South Flor	ida Wat	er Mgmn	t Distrio	et					S NO.02	-	TTAL 04-005
					Phone: 561-68 Fax:	36-8800			CKAG		
TITLE: PROJECT: DRAWING: STATUS: BIC:	e	4D As-Builts rea	REQUI REQUI DAYS I DAYS I DAYS (RED FI HELD: ELAPSH	NISH: ED:	07/13/ 08/03/ 0 1 -20					
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001 Wells C4 C44B4D	4B4B & As-Builts	07/13/2017	07/14/20	17		NE	W O	0		0	1
South		ater Manage ITTAL REVIE		ict							
responsibility is contractor shall	assumed for o	pliance with con correctness of dir esponsibility for ifically indicated	nensions or d leviations fro	letails. The m contract							
Accepted As Returned Fo	or Revision Submittal	Not Acc	d As Noted eptable (Sul erence Only								
]	HDR									

1. The horizontal and vertical controls provided in the submittal included both NAVD 88 and NGVD 29 datum but the C44B4B and C44B4D surveys were given only in NAVD 88 on the survey sheet. In the resubmittal, the Contractor shall provide the C44B4B and C44B4D surveys in both NAVD 88 and NGVD 29 datum per Specification Section 01700 1.02-A-5.2. In the resubmittal, the Contractor shall submit the monitoring well boring logs in gINT format as described in Specification Section 02840-1.04-A.3. In the resubmittal, the Contractor shall submit survey in hardcopy format and electronic AutoCAD format per Specification Section 01050-2.04-E.4. In the submittal, on the drawings provided by KLJ the following statement is included - "BENCHMARK ELEVATION UTILIZED FOR ELEVATION DATA WAS PROVIDED TO KLJ BY BETSY LINDSAY, INC. AND IS BASED ON SURVEYS PERFORMED BETWEEN APRIL 21, 2017 AND JUNE 12, 2017." In the resubmittal the Contractor shall modify the note to indicate that the elevations provided in red are the elevations from the Betsy Lindsay surveys indicated by the note.5. In the submittal, on the drawings provided by KLJ, there are elevations provided that do not appear to be from the Betsy Lindsay survey included with the submittal. These are the elevations for the Bottom Borehole, Bottom Cap, Bottom Screen, Top Screen, Top of Sand Pack, and Top of Bentonite. In the resubmittal the Contractor shall provide documentation as to how these elevations were determined and verified.

6. The review of this submittal against Specification Section 02840 represents a preliminary review for monitoring wells C44B4B and C44B4D per Paragraph 3.06 in Specification Section 02840 for the construction and survey information. All background monitoring well surveys shall be incorporated into the as-built surveys for Substantial Completion as described in Specification Section 01700.

7. The surveys for the other monitoring wells installed by the Contractor were not included in this submittal. These shall be provided under separate submittal(s).

8. All well sites included in the survey shall be clearly labeled on the first page of the survey report (see attached mark-ups).

9. The page of each survey report with the site map rotated 90 degrees (2 places) shall be removed since this sheet provides no additional pertinent information that is not already provided elsewhere (see attached mark-ups).

10. On the survey drawing, highlight in the overall view which well this particular survey is for and have it referenced to the detailed information (see attached mark-ups).

11. Photos shall be lined up on each page and the photos shall also include a picture of the Well Reference Mark (top of well) with the lid open showing well pipe inside. Benchmark elevations and coordinate system shall be noted on the photos where applicable and included in resubmittal. See attached mark-ups.

12. Contractor shall ensure that well data sheets are printable and the format does not become altered or otherwise illegible when a PDF of the document is produced. Contractor shall confirm that no formatting issues exist prior to resubmittal.

13. For Hand-written survey notes, Contractor shall add Level Line Adjustment Printout with a bookmark in the pdf file and include in the resubmittal.

14. The pdf file of the survey report and surveys shall be submitted in bookmark format and electronically locked for certification purposes. Contractor shall include these updates in the resubmittal.

15. Parker Kalon nails are not acceptable for permanent benchmarks. Permanent site benchmarks shall be set in accordance with Specification Section 01050 paragraph 2.03.A.4 and paragraph 2.03.G as originally provided in RFP 29 (PS to STA Discharge) which was not executed. A Field Order will be issued with the provisions of paragraph 2.03.G included.

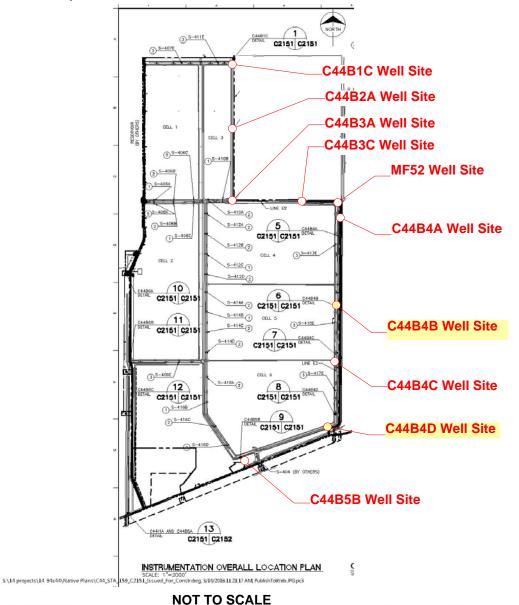
16. The District recommends a meeting between the Contractor and the District's surveyor Howard Ehmke prior to providing the resubmittal to discuss and clarify any issues.



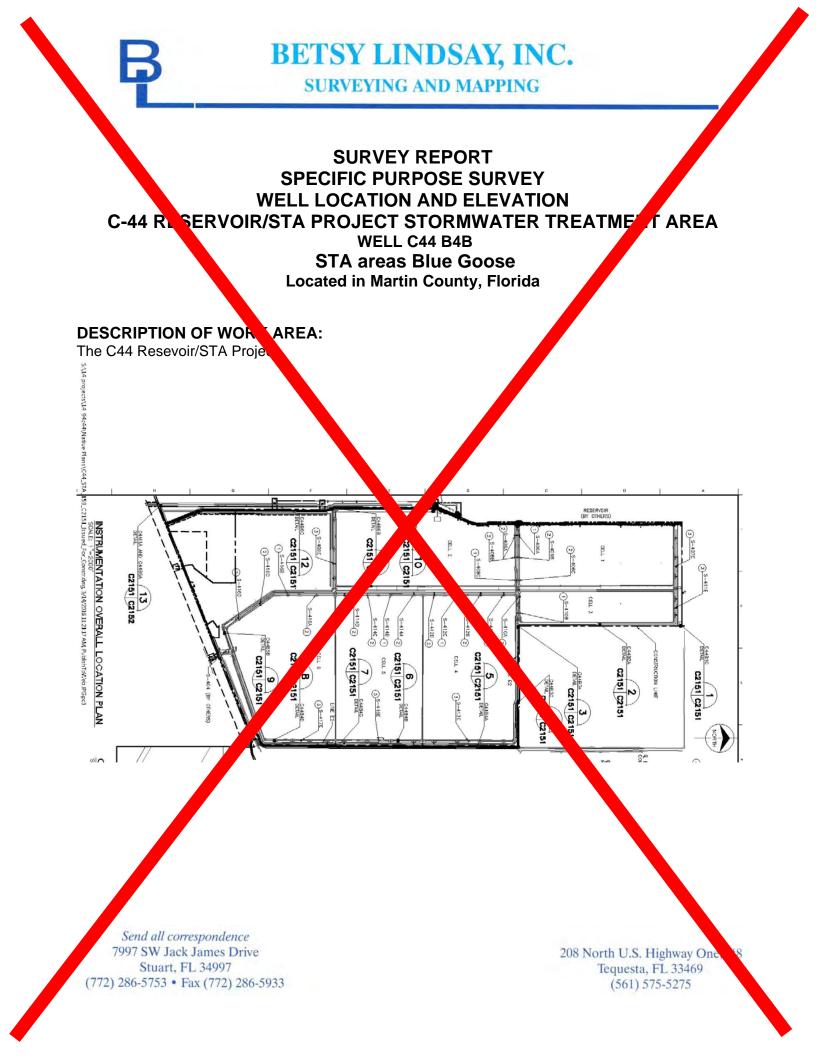
SURVEY REPORT SPECIFIC PURPOSE SURVEY WELL LOCATION AND ELEVATION C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA LOCATE AND ELEVATE THE NEWLY CONSTRUCTED WELLS STA areas Blue Goose Located in Martin County, Florida

DESCRIPTION OF WORK AREA:

The C44 Resevoir/STA Project.



Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933



CREW CHIEF USED:

Party chief for horizontal verification; Mike Aldrich Party chief for vertical level run: Norge Cid

RESPONSIBLE REGISTERED LAND SURVEYOR: ELIZABETH A. LINDSAY, PLS 4724

THE ACCURACIES OF THIS SURVEY WILL MEET OR EXCEED THIRD ORDER. ALL DATA IS LISTED IN U.S. SURVEY FEET PER THE PUBLISHED DATA SHEETS

The survey control that was verified by this survey is in state plane coordinates NAD83/2011 Florida east zone, U.S. survey feet per the attached data sheets. The vertical datum is NAVD 88 per the attached data sheets.

The conversion factor varies per control point based on the different conversion factors illustrated in the design plans.

METHODS USED:

A peg test was done on the Digital level prior to the level run. On March 2, 2016 we started the level run and completed it on March 8, 2016. A closed level loop was run from F0012 north into CP-1. The level loop closed into CP-1 with 0.017' vertical error, exceeding third order standards. A second loop was run from CP-1 north to ALLAP-9. the level loop closed into ALLAP-9 with 0.012 vertical error. A temporary bench mark elevation for each well was established via closed level loop. The horizontal location of the well was done with GPS/RTK reference to the Lengeman network and field vierified by a series of redundant measurments on known points.

Survey Equipment Utilized For This Portion Of The Project Is As Follows:

Trimble R-8 GPS Receivers and base with radio Topcon DL 101C digital level

PUBLISHED VALUES OF CONTROL USED:

Existing onsite control NAD83/2011 US Survey Feet per data supplied by SFWMD. 105,1001910.4100,856092.6800,28.03,C44RV5 (horizontal only) 106,1001956.2100,848601.8900,28.84,C-44-1 (vertical only) 107,984551.3400,855790.8800,27.37,C-44-2 (vertical only) 108,996557.5300,840627.3200,27.81,C-44-3 (vertical only) 109,1012578.3500,830335.4300,28.90,C-44-4 (vertical only) 110,1001975.4200,848890.7000,26.778,CP-1 (horizontal and vertical 2nd order) 112,982393.7800,850532.4900,30.111,STU-APPLEBAUM-PUB(horizontal & vertical 2nd order) 113,984446.6900,856497.5400,37.19,FO12 (horizontal and vertical 2nd order) 114,1001855.2600,877642.6000,23.88,GC7 D08 (horizontal and vertical 2nd order) 116,1004612.7900,840701.9600,28.83,J12-103-3 PUB (horizontal and vertical 2nd order) 117,1012598.2700,845875.1300,26.93,ALLAP 9 PUB (horizontal and vertical 2nd order)

ABBREVIATIONS

BM	BENCH MARK
DESC	DESCRIPTON
ELEV	ELEVATION
GND	GROUND
PNT	POINT NUMBER
SP SCF	STATE PLANE SCALE FACTOR

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933

THIS REPORT IS SUPPORTED BY AND IT IS NOT COMPLETE WITHOUT THE SPECIFIC PURPOSE SURVEY, BENCH MARK FORM, AND FIELD NOTES.

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS DESCRIBED HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE BETWEEN APRIL 21, 2017 AND JUNE 12, 2017 AND SAID "SPECIFIC PURPOSE SURVEY" IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. IT IS FURTHER CERTIFIED THAT THIS "SPECIFIC PURPOSE SURVEY" COMPLIES WITH THE STANDARDS OF PRACTICE FOR "SPECIFIC PURPOSE SURVEY" SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

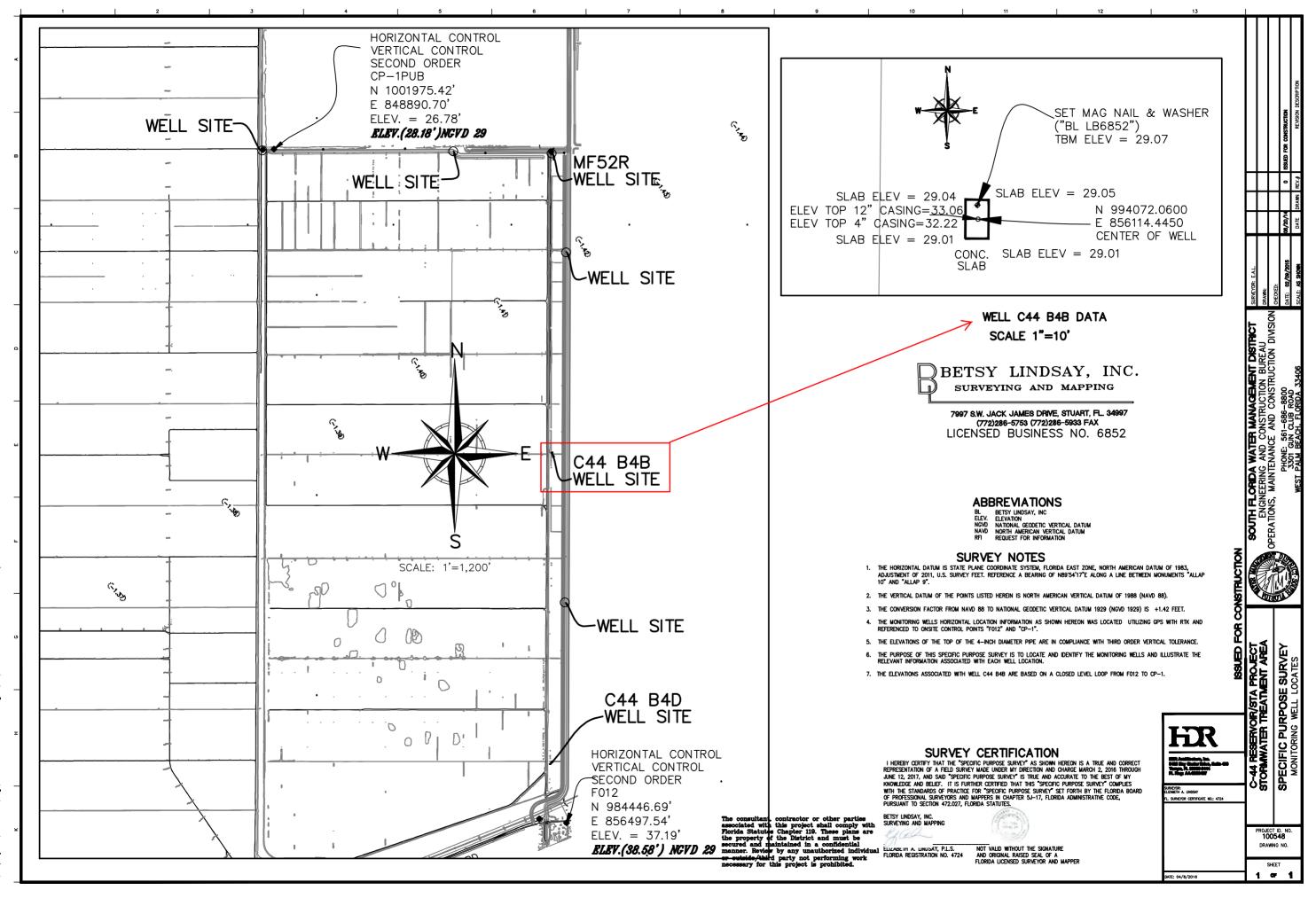
1 1 B

BETSY LINDSAY, INC. SURVEYING AND MAPPING

ELIZABETH A. LINDSAY, P.L.S. FLORIDA REGISTRATION NO. 4724 NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

Betsy Lindsay, Inc., 7997 S.W. Jack James Drive, Stuart, Florida 34997 Florida Certificate of Authorization Number LB-0006852. E-mail address: <u>blindsay@betsylindsay.com</u>

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933

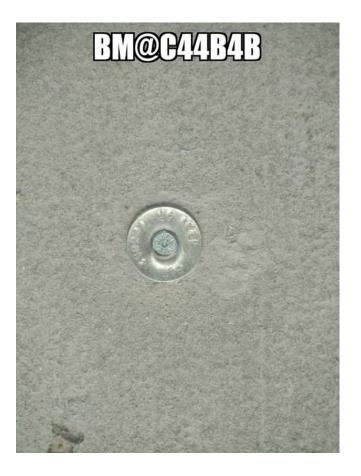


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Rev. 8/07







Rev. 8/07





Rev. 8/07

Clean up this sheet

DESIGNATION C44 B4B		PROJECT C44 S AREA	TORM WATER TREATMENT
ESTABLISHED BY: BETSY	LINDSAY, INC.	SURVEYOR: Eliz	zabeth A. Lindsay
RECOVERED BY		DATE June 14, 20	017
	GEOGR	APHIC POSITION	
SECTION 2	TOWNSHI	P 39 S.	RANGE 39 E,
COUNTY MARTIN		NAME OF QUADR	ANGLE INDIANTOWN
		GEOGRAPHIC INI	DEX OF QUAD 2504
HORIZONTAL DATUM: 19	027 (1983) O	ther	(circle one) ZONE (E) or W
VERTICAL DATUM: MSL	1929 (1988)	Other	(circle one)
CONTROL ACCURACY:	HORIZONTAL 1	1 2 3 <u>N/A</u>	(circle one) VERTICAL 1 2 (3)
STATE PLANE COORDINATE FL. E.	X 856114.44	Y 994072.06	NAVD 88 ELEV.
			NGVD 29 ELEV.
C44 DESIGN PLANS CON	VERSION FACTO	R (NAVD88 TO NG	6VD29): <u>1.40</u>
LATITUDE 27°04'01.790"		LONGITUDE	80°23'08.118"
	RECOVE	RY DESCRIPTION	I
Stamping: BL LB6852 TRA	V PT		
4.85 miles to Barb B Ranch	Road, a dirt road	located west of the	R 726 (SW Citrus Blvd) go easterly C44 spillway. Head northerly along ne bench mark is in concrete slab of
Notable Land marks: well s	tructure		
FIELD BOOK C44-5 c4	4-6	PAGE 42 1	1
· · · · · · · · · · · · · · · · · · ·		SKETCH	

