

April 11, 2019

Solid Waste Section
Department of Environmental Protection
South District Office
2295 Victoria Avenue, Suite 364
Ft. Myers, Florida 33902

Re: Sarasota County
Central County Solid Waste Disposal Complex
Permit No. 0130542-022-SO/01 (Mod# 0130542-028-SO/IM)
WACS No. 51614
Annual Topographic Survey and Remaining Site Life Report - 2018

To Whom It May Concern:

In accordance with Specific Condition C.15.b of the above referenced permit for the Central County Solid Waste Disposal Complex (CCSWDC), the Sarasota County Solid Waste Department is pleased to submit the annual topographic survey and remaining site life report. As shown in the supporting calculations the Phase II Class I Landfill Area has approximately 3.81 years of remaining site life from December 12, 2018 assuming a moderate increase in waste tonnage per year until reaching capacity. The topographic survey dated December 12, 2018, performed by Kucera International, Inc. and provided in Attachment A, demonstrates that the Phase II landfill slopes do not exceed 3:1 (H:V) and the top elevations do not exceed the maximum permitted design elevation of 121 feet NGVD 1929.

During the past year, filling of Phase II has been performed in general accordance with the permit-approved Fill Sequence Plan. Please note that the County has begun the process of design of the Phase III Landfill Expansion with anticipated construction of Phase III to be completed before Phase II reaches final capacity.

The following calculations are provided in support of the site life determination.

Objective:

Calculate the remaining landfill air space and site life in the Phase II Landfill Area located at the Central County Solid Waste Disposal Complex. The Phase I Landfill Area was closed as of November 2011 (closure certification received from FDEP in June 2013) and did not receive any waste during the subject period.

Knowns:

- Topographic survey prepared by Kucera International, Inc. dated December 12, 2018 and provided to the Sarasota County Solid Waste Department by Advanced Disposal, Inc. The signed and sealed report of survey and topographic survey map sheets are provided in Attachment A for reference.
- The volume of air space used in Phase II as calculated using AutoCADD by comparing the December 2017 to December 2018 topographic survey. Please refer to the volume report generated by AutoCADD for comparison of these surfaces.
- Solid Waste tonnage from December 5, 2017 to December 11, 2018 as reported by scale records for the date range. Please refer to the table provided in Attachment C.

Assumptions:

- Total Phase II Air Space= 5,855,011 cu. yards.
- The final cover soil volume is based on 3 feet of soil which includes a 1.0 foot intermediate cover layer, 1.5 foot protective final cover layer, and 0.5 foot vegetative cover soil layer.
- The final cover surface area for Phase II is 2,632,642 square feet (60.4 acres).
- Final Cover Soil Volume= 3 feet x 2,632,642 sq. feet / 27 feet/cu. yard= 292,516 cu. yards.
- Operational Air Space Used in Phase II as of December 12, 2018 calculated by adding volume of waste filled in 2018 found from comparing surface of waste fill from December 5, 2017 topographic survey to surface of waste fill from December 12, 2018 topographic survey and adding total air space consumed from 2017 report.
- Average Monthly Waste Acceptance Rate was 25,964 tons/month (based on December 2017 through November 2018, this does not include December 1 – December 11, 2018). See table provided in Attachment C.
- Apparent Landfill Density equal to contractual density of 1,336 lbs/cu. yards. The apparent landfill density is waste tonnage measured by the scales divided by the Operational Air Space Used which includes waste and initial (daily) cover soils.
- Operational Air Space Available, Used, and Remaining include the volume of waste and initial (daily) cover soils.

Calculations:

1. Total Phase II Air Space- Final Cover Soil Volume = Operational Air Space Available

$$5,855,011 \text{ cu. yards} - 292,516 \text{ cu. yards} = 5,562,495 \text{ cu. yards}$$

2. Operational Air Space Available = 2,213,100 cu. yards as calculated by AutoCADD comparing the December 12, 2018 topographic surface to the final build out of Phase II to intermediate cover.

3. Operational Air Space Remaining X Apparent Landfill Density = Remaining Waste Tonnage

$$2,213,100 \text{ cu. yards} \times 1,336 \text{ lbs/cu. yard} / 2,000 \text{ lbs/ton} = 1,478,350 \text{ tons}$$

4. Remaining Waste Tonnage / Average Monthly Waste Acceptance Rate = Remaining Site Life

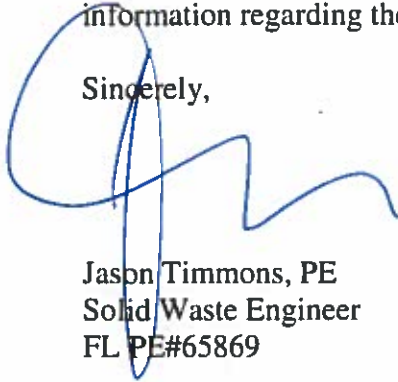
$$1,478,350 \text{ tons} / 25,964 \text{ tons/month} = 56.9 \text{ months} = 4.7 \text{ years from December 12, 2018}$$

Therefore, the Phase II Landfill is projected to reach capacity on or about the beginning of August 2023 assuming 0% increase in waste tonnage through the operational life of Phase II. This is in contrast to the projected date of December 2023 from the April 2018 site life report. The decrease in site life of approximately 4 months is attributed to the increased volume used in 2018 due to the placement of select waste in Subcell 4 during flooring of the subcell which reduces the overall compaction efficiency of the waste placement operation. The volume is expected to be made up in subsequent years through settlement which will allow for additional waste tonnage to be placed in the available airspace.

Using a year-to-year tonnage increase of 3.89%, which was the increase in tonnage from 2017 to 2018 in calendar year tonnage, the remaining site life of the Phase II Landfill is currently estimated as 3.8 years. This results in Phase II reaching capacity on or about October 2022. Please refer to the calculation sheet provided in Attachment D.

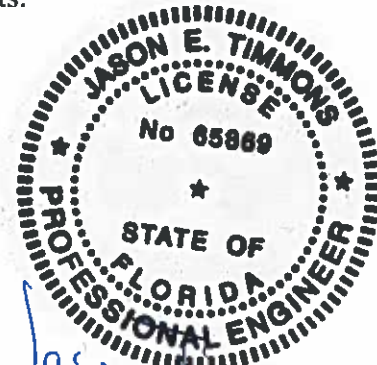
Please contact me anytime at 941-861-1572 if you have questions or require additional information regarding the site life report and attachments.

Sincerely,



Jason Timmons, PE
Solid Waste Engineer
FL PE#65869

Xc: Lois Rose, Sarasota County
File



Jason Timmons 4/11/19
FL PE# 65869

Attachments (4)

- Attachment A - Topographic Survey
- Attachment B - Volume Report
- Attachment C - Tonnage Report
- Attachment D - Site Life Calculations

ATTACHMENT A

TOPOGRAPHIC SURVEY

Survey Report for Sarasota Landfill

Kucera International Project No:	36511 Sarasota Landfill
Type of Survey:	Topographic Survey
Date of Survey:	This map is based on aerial photography collected December 12, 2018
Site:	Sarasota Landfill
Client:	Advanced Disposal

Accuracy Statement:

This survey meets or exceeds National Map Accuracy Standards. Ninety percent of the mapping is meeting or exceeding the tolerances stated below when the photogrammetric value is compared to a field survey value for well-defined features. This mapping also meets or exceeds the Florida Minimum Technical Standards.

