2022 ST. JOSEPH PENINSULA BEACH RENOURISHMENT TOPOGRPAHIC & HYDROGRAPHIC SURVEY REPORT

Prepared For:

Florida Department of Environmental Protection
Bureau of Beaches and Coastal Systems
3900 Commonwealth Boulevard, Mail Station 300
Tallahassee, Florida 32399-3000

And

MRD Associates, Inc.

Prepared By:

Dewberry®

203 Aberdeen Parkway
Panama City, Florida 32405

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1. ABSTRACT

Dewberry Engineers Inc. was contracted by MRD Associates, Inc. to provide Surveying services for the 2023 St. Joseph Peninsula Beach Renourishment Topographic and Hydrographic Survey. Topographic and Hydrographic Surveys were performed between DEP Reference monuments R-85, through R-110, and at all ½ monuments in between, in Gulf County, Florida. The intended purpose of these surveys is to provide current elevation data, which shall be used to compare with historic elevation data (previous surveys performed by Dewberry Engineers Inc.), and for the future physical monitoring of the beach and offshore areas. This data is necessary in order to regularly observe and assess, with quantitative measurements, the performance of the project, any adverse effects which may have occurred, and the need for any adjustments, modifications, or mitigative responses to the project.

2. METHODOLOGY

2(a). CONTROL SURVEY:

Survey field crews found and verified existing 2nd order FDEP "A" monuments "51-83-B30", "51-83-B28", "51-83-B25", and "51-83-B21". In order to confirm FDEP provided coordinates and elevations were accurate, and to meet required accuracy standards, each monument was re-collected prior to the start of Topographic and Hydrographic Surveying. Spectra Precision Epoch 85 GNSS RTK GPS systems were used, together with the Florida Department of Transportation Permanent Reference Network, a GNSS Real Time Network (which provides internet based GPS data), to locate and re-collect said survey control. Once confirmed, these monuments were used as base station control for the duration of this project. Results of control survey, and pictures of each control monument and location are shown in Appendix 5 (Monument Information Report).

Spectra Precision Epoch 85 GNSS RTK GPS systems were used to locate and re-collect existing 3rd order FDEP Range Monuments. Survey field crews used the coordinates and elevations provided by the FDEP for each R-monument to located its position, and, when found, each R-monument was re-collected. The results of the Range Monument survey, and pictures of each monument and location are shown in Appendix 5 (Monument Information Report).

2(b). UPLAND SURVEY:

Once the Control Survey was completed, Upland Surveys began. Multiple survey field crews were used to conduct Upland Profile Surveys at each range monument, all using Spectra Precision Epoch 85 GNSS RTK GPS systems. Elevations were obtained at all grade breaks, and at intervals no greater than 10 feet, along each profile line. In order to maintain online tolerances, Topcon's "Stake to Line" program was used to ensure all points collected were near the profile azimuth. The upland portion of the profile lines commenced at the landward-most position, and extended seaward to the 5 foot contour line, or the vegetation line.

2(c). BEACH AND OFFSHORE SURVEY:

Beach and Offshore Surveys were performed simultaneously, or within 1 day of each other.

Offshore surveys ran along profile azimuths, from wading depth to a distance of 3,500 feet from each range monument. "Nemo", Dewberry's 22 foot aluminum hydrographic survey vessel, was used to perform offshore surveys. A Spectra Precision Epoch 85 GNSS RTK GPS system was used onboard the survey vessel to provide horizontal positions, and instantaneous tide corrections. Depths were obtained using a Ross 825B dual frequency sounder, together with a through-hull mounted transducer. The sounder was calibrated at the beginning of each day, and again checked at the end of each day, with an Odom Digibar Pro sound velocity probe. Measurements were observed at 1' intervals, starting at a depth of 1', and descending to the lowest observed depth each day, usually as deep as 35'. Hypack Hydrographic Surveying software, version 2019, was used as a data collection platform to record positions, elevations, tides and depths. Hypack's navigation software (survey map and left/right indicator) was used to maintain online tolerances.

Beach Surveys overlapped both the Upland Surveys and the Offshore Surveys. Multiple survey field crews were used to conduct Beach Surveys at each range monument, all using Spectra Precision Epoch 85 GNSS RTK GPS systems. Elevations were obtained at all grade breaks, and at intervals no greater than 10 feet, along each profile line. In order to maintain online tolerances, Topcon's "Stake to Line" program was used to ensure all points collected were near the profile azimuth.

2(d). DATA PROCESSING:

Field survey data was processed using Hypack Hydrographic Surveying software, version 2019, and AutoCAD Civil 3D Land Development Desktop. Offshore raw data was edited using Hypack's "Single Beam Editer", and merged with Beach and Upland points using Hypack's "Merge XYZ" program. Profile Plots, shown in Appendix 2, were created using Hypack's "Cross Sections and Volumes" program. Once raw offshore data was edited and merged with beach and upland data, XYZ files were exported from Hypack, reducing the number of points so that they could be legibly displayed on plan view sheets. (Spacing is at ~15 foot intervals). Survey Maps (Plan view), shown in Appendix 1, were then created showing the range lines, elevations, and 2019 aerial photographs, which were obtained from WWW.LABINS.ORG.

3. SURVEY REPORT

2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT TOPOGRAPHIC & HYDROGRAPHIC SURVEY

Project Information:

Title of Project: 2023 St. Joseph Peninsula Beach Renourishment Topographic & Hydrographic Survey

Prepared By: Dewberry Engineers Inc.

Prepared For: MRD Associates, Inc.

Submitted To: Florida Department of Environmental Protection

Date Prepared: July 28, 2023.

Dates of Survey: July 11 through 25, 2023.

Project Location: Surveys consist of the beach, nearshore, and offshore areas of Gulf County, Florida, from FDEP Range Monuments R-85, through R-110, and at all ½ monuments in between, in Gulf County, Florida.

Survey Notes:

1. Horizontal datum is referenced to Florida State Plane Coordinates, North zone, NAD 1983/2011, U.S. Survey Feet, per FDEP control monuments 51-83-B30, 51-83-B28, 51-83-B25, and 51-83-B21.

2. Vertical datum is referenced to North American Vertical Datum (NAVD) 1988, per FDEP control monuments 51-83-B30, 51-83-B28, 51-83-B25, and 51-83-B21.

3. This survey, map, and report is not valid without the signature and original raised seal of a Florida licensed Surveyor and Mapper. Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.

4. Source of information: FDEP Land Boundary Information System internet web site (www.labins.org); previous surveys by Dewberry Engineers, Inc.; aerial photographs obtained from Google earth; 2019 aerial photographs obtained from WWW.LABINS.ORG; field survey.

5. There may be additional restrictions not shown on this survey that may be found in the public records of Gulf County, Florida.

6. Upland Topographic Surveys were conducted with the use of Spectra Precision Epoch 85 GNSS RTK GPS systems.

7. Offshore Hydrographic Surveys were conducted with the use of Spectra Precision Epoch 85 GNSS RTK GPS system for horizontal positions and tide corrections, a Ross 825B dual frequency echosounder for depths (soundings), and Hypack Hydrographic software for data collection.

8. Aids to navigation have not been located by this survey.

9. The survey shown hereon represents the results of a field survey of the subject property as of the dates surveyed.

10. No attempt has been made by the undersigning surveyor to locate or determine Rights-of-way, easements, sections, or other property boundaries of any kind.

11. No title search, title opinion or abstract was performed by, nor provided to Dewberry, for the subject property. There may be deeds of record, unrecorded deeds, easements, encroachments, right-of-ways, building setbacks, restrictive covenants or other instruments which could affect the boundaries or use of the subject property.

12. No underground and/or subaqueous utilities, utility lines, foundations, or other underground structures have been located by Dewberry.

13. Upland and Beach Surveys were recorded in Field Book 278, and 335.

14. Offshore Surveys were recorded in Field Book AF2.

15. Survey Maps (plan views) are intended to be displayed at the following scales:

S1:	1”=2,000’
S2-S6:	1”=200’

16. This Survey Report is not full and complete without the Hydrographic & Topographic Survey, dated July 28, 2023, titled “2023 St. Joseph Peninsula Beach Renourishment Topographic & Hydrographic Survey Map”.

17. Appendices:

1. Survey Maps (Plan View)
2. Profile Plots
3. Ground Digital Photos
4. Federally Compliant Metadata
5. Monument Information Report
6. FDEP ASCII files
7. XYZ Data
8. Field Books/Pages

4. CERTIFICATION

This survey was conducted in accordance with the *Bureau of Beaches and Coastal Systems (BBCS), Monitoring Standards for Beach Erosion Control Projects, March, 2004 and the BBCS Statewide Coastal Monitoring Program, Regional Data Collection and Processing Plan, March, 2004.*

This survey meets the *BBCS* technical specifications for “Beach Profile Topographic Surveying”, and “Offshore Profile Surveying”, and is in accordance with Chapter 5J-17.050, F.A.C. Minimum Technical Standards, established by the Florida Board of Professional Surveyors and Mappers pursuant to Chapter 472 of the Florida Statutes. All work was conducted under the direct supervision and responsible charge of a Professional Surveyor and Mapper who is registered in the State of Florida. Signed and sealed survey maps are provided in **Appendix 1**. The location of all published control, as well as control found and used for survey purposes, is presented in **Appendix 5**. Federally compliant metadata for the applicable data sets is provided in **Appendix 4**.

Vertical data is referenced to North American Vertical Datum of 1988 (NAVD 88). Horizontal data is referenced to the Florida State Plane Coordinate System, North Zone, North American Datum of 1983 (NAD 83). The profile data is presented in xyz format relative to NAVD 88 in **Appendix 7**. Copies of all field books and pages are provided in **Appendix 8.**

I hereby certify that this Topographic and Hydrographic Survey is true and correct to the best of my knowledge and belief, and was performed under my direct supervision and direction. I further certify that it meets the minimum technical standards set forth in Chapter 5J-17.050, adopted by the Florida Board of Professional Surveyors and Mappers, pursuant to Section 472.027 of the Florida Statutes.

Frederick C. Rankin, P.S.M. Date
Professional Surveyor and Mapper
Florida License Number LS 6585
Dewberry
203 Aberdeen Parkway
Panama City, Fl 32405

APPENDIX 1

Survey Maps (Plan View)

Topographic & Hydrographic Survey

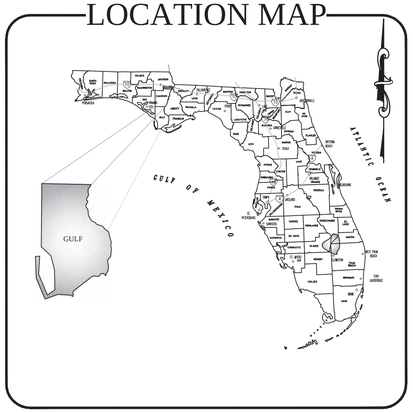
2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
TOPOGRAPHIC & HYDROGRAPHIC SURVEY MAP

SYMBOLS & ABBREVIATIONS:

NAD = NORTH AMERICAN DATUM (1983)
NAVD = NORTH AMERICAN VERTICAL DATUM (1988)
No. = NUMBER
# = NUMBER
L.B. = LICENSED BUSINESS
L.S. = LICENSED SURVEYOR
P.S.M. = PROFESSIONAL SURVEYOR AND MAPPER
ELEV. = ELEVATION
D.N.R. = DEPARTMENT OF NATURAL RESOURCES
INC. = INCORPORATED
FDEP = FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
x21.2 = SPOT ELEVATION AT "X"
R-1 = RANGE MONUMENT
ID = IDENTIFICATION
CM = CONCRETE MONUMENT
MON. = MONUMENT
M.DATE = MONUMENT DATE
M.ELEV. = MONUMENT ELEVATION
AZ = AZIMUTH

INDEX OF SHEETS

LOCATION MAP



DEP GIVEN CONTROL					
MON ID	M. DATE	NORTHING	EASTING	AZ	M. ELEV.
R-62	FEB1993	290528.670	1679280.270	255.0	30.59
R-63A	JUN1983	288593.210	1679890.570	255.0	33.76
R-64	MAR1997	288494.600	1679976.360	255.0	28.23
R-65	MAR1997	287499.720	1680142.660	255.0	16.93
R-66A	JUN1983	286401.680	1680295.980	255.0	35.73
R-67	JUN1983	285319.940	1680232.050	255.0	24.16
R-68A	JUN1983	284303.130	1680450.720	255.0	14.08
R-69A	JUN1983	283258.310	1680697.260	255.0	4.18
R-70	JUN1983	282218.240	1681041.530	255.0	5.30
R-71	JUN1983	281164.360	1681153.220	255.0	10.19
R-72A	JUN1983	280135.240	1681451.120	255.0	4.10
R-73	MAR1997	279140.360	1681805.390	255.0	4.13
R-74	JUN1983	278133.660	1682180.160	255.0	14.56
R-75	MAR1997	277076.850	1682253.940	255.0	19.23
R-76	MAR1997	276045.690	1682463.710	255.0	10.73
R-77	FEB1993	275020.490	1682696.990	255.0	13.31
R-78	FEB1993	273984.590	1682913.740	255.0	21.89
R-79	FEB1993	272961.050	1683150.610	255.0	19.87
R-80A	JUN1983	271983.120	1683485.440	255.0	21.83
R-81	MAR1997	271028.970	1683952.940	255.0	9.33
R-82A	JUN1983	270004.850	1684197.940	255.0	18.59
R-83	MAR1997	269235.190	1684387.960	250.0	14.73
R-84A	JUN1983	268125.260	1684836.350	250.0	15.82
R-85A	JUN1983	267183.310	1685165.420	250.0	16.09
R-86	MAR1997	266166.470	1685425.040	250.0	22.69
R-87A	JUN1983	265243.550	1685843.120	250.0	20.07
R-88A	JUN1983	264261.210	1686167.210	250.0	17.33
R-89A	JUN1983	263287.270	1686498.980	250.0	21.80
R-90A	JUN1983	262295.820	1686796.700	250.0	17.42
R-91A	JUN1983	261347.820	1687169.720	250.0	20.32
R-92	MAR1997	260416.700	1687604.080	250.0	8.99
R-93	MAR1997	259475.870	1687925.940	250.0	12.12
R-94	MAR1997	258535.550	1688321.600	250.0	13.32
R-95	MAR1997	257542.850	1688704.770	250.0	9.52
R-96	MAR1997	256533.480	1688983.100	250.0	8.62
R-97	FEB1993	255682.110	1689530.880	250.0	12.95
R-98A	JUN1983	254743.200	1689836.240	250.0	13.59
R-99A	APR1983	253846.400	1690312.090	250.0	15.90
R-100	MAR1997	253037.800	1690856.340	240.0	16.62
R-101	MAR1997	252057.590	1691193.570	240.0	15.62
R-102	MAR1997	251208.440	1691639.240	230.0	7.62
R-103	MAR1997	250318.730	1692177.880	230.0	8.92
R-104A	JUN1983	249464.860	1692813.270	240.0	11.05
R-105	MAR1997	248627.760	1693397.030	240.0	5.12
R-106	MAR1997	247693.110	1693835.910	240.0	3.82
R-107	MAR1997	246855.250	1694423.110	240.0	5.92
R-108	MAR1997	246037.550	1695015.990	245.0	5.02
R-109	MAR1997	245157.080	1695566.850	245.0	6.62
R-110	MAR1997	244534.430	1696525.390	245.0	6.72

SURVEYOR'S NOTES:

1. HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO FLORIDA STATE PLANE COORDINATES, NORTH ZONE, NAD 1983/90, U.S. SURVEY FEET, PER FDEP CONTROL MONUMENTS 51-83-B30, 51-83-B28, 51-83-B25, AND 51-83-B21.

2. VERTICAL DATUM SHOWN HEREON IS REFERENCED TO NORTH AMERICAN VERTICAL DATUM (NAVD) 1988, PER FDEP CONTROL MONUMENTS 51-83-B30, 51-83-B28, 51-83-B25, AND 51-83-B21.

3. THIS SURVEY, MAP, AND REPORT IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

4. SOURCE OF INFORMATION: F.D.E.P. LAND BOUNDARY INFORMATION SYSTEM INTERNET WEB SITE (WWW.LABINS.ORG); PREVIOUS SURVEYS BY DEWBERRY ENGINEERS INC.; OVERALL AERIAL PHOTOGRAPH SHOWN ON SHEET S1 OBTAINED FROM GOOGLE EARTH; 2019 AERIAL PHOTOGRAPHS SHOWN ON SHEETS S2-S6 OBTAINED FROM THE F.D.E.P. LAND BOUNDARY INFORMATION SYSTEMS WEBSITE; FIELD SURVEY.

5. THERE MAY BE ADDITIONAL RESTRICTIONS NOT SHOWN ON THIS SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF BAY COUNTY, FLORIDA.

6. UPLAND TOPOGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS.

7. OFFSHORE HYDROGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS FOR HORIZONTAL POSITIONS AND TIDE CORRECTIONS, A ROSS 825B DUAL FREQUENCY ECHOSOUNDER FOR DEPTHS (SOUNDINGS), AND HYPACK HYDROGRAPHIC SOFTWARE FOR DATA COLLECTION.

8. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.

9. THIS SURVEY MAP IS NOT FULL AND COMPLETE WITHOUT THE SURVEY REPORT, DATED JULY 28, 2023, TITLED "2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT TOPOGRAPHIC & HYDROGRAPHIC SURVEY REPORT".

GRAPHIC SCALE
0 1,000 2,000 4,000
(IN FEET)
1 inch = 2,000ft.

REVISIONS

NO.	BY	DATE

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY
2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

FIELD BOOK/PAGE: N.A.
FIELD DATE: 07/25/2023
DRAWN BY: FCR
DRAWING DATE: 07/28/2023
SHEET SCALE: 1" = 2,000'
APPROVED BY: JG

Dewberry
DEWBERRY ENGINEERS INC.
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PANAMA CITY, FLORIDA 32405
PHONE: 850.872.0444 FAX: 850.522.1011
WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723
SHEET NO. 1 OF 6

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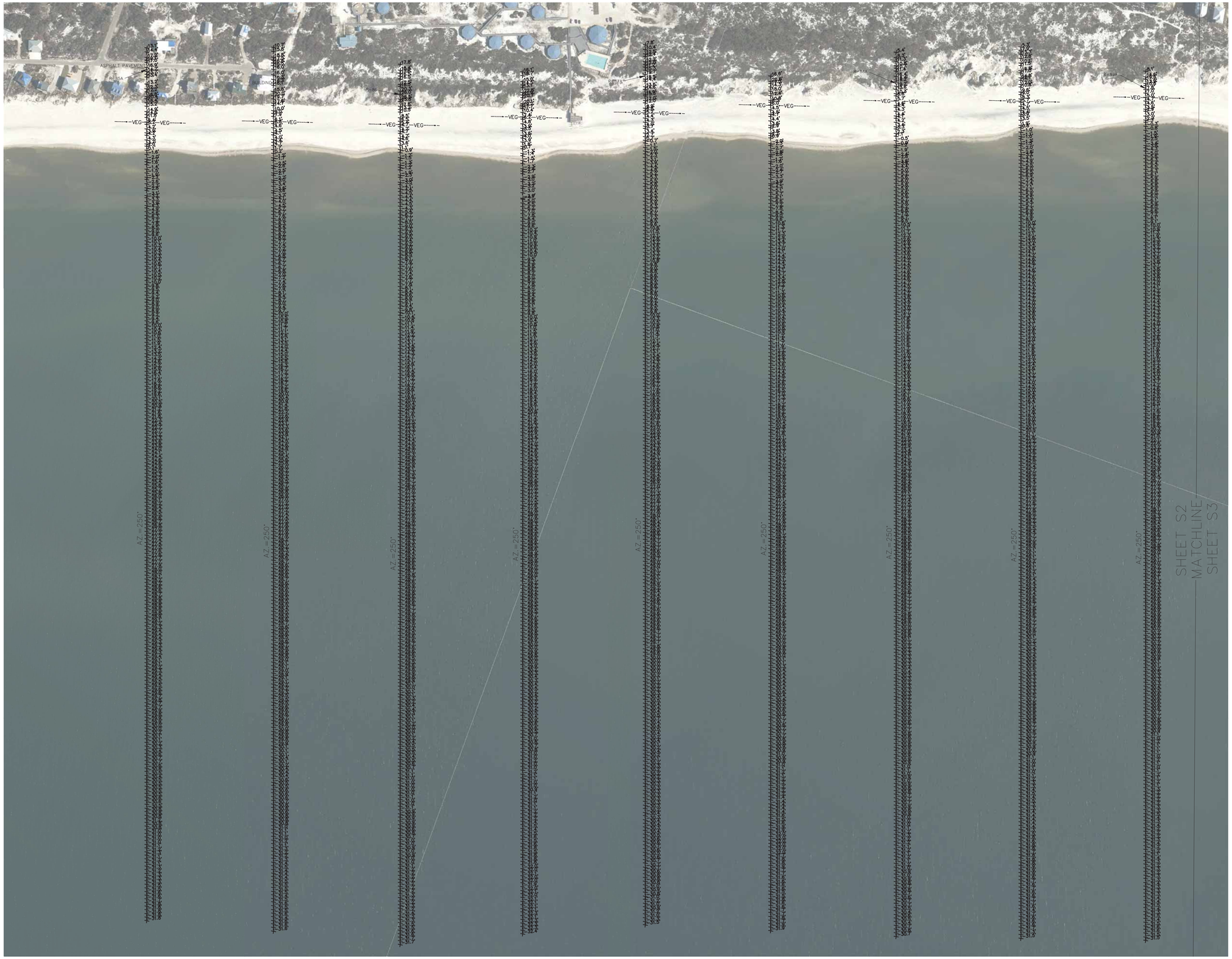

INDEX OF SHEETS

GRAPHIC SCALE

0 100 200 400

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S NOTES:

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2. OFFSHORE HYDROGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS FOR HORIZONTAL POSITIONS AND TIDE CORRECTIONS, A ROSS 825B DUAL FREQUENCY ECHOSOUNDER FOR DEPTHS (SOUNDINGS), AND HYPACK HYDROGRAPHIC SOFTWARE FOR DATA COLLECTION.
3. SOURCE OF INFORMATION: AERIAL PHOTOGRAPHS SHOWN HEREON WERE OBTAINED FROM F.D.E.P. LAND BOUNDARY INFORMATION SYSTEM INTERNET WEB SITE (WWW.LABINS.ORG); PREVIOUS SURVEYS BY DEWBERRY ENGINEERS INC.; FIELD SURVEY.
4. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.
5. DATE OF OFFSHORE PROFILE SURVEY: JULY 18, 2023
6. DATE OF UPLAND PROFILE SURVEY: JULY 18, 2023

NO.	REVISIONS	BY	DATE

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY

2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

FIELD BOOK/PAGE: N.A.
FIELD DATE: 07/25/2023
DRAWN BY: FCR
DRAWING DATE: 07/28/2023
SHEET SCALE: 1" = 200'
APPROVED BY: JG

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WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723

SHEET NO. 2 OF 6

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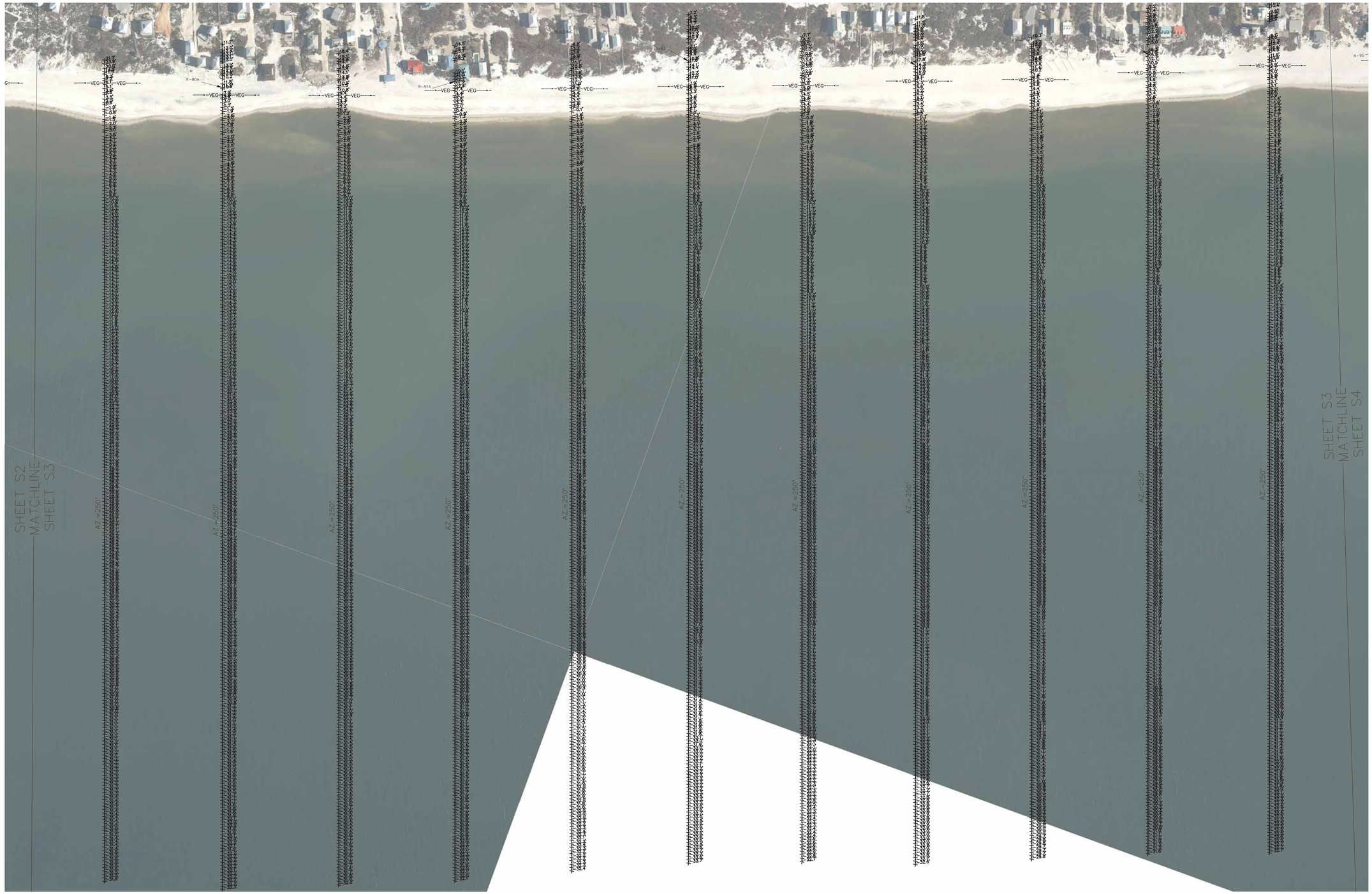

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GRAPHIC SCALE

0 100 200 400

(IN FEET)
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4. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.
5. DATE OF OFFSHORE PROFILE SURVEY: JULY 18, 2023
6. DATE OF UPLAND PROFILE SURVEY: R-89-5 THROUGH R-92 = JULY 18, 2023
   R-92-5 THROUGH R-94-5 = JULY 19, 2023

NO.	REVISIONS	BY	DATE

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY

2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

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FIELD DATE:	07/25/2023
DRAWN BY:	FCR
DRAWING DATE:	07/28/2023
SHEET SCALE:	1" = 200'
APPROVED BY:	JG

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WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723

SHEET NO. 3 OF 6

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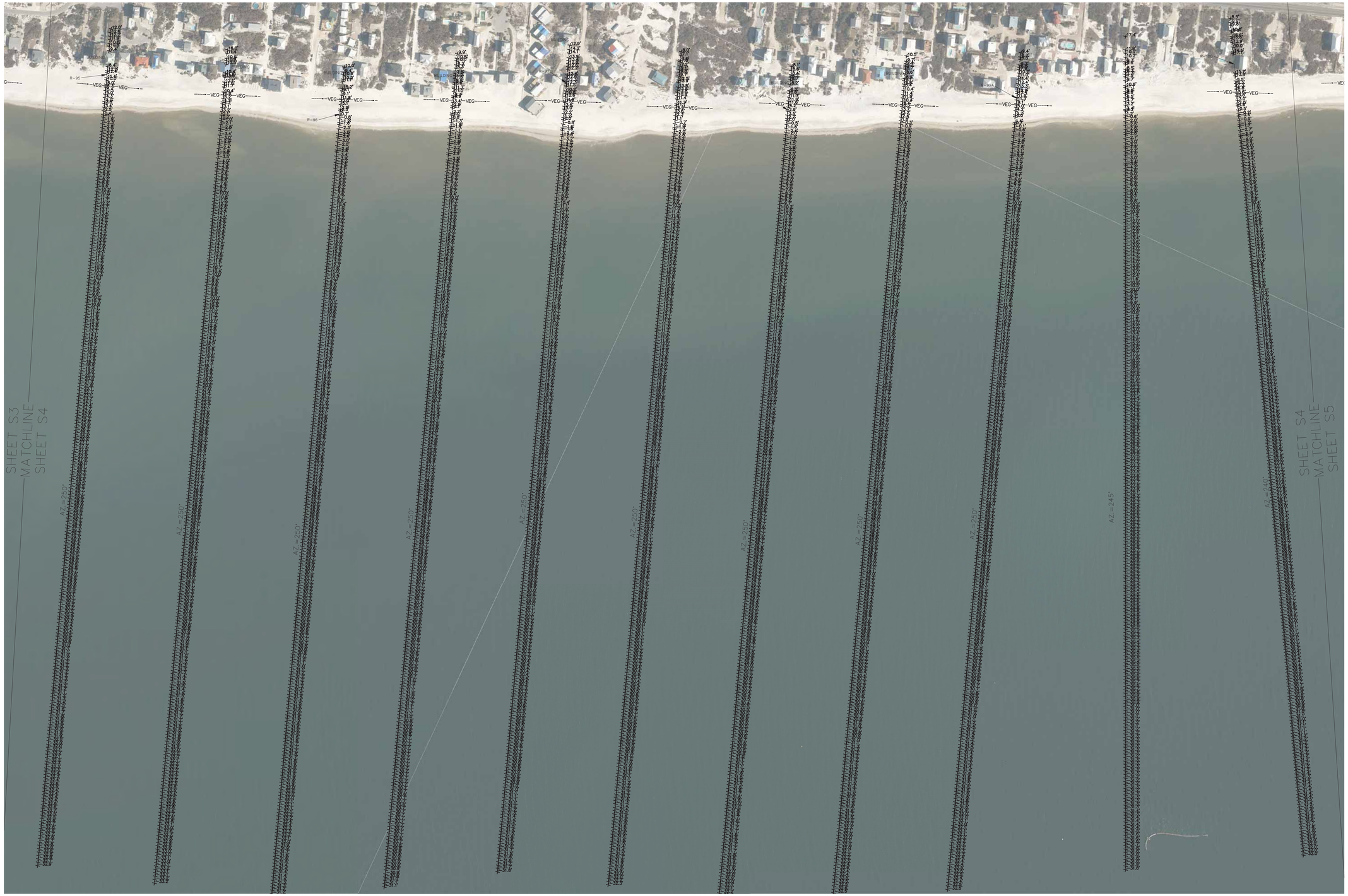

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GRAPHIC SCALE

0 100 200 400

(IN FEET)
1 inch = 200 ft.

