

April 10, 2020

Renee Kwiat
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-S0/01 (Mod# 0130542-028-SO/IM)
WACS No. 51614
Annual Topographic Survey and Remaining Site Life Report - 2019

Dear Ms. Kwiat:

In accordance with Specific Condition C.14.b of the above referenced permit for the Central County Solid Waste Disposal Complex (CCSWDC), the Sarasota County Solid Waste Division is pleased to submit the annual topographic survey and remaining site life report. As shown in the supporting calculations, provided in Attachment A, the Phase II Class I Landfill Area has approximately 3.15 years of remaining site life from December 15, 2019, which is equivalent to approximately February 8, 2023.

This design life estimate assumes a 4% increase in waste tonnage per year and a waste compaction of 1,200 pounds per cubic yard until reaching capacity. A 2019 tonnage summary report and the volume consumed report, generated by comparing the December 2018 and 2019 topographic surfaces in AutoCADD, are provided in Attachment B.

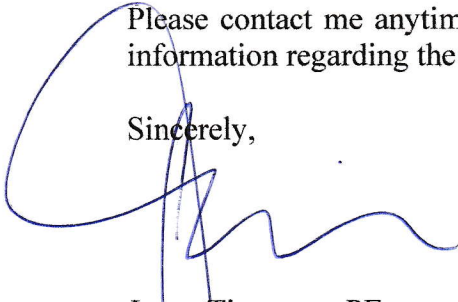
The topographic survey dated December 15, 2019, performed by Kucera International, Inc. and provided in Attachment C, demonstrates that the Phase II landfill slopes do not exceed 3:1 (H:V) and the top elevations do not exceed the maximum permitted design elevation of 121 feet NGVD 1929.

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.

FDEP South District
April 10, 2020
Page 2 of 2

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

Sincerely,

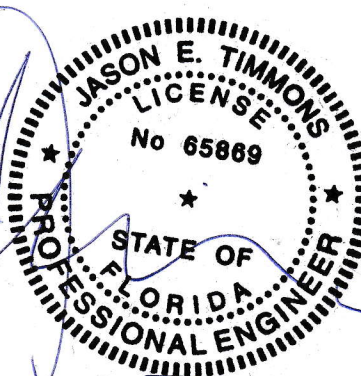


Jason Timmons, PE
Solid Waste Engineer
FL PE#65869

Xc: Lois Rose, Sarasota County
File

Attachments (3)

- Attachment A – Design Life Calculations
- Attachment B – Tonnage and Volume Reports
- Attachment C – December 2019 Topographic Survey



4/10/2020
Jason Timmons
FL PE#65869

ATTACHMENT A

DESIGN LIFE CALCULATIONS

**Sarasota County Central County Solid Waste Disposal Complex Phase II Landfill Site Life
April 8, 2020**

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 (lbs/cy)	Volume of Waste Received per year ⁵ (cy)	Cumulative Capacity Used in Phase II ⁶ (cy)	Volume of Class I Remaining (cy)	Notes Date of Topo
-	2010	-	-	-	-	-	-	0	5,562,495	
-	2011	-	-	Partial Year	150,866	1,329	227,022	227,022	5,335,473	
-	2012	-	-	860	264,846	998	530,885	757,907	4,804,588	12/1/2012
-	2013	-	-2.15%	841	259,155	1,247	415,644	1,173,551	4,388,944	12/8/2013
-	2014	-	2.82%	865	266,453	1,303	408,868	1,582,419	3,980,076	12/1/2014
-	2015	-	5.52%	913	281,149	1,399	402,026	1,984,445	3,578,050	12/13/2015
-	2016	397,420	3.16%	942	290,036	1,419	408,896	2,393,341	3,169,154	12/3/2016
-	2017	402,389	3.51%	975	300,228	1,089	551,426	2,944,767	2,617,728	12/5/2017
-	2018	407,055	5.73%	1,031	317,422	1,191	533,113	3,477,880	2,213,100	12/12/2018
0	2019	411,522	-1.51%	1,015	312,627	1,462	427,786	3,905,666	1,785,314	12/15/2019
1	2020	415,923	4.00%	1,056	325,132	1,200	541,887	4,447,553	1,243,427	Projected Year
2	2021	420,263	4.00%	1,098	338,137	1,200	563,562	5,011,115	679,865	Projected Year
3	2022	424,522	4.00%	1,142	351,663	1,200	586,105	5,597,220	93,760	Projected Year
4	2023	428,684	4.00%	1,187	365,729	1,200	609,549	6,206,769	-515,789	Projected Year
5	2024	432,732	4.00%	1,235	380,359	1,200	633,931	6,840,700	-1,149,720	Projected Year
Design Life⁷ = 3.15 years from date of last topo.										
Approximate Date of Completion = 2/8/2023										

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 For the current report and past years, 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%. For projected years, the County has decided to use a set 4% annual increase as a conservative approach to estimating the average tonnage increase over the long-term life of the landfill.

³ Tonnage based on scale data reports for calendar years. See tonnage summary table for 2019 provided with submittal.

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 For the current report and past years the volume of waste received is determined from comparing AutoCADD topographic surfaces. For projected years the volume of waste received is calculated by taking the projected tonnage received multiplying by 2,000 lbs/ton and dividing by the assumed apparent density (currently 1,200 lbs/cubic yard). For example (325,132 tons x 2,000 lbs/ton) / (1,200 lbs/cubic yard) = 541,887 cubic yards.

⁶ Volume consumed in Phase II from December 2018 to December 2019 calculated using AutoCADD topographic survey surfaces, see cut/fill report provided with submittal.

⁷ 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 (eg. 204,096 (year 5) / 555,074 (year 6) + 5 years = design life).

ATTACHMENT B

TONNAGE AND VOLUME REPORTS

CCSWDC Monthly Tonnage to Class I Landfill December 12, 2018 to December 15, 2019

Month	Tonnage to Class I Landfill (tons)	
Dec 12 to Dec 31, 2018	16,827	
Jan-19	28,069	
Feb-19	25,153	
Mar-19	26,929	
Apr-19	27,425	
May-19	27,292	
Jun-19	23,596	
Jul-19	27,306	
Aug-19	25,342	
Sep-19	22,396	
Oct-19	25,307	
Nov-19	24,895	
Dec 1 to Dec 15, 2019	12,089	
Average	25,045	December 2018 through November 2019
Total	312,627	December 12, 2018 through December 15, 2019
2019 Calendar Year Total	310,896	January 1, 2019 through December 31, 2019
Annual % Increase from Previous Calendar Year	-0.38%	

Source: CCSWDC scalehouse tonnage reports.

Cut/Fill Report

Generated: 2020-04-06 10:12:24

By user: jtimmons

Drawing: C:\Users\jtimmons\Desktop\Desktop Files 8.26.19\C:\Users\jtimmons\Desktop\Desktop Files 8.26.19\Drawing4.dwg

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Phase II Dec 2019 Remaining Volume	full	1.000	1.000	2632641.70	4855.22	1846293.06	1841437.84<Fill>
Dec 2018 to Dec 2019 Volume Consumed	full	1.000	1.000	14322153.10	211009.92	517107.18	306097.25<Fill>
Dec 2018 to Dec 2019 Volume Consumed.1	bounded	1.000	1.000	2632669.68	56124.66	427786.69	371662.03<Fill>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	19587464.49	271989.80	2791186.93	2519197.13<Fill>

* Value adjusted by cut or fill factor other than 1.0

ATTACHMENT C

DECEMBER 2019

TOPOGRAPHIC SURVEY

Survey Report for Sarasota Landfill

Kucera International Project No: 36537 Sarasota Landfill
Type of Survey: Topographic Survey
Date of Survey: This map is based on aerial photography collected December 15, 2019
Site: Sarasota Landfill
Client: Advanced Disposal

Accuracy Statement:

This photogrammetric mapping data and report is certified to the Florida Department of Revenue as meeting or exceeding, in quality and precision, the standards of practice applicable for this work, as set forth in chapter 5J-17, Florida Administrative Code, pursuant to Chapter 472, Florida statutes.

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 January 14, 2020 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



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
09	1047476.1159	526949.0281	19.634	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	2X2 TARGET
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
219	1038295.069000	530810.011300	21.660000	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
271	1039022.2532	529840.0169	21.85	2X2 TARGET CL
282	1041364.7480	529780.8119	25.19	SW COR STOP BAR
222	1042779.295800	527824.412100	68.282200	GROUND
224a	1043431.889800	527939.397800	66.046300	GROUND
225	1043712.135600	528296.348200	75.493900	GROUND
229	1043275.150100	528399.570100	86.700900	GROUND
232	1043031.287500	528549.826600	89.317100	GROUND
242	1042639.675500	528294.725800	77.727800	GROUND

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

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		

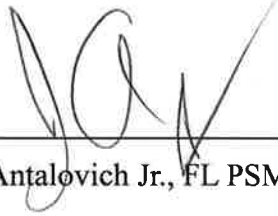
Measurement Methods:

This map was produced using aerial photogrammetric methods using photography captured on December 15, 2019 using a Vexcel Eagle digital camera. The imagery was collected at a flight height of 4900' 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 27 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 0.435' 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: 1-14-2020

Kucera International Inc. License No.: LB6643



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

APPENDIX I

Horizontal / Vertical Control Point Residuals (US Feet)

Point ID	Residual Easting	Residual Northing	Residual Elevation	Type
107	-0.132	-0.036	0.01	HV
161	-0.064	0.027	0.001	HV
219	-0.067	-0.082	0.007	HV
248	0.068	0.021	-0.002	HV
256	0.003	-0.107	0.014	HV
222			-0.019	V
225			-0.009	V
229			-0.005	V
242			0.003	V

Type:

HV – horizontal and vertical

V – vertical

APPENDIX II

Vertical Accuracy Test

PID	Survey Northing	Survey Easting	Survey Elevation	TIN Elevation	DZ
9	1047476.12	526949.03	19.63	19.257	0.38
14	1047444.49	528984.37	21.63	21.35	0.28
88	1043964.07	527495.80	26.00	26.149	-0.15
95	1043963.70	528453.46	25.88	25.445	0.44
102	1043892.13	529898.84	25.59	25.609	-0.02
110	1042293.31	527196.11	25.79	25.676	0.11
115	1042430.99	528354.21	40.90	40.44	0.46
119	1042411.79	529755.03	32.95	32.771	0.18
124	1042440.20	531272.57	28.32	28.348	-0.02
133	1042134.85	531273.05	25.85	25.884	-0.04
142	1042134.30	531239.92	25.53	25.826	-0.29
145	1042023.83	532326.66	26.01	25.786	0.22
153	1041847.03	534778.19	23.98	23.963	0.02
166	1040970.93	532821.35	23.83	23.7	0.13
173	1040945.42	531197.04	25.86	25.521	0.34
179	1039211.64	532158.83	22.19	22.167	0.02
198	1039182.13	528074.55	20.62	20.76	-0.14
204	1040770.37	527860.83	24.53	24.57	-0.04
212	1041737.33	527449.92	25.79	26.089	-0.30
221	1040929.46	528304.91	26.02	25.852	0.17
224	1040920.88	529879.84	25.78	25.633	0.15
228	1042983.23	527446.20	25.82	26.094	-0.27
241	1039469.29	527970.53	21.07	21.18	-0.11
271	1039022.25	529840.02	21.85	21.85	0.00
282	1041364.75	529780.81	25.19	25.014	0.18
224a	1043431.89	527939.40	66.05	66.211	-0.16
232	1043031.29	528549.83	89.32	89.56	-0.24

Vertical RMSE = 0.222'

95% confidence = RMSE x 1.96 = 0.222 x 1.96 = 0.435'

APPENDIX III

Survey Report

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 14, 2020

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 2019.