Vertical:

Photogrammetrically derived breaklines and mass points were collected to generate contours with an estimated vertical accuracy of 0.5'. Dashed contours in obscured areas are approximate and should be field checked before using. Spot elevations and well defined features have been measured to an estimated vertical accuracy of 0.25'.

Horizontal:

Well defined features have been measured to an estimated horizontal accuracy of 1.25'.

Map Plotting:

This map is intended to be plotted at a scale of 1:600 or smaller.

Lineage:

This topographic map is based on a control supplied to Kucera International in December 2018 by Van Horn and Associates Incorporated titled Specific Purpose Survey Report For Sarasota County Landfill Site, Florida. The digital photography was georeferenced to this control data. A copy of the survey report is contained in Appendix III.

Datum:

Horizontal: Florida State Plane Coordinate System, Florida West Zone (902),
North American Datum of 1983 (2011 Adjustment).

Vertical Datum: Elevations based on the National Geodetic Vertical Datum of 1929
(NGVD29)

Units: U.S. Survey Feet



KUCERA
INTERNATIONAL INC.

38133 Western Parkway
Willoughby, OH 44094
Phone: 440-975-4230

Targeted Control Points And Checkpoints Used for Photogrammetric Mapping:

Datums:

Horizontal: Florida State Plane Coordinate System, Florida West Zone (902),
North American Datum of 1983 (1990 Adjustment).

Vertical: Elevations based on the National Geodetic Vertical Datum of 1929
(NGVD29).

U.S. Survey Feet

Point #	Northing	Easting	Elevation	Description
9	1047463.6423	526879.4391	20.0117	4X4 TARGET
14	1047444.4905	528984.3714	21.6274	4X4 TARGET
24	1046092.2375	528686.2546	19.7400	4X4 TARGET
88	1043964.0738	527495.8004	26.0000	2X2 TARGET
95	1043963.6975	528453.4649	25.8848	2X2 TARGET
102	1043892.1284	529898.8383	25.5929	2X2 TARGET
107	1043937.5743	531107.8086	25.8448	2X2 TARGET
110	1042293.3073	527196.1105	25.7906	2X2 TARGET
115	1042430.9896	528354.2066	40.9023	2X2 TARGET
119	1042411.7862	529755.0321	32.9469	2X2 TARGET
124	1042440.2008	531272.5723	28.3241	2X2 TARGET
133	1042134.8518	531273.0451	25.8464	2X2 TARGET
142	1042134.3031	531239.9235	25.5311	NE COR STOR BAR
145	1042023.8279	532326.6632	26.0093	SOUTH END
153	1041847.0332	534778.1886	23.9842	NORTH WHITE LINE
161	1040885.0298	534723.6882	23.8041	CROSS WHITE LINE
166	1040970.9274	532821.3451	23.8334	CROSS WHITE LINE
173	1040945.4212	531197.0428	25.8611	2X2 TARGET
179	1039211.6396	532158.8282	22.1905	2X2 TARGET
187	1038299.3459	530821.6900	21.8000	2X2 TARGET
198	1039182.1253	528074.5498	20.6223	TIP OF ARROW
204	1040770.3674	527860.8335	24.5267	2X2 TARGET
212	1041737.3307	527449.9247	25.7938	CROSS ON YELLOW
221	1040929.4557	528304.9112	26.0240	2X2 TARGET
224	1040920.8815	529879.8420	25.7830	2X2 TARGET
228	1042983.2247	527446.2028	25.8207	SOUTH END LINE
241	1039469.2936	527970.5341	21.0711	TIP OF ARROW
248	1039461.9503	527133.7242	22.9707	TIP OF ARROW
256	1046028.9036	526217.2256	24.1100	2X2 TARGET
271	1039022.2532	529840.0169	21.8500	2X2 TARGET
282	1041364.7480	529780.8119	25.1900	SW COR STOP BAR
502	1043760.5359	527630.6042	50.1000	DIRT
503	1043744.5977	528062.5578	58.1300	DIRT
504	1043201.4154	527807.2533	56.8200	DIRT
506	1042577.3023	527929.1075	54.2100	DIRT
508	1042543.3268	527418.1035	44.6700	DIRT



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Abbreviations

US – United States

RMSE – Root Mean Square Error

RMS – Root Mean Square

& - And

CO – County

FL – Florida

E – East

W – West

N – North

S – South

' – Feet

NGVD29 – National Geodetic Vertical Datum of 1929

NAD83 – North American Datum of 1983

X – by



















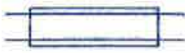









DZ – Difference in Elevation



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Legend

	PAVED ROAD		BRUSHLINE
	UNPAVED ROAD		10' INDEX CONTOUR
	UNPAVED DRIVE OR PARKING		2' INTERMEDIATE CONTOUR
	TRAIL		DEPRESSION CONTOUR
	GUARDRAIL		SPOT ELEVATION
	BUILDING		HORIZONTAL AND VERTICAL CONTROL POINT
	DECK		VERTICAL CONTROL POINT
	MISC. OBJECT (LINE)		UTILITY POLE
	MISC. OBJECT (SYMBOL)		LIGHT POLE
	BRIDGE		TREE
	FENCE		SWAMP AREA
	WATERLINE (LAKE, STREAM, RIVER)		TANK / SILO
	DITCH		PIPE INLET
	CULVERT		
	TREELINE		



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Measurement Methods:

This map was produced using aerial photogrammetric methods using photography captured on December 12, 2018 using a Vexcel Eagle digital camera. The imagery was collected at a flight height of 4300' above ground. A total of 3 flightlines and 33 exposures were needed to cover the site. The digital images were then georeferenced using Inpho Match AT aerotriangulation software. A report of the control point residuals is contained in Appendix I. The existing mapping was then updated using BAE Socet Set combined with Cardinal Systems VR-1 mapping software. Areas of change were delineated and the existing breakline and mass point information was updated. Contours in the changed area were generated using Cardinal Systems VR-1 mapping software and the data was tied into the existing mapping. In areas where the ground is obscured by trees or heavy shadows the contours should be treated as approximate and they do not meet the accuracy standards stated above. Finally a vertical accuracy test was performed on 20 checkpoints in accordance with National Standards for Spatial Data Accuracy Assessment (NSSDA) and American Society for Photogrammetry and Remote Sensing (ASPRS) methodologies and the results of the accuracy test are contained in Appendix II. The vertical accuracy test yielded an accuracy of 0.441' at 95% confidence.

Limitations:

Field surveys should be used when a greater accuracy is required than the accuracy stated in this report.

Note: This report and accompanying map titled Topographic Survey of Sarasota Landfill are not full and complete without the other and are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper.