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4. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.
5. DATE OF OFFSHORE PROFILE SURVEY: R-95 THROUGH R-95-5 = JULY 18, 2023
   R-96 THROUGH R-100 = JULY 19, 2023
6. DATE OF UPLAND PROFILE SURVEY: JULY 19, 2023

NO.	REVISIONS	BY	DATE

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY

2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

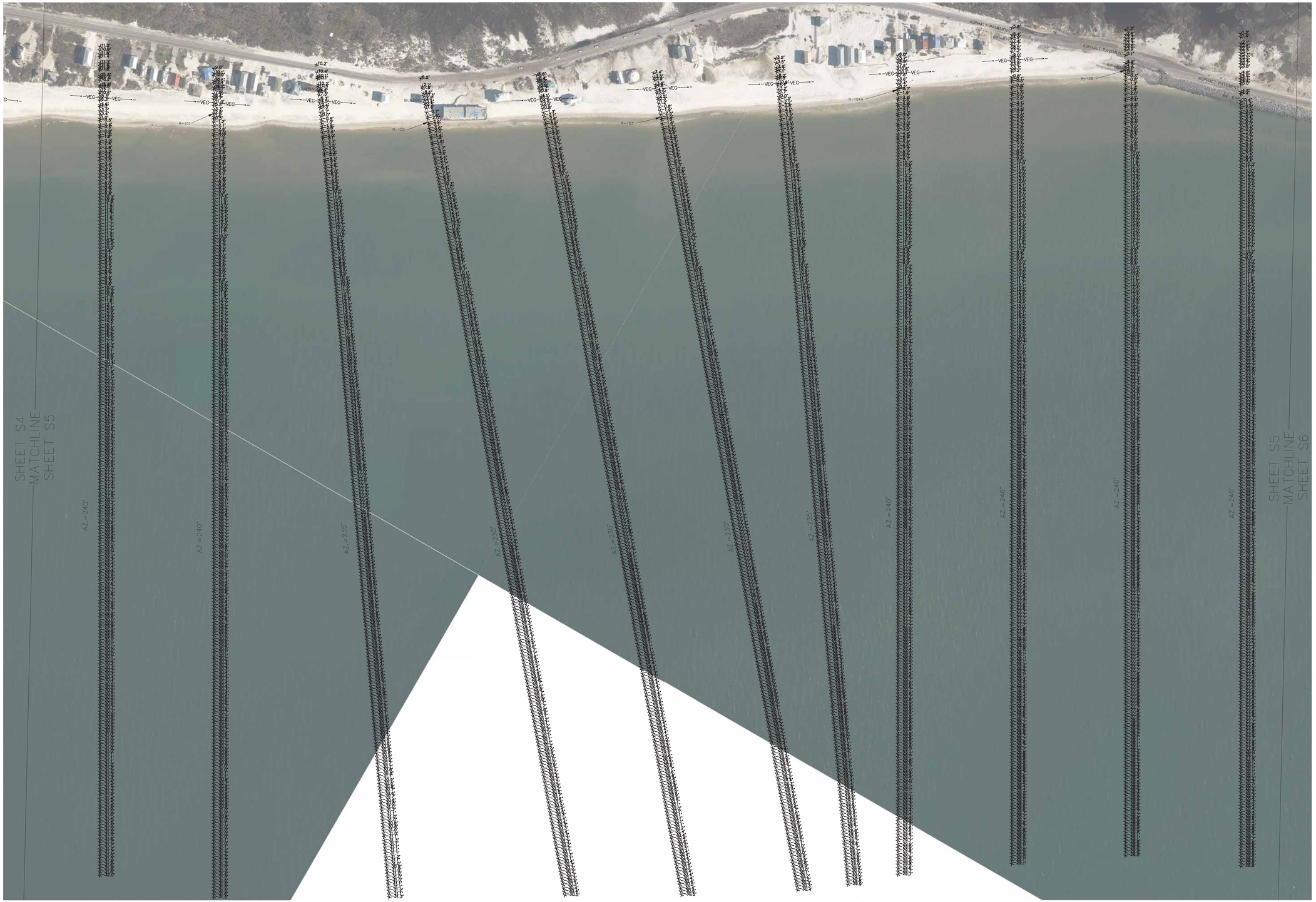
FIELD BOOK/PAGE:	N.A.
FIELD DATE:	07/25/2023
DRAWN BY:	FCR
DRAWING DATE:	07/28/2023
SHEET SCALE:	1" = 200'
APPROVED BY:	JG

Dewberry
DEWBERRY ENGINEERS INC.
203 ABERDEEN PARKWAY
PANAMA CITY, FLORIDA 32405
PHONE: 850.215.0446 FAX: 850.522.1011
WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723

SHEET NO.
4
OF
6

July 27, 2023 (13:55:24 EST)
DRAWING NAME: C:\SURVEY PROJECTS (TEMPORARY)\50165723_MRD_ST. JOSEPH PENINSULA SURVEYS 2023\SURVEY DWG\50165723-HT.DWG S(4) BY: ERANKIN



INDEX OF SHEETS

GRAPHIC SCALE

0 100 200 400

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S NOTES:

1. UPLAND TOPOGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS.
2. OFFSHORE HYDROGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS FOR HORIZONTAL POSITIONS AND TIDE CORRECTIONS, A ROSS 825B DUAL FREQUENCY ECHOSOUNDER FOR DEPTHS (SOUNDINGS), AND HYPACK HYDROGRAPHIC SOFTWARE FOR DATA COLLECTION.
3. SOURCE OF INFORMATION: AERIAL PHOTOGRAPHS SHOWN HEREON WERE OBTAINED FROM F.D.E.P. LAND BOUNDARY INFORMATION SYSTEM INTERNET WEB SITE (WWW.LABINS.ORG); PREVIOUS SURVEYS BY DEWBERRY; FIELD SURVEY.
4. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.
5. DATE OF OFFSHORE PROFILE SURVEY: JULY 19, 2023
6. DATE OF UPLAND PROFILE SURVEY: R-100-5 THROUGH R-105 = JULY 19, 2023
   R-105-5 = JULY 20, 2023

NO.	REVISIONS	BY	DATE

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY

2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

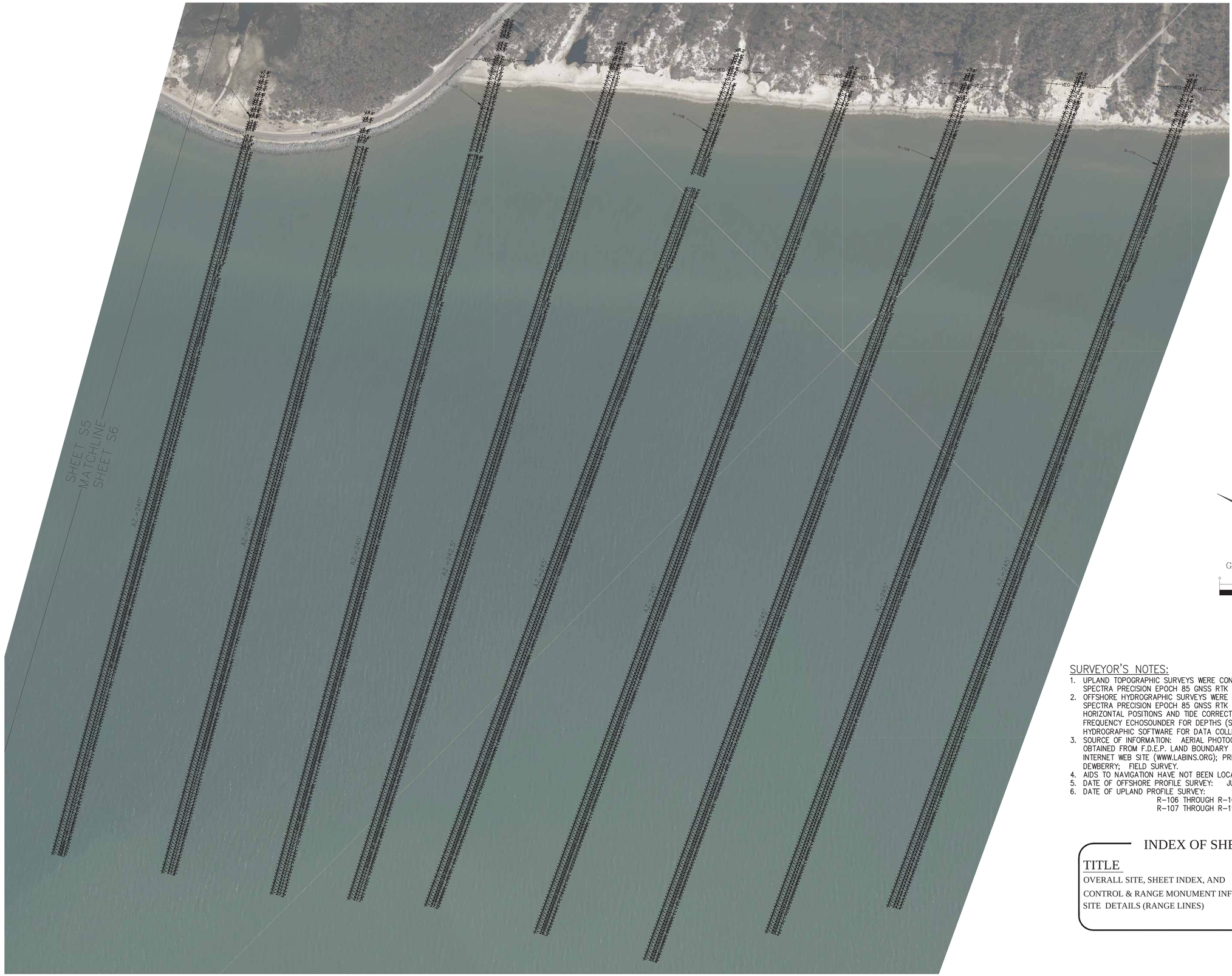
FIELD BOOK/PAGE: N.A.
FIELD DATE: 07/25/2023
DRAWN BY: FCR
DRAWING DATE: 07/28/2023
SHEET SCALE: 1" = 200'
APPROVED BY: JG

Dewberry
DEWBERRY ENGINEERS INC.
203 ABERDEEN PARKWAY
PANAMA CITY, FLORIDA 32405
PHONE: 850.522.2464 FAX: 850.522.1011
WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723

SHEET NO. 5 OF 6

July 27, 2023 (13:55:24 EST)
DRAWING NAME: C:\SURVEY PROJECTS (TEMPORARY)\50165723_JWRD_ST. JOSEPH PENINSULA SURVEYS 2023\SURVEY DWG\50165723-HT.DWG S(5) BY: ERANKIN



GRAPHIC SCALE

0 100 200 400

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S NOTES:

1. UPLAND TOPOGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS.
2. OFFSHORE HYDROGRAPHIC SURVEYS WERE CONDUCTED WITH THE USE OF SPECTRA PRECISION EPOCH 85 GNSS RTK GPS SYSTEMS FOR HORIZONTAL POSITIONS AND TIDE CORRECTIONS, A ROSS 825B DUAL FREQUENCY ECHOSOUNDER FOR DEPTHS (SOUNDINGS), AND HYPACK HYDROGRAPHIC SOFTWARE FOR DATA COLLECTION.
3. SOURCE OF INFORMATION: AERIAL PHOTOGRAPHS SHOWN HEREON WERE OBTAINED FROM F.D.E.P. LAND BOUNDARY INFORMATION SYSTEM INTERNET WEB SITE (WWW.LABINS.ORG); PREVIOUS SURVEYS BY DEWBERRY; FIELD SURVEY.
4. AIDS TO NAVIGATION HAVE NOT BEEN LOCATED BY THIS SURVEY.
5. DATE OF OFFSHORE PROFILE SURVEY: JULY 19, 2023
6. DATE OF UPLAND PROFILE SURVEY:
   R-106 THROUGH R-106-5 = JULY 13, 2023
   R-107 THROUGH R-110 = JULY 20, 2023

INDEX OF SHEETS

NO.	BY	DATE
REVISIONS		

FREDERICK C. RANKIN, P.S.M. DATE SIGNED
PROFESSIONAL SURVEYOR & MAPPER No. LS6565

TOPOGRAPHIC & TOPOGRAPHIC SURVEY

2023 ST. JOSEPH PENINSULA
BEACH RENOURISHMENT
GULF COUNTY, FLORIDA.

FIELD BOOK/PAGE: N.A.
FIELD DATE: 07/25/2023
DRAWN BY: FCR
DRAWING DATE: 07/28/2023
SHEET SCALE: 1" = 200'
APPROVED BY: JG

Dewberry
DEWBERRY ENGINEERS INC.
203 ABERDEEN PARKWAY
PANAMA CITY, FLORIDA 32405
PHONE: 850.215.2446 FAX: 850.522.1011
WWW.DEWBERRY.COM
CERTIFICATE OF AUTHORIZATION
NO. L.B. 8011

PROJECT NO. 50165723

SHEET NO. 6 OF 6

July 27, 2023 (13:55:24 EST)
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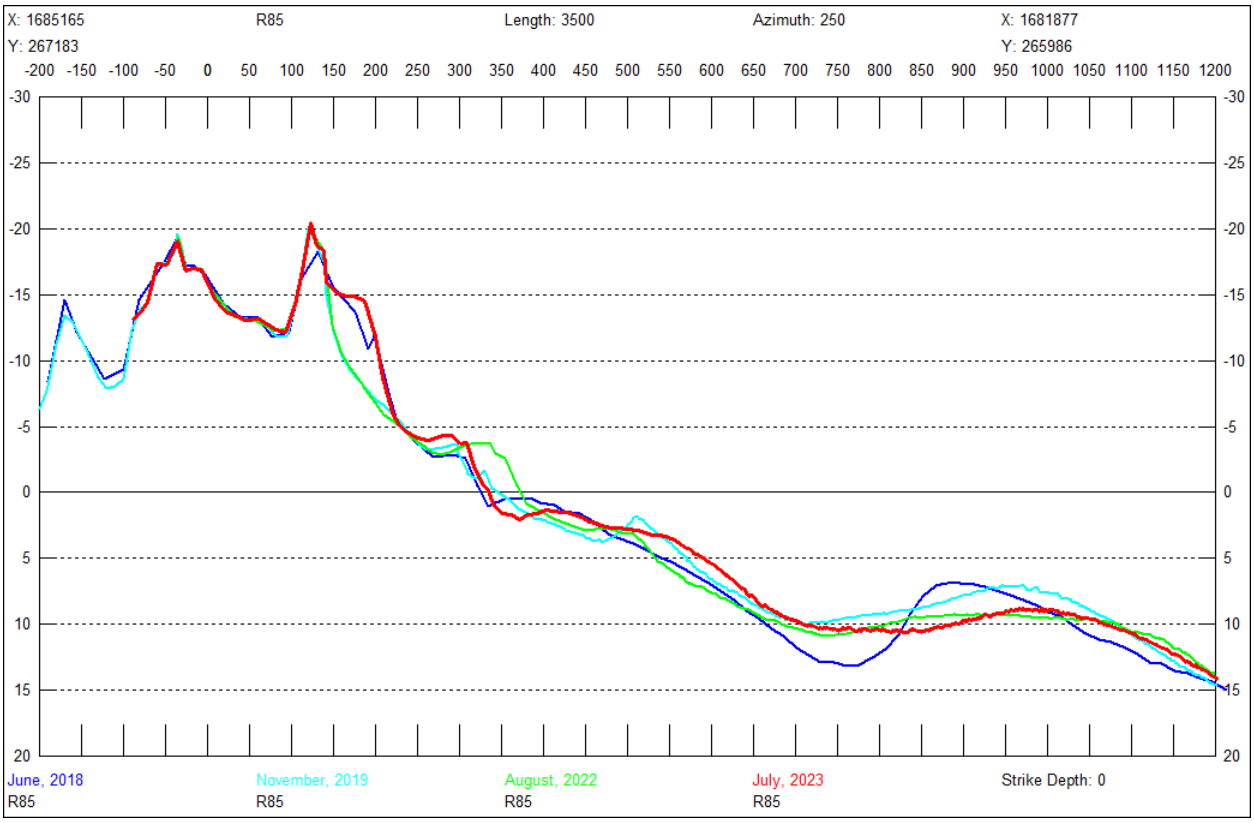
APPENDIX 2