Method

A Real Time Global Positioning Network Solutions were performed to establish both horizontal and vertical coordinates on thirty-one Control aerial targets and six 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 Standards of Practice 5J-17.051

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 December 14, 2020.
3. This Survey report or the copies thereof are not valid without the digital signature or the 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 of Practice as applicable for this work, as set forth in chapter 5J-17.051, 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 14 20201 KUCERA .DOC

DATE: 12/18/2019
SARASOTA LANDFILL, SARASOTA COUNTY, FLORIDA
NAD 83
NAVD 1929 - GEOID 12B
FLORIDA WEST ZONE (902)
2011 HORIZONTAL
12/18/2019 ADDED - 6 DIRT ELEVATIONS
FIELD BOOK 115 PAGE 12, 13, 42, 57

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

09,1047476.1159,526949.0281,19.634,4X4 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
219,1038295.069000,530810.011300,21.660000,2X2 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
271,1039022.2532,529840.0169,21.85,2X2TARGET CL
282,1041364.7480,529780.8119,25.19,SW COR STOP BAR
222,1042779.295800,527824.412100,68.282200,NG
224,1043431.889800,527939.397800,66.046300,NG
225,1043712.135600,528296.348200,75.493900,NG
229,1043275.150100,528399.570100,86.700900,NG
232,1043031.287500,528549.826600,89.317100,NG
242,1042639.675500,528294.725800,77.727800,NG



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-15-2019
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

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

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

NOTES: Accuracy Specifications

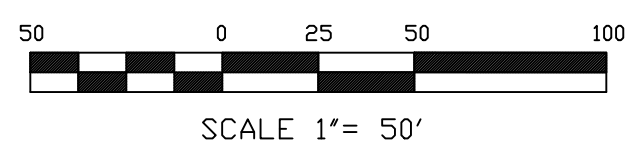
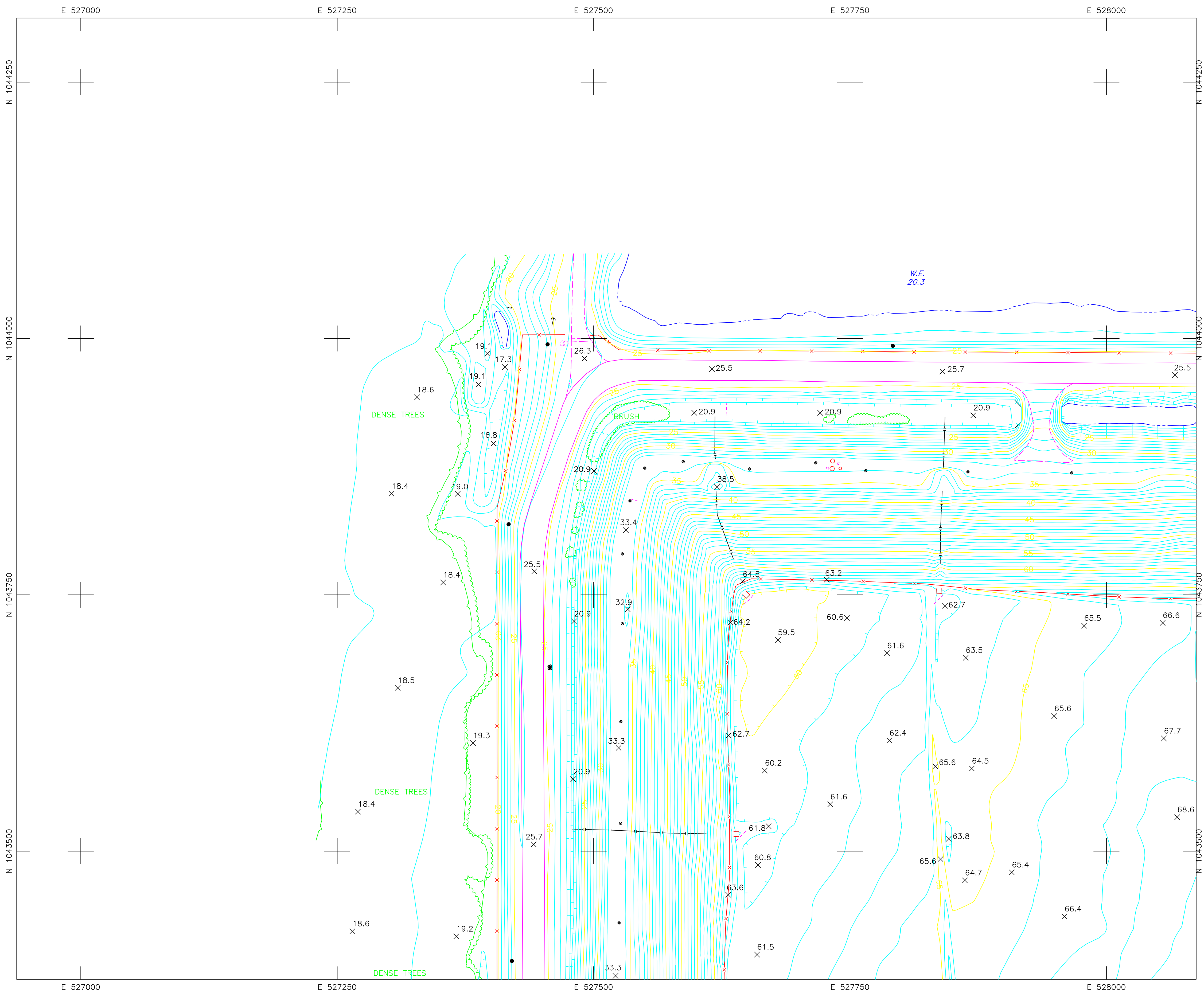
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SHEET INDEX

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

LEGEND

- 110 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
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- - - - DIRT / UNIMPROVED ROAD
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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. 15, 2019
Sheet Number:
1 of 16



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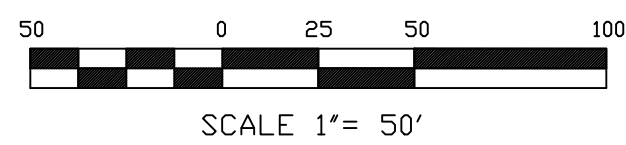
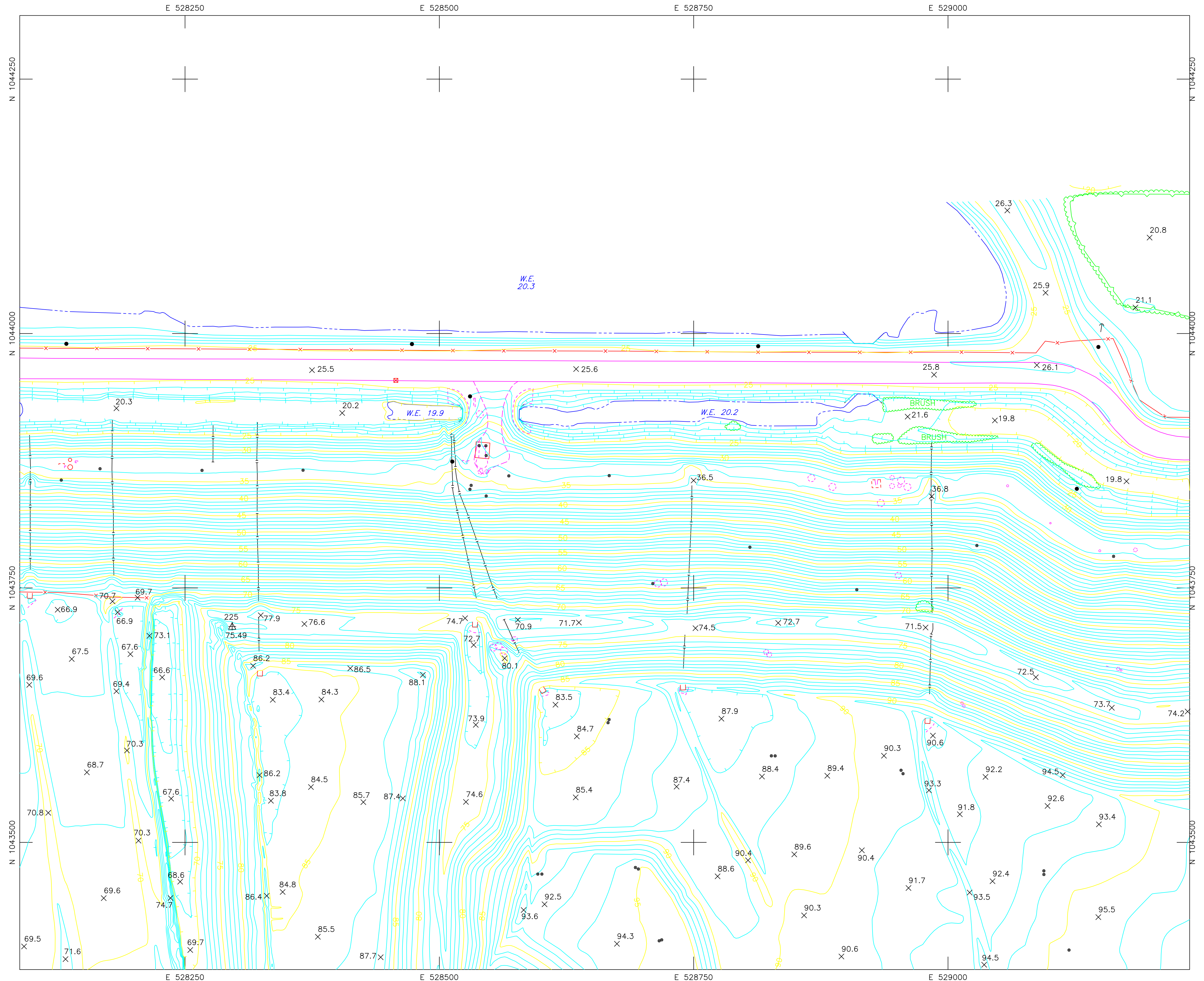
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SHEET INDEX

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

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SITE TOPOGRAPHIC MAP
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SARASOTA LANDFILL

Drawing No.