Signed: _____

John Antalovich Jr. FL PSM No. LS5463

Seal: _____

Date: _____

1-18-19

Kucera International Inc. License No.: _____

LB6643



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38133 Western Parkway
Willoughby, OH 44094
Phone: 440-975-4230

APPENDIX I

Horizontal / Vertical Control Point Residuals (US Feet)

Point ID	Residual Northing	Residual Easting	Residual Elevation	Type
9	0.097	0.078	-0.021	HV
14	0.048	-0.16	0.051	HV
88	-0.027	0.023	0.031	HV
107	-0.05	0	0.017	HV
161	0.012	0.089	0.003	HV
179	-0.033	-0.121	-0.025	HV
241	-0.071	0.595	-0.239	HV
271	-0.049	-0.002	-0.28	HV
282	0.032	-0.004	-0.038	HV
502		0.078	-0.005	V
503		-0.16	-0.005	V
504			-0.005	V
506			0.004	V
508			-0.014	V

Type:

HV – horizontal and vertical

V – vertical



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APPENDIX II

Vertical Accuracy Test

PID	Survey Northing	Survey Easting	Survey Elevation	TIN Elevation	DZ
24	1046092.238	528686.2546	19.74	19.50	0.24
95	1043963.698	528453.4649	25.88	25.45	0.44
102	1043892.128	529898.8383	25.59	25.61	-0.02
110	1042293.307	527196.1105	25.79	25.68	0.11
115	1042430.99	528354.2066	40.90	40.44	0.46
119	1042411.786	529755.0321	32.95	32.88	0.07
124	1042440.201	531272.5723	28.32	28.35	-0.02
133	1042134.852	531273.0451	25.85	25.88	-0.04
142	1042134.303	531239.9235	25.53	25.83	-0.29
145	1042023.828	532326.6632	26.01	25.60	0.21
153	1041847.033	534778.1886	23.98	23.89	0.10
166	1040970.927	532821.3451	23.83	23.89	-0.06
173	1040945.421	531197.0428	25.86	25.52	0.34
187	1038299.346	530821.69	21.80	22.28	-0.13
198	1039182.125	528074.5498	20.62	20.87	-0.24
204	1040770.367	527860.8335	24.53	24.57	-0.04
212	1041737.331	527449.9247	25.79	26.09	-0.30
221	1040929.456	528304.9112	26.02	25.85	0.17
224	1040920.882	529879.842	25.78	25.63	0.15
228	1042983.225	527446.2028	25.82	26.09	-0.27
248	1039461.95	527133.7242	22.97	22.97	0.00
256	1046028.904	526217.2256	24.11	24.38	-0.27

Vertical RMSE = 0.225'

95% confidence = RMSE x 1.96 = 0.225 x 1.96 = 0.441'



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38133 Western Parkway
Willoughby, OH 44094
Phone: 440-975-4230

APPENDIX III

Survey Report



KUCERA
INTERNATIONAL INC.

38133 Western Parkway
Willoughby, OH 44094
Phone: 440-975-4230

Van Horn & Associates, Inc.
Daniel L. Van Horn, PLS, Responsible charge
Certificate of Authorization LB #7939
12610 Sydney Road
Dover, Florida 33527
813-684-4565
Date: January 18, 2019

SPECIFIC PURPOSE SURVEY REPORT FOR SARASOTA COUNTY LANDFILL SITE, FLORIDA.

REPORT PREPARED FOR:

Kucera International, Inc
38133 Western Parkway
Willoughby, Ohio 44094

Purpose

The purpose of this survey is to establish coordinate values on aerial targets and check points for Kucera International, Inc., in support of aerial mapping for Sarasota County Landfill for December - 2018.

Method

A Real Time Global Positioning Network Solutions were performed to establish both horizontal and vertical coordinates on thirty-one Control aerial targets and five ground points. This Real Time Global Positioning Network uses several local control stations to calculate the position of the target value. The following Control stations were used by GPS network:

		Latitude	Longitude
1.	WACH	273051.042	0815256.615
2.	MCD5	275059.338	0823156.335
3.	BKVL	282825.669	0822713.194
4.	FMYR	263527.507	0815150.972
5.	LEES	284934.404	0814825.890
5.	CCV6	282735.827	0803243.702
6.	DLND	290322.897	0811547.480
7.	PBCH	265046.638	0801309.299
8.	ORMD	291753.469	0810632.013
9.	OKCB	271557.715	0805119.181
10.	NAPL	260855.103	0814634.626
11.	ZEFR	281339.322	0820952.671
12.	MTNT	255156.760	0805425.186
13.	LAUD	261146.341	0801023.014
14.	GNVL	294111.557	0821636.736
15.	FLBN	293538.911	0811713.546

North American Datum of 1983 (NAD 1983), Adjustment of 2011, Florida West Zone (902). The vertical datum is the NGVD Datum of 1929 in U.S. feet.

Geoid Model – Geoid 12B
Equipment:
Champion GPS Unit

Accuracy Levels

The methodology for establishing the Aerial targets and checkpoints is based on Third order Horizontal and Vertical Survey procedures. Coordinate values have a maximum horizontal positional accuracy of +/- 0.30 feet and a maximum vertical accuracy of +/- 0.30 feet, conforming to Florida Minimum Technical Standards 5J-17.050 to 5J-17.052.

Office and Field Personnel

Daniel L. Van Horn

ABBREVIATIONS

No. # – Number
LB – Licensed Business
Elev. – Elevation

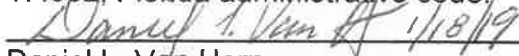
NAD 83 - North American Datum of 1983
NGVD - 1929
GPS - Global Positioning System

General Notes

1. Type of Survey - Specific purpose survey for target positions.
2. Fieldwork was completed through November 21, 2018.
3. This Survey report or the copies thereof are not valid without the signature and original raised seal of a Florida licensed Surveyor and Mapper.
4. Additions or deletions to this report by other than the signing party are prohibited without the written consent of the signing party.

SURVEYOR'S CERTIFICATION

This Photogrammetric mapping ground control survey is certified to the Sarasota County as meeting or exceeding, in quality and precision, the standards applicable for this work, as set forth in chapter 5J-17.050 to 5J-17.052, Florida administrative code.


Daniel L. Van Horn

Professional Land Surveyor Registration No. 4267, State of Florida
Van Horn & Associates, Inc.

Certificate of Authorization LB #7939

Attachments: A – Data Target List
SARASOTA COUNTY CERT 1 18 2019 KUCERA .DOC



DATE: 12/20/2018
SARASOTA LANDFILL, SARASOTA COUNTY, FLORIDA
NAD 83
NAVD 1929
GEOID 12B
FLORIDA WEST ZONE (902)
2011 HORIZONTAL
REVISED ON 12/20/2018 ADDED - 5 DIRT ELEVATIONS
FIELD BOOK 115 PAGE 12, 13, 42