Profile Plots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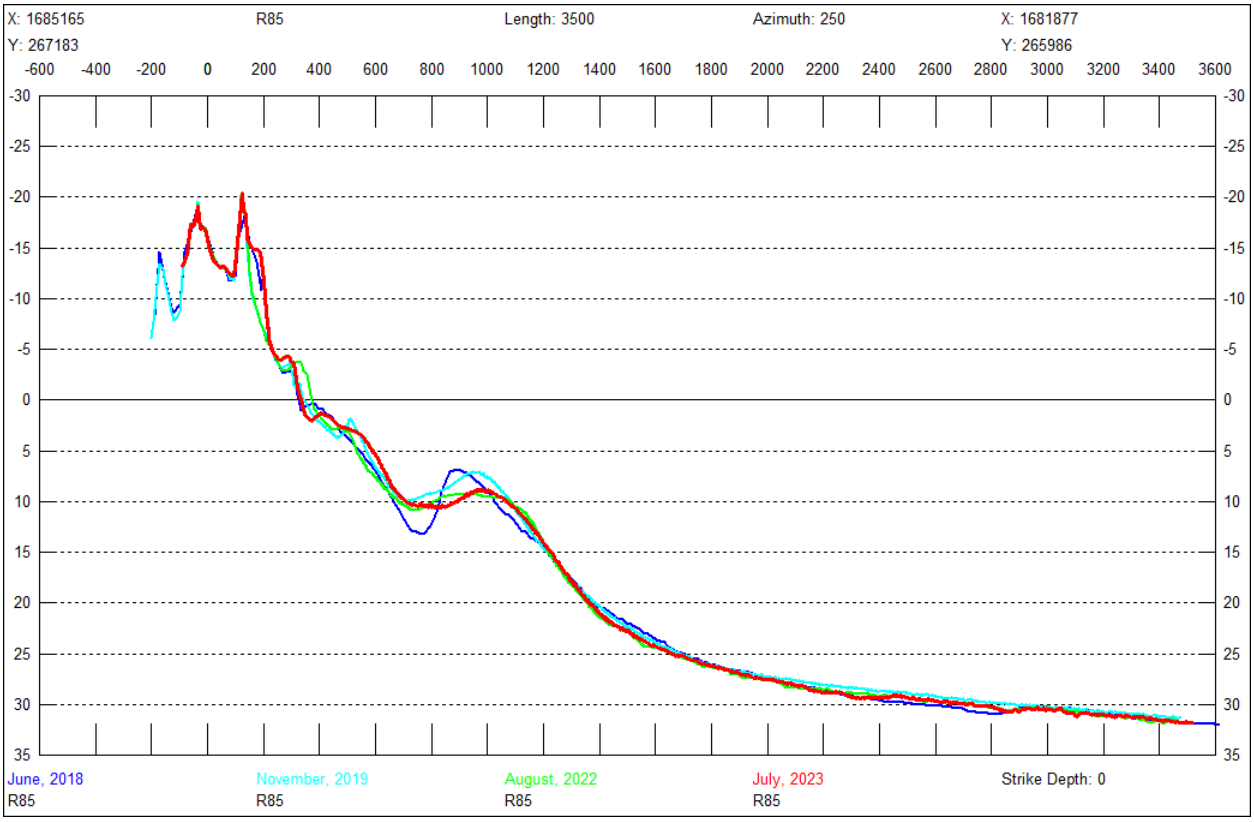
R85
November, 2019
R85
August, 2022
R85
July, 2023
R85
Strike Depth: 0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November, 2019
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R85
July, 2023
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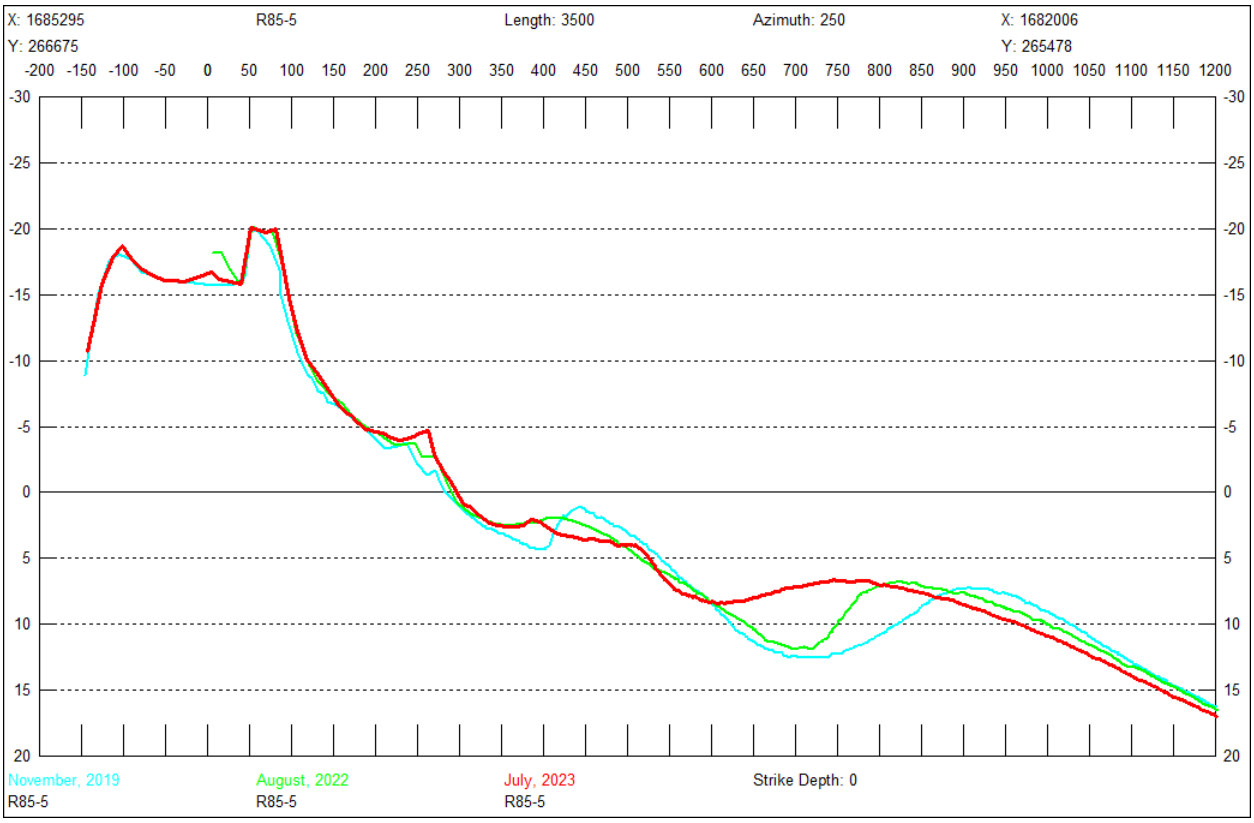
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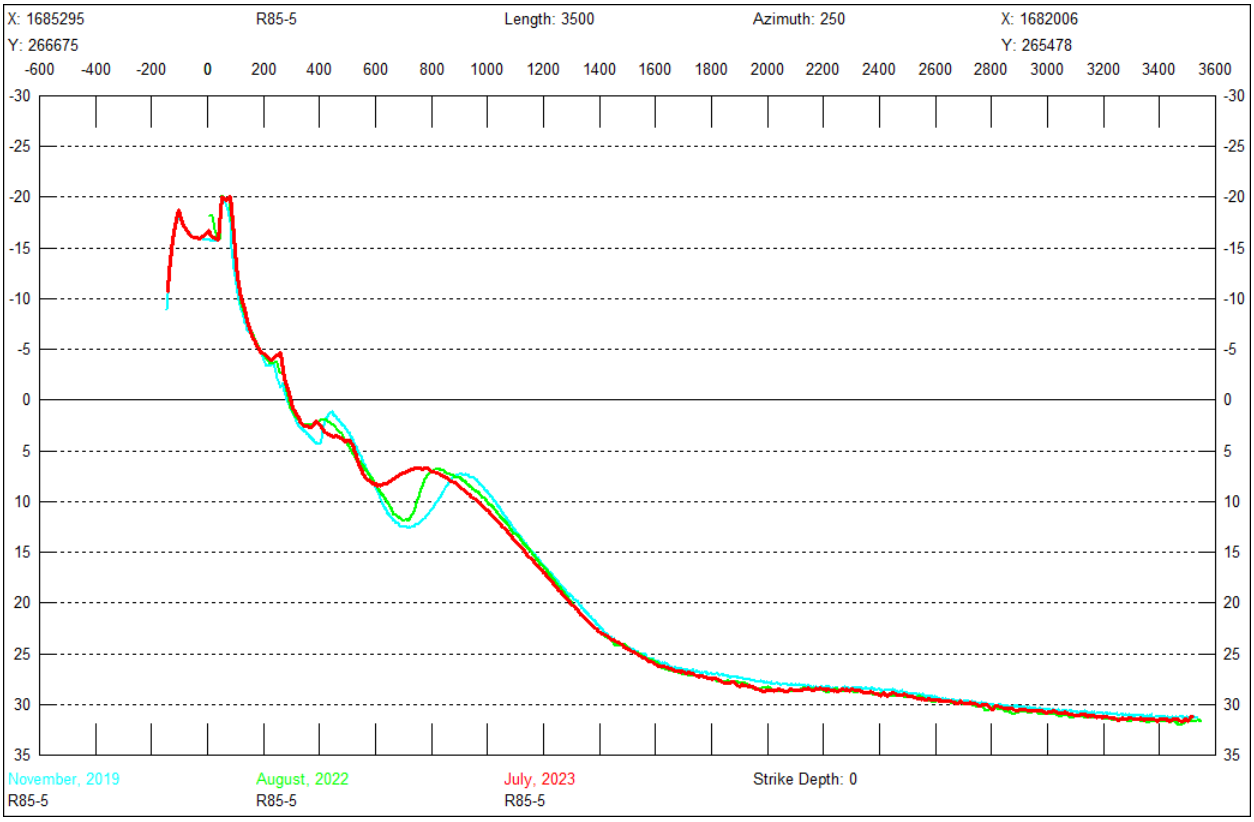
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R85-5
August, 2022
R85-5
July, 2023
R85-5
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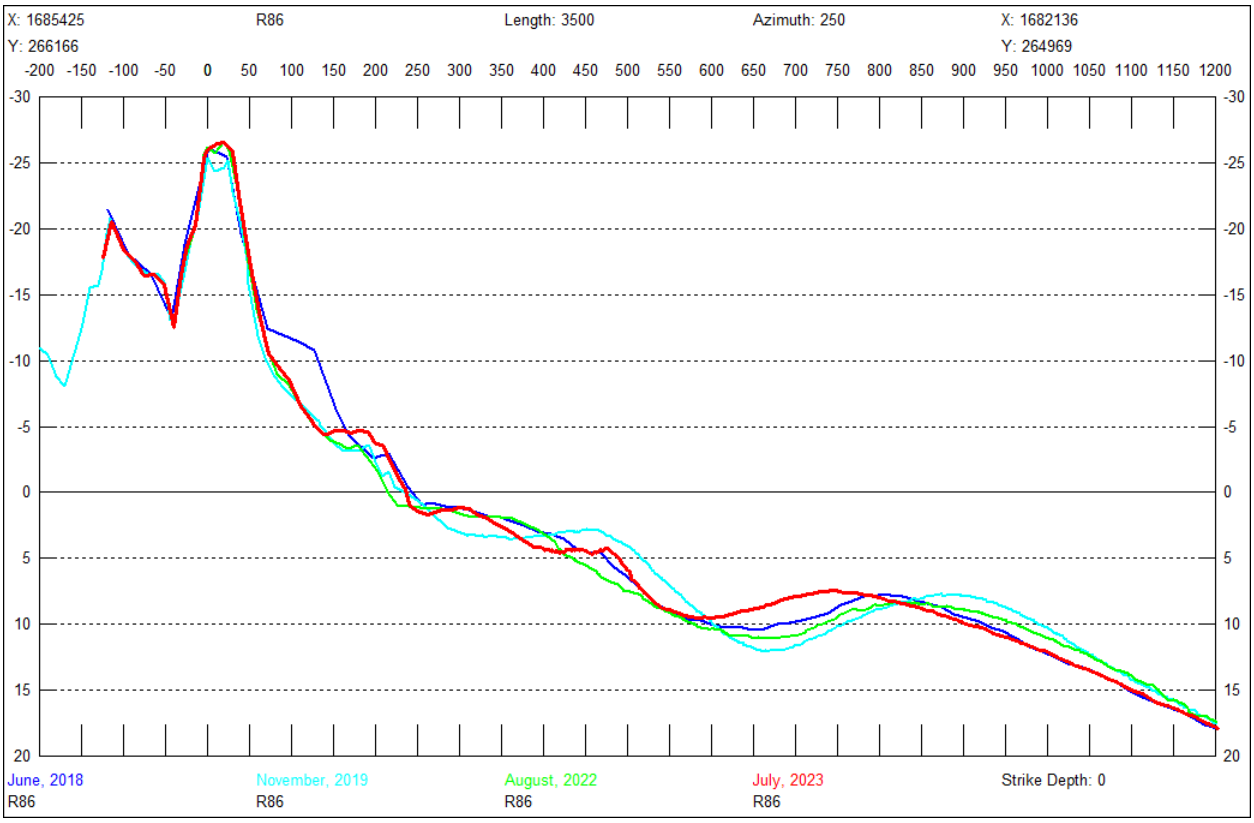
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November, 2019
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August, 2022
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July, 2023
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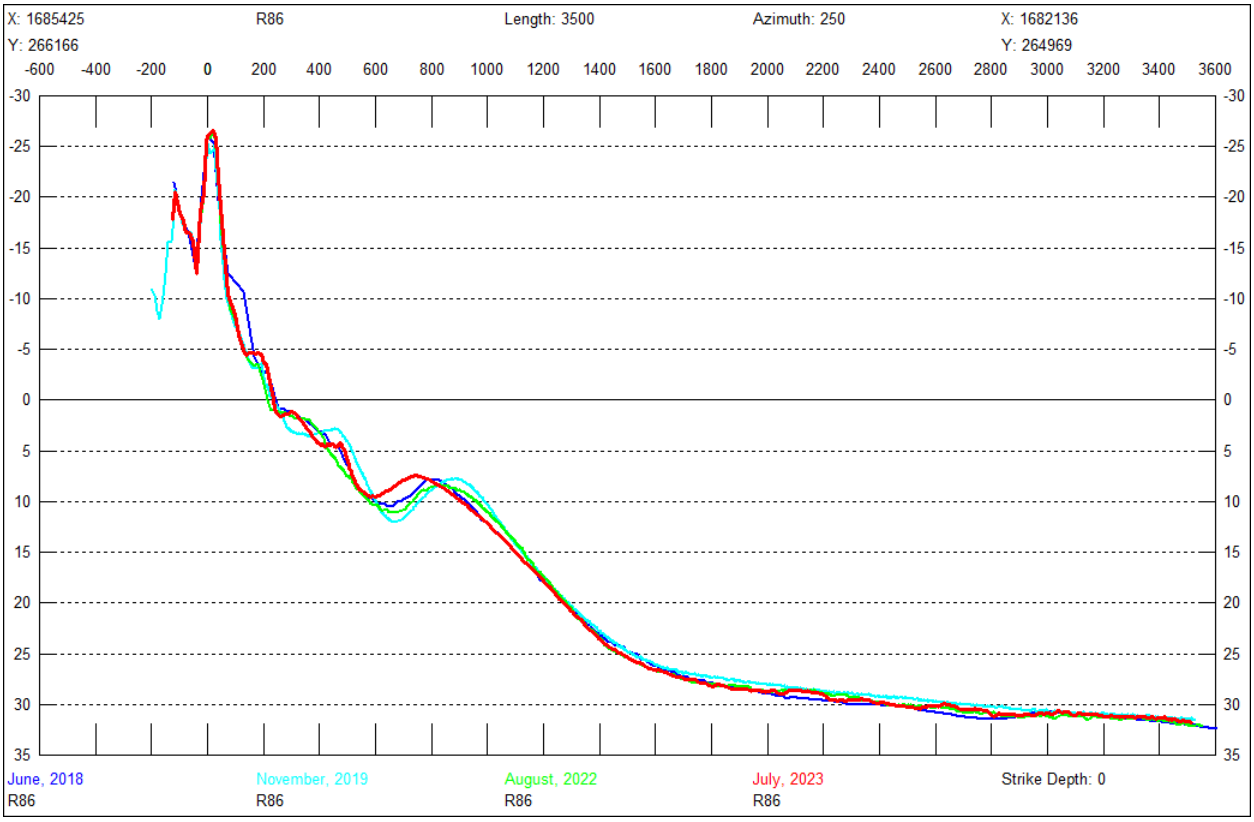
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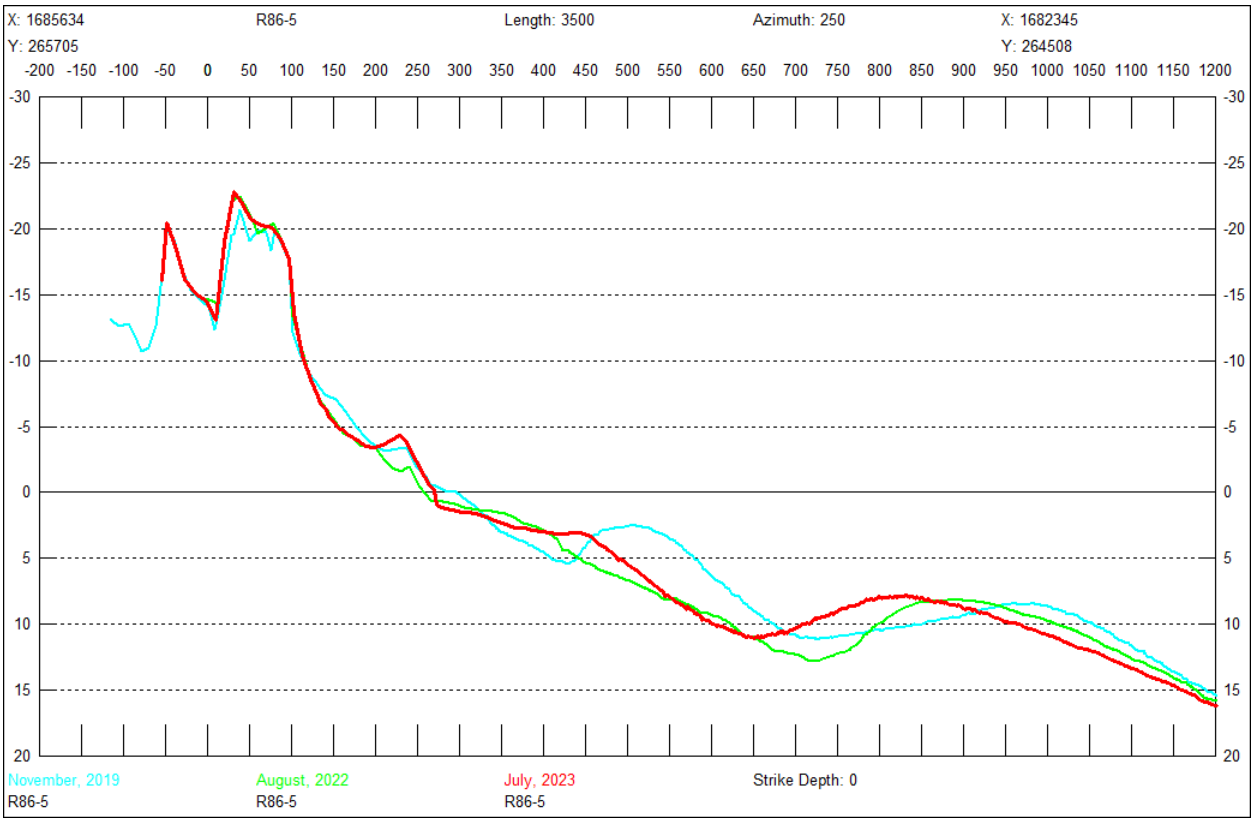
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August, 2022
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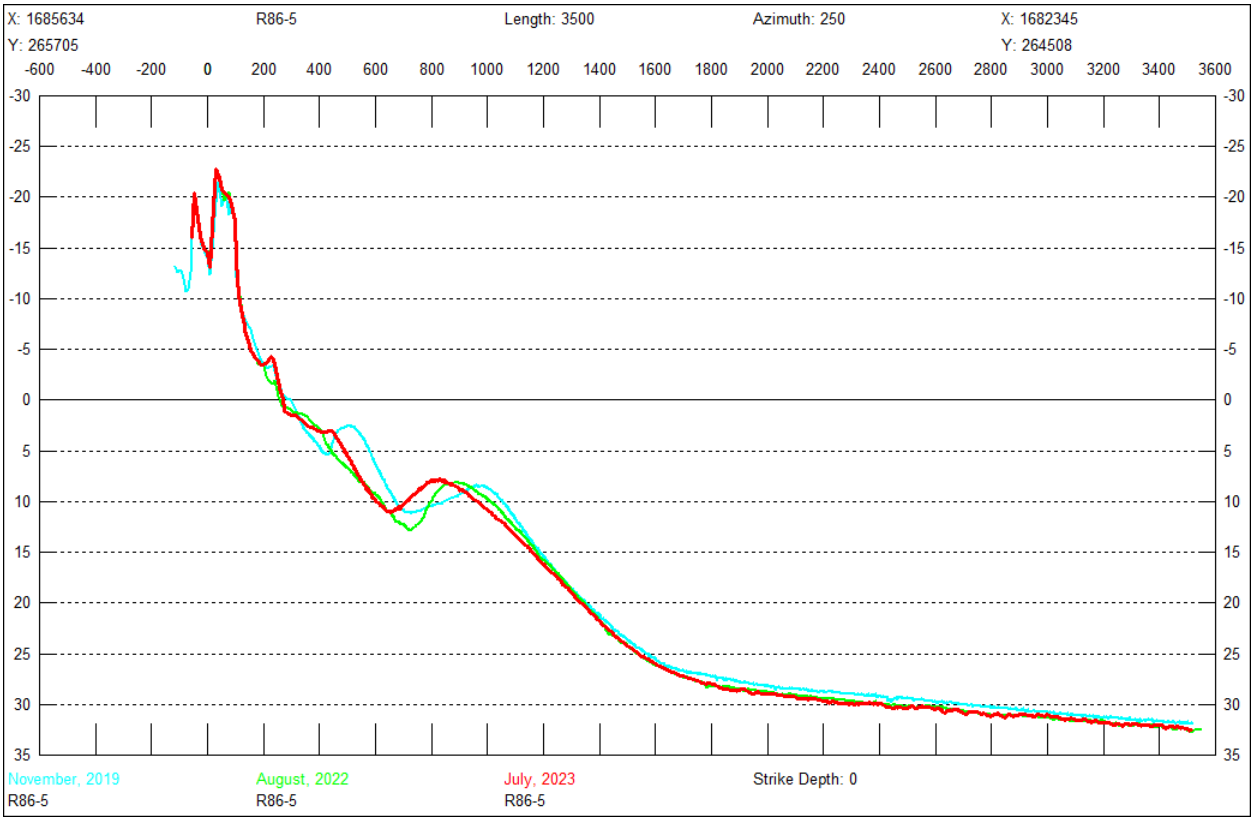
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R86-5
August, 2022
R86-5
July, 2023
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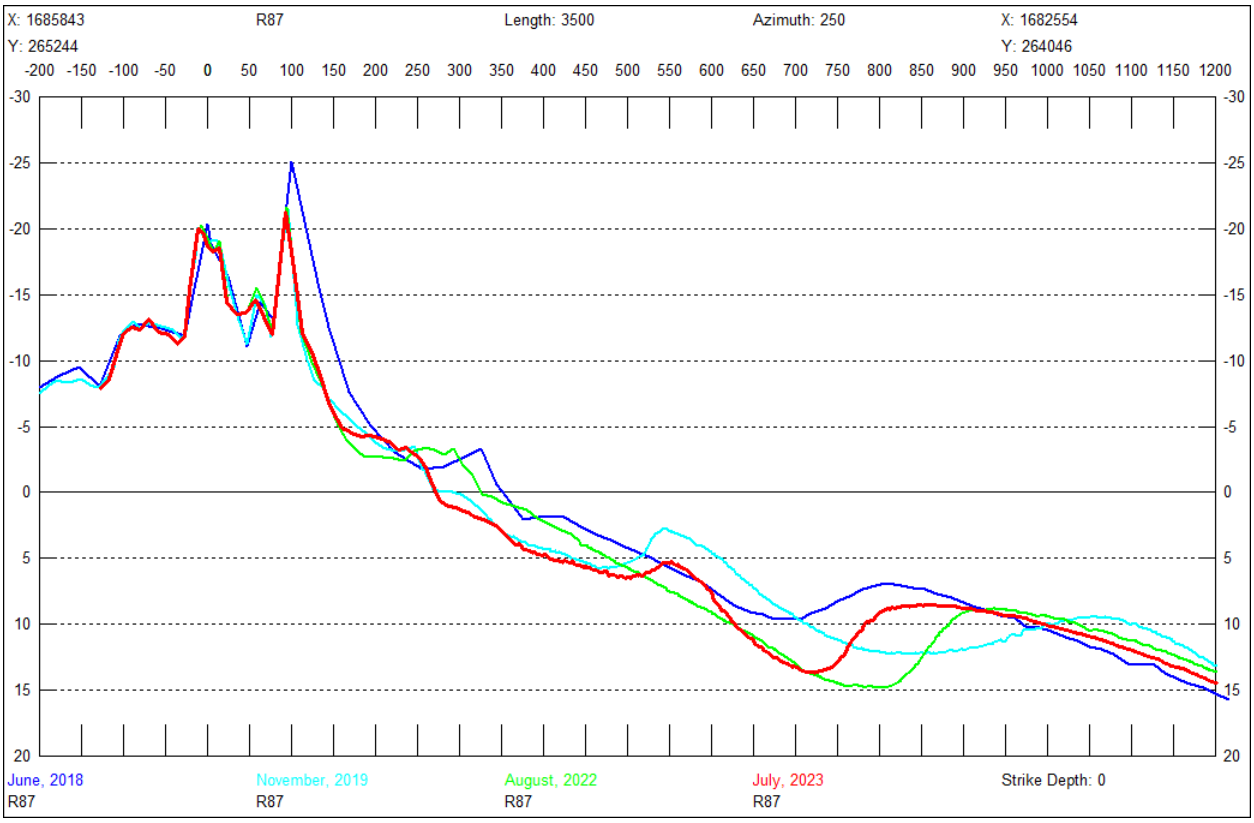
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November, 2019
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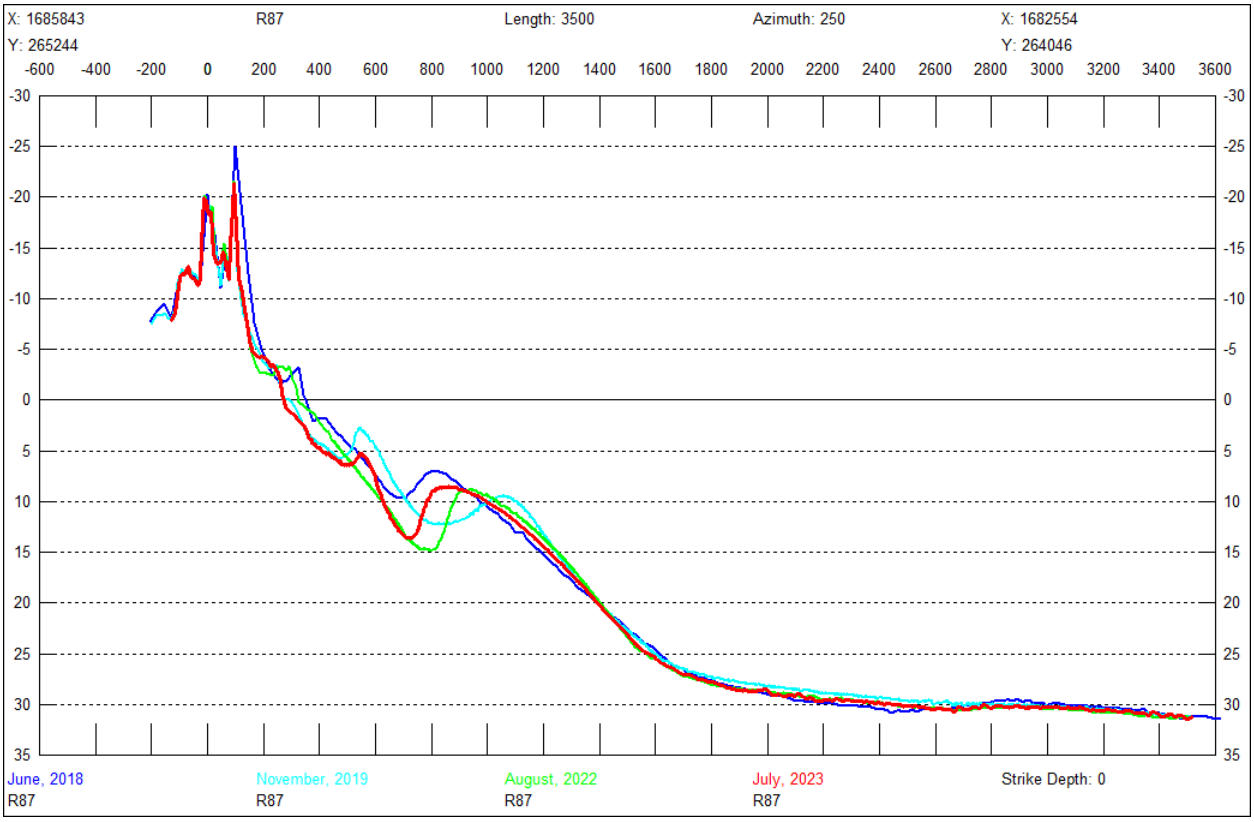
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June, 2018
R87
November, 2019
R87
August, 2022
R87
July, 2023
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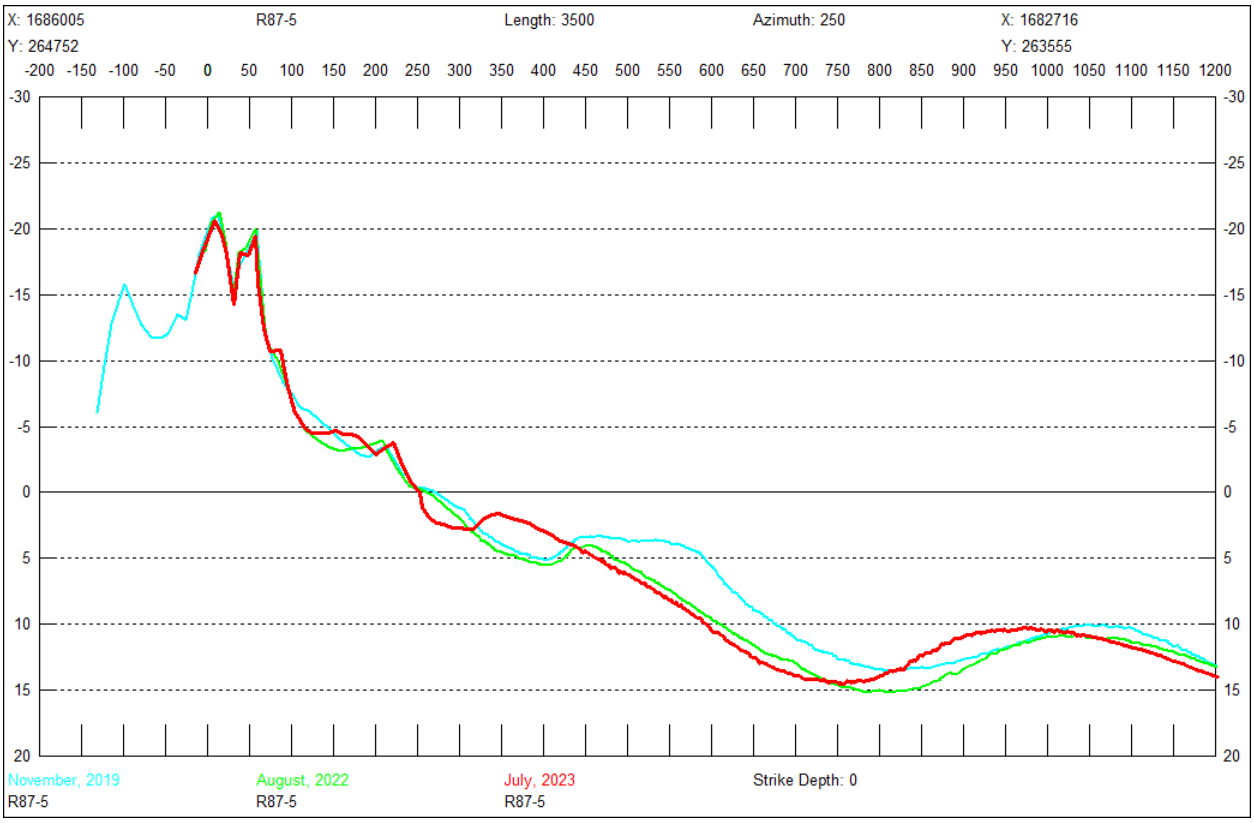
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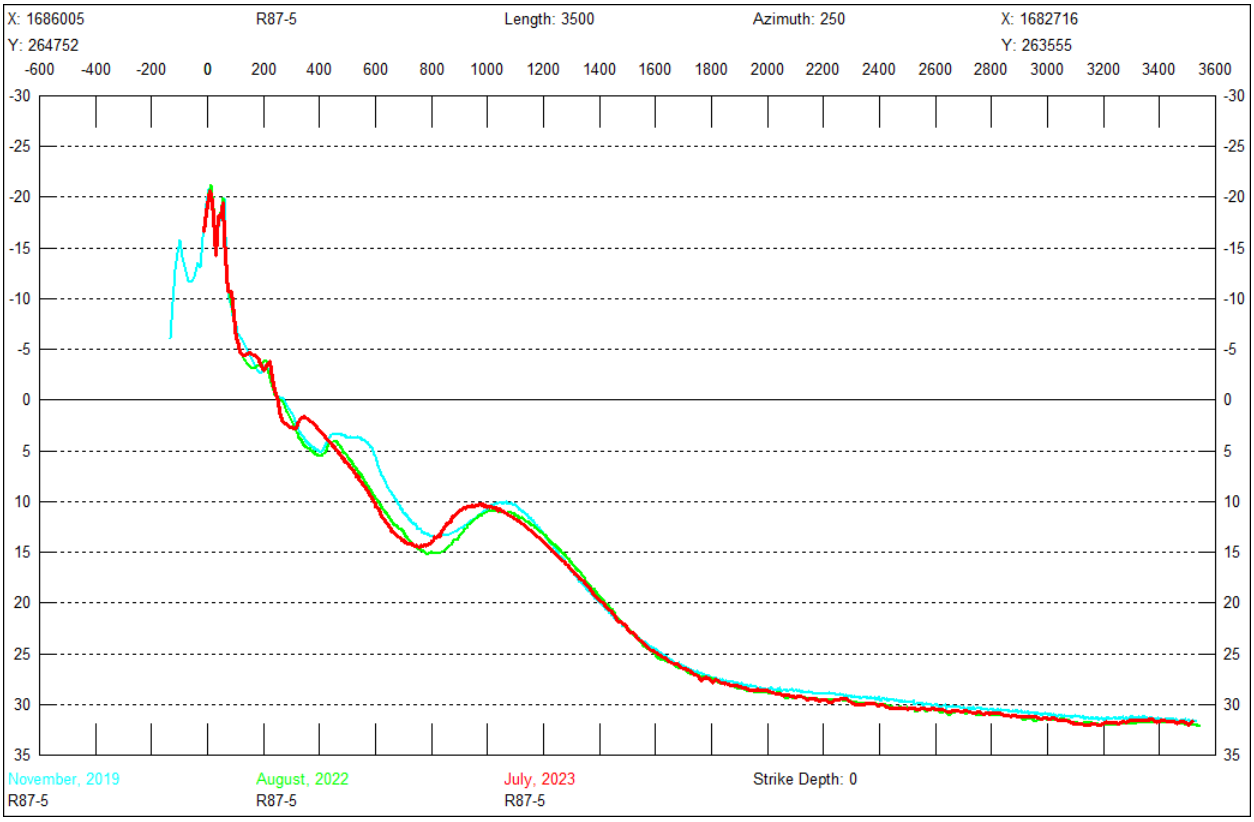
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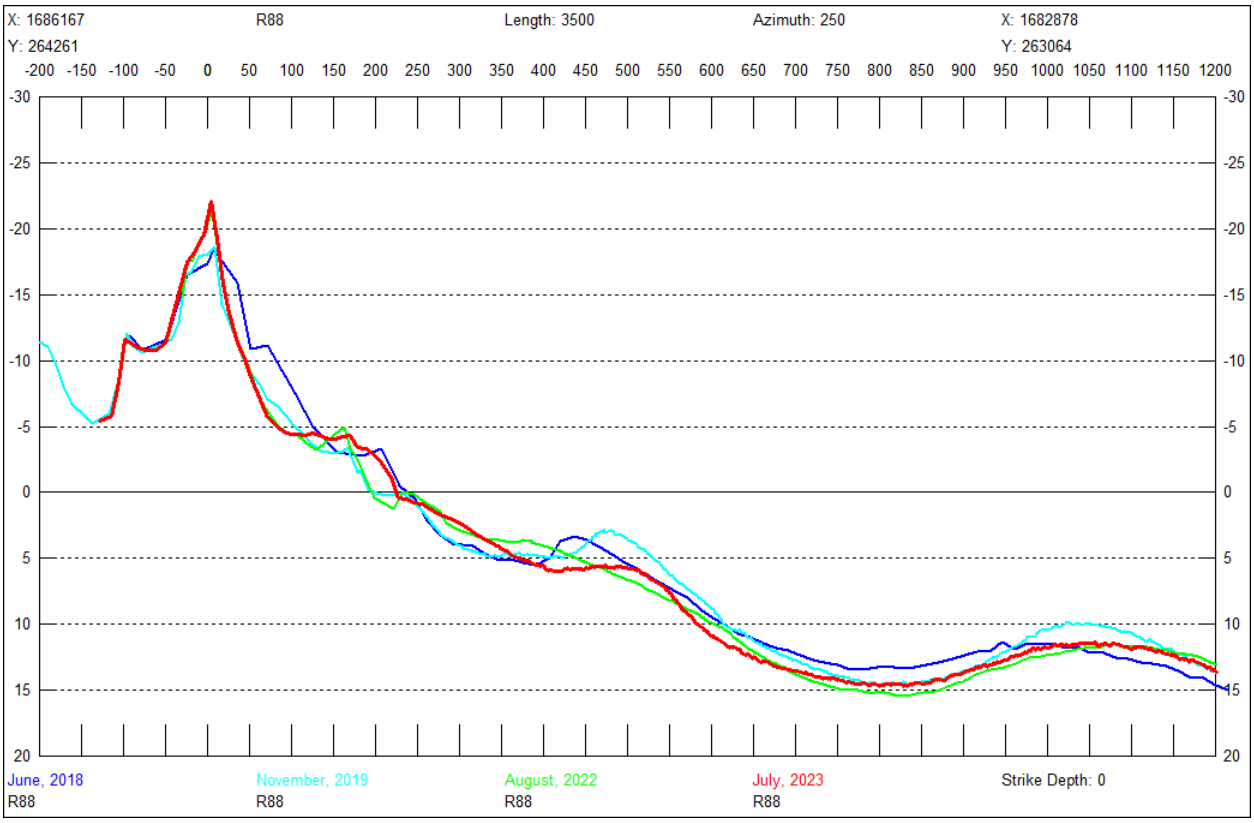
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August, 2022
R88
July, 2023
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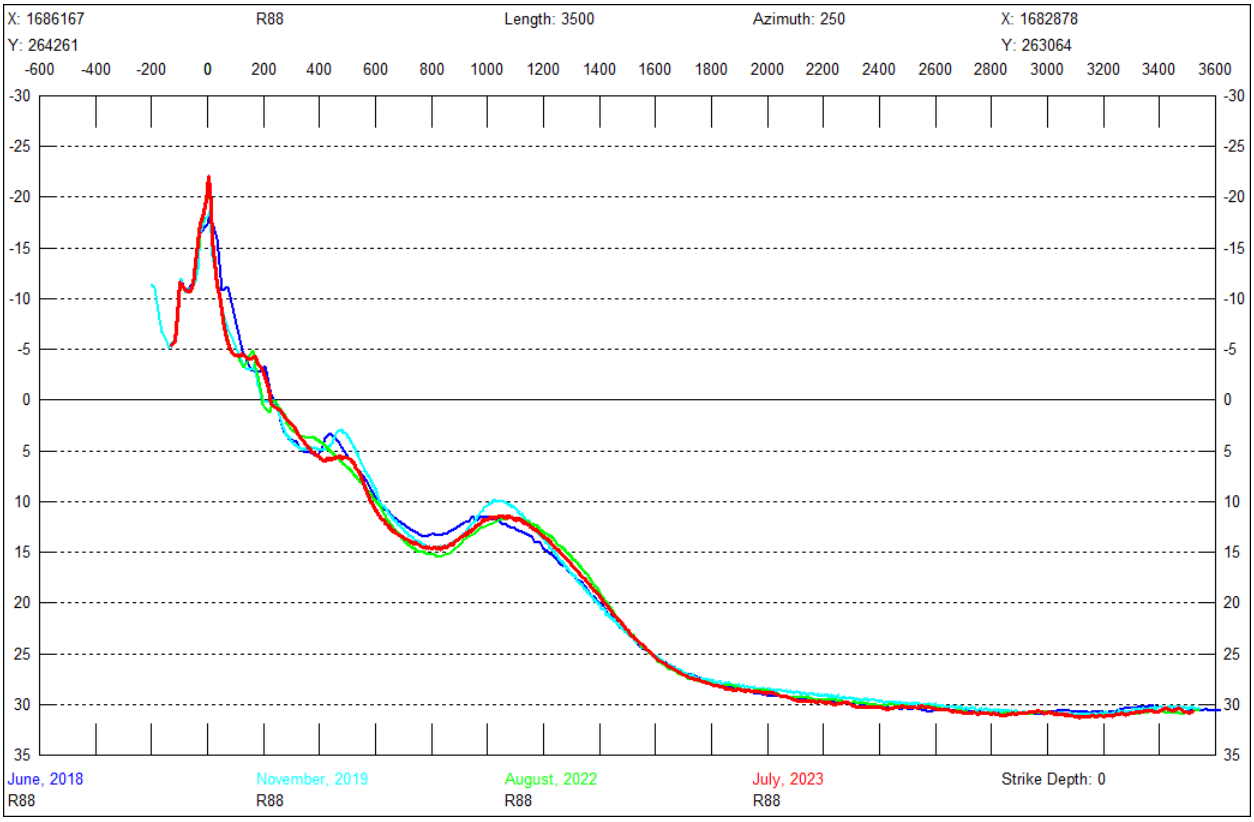
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November, 2019
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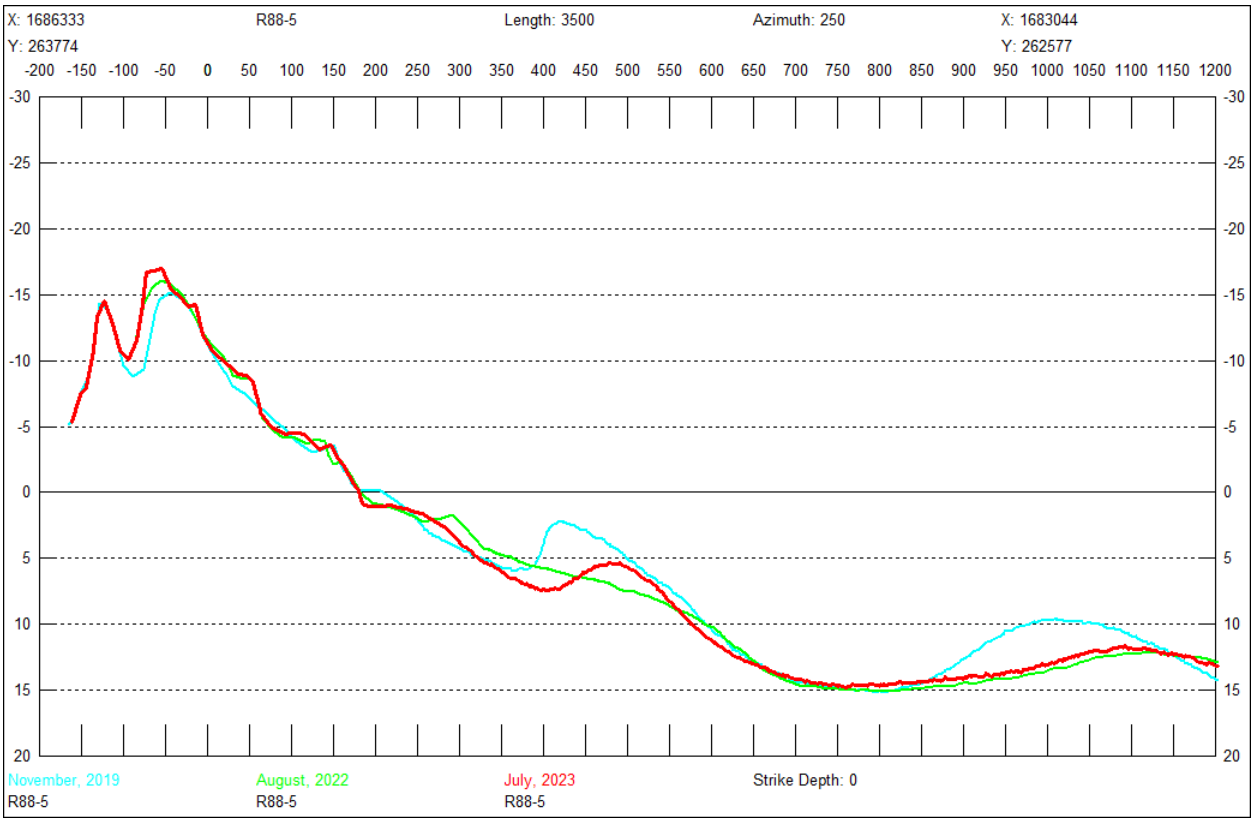
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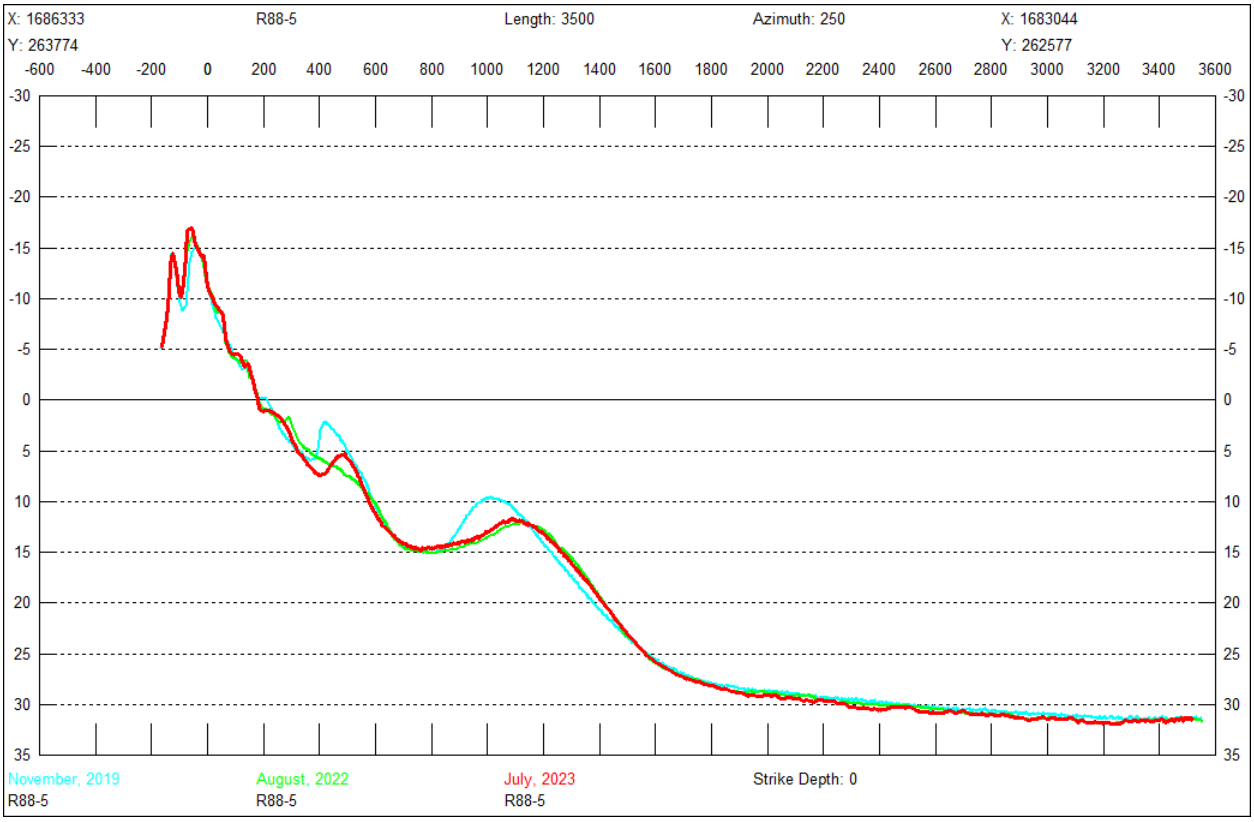
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R88-5
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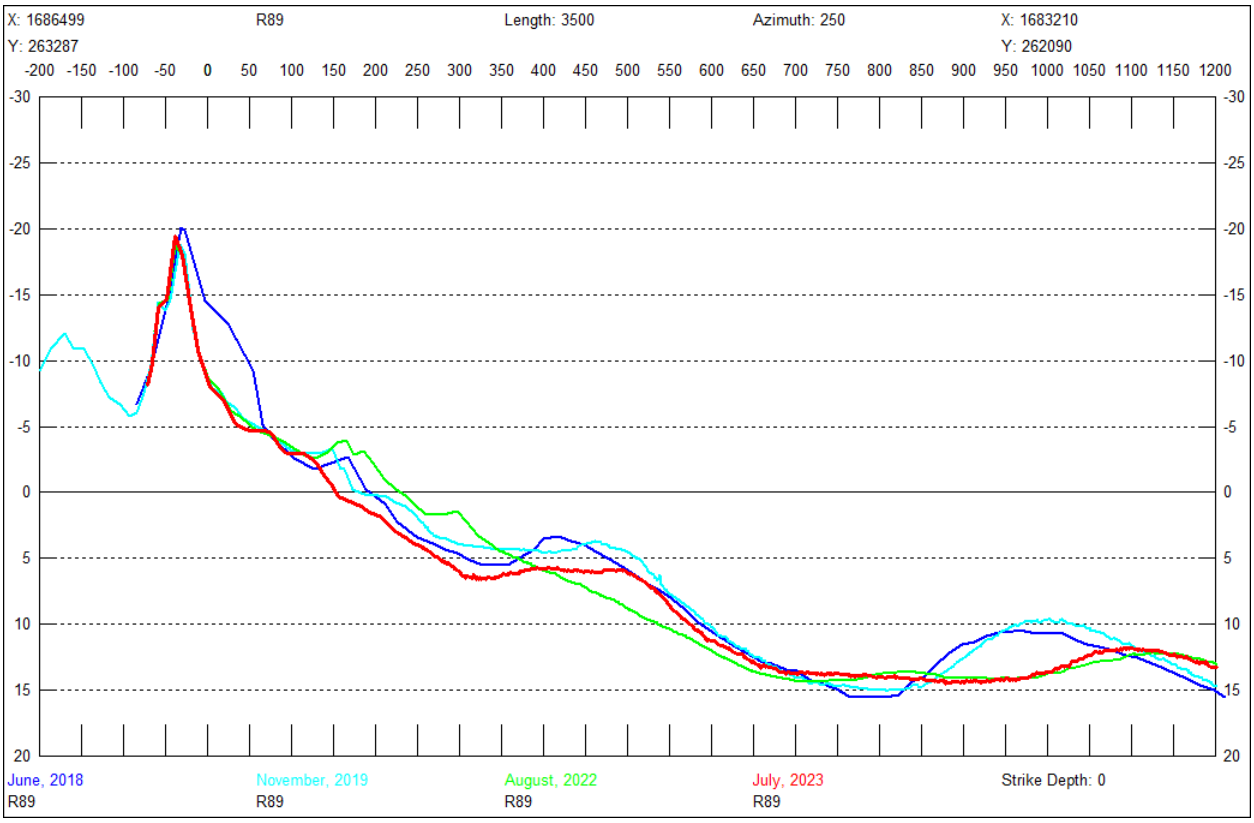
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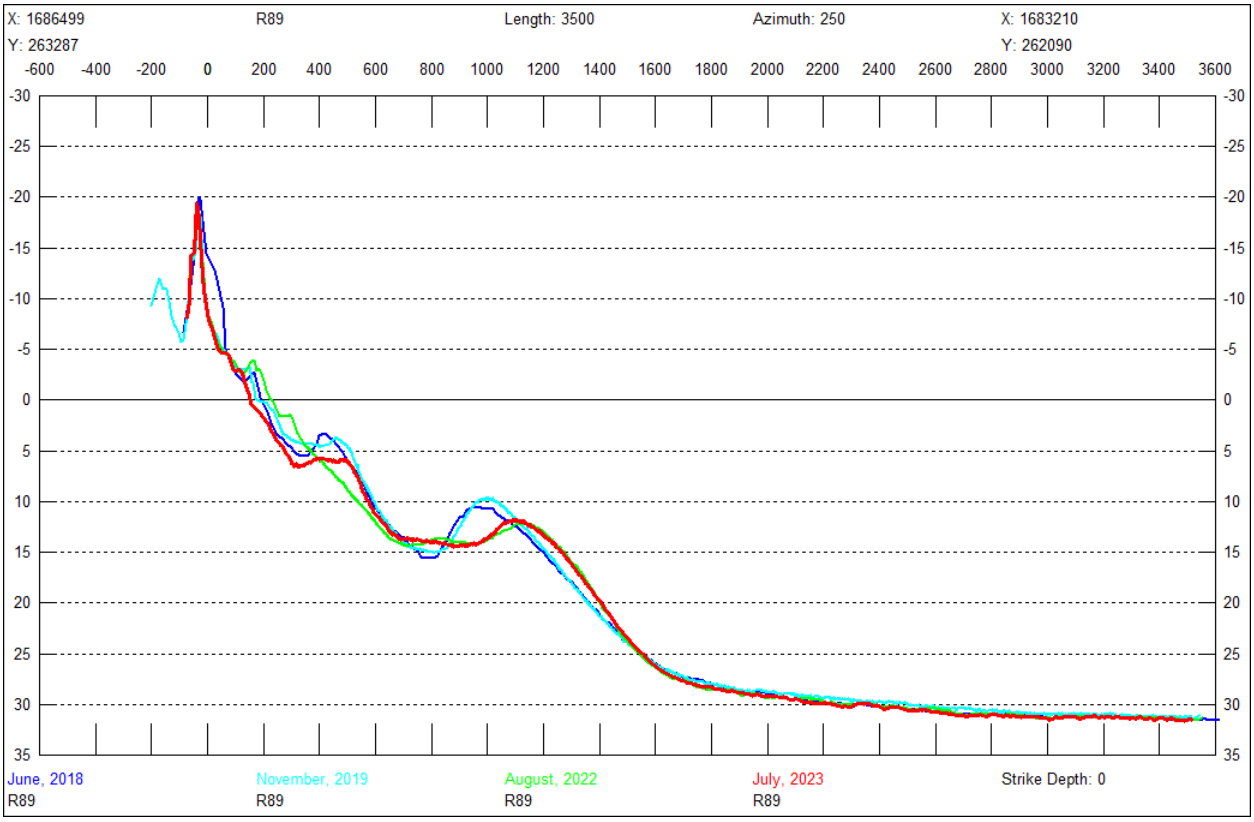
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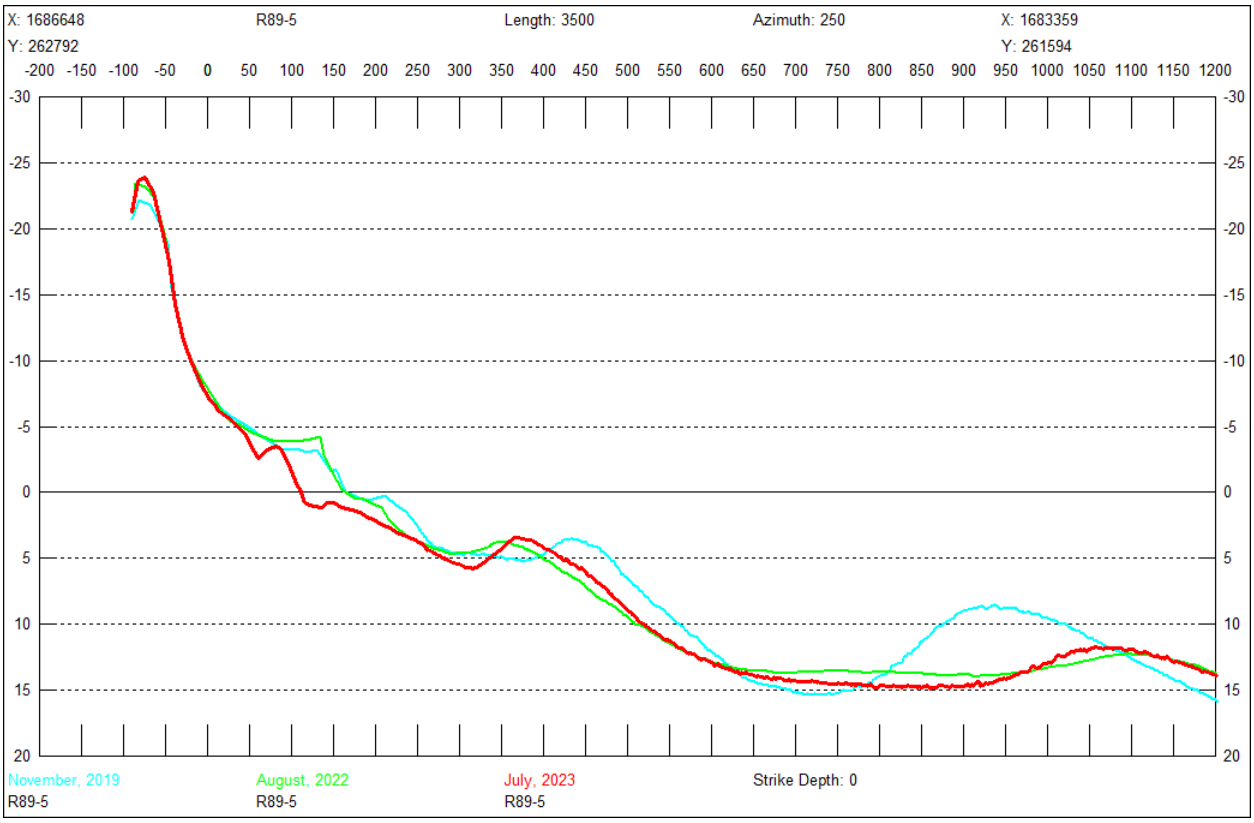
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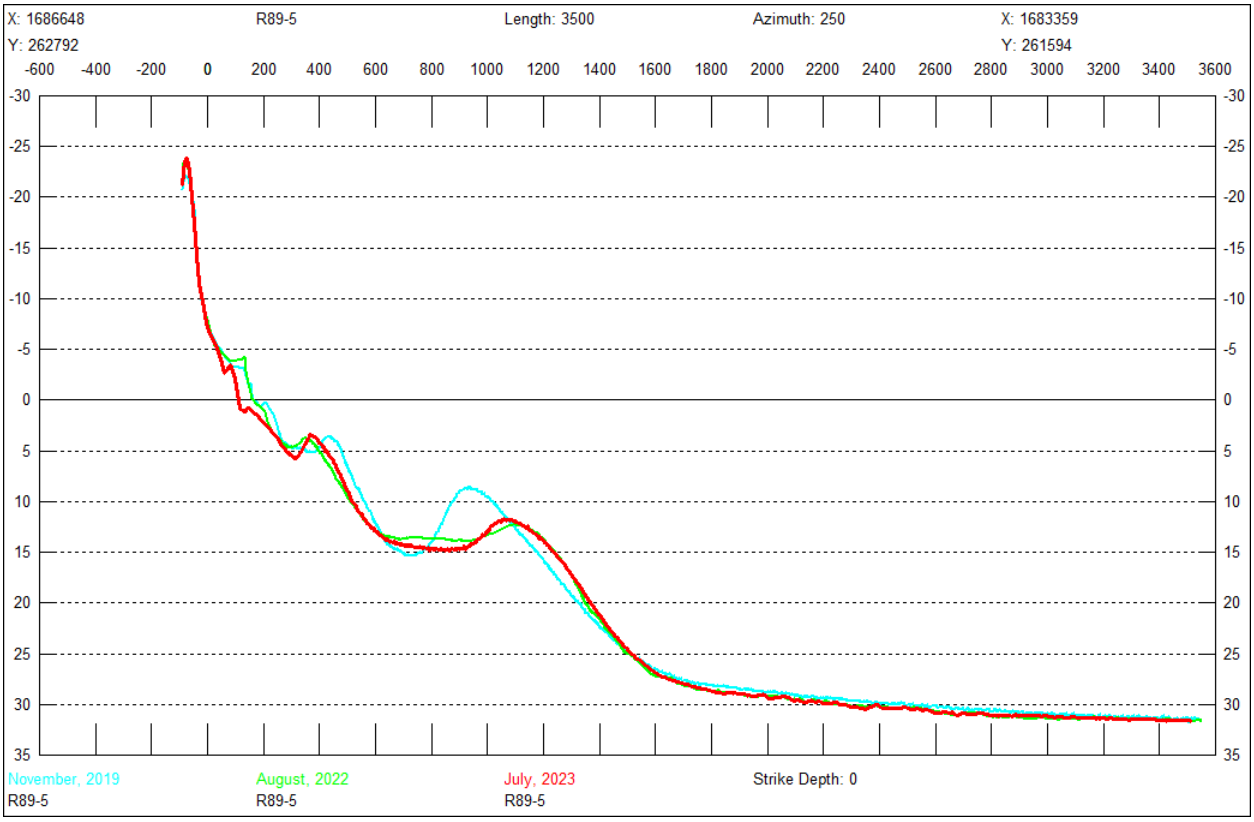
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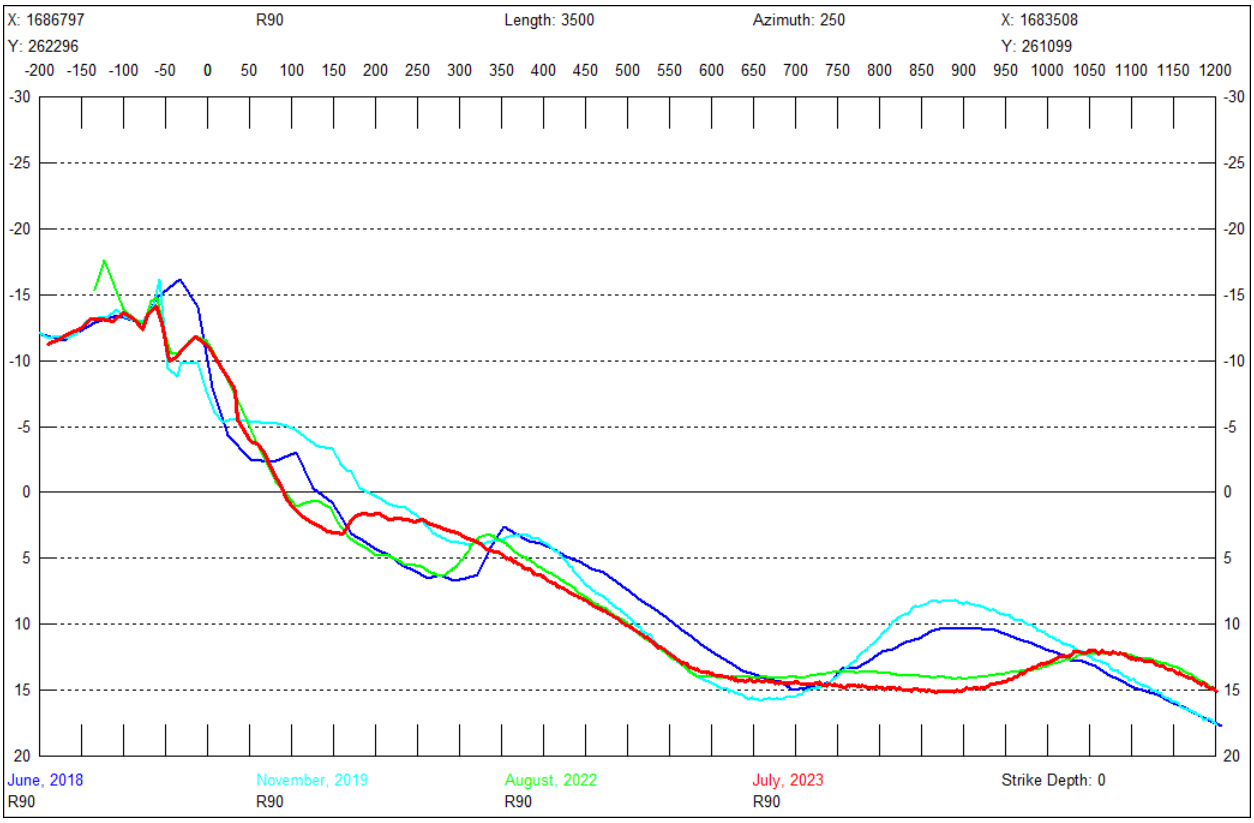
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November, 2019
August, 2022
July, 2023
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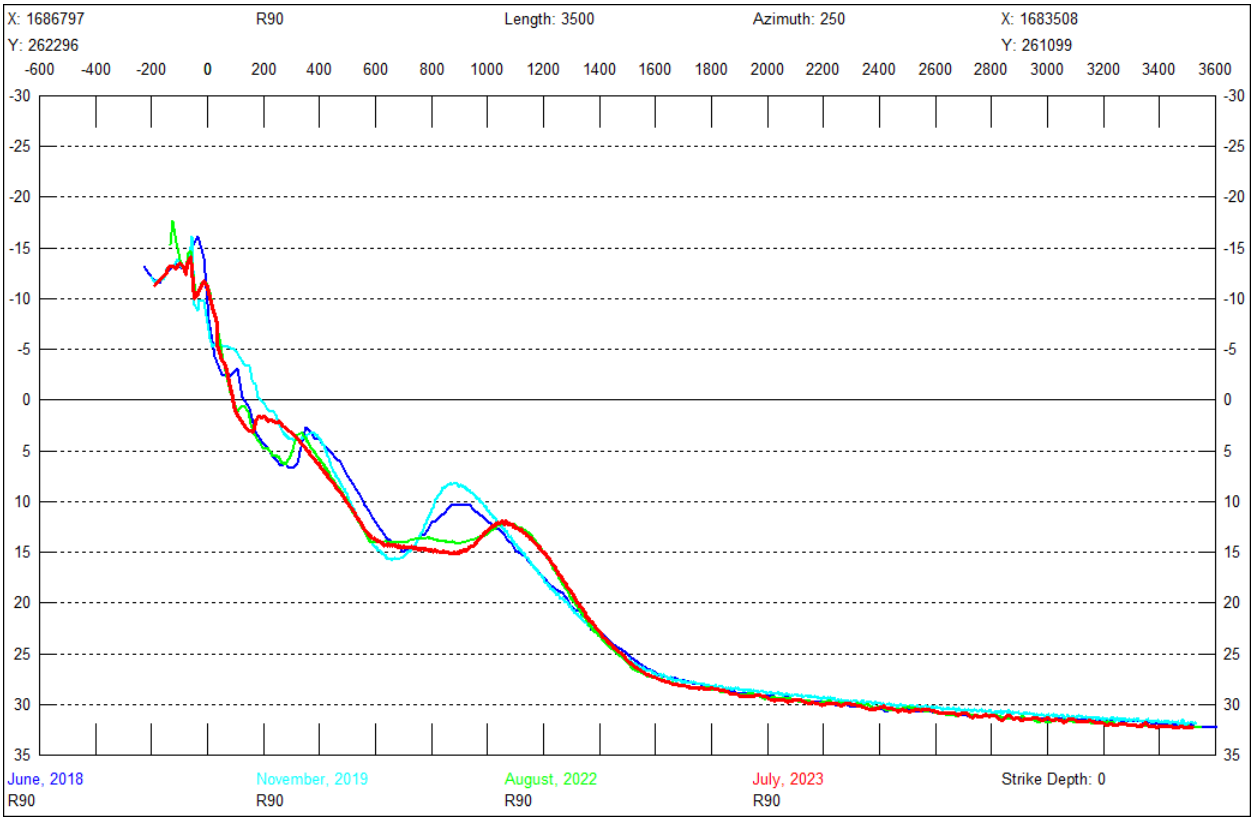
R90
R90
R90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August, 2022
July, 2023
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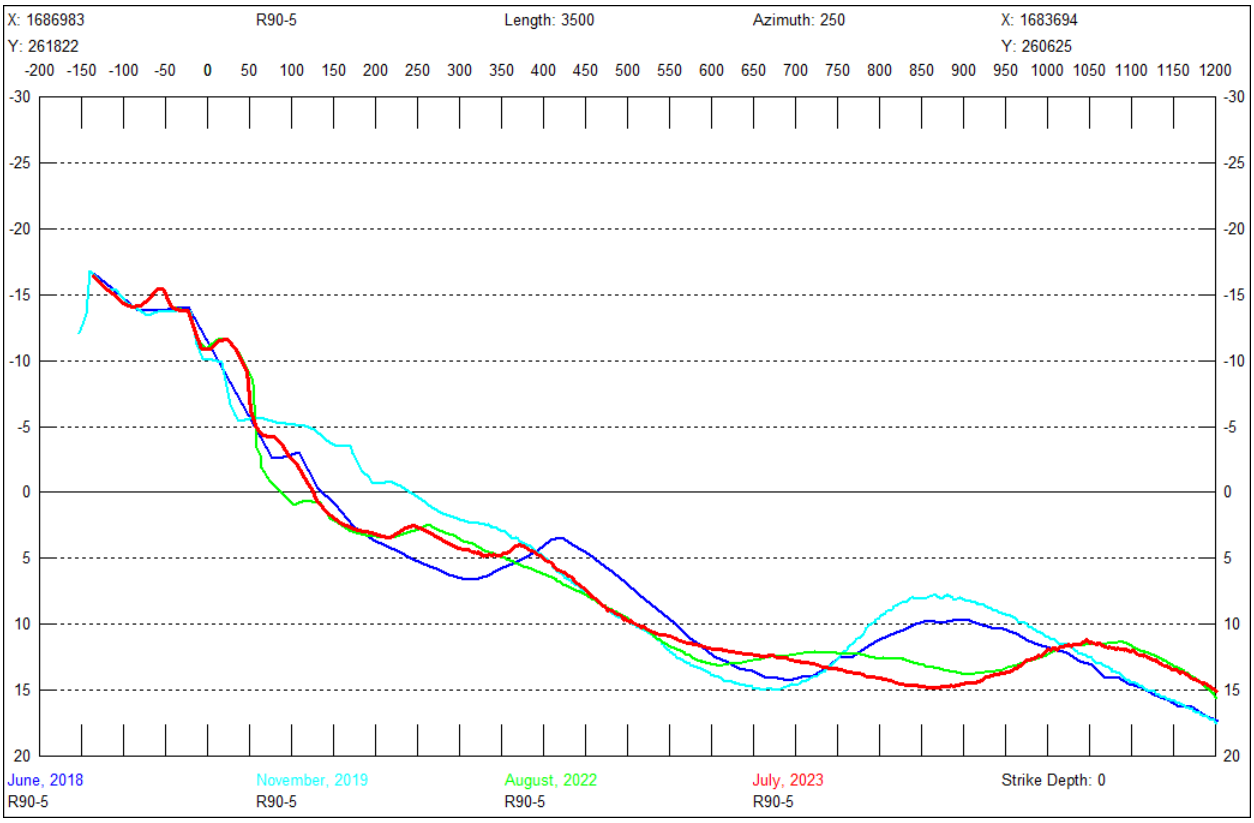
R90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R90-5
November, 2019
R90-5
August, 2022
R90-5
July, 2023
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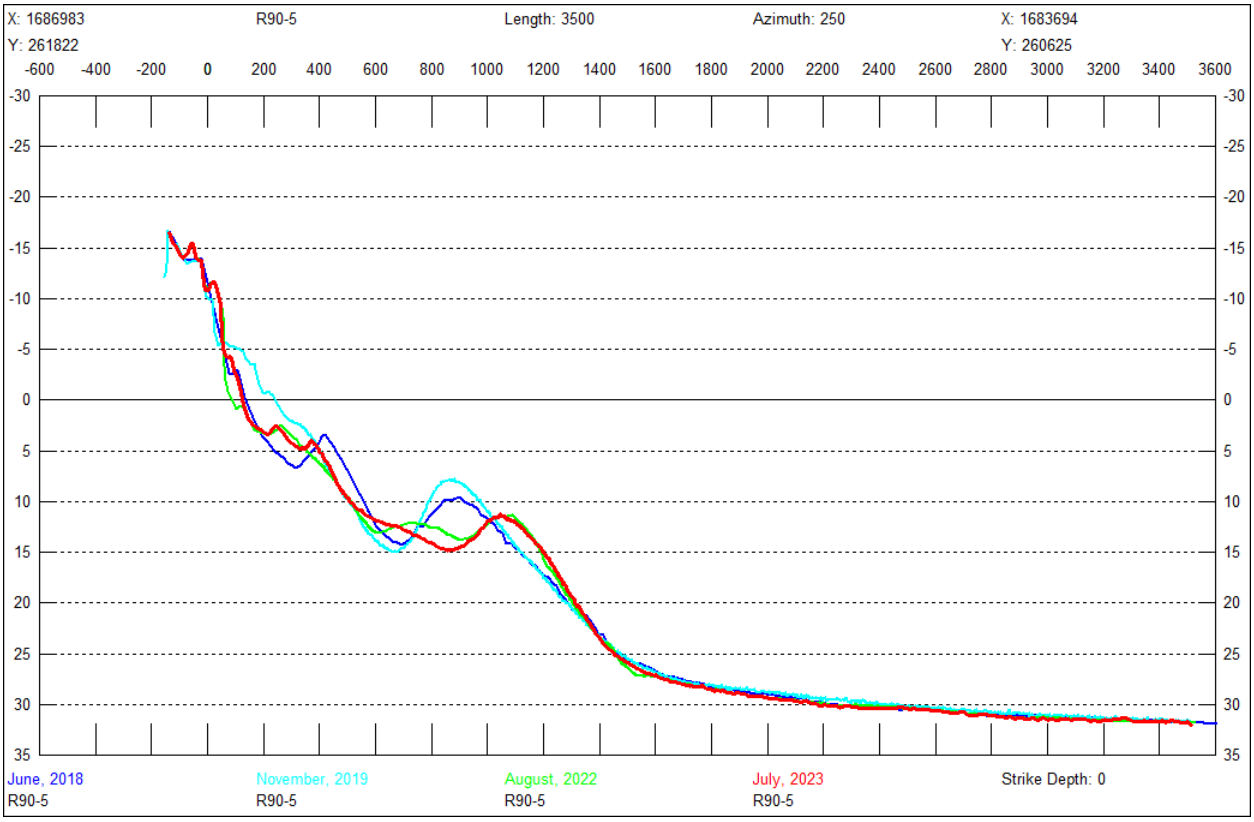
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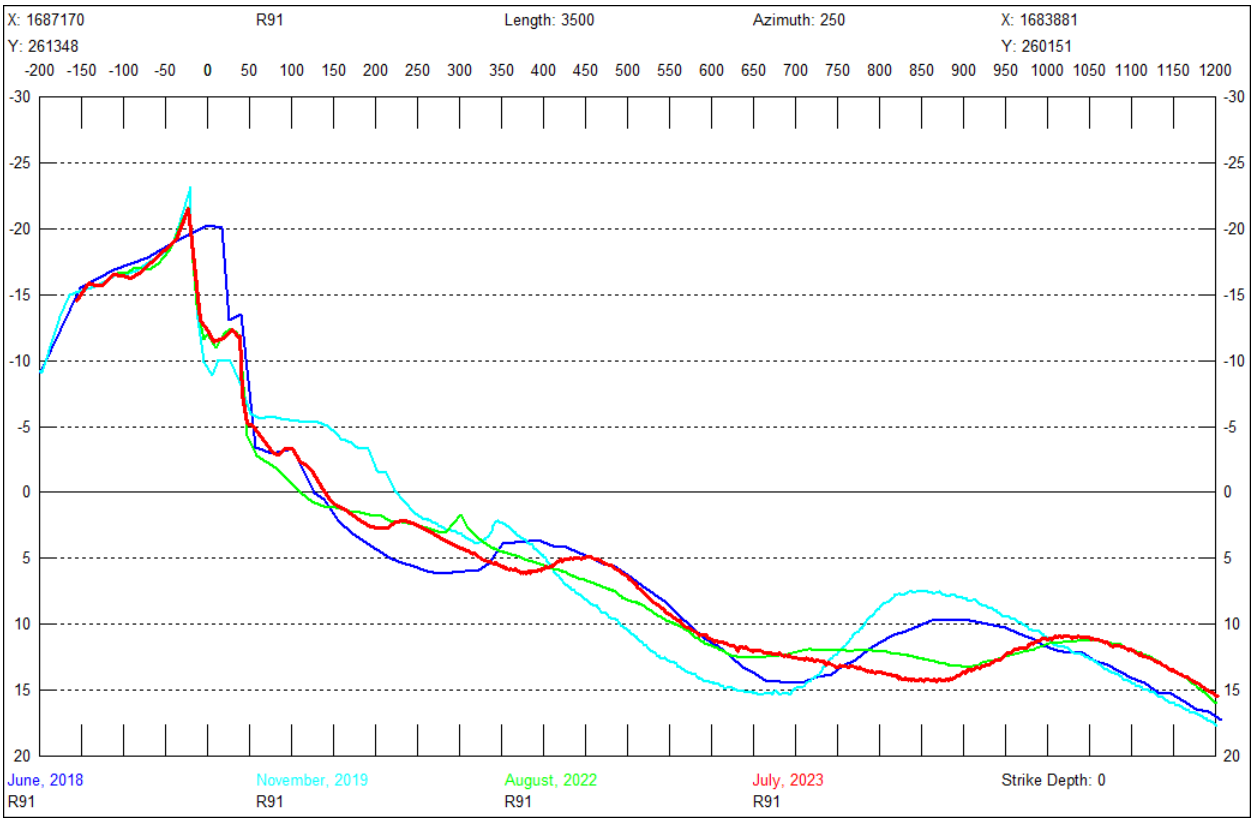
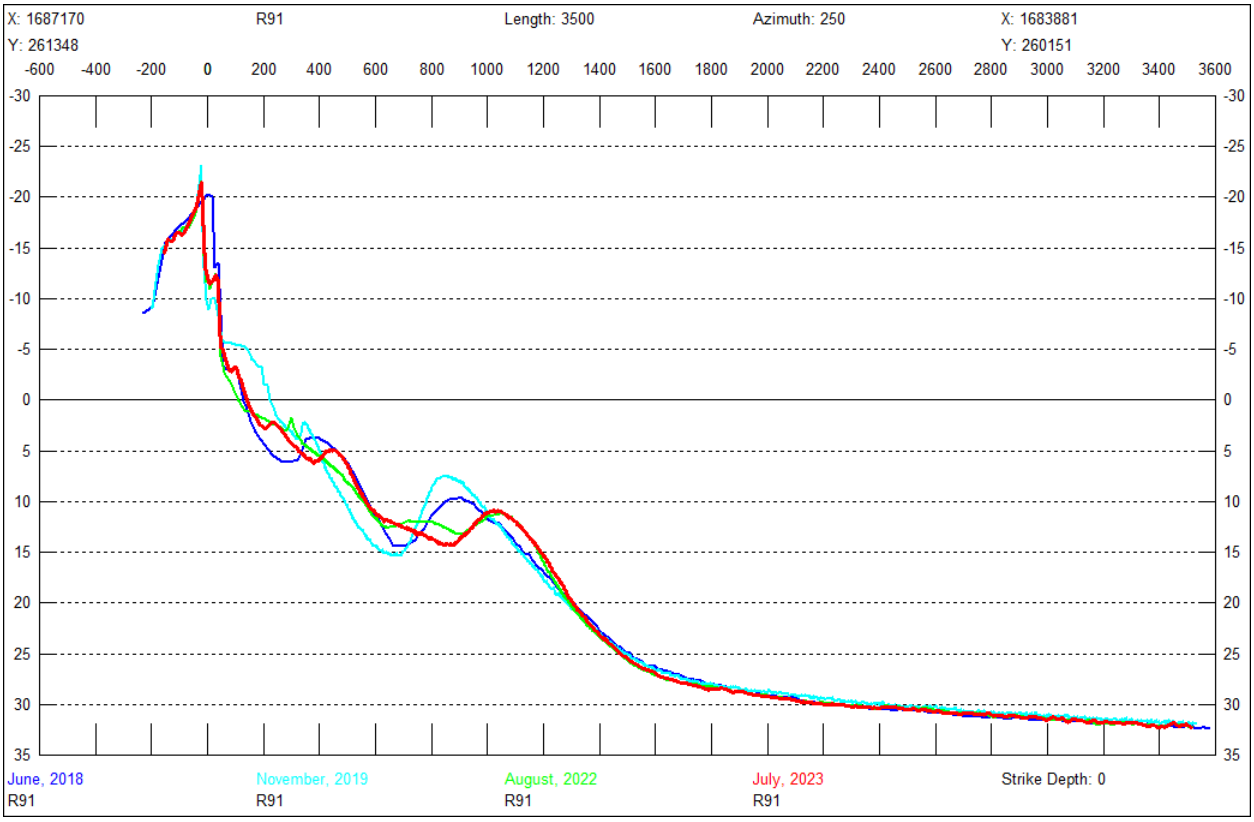
June, 2018
R90-5
November, 2019
R90-5
August, 2022
R90-5
July, 2023
R90-5
Strike Depth: 0