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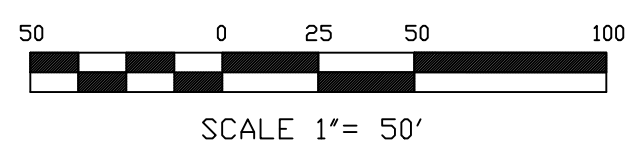
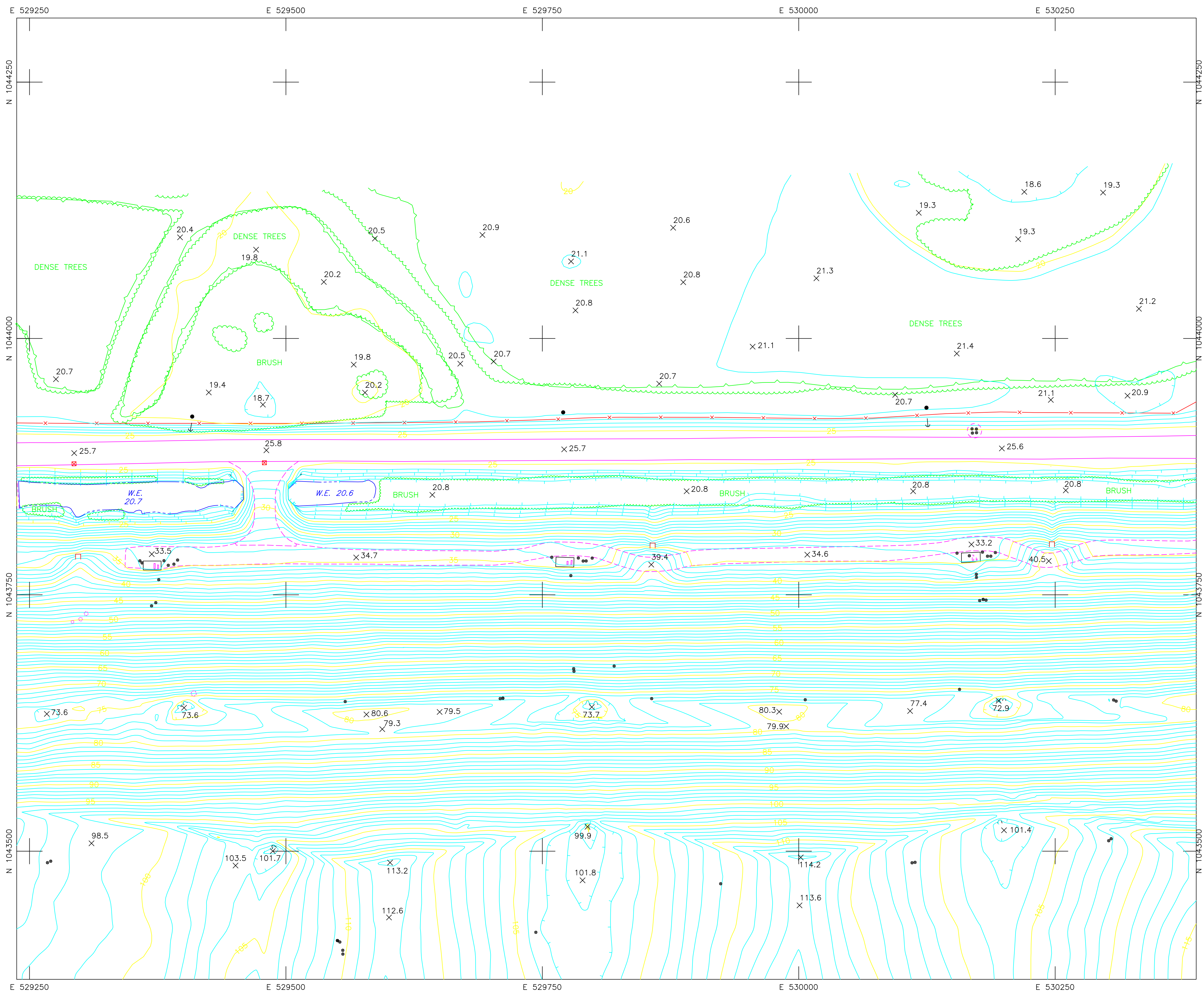
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SHEET INDEX

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

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SARASOTA LANDFILL

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Sheet Number:
3 of 16



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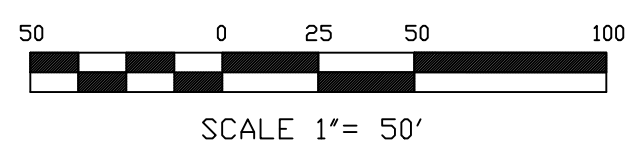
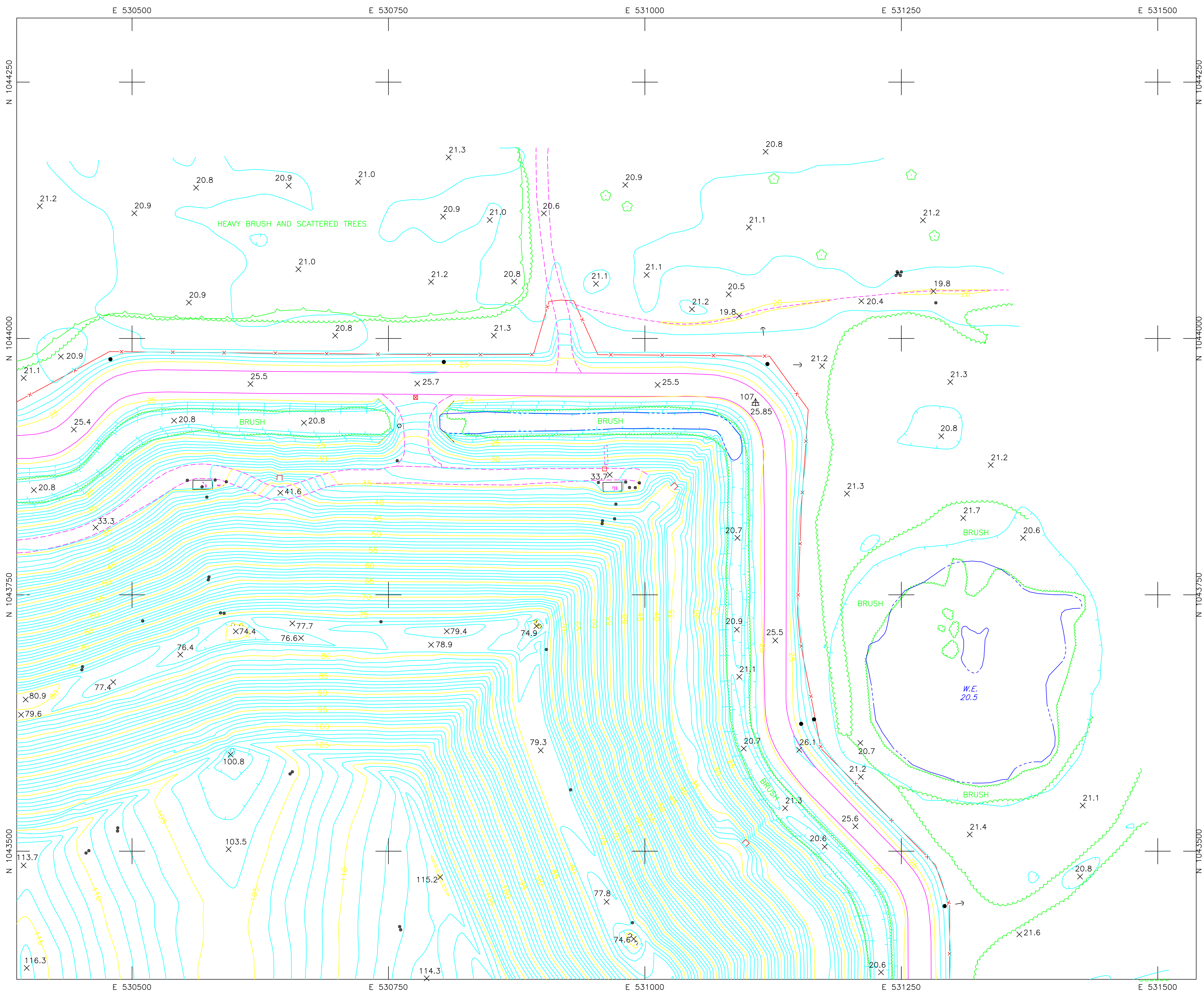
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SHEET INDEX

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

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ADVANCED DISPOSAL
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SITE TOPOGRAPHIC MAP
NOKOMIS, FL

