

South Florida Water Mgmt District

SUBMITTAL

NO.02840-1.04-005
PACKAGE NO: 02840

Phone: 561-686-8800


Fax:

TITLE:	C44STA Wells B4B & B4D As-Builts	REQUIRED START:	07/13/2017
PROJECT:	Stormwater Treatment Area	REQUIRED FINISH:	08/03/2017
DRAWING:		DAYS HELD:	0
STATUS:	NEW	DAYS ELAPSED:	1
BIC:		DAYS OVERDUE:	-20

RECEIVED	FROM	SENT TO	RETURNED BY	FORWARDED TO
BGC	LS	ADA	TR	

Rev No.	Description/Remark	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Draw Date	Held	Elapse
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001	Wells C44B4B & C44B4D As-Builts	07/13/2017	07/14/2017			NEW	0	0		0	1
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South Florida Water Management District SUBMITTAL REVIEW	
Review is for general compliance with contract documents. No responsibility is assumed for correctness of dimensions or details. The contractor shall assume full responsibility for deviations from contract requirements not specifically indicated on this submittal.	
<input type="checkbox"/> Accepted As Submitted	<input type="checkbox"/> Accepted As Noted
<input checked="" type="checkbox"/> Returned For Revision	<input type="checkbox"/> Not Acceptable (Submit Anew)
<input type="checkbox"/> Preliminary Submittal	<input type="checkbox"/> For Reference Only
<input type="checkbox"/> Distribution Copy (Previously Accepted)	
	

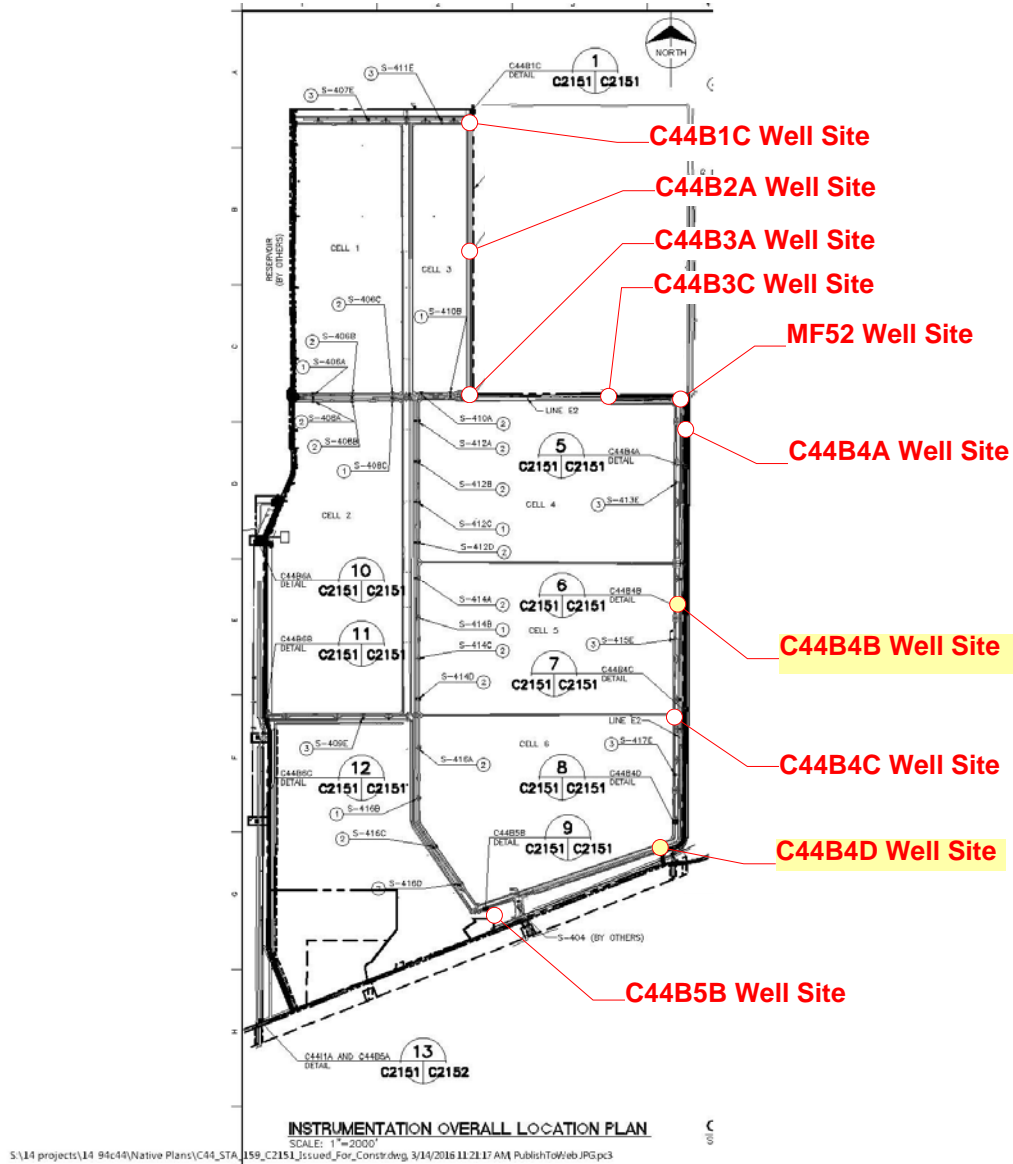
1. The horizontal and vertical controls provided in the submittal included both NAVD 88 and NGVD 29 datum but the C44B4B and C44B4D surveys were given only in NAVD 88 on the survey sheet. In the resubmittal, the Contractor shall provide the C44B4B and C44B4D surveys in both NAVD 88 and NGVD 29 datum 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 Reservoir/STA Project.



NOT TO SCALE

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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275

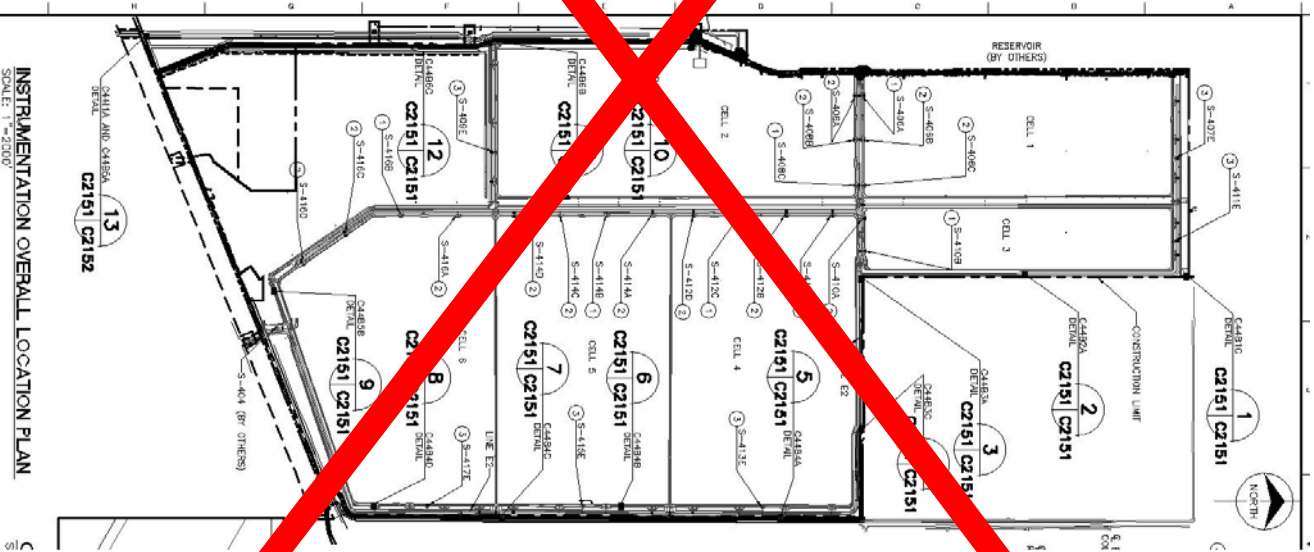


BETSY LINDSAY, INC.
SURVEYING AND MAPPING

**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 Reservoir/STA Project

S:\14 projects\14-94-c44\Native Plans\C44 STA 159, C2151 Issued For Covering 3/14/2016 11:21:17 AM Publish\wso Prop



INSTRUMENTATION OVERALL LOCATION PLAN
SCALE: 1" = 200'

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

208 North U.S. Highway One
Tequesta, FL 33469
(561) 575-5275

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 verified by a series of redundant measurements 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

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Tequesta, FL 33469

(561) 575-5275

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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275

WELL SITE

HORIZONTAL CONTROL
VERTICAL CONTROL
SECOND ORDER
CP-1PUB
N 1001975.42'
E 848890.70'
ELEV. = 26.78'
ELEV.(28.18') NGVD 29

WELL SITE

MF52R
WELL SITE

WELL SITE

C44 B4B
WELL SITE

WELL SITE

C44 B4D
WELL SITE

HORIZONTAL CONTROL
VERTICAL CONTROL
SECOND ORDER
F012
N 984446.69'
E 856497.54'
ELEV. = 37.19'
ELEV.(38.58') NGVD 29

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for this project is prohibited.



SET MAG NAIL & WASHER
("BL LB6852")
TBM ELEV = 29.07

SLAB ELEV = 29.04
ELEV TOP 12" CASING=33.06
ELEV TOP 4" CASING=32.22
SLAB ELEV = 29.01
CONC. SLAB
SLAB ELEV = 29.05
SLAB ELEV = 29.01
N 994072.0600
E 856114.4450
CENTER OF WELL

WELL C44 B4B DATA
SCALE 1"=10'

B BETSY LINDSAY, INC.
SURVEYING AND MAPPING
7997 S.W. JACK JAMES DRIVE, STUART, FL 34997
(772)286-5753 (772)286-5933 FAX
LICENSED BUSINESS NO. 6852

ABBREVIATIONS

BL BETSY LINDSAY, INC
ELEV. ELEVATION
NGVD NATIONAL GEODETIC VERTICAL DATUM
NAVD NORTH AMERICAN VERTICAL DATUM
RFI REQUEST FOR INFORMATION

SURVEY NOTES

1. THE HORIZONTAL DATUM IS STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, U.S. SURVEY FEET. REFERENCE A BEARING OF N89°54'17"E ALONG A LINE BETWEEN MONUMENTS "ALLAP 10" AND "ALLAP 9".
2. THE VERTICAL DATUM OF THE POINTS LISTED HEREIN IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. THE CONVERSION FACTOR FROM NAVD 88 TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 1929) IS +1.42 FEET.
4. THE MONITORING WELLS HORIZONTAL LOCATION INFORMATION AS SHOWN HEREON WAS LOCATED UTILIZING GPS WITH RTK AND REFERENCED TO ONSITE CONTROL POINTS "F012" AND "CP-1".
5. THE ELEVATIONS OF THE TOP OF THE 4-INCH DIAMETER PIPE ARE IN COMPLIANCE WITH THIRD ORDER VERTICAL TOLERANCE.
6. THE PURPOSE OF THIS SPECIFIC PURPOSE SURVEY IS TO LOCATE AND IDENTIFY THE MONITORING WELLS AND ILLUSTRATE THE RELEVANT INFORMATION ASSOCIATED WITH EACH WELL LOCATION.
7. THE ELEVATIONS ASSOCIATED WITH WELL C44 B4B ARE BASED ON A CLOSED LEVEL LOOP FROM F012 TO CP-1.

SURVEY CERTIFICATION

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE MARCH 2, 2016 THROUGH 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" COMPLES 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.

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



100548

DATE: 04/8/2016

ISSUED FOR CONSTRUCTION

C-44 RESERVOIR/STA PROJECT
STORMWATER TREATMENT AREA

SPECIFIC PURPOSE SURVEY
MONITORING WELL LOCATES

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENGINEERING AND CONSTRUCTION BUREAU
OPERATIONS, MAINTENANCE AND CONSTRUCTION DIVISION

PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

SURVEYOR: E.A.L.
DRAWN: [blank]
CHECKED: [blank]
DATE: 02/09/2015
SCALE: AS SHOWN

ISSUED FOR CONSTRUCTION
0
08/20/14
DATE
DRAWN
REV./#

PROJECT ID. NO.
100548
DRAWING NO.

SHEET
1 of 1

S:\14 projects\14-94644\dwg\MANAGEMENT\11 -mf52r.dwg, 4/15/2017 11:02:29 AM, 19M, To: 198 dpc3

Line up pictures on page
Add a picture of the Well's Reference Mark ie.(Top of Well Casing with the lid open and showing well pipe inside



C44B4B Benchmark
EI. 29.07 NAVD88



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07







SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Clean up this sheet

Rev. 8/07

DESIGNATION C44 B4B	PROJECT C44 STORM WATER TREATMENT AREA
ESTABLISHED BY: BETSY LINDSAY, INC. RECOVERED BY	SURVEYOR: Elizabeth A. Lindsay DATE June 14, 2017

GEOGRAPHIC POSITION

SECTION 2	TOWNSHIP 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 COORDINATE FL. E.	X 856114.44	Y 994072.06	NAVD 88 ELEV. <u>29.07</u>
			NGVD 29 ELEV. <u>30.47</u>

C44 DESIGN PLANS CONVERSION FACTOR (NAVD88 TO NGVD29): 1.40

LATITUDE 27°04'01.790"	LONGITUDE 80°23'08.118"
------------------------	-------------------------

RECOVERY DESCRIPTION

Stamping: BL LB6852 TRAV PT

To Reach: From the intersection of SR 710 (Warfield Blvd) and CR 726 (SW Citrus Blvd) go easterly 4.85 miles to Barb B Ranch Road, a dirt road located west of the C44 spillway. Head northerly along the dirt road for 1.84 miles to the well site 300 feet to the west. The bench mark is in concrete slab of the well.