X: 1687170
R91
Length: 3500
Azimuth: 250
X: 1683881
Y: 261348
Y: 260151
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R91
R91
R91
R91


X: 1687170
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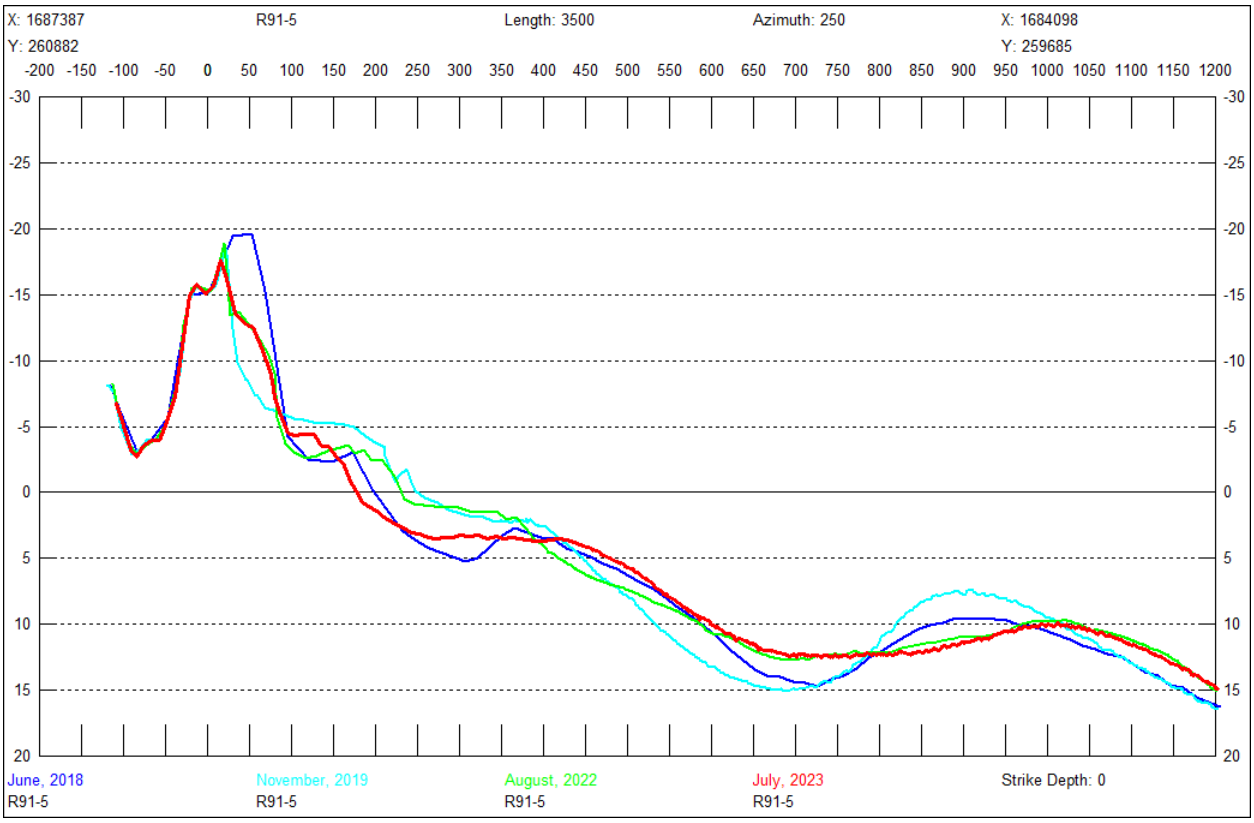
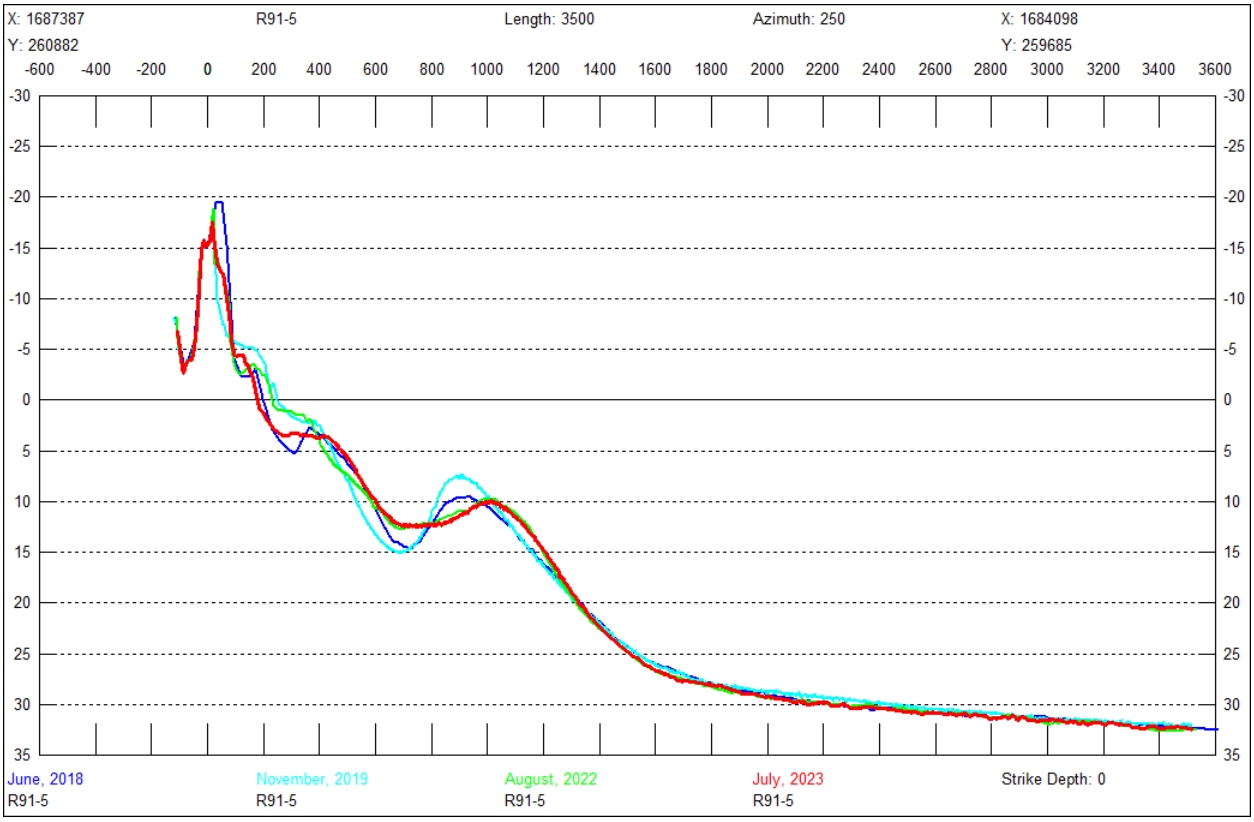
Length: 3500
Azimuth: 250
X: 1683881
Y: 261348
Y: 260151
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R91
R91
R91
R91


X: 1687387
R91-5
Length: 3500
Azimuth: 250
X: 1684098
Y: 260882
Y: 259685
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R91-5
R91-5
R91-5
R91-5


X: 1687387
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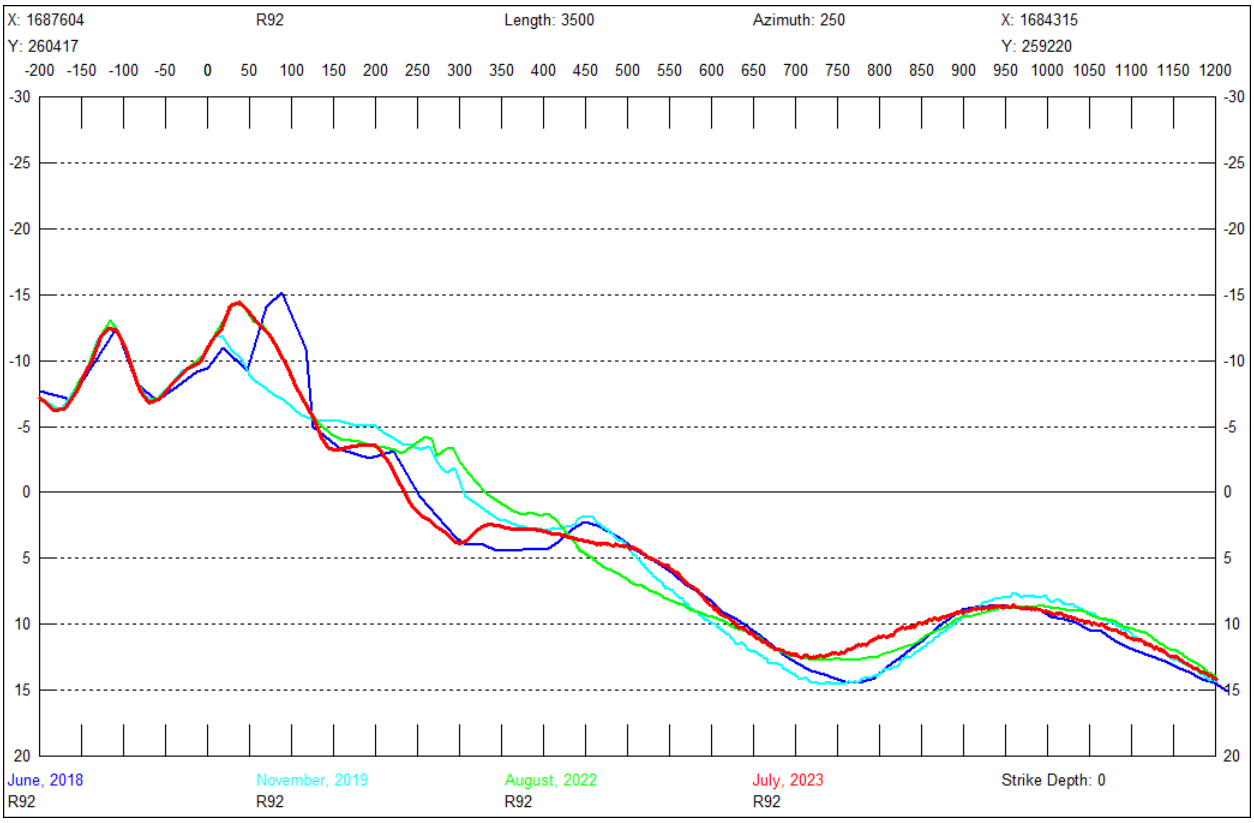
Length: 3500
Azimuth: 250
X: 1684098
Y: 260882
Y: 259685
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R91-5
R91-5
R91-5
R91-5


X: 1687604
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Length: 3500
Azimuth: 250
X: 1684315
Y: 260417
Y: 259220
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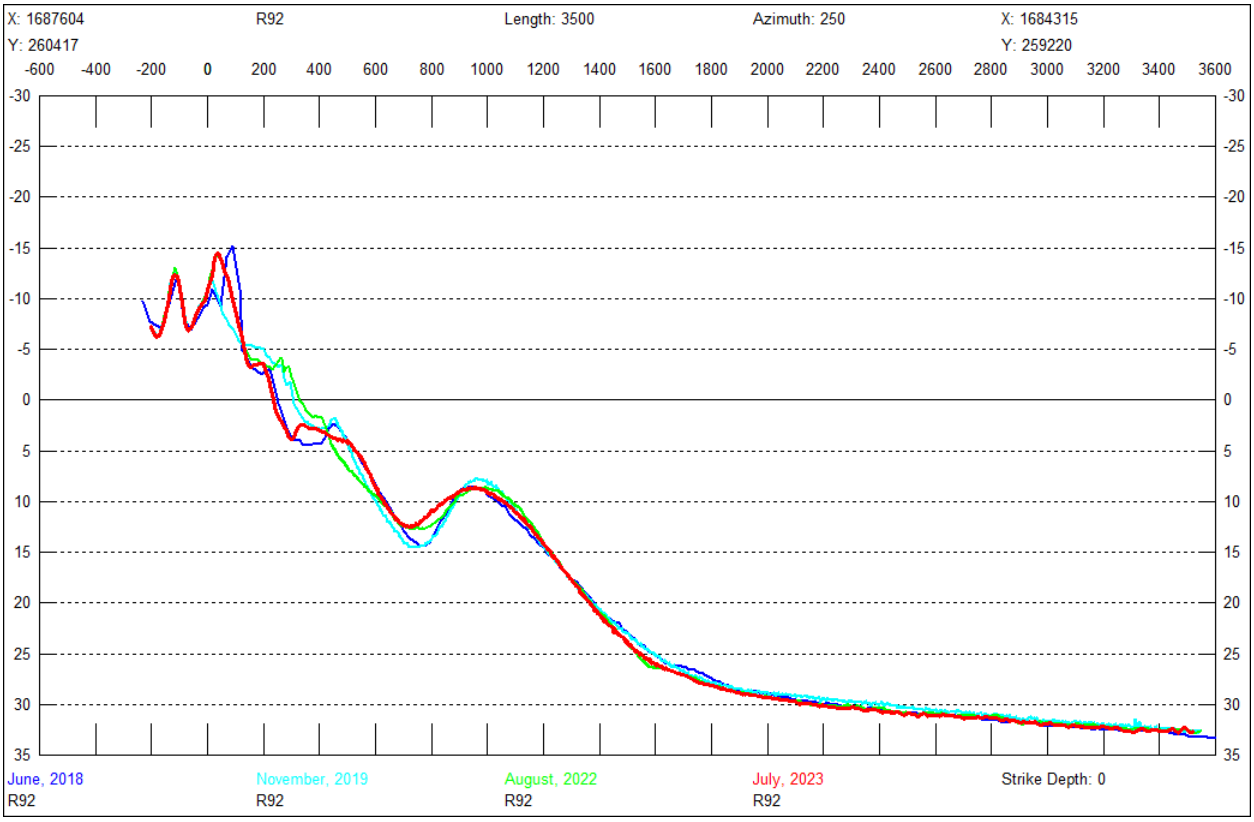
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R92
November, 2019
R92
August, 2022
R92
July, 2023
R92
Strike Depth: 0