C44B4B Well Site (Looking East)

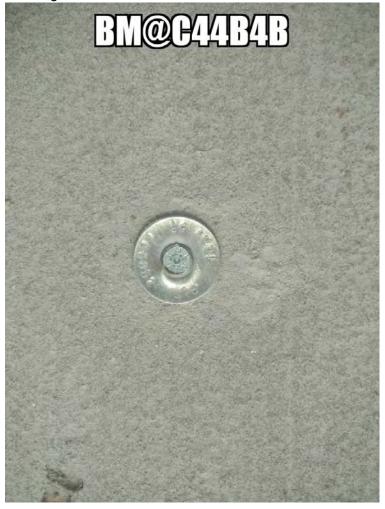
PAGE 3

Elevation of Well components

Elev. of BM on concrete slab = 29.07 Elev. of top of 12" casing = 33.06 Elev of top of 4" csing = 32.22 Elevation of NE corner of concrete slab = 29.05 Horizontal location of center of of Well

N 994072.060, E 856114.445

Bench Mark set mag nail and washer "BL LB6852 TRAV PT" on Slab Elev = 29.07

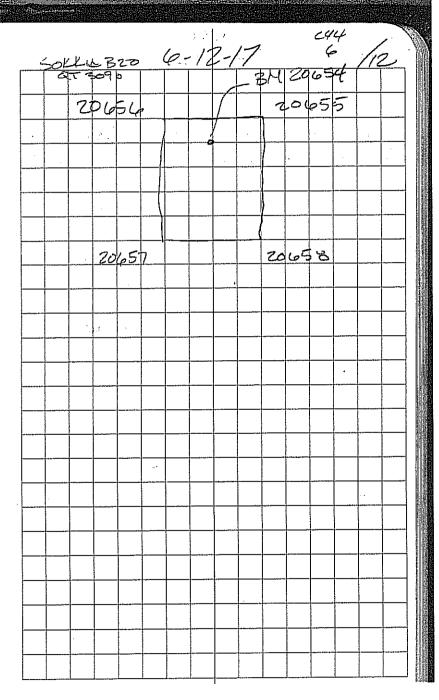


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1400- 18 er 10x2 <u>AVN</u> BRIDER WELES CHILEUB DEL C444 24D 11 ELEV f 574 37,508 2445-61-1 12,108 32,528 4.98 PLD 36,444 1.0104 12" 37,278 1,78 35,728 1.55 41 11.875 CUUS-61-1 25,403 CHAB4D ** ~ 10.513 35,382 6.849 29,034 <u>17-D</u> 2,318 33.064 120 10 32.225 3,157 35,558 3 333 4.495 28,863 14-10-2

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TP 3B	4.8303	32.62.44	5.7234	27.7941		_	215.36		-48	602	26 A		
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7 <i>P-4</i> 4	4.4253	32.9571	4.0540	28.5318			<u> </u>		.06	:	`		46.3								
TP-45	4,3447	32.6251	4.6767	28.2804	-		10	67-	42				70.2				 				
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BETSY LINDSAY, INC. SURVEYING AND MAPPING

SURVEY REPORT SPECIFIC PURPOSE SURVEY WELL LOCATION AND ELEVATION C-44 RES. RVOIR/STA PROJECT STORMWATER TREATMENT AREA WELL C44 B4D STA areas Blue Goose

Located in Martin County, Florida

DESCRIPTION OF WORK REA:

The C44 Resevoir/STA Project.



CREW CHIEF USED:

Party chief for horizontal verification; Mike Aldrich Party chief for vertical level run: Norge Cid

RESPONSIBLE REGISTERED LAND SURVEYOR: ELIZABETH A. LINDSAY, PLS 4724

THE ACCURACIES OF THIS SURVEY WILL MEET OR EXCEED THIRD ORDER. ALL DATA IS LISTED IN U.S. SURVEY FEET PER THE PUBLISHED DATA SHEETS

The survey control that was verified by this survey is in state plane coordinates NAD83/2011 Florida east zone, U.S. survey feet per the attached data sheets. The vertical datum is NAVD 88 per the attached data sheets.

The conversion factor varies per control point based on the different conversion factors illustrated in the design plans.

METHODS USED:

A peg test was done on the Digital level prior to the level run. On March 2, 2016 we started the level run and completed it on March 8, 2016. A closed level loop was run from F0012 north into CP-1. The level loop closed into CP-1 with 0.017' vertical error, exceeding third order standards. A second loop was run from CP-1 north to ALLAP-9. the level loop closed into ALLAP-9 with 0.012 vertical error. A temporary bench mark elevation for each well was established via closed level loop. The horizontal location of the well was done with GPS/RTK reference to the Lengeman network and field vierified by a series of redundant measurments on known points.

Survey Equipment Utilized For This Portion Of The Project Is As Follows:

Trimble R-8 GPS Receivers and base with radio Topcon DL 101C digital level

PUBLISHED VALUES OF CONTROL USED:

Existing onsite control NAD83/2011 US Survey Feet per data supplied by SFWMD. 105,1001910.4100,856092.6800,28.03,C44RV5 (horizontal only) 106,1001956.2100,848601.8900,28.84,C-44-1 (vertical only) 107,984551.3400,855790.8800,27.37,C-44-2 (vertical only) 108,996557.5300,840627.3200,27.81,C-44-3 (vertical only) 109,1012578.3500,830335.4300,28.90,C-44-4 (vertical only) 110,1001975.4200,848890.7000,26.778,CP-1 (horizontal and vertical 2nd order) 112,982393.7800,850532.4900,30.111,STU-APPLEBAUM-PUB(horizontal & vertical 2nd order) 113,984446.6900,856497.5400,37.19,FO12 (horizontal and vertical 2nd order) 114,1001855.2600,877642.6000,23.88,GC7 D08 (horizontal and vertical 2nd order) 116,1004612.7900,840701.9600,28.83,J12-103-3 PUB (horizontal and vertical 2nd order) 117,1012598.2700,845875.1300,26.93,ALLAP 9 PUB (horizontal and vertical 2nd order)

ABBREVIATIONS

BM	BENCH MARK
DESC	DESCRIPTON
ELEV	ELEVATION
GND	GROUND
PNT	POINT NUMBER
SP SCF	STATE PLANE SCALE FACTOR

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933

PAGE 3

Elevation of Well components

Elev. of BM on concrete slab = 33.56 Elev. of top of 12" casing = 36.44 Elev of top of 4" csing = 35.73 Elevation of NE corner of concrete slab = 32.52 Horizontal location of center of of Well

N 994072.060, E 856114.445

Bench Mark set mag nail and washer "BL LB6852 TRAV PT" on Slab Elev = 35.56





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THIS REPORT IS SUPPORTED BY AND IT IS NOT COMPLETE WITHOUT THE SPECIFIC PURPOSE SURVEY, BENCH MARK FORM, AND FIELD NOTES.