SARASOTA LANDFILL

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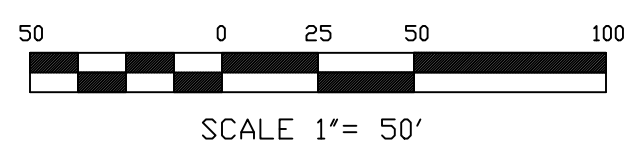
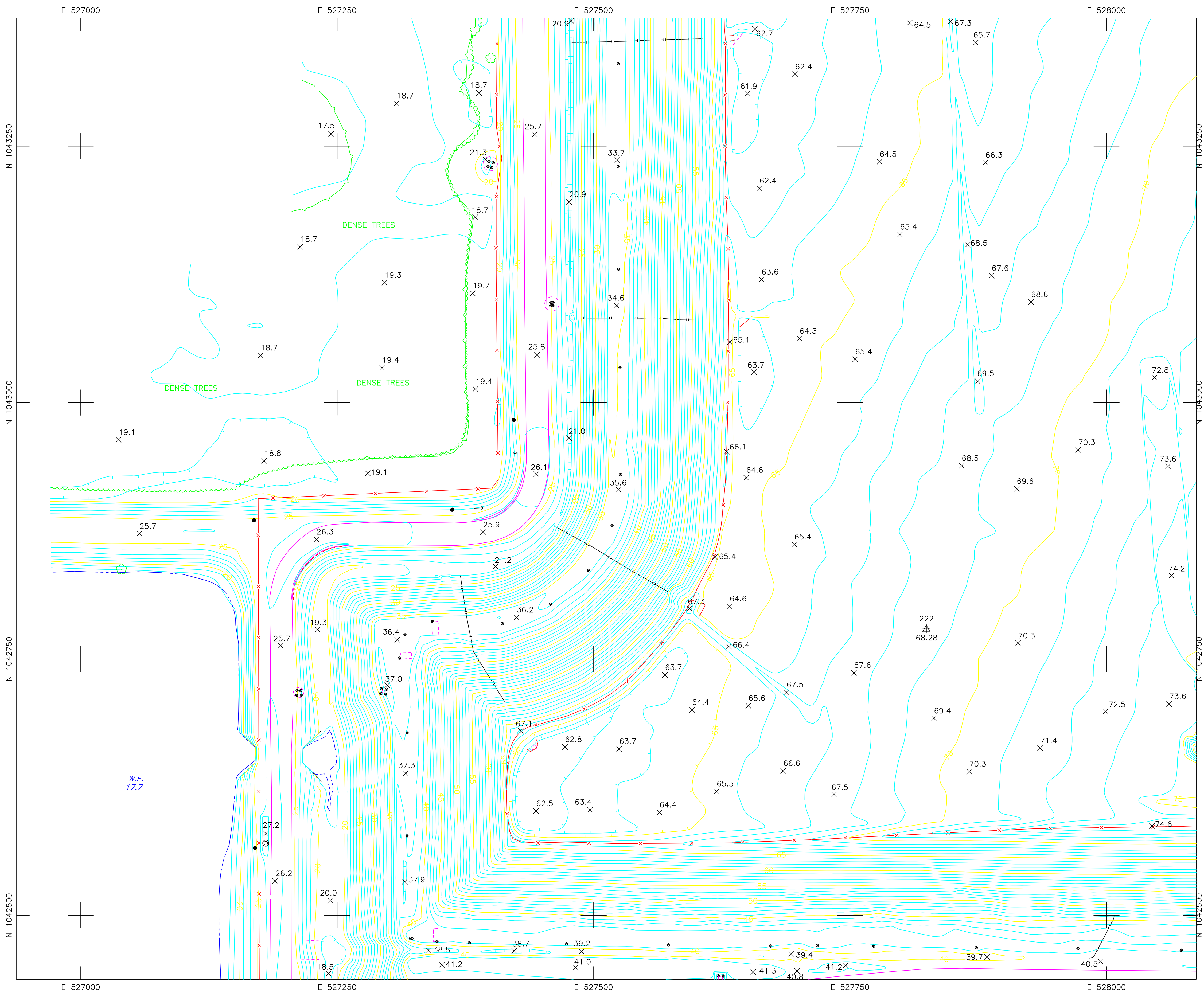
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SHEET INDEX

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

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- 1' CONTOUR
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4000 Knights Trail Road
Nokomis, Florida 34275

Revisions

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Project Location:
**SITE TOPOGRAPHIC MAP
NOKOMIS, FL**

SARASOTA LANDFILL

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Sheet Number:
5 of 16



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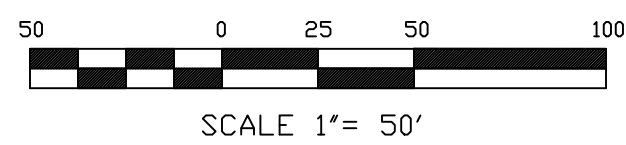
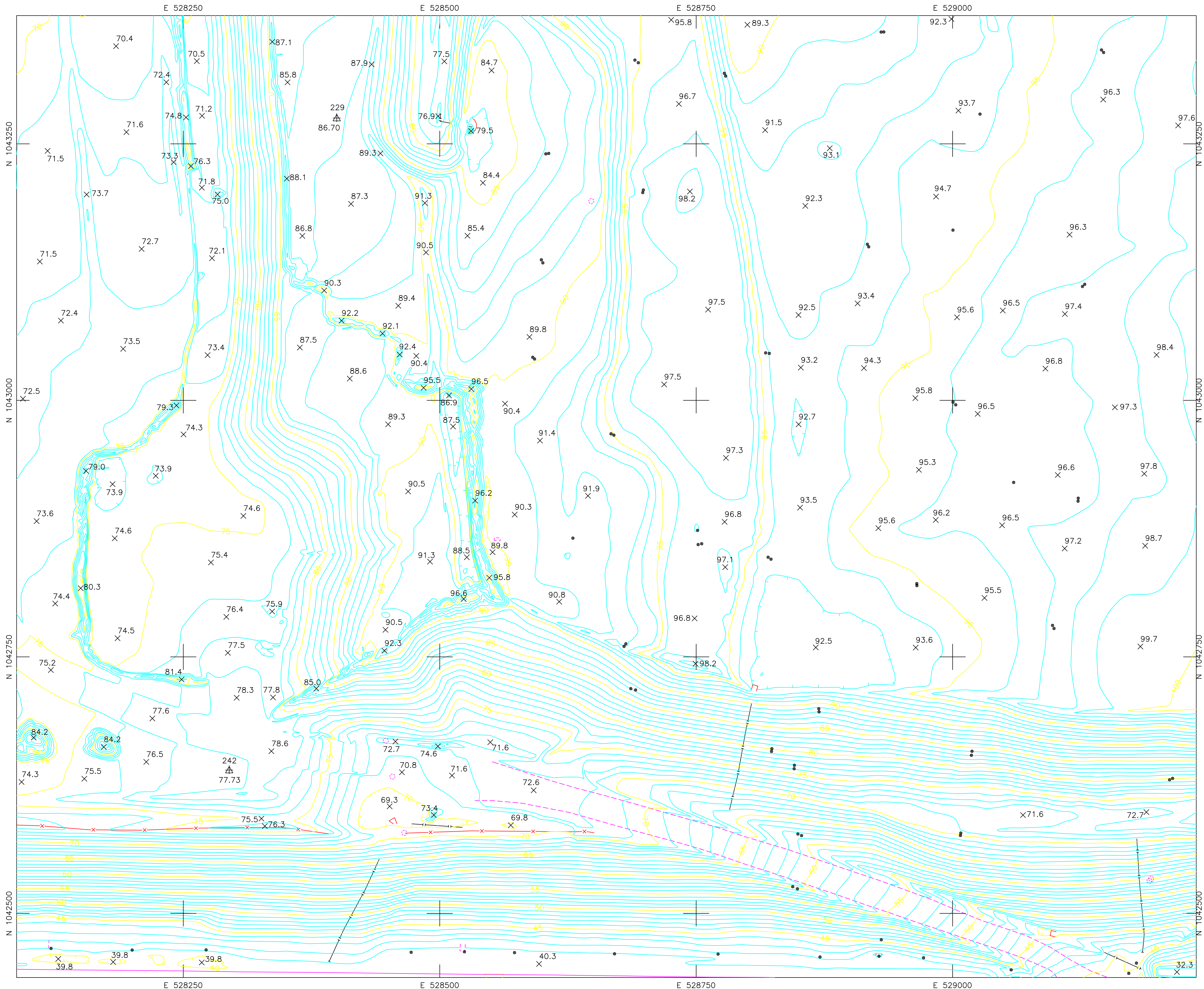
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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

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4000 Knights Trail Road
Nokomis, Florida 34275

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**SITE TOPOGRAPHIC MAP
NOKOMIS, FL**