X: 1687604
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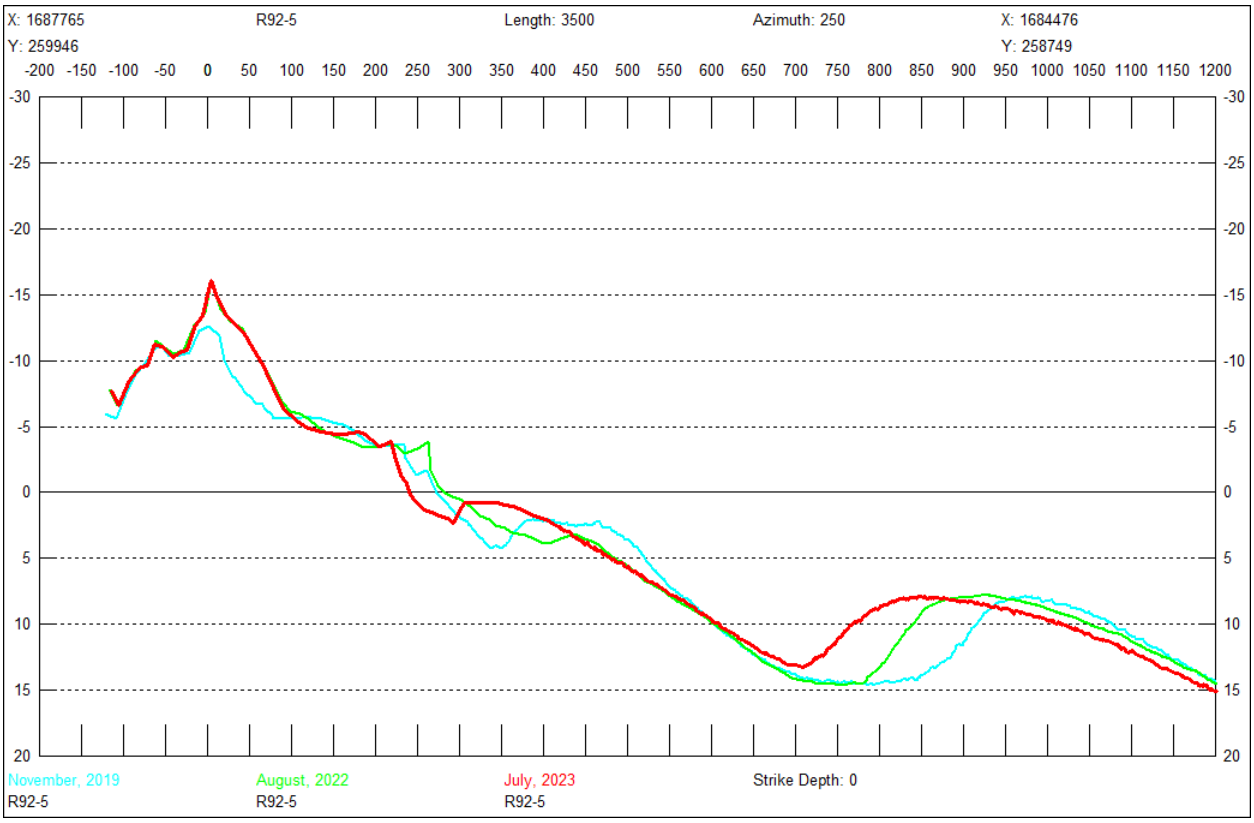
Length: 3500
Azimuth: 250
X: 1684315
Y: 260417
Y: 259220
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R92
November, 2019
R92
August, 2022
R92
July, 2023
R92
Strike Depth: 0


X: 1687765
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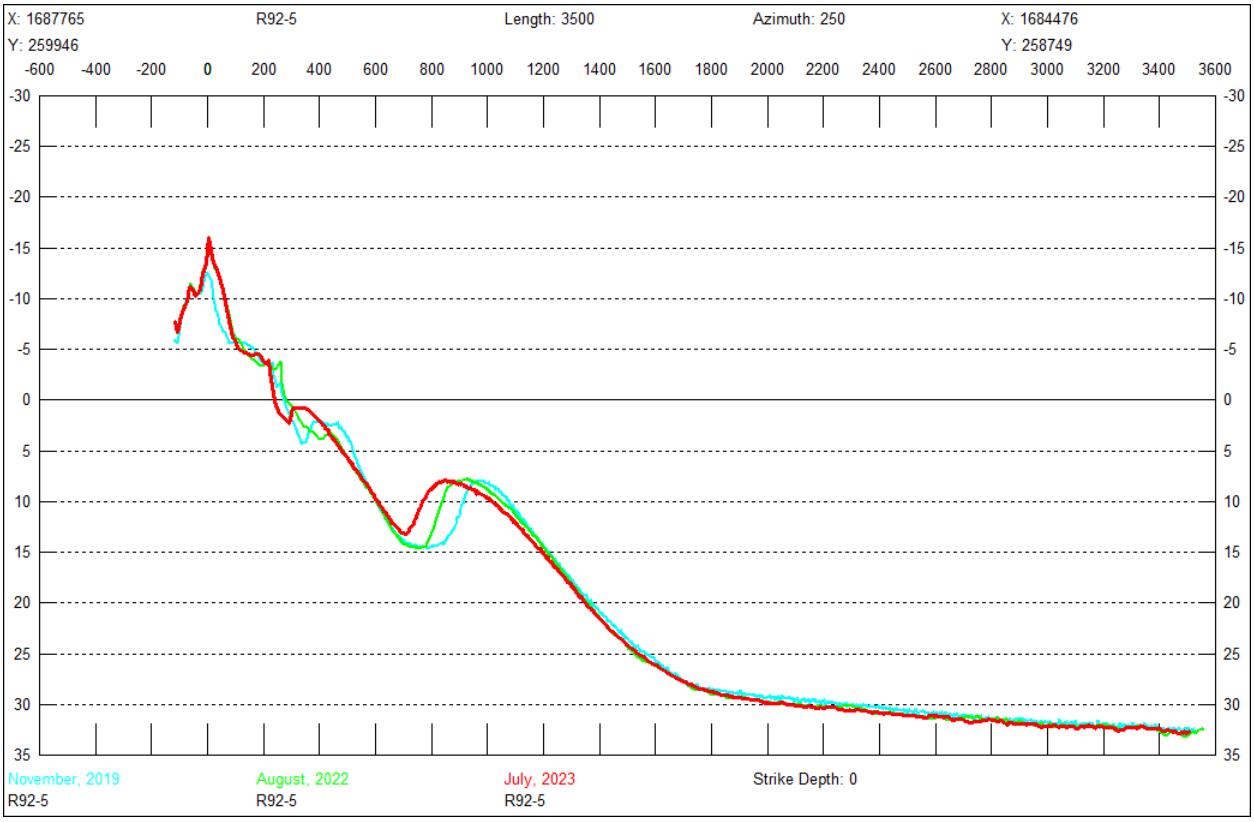
Length: 3500
Azimuth: 250
X: 1684476
Y: 259946
Y: 258749
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R92-5
August, 2022
R92-5
July, 2023
R92-5
Strike Depth: 0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Azimuth: 250
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Y: 259946
Y: 258749
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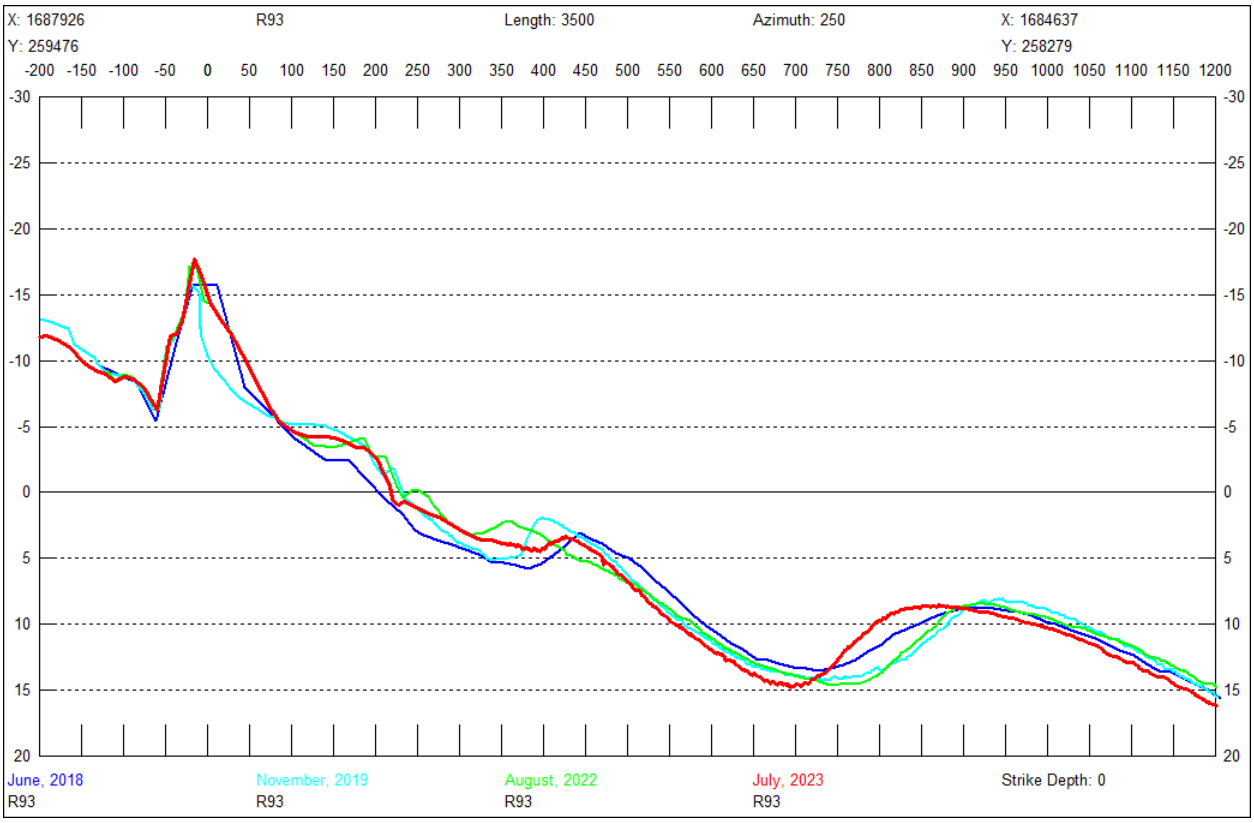
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R92-5
August, 2022
R92-5
July, 2023
R92-5
Strike Depth: 0


X: 1687926
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Length: 3500
Azimuth: 250
X: 1684637
Y: 259476
Y: 258279
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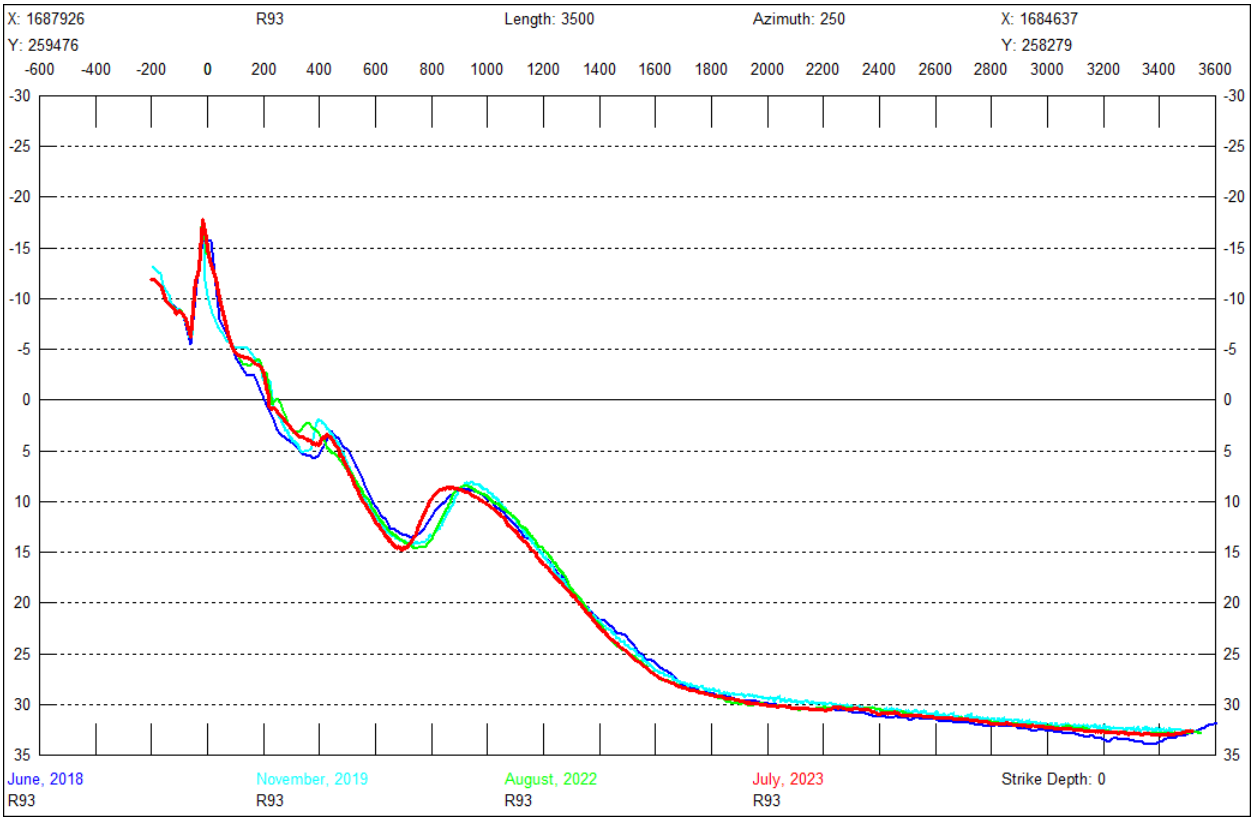
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R93
November, 2019
R93
August, 2022
R93
July, 2023
R93
Strike Depth: 0


X: 1687926
R93
Length: 3500
Azimuth: 250
X: 1684637
Y: 259476
Y: 258279
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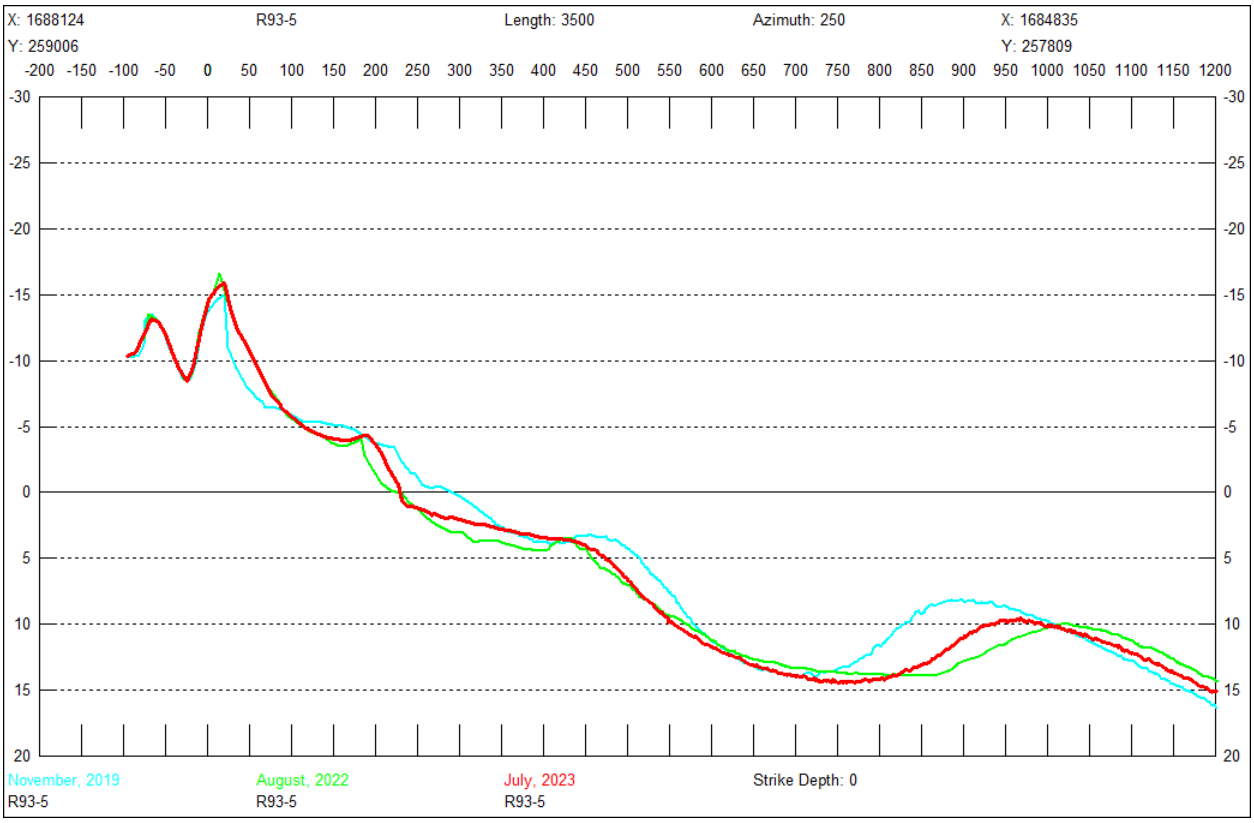
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R93
November, 2019
R93
August, 2022
R93
July, 2023
R93
Strike Depth: 0