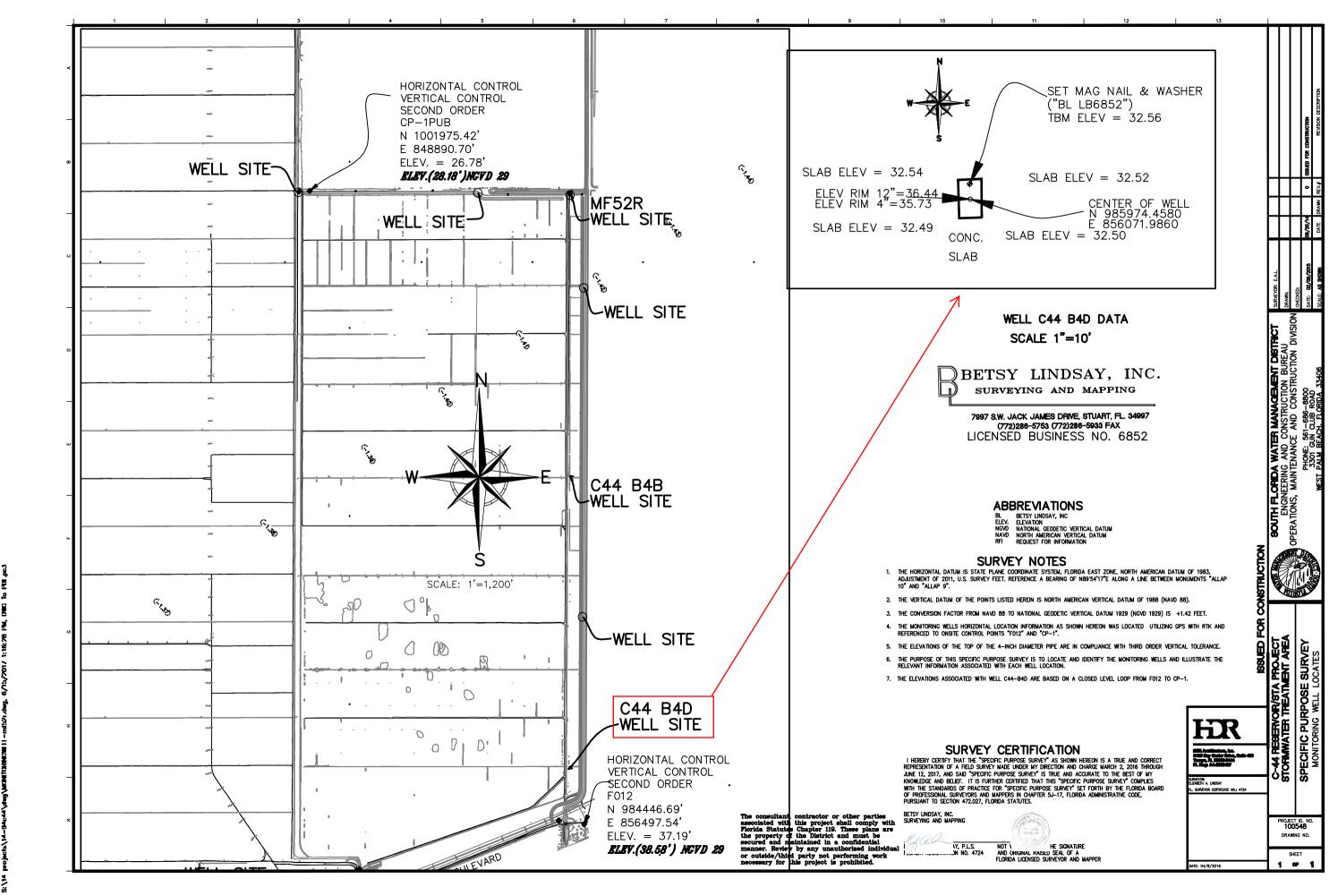
I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS DESCRIBED HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE BETWEEN APRIL 21, 2017 AND JUNE 12, 2017 AND SAID "SPECIFIC PURPOSE SURVEY" IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. IT IS FURTHER CERTIFIED THAT THIS "SPECIFIC PURPOSE SURVEY" COMPLIES WITH THE STANDARDS OF PRACTICE FOR "SPECIFIC PURPOSE SURVEY" SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

BETSY LINDSAY, INC. SURVEYING AND MAPPING

ELIZABETH A. LINDSAY, P.L.S. FLORIDA REGISTRATION NO. 4724

NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER Betsy Lindsay, Inc., 7997 S.W. Jack James Drive, Stuart, Florida 34997 Florida Certificate of Authorization Number LB-0006852. E-mail address: blindsay@betsylindsay.com

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 · Fax (772) 286-5933





Rev. 8/07







Rev. 8/07







Rev. 8/07

Clean up this sheet

DESIGNATION C44 B4D	PROJECT C44 ST AREA	ORM WATER TREATMENT
ESTABLISHED BY: BETSY LINDSAY, INC. RECOVERED BY	SURVEYOR: Eliza DATE June 14, 20	-
GEOG	RAPHIC POSITION	
SECTION 2 TOWNSH	HP 39 S.	RANGE 39 E,
COUNTY MARTIN		ANGLE INDIANTOWN EX OF QUAD 2504
HORIZONTAL DATUM: 1927 (1983)	Other(circle one) ZONE (E) or W
VERTICAL DATUM: MSL 1929 (1988	3) Other	(circle one)
CONTROL ACCURACY: HORIZONTAL	1 2 3 <u>N/A (</u> c	circle one) VERTICAL 1 2 (3)
STATE PLANE X 856071.986 COORDINATE FL. E.	Y 985974.458	NAVD 88 ELEV. <u>32.56</u>
		NGVD 29 ELEV. <u>33.95</u>
C44 DESIGN PLANS CONVERSION FACT	OR (NAVD88 TO NG\	/D29): <u>1.39</u>
LATITUDE 27°02'41.603"	LONGITUDE	80°23'09.025"
RECO	ERY DESCRIPTION	
Stamping: BL LB6852 TRAV PT		
To Reach: From the intersection of SR 710 4.85 miles to Barb B Ranch Road, a dirt roa the dirt road for 0.29 miles to the well site 3 the well.	d located west of the C	C44 spillway. Head northerly along
Notable Land marks: well structure		
FIELD BOOK C44-5 c44-6	PAGE 42 11	
	SKETCH	
	C44B4D W	ell Site (Looking East)

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Letter of Transmittal

Date:	June 28, 2017
Project	C44 STA
To:	Lisa Seavey - Contract Administrator
	Blue Goose Construction
Copy To:	Luis Jimenez - Project Manager
	Blue Goose Construction
From:	John Mayhut - Project Manager
	Liz Hunter P.E Project Engineer
Re:	Boundary Monitor Well As-Built Drawings
Spec Section	02840 Monitor Wells
Subsection	1.04
Submittal No.	006-00
Project #:	1510614103

We Are Sending You:

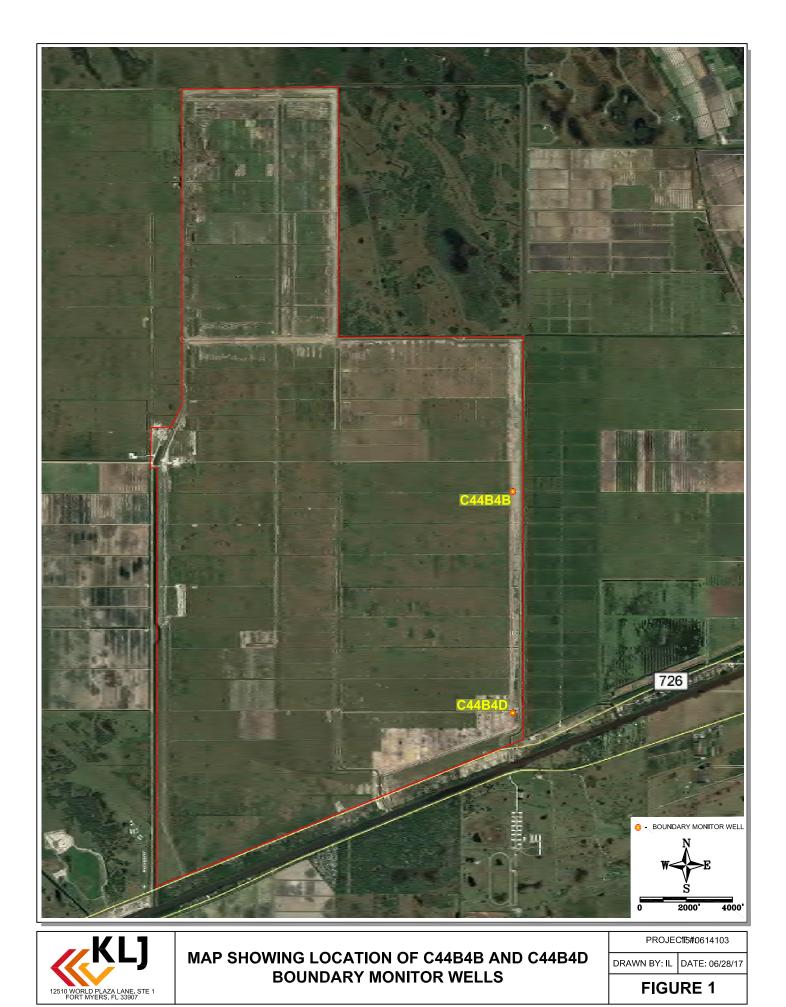
⊠ Attached	🗆 O&M Manuals	For Approval				
Product Data	Engineering Report/Plans	For Your Review				
□ Installation Plans	☑ Field Logs/As-Builts	□ For Your Information				
□ Other						