SARASOTA LANDFILL

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Sheet Number:
6 of 16



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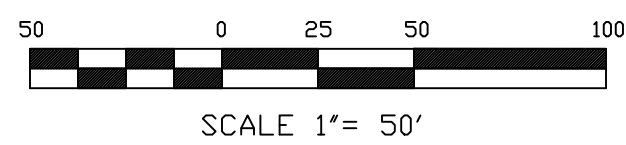
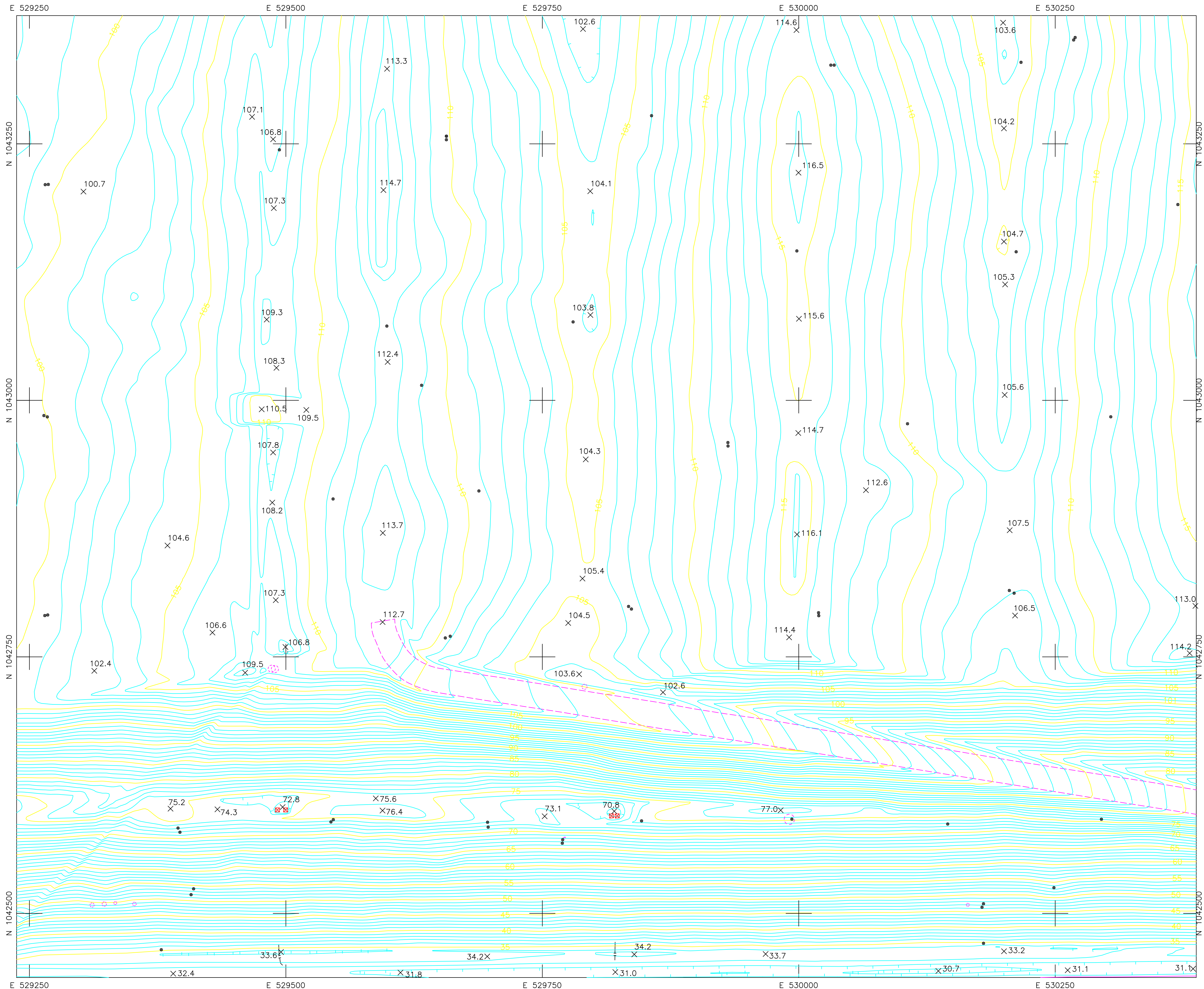
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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

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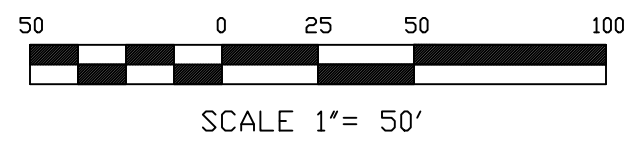
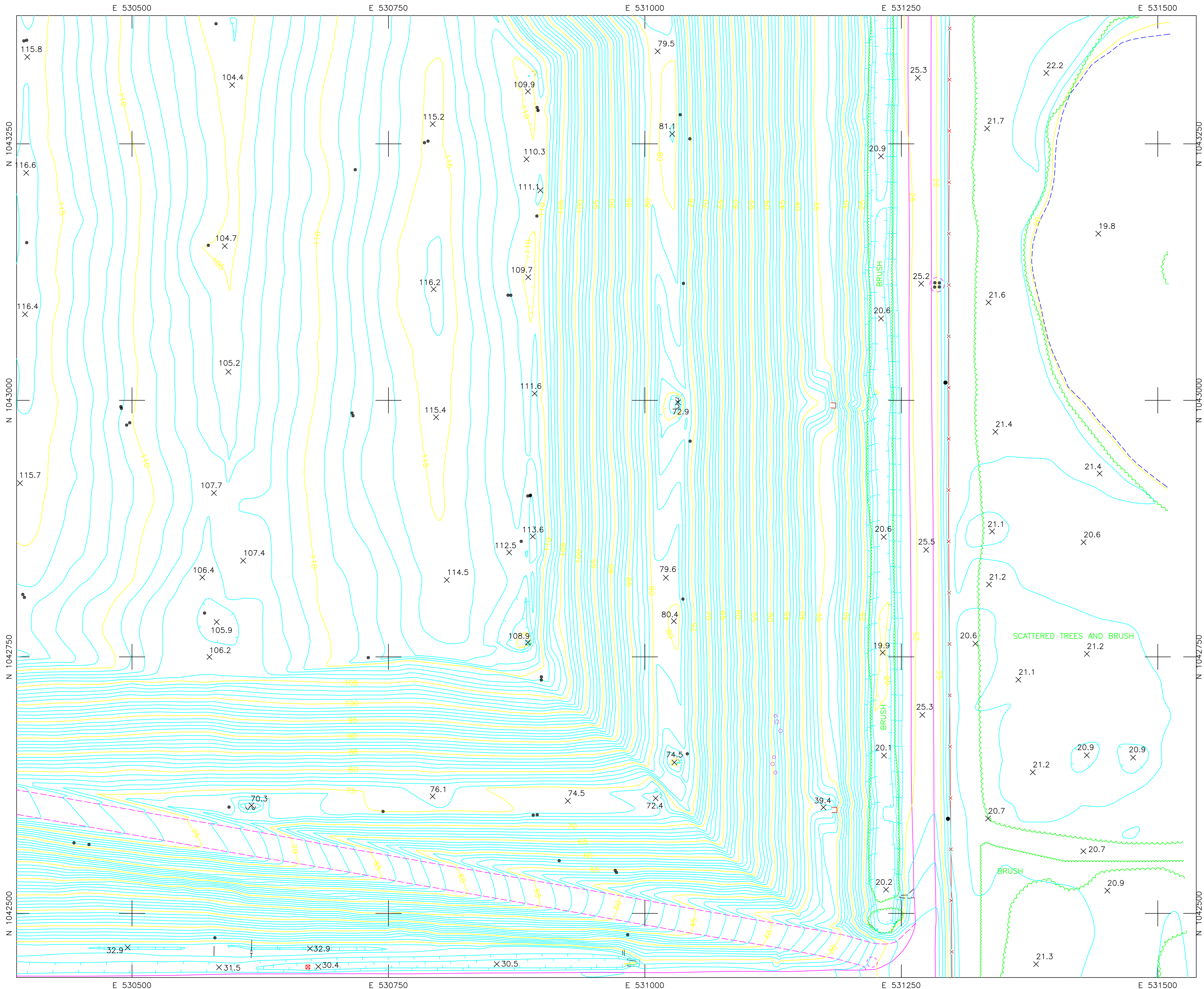
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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

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8 of 16



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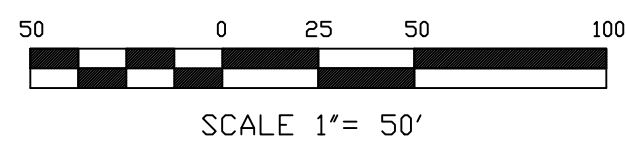
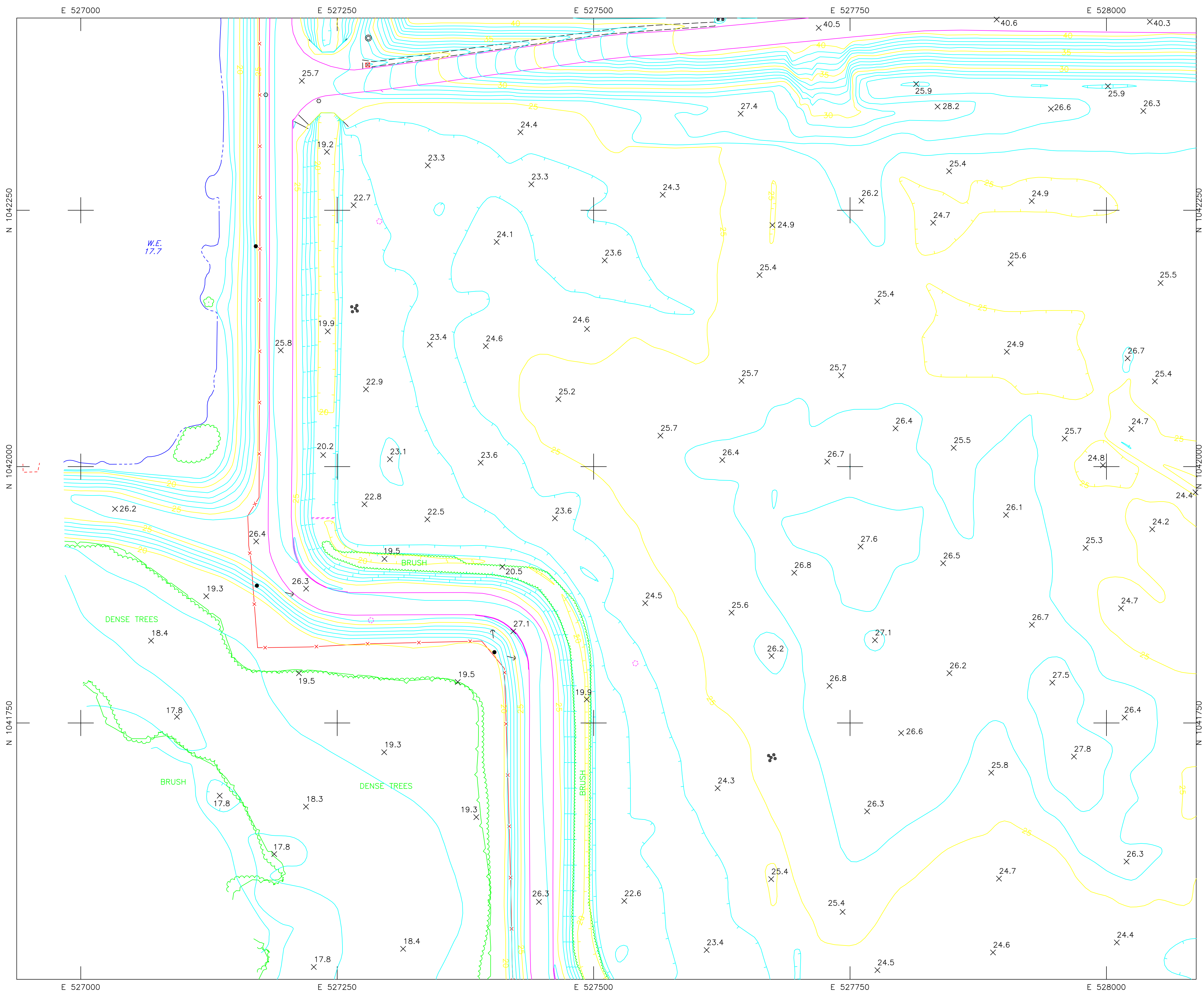
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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