X: 1688124
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Length: 3500
Azimuth: 250
X: 1684835
Y: 259006
Y: 257809
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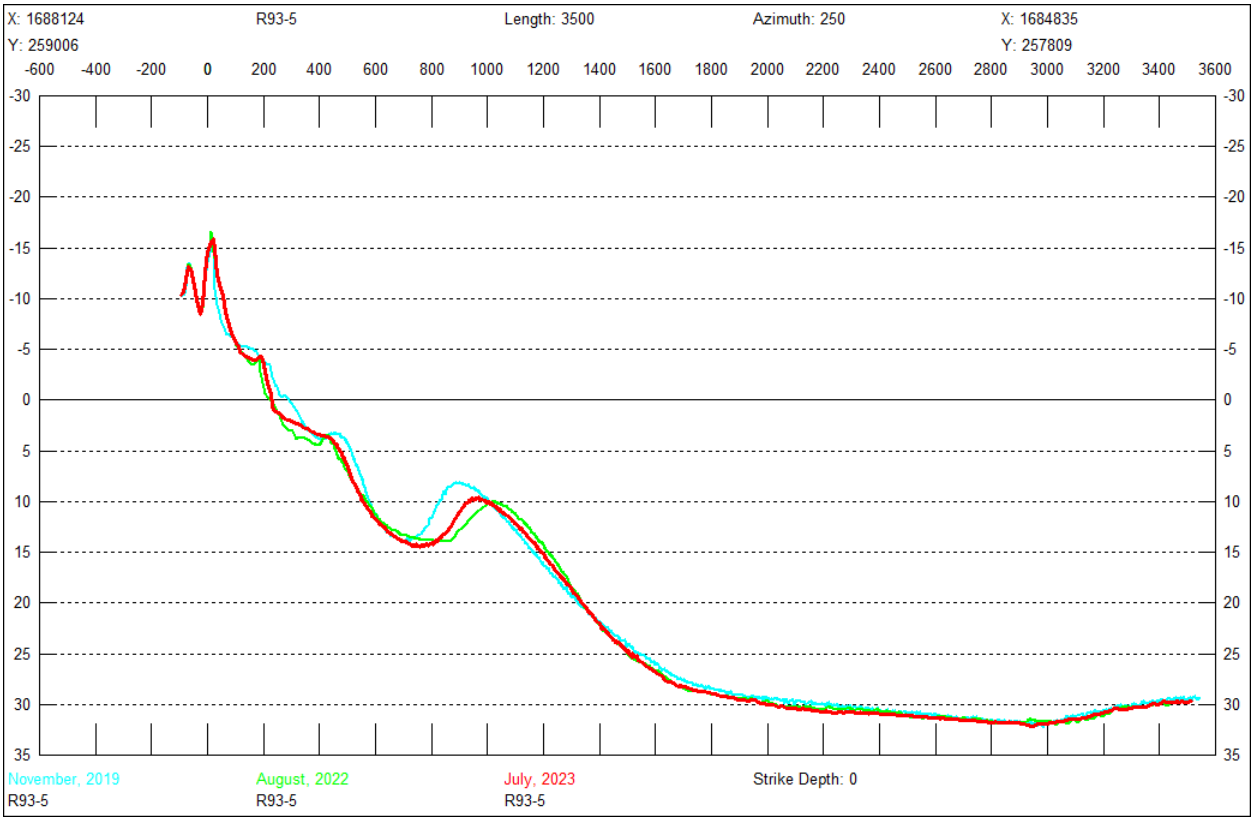
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R93-5
August, 2022
R93-5
July, 2023
R93-5
Strike Depth: 0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Y: 259006
Y: 257809
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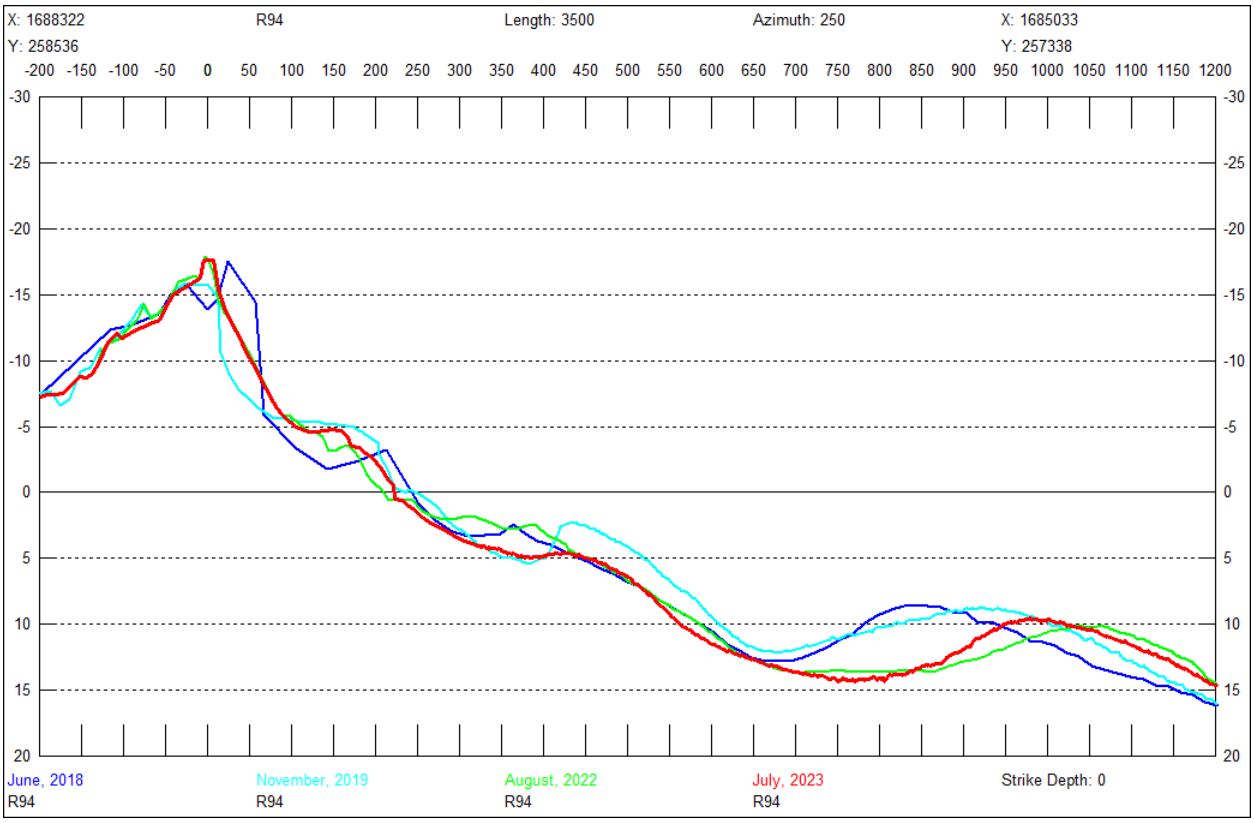
November, 2019
R93-5
August, 2022
R93-5
July, 2023
R93-5
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1685033
Y: 258536
Y: 257338
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June, 2018
R94
November, 2019
R94
August, 2022
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July, 2023
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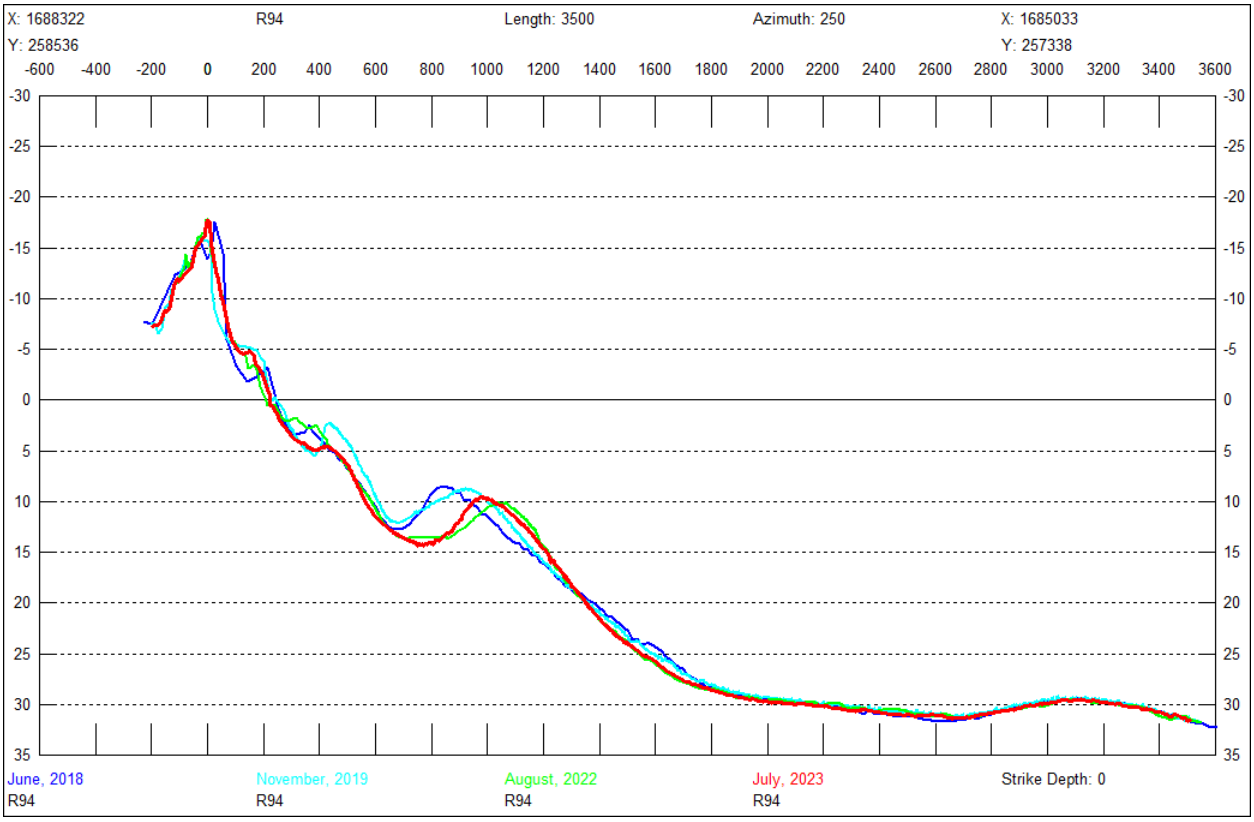
Strike Depth: 0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Azimuth: 250
X: 1685033
Y: 258536
Y: 257338
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-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
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November, 2019
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August, 2022
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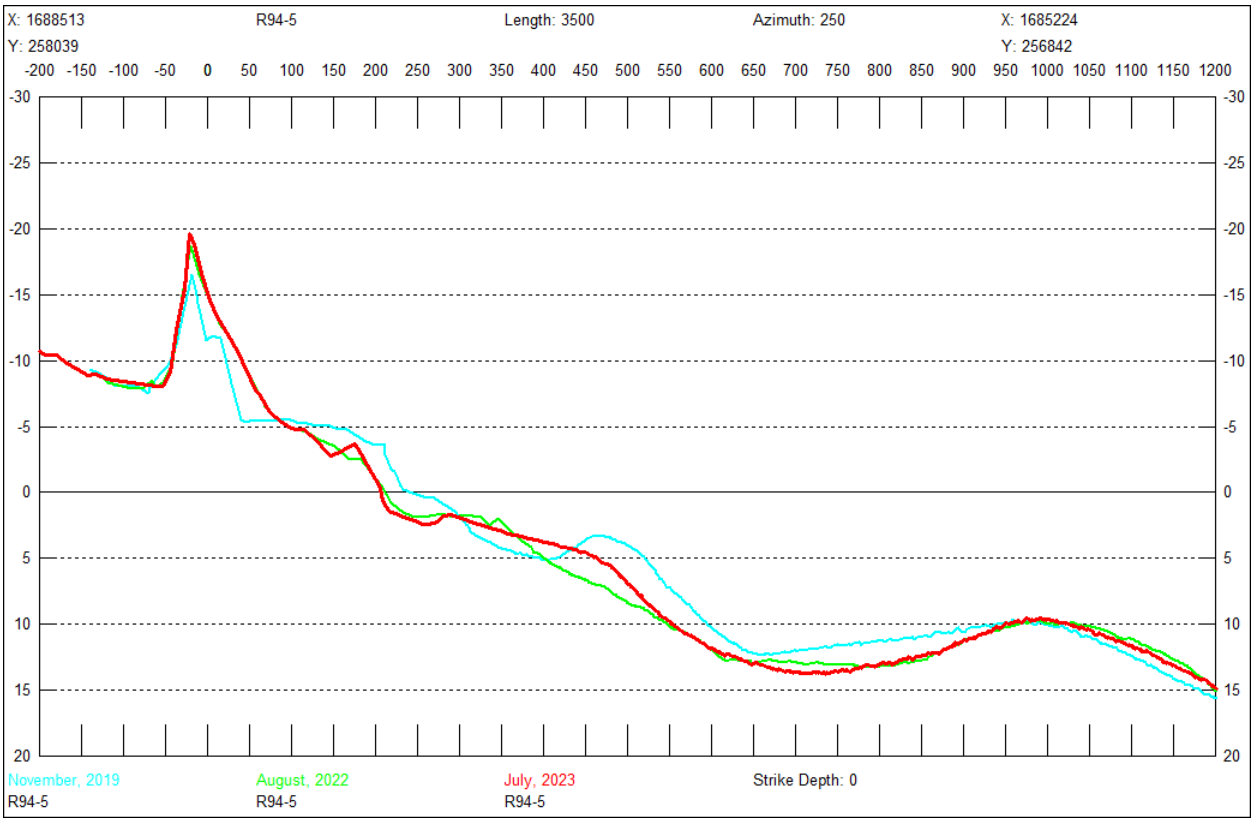
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1685224
Y: 258039
Y: 256842
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-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R94-5
August, 2022
R94-5
July, 2023
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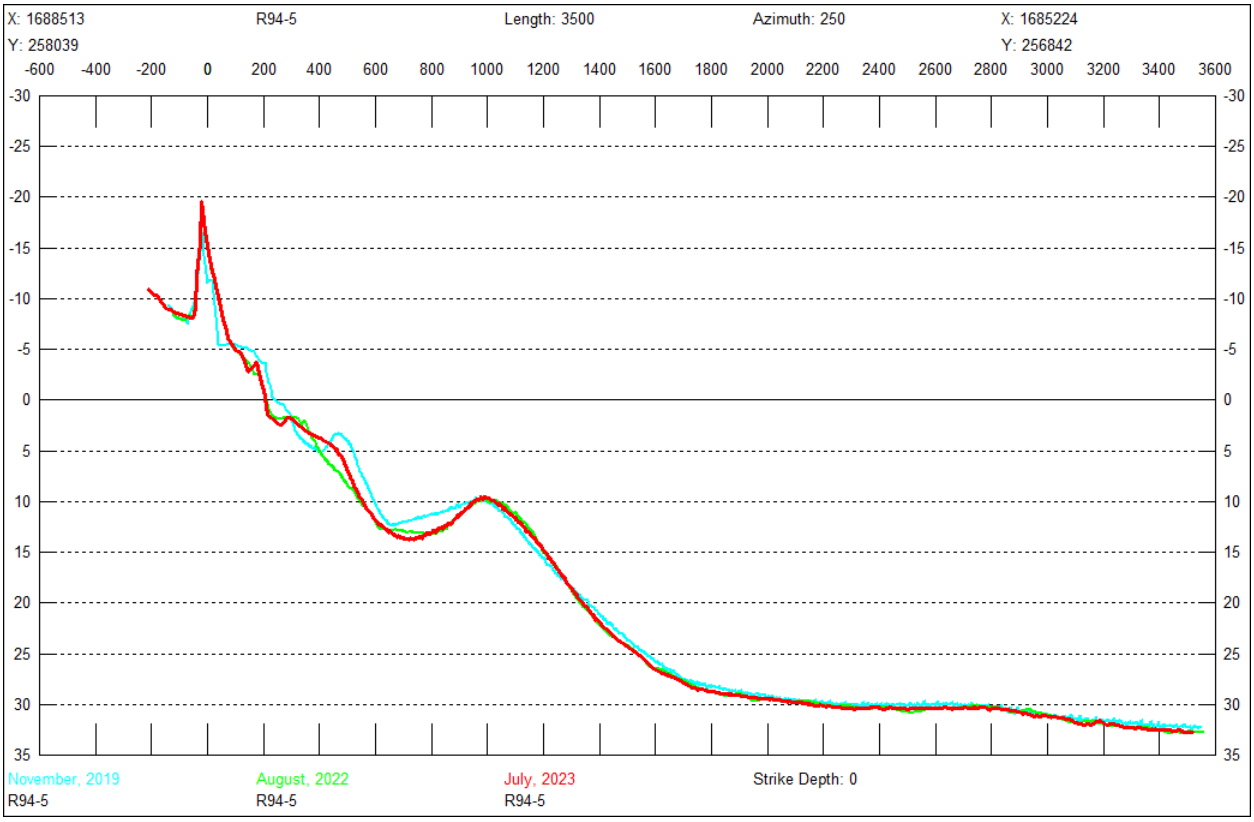
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1685224
Y: 258039
Y: 256842
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-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R94-5
August, 2022
R94-5
July, 2023
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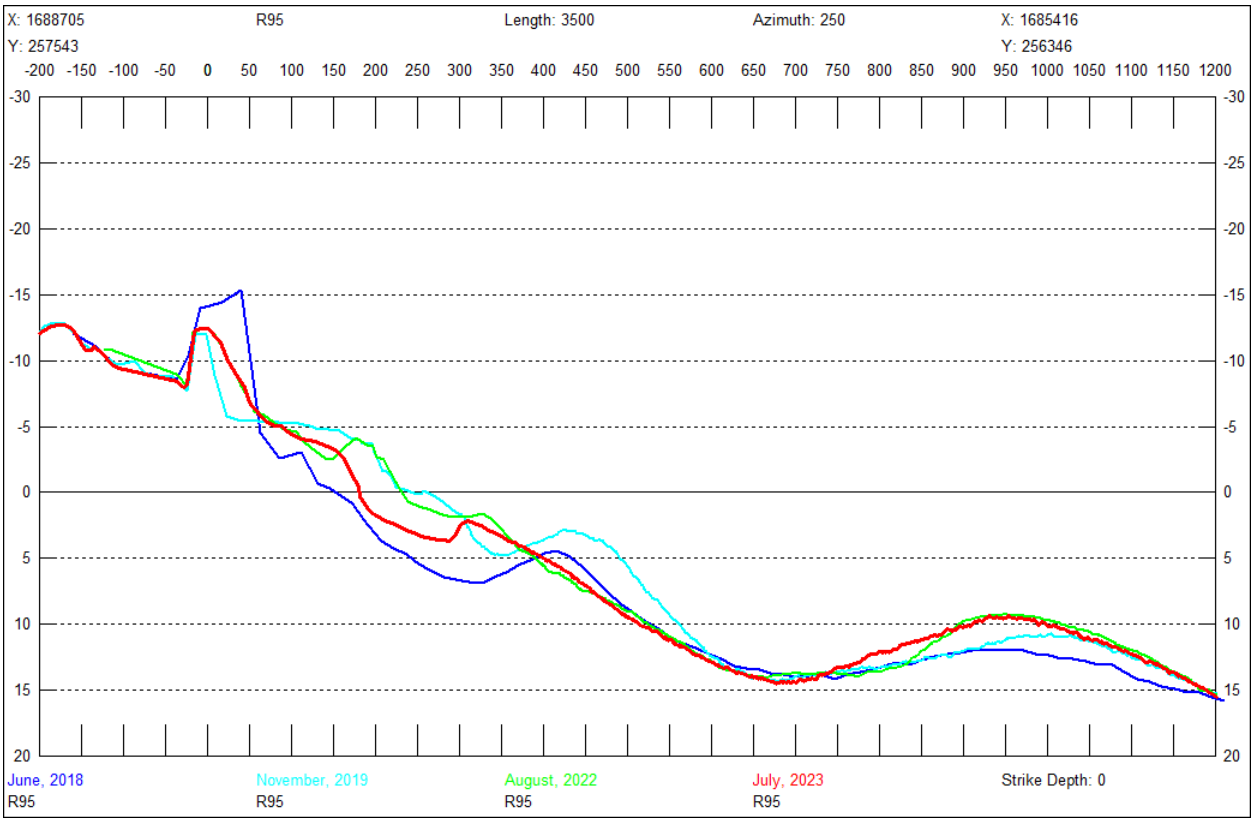
Strike Depth: 0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Y: 257543
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Length: 3500
Azimuth: 250
X: 1685416
Y: 256346
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June, 2018
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November, 2019
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August, 2022
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July, 2023
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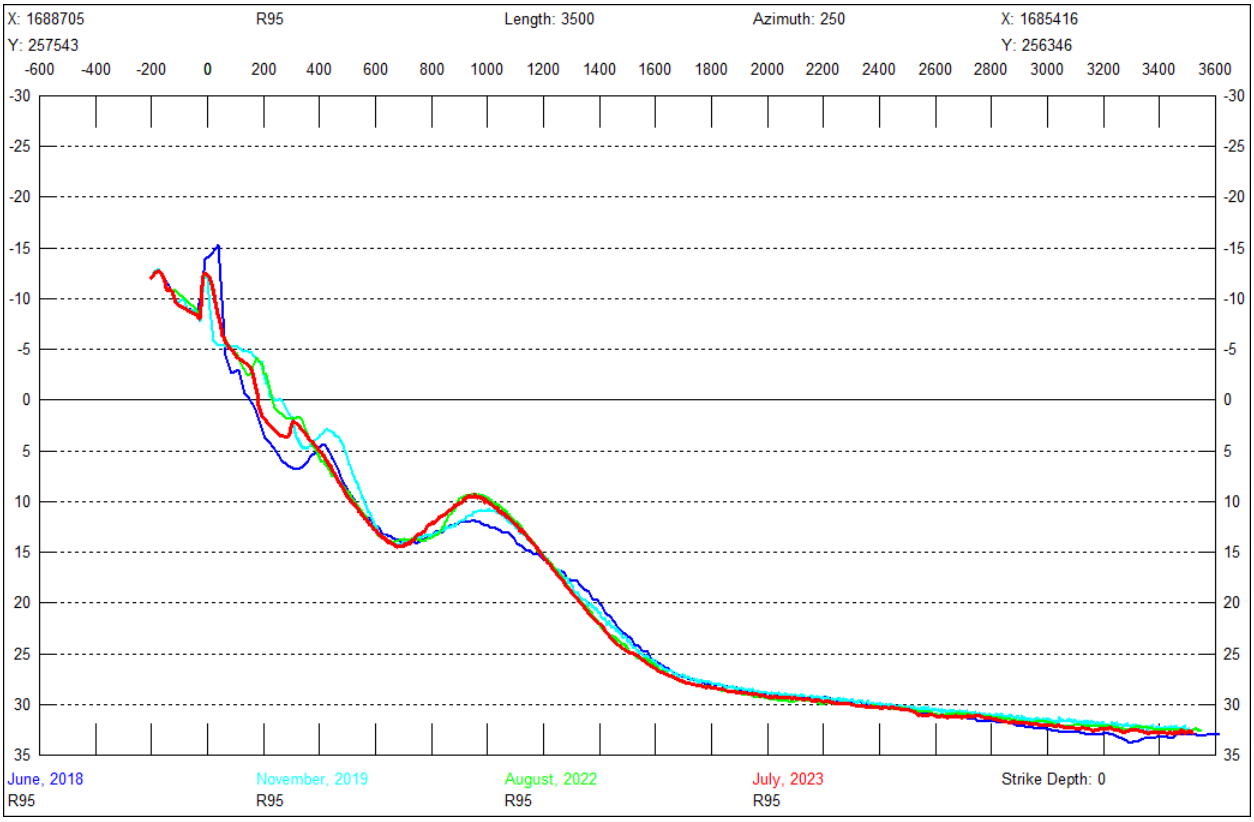
Strike Depth: 0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Azimuth: 250
X: 1685416
Y: 256346
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-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
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November, 2019
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August, 2022
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July, 2023
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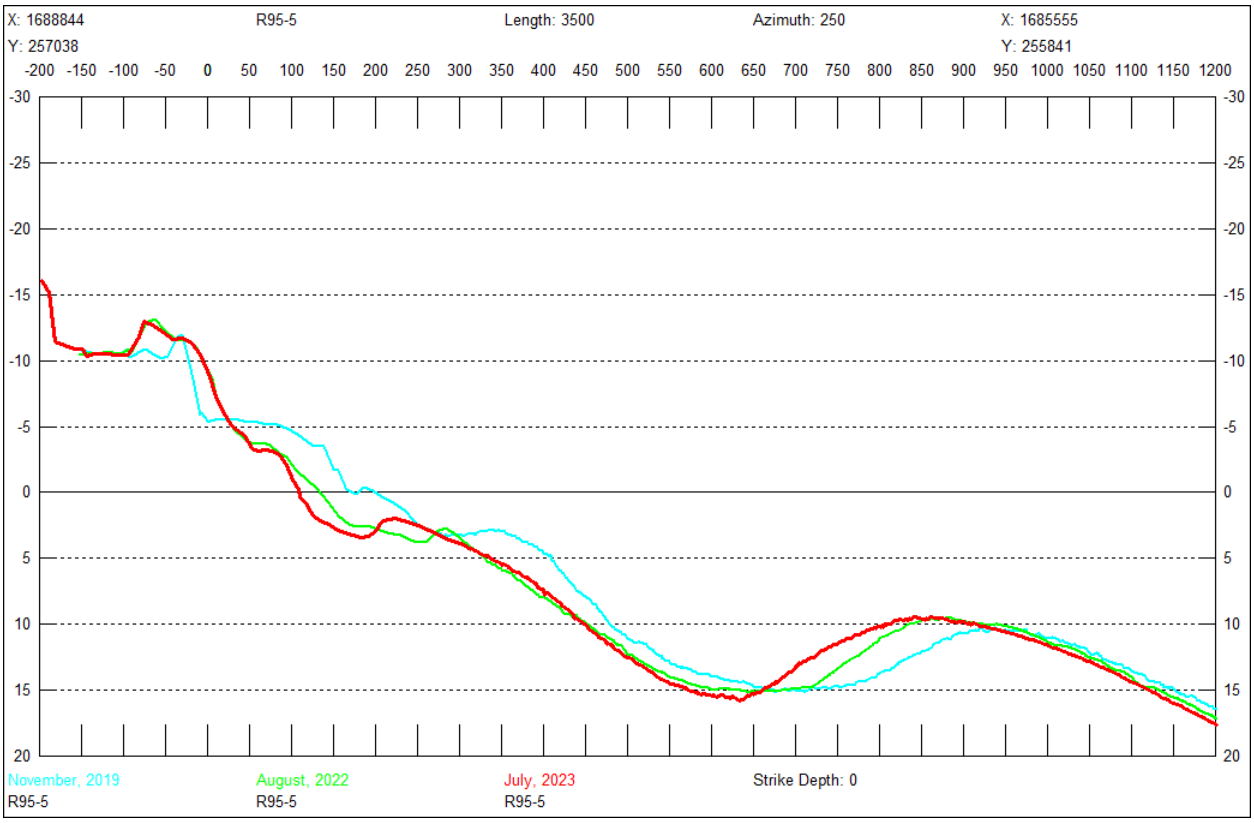
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1685555
Y: 257038
Y: 255841
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November, 2019
R95-5
August, 2022
R95-5
July, 2023
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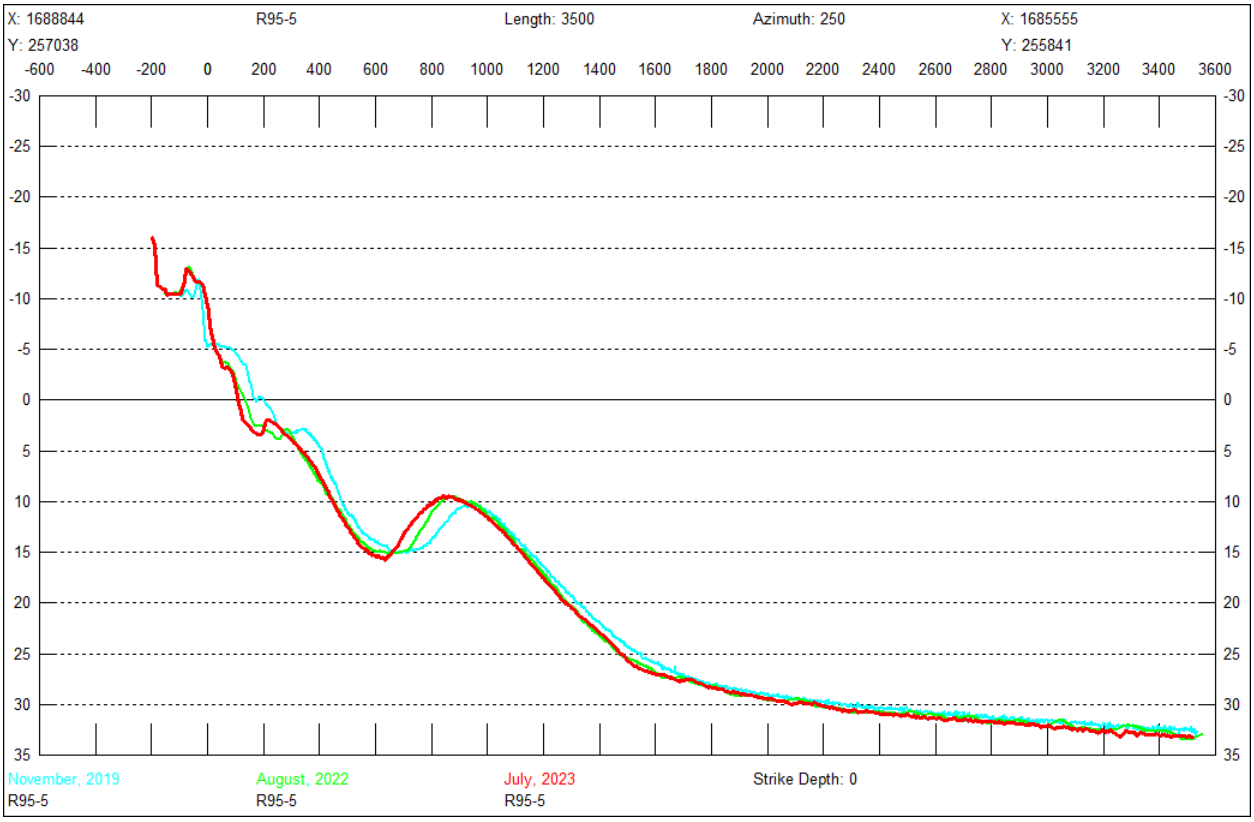
Strike Depth: 0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Y: 257038
Y: 255841
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November, 2019
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August, 2022
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July, 2023
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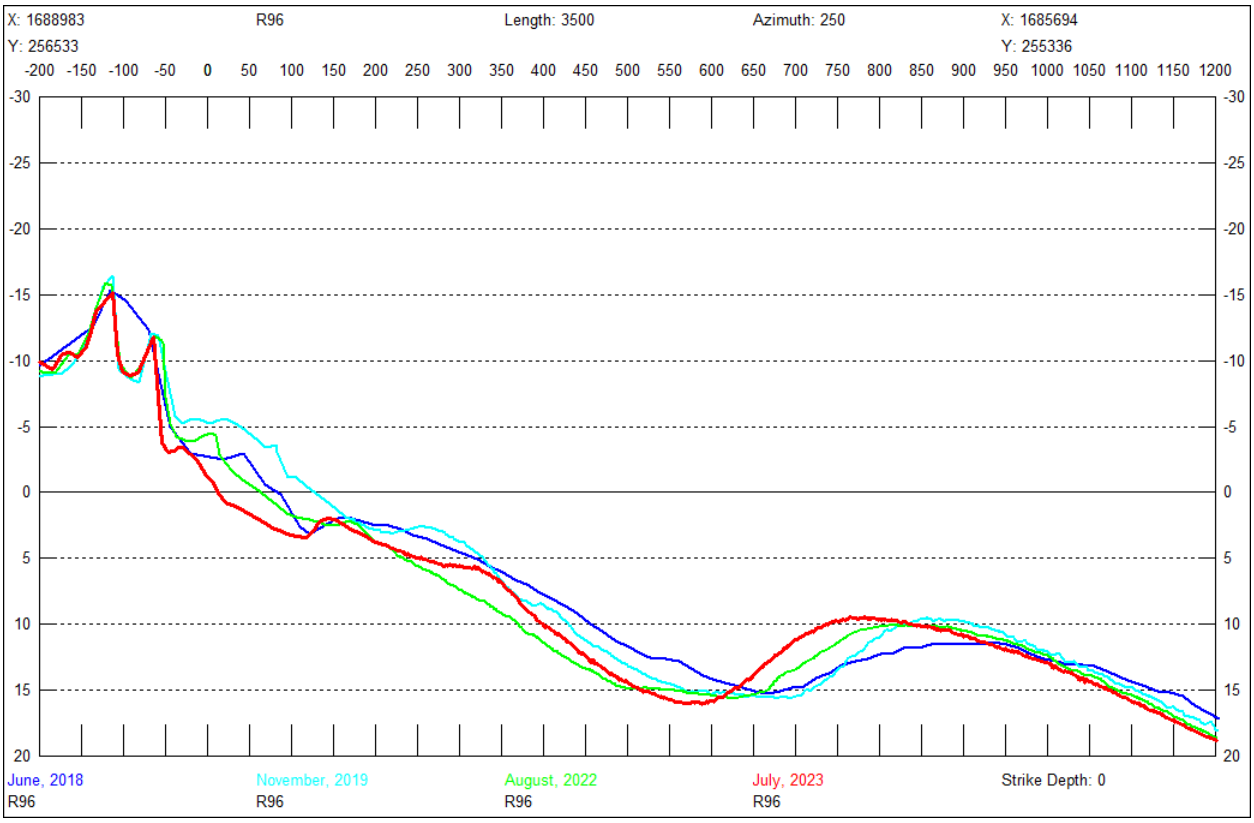
Strike Depth: 0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Azimuth: 250
X: 1685694
Y: 256533
Y: 255336
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June, 2018
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November, 2019
R96
August, 2022
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July, 2023
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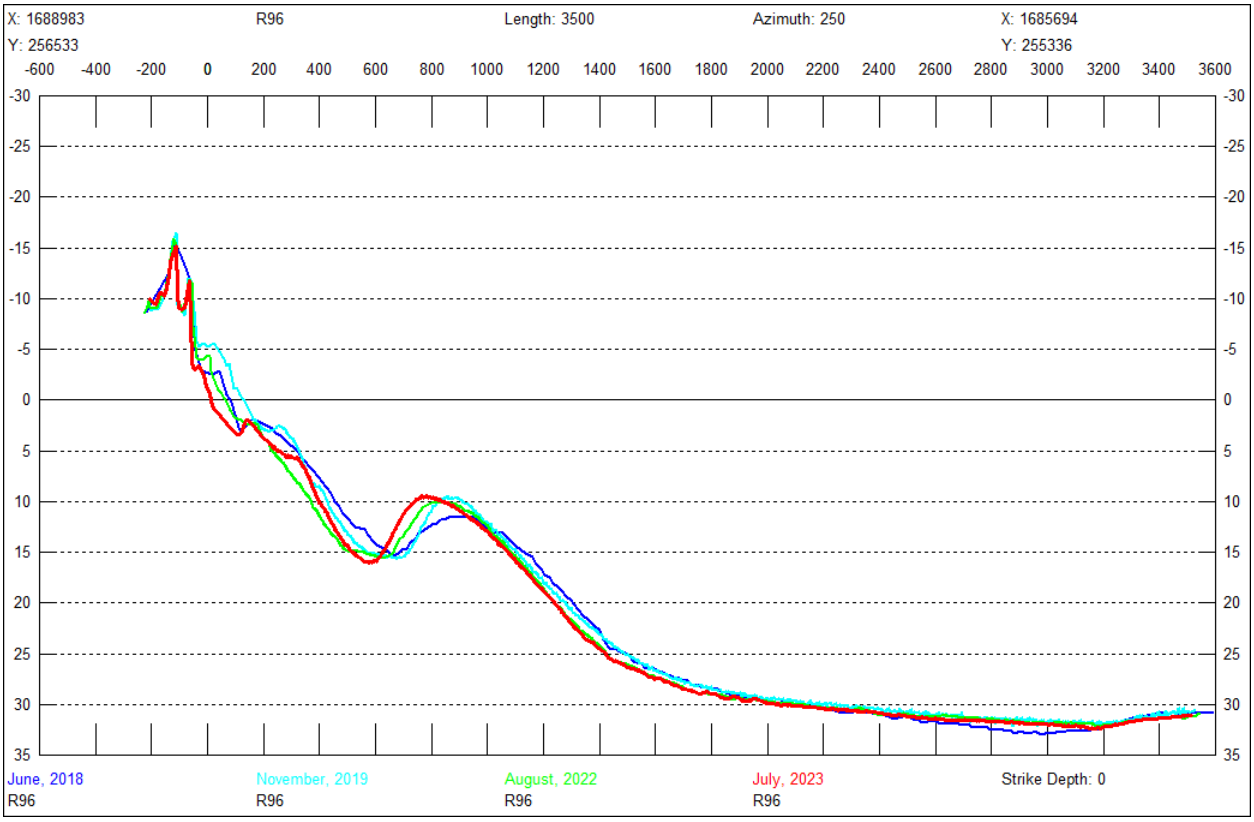
Strike Depth: 0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Azimuth: 250
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Y: 256533
Y: 255336
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-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
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November, 2019
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August, 2022
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July, 2023
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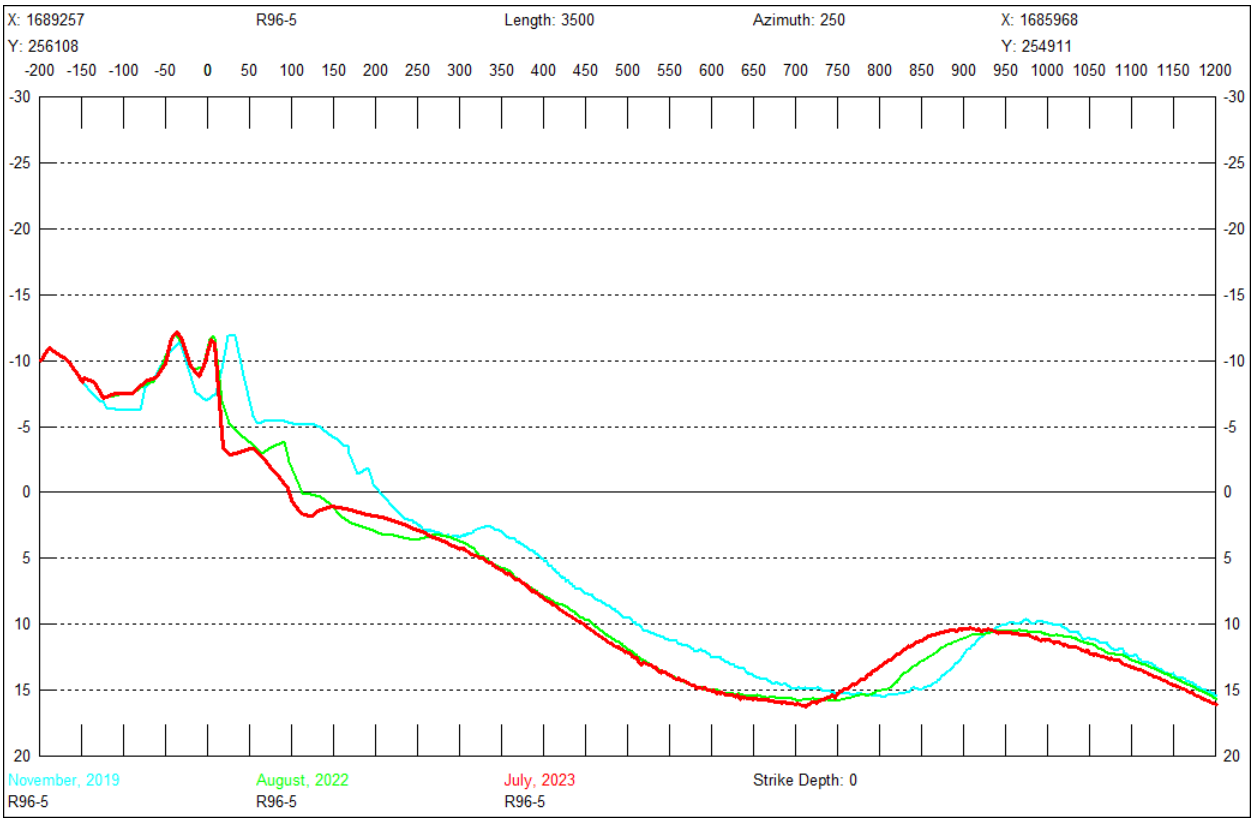
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1685968
Y: 256108
Y: 254911
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-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R96-5
August, 2022
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July, 2023
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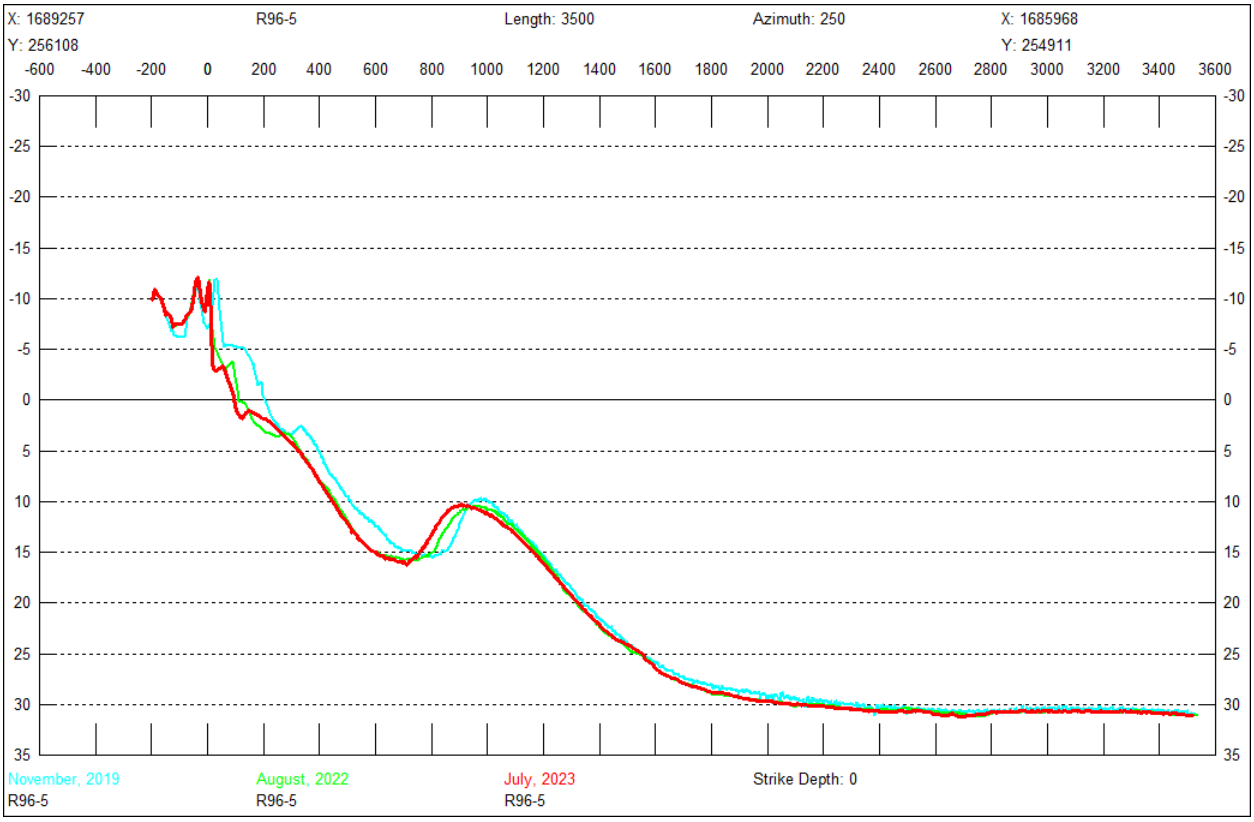
Strike Depth: 0


X: 1689257
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Length: 3500
Azimuth: 250
X: 1685968
Y: 256108
Y: 254911
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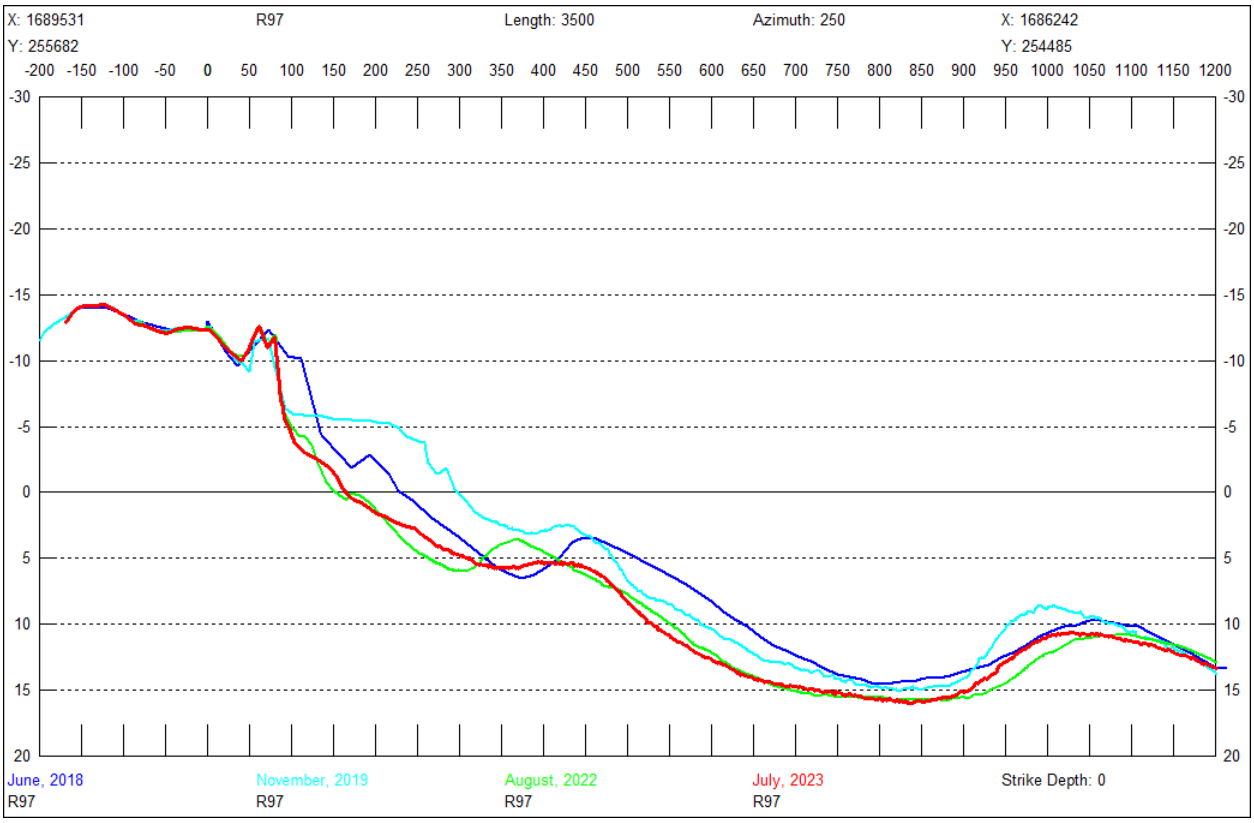
November, 2019
R96-5
August, 2022
R96-5
July, 2023
R96-5
Strike Depth: 0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Azimuth: 250
X: 1686242
Y: 255682
Y: 254485
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June, 2018
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November, 2019
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August, 2022
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July, 2023
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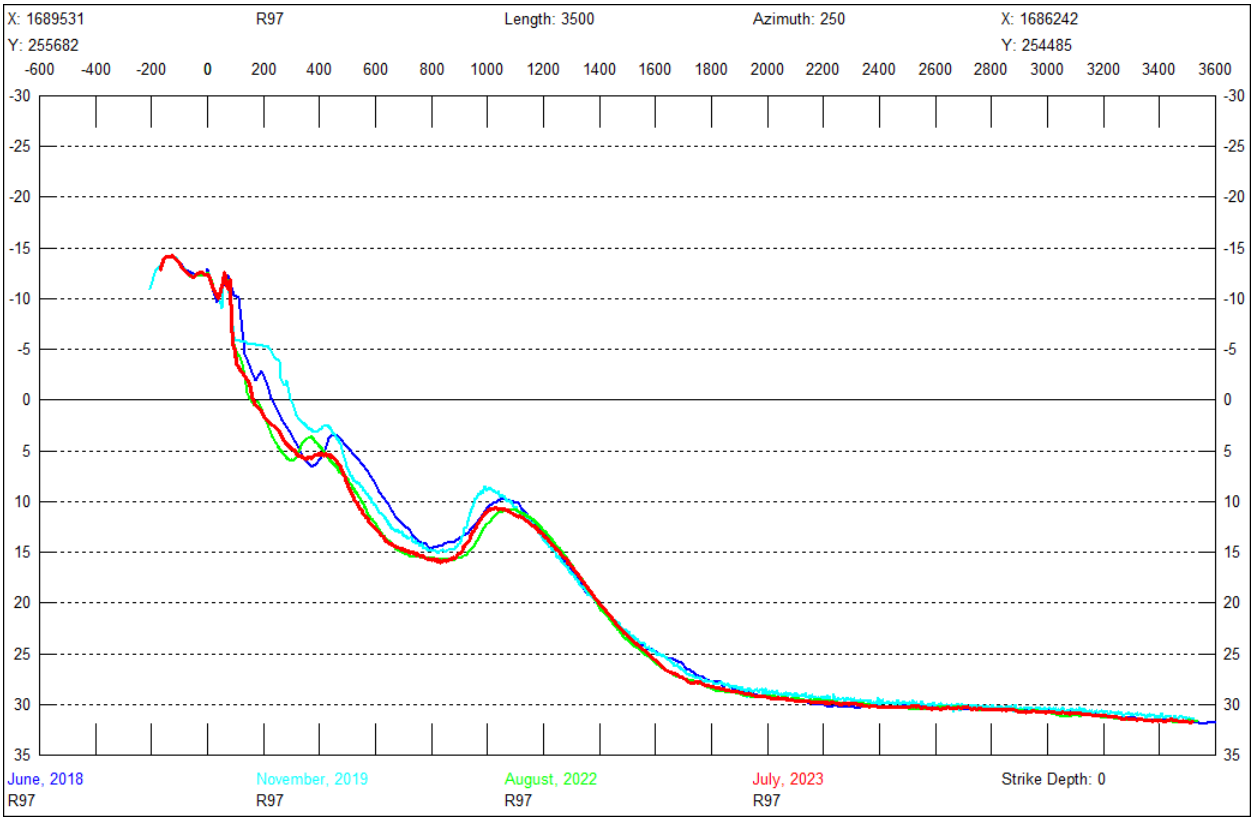
Strike Depth: 0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Length: 3500
Azimuth: 250
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Y: 255682
Y: 254485
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June, 2018
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November, 2019
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August, 2022
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July, 2023
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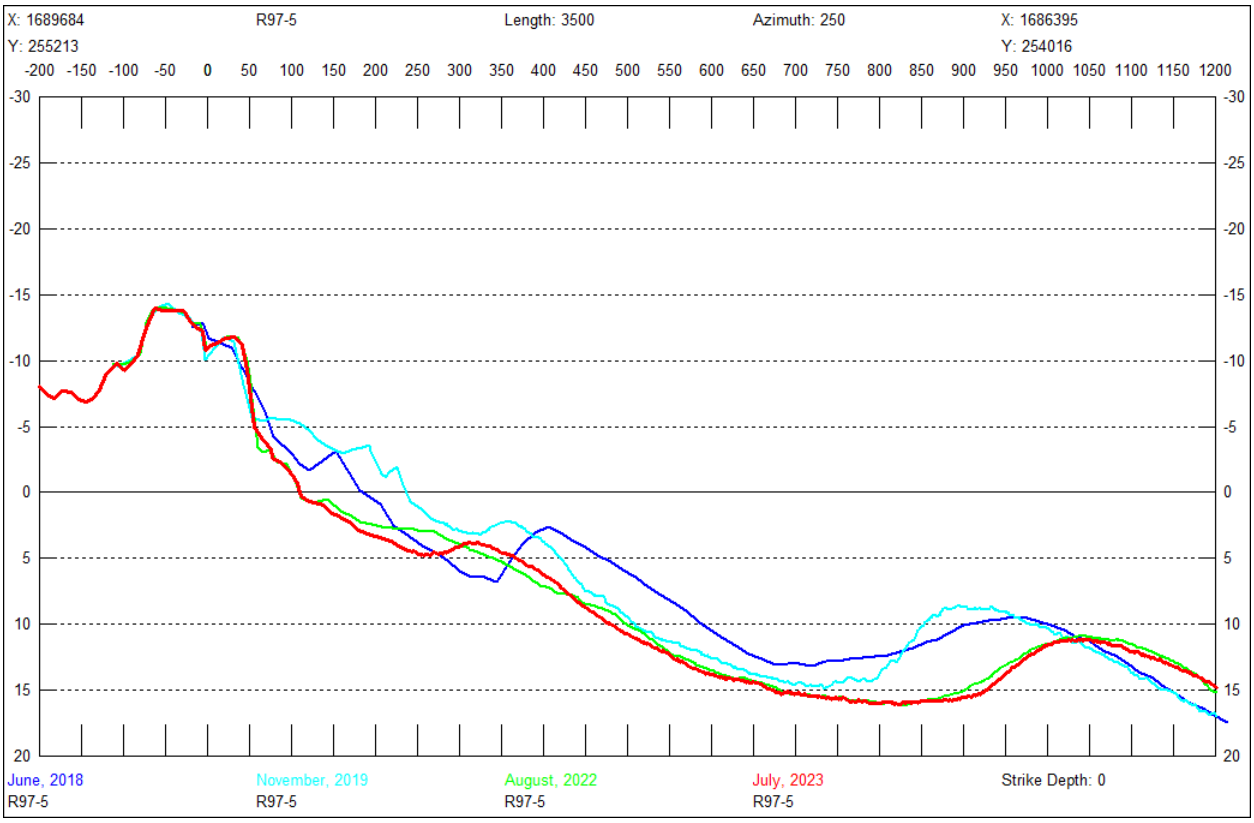
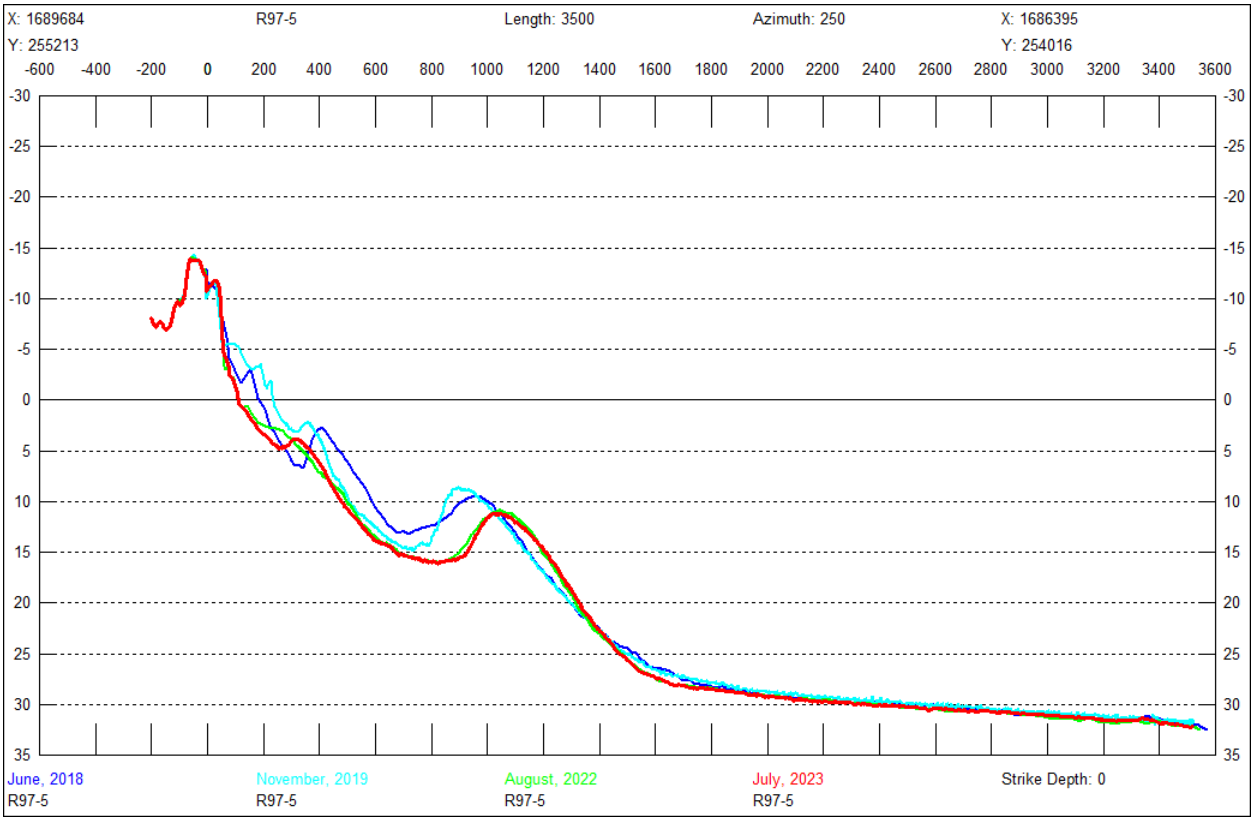
Strike Depth: 0