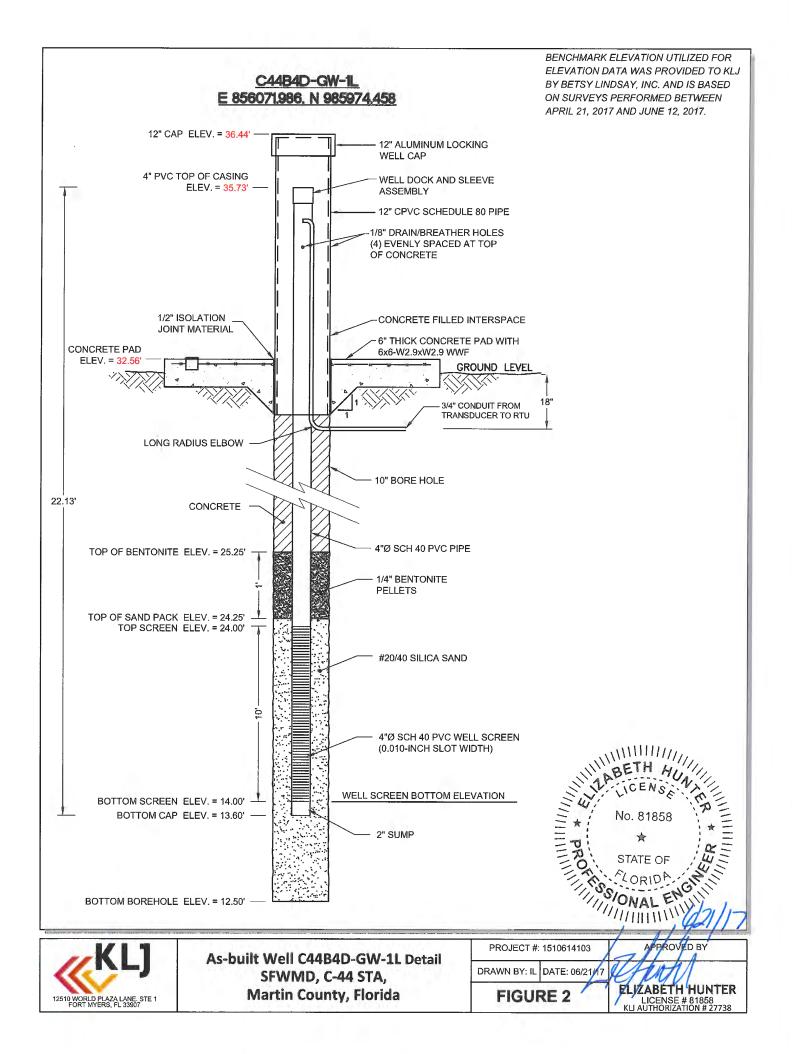
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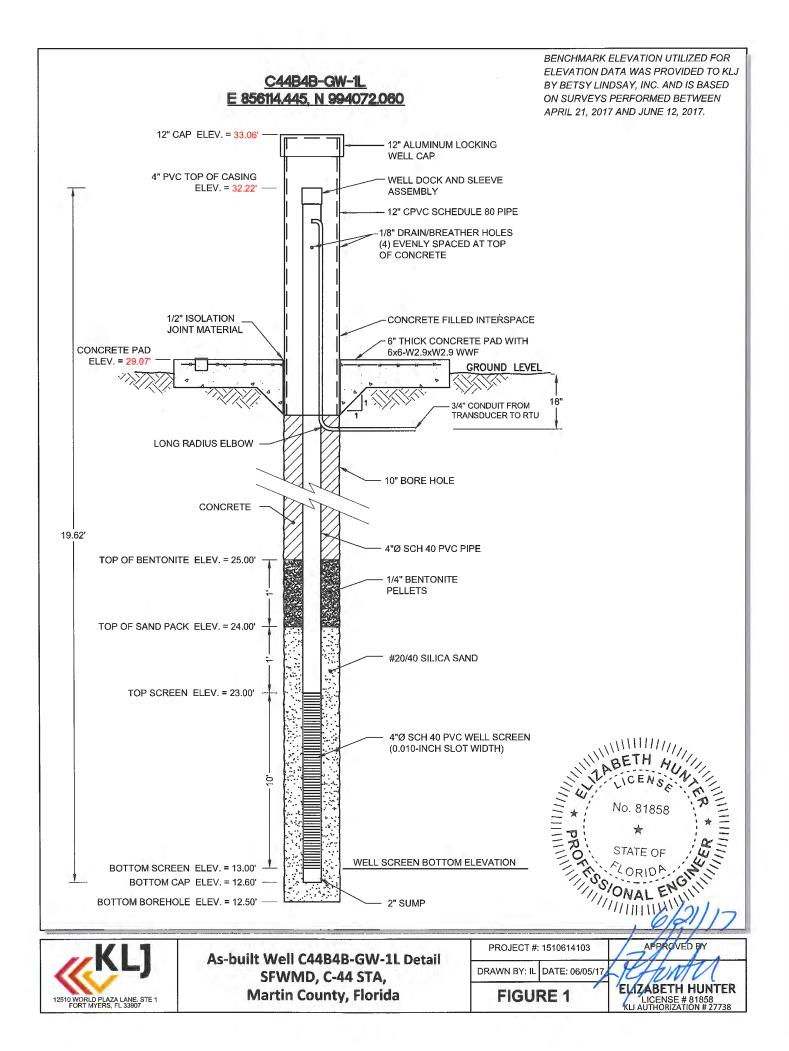
File Name: C44STA_02840_006-00_Boundary Monitor Well As-Built Drawings_C44B4B & B4D.pdf

Remarks

Please find attached as-built drawings for the two (2) Boundary Monitor Wells that have constructed at the project site to date. The Boundary Monitor Wells located at C44B4B and C44B4D are included within this submittal.









State Certified Licensed General Contractor #CGC1517686 Pollutant System Contractor # PCC056727 Underground Utility & Excavation # CUC1225110

SUBMITTAL

C44STA RFB No. 600000060 CN4600003135
 Spec Section No:
 02840 1.04

 Submittal No:
 005

 Revision No:
 N/A

 Sent Date:
 7/14/17

 Spec Section Title:
 Monitoring Wells

 Submittal Title:
 Well Locations & Elevations - Specific Purpose Survey

Contractor: Blue Goose Construction

Contractors Explanation

Specific Purpose Survey Report for Well Locations and Elevation, for C44B4B and C44B4D.

Signed and Sealed by Betsy Lindsay, Inc. Report Drawing and Field Notes. Also includes Wellhead As-Built by KLJ.

Contractors Stamp	
Lisa R. Seawey, C.I.T. ContracttAdministrator Blue Goose Construction	
CONSTRUCTOR	

Engineers Stamp

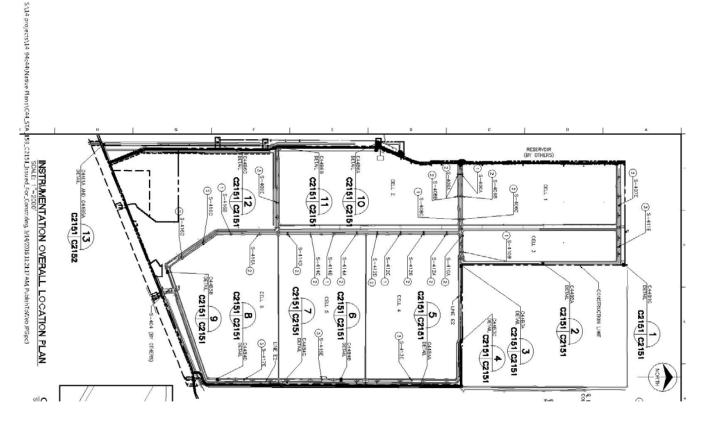
Architects Stamp



SURVEY REPORT SPECIFIC PURPOSE SURVEY WELL LOCATION AND ELEVATION C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA WELL C44 B4B STA areas Blue Goose Located in Martin County, Florida

DESCRIPTION OF WORK AREA:

The C44 Resevoir/STA Project.



Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933

CREW CHIEF USED:

Party chief for horizontal verification; Mike Aldrich Party chief for vertical level run: Norge Cid

RESPONSIBLE REGISTERED LAND SURVEYOR: ELIZABETH A. LINDSAY, PLS 4724

THE ACCURACIES OF THIS SURVEY WILL MEET OR EXCEED THIRD ORDER. ALL DATA IS LISTED IN U.S. SURVEY FEET PER THE PUBLISHED DATA SHEETS

The survey control that was verified by this survey is in state plane coordinates NAD83/2011 Florida east zone, U.S. survey feet per the attached data sheets. The vertical datum is NAVD 88 per the attached data sheets.

The conversion factor varies per control point based on the different conversion factors illustrated in the design plans.

METHODS USED:

A peg test was done on the Digital level prior to the level run. On March 2, 2016 we started the level run and completed it on March 8, 2016. A closed level loop was run from F0012 north into CP-1. The level loop closed into CP-1 with 0.017' vertical error, exceeding third order standards. A second loop was run from CP-1 north to ALLAP-9. the level loop closed into ALLAP-9 with 0.012 vertical error. A temporary bench mark elevation for each well was established via closed level loop. The horizontal location of the well was done with GPS/RTK reference to the Lengeman network and field vierified by a series of redundant measurments on known points.