Notable Land marks: well structure

FIELD BOOK C44-5 c44-6 PAGE 42 11

SKETCH



C44B4B Well Site (Looking East)

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 Well

N 994072.060, E 856114.445

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



4405
 Bldg W/D US 4405UB
 + C44B4D

STL	+	HI	-	ELEV
C445-01-1	12.108	37.508		
PAD			4.78	32.528
12"			1.304	34.444
4"	1.55	37.218	1.78	35.128
C445-01-1			11.875	25.403

C44B4D

STL	+	HI	-	ELEV
9871 C444-00-2	10.513	35.382		
PAD			6.348	29.034
12"			2.318	33.064
4"	3.333	35.558	3.157	32.225
C444-00-2			4.695	28.863

C44
5/68

C44B4D

20621

N: 985974.50 E: 856072.015

5-31-17

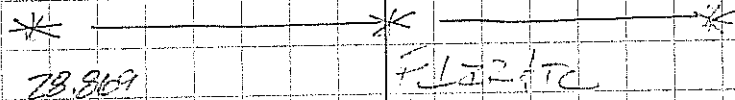
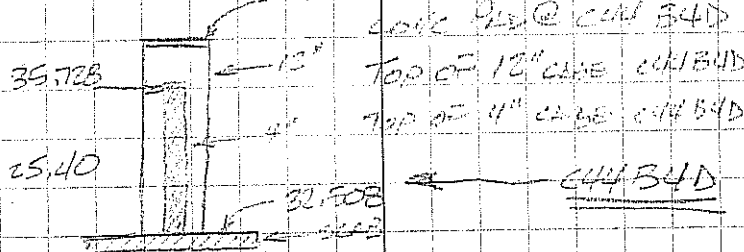
Bldg

25.40

TOP OF CASE
 36.414
 36.414

DESCR

FL 12" etc

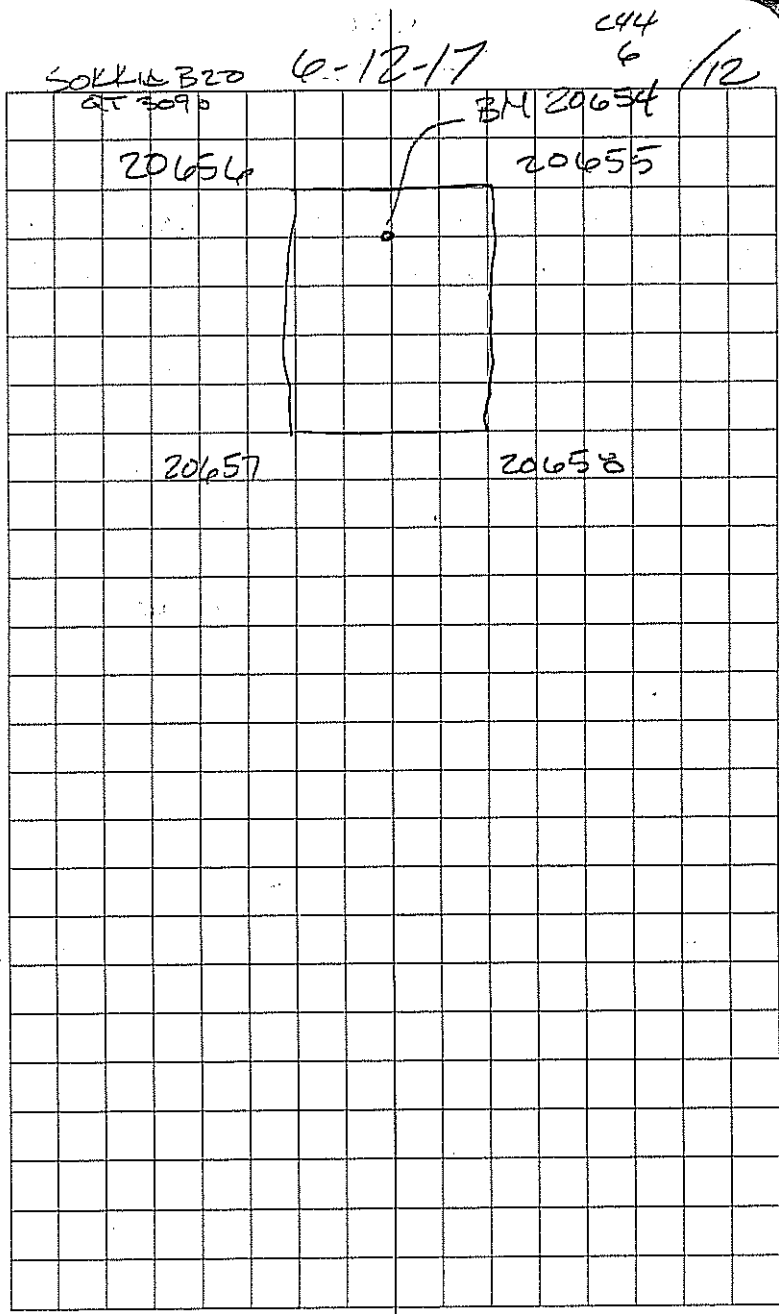


C44B4B

20622

N: 994072.013 E: 856014.92

		WELL			
		#. C44 B4B			
SL					
STA	+	H1	-	ELEV	BM
C44-60-2	6.142	35.011			28.869
20654 BM	6.12	35.180	5.945	29.066	
NE			6.13	29.056	
NW			6.15	29.036	
SW			6.18	29.006	
SE			6.18	29.006	
C44-60-2			6.315	28.871	



Add the Level Line Adjustment Print
out. and bookmark it in the report

16

C-442/45

NC	C-444				
ET	Bench Run C-44 W2				
ST	+	H.I	-	Elev	BH
113	3.9447	41.1347			37.19
TP 1	5.0065	40.2793	5.8619	35.2728	
TP2	1.2692	32.0329	9.5156	30.7637	
TP3	6.9115	33.8680	5.0764	26.9565	
TP4	3.8451	32.2679	5.4452	28.4228	
TP5	3.8754	32.7757	3.3676	28.9003	
TP6	3.9438	32.8849	3.8346	28.9411	
TP7	6.6959	34.0193	5.5615	27.3234	
TP8	5.1422	34.2001	4.9614	29.0579	
TP9	4.8463	33.7401	5.3063	28.8938	
TP10	3.1752	30.2517	6.6636	27.0765	
TP11	5.1955	33.6264	1.8208	28.4309	
TP12	5.4710	34.0997	4.9977	28.6287	
TP13	5.6778	34.3835	5.3940	28.7057	
TP14	5.7839	34.3288	5.8446	28.5389	
TP15	4.9224	33.9614	5.2838	29.0390	
BHWP7	6.6596	33.7680	6.8530	27.1084	
TP-16	5.3234	33.8330	5.2584	28.5096	
TP-17	5.2475	33.7932	5.2873	28.5457	
TP-18	5.1785	33.8062	5.1655	28.6277	
TP-19	5.4102	34.0422	5.1742	28.6320	
TP-20	6.9610	33.9050	7.0982	26.944	BH
TP-21			5.2793	28.6257	

DIST B	DIST F	Point
239.28		FOI Z NAV 88
211.22	215.28	
141.96	106.76	
141.28	146.82	
193.12	201.32	
157.32	200.06	
271.88	176.80	6014A
178.66	298.40	6013A
191.46	231.92	
296.64	264.62	
190.64	339.78	6012A
203.56	185.04	
193.08	268.62	
184.04	197.62	
214.30	203.26	
184.80	275.04	
220.10	234.56	6007A
218.00	223.54	
187.88	213.40	
222.74	215.22	
290.00	229.32	
236.40	300.72	6011A
	293.92	

NO	C-44				
ET	Bench Run C44 W2				
Sta	+	HI	-	Elev	BM
TP-21	5.7136	34.3393		28.6257	
TP-22	5.8374	34.4375	5.7392	28.6001	
TP-23	5.7946	34.3044	5.9277	28.5098	
TP-24	5.4828	34.0762	5.7110	28.5934	
-TP-25	6.6041	34.1957	6.4846	27.5916	BM
TP-26	5.5744	34.1956	5.745	28.6212	
TP-27	4.9856	33.5721	5.6091	28.5865	
TP-28	5.2247	33.7799	5.0169	28.5552	
TP-29	5.3749	33.8771	5.2777	28.5022	
TP-30	6.1198	33.7821	6.2041	27.6730	BM
TP-31	5.0766	34.0355	4.8239	28.9589	
TP-32	4.5167	33.4976	5.0546	28.9809	
TP-33	4.7498	33.6950	4.5524	28.9452	
BMWPS	6.1059	33.3449	6.4560	27.239	BM
TP-34	4.3832	33.3967	4.3314	29.0135	
TP-35	4.6674	33.624	4.4401	28.9566	
TP-36	4.7293	33.8065	4.5468	29.0772	
TP-37	4.4281	33.5175	4.7171	29.0894	
TP-38	4.8303	32.6244	5.7234	27.7941	BM
TP-39	4.6454	32.5185	4.7513	27.8731	
TP-40	3.1566	31.9185	3.7566	28.7619	
TP-41	3.1543	31.7186	3.3542	28.5643	
TP-42			3.8206	27.8980	BM

03-03-16		C-442/48	
DIST B	DIST F	Point	
255.84			
319.76	293.92		
267.76	281.54		
248.80	297.22		
299.24	233.84	6010A	
268.26	257.02		
256.00	212.60		
293.90	244.66		
202.64	176.20		
216.80	199.40	6009A	
207.44	250.26		
293.10	220.84		
111.68	271.44		
186.34	130.62	6018A	
238.94	221.32		
273.88	265.06		
259.74	283.54		
278.58	262.58		
215.36	330.48	6026A	
266.28	275.74		
242.60	260.28		
290.56	223.04		
	321.24	6027A	

NC	C44				
ET	Berch Rum C-44 W1				
Sta	+	HI	-	Elev	BH
TP-42	4.3365	32.2345		27.8980	
TP-43	3.4349	31.6169	4.0525	28.1820	
BHWP4	4.8699	32.5858	3.9010	27.7159	BH
TP-44	4.4253	32.9571	4.0540	28.5318	
TP-45	4.3447	32.6251	4.6767	28.2804	
TP-46	4.3898	33.0525	3.9624	28.6627	BH
TP-47	4.4891	32.8182	4.7234	28.3291	
TP-48	4.6648	32.9227	4.5603	28.2579	
TP-49	4.5393	32.8412	4.6208	28.3019	
TP-50	4.3207	32.9307	4.2312	28.6100	BH
TP-51	4.3115	32.6836	4.5586	28.3721	
TP52	4.6785	32.9658	4.3963	28.2873	
CP-1PUB			6.2029	26.7629	26.78
				-0.0171	

03-07-16 C442/47

DIST B	DIST F	Point
288.26		6027A
201.38	239.76	
158.68	150.82	6020A
242.06	246.34	
167.42	290.24	
244.96	152.92	6028A
272.54	250.40	
257.64	286.88	
318.46	233.62	
329.16	269.48	6029A
292.18	306.98	
72.62	208.10	
	84.42	
6018		
N	999.290.605	
E	856435.694	
	ELEV = 27.24	



BETSY LINDSAY, INC.
SURVEYING AND MAPPING

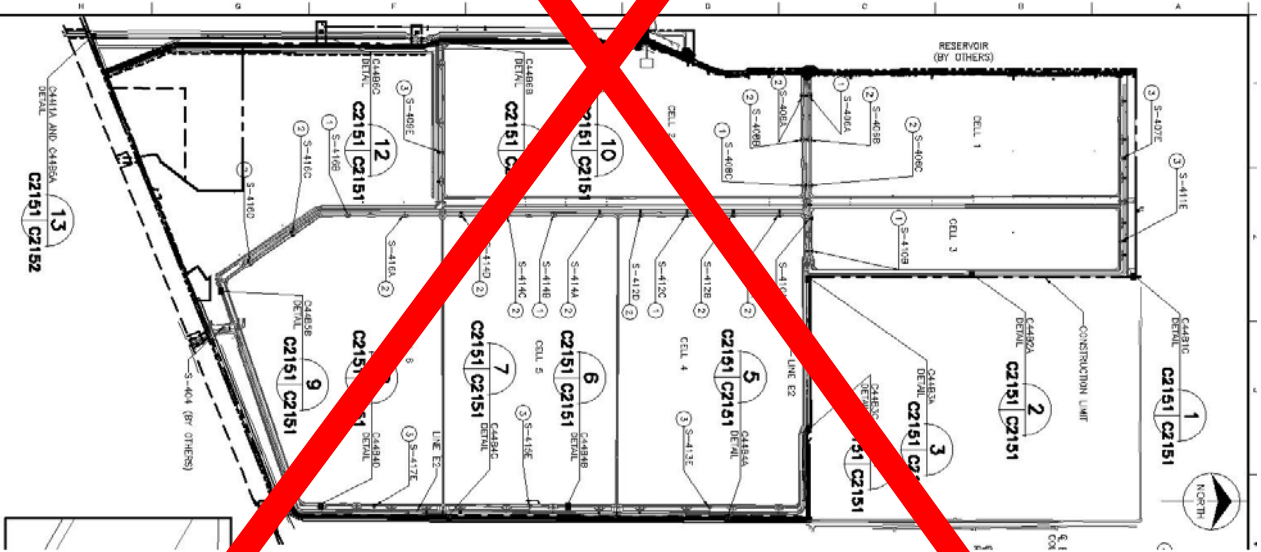
**SURVEY REPORT
SPECIFIC PURPOSE SURVEY
WELL LOCATION AND ELEVATION
C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA
WELL C44 B4D
STA areas Blue Goose
Located in Martin County, Florida**

DESCRIPTION OF WORK AREA:
The C44 Reservoir/STA Project.

S:\14 projects\14-94-c44\Native Plans\C44 STA 159, C2151 Issued For Covering 3/14/2016 11:21:17 AM Publish\wso Proj03

INSTRUMENTATION OVERALL LOCATION PLAN

SCALE: 1" = 200'



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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275

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 verified by a series of redundant measurements 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