X: 1689684
R97-5
Length: 3500
Azimuth: 250
X: 1686395
Y: 255213
Y: 254016
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R97-5
November, 2019
R97-5
August, 2022
R97-5
July, 2023
R97-5
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1686395
Y: 255213
Y: 254016
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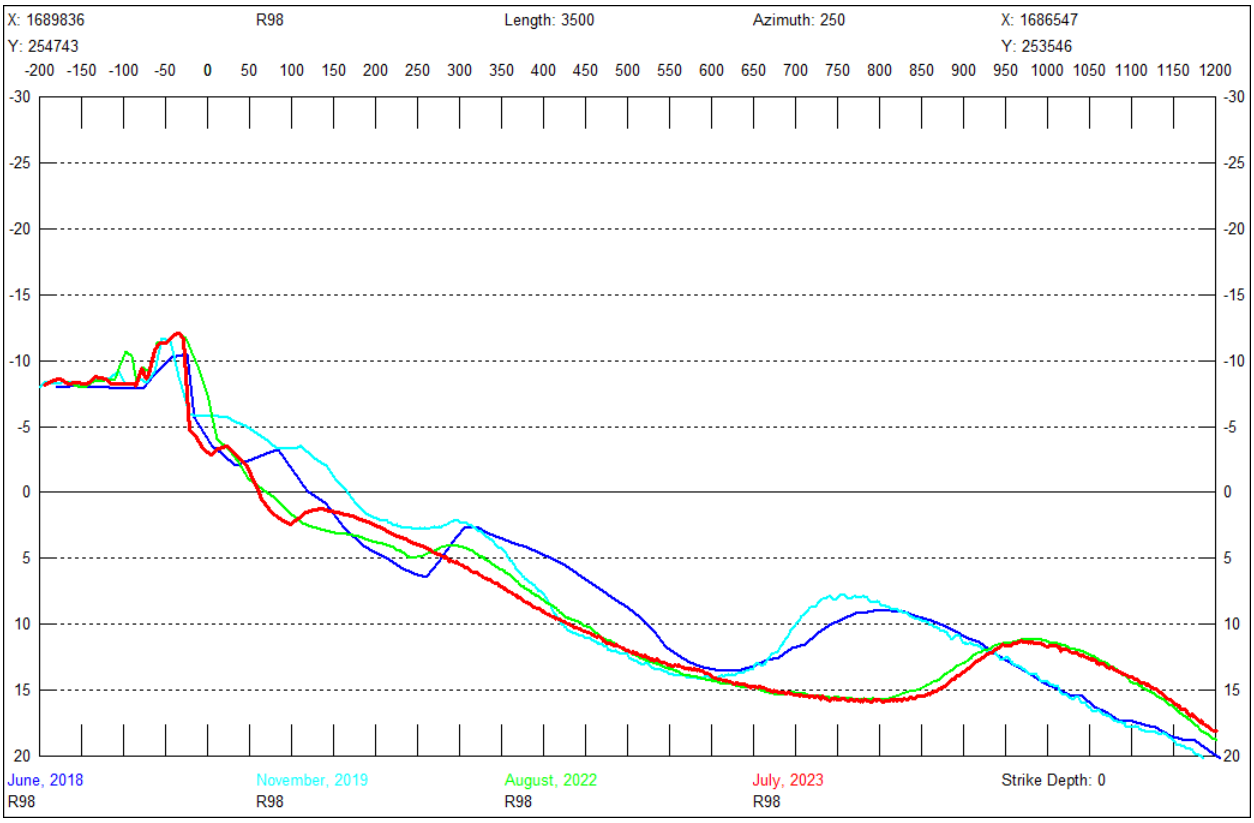
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R97-5
November, 2019
R97-5
August, 2022
R97-5
July, 2023
R97-5
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1686547
Y: 254743
Y: 253546
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-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R98
November, 2019
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August, 2022
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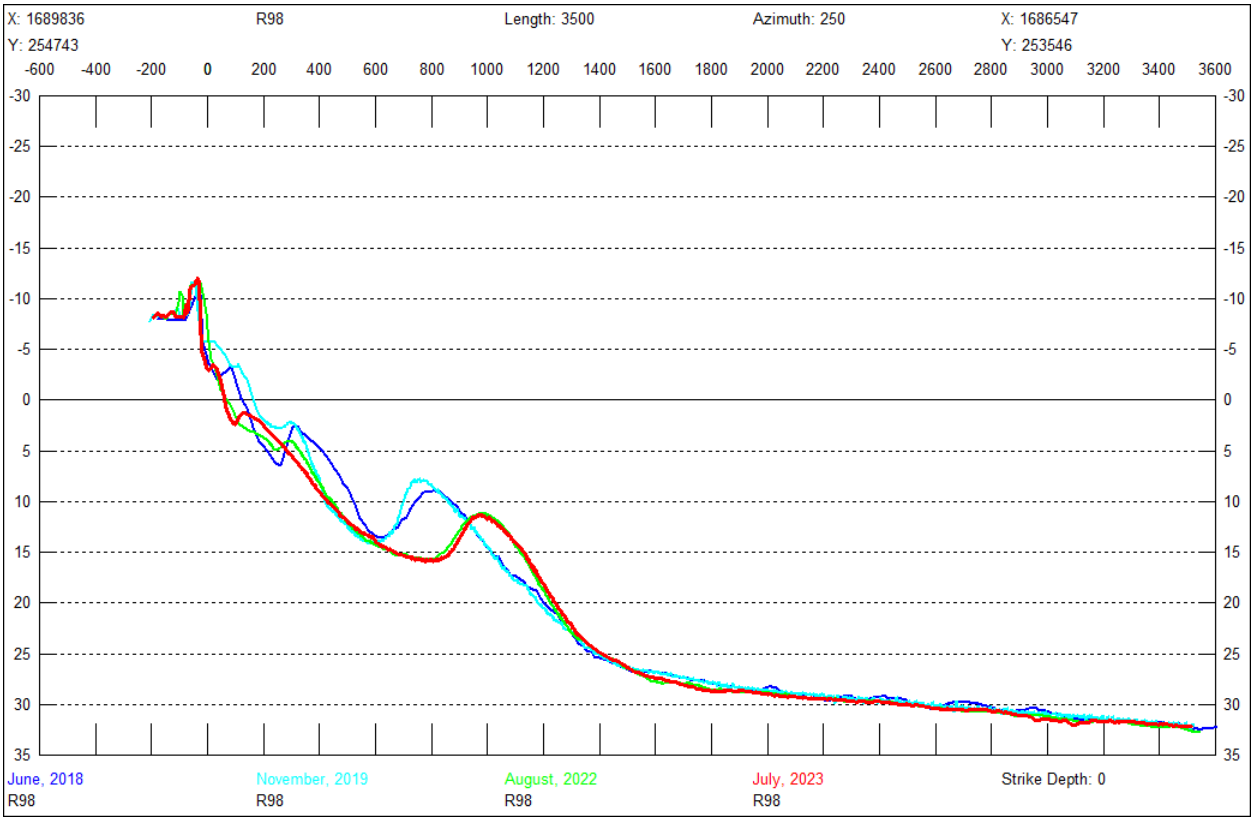
July, 2023
R98
Strike Depth: 0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Length: 3500
Azimuth: 250
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Y: 254743
Y: 253546
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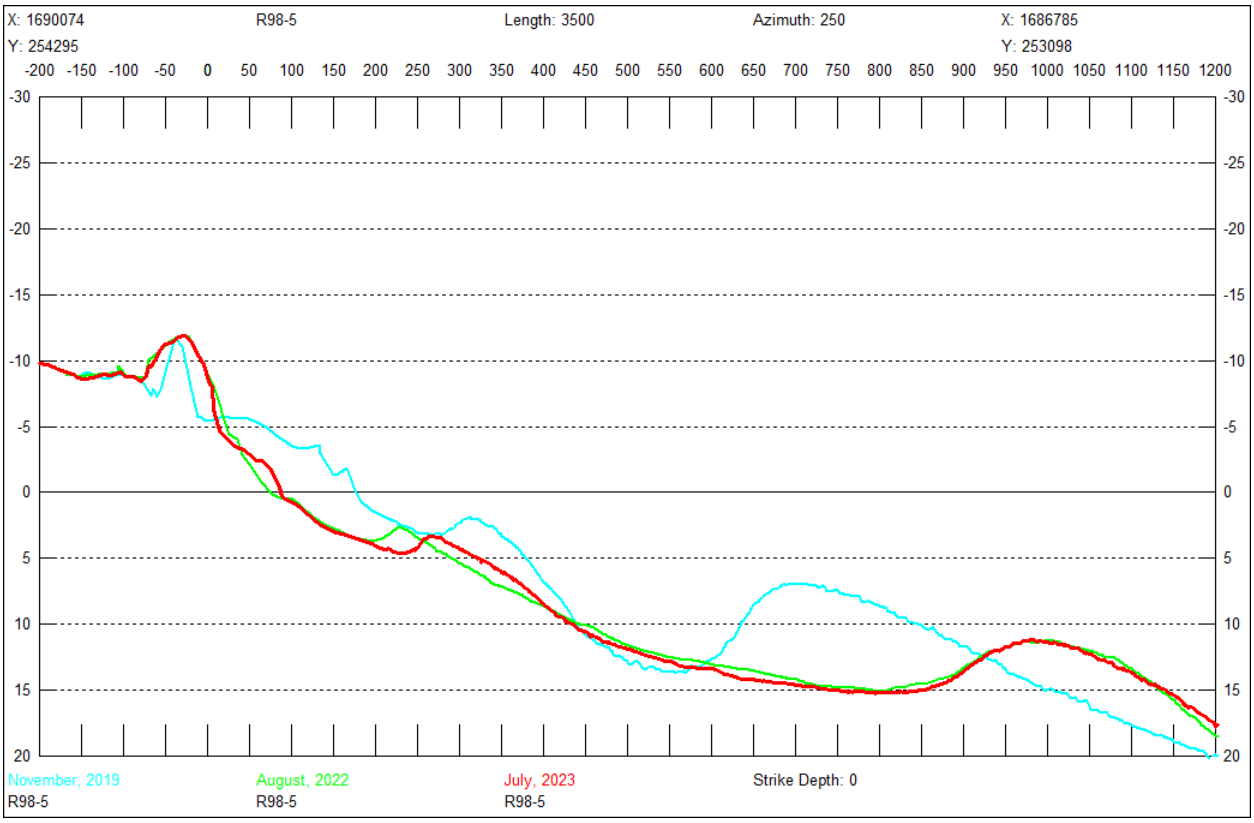
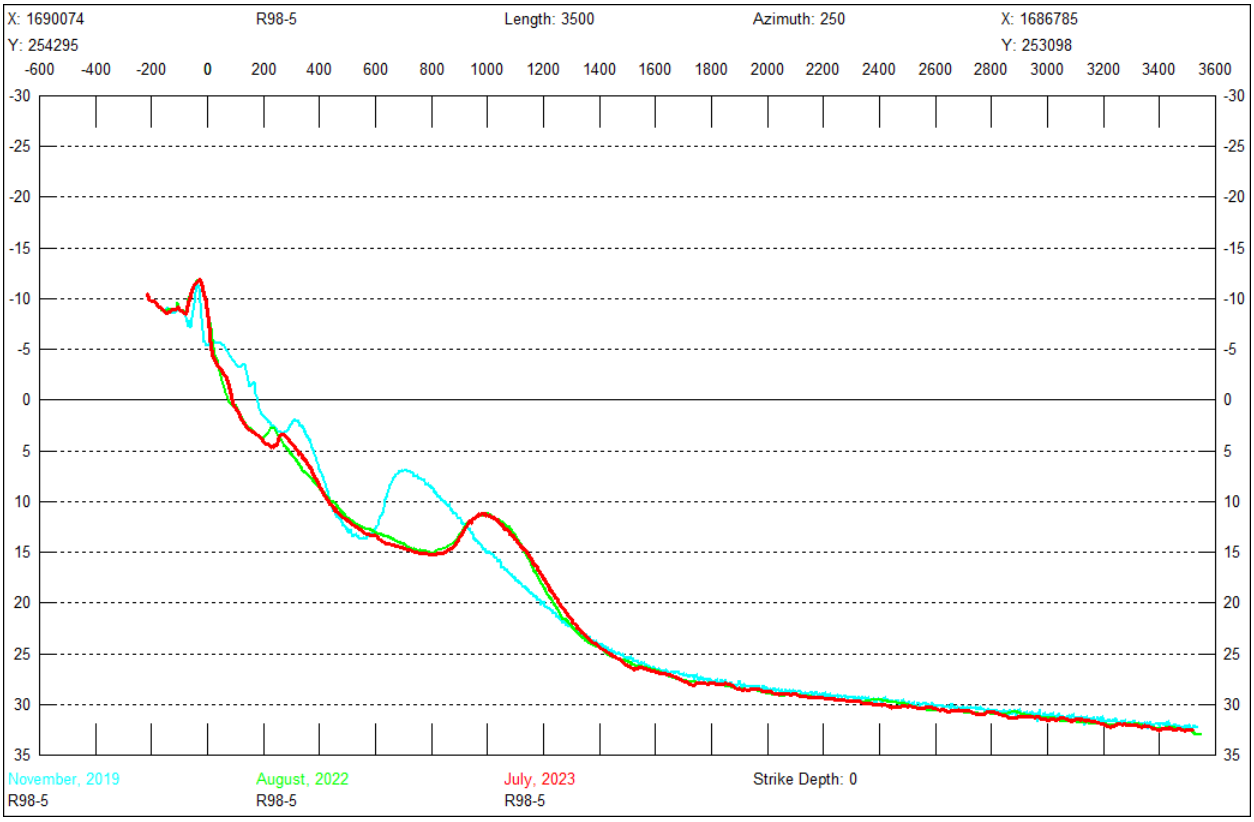
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R98
November, 2019
R98
August, 2022
R98
July, 2023
R98
Strike Depth: 0


X: 1690074
R98-5
Length: 3500
Azimuth: 250
X: 1686785
Y: 254295
Y: 253098
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R98-5
August, 2022
R98-5
July, 2023
R98-5
Strike Depth: 0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Length: 3500
Azimuth: 250
X: 1686785
Y: 254295
Y: 253098
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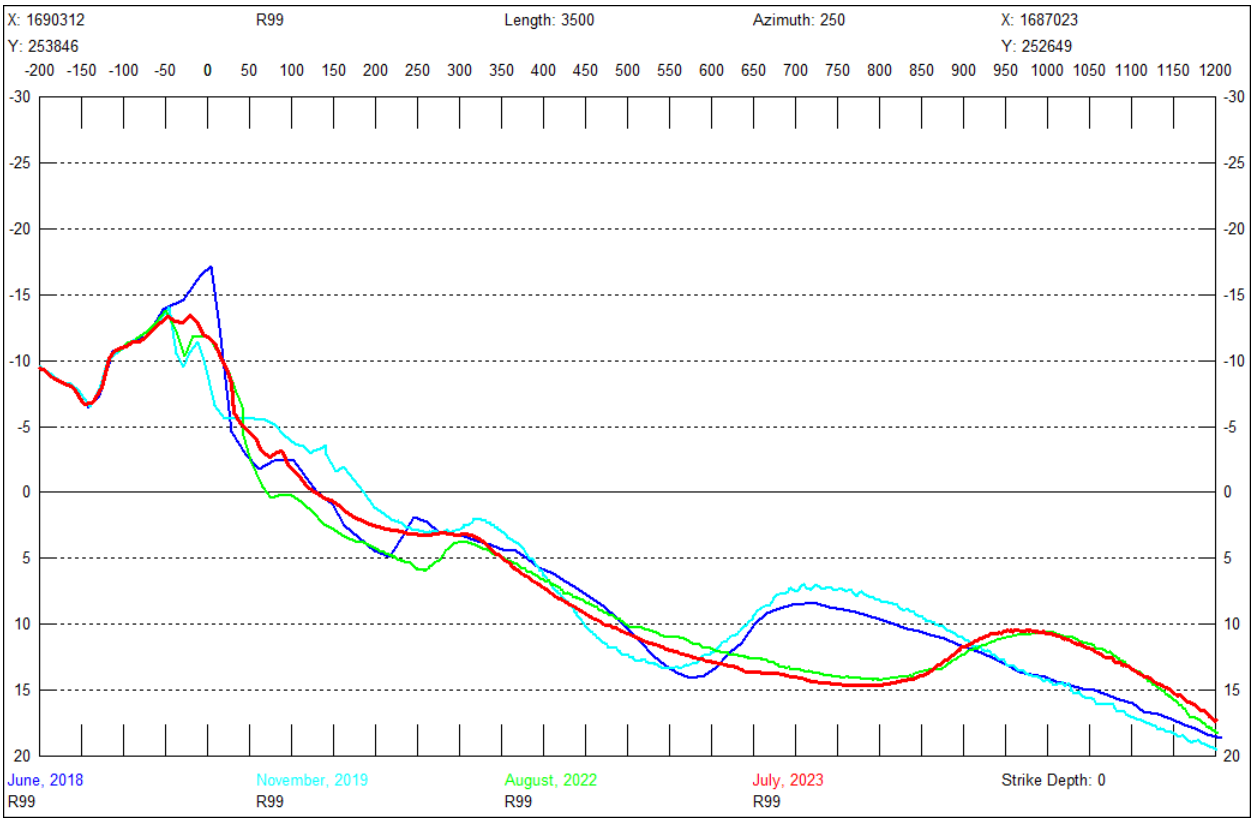
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R98-5
August, 2022
R98-5
July, 2023
R98-5
Strike Depth: 0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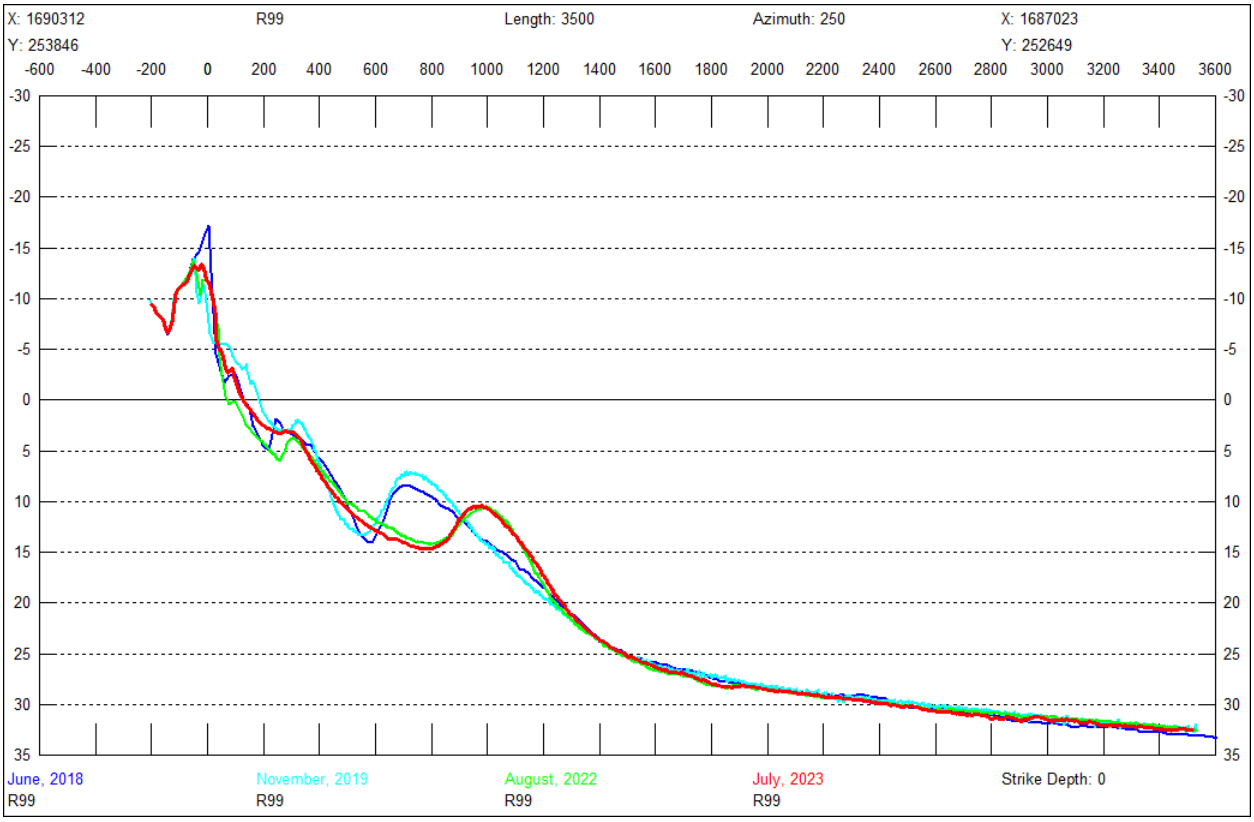
Y: 253846
R99
Length: 3500
Azimuth: 250
X: 1687023
Y: 252649
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R99
November, 2019
R99
August, 2022
R99
July, 2023
R99
Strike Depth: 0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Y: 253846
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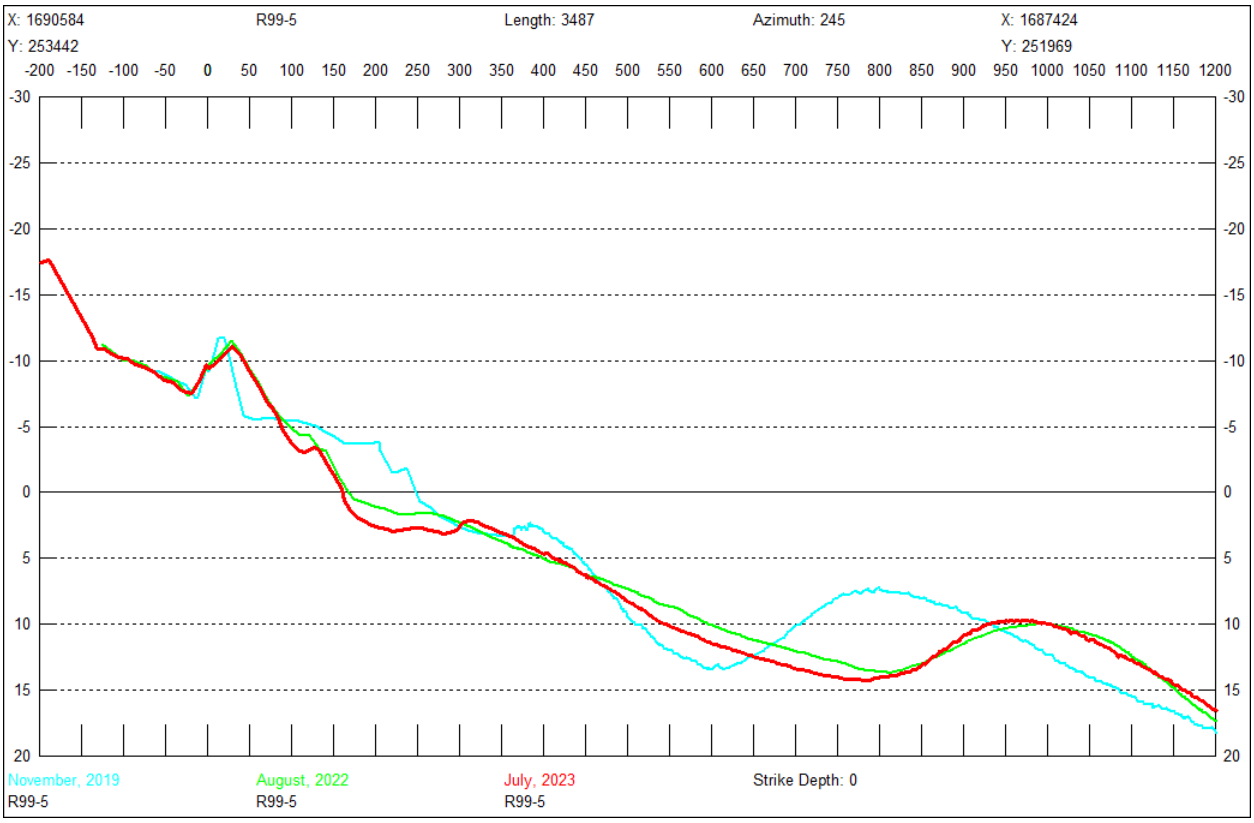
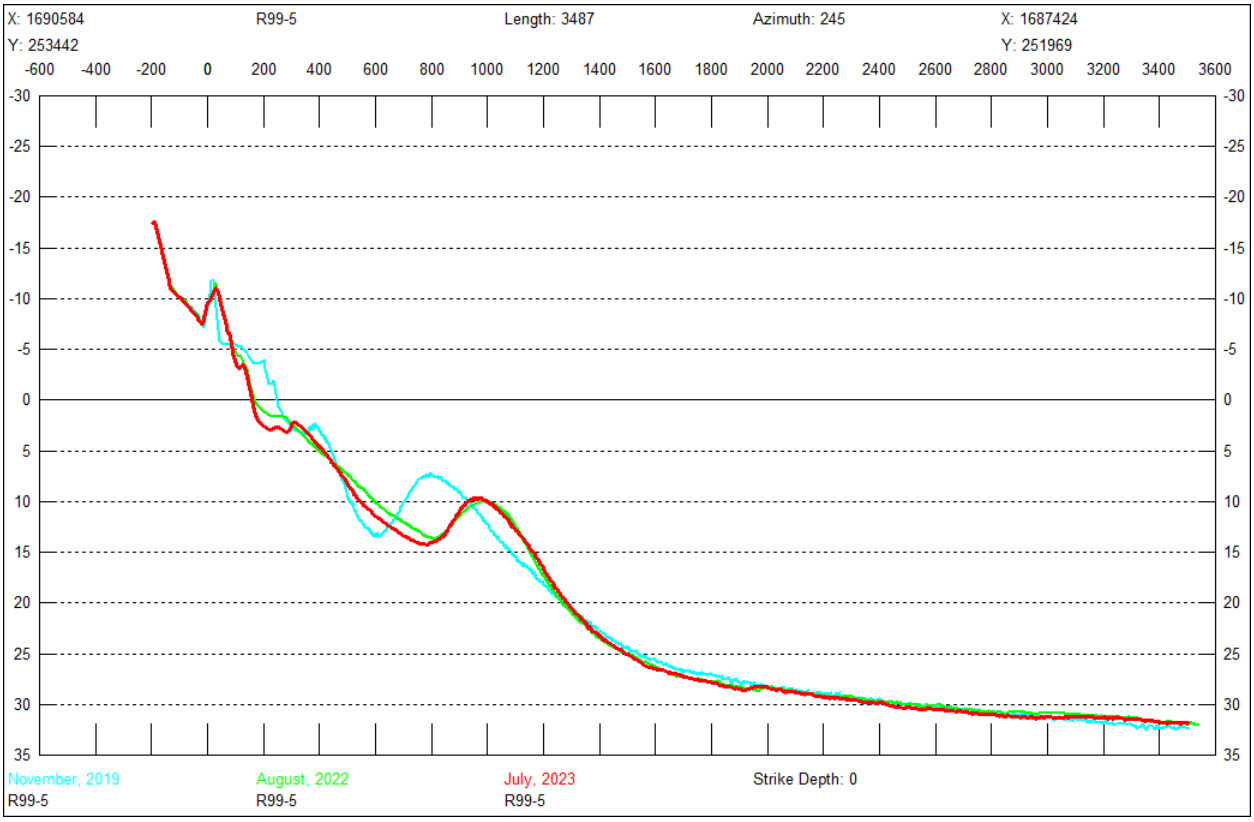
Length: 3500
Azimuth: 250
X: 1687023
Y: 252649
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R99
November, 2019
R99
August, 2022
R99
July, 2023
R99
Strike Depth: 0


X: 1690584
R99-5
Length: 3487
Azimuth: 245
X: 1687424
Y: 253442
Y: 251969
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R99-5
August, 2022
R99-5
July, 2023
R99-5
Strike Depth: 0