Survey Equipment Utilized For This Portion Of The Project Is As Follows:

Trimble R-8 GPS Receivers and base with radio Topcon DL 101C digital level

PUBLISHED VALUES OF CONTROL USED:

Existing onsite control NAD83/2011 US Survey Feet per data supplied by SFWMD. 105,1001910.4100,856092.6800,28.03,C44RV5 (horizontal only) 106,1001956.2100,848601.8900,28.84,C-44-1 (vertical only) 107,984551.3400,855790.8800,27.37,C-44-2 (vertical only) 108,996557.5300,840627.3200,27.81,C-44-3 (vertical only) 109,1012578.3500,830335.4300,28.90,C-44-4 (vertical only) 110,1001975.4200,848890.7000,26.778,CP-1 (horizontal and vertical 2nd order) 112,982393.7800,850532.4900,30.111,STU-APPLEBAUM-PUB(horizontal & vertical 2nd order) 113,984446.6900,856497.5400,37.19,FO12 (horizontal and vertical 2nd order) 114,1001855.2600,877642.6000,23.88,GC7 D08 (horizontal and vertical 2nd order) 116,1004612.7900,840701.9600,28.83,J12-103-3 PUB (horizontal and vertical 2nd order) 117,1012598.2700,845875.1300,26.93,ALLAP 9 PUB (horizontal and vertical 2nd order)

ABBREVIATIONS

BM	BENCH MARK
DESC	DESCRIPTON
ELEV	ELEVATION
GND	GROUND
PNT	POINT NUMBER
SP SCF	STATE PLANE SCALE FACTOR

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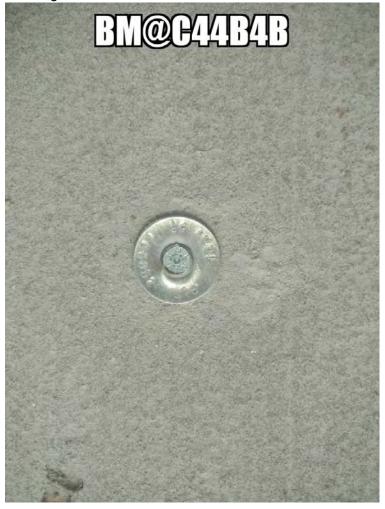
PAGE 3

Elevation of Well components

Elev. of BM on concrete slab = 29.07 Elev. of top of 12" casing = 33.06 Elev of top of 4" csing = 32.22 Elevation of NE corner of concrete slab = 29.05 Horizontal location of center of of Well

N 994072.060, E 856114.445

Bench Mark set mag nail and washer "BL LB6852 TRAV PT" on Slab Elev = 29.07



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THIS REPORT IS SUPPORTED BY AND IT IS NOT COMPLETE WITHOUT THE SPECIFIC PURPOSE SURVEY, BENCH MARK FORM, AND FIELD NOTES.

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS DESCRIBED HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE BETWEEN APRIL 21, 2017 AND JUNE 12, 2017 AND SAID "SPECIFIC PURPOSE SURVEY" IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. IT IS FURTHER CERTIFIED THAT THIS "SPECIFIC PURPOSE SURVEY" COMPLIES WITH THE STANDARDS OF PRACTICE FOR "SPECIFIC PURPOSE SURVEY" SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

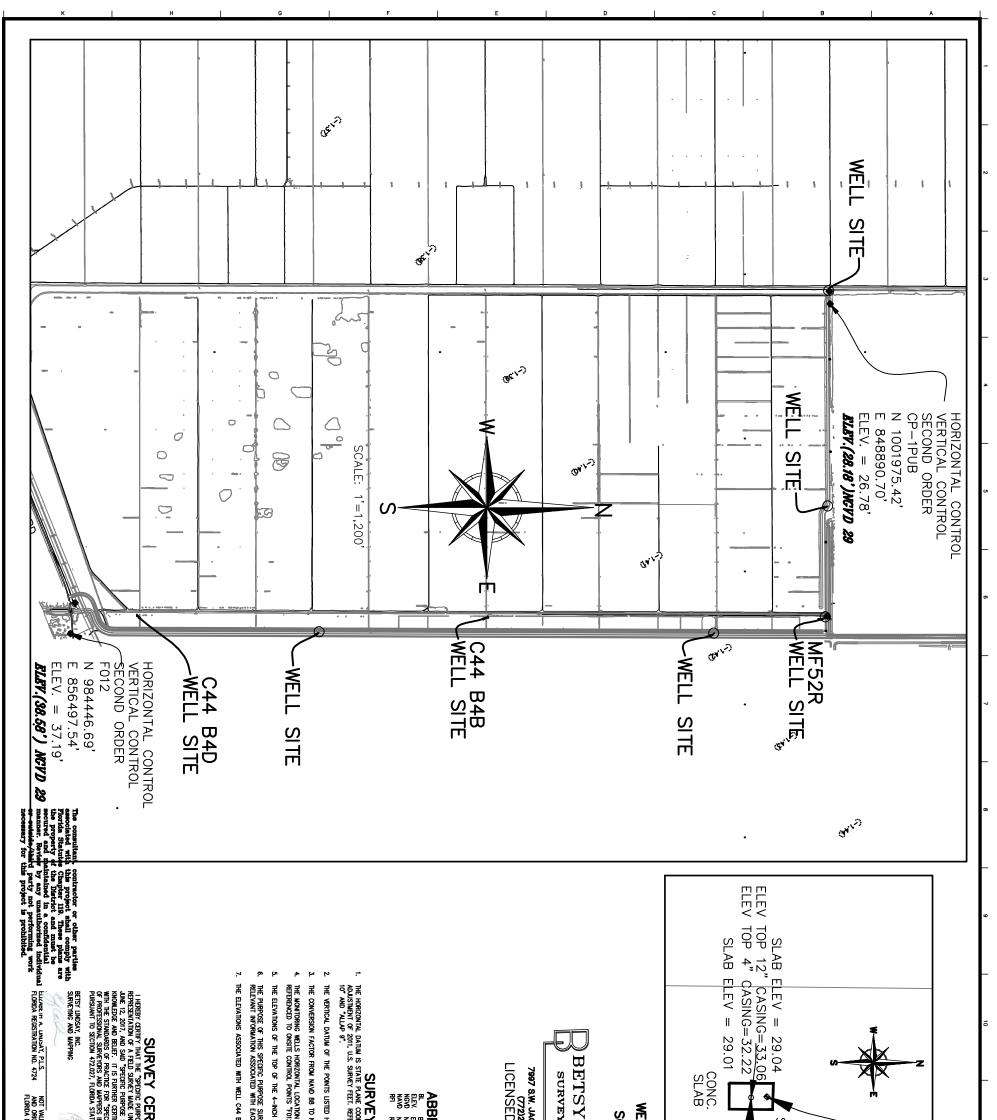
A 16 8

BETSY LINDSAY, INC. SURVEYING AND MAPPING

ELIZABETH A. LINDSAY, P.L.S. FLORIDA REGISTRATION NO. 4724 NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

Betsy Lindsay, Inc., 7997 S.W. Jack James Drive, Stuart, Florida 34997 Florida Certificate of Authorization Number LB-0006852. E-mail address: <u>blindsay@betsylindsay.com</u>