HELD CURRENT CONTROL POINT #408 ON SARASOTA PLANS AS NGVD
1929

09,1047463.642300,526879.439100,20.011700,4X4 TARGET
14,1047444.490500,528984.371400,21.627400,4X4 TARGET
88,1043964.073800,527495.800400,26.000000,2X2 TARGET
95,1043963.697500,528453.464900,25.884800,2X2 TARGET
102,1043892.128400,529898.838300,25.592900,2X2 TARGET
107,1043937.574300,531107.808600,25.844800,2X2 TARGET
110,1042293.307300,527196.110500,25.790600,2X2 TARGET
115,1042430.989600,528354.206600,40.902300,2X2 TARGET
119,1042411.786200,529755.032100,32.946900,2X2 TARGET
124,1042440.200800,531272.572300,28.324100,2X2TARGET
133,1042134.851800,531273.045100,25.846400,2X2 TARGET
142,1042134.303100,531239.923500,25.531100,NE COR STOR BAR
145,1042023.827900,532326.663200,26.009300,SOUTH END WHITE CURB
153,1041847.033200,534778.188600,23.984200,NORTH WHITE LINE
161,1040885.029800,534723.688200,23.804100,CROSS WHITE LINE
166,1040970.927400,532821.345100,23.833400,CROSS WHITE LINE
173,1040945.421200,531197.042800,25.861100,2X2 TARGET
179,1039211.639600,532158.828200,22.190500,2X2 TARGET
187,1038299.345900,530821.690000,21.800000,2X2 TARGET
198,1039182.125300,528074.549800,20.622300,TIP OF ARROW
204,1040770.367400,527860.833500,24.526700,2X2 TARGET
212,1041737.330700,527449.924700,25.793800,CROSS ON YELLOW
221,1040929.455700,528304.911200,26.024000,2X2 TARGET
224,1040920.881500,529879.842000,25.783000,2X2 TARGET
228,1042983.224700,527446.202800,25.820700,SOUTH END LINE
241,1039469.293600,527970.534100,21.071100,TIP OF ARROW

248,1039461.950300,527133.724200,22.970700,TIP OF ARROW
256,1046028.9036,526217.2256,24.11000,2X2 TARGET
24,1046092.2375,528686.2546,19.7400,4X4 TARGET
271,1039022.2532,529840.0169,21.85,2X2TARGET CL
282,1041364.7480,529780.8119,25.19,SW COR STOP BAR
502,1043760.535900,527630.604200,50.100000,DIRT
503,1043744.597700,528062.557800,58.130000,DIRT
504,1043201.415400,527807.253300,56.820000,DIRT
506,1042577.302300,527929.107500,54.210000,DIRT
508,1042543.326800,527418.103500,44.670000,DIRT

THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC
METHODS FROM PHOTOGRAPHS DATED 12-12-2018
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

HEADQUARTERS: WILLOUGHBY, OHIO
PLANT CITY, FL - COLUMBUS, OH - PITTSBURGH, PA

See report of topographic survey of lands in Secs. 2 & 3, Twp. 38S, Range 19 E, Sarasota Co., FL dated 12-12-2018. This topographic map and attached report are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper which can be found on the report. The map and report are not full and complete without the other.

John Antalovich, Jr. P.S.M. No. LS5463

NOTES: Accuracy Specifications

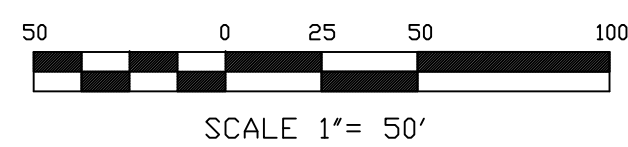
- 1.) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc., Willoughby, Ohio, using photogrammetric methods from aerial photography taken 12-12-2018. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as "dashed contours".
- 2.) Buildings are shown roofline only.

SHEET INDEX

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

LEGEND

- 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
- FENCE
- DIRT / UNIMPROVED ROAD
- TREE LINE
- DITCH (WATER) LINE
- HORIZONTAL & VERTICAL CONTROL POINT
- SPOT ELEVATION
- POWER POLE
- NON-UTILITY POLE
- GUYWIRE
- LIGHT POLE
- POST
- SIGN
- TREE
- CATCH BASIN
- PIPE INLET
- MANHOLE



ADVANCED DISPOSAL
4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

No.	Description	Date	By	No.	Description	Date	By

Approved By:

Checked By:

Drawn By:

Project Location:

SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No.

Scale:

As Shown

Date:

DEC. 12, 2018

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1 of 16

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John Antalovich, Jr. P.S.M. No. LS5463

NOTES: Accuracy Specifications

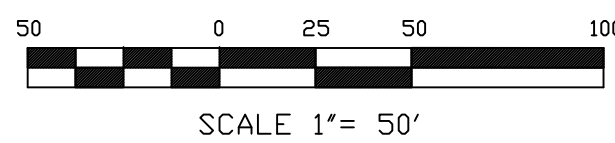
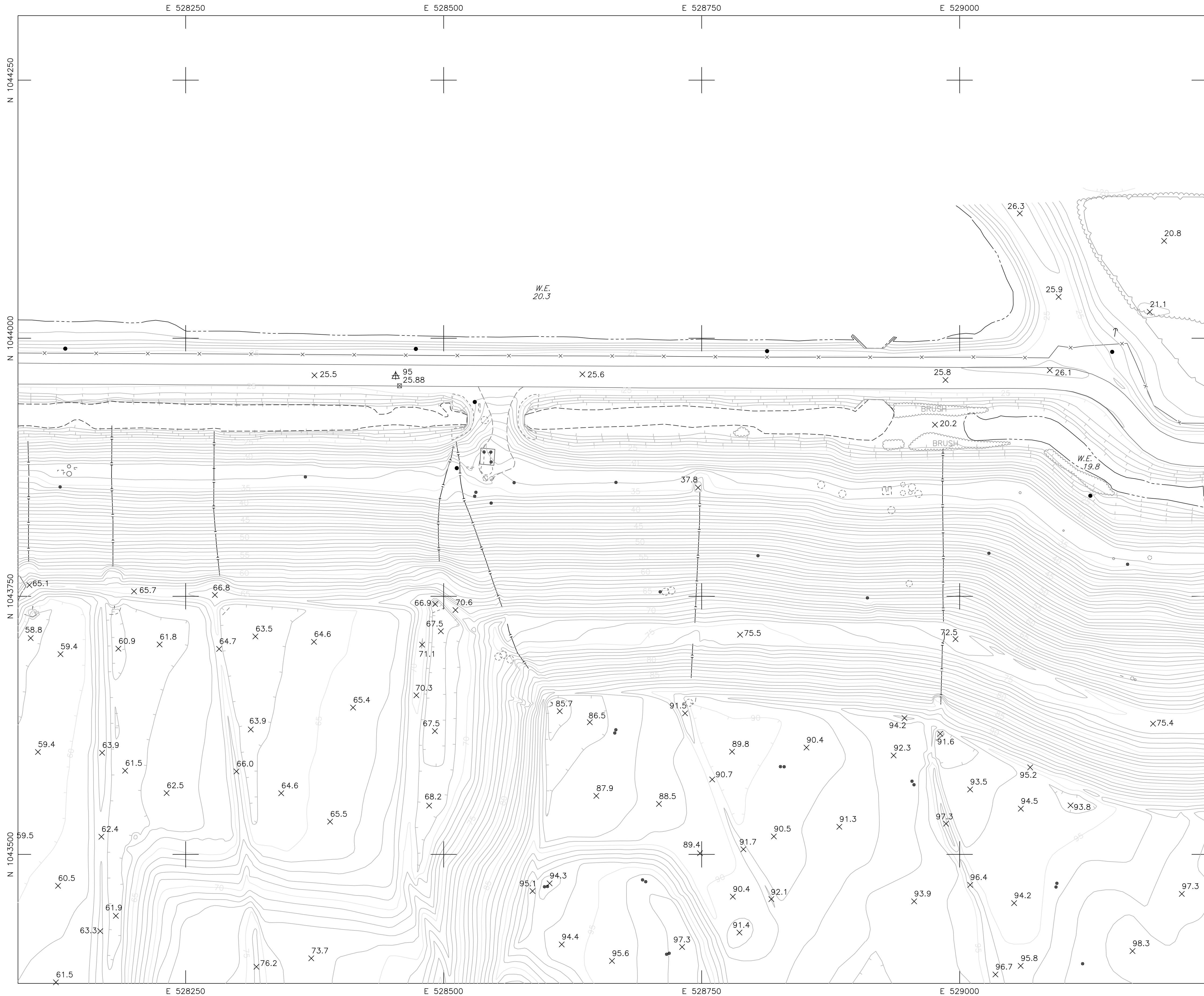
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LEGEND