208 North U.S. Highway One, #8

Tequesta, FL 33469

(561) 575-5275

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" casing = 35.73

Elevation of NE corner of concrete slab = 32.52

Horizontal location of center of Well

N 994072.060, E 856114.445

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





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



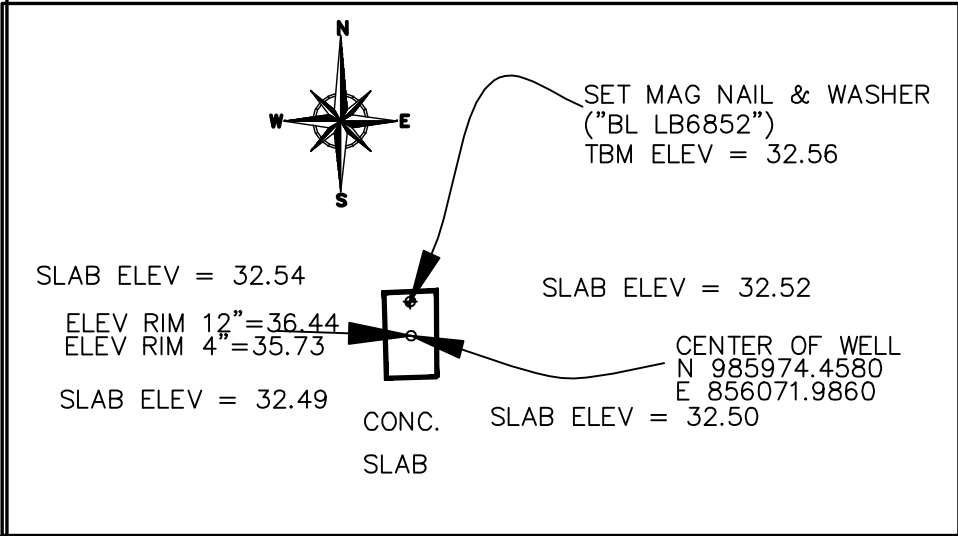
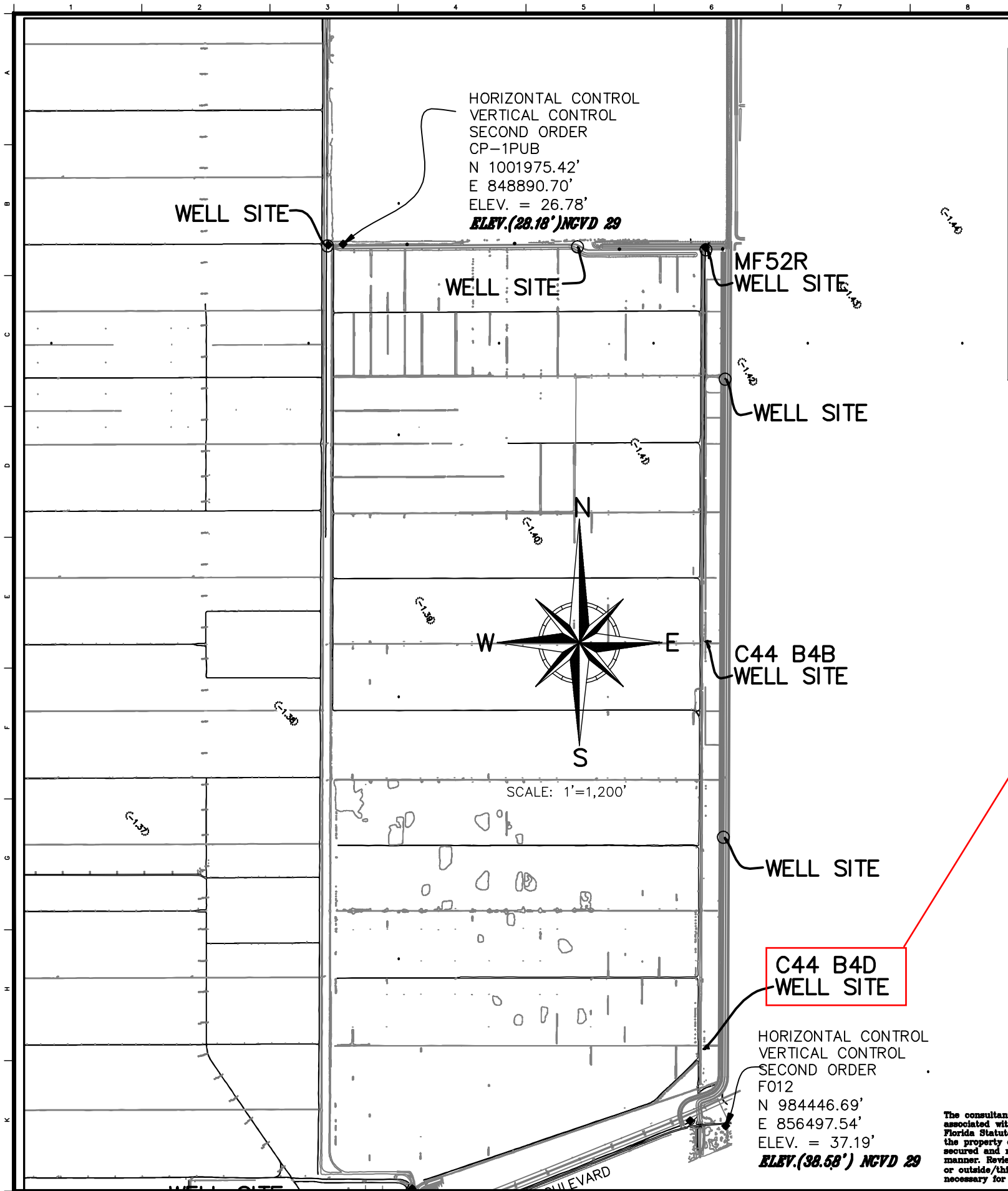
ELIZABETH A. LINDSAY, P.L.S.
FLORIDA REGISTRATION NO. 4724

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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275



**WELL C44 B4D DATA
SCALE 1"=10'**

B **BETSY LINDSAY, INC.**
SURVEYING AND MAPPING

7997 S.W. JACK JAMES DRIVE, STUART, FL. 34997
(772)286-5753 (772)286-5933 FAX
LICENSED BUSINESS NO. 6852

ABBREVIATIONS

- BL BETSY LINDSAY, INC
- ELEV. ELEVATION
- NGVD NATIONAL GEODETIC VERTICAL DATUM
- NAVD NORTH AMERICAN VERTICAL DATUM
- RFI REQUEST FOR INFORMATION

SURVEY NOTES

1. THE HORIZONTAL DATUM IS STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, U.S. SURVEY FEET. REFERENCE A BEARING OF N89°54'17"E ALONG A LINE BETWEEN MONUMENTS "ALLAP 10" AND "ALLAP 9".
2. THE VERTICAL DATUM OF THE POINTS LISTED HEREIN IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. THE CONVERSION FACTOR FROM NAVD 88 TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 1929) IS +1.42 FEET.
4. THE MONITORING WELLS HORIZONTAL LOCATION INFORMATION AS SHOWN HEREON WAS LOCATED UTILIZING GPS WITH RTK AND REFERENCED TO ONSITE CONTROL POINTS "F012" AND "CP-1".
5. THE ELEVATIONS OF THE TOP OF THE 4-INCH DIAMETER PIPE ARE IN COMPLIANCE WITH THIRD ORDER VERTICAL TOLERANCE.
6. THE PURPOSE OF THIS SPECIFIC PURPOSE SURVEY IS TO LOCATE AND IDENTIFY THE MONITORING WELLS AND ILLUSTRATE THE RELEVANT INFORMATION ASSOCIATED WITH EACH WELL LOCATION.
7. THE ELEVATIONS ASSOCIATED WITH WELL C44-B4D ARE BASED ON A CLOSED LEVEL LOOP FROM F012 TO CP-1.

SURVEY CERTIFICATION

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE MARCH 2, 2016 THROUGH 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

BY, P.L.S. NOT A SIGNATURE
NO. 4724 AND ORIGINAL HASLED SEAL OF A
FLORIDA LICENSED SURVEYOR AND MAPPER



HDR
1000 Bay Center Drive, Suite 400
St. Petersburg, FL 33706
Tel: 727-834-4444

SURVEYOR:
ELIZABETH A. LINDSAY
FL SURVEYOR CERTIFICATE NO.: 4724

PROJECT ID. NO.
100548
DRAWING NO.

SHEET
1 of 1
DATE: 04/2/2018

ISSUED FOR CONSTRUCTION

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENGINEERING AND CONSTRUCTION BUREAU
OPERATIONS, MAINTENANCE AND CONSTRUCTION DIVISION



C-44 RESERVOIR/STA PROJECT
STORMWATER TREATMENT AREA
SPECIFIC PURPOSE SURVEY
MONITORING WELL LOCATES

PROJECT ID. NO.
100548
DRAWING NO.
SHEET
1 of 1
DATE: 04/2/2018

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C44B4D

LOOKING EAST



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Clean up this sheet

Rev. 8/07

DESIGNATION C44 B4D	PROJECT C44 STORM WATER TREATMENT AREA
---------------------	--

ESTABLISHED BY: BETSY LINDSAY, INC. RECOVERED BY	SURVEYOR: Elizabeth A. Lindsay DATE June 14, 2017
---	--

GEOGRAPHIC POSITION

SECTION 2	TOWNSHIP 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 COORDINATE FL. E.	X 856071.986	Y 985974.458	NAVD 88 ELEV. <u>32.56</u>
			NGVD 29 ELEV. <u>33.95</u>

C44 DESIGN PLANS CONVERSION FACTOR (NAVD88 TO NGVD29): <u>1.39</u>
--

LATITUDE 27°02'41.603"	LONGITUDE 80°23'09.025"
------------------------	-------------------------

RECOVERY DESCRIPTION

Stamping: BL LB6852 TRAV PT

To Reach: From the intersection of SR 710 (Warfield Blvd) and CR 726 (SW Citrus Blvd) go easterly 4.85 miles to Barb B Ranch Road, a dirt road located west of the C44 spillway. Head northerly along the dirt road for 0.29 miles to the well site 300 feet to the west. The bench mark is in concrete slab of the well.

Notable Land marks: well structure

FIELD BOOK C44-5 c44-6	PAGE 42 11
------------------------	------------

SKETCH



C44B4D Well Site (Looking East)

DL	BLD Ref. W/LS	ELEV	CR1
DL	C44 B4D		

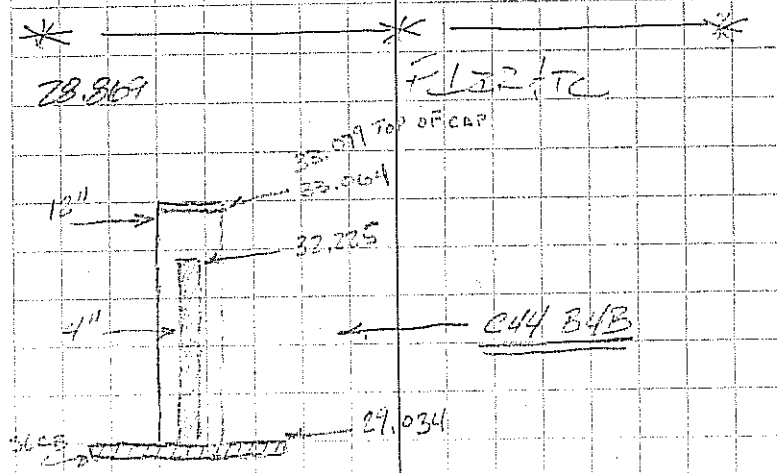
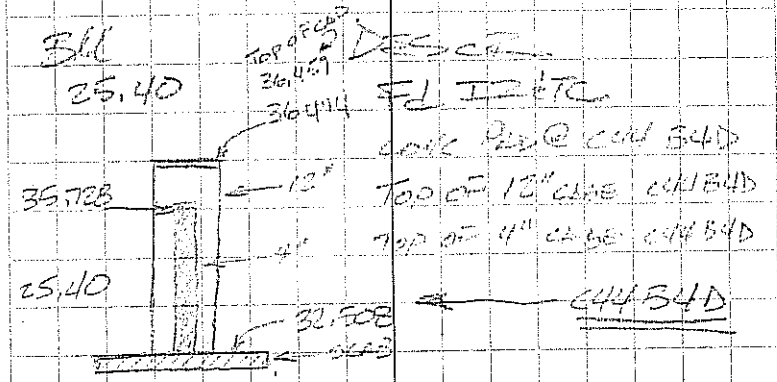
STL	+	HL	-	ELEV
C445-61-1	12.108	37.508		
PAD			4.78	32.528
12"			1.864	30.444
4"	1.55	37.278	1.78	35.728
C445-61-1			11.875	25.403

C44 B4D

* 8371			* ←	* →
C444-102-2	10.513	35.382		
PAD			6.848	29.034
12"			2.318	33.064
4"	3.333	35.558	3.157	32.225
C444-102-2			11.695	28.863

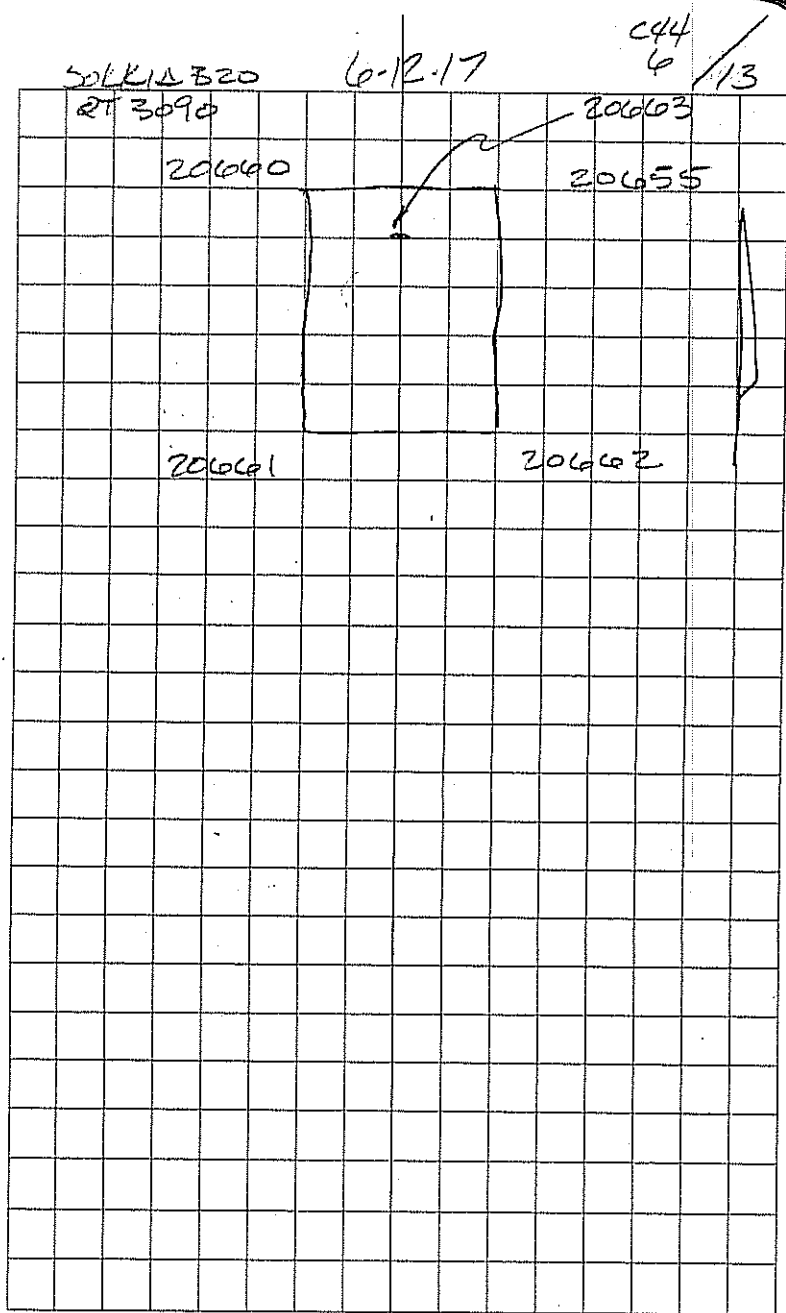
C44
5/68

C44B4D
20021 N. 985974.50 E. 856072.015



C44 B4B
20622 N. 994072.013 E. 856114.42

REL		WELL			
SL		C44 B4D			
STH	+	H1	-	REV	BM
C445-61-1	11647	37.047			25.40
BM	4.809	37.373	4.483	32.564	
NE			4.85	32.523	
NW			4.83	32.543	
SW			4.88	32.493	
SE			4.87	32.503	
C445-61-1			11.973	25.40	25.40



Add the Level Line Adjustment Print out.
and bookmark it in the report

3-03-16

C 442/45

NC	C-44				
ET	Branch Run C-44 W2				
ST	+	HJ	-	Elev	BH
113	3.9447	41.1347			37.19
TP 1	5.0065	40.2793	5.8619	35.2728	
TP 2	1.2692	32.0329	9.5156	30.7637	
TP 3	6.9115	33.8680	5.0764	26.9565	
TP 4	3.8451	32.2679	5.4452	28.4228	
TP 5	3.8754	32.7757	3.3676	28.9003	
TP 6	3.9438	32.8849	3.8346	28.9411	
TP 7	6.6959	34.0193	5.5615	27.3234	
TP 8	5.1422	34.2001	4.9614	29.0579	
TP 9	4.8463	33.7401	5.3063	28.8938	
TP 10	3.1752	30.2517	6.6636	27.0765	
TP 11	5.1955	33.6264	1.8208	28.4309	
TP 12	5.4710	34.0997	4.9977	28.6287	
TP 13	5.6778	34.3835	5.3940	28.7057	
TP 14	5.7839	34.3288	5.8446	28.5389	
TP 15	4.9224	33.9614	5.2838	29.0390	
BHWP 7	6.6596	33.7680	6.8530	27.1084	
TP-16	5.3234	33.8330	5.2584	28.5096	
TP-17	5.2475	33.7932	5.2873	28.5457	
TP-18	5.1785	33.8062	5.1655	28.6277	
TP-19	5.4102	34.0422	5.1742	28.6320	
TP-20	6.9610	33.9050	7.0982	26.944	Bm
TP-21			5.2793	28.6257	