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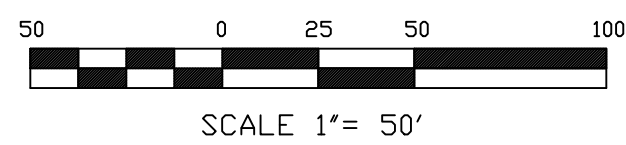
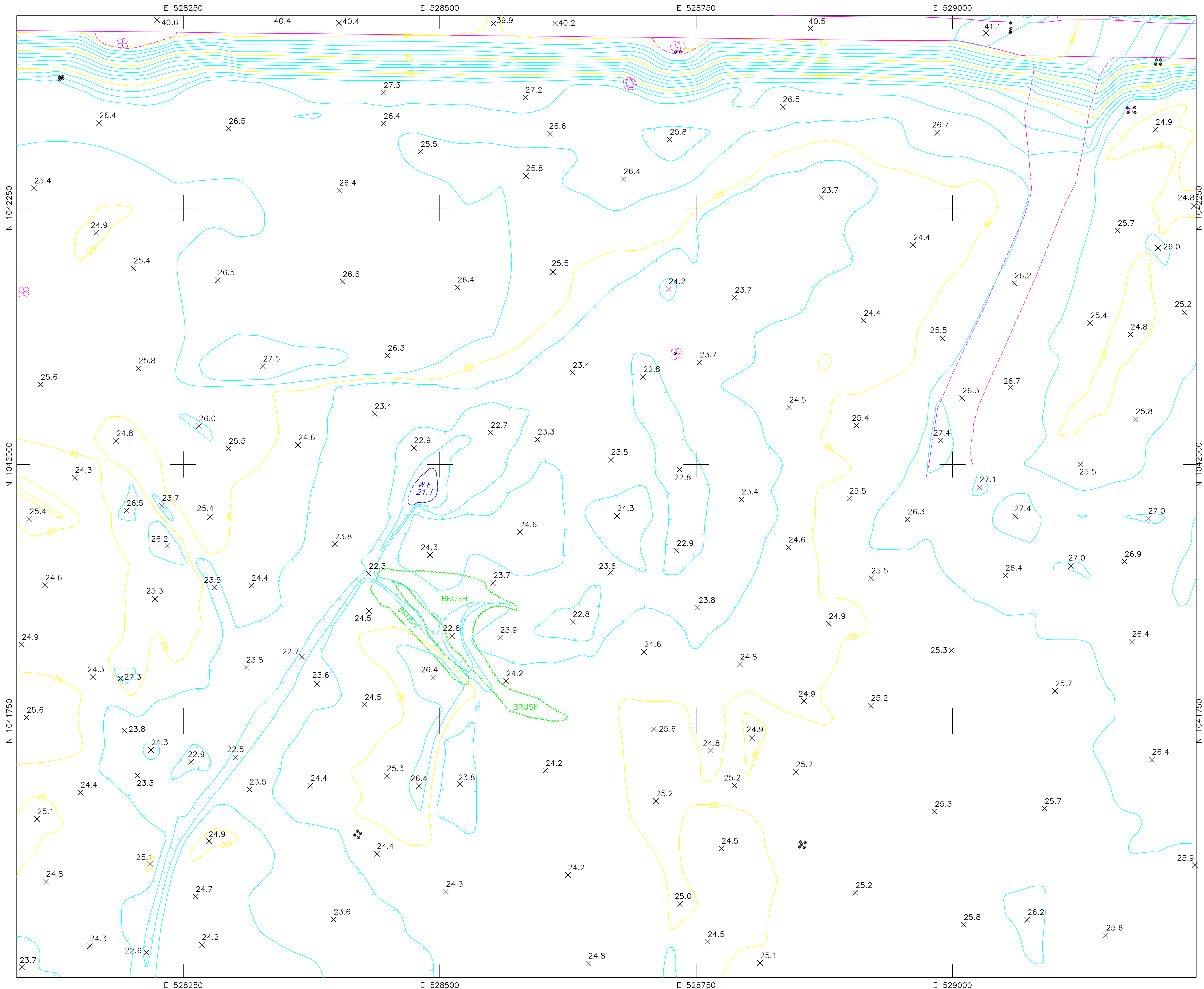
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SHEET INDEX

1	2	3	4
5	6	7	8
9	10	11	12
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- 110 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
- x-x- FENCE
- - - - DIRT / UNIMPROVED ROAD
- ~ ~ ~ ~ TREE LINE
- - - - DITCH (WATER) LINE
- ⊕ HORIZONTAL & VERTICAL CONTROL POINTS
- x 22.7 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. 15, 2019
Sheet Number:
10 of 16



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-15-2019. MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

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

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

NOTES: Accuracy Specifications

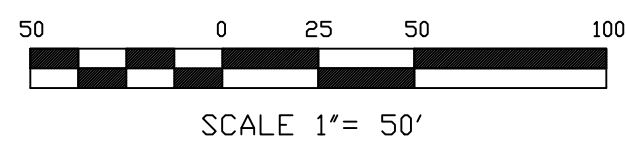
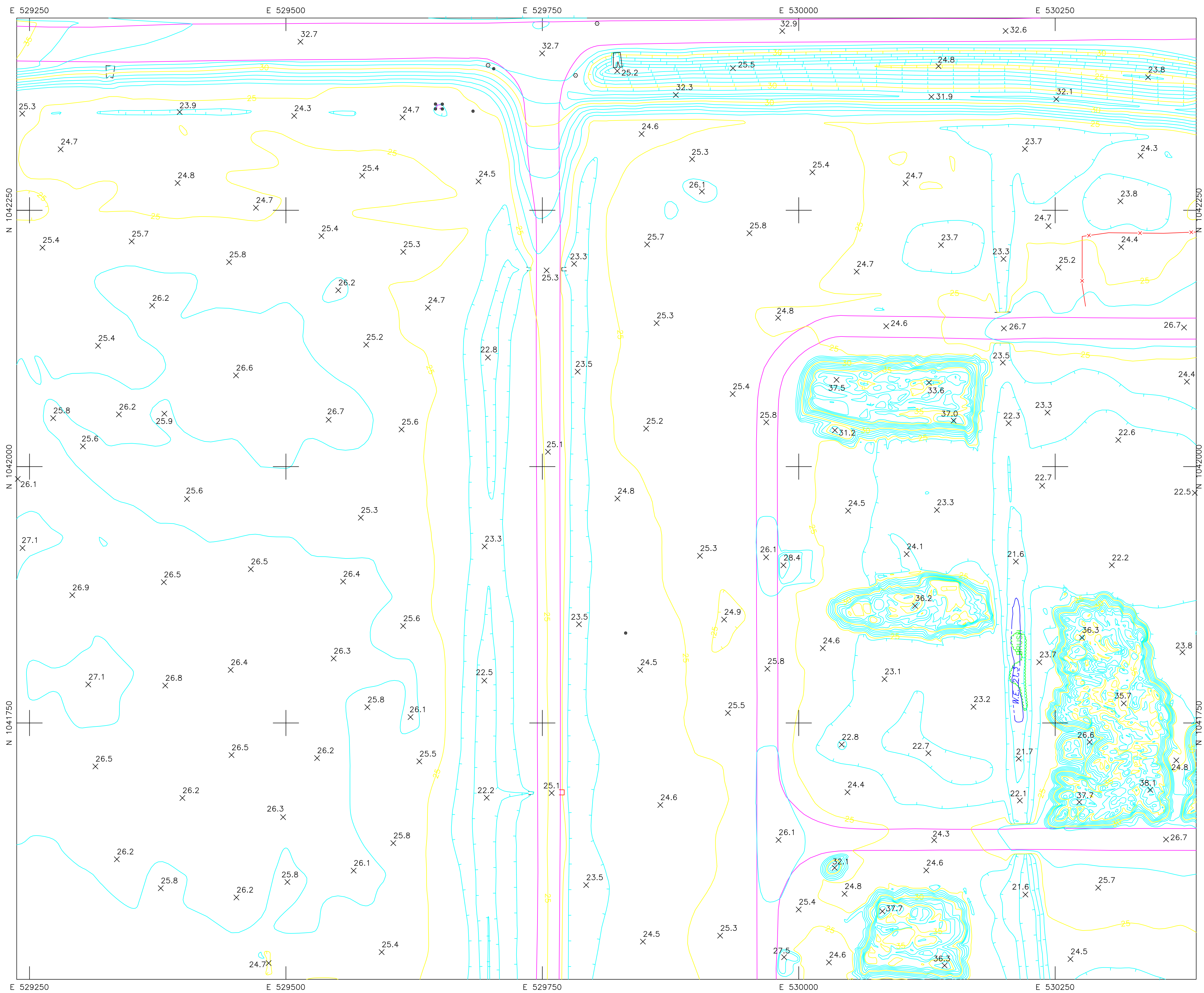
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SHEET INDEX