- 110 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
- FENCE
- DIRT / UNIMPROVED ROAD
- TREE LINE
- DITCH (WATER) LINE
- HORIZONTAL & VERTICAL CONTROL POINT
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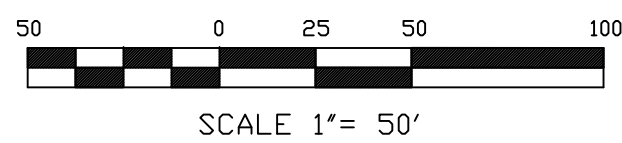
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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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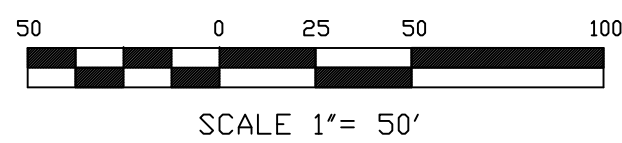
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NOKOMIS, FL

SARASOTA LANDFILL

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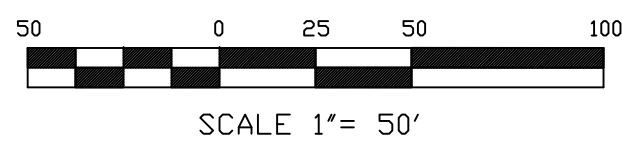
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ADVANCED DISPOSAL
4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

No.	Description	Date	By	No.	Description	Date	By

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Project Location:

SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No.

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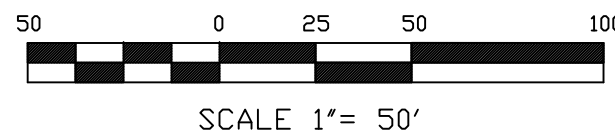
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ADVANCED DISPOSAL
4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

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Project Location:

SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No.

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DEC. 12, 2018

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1



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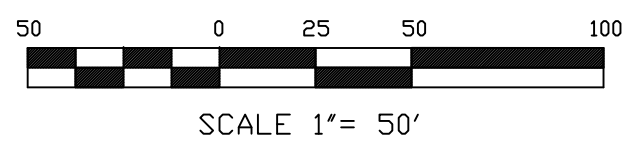
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LEGEND