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933



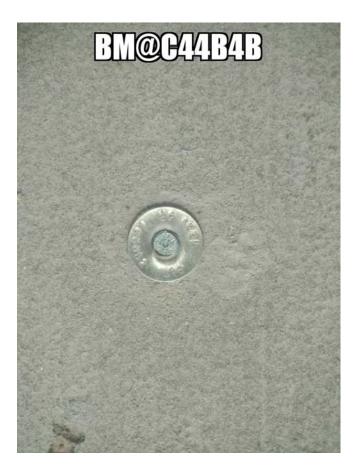
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T VLUD WINDUT THE SIGNATURE D ORGINAL RAISED SAL OF A RIDA LICENSED SURVETOR AND MAPPER	ERTIFICATION PUPPOSE SURVEY AS SHOWN HEREON IS A TRUE AND CORRECT RE UNDER MY OBECTION AND CHARGE WARCH 2, 2016 THROUG DOES SURVEY IS TRUE AND CHARGE WARCH 2, 2016 THROUG DOES SURVEY IS TRUE AND CHARGE WARCH 2, 2016 THROUG STATUTES THAT HAN CHARGE WARCH 2, 2016 THROUGH STATUTES SURVEY SET FORTH BY THE FLORED, BOARD RES IN CHAPTER SU-17, FLOREDA ADMINISTRATIVE CODE, STATUTES.	: To national geodetic vertical datum 1929 (NGVD 1929) IS +1.42 Feet. Trion: Nerdmanton as shown hereon was located utilizing ges with RTK au "Fold" and "CP-1". Inch diameter pipe are in compliance with third order vertical tolerance E Survey is to locate and identify the monitoring wells and illustrate th E Survey is to locate and identify the monitoring wells and illustrate th E Survey is to locate and identify the monitoring wells and illustrate th E Survey is to locate and identify the monitoring wells and illustrate th E Survey is to locate and identify the monitoring wells and illustrate th E Survey is to locate and identify the monitoring of the total of total of the total of the total of total of the total of the total of tot	Y NC	BBREVIATIONS RETSY LINDSAY, INC V. ELEVATION D. INATIONAL GEODETIC VERTICAL DATUM D. INORTH AMERICAN VERTICAL DATUM REQUEST FOR INFORMATION	Y LINDSAY, INC. "EYING AND MAPPING JACK JAMES DRVE, STUART, FL 34997 720286-5753 (722)286-5833 FAX SED BUSINESS NO. 6852	WELL C44 B4B DATA SCALE 1"=10'		E 856114.4450	SLAB ELEV = 29.05	SET MAG NAIL & WAS ("BL LB6852") TBM ELEV = 29.07	
/8/2016			ALLAP	1				- 0		WASHER 7	
		R/STA PROJECT		SOUTH FLORIDA	WATER MANAGEMENT D AND CONSTRUCTION BURE		SURVEYOR: E.A.L.				
Q HE	STORMWATER T			OPERATIONS, MAINTE	NANCE AND CONSTRUCTION BURE	DN DIVISION	DRAWN: CHECKED:		_		
				PH 3	ONE: 561—686—8800 501 GUN CLUB ROAD LM BEACH, FLORIDA 33406		DATE: 02/09/2015	08/20/14	-	Issued for construction	
	MONITORING W	ELL LUCATES	- CE-JUS	WEST PA	LM BEACH, FLORIDA 33406		SCALE: AS SHOWN	DATE DRA	WN REV.#	REVISION DESCRIPTION	



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

DESIGNATION C44 B4B	PROJECT C44 STORM WATER TREATMENT AREA
ESTABLISHED BY: BETSY LINDSAY, INC.	SURVEYOR: Elizabeth A. Lindsay
RECOVERED BY	DATE <u>June 14, 2017</u>
GEOGI	RAPHIC POSITION
SECTION 2 TOWNSH	IP 39 S. RANGE 39 E,
COUNTY MARTIN	NAME OF QUADRANGLE INDIANTOWN
	GEOGRAPHIC INDEX OF QUAD 2504
HORIZONTAL DATUM: 1927 (1983)	Other (circle one) ZONE (E) or W
VERTICAL DATUM: MSL 1929 (1988)) Other (circle one)
CONTROL ACCURACY: HORIZONTAL	1 2 3 <u>N/A (</u> circle one) VERTICAL 1 2 (3)
STATE PLANE X 856114.44 COORDINATE FL. E.	Y 994072.06 NAVD 88 ELEV.
	NGVD 29 ELEV. 30.47
C44 DESIGN PLANS CONVERSION FACTO	DR (NAVD88 TO NGVD29): <u>1.40</u>
LATITUDE 27°04'01.790"	LONGITUDE 80°23'08.118"
RECOV	ERY DESCRIPTION
Stamping: BL LB6852 TRAV PT	
4.85 miles to Barb B Ranch Road, a dirt road	Warfield Bvd) and CR 726 (SW Citrus Blvd) go easterly I located west of the C44 spillway. Head northerly along 0 feet to the west. The bench mark is in concrete slab of
Notable Land marks: well structure	
FIELD BOOK C44-5 c44-6	PAGE 42 11
	SKETCH









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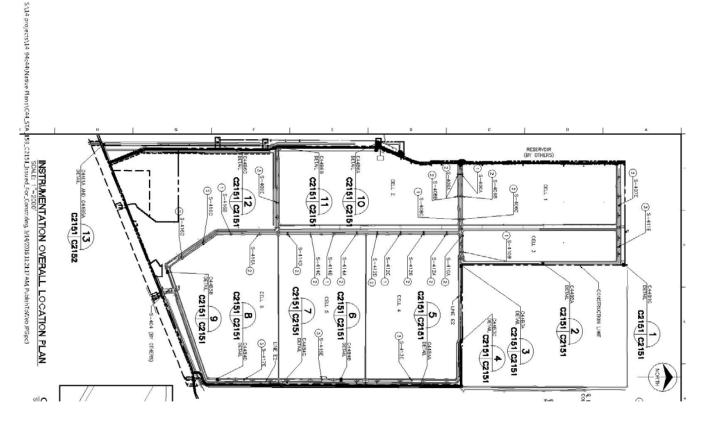
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SURVEY REPORT SPECIFIC PURPOSE SURVEY WELL LOCATION AND ELEVATION C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA WELL C44 B4D STA areas Blue Goose Located in Martin County, Florida

DESCRIPTION OF WORK AREA:

The C44 Resevoir/STA Project.



Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 • Fax (772) 286-5933

CREW CHIEF USED:

Party chief for horizontal verification; Mike Aldrich Party chief for vertical level run: Norge Cid

RESPONSIBLE REGISTERED LAND SURVEYOR: ELIZABETH A. LINDSAY, PLS 4724

THE ACCURACIES OF THIS SURVEY WILL MEET OR EXCEED THIRD ORDER. ALL DATA IS LISTED IN U.S. SURVEY FEET PER THE PUBLISHED DATA SHEETS

The survey control that was verified by this survey is in state plane coordinates NAD83/2011 Florida east zone, U.S. survey feet per the attached data sheets. The vertical datum is NAVD 88 per the attached data sheets.

The conversion factor varies per control point based on the different conversion factors illustrated in the design plans.

METHODS USED:

A peg test was done on the Digital level prior to the level run. On March 2, 2016 we started the level run and completed it on March 8, 2016. A closed level loop was run from F0012 north into CP-1. The level loop closed into CP-1 with 0.017' vertical error, exceeding third order standards. A second loop was run from CP-1 north to ALLAP-9. the level loop closed into ALLAP-9 with 0.012 vertical error. A temporary bench mark elevation for each well was established via closed level loop. The horizontal location of the well was done with GPS/RTK reference to the Lengeman network and field vierified by a series of redundant measurments on known points.

Survey Equipment Utilized For This Portion Of The Project Is As Follows:

Trimble R-8 GPS Receivers and base with radio Topcon DL 101C digital level

PUBLISHED VALUES OF CONTROL USED:

Existing onsite control NAD83/2011 US Survey Feet per data supplied by SFWMD. 105,1001910.4100,856092.6800,28.03,C44RV5 (horizontal only) 106,1001956.2100,848601.8900,28.84,C-44-1 (vertical only) 107,984551.3400,855790.8800,27.37,C-44-2 (vertical only) 108,996557.5300,840627.3200,27.81,C-44-3 (vertical only) 109,1012578.3500,830335.4300,28.90,C-44-4 (vertical only) 110,1001975.4200,848890.7000,26.778,CP-1 (horizontal and vertical 2nd order) 112,982393.7800,850532.4900,30.111,STU-APPLEBAUM-PUB(horizontal & vertical 2nd order) 113,984446.6900,856497.5400,37.19,FO12 (horizontal and vertical 2nd order) 114,1001855.2600,877642.6000,23.88,GC7 D08 (horizontal and vertical 2nd order) 116,1004612.7900,840701.9600,28.83,J12-103-3 PUB (horizontal and vertical 2nd order) 117,1012598.2700,845875.1300,26.93,ALLAP 9 PUB (horizontal and vertical 2nd order)

ABBREVIATIONS

BM	BENCH MARK
DESC	DESCRIPTON
ELEV	ELEVATION
GND	GROUND
PNT	POINT NUMBER
SP SCF	STATE PLANE SCALE FACTOR

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PAGE 3

Elevation of Well components

Elev. of BM on concrete slab = 33.56 Elev. of top of 12" casing = 36.44 Elev of top of 4" csing = 35.73 Elevation of NE corner of concrete slab = 32.52 Horizontal location of center of of Well

N 994072.060, E 856114.445

Bench Mark set mag nail and washer "BL LB6852 TRAV PT" on Slab Elev = 35.56





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THIS REPORT IS SUPPORTED BY AND IT IS NOT COMPLETE WITHOUT THE SPECIFIC PURPOSE SURVEY, BENCH MARK FORM, AND FIELD NOTES.