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

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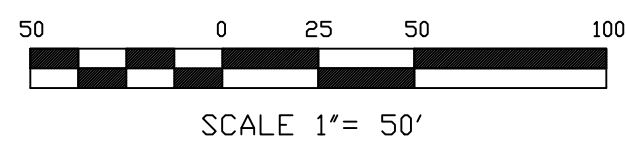
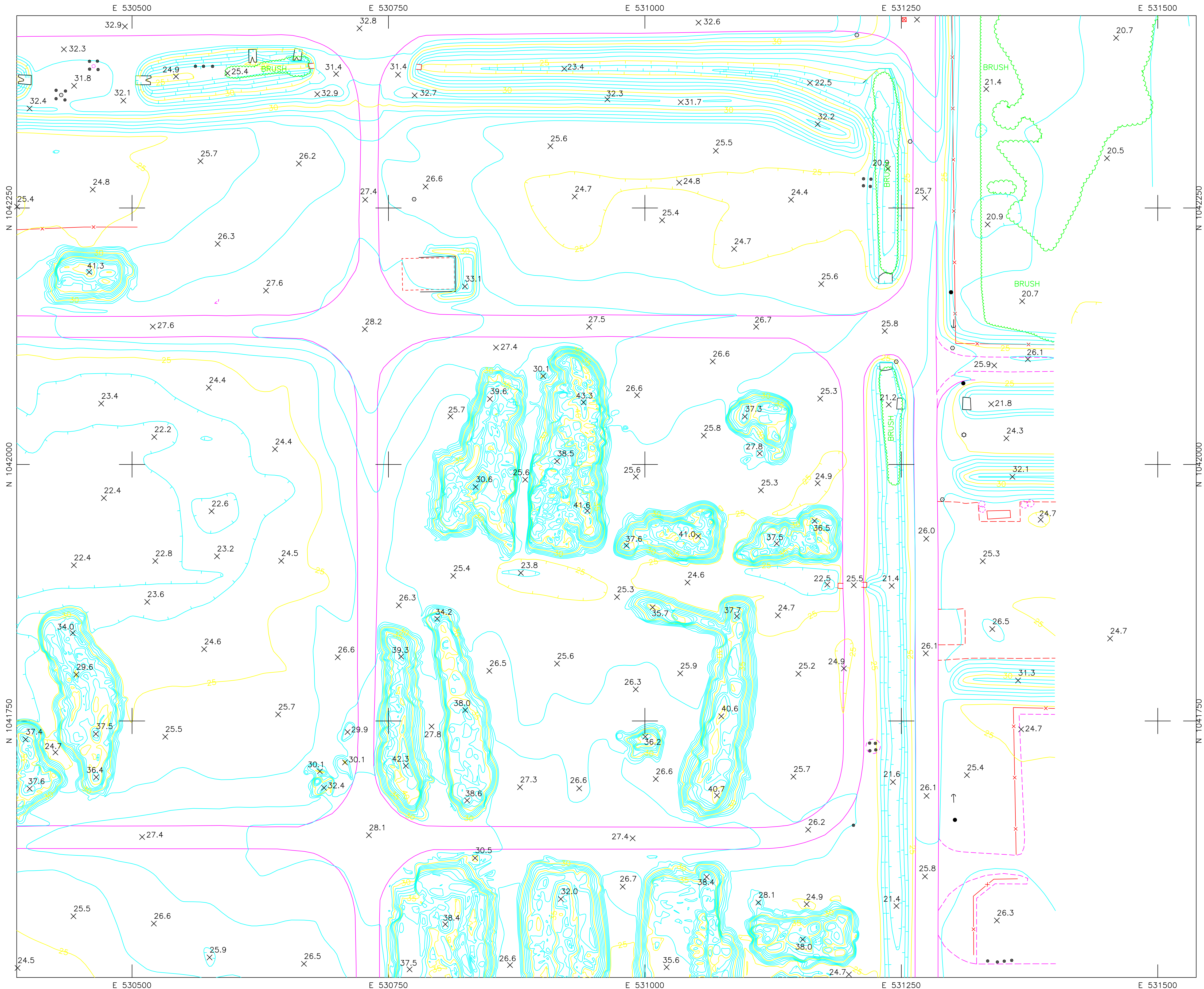
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1	2	3	4
5	6	7	8
9	10	11	12
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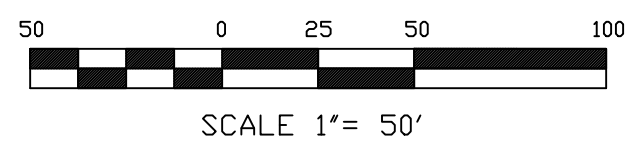
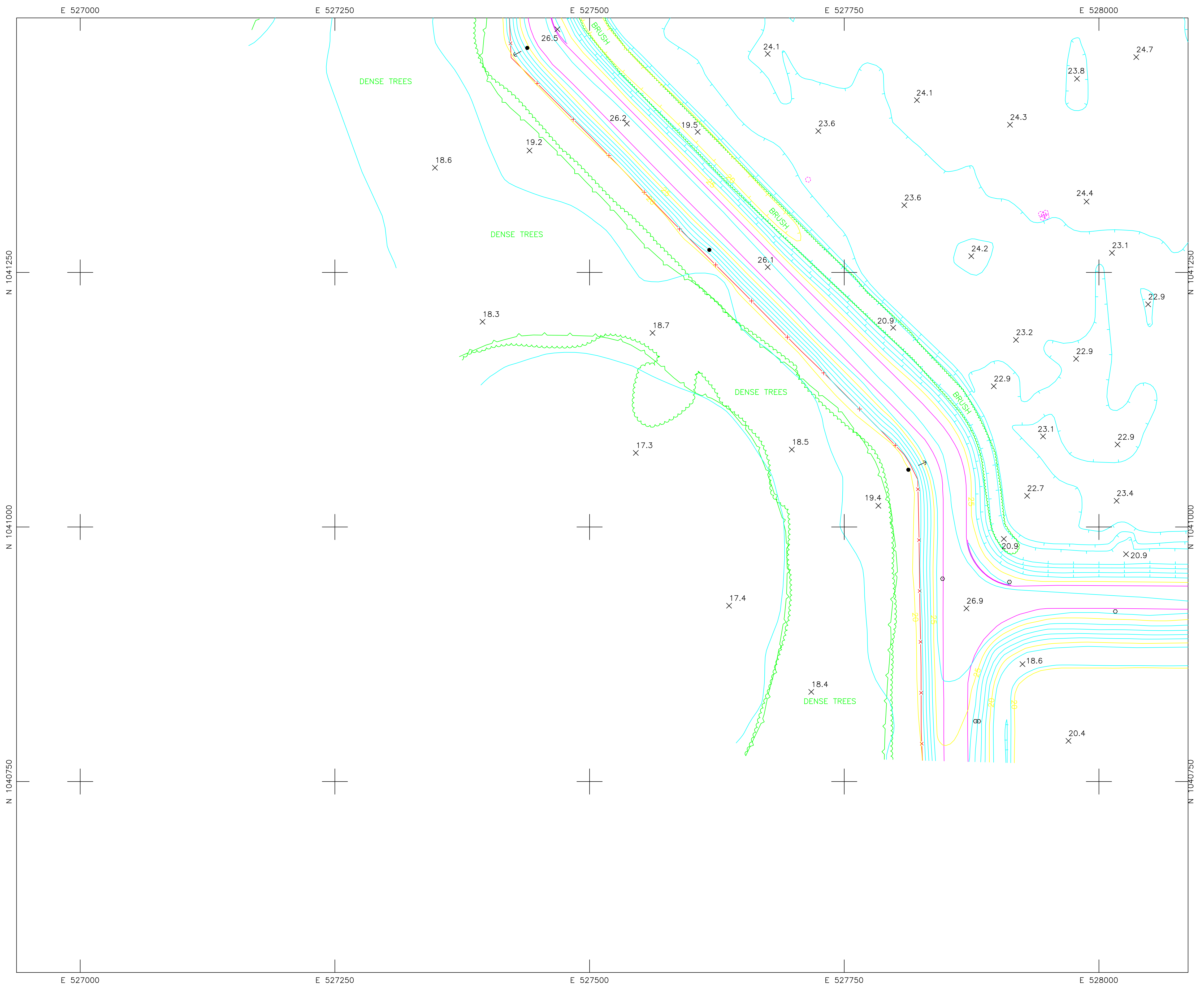
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5	6	7	8
9	10	11	12
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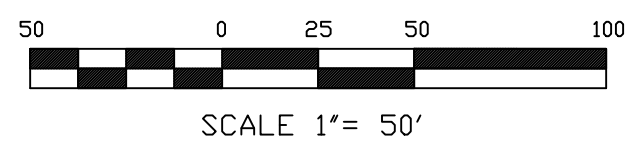
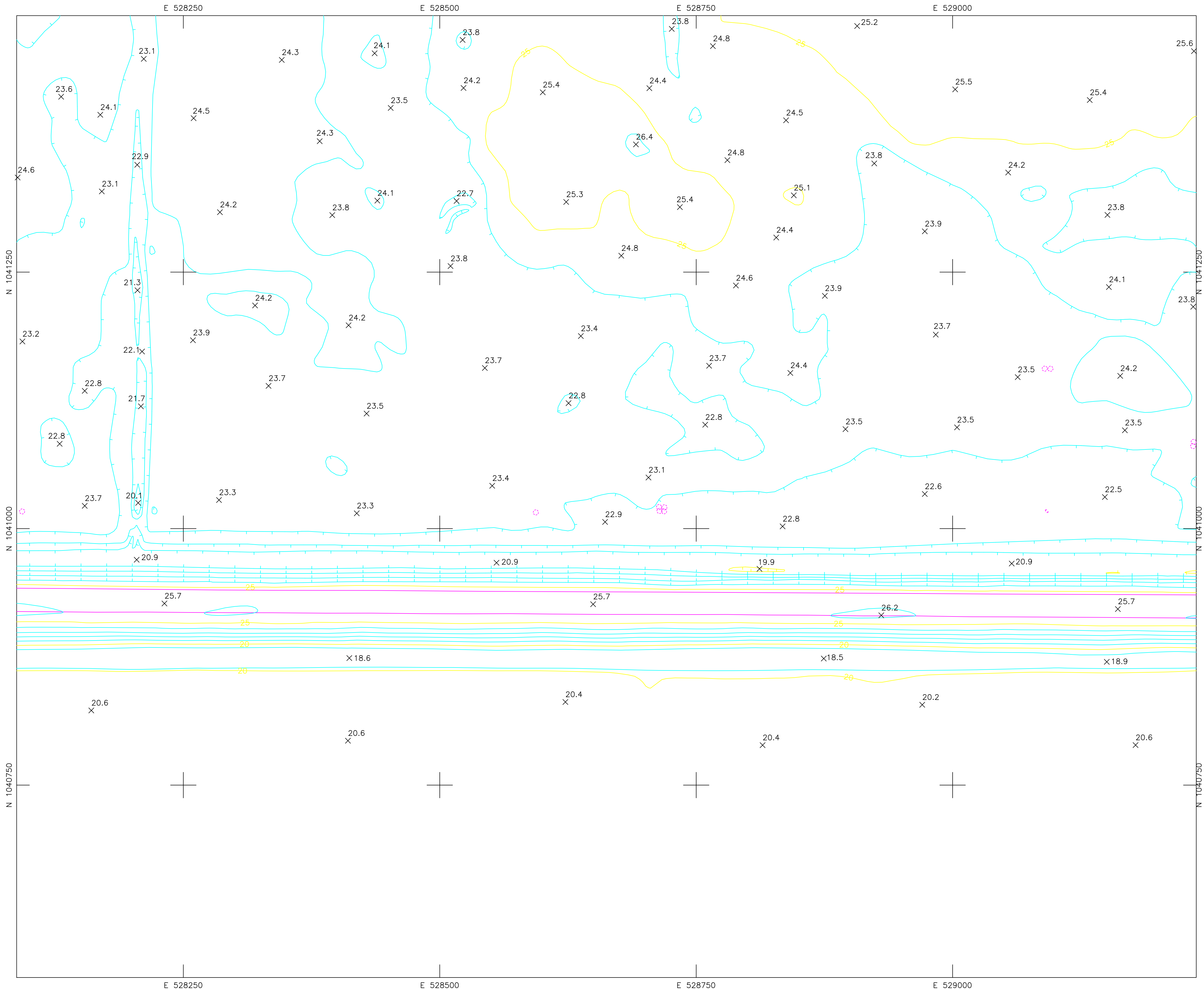
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5	6	7	8
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5	6	7	8
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13	14	15	16

