architects • Transportation Consultants
WilsonMiller, Inc.
Naples • Fort Myers • Sarasota • Bradenton • Tampa • Tallahassee
4571 Colonial Boulevard, Suite 100 • Fort Myers, Florida 33966 • Phone 941-939-1020 • Fax 941-939-7479 • Web-Site www.wilsonmiller.com

CLIENT: BAYVEST, LLC.
PROJECT: HERITAGE BAY COMMONS

DATE: APRIL 2004
HORIZONTAL SCALE: AS NOTED
VERTICAL SCALE: AS NOTED
SEC: 13,14 TWP: 24S RGE: 25E
CROSS REFERENCE FILE NO.:
PROJECT NUMBER: N0442-203-001

TITLE: STANDARD PUMP STATION DETAIL

REVISED 10/13/03
DAVID S. WILKISON 10/13/05
LICENSE # 36871
INDEX NUMBER: D-0442-110
SHEET NUMBER: 17 OF 19

APPENDIX E

Cameron Commons Unit 1 Phased Storm Water Management Plan

LEGEND

- PROPOSED CONTOURS
- DRAINAGE PIPE
- PROPOSED TYPE "C" DRAINAGE BASIN

DRY PRETREATMENT AREA 1 (4,435 cft.)

DRY PRETREATMENT AREA 2 (1,995 cft.)

DRY PRETREATMENT AREA 3 (5,830 cft.)

DRY PRETREATMENT AREA 4 (2,870 cft.)

DRY PRETREATMENT AREA 5 (4,970 cft.)

DRY PRETREATMENT AREA 6 (3,490 cft.)

DRY PRE TREATMENT AREA 7 (2,290 cft.)

DRY PRETREATMENT AREA 8 (575 cft.)

DRY PRETREATMENT AREA 9 (1,270 cft.)

EX. 10" PVC W.M.

EX. 48" RCP STM SWR @ 0.00%

EX. STM CB RIM ELEV = 15.20 48" N INV =6.30 48" S INV =6.41

EX. STM CB RIM ELEV = 15.05 48" N INV =5.99 36" E INV =8.15 48" S INV =6.17

EX. STM CB RIM ELEV = 13.00 48" N INV = 6.84

EX. 48" RCP STM SWR @ 1.35%

EX. 48" RCP STM SWR @ 2.48%

CDS-1 CDS-2 CDS-3 CDS-4 CDS-5 CDS-6 CDS-7 CDS-8 CDS-9 CDS-10 CDS-11 CDS-12

15" HDPE STM SWR

2" POTABLE WATER LINE

CV PIV

FDC

6" FIRE LINE

6" EXTERIOR FIRE SPRINKLER RISER

CONC FLUME

8" SEWER LINE

FFE = 17.10' NGVD

cvs pharmacy

EX. 10" PVC W.M.

EX. 10" PVC W.M. 10.82 F-BN

11.29 F-IP

11.39 F-GVJ

13.00 F-AP

12.08 F-IP

11.31 F-BN

EX. 10" PVC W.M.

PHASE 1 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

PHASE 2 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

PHASE 3 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

PHASE 4 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

PHASE 5 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

PHASE 6 STORM WATER MANAGEMENT SYSTEM CONSTRUCTION

WATER QUALITY CALCULATIONS

PRETREATMENT VOL. REQ'D	0.507 AC-FT
PRETREATMENT VOL. PROV.	0.630 AC-FT

THIS PHASE OF CONSTRUCTION:

PRETREATMENT VOL. REQ'D	0.125 AC-FT
PRETREATMENT VOL. PROV.	0.460 AC-FT

NOTE: EACH TRACT WILL PROVIDE THE ADDITIONAL REQUIRED DRY PRETREATMENT SHOWN ON THIS PLAN DURING INDIVIDUAL SDP SUBMITTAL

DRY PRETREATMENT VOLUMES & CONSTRUCTION PHASE

*DPA #	VOL. (CU. FT.)	VOL. (AC-FT.)	CONST. PHASE	*DPA #	VOL. (CU. FT.)	VOL. (AC-FT.)	CONST. PHASE
1	4,435	0.10	1	5	4,970	0.11	4
2	1,995	0.05	1	6	3,490	0.08	4
3	5,830	0.13	1	7	2,290	0.05	5
4	2,870	0.07	1	8	575	0.01	6
				9	1,270	0.03	6
				TOTAL	27,440	0.63	

*DPA = DRY PRETREATMENT AREA

N

0' 20' 40' 80'

SCALE: 1" = 40'

CLIENT:
THOMAS CAROLLO
11586 QUAIL VILLAGE WAY
NAPLES, FL 34119

REV.	DATE:	DESCRIPTION	BY:

DAVIDSON ENGINEERING, INC.
2154 TRADE CENTER WAY, SUITE 3 NAPLES, FLORIDA 34109
PHONE (239) 597-3916 FAX (239) 597-5195
COMPANY ID. NO. 00009496

CAMERON COMMONS UNIT 1
SURFACE WATER MANAGEMENT CONSTRUCTION PHASING PLAN

DRAWN BY: KMW	PROJECT: 06-0095	SURVEY: AS NOTED	
DESIGNED BY: KMW	SCALE: AS NOTED	FILE NO.: 06-0095	
APPROVED BY:	DATE: APR 2007		

MAY 05 2008

KEISHA M. WESTBROOK, P.E. NO. 65023

Z:\Active Projects\N\Heritage Bay Commons\dwg\06-0095-Heritage-ppl-plt-ERP.dwg 5/1/2008 11:50:19 AM EDT

APPENDIX F

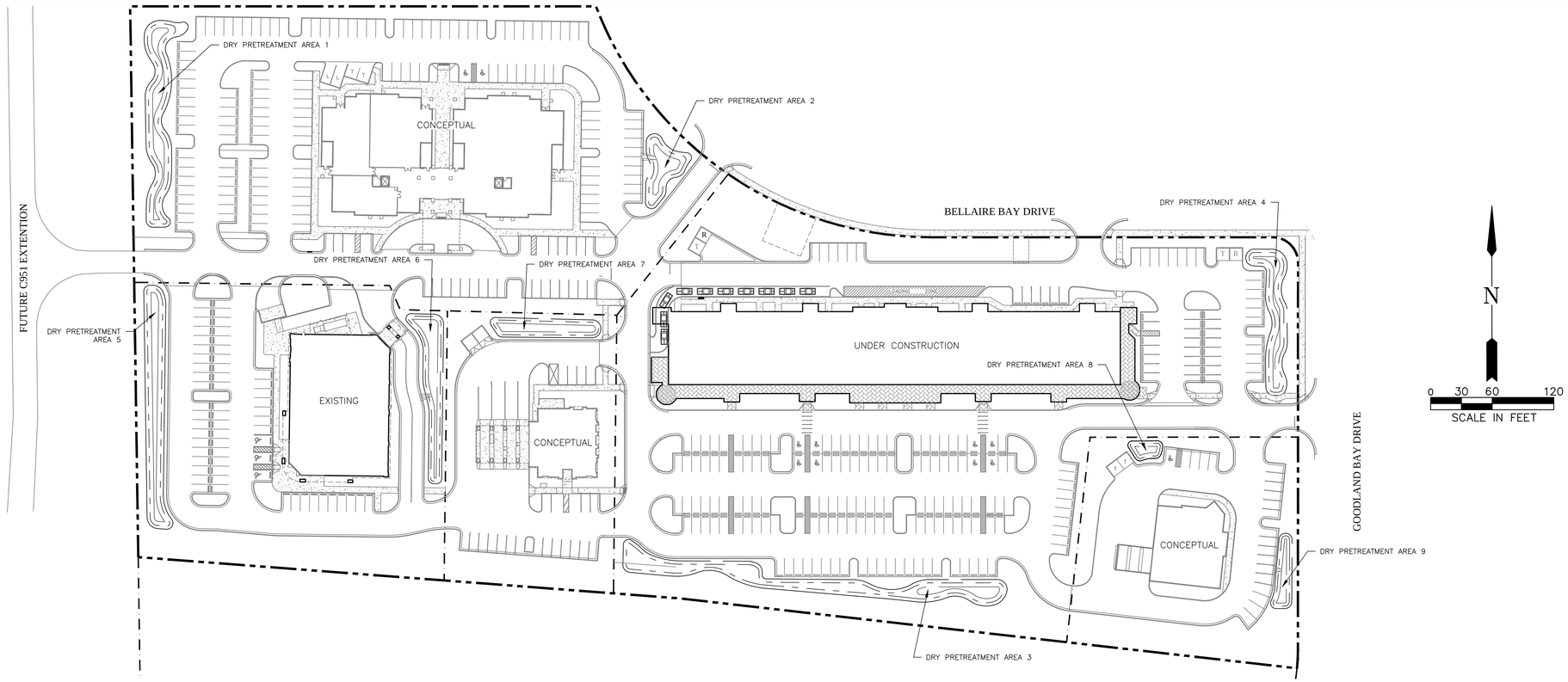
Tract 3 – Existing/Conceptually Permitted