- 110 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
- x-x FENCE
- DIRT / UNIMPROVED ROAD
- ~~~~~ TREE LINE
- - - DITCH (WATER) LINE
- △ HORIZONTAL & VERTICAL CONTROL POINT
- x22.7 SPOT ELEVATION
- POWER POLE
- NON-UTILITY POLE
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ADVANCED DISPOSAL
4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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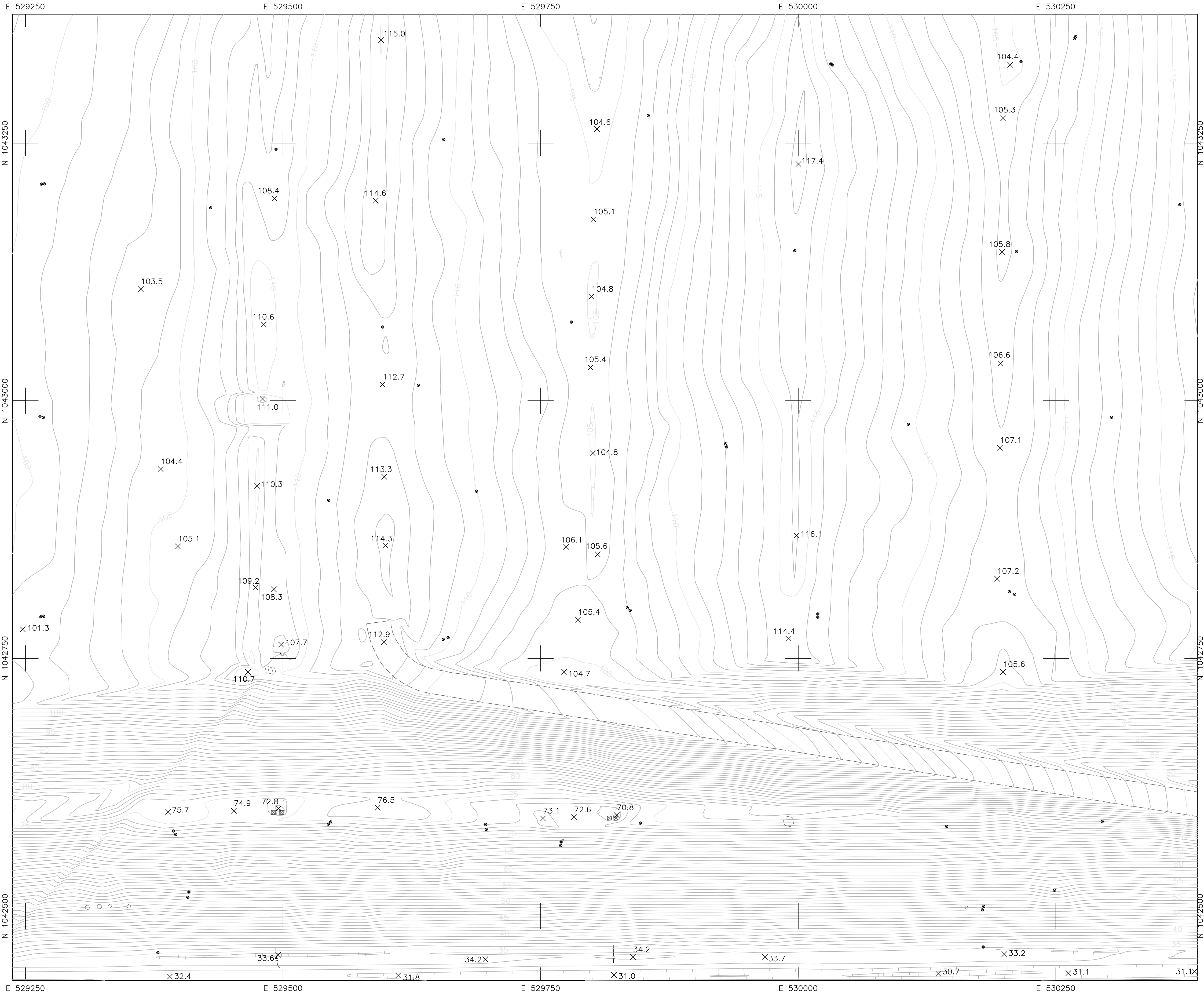
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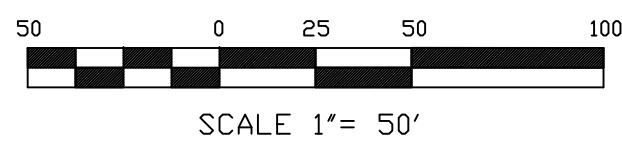
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ADVANCED DISPOSAL
4000 Knights Trail Road
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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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A B C D E F G H

1



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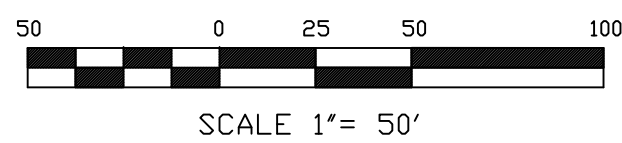
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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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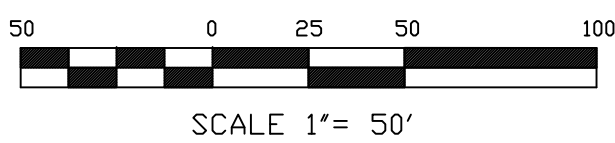
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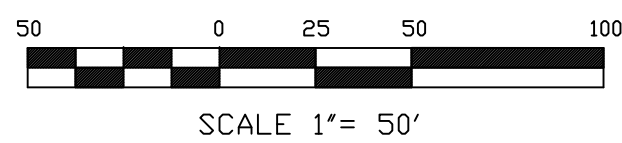
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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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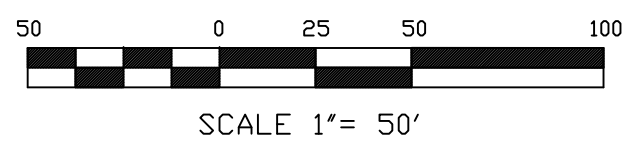
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- GUYWIRE
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- POST
- SIGN
- TREE
- CATCH BASIN
- PIPE INLET
- MANHOLE



ADVANCED DISPOSAL
4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

No.	Description	Date	By	No.	Description	Date	By

Approved By:

Checked By:

Drawn By:

Project Location:

SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No.

Scale:

As Shown

Sheet Number:

Date:

DEC. 12, 2018

12 of 16

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A B C D E F G H

1



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC
METHODS FROM PHOTOGRAPHS DATED 12-12-2018
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

HEADQUARTERS: WILLOUGHBY, OHIO
PLANT CITY, FL - COLUMBUS, OH - PITTSBURGH, PA

See report of topographic survey of lands in Secs. 2 & 3, Twp. 38S, Range 19 E, Sarasota Co., FL
dated 12-12-2018. This topographic map and attached report are not valid without the signature
and original raised seal of a Florida licensed surveyor and mapper which can be found on
the report. The map and report are not full and complete without the other.

John Antalovich, Jr. P.S.M. No. LS5463

NOTES: Accuracy Specifications

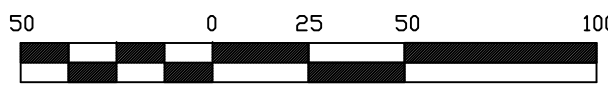
- 1.) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc., Willoughby, Ohio, using photogrammetric methods from aerial photography taken 12-12-2018. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as "dashed contours".