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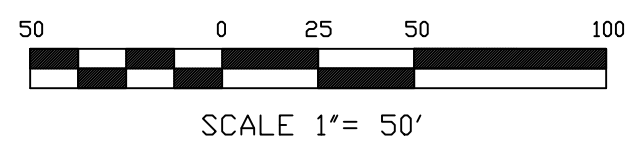
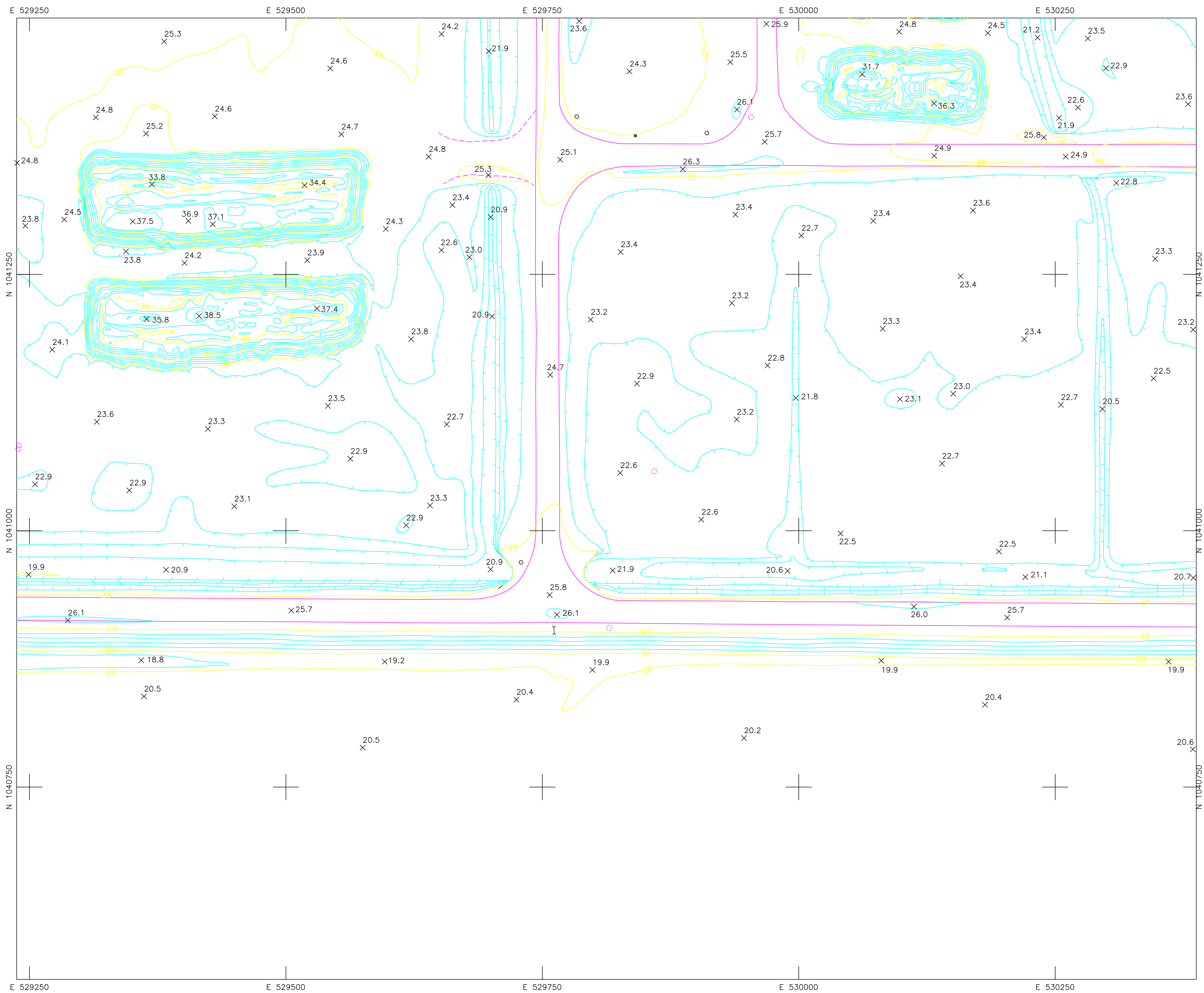
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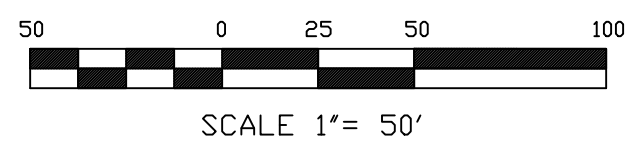
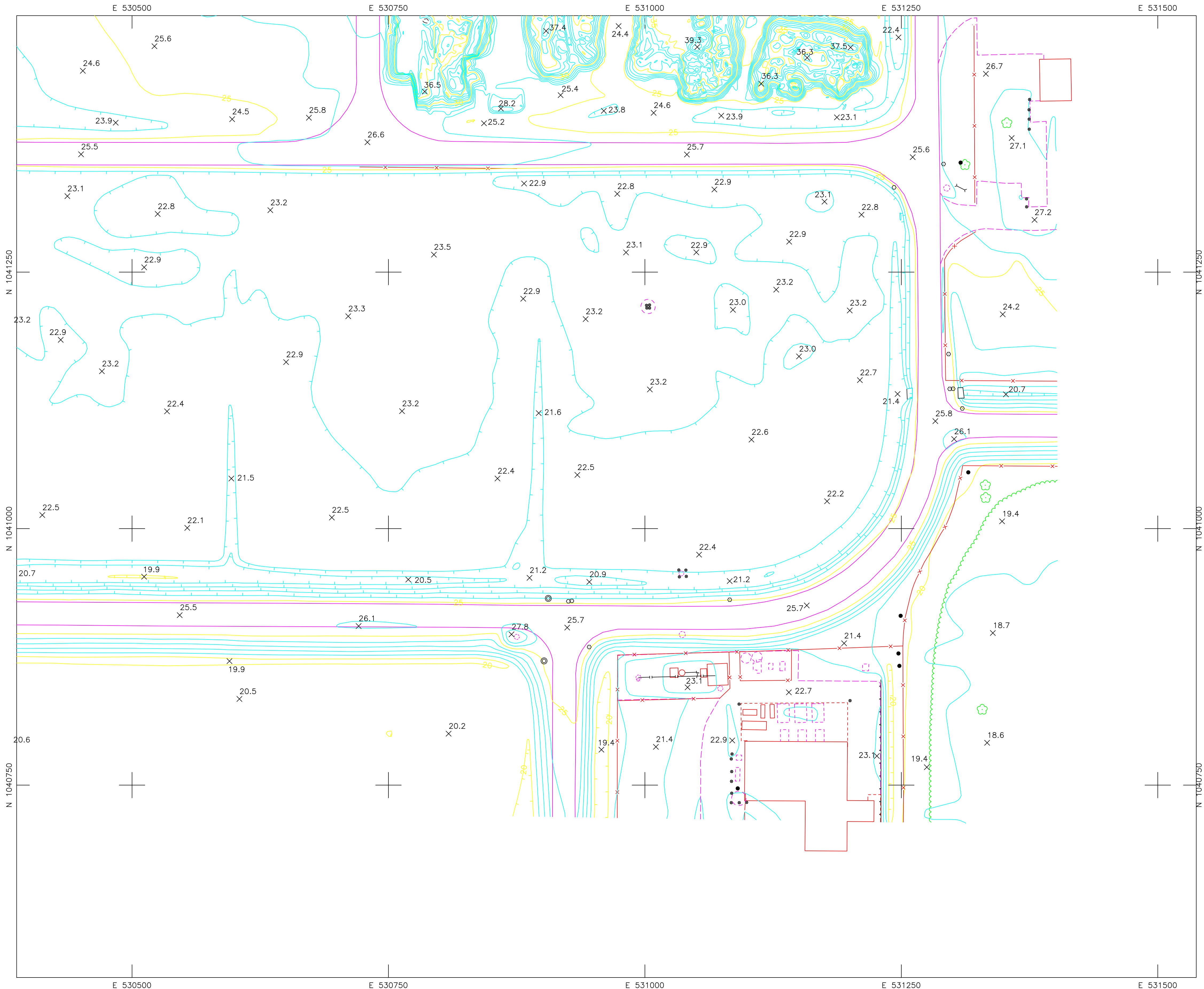
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16 of 16