Versus Proposed Dry Detention Areas

CAMERON COMMONS UNIT 1 PERMITTED DRY PRETREATMENT AREA PER ERP # 11-02234-P-05

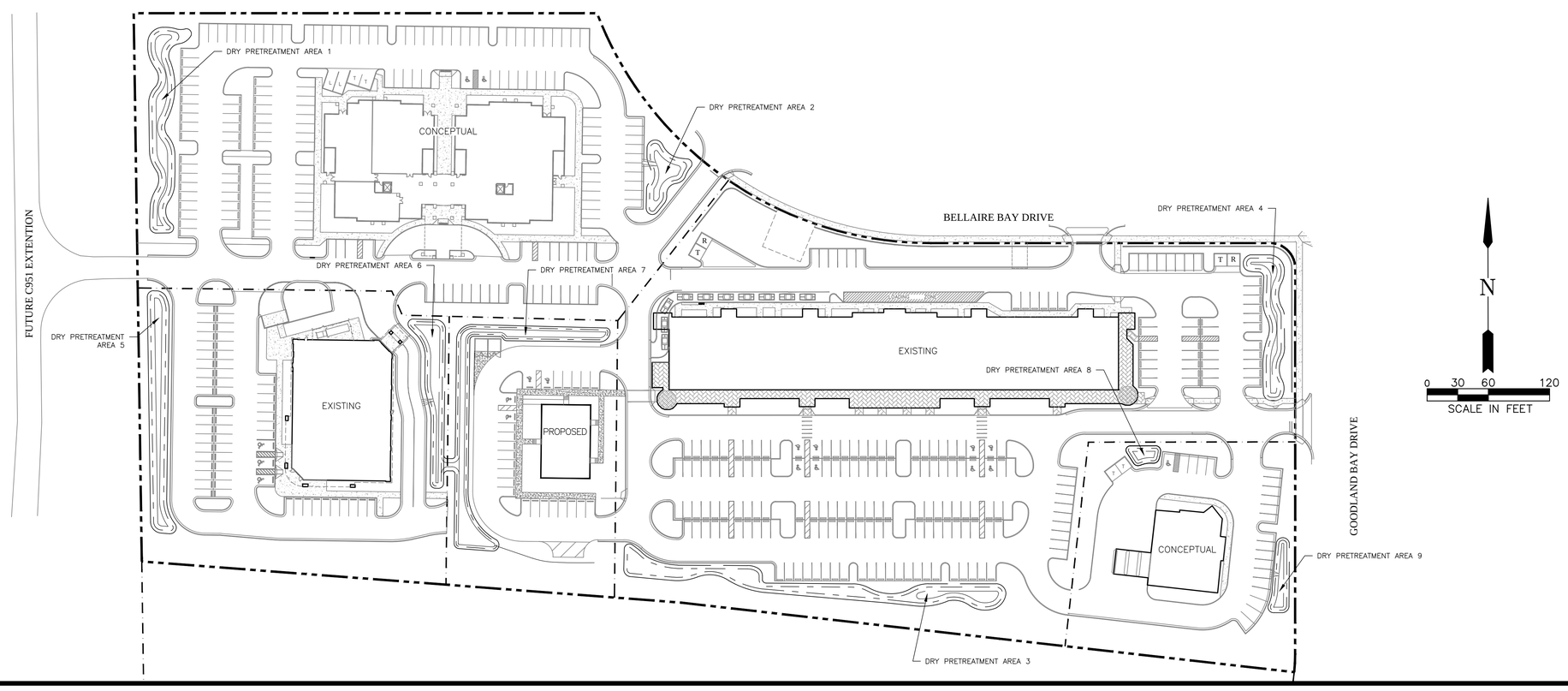
1/2" DRY PRETREATMENT REQUIRED = 0.507 AC. FT.

DRY PRETREATMENT PROVIDED	
AREA	VOLUME (AC. FT.)
1	0.10
2	0.05
3	0.11
4	0.08
5	0.11
6	0.08
7	0.05
8	0.01
9	0.03
TOTAL	0.62



CAMERON COMMONS UNIT 1 PROPOSED DRY PRETREATMENT AREAS

DRY PRETREATMENT PROVIDED	
AREA	VOLUME (AC. FT.)
1	0.10
2	0.05
3	0.11
4	0.08
5	0.11
6	0.08
7	0.09
8	0.01
9	0.03
TOTAL	0.66



REVISIONS

REV.	DATE:	DESCRIPTION

DESIGNED BY: R.A.W.
DRAWN BY: D.J.S.
CHECKED BY:
PROJECT NO.:

CLIENT:
NCH HEALTHCARE
350 7TH STREET N.
NAPLES, FL 34102

PROJECT:
CAMERON COMMONS UNIT 1

SHEET TITLE:
ERP MODIFICATION DRY PRETREATMENT EXHIBIT

DAVIDSON ENGINEERING
4365 Radio Road, Suite 201
Naples, Florida 34104
P: 239.434.6060 F: 239.434.6084
Company Cert. of Authorization No. 00009496

JEFF L. DAVIDSON, P.E. NO. 47161
ANDREW E. RATH, P.E NO. 73996
RYAN A. WHITE, P.E. NO. 67400

SHEET NO:
1 OF 1