DIST B	DIST F	Point
239.28		FOI 2 - NAVD 88
211.22	215.28	
141.96	106.76	
141.88	146.82	
193.12	201.32	
157.32	200.06	
271.88	176.80	6014 A
178.66	298.40	6013 A
191.46	231.92	
296.64	264.62	
190.64	339.78	6012 A
203.56	185.04	
193.08	268.62	
184.04	197.62	
214.30	203.26	
184.80	275.04	
220.10	234.56	6007 A
218.00	223.54	
187.88	213.40	
222.74	215.22	
290.00	229.32	
236.40	300.72	6011 A
	293.92	

NO	C-44				
ET	Berch Rum C44 W2				
Sta	+	HI	-	Elev	BM
TP-21	5.7136	34.3393		28.6257	
TP-22	5.8374	34.4375	5.7392	28.6001	
TP-23	5.7946	34.3044	5.9277	28.5098	
TP-24	5.4828	34.0762	5.7110	28.5934	
-TP-25	6.6041	34.1957	6.4846	27.5916	BM
TP-26	5.5744	34.1956	5.745	28.6212	
TP-27	4.9856	33.5721	5.6091	28.5865	
TP-28	5.2247	33.7799	5.0169	28.5552	
TP-29	5.3749	33.8771	5.2777	28.5022	
TP-30	6.1098	33.7821	6.2041	27.6730	BM
TP-31	5.0766	34.0355	4.8239	28.9589	
TP-32	4.5167	33.4976	5.0546	28.9809	
TP-33	4.7498	33.6950	4.5524	28.9452	
BHWPS	6.1059	33.3449	6.4566	27.239	BM
TP-34	4.3832	33.3967	4.3314	29.0135	
TP-35	4.6674	33.624	4.4401	28.9566	
TP-36	4.7293	33.8065	4.5468	29.0772	
TP-37	4.4281	33.5175	4.7171	29.0894	
TP-38	4.8303	32.6244	5.7234	27.7941	BM
TP-39	4.6454	32.5185	4.7513	27.8731	
TP-40	3.1566	31.9185	3.7566	28.7619	
TP-41	3.1543	31.7186	3.3542	28.5643	
TP-42			3.8206	27.8980	BM

C-442/48

03-03-16

DIST B	DIST F	Point
255.84		
319.76	293.92	
267.76	281.54	
248.88	297.22	
299.24	233.84	6010A
268.26	257.02	
256.00	212.60	
293.90	244.66	
202.64	176.20	
216.80	199.40	6009A
207.44	250.26	
293.10	220.84	
111.68	271.44	
186.34	130.62	6018A
238.94	221.32	
273.88	265.06	
259.74	283.54	
278.58	262.58	
215.36	330.48	6026A
266.28	275.74	
242.60	260.28	
290.56	223.04	
	321.24	6027A

NC	C44				
ET	Berch Rum C-44 W1				
Sta	+	HI	-	Elev	BH
TP-42	4.3365	32.2345		27.8980	
TP-43	3.4349	31.6169	4.0525	28.1820	
BHWP4	4.8699	32.5858	3.9010	27.7159	BH
TP-44	4.4253	32.9571	4.0540	28.5318	
TP-45	4.3447	32.6251	4.6767	28.2804	
TP-46	4.3898	33.0525	3.9624	28.6627	BH
TP-47	4.4891	32.8182	4.7234	28.3291	
TP-48	4.6648	32.9227	4.5603	28.2579	
TP-49	4.5393	32.8412	4.6208	28.3019	
TP-50	4.3207	32.9307	4.2312	28.6100	BH
TP-51	4.3115	32.6836	4.5586	28.3721	
TP52	4.6785	32.9658	4.3963	28.2873	
CP-1PUB			6.2029	26.7629	26.78
				-0.0171	

03-07-16		C442/47
DIST B	DIST F	Point
288.26		6027A
201.38	239.76	
158.68	150.82	6020A
242.06	246.34	
167.42	290.24	
244.96	152.92	6028A
272.54	250.40	
257.64	286.88	
318.46	233.62	
329.16	269.48	6029A
292.18	306.98	
72.62	208.10	
	84.42	
6013		
	999.290.605	
	856.435.694	
	ELEV = 27.24	



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:

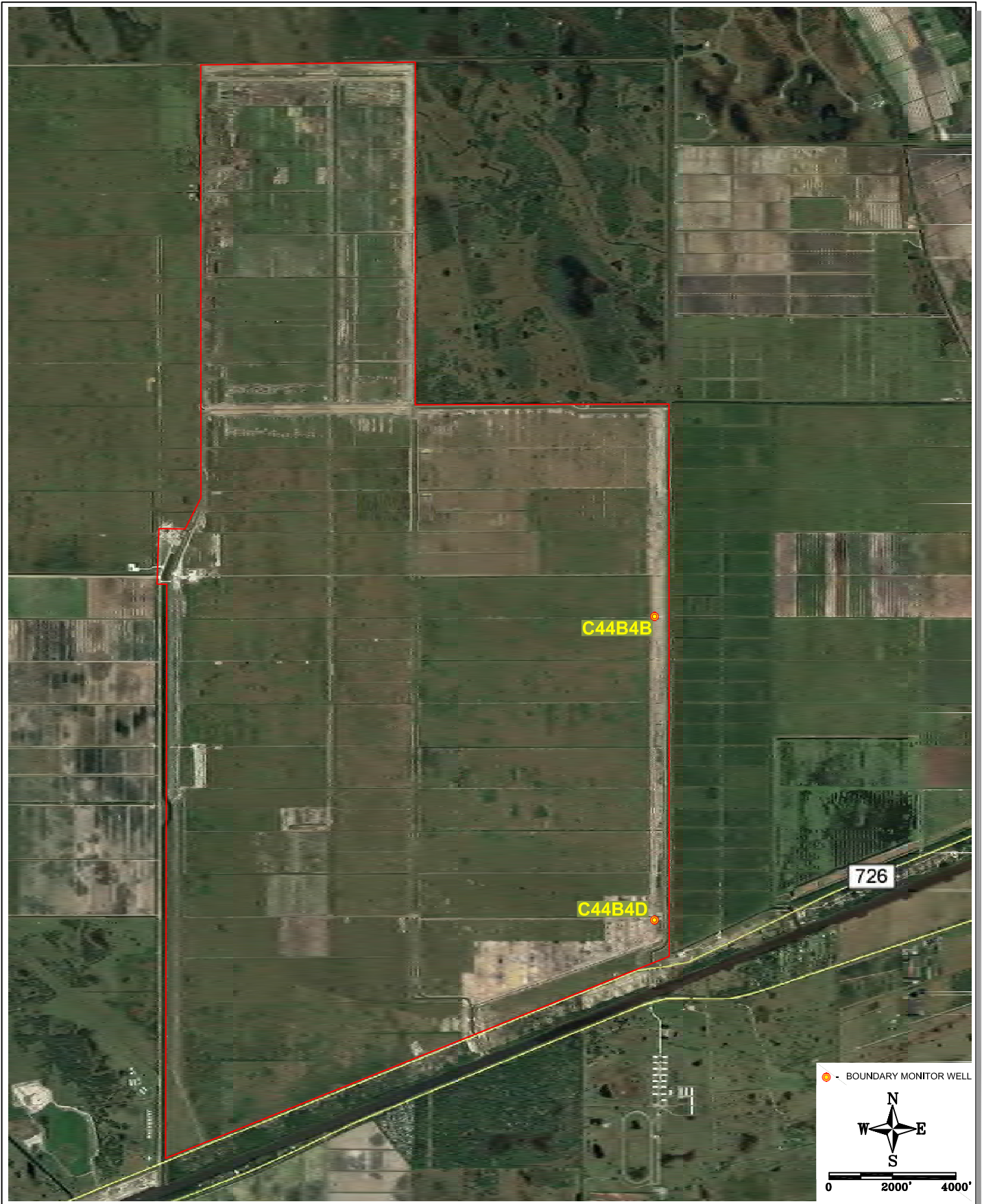
<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> O&M Manuals	<input type="checkbox"/> For Approval
<input type="checkbox"/> Product Data	<input type="checkbox"/> Engineering Report/Plans	<input type="checkbox"/> For Your Review
<input type="checkbox"/> Installation Plans	<input checked="" type="checkbox"/> Field Logs/As-Builts	<input type="checkbox"/> For Your Information
<input type="checkbox"/> 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.



12510 WORLD PLAZA LANE, STE 1
FORT MYERS, FL 33907

**MAP SHOWING LOCATION OF C44B4B AND C44B4D
BOUNDARY MONITOR WELLS**

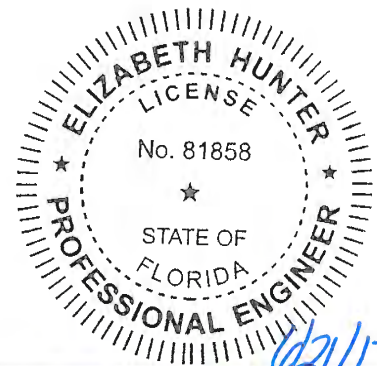
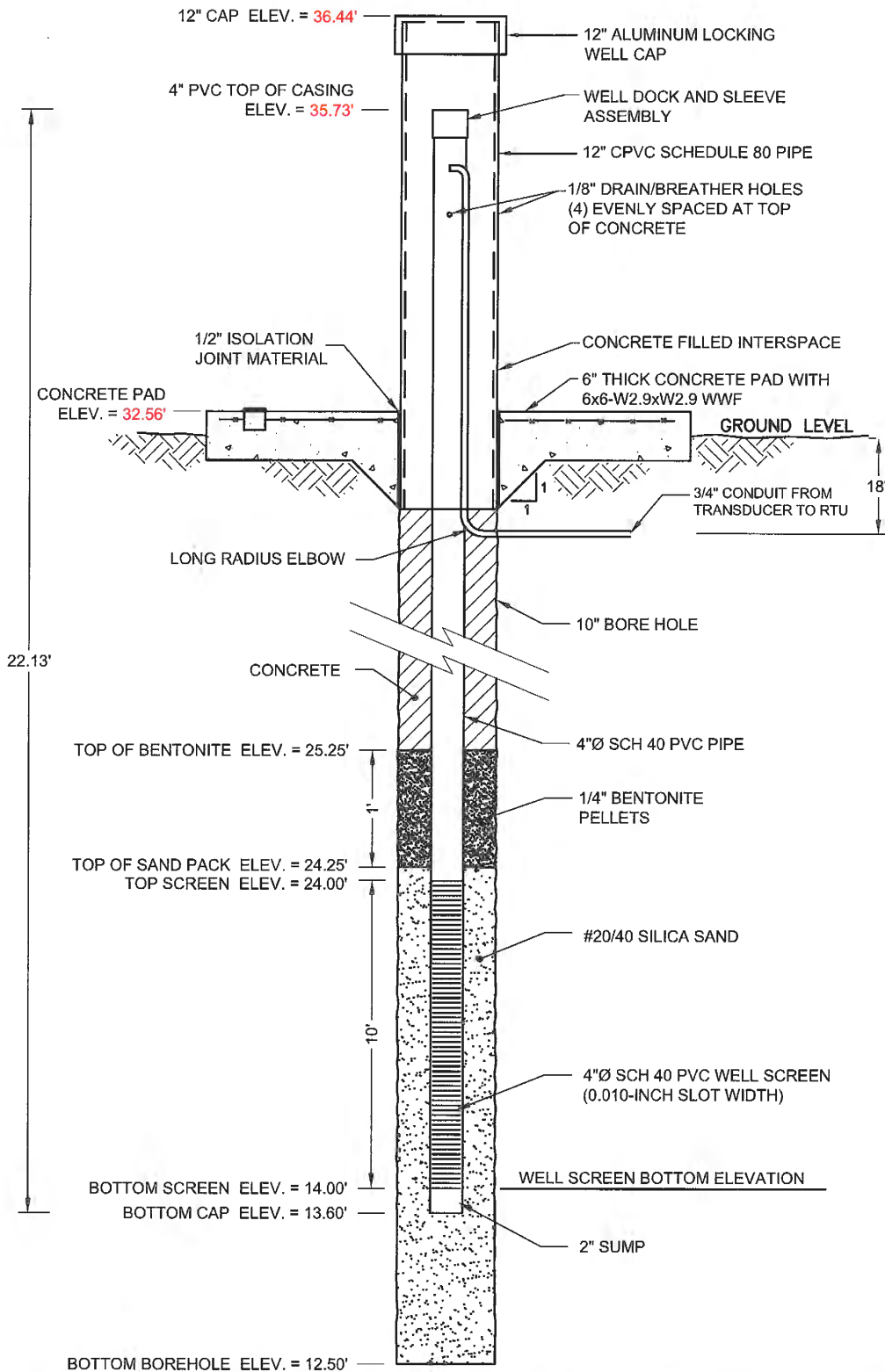
PROJECT#0614103

DRAWN BY: IL DATE: 06/28/17

FIGURE 1

C44B4D-GW-1L
E 856071.986, N 985974.458

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.

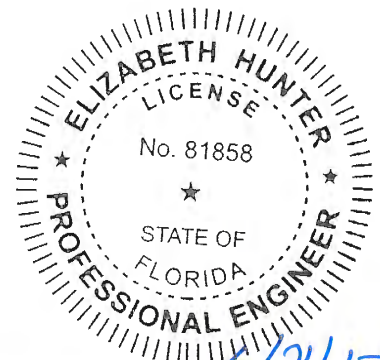
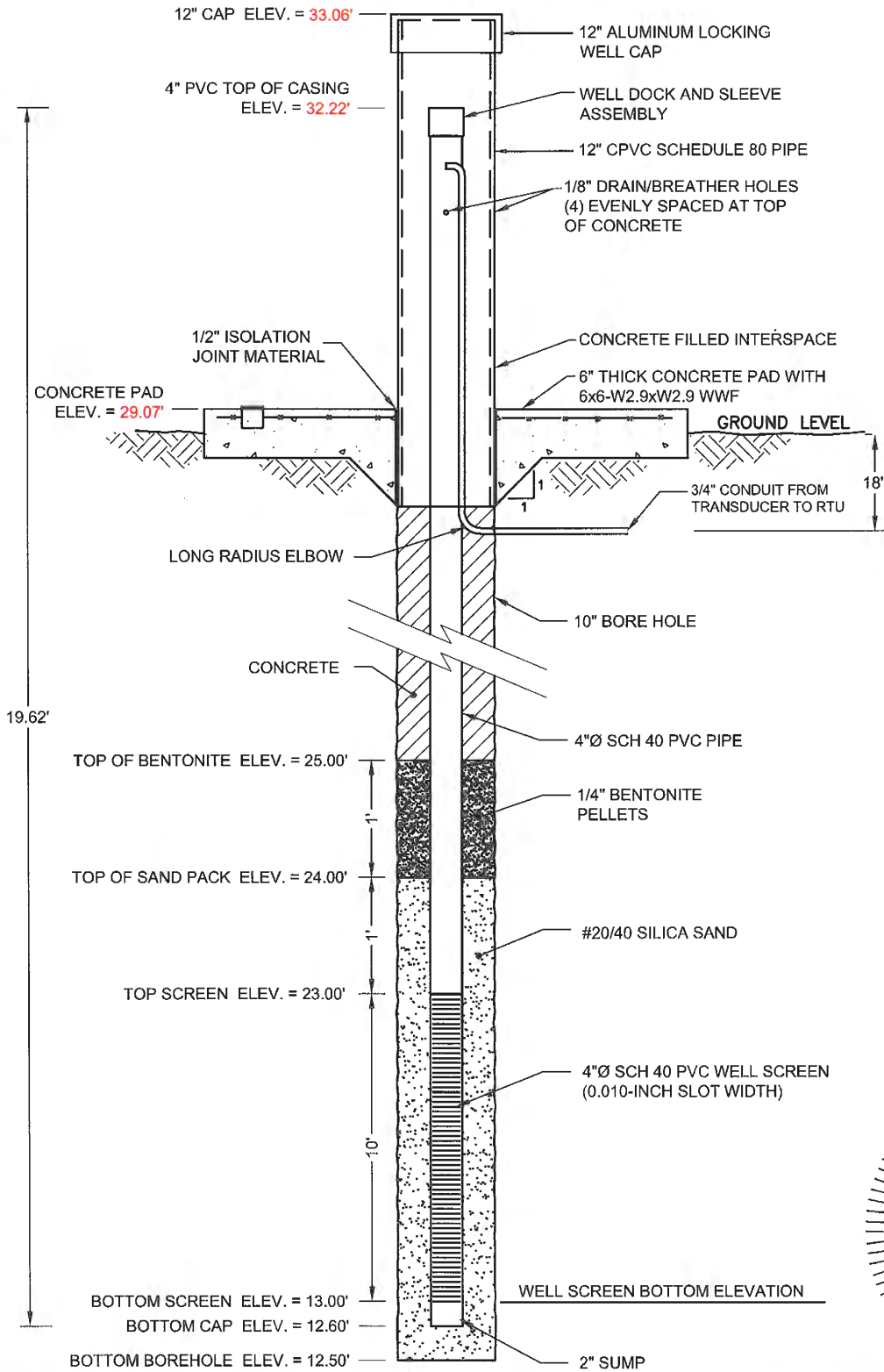