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E 527000 E 527250 E 527500 E 527750 E 528000

N 1041250

N 1041000

N 1040750

E 527000

E 527250

E 527500

E 527750

E 528000

N 1041250

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N 1040750

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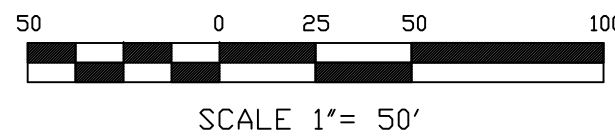
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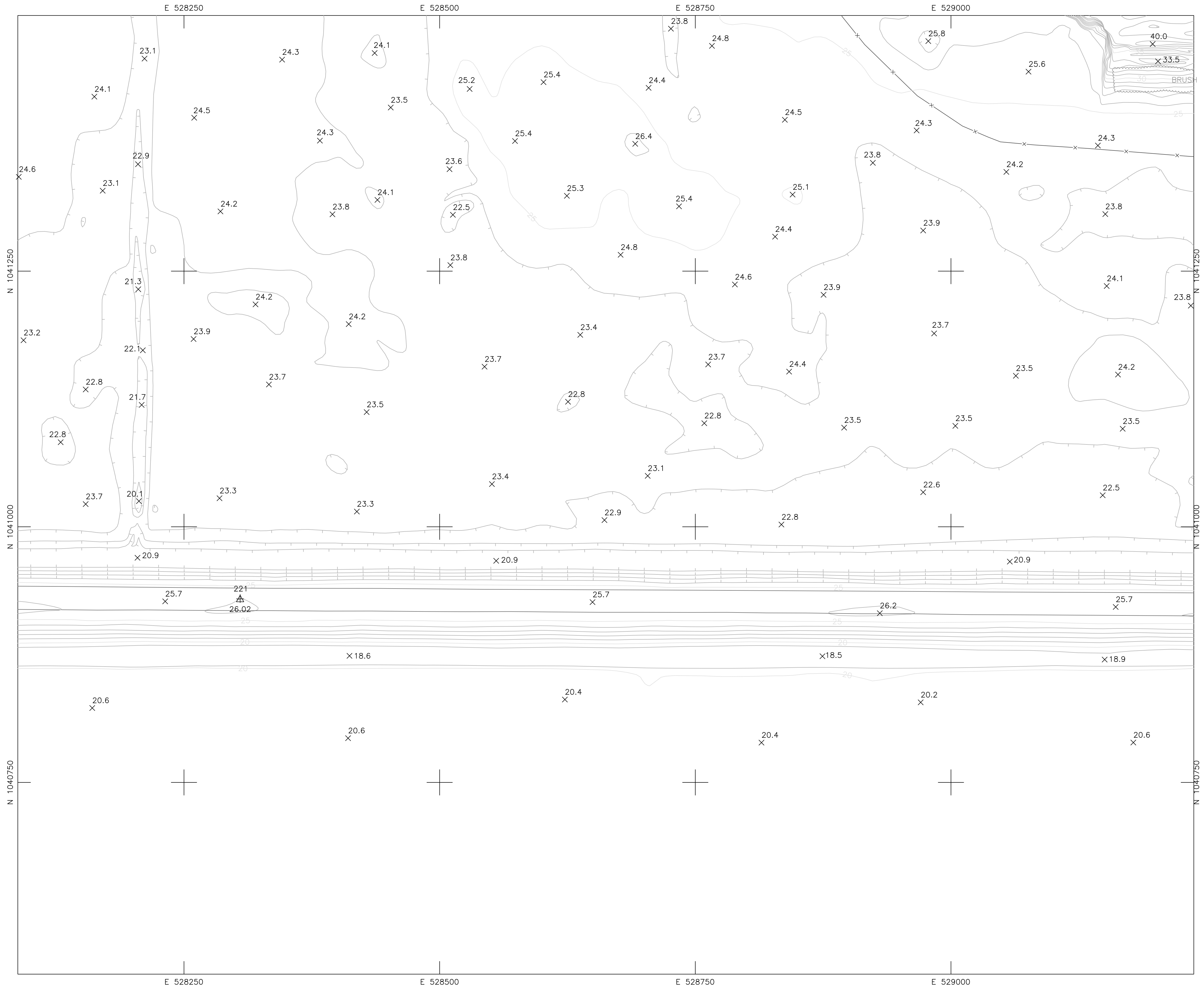
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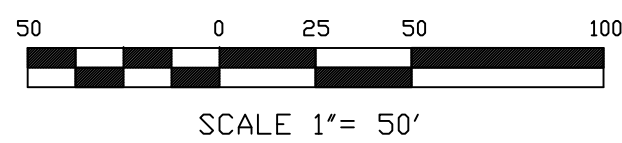
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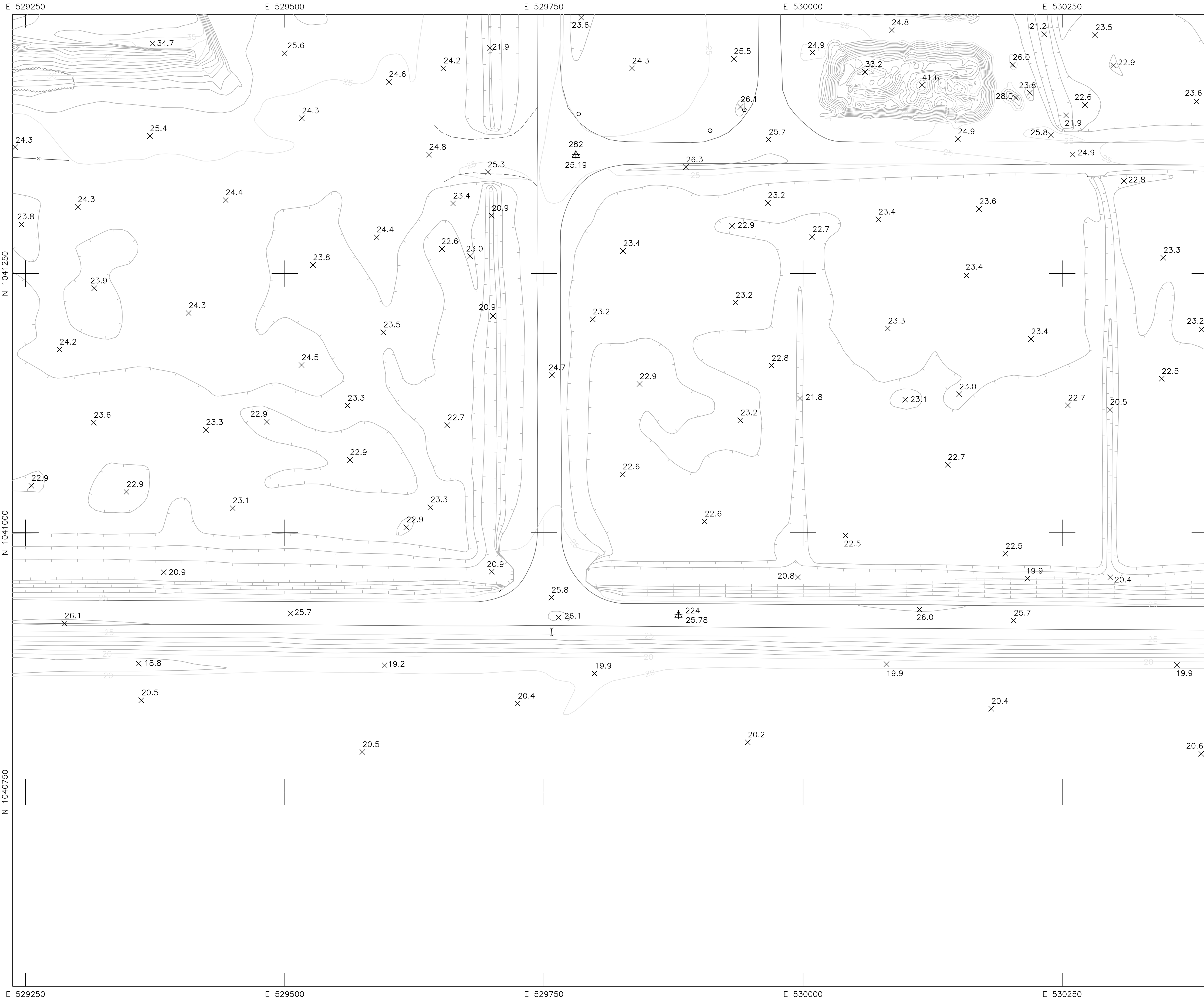
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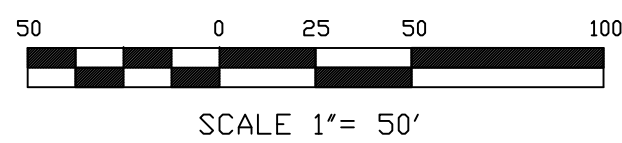
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A B C D E F G H

ATTACHMENT B

AUTOCADD
VOLUME REPORT

Cut/Fill Report

Generated: 2019-04-11 11:11:37

By user: jtimmons

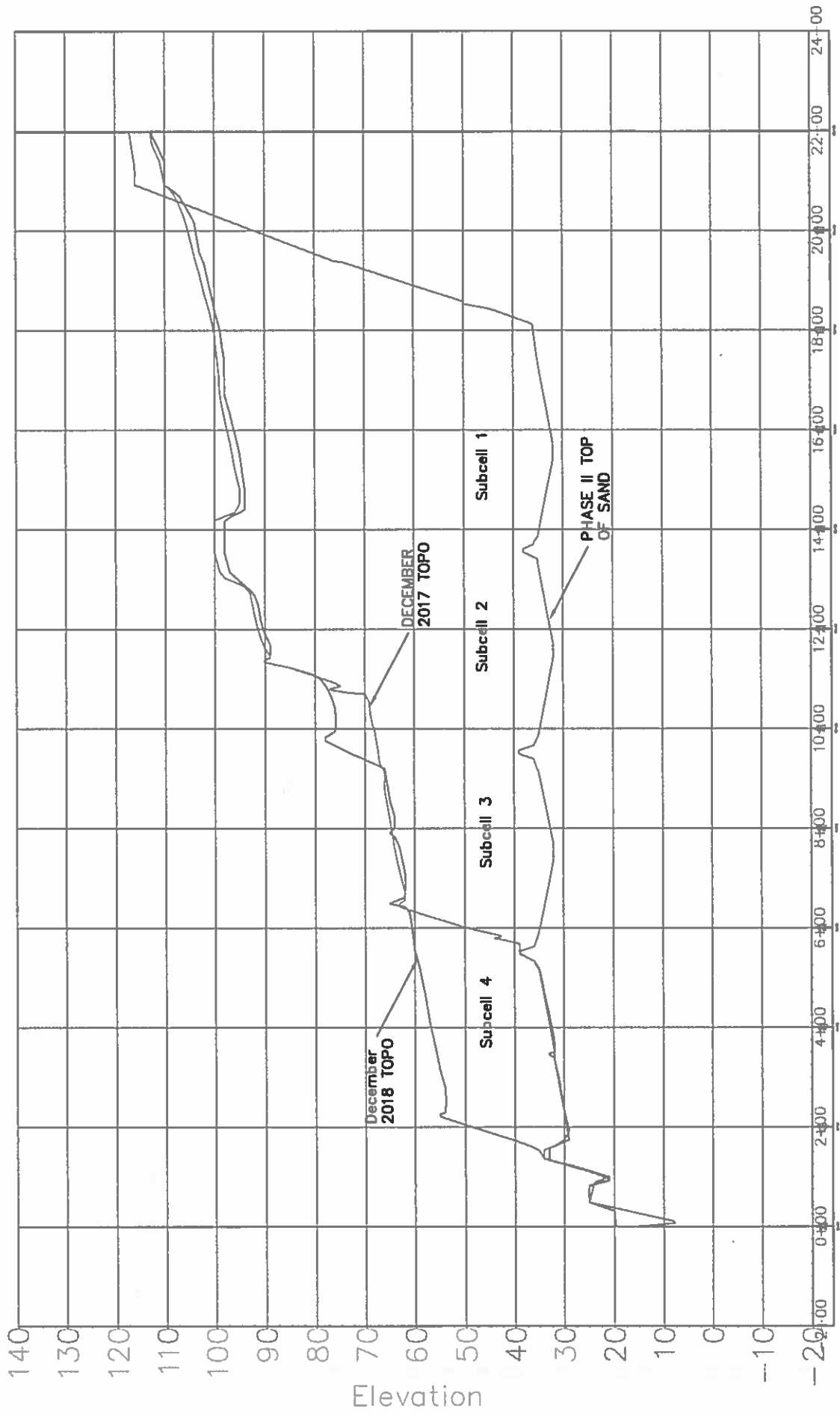
Drawing: K:\Central County Solid Waste Disposal Complex\Annual Topo\2018 Annual Report\K:\Central County Solid Waste Disposal Complex\Annual Topo\2018 Annual Report\Phase II Volumes Working File.dwg

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Phase II Remaining Volume Dec 2018	full	1.000	1.000	2632641.70 <i>66.4 acres</i>	5780.15	2218880.64	2213100.49<Fill>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	2632641.70	5780.15	2218880.64	2213100.49<Fill>

* Value adjusted by cut or fill factor other than 1.0

CCSWDC December 2018 West to East PROFILE



ATTACHMENT C

TONNAGE REPORT

CCSWDC Monthly Tonnage to Class I Landfill December 5, 2017 to December 11, 2018

Month	Tonnage to Class I Landfill (tons)	
Dec 5 to Dec 31, 2017	22,160	
Jan-18	30,009	
Feb-18	26,964	
Mar-18	27,010	
Apr-18	25,653	
May-18	27,460	
Jun-18	24,723	
Jul-18	25,382	
Aug-18	26,356	
Sep-18	22,676	
Oct-18	25,459	
Nov-18	25,186	
Dec 1 to Dec 11, 2018	8,383	
Average	25,964	December 2017 through November 2018
Total	317,422	December 5, 2017 through December 11, 2018
 2018 Calendar Year Total	 312,089	 January 1, 2018 through December 31, 2018
Annual % Increase from Previous Year	3.89%	

Source: CCSWDC scalehouse tonnage reports.

ATTACHMENT D

SITE LIFE CALCULATIONS

Sarasota County Central County Solid Waste Disposal Complex Phase II Landfill Site Life
April 10, 2019

Total Available Disposal Volume of Phase II = 5,855,011 cubic yards
Intermediate and Final Cover Soil Volume (3 feet) = 292,516 cubic yards
Total Available Waste Disposal Volume of Phase II = 5,562,495 cubic yards
Operational Days per Year = 308 days

Year	Calendar Year	Projected Population ¹	Percent Increase ²	Waste Received ³ (tons/day)	Waste Received by Calendar Year ³ (tons/year)	Assumed Density ⁴ (tons/cy)	Volume of Waste Received per year (cy)	Cumulative Capacity Used in Phase II (cy)	Volume of Class I Remaining ⁵ (cy)	Notes Date of Topo