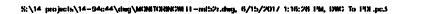
I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS DESCRIBED HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE BETWEEN APRIL 21, 2017 AND JUNE 12, 2017 AND SAID "SPECIFIC PURPOSE SURVEY" IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. IT IS FURTHER CERTIFIED THAT THIS "SPECIFIC PURPOSE SURVEY" COMPLIES WITH THE STANDARDS OF PRACTICE FOR "SPECIFIC PURPOSE SURVEY" SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

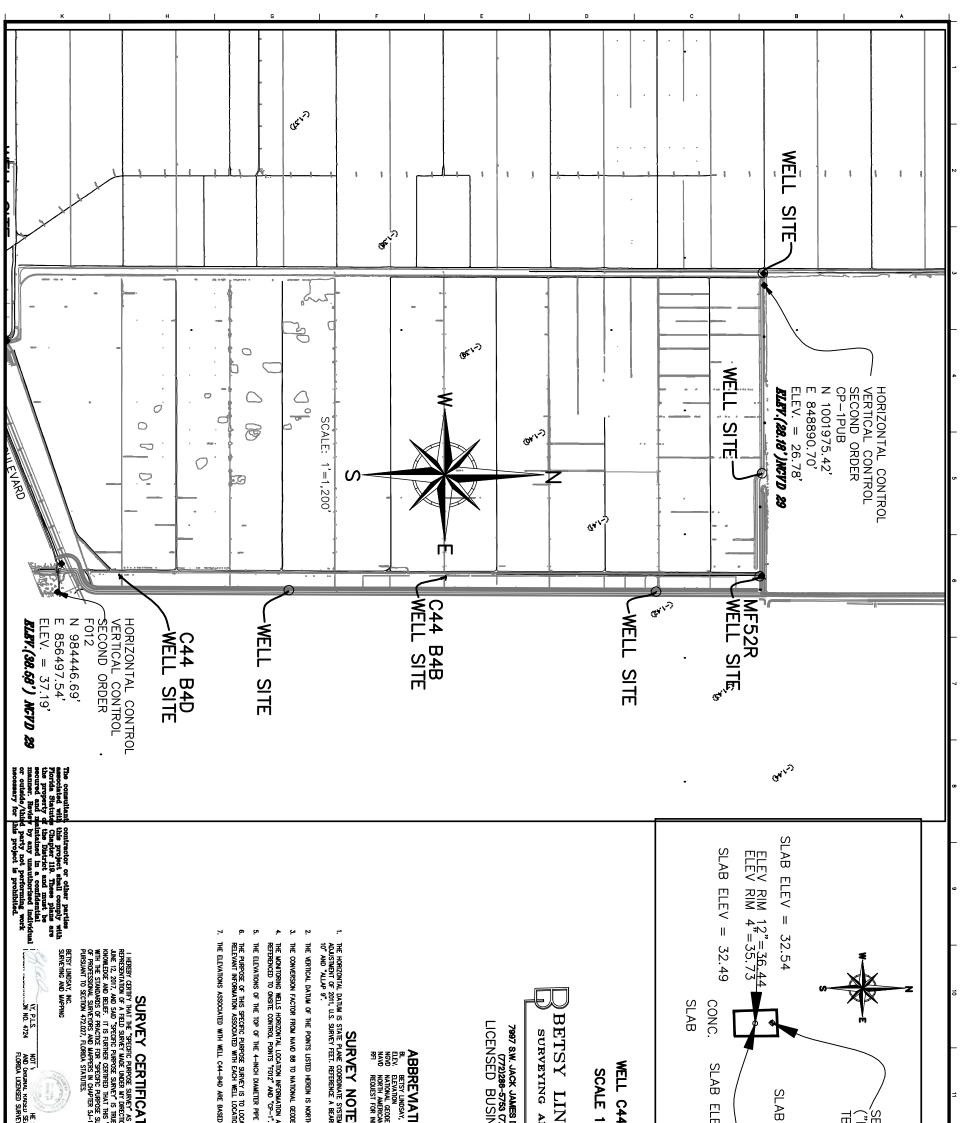
BETSY LINDSAY, INC. SURVEYING AND MAPPING

ELIZABETH A. LINDSAY, P.L.S. FLORIDA REGISTRATION NO. 4724

NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER Betsy Lindsay, Inc., 7997 S.W. Jack James Drive, Stuart, Florida 34997 Florida Certificate of Authorization Number LB-0006852. E-mail address: blindsay@betsylindsay.com

Send all correspondence 7997 SW Jack James Drive Stuart, FL 34997 (772) 286-5753 · Fax (772) 286-5933





RVEYOR AND MAPPER		ATION s Show Heedin IS A True and correct ction and charge Merch 2, 2016 Through true and accurate to the best of My its "Sector purpose survey" complex survey "Set forth by the floward board s-17, Flowida addimensional to the floward	-1". IPE ARE IN COMPLIANCE WITH THIRD ORDER VERTICA OCATE AND IDENTIFY THE MONTORING WELLS AND II ATION. SED ON A CLOSED LEVEL LOOP FROM FOIZ TO CP-	XTH AMERICAN VERTICAL DATUM OF 1988 (VAAV 88) CODETIC VERTICAL DATUM 1929 (NGVD 1929) IS +1.4 N AS SHOWN HEREON WAS LOCATED UTILIZING GPS	S FLORIDA EAST ZONE, NORTH AMERICAN DATUM	TIONS AV, INC CAPT, REFINICAL DATUM ICAM VERTICAL DATUM 2) MFORMATION	35 DRIVE, STUART, FL 34997 (772)286-5633 FAX SINESS NO. 6852	1"=10' NDSAY, INC. And mapping	14 B4D DATA		856071. 2.50	CENTER OF WEL	SET MAG NAIL & WASHER ("BL LB6852") TBM ELEV = 32.56 B ELEV = 32.50	
DATE: 04/8/2016			L TOLERANCE. LIUSTRATE THE 1.	2 Feet. With RTK AND	NSTRUCTION	4							ਸ਼ੁ 	
-	PROJEC 100 DRAW	C-44 RESERVOI STORMWATER TH	R/STA PROJECT REATMENT AREA			ENGINEE	IDA WATER MANAG RING AND CONSTRUC AINTENANCE AND CO	TION BUREAU	DRAW	YOR: E.A.L. N:				
9 	ioject ID. No. 100548 Jrawing No.	SPECIFIC PURF MONITORING W				•	PHONE: 561-686-88 3301 GUN CLUB RO ST PALM BEACH, FLORID		DATE:		08/20/14 Date		ISSUED FOR CONSTRUCTION REVISION DESCRIPTION	



DESIGNATION C44 B4D		PROJECT C44 STORM WATER TREATMENT AREA
ESTABLISHED BY: BETSY LINDSAY, IN	NC.	SURVEYOR: Elizabeth A. Lindsay
RECOVERED BY		DATE <u>June 14, 2017</u>
GE	OGR	RAPHIC POSITION
SECTION 2 TOWN	NSHI	IIP 39 S. RANGE 39 E,
COUNTY MARTIN		NAME OF QUADRANGLE INDIANTOWN
		GEOGRAPHIC INDEX OF QUAD 2504
HORIZONTAL DATUM: 1927 (1983)	0	Other (circle one) ZONE (E) or W
VERTICAL DATUM: MSL 1929 (19	988)) Other (circle one)
CONTROL ACCURACY: HORIZONTA	\L 1	1 2 3 <u>N/A (</u> circle one) VERTICAL 1 2 (3)
STATE PLANE X 856071.98 COORDINATE FL. E.	36	Y 985974.458 NAVD 88 ELEV. <u>32.56</u>
		NGVD 29 ELEV. <u>33.95</u>
C44 DESIGN PLANS CONVERSION FA	СТО	OR (NAVD88 TO NGVD29): <u>1.39</u>
LATITUDE 27°02'41.603"		LONGITUDE 80°23'09.025"
REC	OVE	ERY DESCRIPTION
Stamping: BL LB6852 TRAV PT		
4.85 miles to Barb B Ranch Road, a dirt r	road I	Warfield Bvd) and CR 726 (SW Citrus Blvd) go easterly d located west of the C44 spillway. Head northerly along 00 feet to the west. The bench mark is in concrete slab of
Notable Land marks: well structure		
FIELD BOOK C44-5 c44-6		PAGE 42 11
		SKETCH













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Letter of Transmittal

Date:	June 28, 2017
Project	C44 STA
To:	Lisa Seavey - Contract Administrator
	Blue Goose Construction
Copy To:	Luis Jimenez - Project Manager
	Blue Goose Construction
From:	John Mayhut - Project Manager
	Liz Hunter P.E Project Engineer
Re:	Boundary Monitor Well As-Built Drawings
Spec Section	02840 Monitor Wells
Subsection	1.04
Submittal No.	006-00
Project #:	1510614103

We Are Sending You:

⊠ Attached	🗆 O&M Manuals	□ For Approval
Product Data	Engineering Report/Plans	For Your Review
□ Installation Plans	☑ Field Logs/As-Builts	□ For Your Information
□ Other		

Shipped via: Email

File Name: C44STA_02840_006-00_Boundary Monitor Well As-Built Drawings_C44B4B & B4D.pdf

Remarks

Please find attached as-built drawings for the two (2) Boundary Monitor Wells that have constructed at the project site to date. The Boundary Monitor Wells located at C44B4B and C44B4D are included within this submittal.