As-built Well C44B4D-GW-1L Detail
SFWMD, C-44 STA,
Martin County, Florida

PROJECT #: 1510614103		APPROVED BY
DRAWN BY: IL	DATE: 06/21/17	<i>Elizabeth Hunter</i>
FIGURE 2		ELIZABETH HUNTER LICENSE # 81858 KU AUTHORIZATION # 27738

C44B4B-GW-1L
E 856114.445, N 994072.060

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.



06/21/17
[Signature]



As-built Well C44B4B-GW-1L Detail
SFWM, C-44 STA,
Martin County, Florida

PROJECT #: 1510614103	APPROVED BY
DRAWN BY: IL	DATE: 06/05/17
FIGURE 1	ELIZABETH HUNTER LICENSE # 81858 KLJ AUTHORIZATION # 27738



**Blue
Goose
Construction**

Heavy Civil / Underground Utilities / Complete Site Development / Marine

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

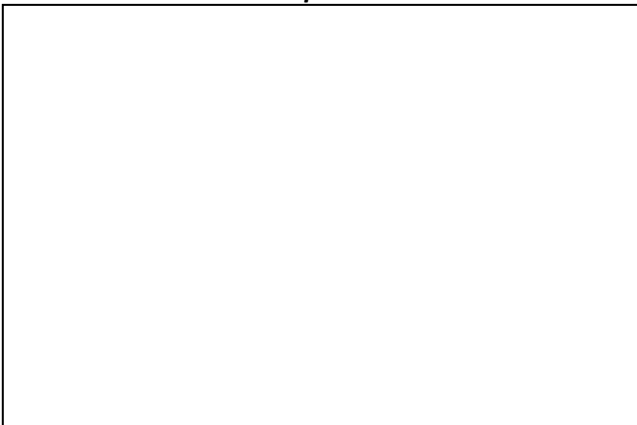
Specific Purpose Survey Report for Well Locations and Elevation, for C44B4B and C44B4D.
Signed and Sealed by Betsy Lindsay, Inc. Report Drawing and Field Notes.
Also includes Wellhead As-Built by KLJ.

Contractors Stamp

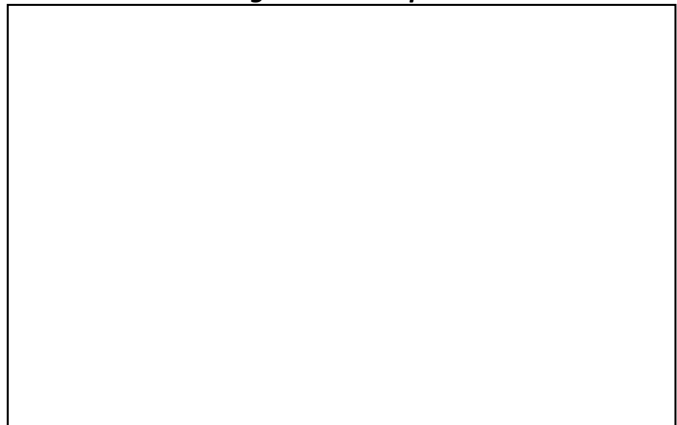
Lisa R. Seavey, C.I.T.
Contract Administrator



Architects Stamp



Engineers Stamp

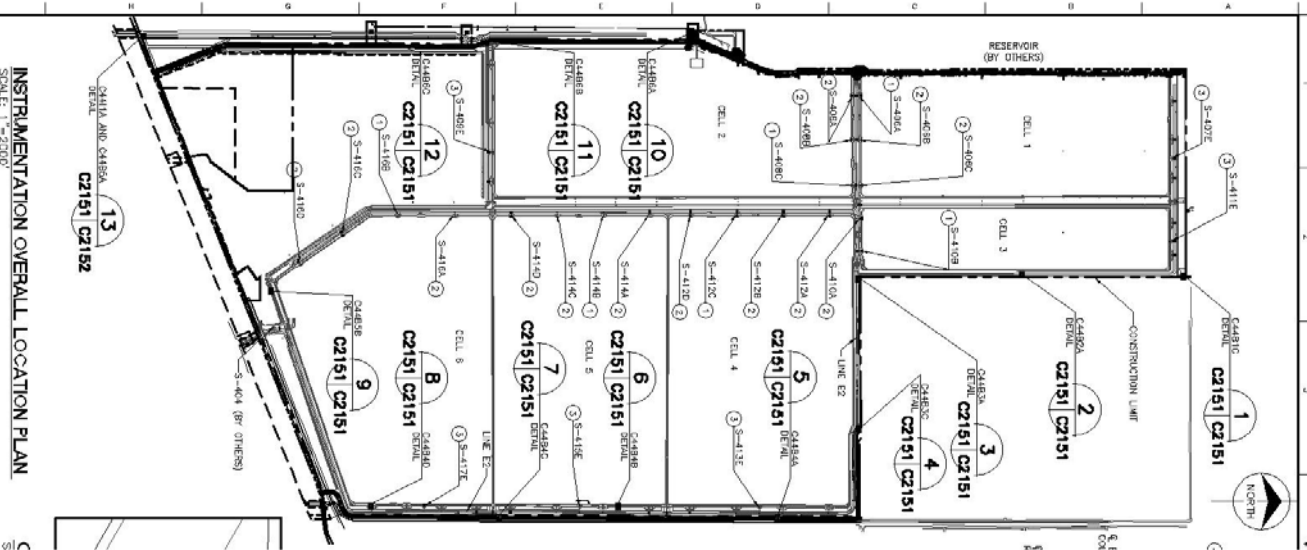




**SURVEY REPORT
SPECIFIC PURPOSE SURVEY
WELL LOCATION AND ELEVATION
C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA
WELL C44 B4B
STA areas Blue Goose
Located in Martin County, Florida**

DESCRIPTION OF WORK AREA:
The C44 Reservoir/STA Project.

S:\14 projects\14 94-c44\Native Plans\C44 STA 159, C2151 Issued For Covering 3/14/2016 11:21:17 AM Publish\wbo Proj3



INSTRUMENTATION OVERALL LOCATION PLAN

SCALE: 1" = 200'

5

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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275

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 verified by a series of redundant measurements 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)

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107,984551.3400,855790.8800,27.37,C-44-2 (vertical only)

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ABBREVIATIONS

BM	BENCH MARK
DESC	DESCRIPTON
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PNT	POINT NUMBER
SP SCF	STATE PLANE SCALE FACTOR

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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 Well

N 994072.060, E 856114.445

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





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



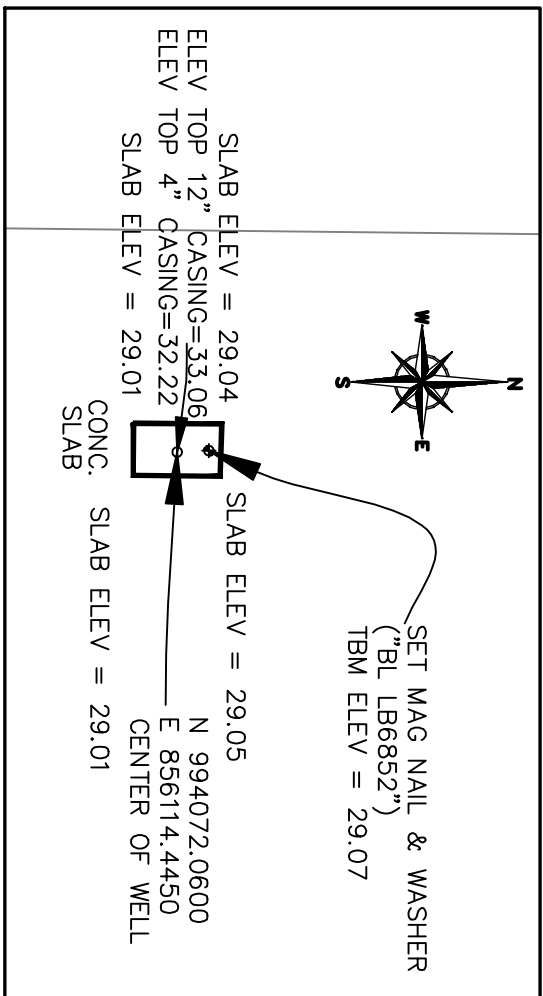
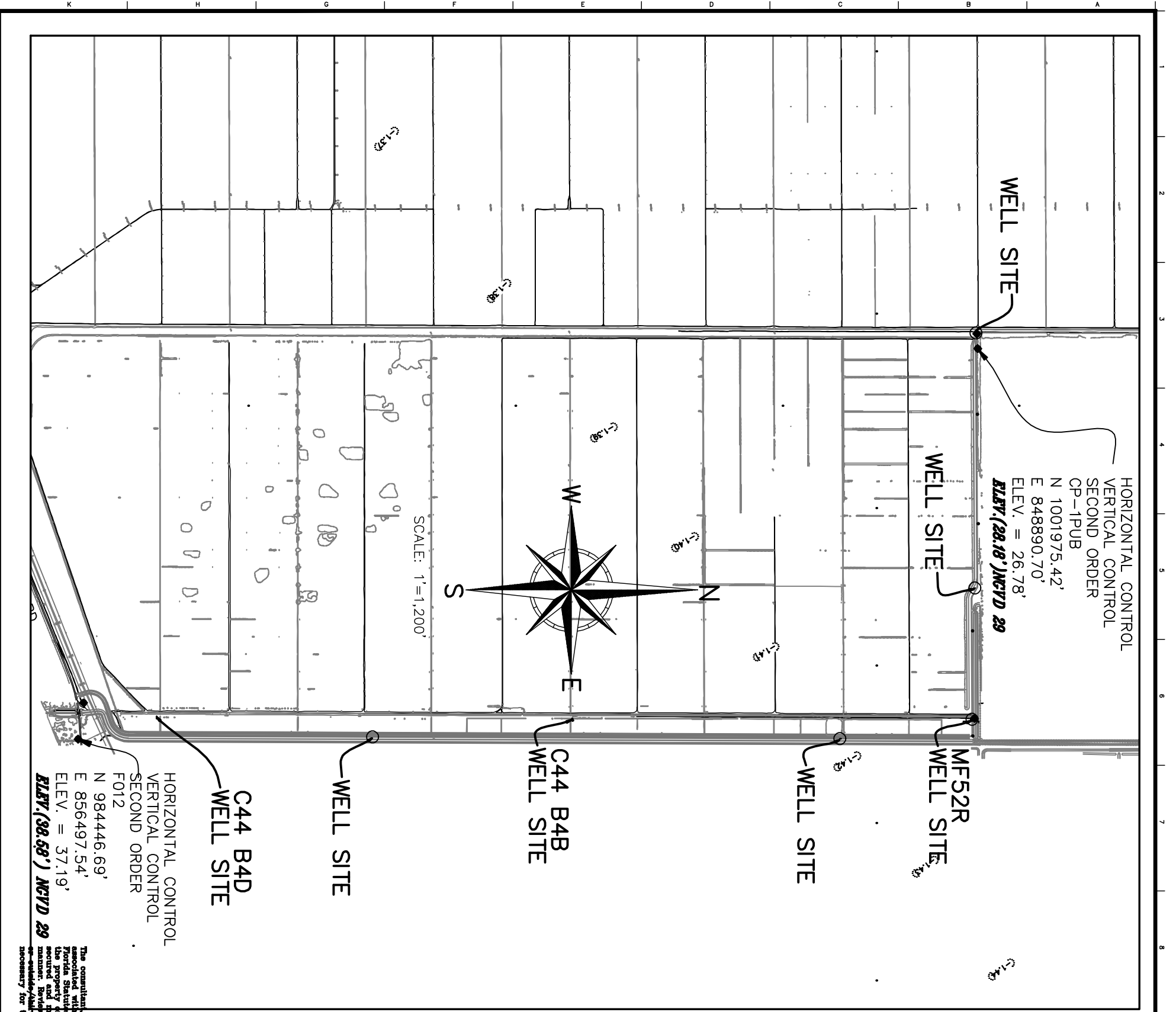
ELIZABETH A. LINDSAY, P.L.S.
FLORIDA REGISTRATION NO. 4724

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

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B BETSY LINDSAY, INC.
SURVEYING AND MAPPING
7997 S.W. JACK JAMES DRIVE, STUART, FL 34997
(772)286-5753 (772)286-5933 FAX
LICENSED BUSINESS NO. 6852

ABBREVIATIONS

BL BETSY LINDSAY, INC.
ELEV. ELEVATION
NGVD NATIONAL GEODESIC VERTICAL DATUM
NAVD NORTH AMERICAN VERTICAL DATUM
RI REQUEST FOR INFORMATION

SURVEY NOTES

1. THE HORIZONTAL DATUM IS STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, U.S. SURVEY FEET. REFERENCE A BEARING OF N89°54'17"E ALONG A LINE BETWEEN MONUMENTS "ALLAP 10" AND "ALLAP 9".
2. THE VERTICAL DATUM OF THE POINTS LISTED HEREIN IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. THE CONVERSION FACTOR FROM NAVD 88 TO NATIONAL GEODESIC VERTICAL DATUM 1929 (NGVD 1929) IS +1.42 FEET.
4. THE MONITORING WELLS HORIZONTAL LOCATION INFORMATION AS SHOWN HEREIN WAS LOCATED UTILIZING GPS WITH RTK AND REFERENCED TO ON-SITE CONTROL POINTS "F012" AND "CP-1".
5. THE ELEVATIONS OF THE TOP OF THE 4-INCH DIAMETER PIPE ARE IN COMPLIANCE WITH THIRD ORDER VERTICAL TOLERANCE.
6. THE PURPOSE OF THIS SPECIFIC PURPOSE SURVEY IS TO LOCATE AND IDENTIFY THE MONITORING WELLS AND ILLUSTRATE THE RELEVANT INFORMATION ASSOCIATED WITH EACH WELL LOCATION.
7. THE ELEVATIONS ASSOCIATED WITH WELL C44 B4B ARE BASED ON A CLOSED LEVEL LOOP FROM F012 TO CP-1.