-	2010	-	-	-	-	-	-	0	5,562,495	
-	2011	-	-	Partial Year	150,866	0.66	227,022	227,022	5,335,473	
-	2012	-		860	264,846	0.50	530,885	757,907	4,804,588	12/1/2012
-	2013	-	-2.15%	841	259,155	0.62	415,644	1,173,551	4,388,944	12/8/2013
-	2014	-	2.82%	865	266,453	0.65	408,868	1,582,419	3,980,076	12/1/2014
-	2015	-	5.52%	913	281,149	0.70	402,026	1,984,445	3,578,050	12/13/2015
-	2016	397,420	3.16%	942	290,036	0.71	408,896	2,393,341	3,169,154	12/3/2016
-	2017	402,389	3.57%	975	300,394	0.54	551,426	2,944,767	2,617,728	12/5/2017
0	2018	407,055	5.67%	1,031	317,422	0.60	533,113	3,477,880	2,213,100	12/12/2018
1	2019	411,522	3.89%	1,071	329,770	0.60	549,616	4,027,496	1,663,484	Current Year
2	2020	415,923	3.89%	1,112	342,598	0.60	570,996	4,598,492	1,092,488	
3	2021	420,263	3.89%	1,156	355,925	0.60	593,208	5,191,700	499,280	
4	2022	424,522	3.89%	1,201	369,770	0.60	616,284	5,807,984	-117,004	
5	2023	428,684	3.89%	1,247	384,154	0.60	640,257	6,448,242	-757,262	
6	2024	432,732	3.89%	1,296	399,098	0.60	665,163	7,113,405	-1,422,425	

Design Life⁶ = 3.81 years from date of last topo.

Approximate Date of Completion = 10/3/2022

Notes:

- 1 SHOWN FOR INFORMATIONAL PURPOSES ONLY - Population Data from the Florida Demographic Estimating Conference, December 2015 and UF, BEBR, Florida Population Studies, Volume 49, Bulletin 174, January 2016 medium county projections provided by the Office of Economic and Demographic Research (EDR).
- 2 The percent increase is based on the previous years tonnage increase from the year before, i.e. [(2017 tonnage - 2016 tonnage) / 2016 tonnage] x 100%. This has been revised from previous years since population % increase has not accurately predicted the tonnage increase observed over the last several years.
- 3 Tonnage based on scale data reports for calendar years.
- 4 The assumed density is an apparent density with cover soil included in volume, therefore a reduction of the total available volume of the landfill is not required for this calculation. This value is a conservative estimate of the actual compacted density in the landfill. The densities before the current year are actual from volume and tonnage data. For projected years, 2019 and beyond, a density of 1,200 lbs/cy is used for projected volume of waste received.
- 5 Volume remaining in Phase II in cubic yards adjusted in 2018 to match AutoCADD calculated remaining volume from December 2018.
- 6 The design life of the landfill was determined by dividing the volume of waste remaining in the previous year before airspace becomes negative in the table by the total amount of waste that is generated in that year and adding the number of years previous (e.g. 204,096 (year 5) / 555,074 (year 6) + 5 years = design life).