SURVEY CERTIFICATION

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS SHOWN HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE MARCH 2, 2016 THROUGH 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 4S-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

BETSY LINDSAY, INC.
SURVEYING AND MAPPING

ELEVEN (11) A. LINDSAY, P.L.S.
FLORIDA REGISTRATION NO. 4724

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



ISSUED FOR CONSTRUCTION



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENGINEERING AND CONSTRUCTION BUREAU
OPERATIONS, MAINTENANCE AND CONSTRUCTION DIVISION
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

SURVEYOR: E.A.L.				
DRAWN:				
CHECKED:				
DATE: 02/09/2015	06/20/14	0	ISSUED FOR CONSTRUCTION	
SCALE: AS SHOWN	DATE	DRAWN	REV.#	REVISION DESCRIPTION

C-44 RESERVOIR/STA PROJECT
STORMWATER TREATMENT AREA
SPECIFIC PURPOSE SURVEY
MONITORING WELL LOCATES

PROJECT ID. NO. 100548
DRAWING NO. 1 OF 1



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07

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>	
GEOGRAPHIC POSITION			
SECTION 2	TOWNSHIP 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 COORDINATE FL. E.	X 856114.44	Y 994072.06	NAVD 88 ELEV. <u>29.07</u> NGVD 29 ELEV. <u>30.47</u>
C44 DESIGN PLANS CONVERSION FACTOR (NAVD88 TO NGVD29): <u>1.40</u>			
LATITUDE 27°04'01.790"		LONGITUDE 80°23'08.118"	
RECOVERY DESCRIPTION			
Stamping: BL LB6852 TRAV PT			
To Reach: From the intersection of SR 710 (Warfield Blvd) and CR 726 (SW Citrus Blvd) go easterly 4.85 miles to Barb B Ranch Road, a dirt road located west of the C44 spillway. Head northerly along the dirt road for 1.84 miles to the well site 300 feet to the west. The bench mark is in concrete slab of the well.			
Notable Land marks: well structure			
FIELD BOOK C44-5 c44-6 PAGE <u>42</u> <u>11</u>			
SKETCH			



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07



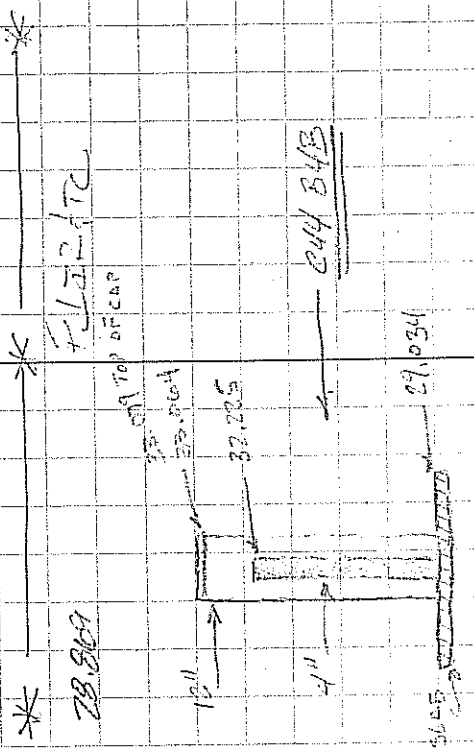
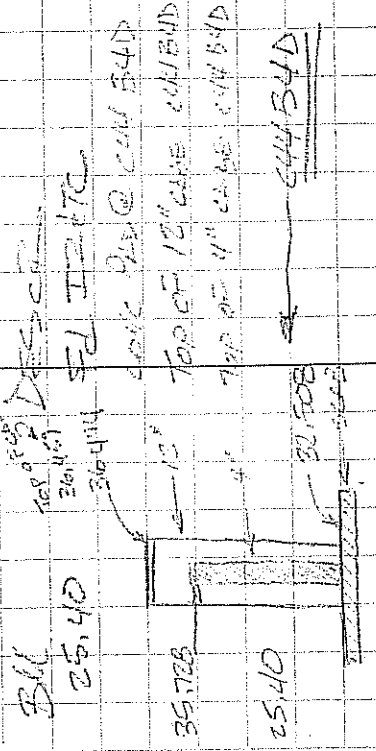


C44B4B

LOOKING EAST

444
5
68

20421 4: 985974.50 E: 856072.013



20422 4: 994072.013 E: 856114.921

BLK	DL	Top	ELEV	CON
445-61-1	12.108	37.508	4.98	ELEV
RD			1.816	32.528
12"			1.78	30.444
4"	1.55	37.078	1.815	35.728
445-61-1				25.403
				444 B4D
				*
444-60-2	10.513	35.382	6.348	27.034
RD			2.518	33.064
12"			3.157	32.225
4"	3.853	35.558	4.695	28.803
444-60-2				

SOLKUS B20
AT 3090

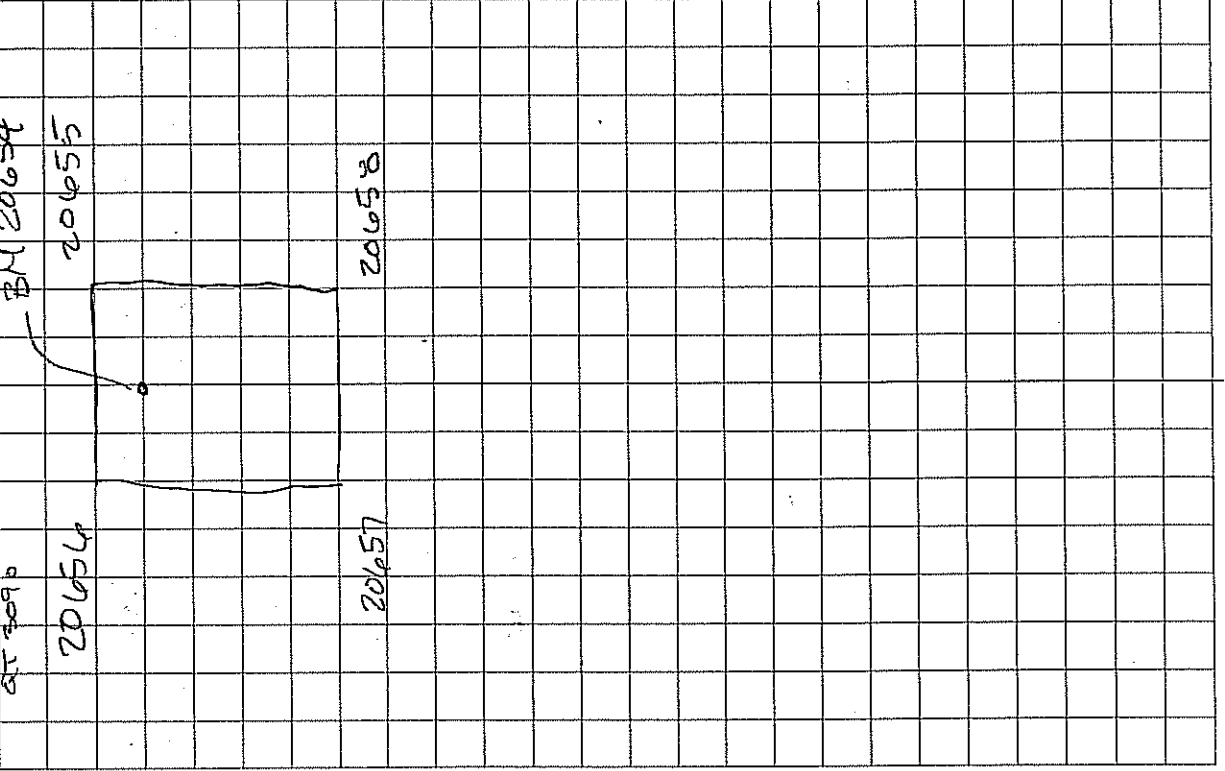
6-12-17

244

BM 20654

20654

20655



WBL
244 B4B

	+	H1	-	ELEV	BM
20654 BM	6.142	35.011			28.869
	6.12	35.184	5.945	29.264	
NE			6.13	29.056	
NW			6.15	29.034	
SW			6.18	29.006	
SE			6.18	29.006	
244-60.2			6.315	28.871	

C-442/45

03-03-16

NO	C-444	Bench Run	C-444 W2	Ekv	BH
ET		HJ			
ST	3.9447	41.1347			37.19
113	5.0065	40.2793	5.8619	35.2728	
TP1	1.2692	32.0329	9.5156	30.7637	
TP2	6.9115	33.8680	5.0764	26.9565	
TP4	3.8451	32.2679	6.4452	28.4229	
TP5	3.8754	32.7757	3.3676	28.9003	
TP6	3.9438	32.8849	3.8346	28.9411	
TP7	6.6959	34.0193	5.5615	27.3234	
TP8	5.1422	34.2001	4.9614	29.0579	
TP9	4.8463	33.7401	5.3063	28.8938	
TP10	3.1752	30.2517	6.6636	27.0765	
TP11	5.1955	33.6264	1.8208	28.4309	
TP12	5.4710	34.0997	4.9977	28.6287	
TP13	5.6778	34.3835	5.3940	28.7057	
TP14	5.7839	34.3288	5.8446	28.5389	
TP15	4.9224	33.9614	5.2438	29.0390	
BHWP7	6.6596	33.7680	6.8530	27.1084	
TP-16	5.3234	33.8330	5.2584	28.5096	
TP-17	5.2475	33.7932	5.2873	28.5457	
TP-18	5.1785	33.8062	5.1655	28.6277	
TP-19	5.4102	34.0422	5.1742	28.6320	
TP-20	6.9610	33.9050	7.0982	26.9444	BH
TP-21			5.2793	28.6257	

DIST B	DIST F	Point
239.28		F012 NRD 88
211.22	215.28	
141.96	106.76	
141.28	146.82	
193.12	201.32	
157.32	200.06	
271.88	176.80	6014 A
178.66	298.40	6013 A
191.46	231.92	
296.64	264.62	
190.64	339.78	6012 A
203.56	185.04	
193.08	268.62	
184.04	197.62	
214.30	203.26	
184.80	275.04	
220.70	234.56	6007A
218.00	223.54	
187.88	213.40	
222.74	215.22	
290.00	229.32	
236.40	300.72	6011 A
	293.92	

C-442/48

03-03-16

DIST B	DIST F	Point
255.84		
319.76	293.92	
267.76	281.54	
248.88	297.22	
299.24	233.84	6010A
268.26	257.02	
256.00	212.60	
293.90	244.66	
202.64	176.20	
216.70	199.40	6009A
207.44	250.26	
293.10	220.84	
111.68	271.44	
186.34	130.62	6018A
238.94	221.32	
273.88	265.06	
259.74	283.54	
278.58	262.58	
215.36	330.48	6026A
266.28	275.74	
242.60	260.28	
290.56	223.04	
	321.24	6027A

NO	C-444	Bench Run	C 44 WJ	BM
ET				
Sta	+	HI	Flu	BM
TP-21	5.7136	34.3393	28.6257	
TP-22	5.8374	34.4375	28.6001	
TP-23	5.7946	34.3044	28.5088	
TP-24	5.4828	34.0762	28.5934	
TP-25	6.6041	34.1957	27.5916	BM
TP-26	5.5744	34.1956	28.6212	
TP-27	4.9856	33.5721	28.5865	
TP-28	5.2247	33.7799	28.5552	
TP-29	5.3749	33.8771	28.5022	
TP-30	6.1098	33.7826	27.6730	BM
TP-31	5.0766	34.0355	28.9589	
TP-32	4.5767	33.4976	28.9809	
TP-33	4.7488	33.6950	28.9452	
BHWPS	6.1059	33.3449	27.239	BM
TP-34	4.3832	33.3967	29.0135	
TP-35	4.6674	33.624	28.9566	
TP-36	4.7293	33.8065	29.0772	
TP-37	4.4281	33.5125	29.0894	
TP-38	4.8303	32.6244	27.7940	BM
TP-39	4.6454	32.5185	27.8731	
TP-40	3.1566	31.9185	28.7619	
TP-41	3.1543	31.7186	28.5643	
TP-42		3.8206	27.8980	BM



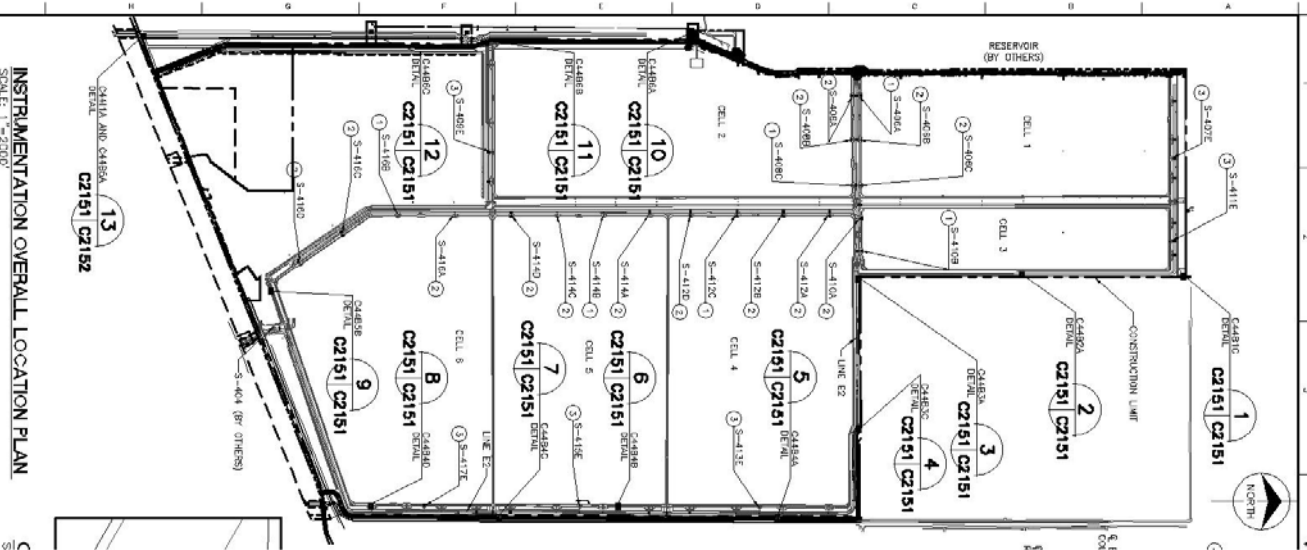
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SURVEYING AND MAPPING

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 Reservoir/STA Project.

S:\14 projects\14 94-c44\Native Plans\C44 STA 159, C2151 Issued For Covering 3/14/2016 11:21:17 AM Publish\wso Proj3



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N 994072.060, E 856114.445

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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



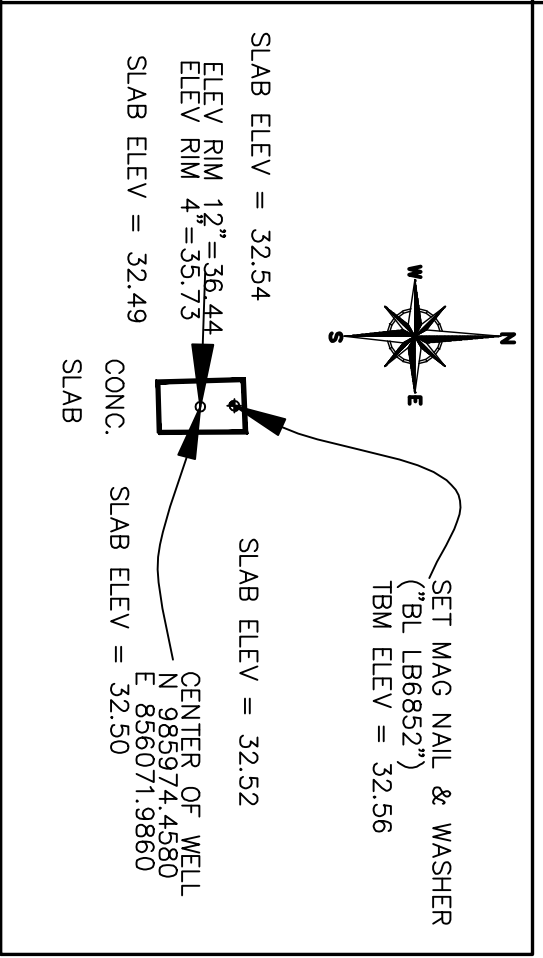
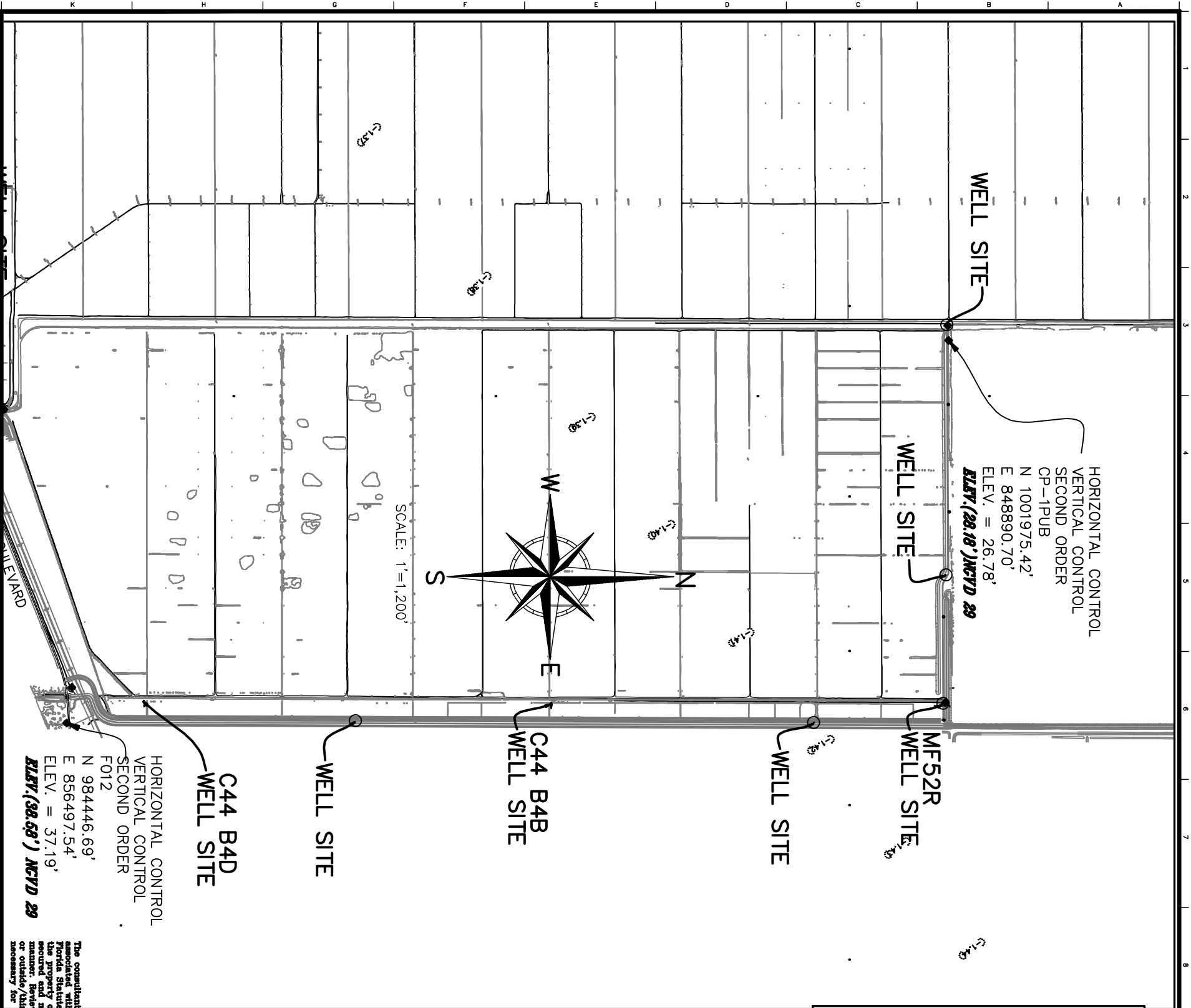
ELIZABETH A. LINDSAY, P.L.S.
FLORIDA REGISTRATION NO. 4724

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

208 North U.S. Highway One, #8
Tequesta, FL 33469
(561) 575-5275



B BETSY LINDSAY, INC.
SURVEYING AND MAPPING

7997 S.W. JACK JAMES DRIVE STUART, FL 34997
(772)286-5733 (772)286-5833 FAX
LICENSED BUSINESS NO. 68552

ABBREVIATIONS

BLV BETSY LINDSAY, INC.
ELEV ELEVATION
NGVD NORTH AMERICAN GEODETIC VERTICAL DATUM
NAVD NORTH AMERICAN VERTICAL DATUM
RPT REQUEST FOR INFORMATION

SURVEY NOTES

1. THE HORIZONTAL DATUM IS STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, U.S. SURVEY FEET. REFERENCE A BEARING OF N89°54'17"E ALONG A LINE BETWEEN MONUMENTS "ALLAP 10" AND "ALLAP 9".
2. THE VERTICAL DATUM OF THE POINTS LISTED HEREIN IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. THE CONVERSION FACTOR FROM NAVD 88 TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 1929) IS +1.42 FEET.
4. THE MONITORING WELLS HORIZONTAL LOCATION INFORMATION AS SHOWN HEREON WAS LOCATED UTILIZING GPS WITH RTK AND REFERENCED TO ON-SITE CONTROL POINTS "T012" AND "CP-1".
5. THE ELEVATIONS OF THE TOP OF THE 4-INCH DIAMETER PIPE ARE IN COMPLIANCE WITH THIRD ORDER VERTICAL TOLERANCE.
6. THE PURPOSE OF THIS SPECIFIC PURPOSE SURVEY IS TO LOCATE AND IDENTIFY THE MONITORING WELLS AND ILLUSTRATE THE RELEVANT INFORMATION ASSOCIATED WITH EACH WELL LOCATION.
7. THE ELEVATIONS ASSOCIATED WITH WELL C44-B4D ARE BASED ON A CLOSED LEVEL LOOP FROM F012 TO CP-1.

SURVEY CERTIFICATION

I HEREBY CERTIFY THAT THE "SPECIFIC PURPOSE SURVEY" AS SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A FIELD SURVEY MADE UNDER MY DIRECTION AND CHARGE MARCH 2, 2016 THROUGH 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 54-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

BETSY LINDSAY, INC.
SURVEYING AND MAPPING

BY SIGNATURE
DATE: 06/15/2017

ISSUED FOR CONSTRUCTION

**C-44 RESERVOIR/STA PROJECT
STORMWATER TREATMENT AREA**

**SPECIFIC PURPOSE SURVEY
MONITORING WELL LOCATES**



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENGINEERING AND CONSTRUCTION BUREAU
OPERATIONS, MAINTENANCE AND CONSTRUCTION DIVISION

PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

SURVEYOR: E.A.L.				
DRAWN:				
CHECKED:				
DATE: 02/09/2015	06/20/14	0	ISSUED FOR CONSTRUCTION	
SCALE: AS SHOWN	DATE	DRAWN	REV.#	REVISION DESCRIPTION

PROJECT D. NO.
100548

DRAWING NO.
1 OF 1



DATE: 04/26/2018



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07

DESIGNATION C44 B4D		PROJECT C44 STORM WATER TREATMENT AREA	
ESTABLISHED BY: BETSY LINDSAY, INC.		SURVEYOR: Elizabeth A. Lindsay	
RECOVERED BY		DATE <u>June 14, 2017</u>	
GEOGRAPHIC POSITION			
SECTION 2	TOWNSHIP 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 COORDINATE FL. E.	X 856071.986	Y 985974.458	NAVD 88 ELEV. <u>32.56</u> NGVD 29 ELEV. <u>33.95</u>
C44 DESIGN PLANS CONVERSION FACTOR (NAVD88 TO NGVD29): <u>1.39</u>			
LATITUDE 27°02'41.603"		LONGITUDE 80°23'09.025"	
RECOVERY DESCRIPTION			
Stamping: BL LB6852 TRAV PT			
To Reach: From the intersection of SR 710 (Warfield Blvd) and CR 726 (SW Citrus Blvd) go easterly 4.85 miles to Barb B Ranch Road, a dirt road located west of the C44 spillway. Head northerly along the dirt road for 0.29 miles to the well site 300 feet to the west. The bench mark is in concrete slab of the well.			
Notable Land marks: well structure			
FIELD BOOK C44-5 c44-6 PAGE <u>42</u> <u>11</u>			
SKETCH			



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07





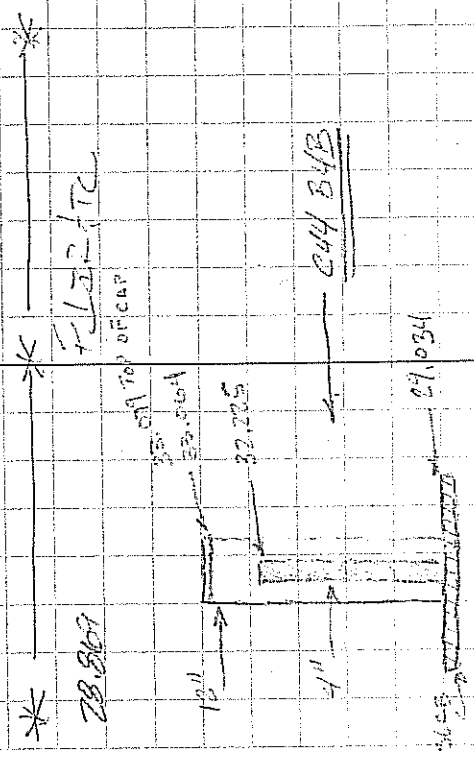
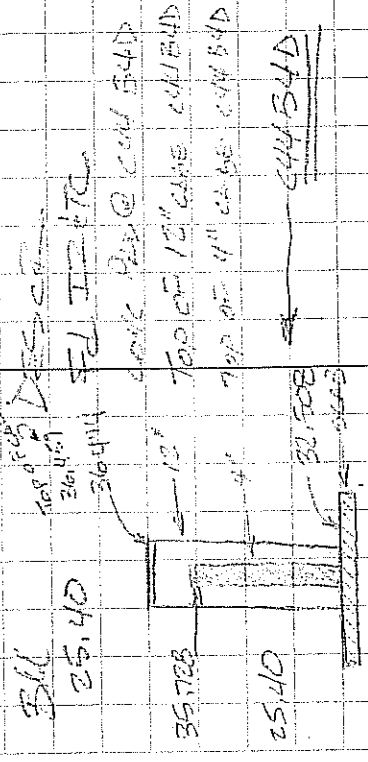
C44B4D

LOOKING EAST

444
5
68

5-31-17

244540
20021 11-985974.50 E-856072.013



244543
20022 11-994072.013 E-856014.912

STATION	VERT	ELEV	CM
445-61-1	12.108	37.528	ELEV
445-61-1	1.55	37.278	
445-61-1	11.875	25.403	
444 B4 D			

444-100-2	10.513	35.382	
444-100-2	6.348	37.034	
444-100-2	2.318	37.064	
444-100-2	3.157	32.225	
444-100-2	6.695	27.034	

WB	WBL			
SL	C44 B4D			
STL	H1	-	REV	BH
C445-61-1	11647	37,047		25.40
BH	4809	37,373	4,483	32,564
NE			4,85	32,523
NW			4,83	32,543
SW			4,88	32,493
SE			4,87	32,503
C445-61-1		11973	25.40	25.40

501 K11 B20	6-12-17	C44
206090		4
206090		13
206091		
206092		
206093		
206094		
206095		

C-442/45

03-03-16

NO	C-444	Batch	Run	C-444	WL	Ekv	BH
ET							
ST		HJ					37.19
113	3.9447	41.1347					
TP 1	5.0065	40.2793	5.8619		35.2728		
TP2	1.2692	32.0329	9.5156		30.7637		
TP3	6.9115	33.8680	5.0764		26.9565		
TP4	3.8451	32.2679	6.4452		28.4229		
TP5	3.8754	32.7757	3.3676		28.9003		
TP6	3.9438	32.8849	3.8346		28.9411		
TP7	6.6959	34.0193	5.5615		27.3234		
TP8	5.1422	34.2001	4.9614		29.0579		
TP9	4.8463	33.7401	5.3063		28.8938		
TP10	3.1752	30.2517	6.6636		27.0765		
TP11	5.1955	33.6264	1.8208		28.4309		
TP12	5.4710	34.0997	4.9977		28.6287		
TP13	5.6778	34.3835	5.3940		28.7057		
TP14	5.7839	34.3288	5.8446		28.5389		
TP15	4.9224	33.9614	5.2438		29.0390		
BHWP7	6.6596	33.7680	6.8530		27.1084		
TP-16	5.3234	33.8330	5.2584		28.5096		
TP-17	5.2475	33.7932	5.2873		28.5457		
TP-18	5.1785	33.8062	5.1655		28.6277		
TP-19	5.4102	34.0422	5.1742		28.6320		
TP-20	6.9610	33.9050	7.0982		26.9444	BH	
TP-21			5.2793		28.6257		

DIST B	DIST F	Point
239.28		F012 NRD 88
211.22	215.28	
141.96	106.76	
141.28	146.82	
193.12	201.32	
157.32	200.06	
271.88	176.80	6014 A
178.66	298.40	6013 A
191.46	231.92	
296.64	264.62	
190.64	339.78	6012 A
203.56	185.04	
193.08	268.62	
184.04	197.62	
214.30	203.26	
184.80	275.04	
220.70	234.56	6007A
218.00	223.54	
187.88	213.40	
222.74	215.22	
290.00	229.32	
236.40	300.72	6011 A
	293.92	

C-442/48

03-03-16

DIST B	DIST F	Point
255.84		
319.76	293.92	
267.76	281.54	
248.88	297.22	
299.24	233.84	6010A
268.26	257.02	
256.00	212.60	
293.90	244.66	
202.64	176.20	
216.70	199.40	6009A
207.44	250.26	
293.10	220.84	
111.68	271.44	
186.34	130.62	6018A
238.94	221.32	
273.88	265.06	
259.74	283.54	
278.58	262.58	
215.36	330.48	6026A
266.28	275.74	
242.60	260.28	
290.56	223.04	
	321.24	6027A

NO	C-444	Bench Run	C 44 WJ	BM
ET				
Sta	+	HI	Flu	BM
TP-21	5.7136	34.3393	28.6257	
TP-22	5.8374	34.4375	28.6001	
TP-23	5.7946	34.3044	28.5088	
TP-24	5.4828	34.0762	28.5934	
TP-25	6.6041	34.1957	27.5916	BM
TP-26	5.5744	34.1956	28.6212	
TP-27	4.9856	33.5721	28.5865	
TP-28	5.2247	33.7799	28.5552	
TP-29	5.3749	33.8771	28.5022	
TP-30	6.1098	33.7826	27.6730	BM
TP-31	5.0766	34.0355	28.9589	
TP-32	4.5767	33.4976	28.9809	
TP-33	4.7498	33.6950	28.9452	
BHWPS	6.1059	33.3449	27.239	BM
TP-34	4.3832	33.3967	29.0135	
TP-35	4.6674	33.624	28.9566	
TP-36	4.7293	33.8065	29.0772	
TP-37	4.4281	33.5125	29.0894	
TP-38	4.8303	32.6244	27.7940	BM
TP-39	4.6454	32.5185	27.8731	
TP-40	3.1566	31.9185	28.7619	
TP-41	3.1543	31.7186	28.5643	
TP-42		3.8206	27.8980	BM



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:

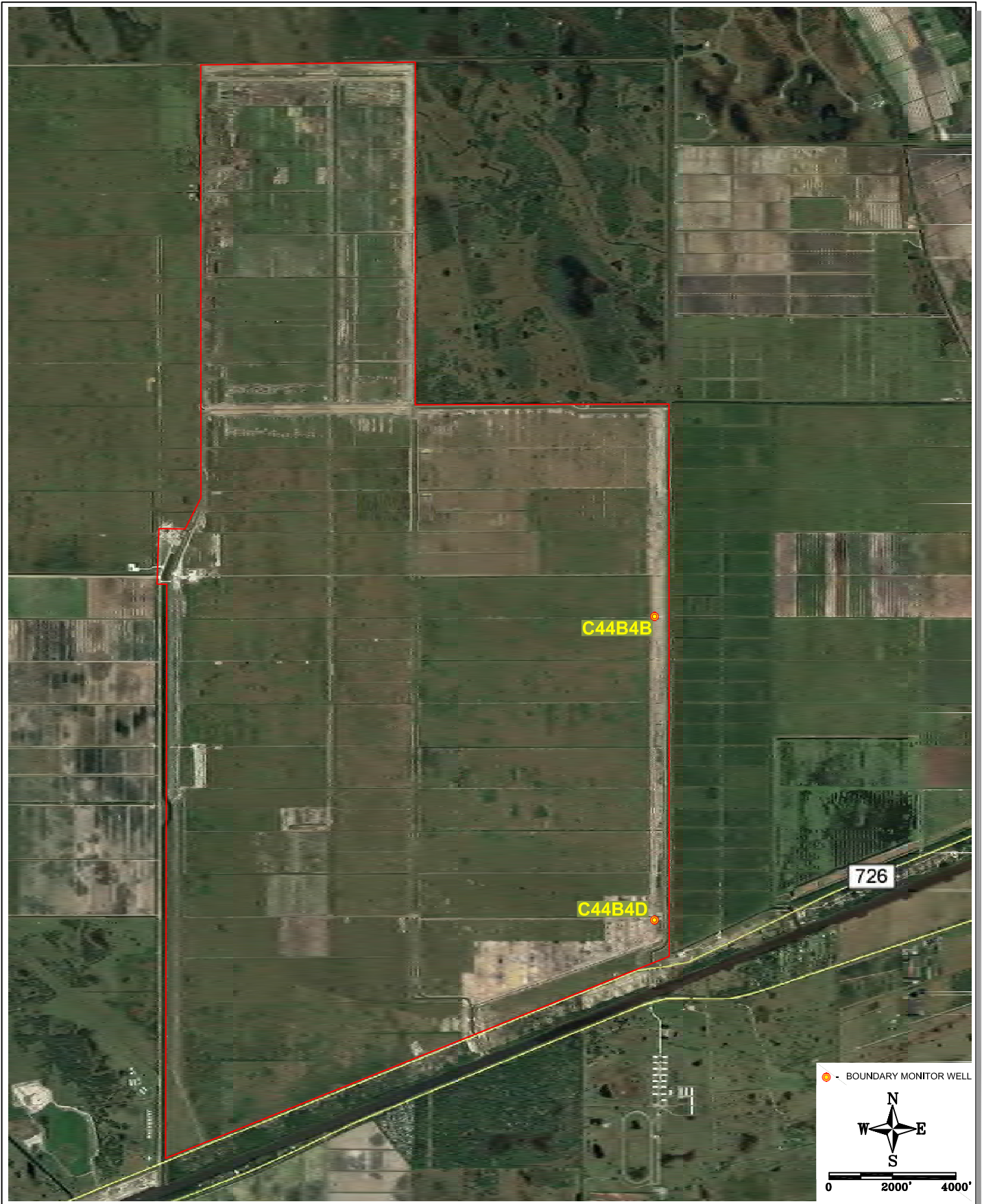
<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> O&M Manuals	<input type="checkbox"/> For Approval
<input type="checkbox"/> Product Data	<input type="checkbox"/> Engineering Report/Plans	<input type="checkbox"/> For Your Review
<input type="checkbox"/> Installation Plans	<input checked="" type="checkbox"/> Field Logs/As-Builts	<input type="checkbox"/> For Your Information
<input type="checkbox"/> 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.



12510 WORLD PLAZA LANE, STE 1
FORT MYERS, FL 33907

**MAP SHOWING LOCATION OF C44B4B AND C44B4D
BOUNDARY MONITOR WELLS**

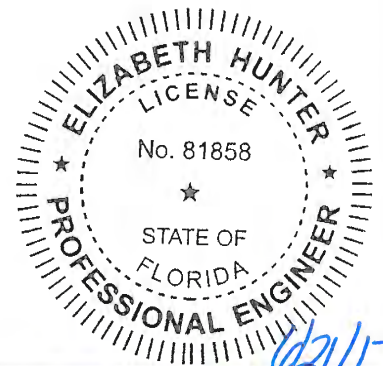
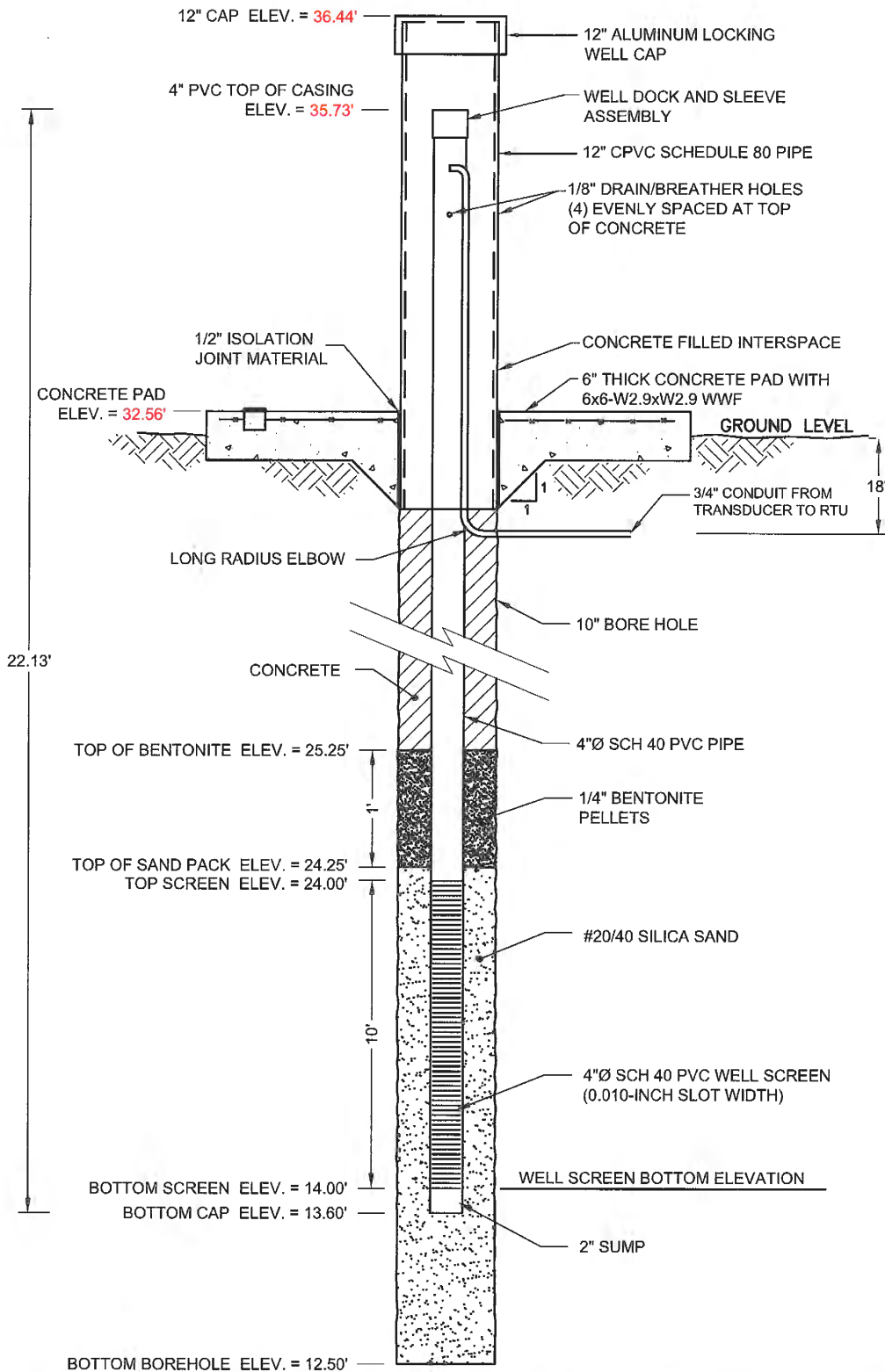
PROJECT#0614103

DRAWN BY: IL DATE: 06/28/17

FIGURE 1

C44B4D-GW-1L
E 856071.986, N 985974.458

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.



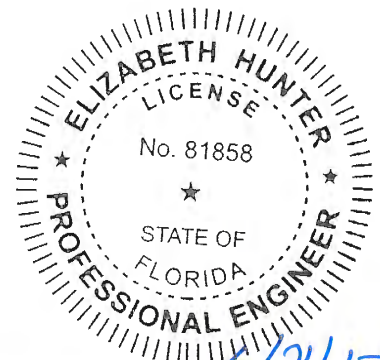
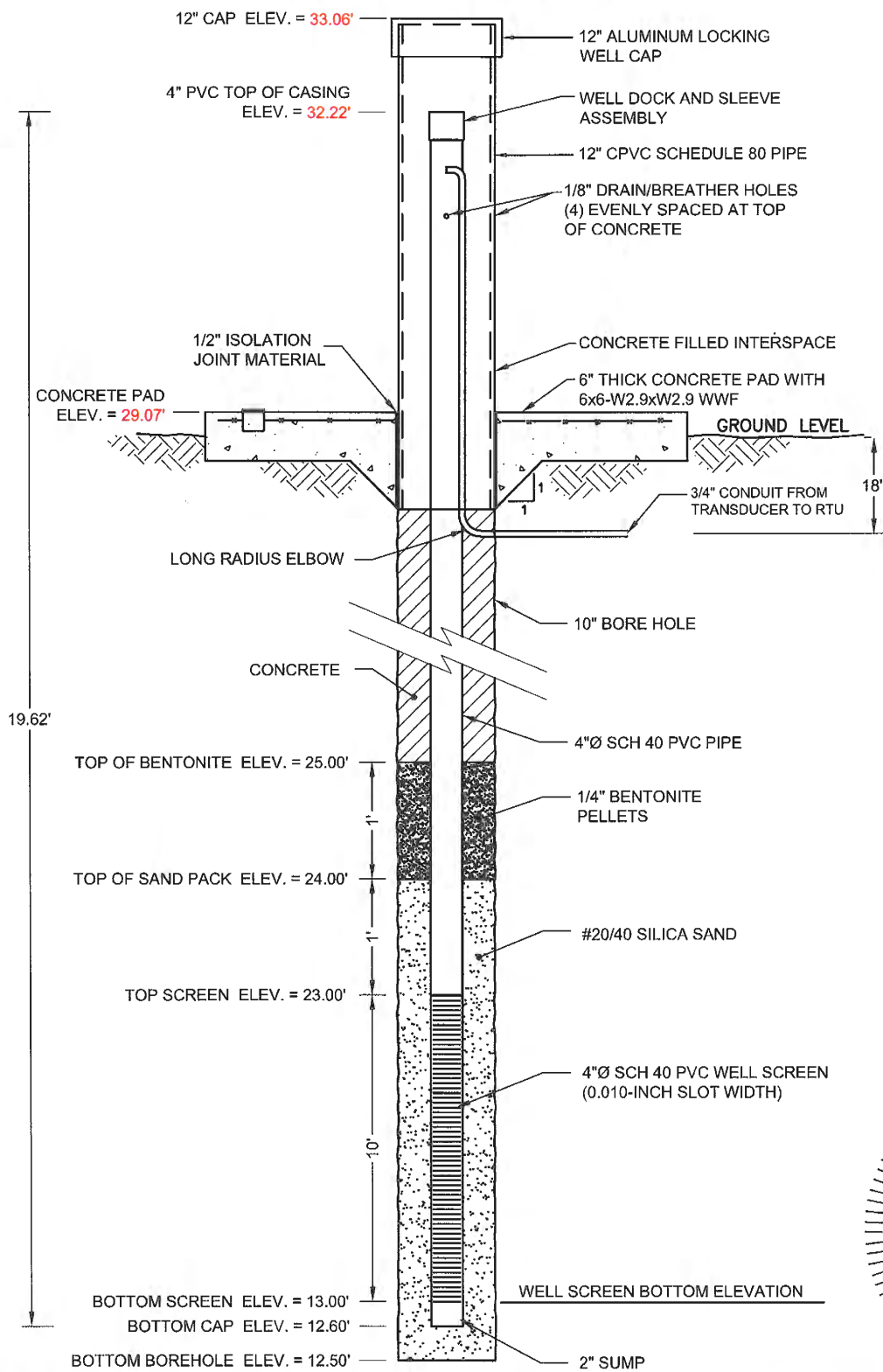
As-built Well C44B4D-GW-1L Detail
SFWMD, C-44 STA,
Martin County, Florida

PROJECT #: 1510614103
 DRAWN BY: IL DATE: 06/21/17
FIGURE 2

APPROVED BY
Elizabeth Hunter
ELIZABETH HUNTER
 LICENSE # 81858
 KJ AUTHORIZATION # 27738

C44B4B-GW-1L
E 856114.445, N 994072.060

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.



06/21/17
 ELIZABETH HUNTER
 LICENSE # 81858
 KLJ AUTHORIZATION # 27738



As-built Well C44B4B-GW-1L Detail
SFWM, C-44 STA,
Martin County, Florida

PROJECT #: 1510614103	APPROVED BY
DRAWN BY: IL	DATE: 06/05/17
FIGURE 1	ELIZABETH HUNTER LICENSE # 81858 KLJ AUTHORIZATION # 27738