X: 1690584
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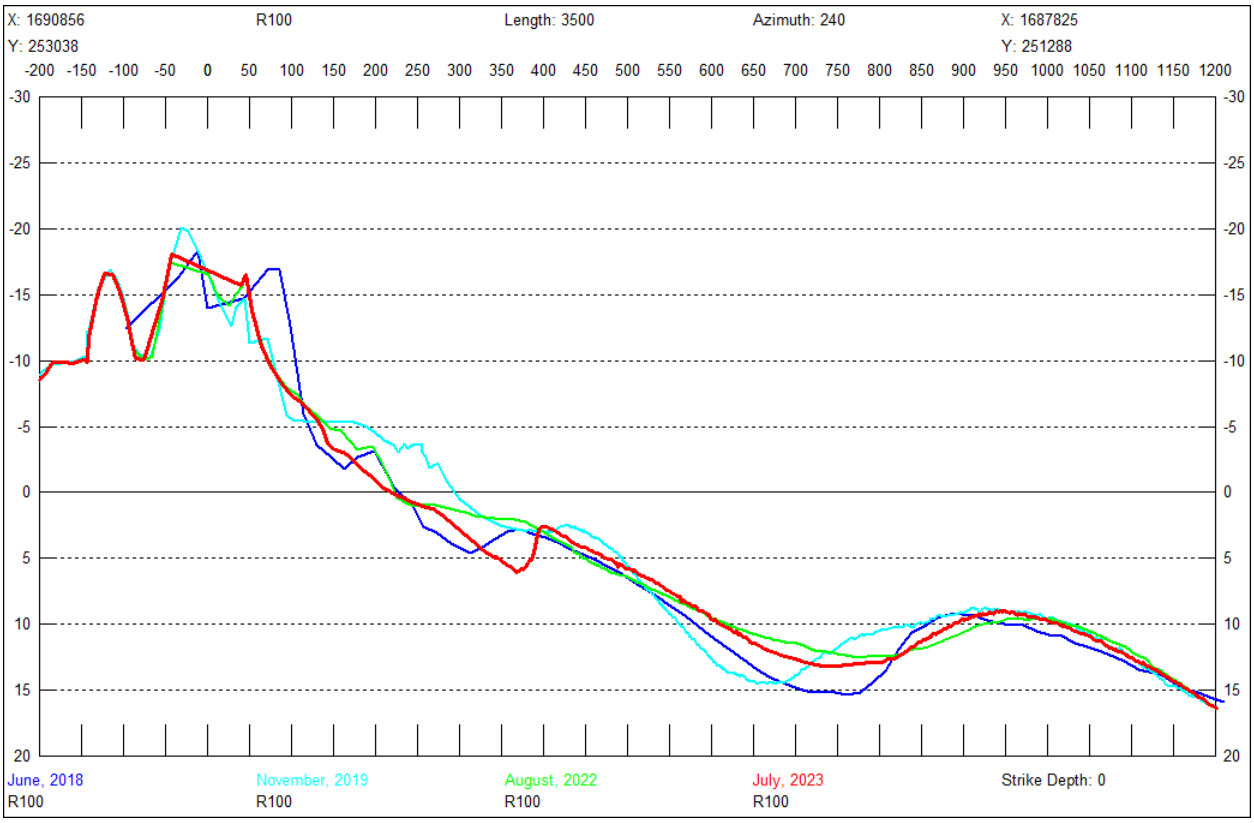
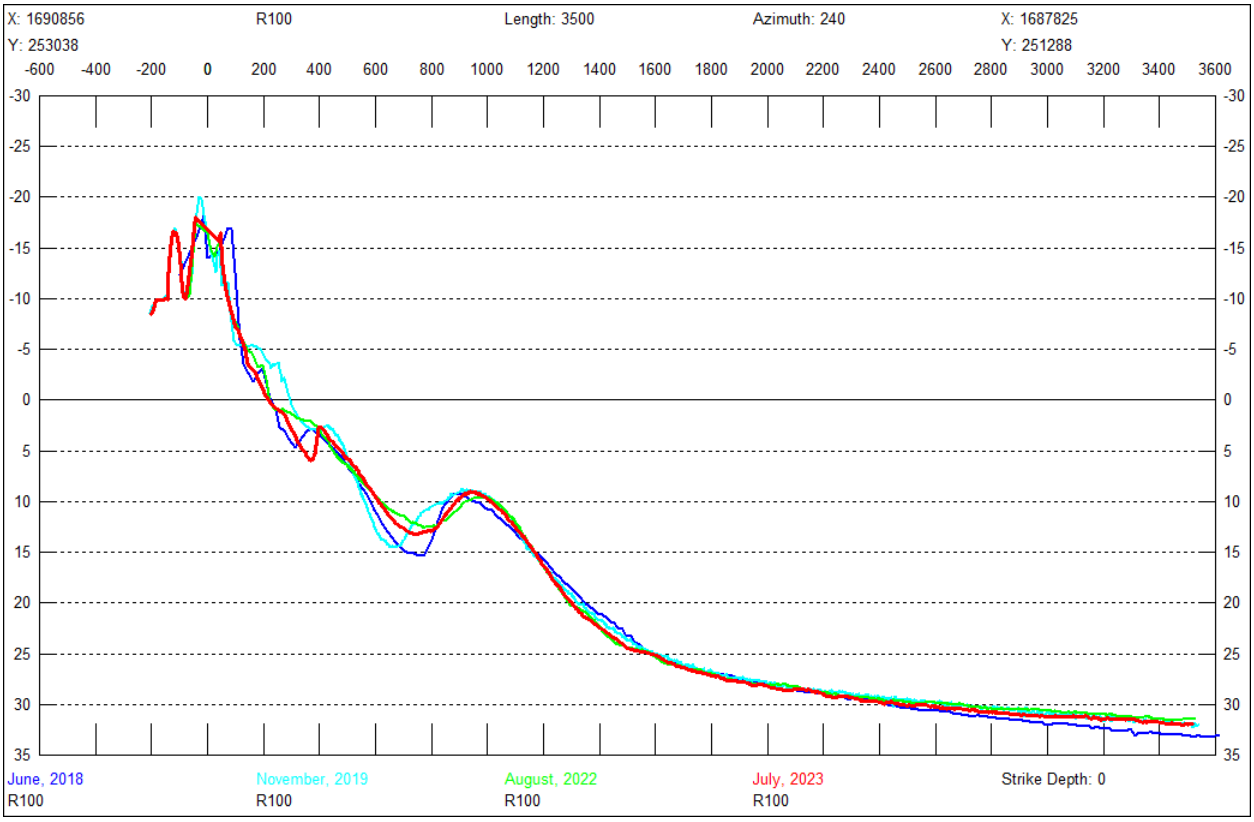
Length: 3487
Azimuth: 245
X: 1687424
Y: 253442
Y: 251969
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R99-5
August, 2022
R99-5
July, 2023
R99-5
Strike Depth: 0


X: 1690856
R100
Length: 3500
Azimuth: 240
X: 1687825
Y: 253038
Y: 251288
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R100
November, 2019
R100
August, 2022
R100
July, 2023
R100
Strike Depth: 0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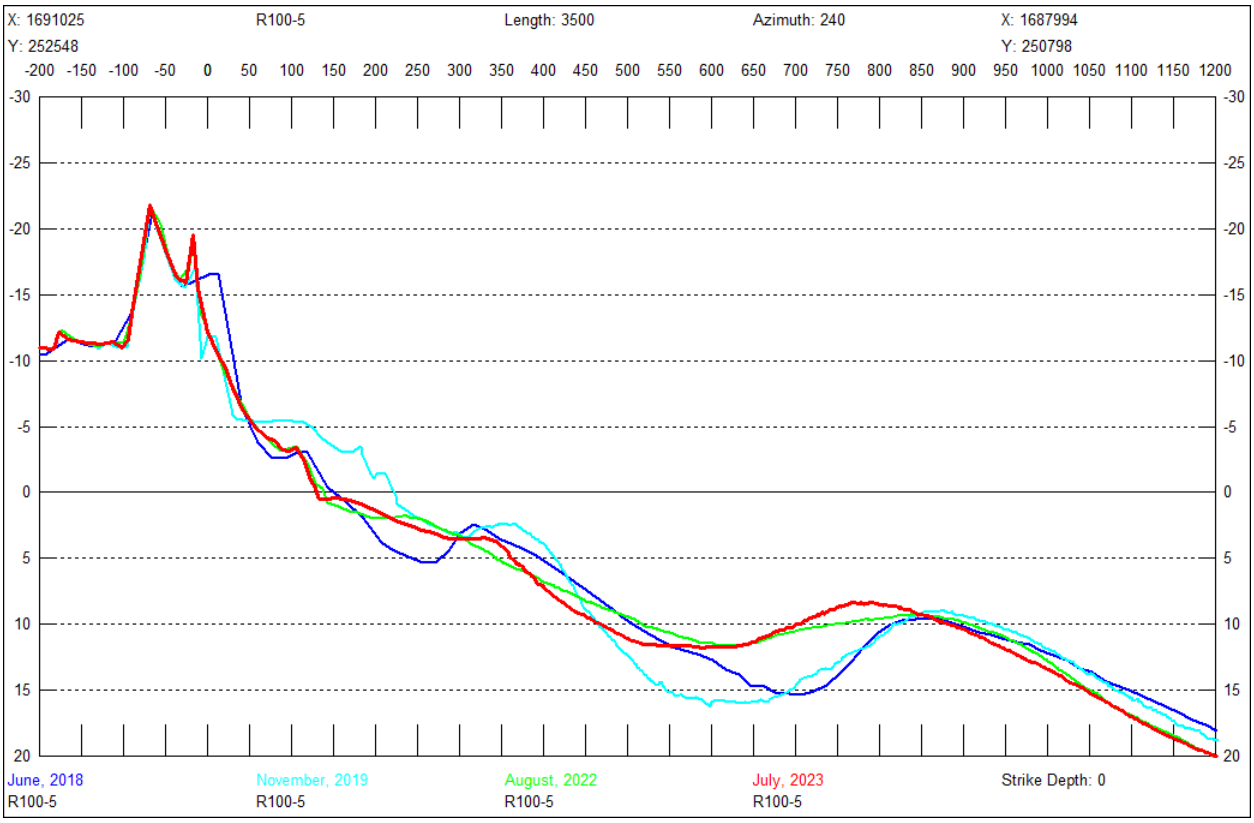
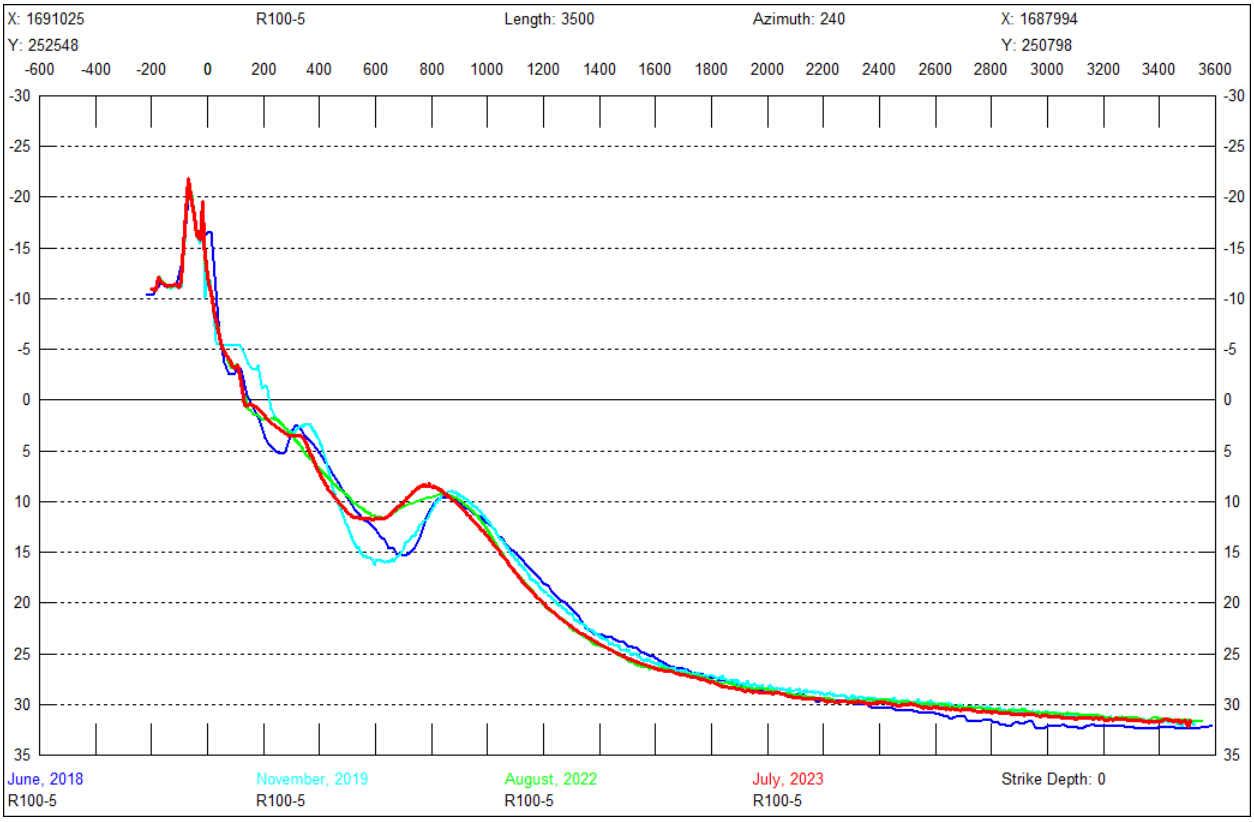
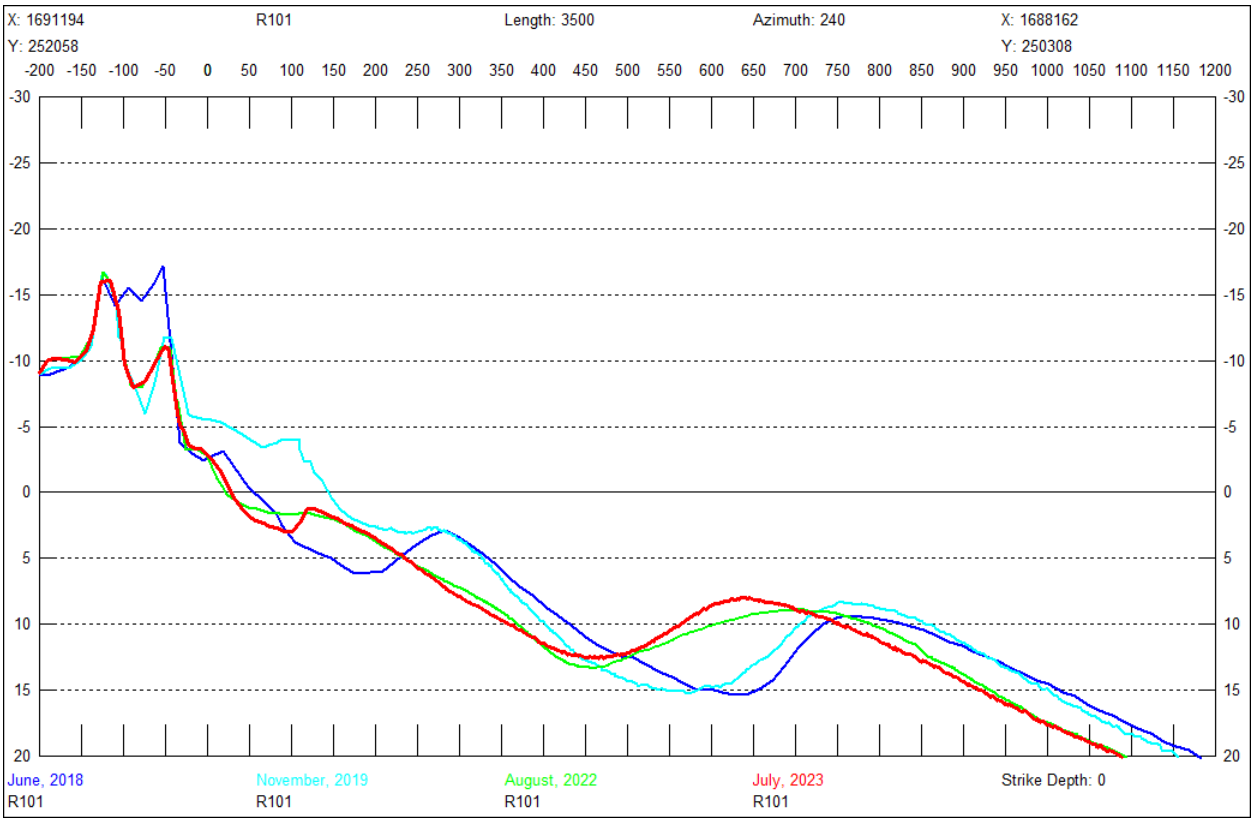
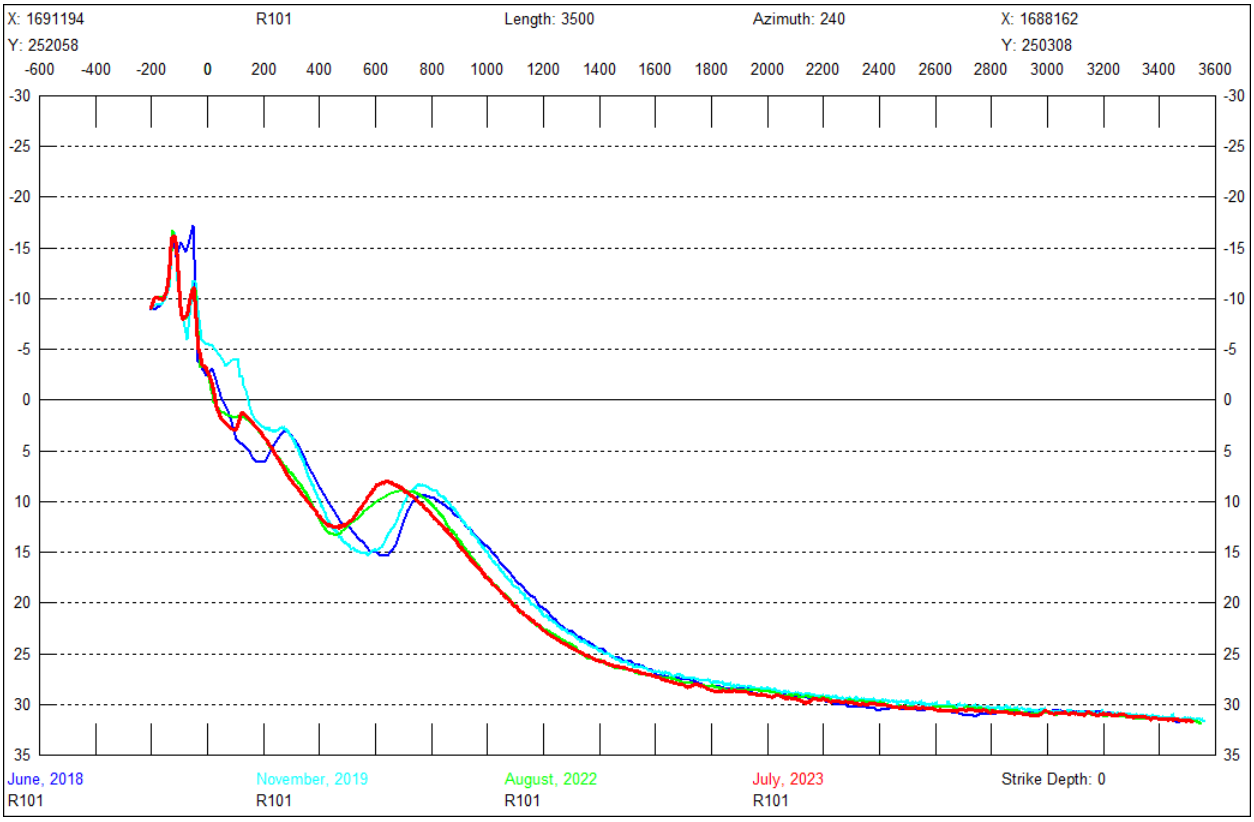
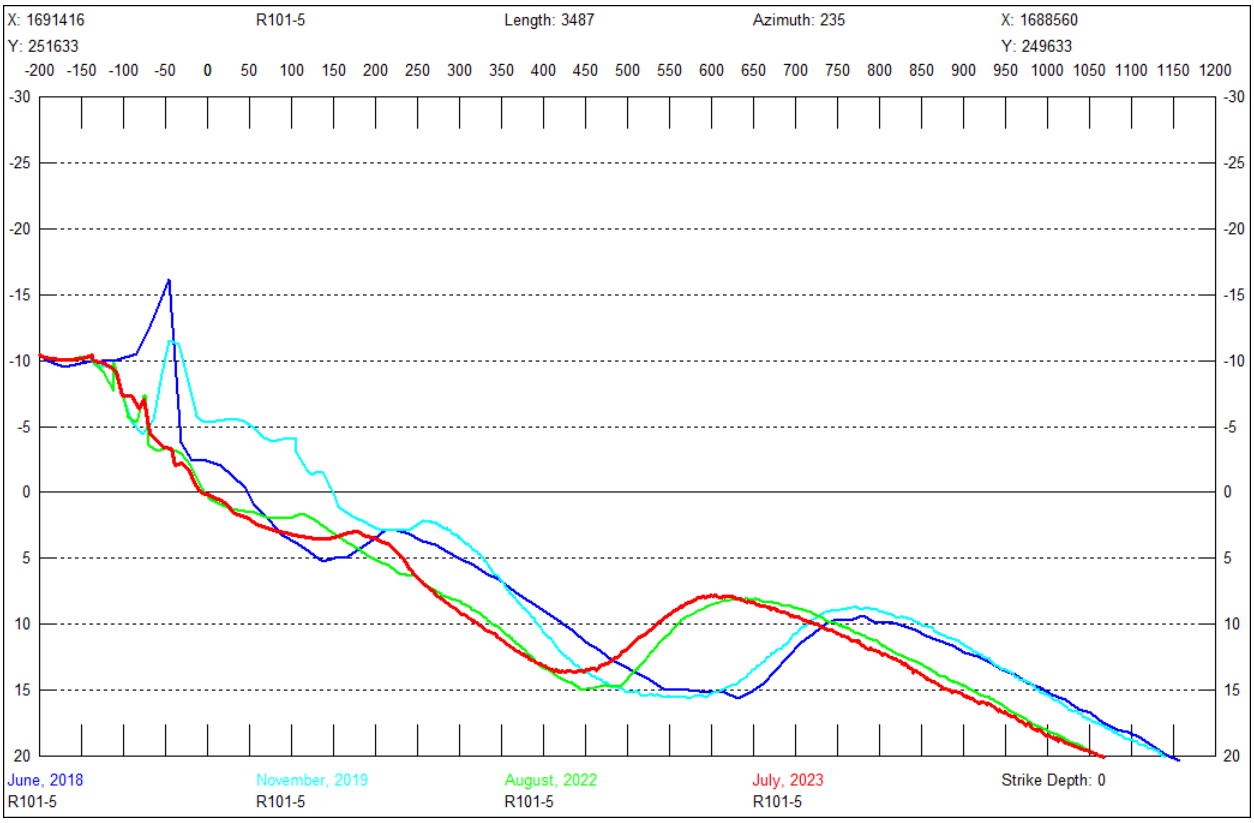
Length: 3500
Azimuth: 240
X: 1687825
Y: 253038
Y: 251288
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R100
November, 2019
R100
August, 2022
R100
July, 2023
R100
Strike Depth: 0

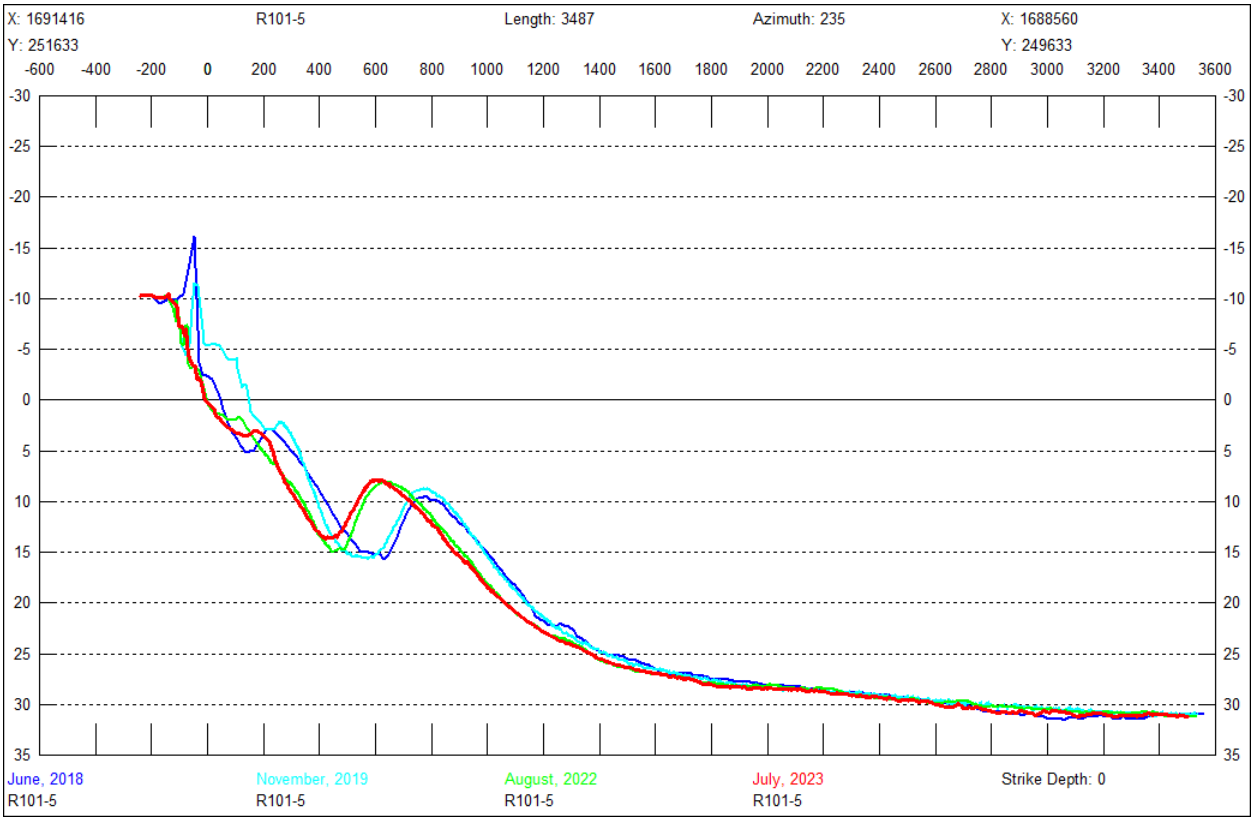

X: 1691025
R100-5
Length: 3500
Azimuth: 240
X: 1687994
Y: 252548
Y: 250798
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R100-5
November, 2019
R100-5
August, 2022
R100-5
July, 2023
R100-5
Strike Depth: 0

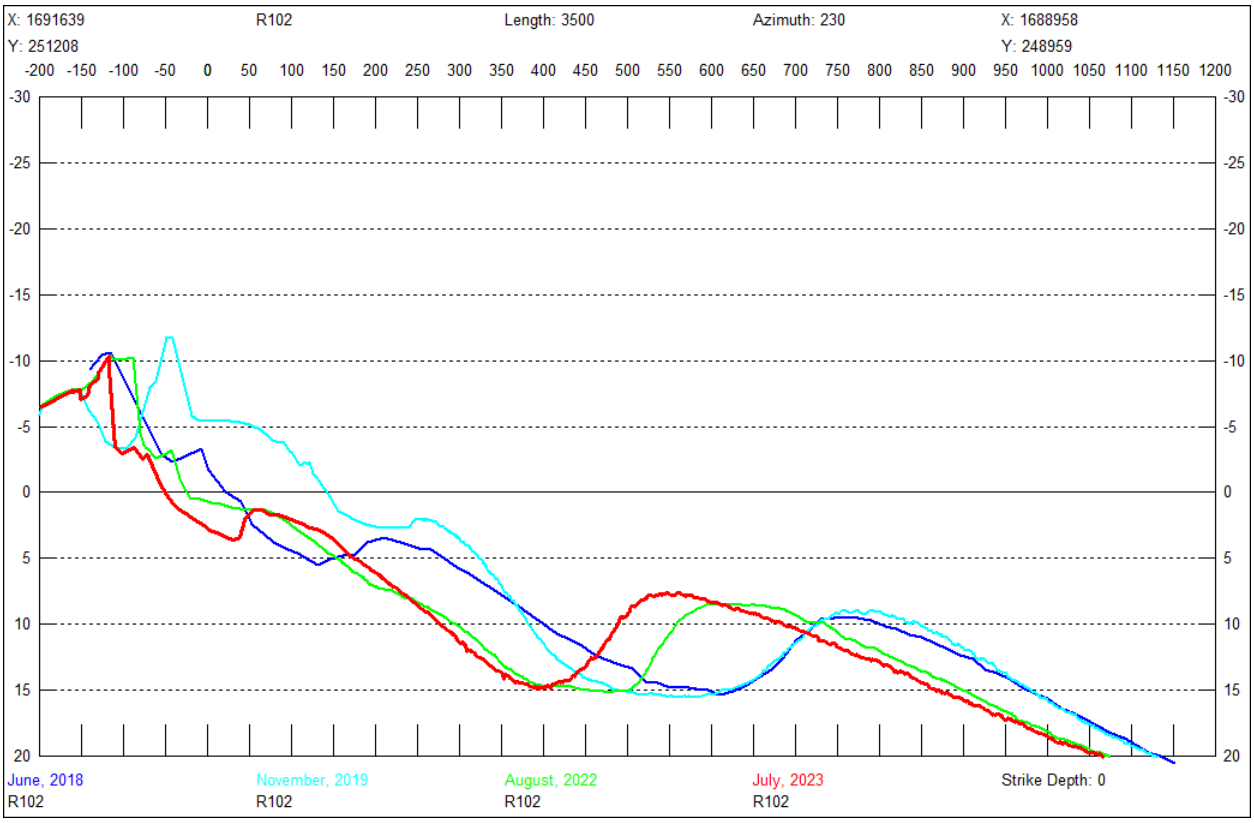

X: 1691025
R100-5
Length: 3500
Azimuth: 240
X: 1687994
Y: 252548
Y: 250798
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R100-5
November, 2019
R100-5
August, 2022
R100-5
July, 2023
R100-5
Strike Depth: 0


X: 1691194
R101
Length: 3500
Azimuth: 240
X: 1688162
Y: 252058
Y: 250308
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R101
R101
R101
R101


X: 1691194
R101
Length: 3500
Azimuth: 240
X: 1688162
Y: 252058
Y: 250308
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R101
R101
R101
R101


X: 1691416
R101-5
Length: 3487
Azimuth: 235
X: 1688560
Y: 251633
Y: 249633
June, 2018
R101-5
November, 2019
R101-5
August, 2022
R101-5
July, 2023
R101-5
Strike Depth: 0


X: 1691416
R101-5
Length: 3487
Azimuth: 235
X: 1688560
Y: 251633
Y: 249633
June, 2018
R101-5
November, 2019
R101-5
August, 2022
R101-5
July, 2023
R101-5
Strike Depth: 0


X: 1691639
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Length: 3500
Azimuth: 230
X: 1688958
Y: 251208
Y: 248959
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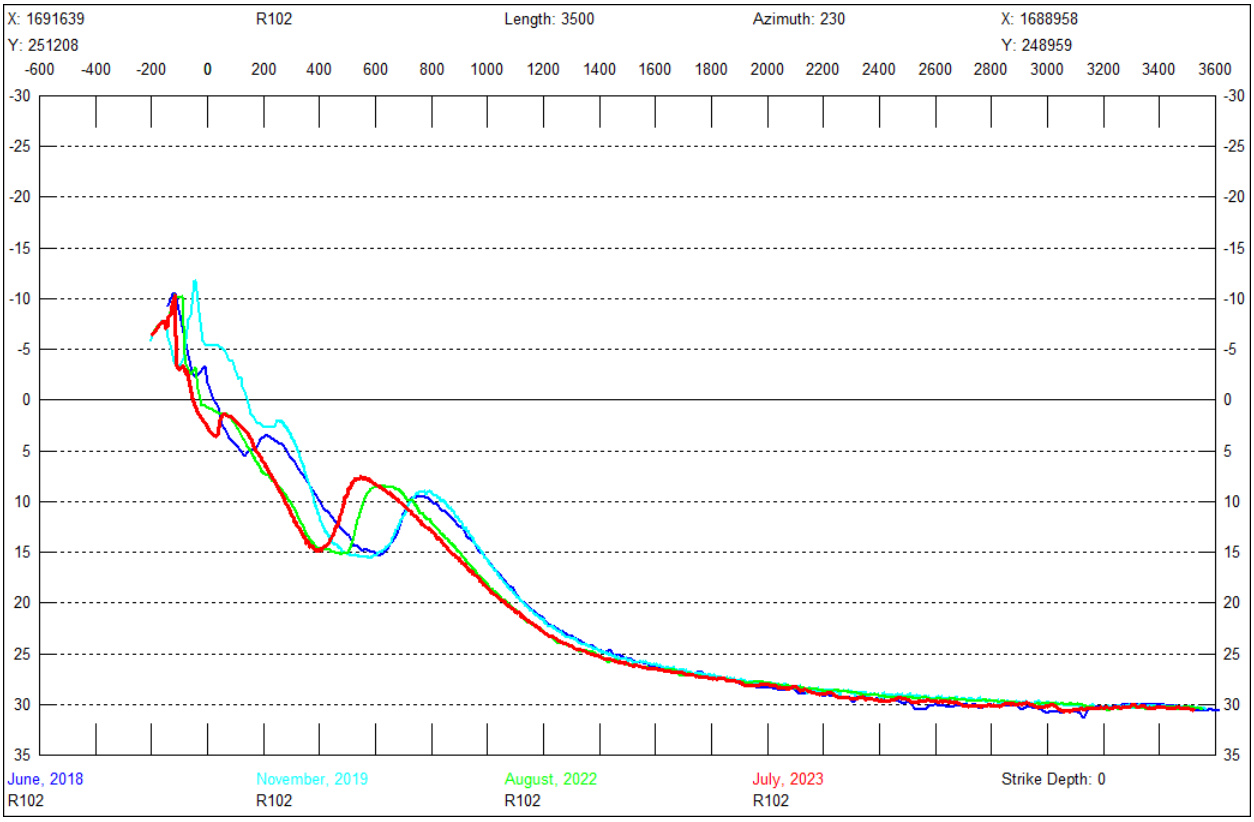
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R102
November, 2019
R102
August, 2022
R102
July, 2023
R102
Strike Depth: 0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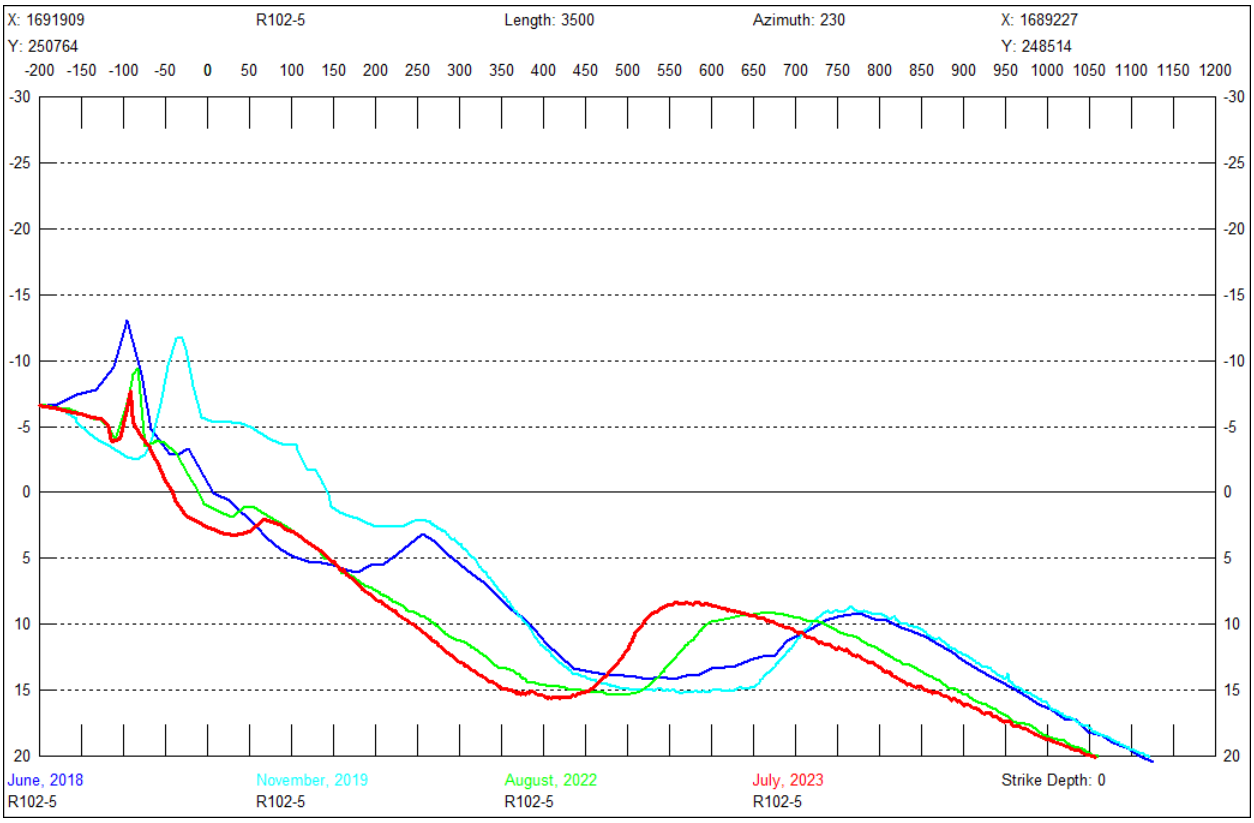
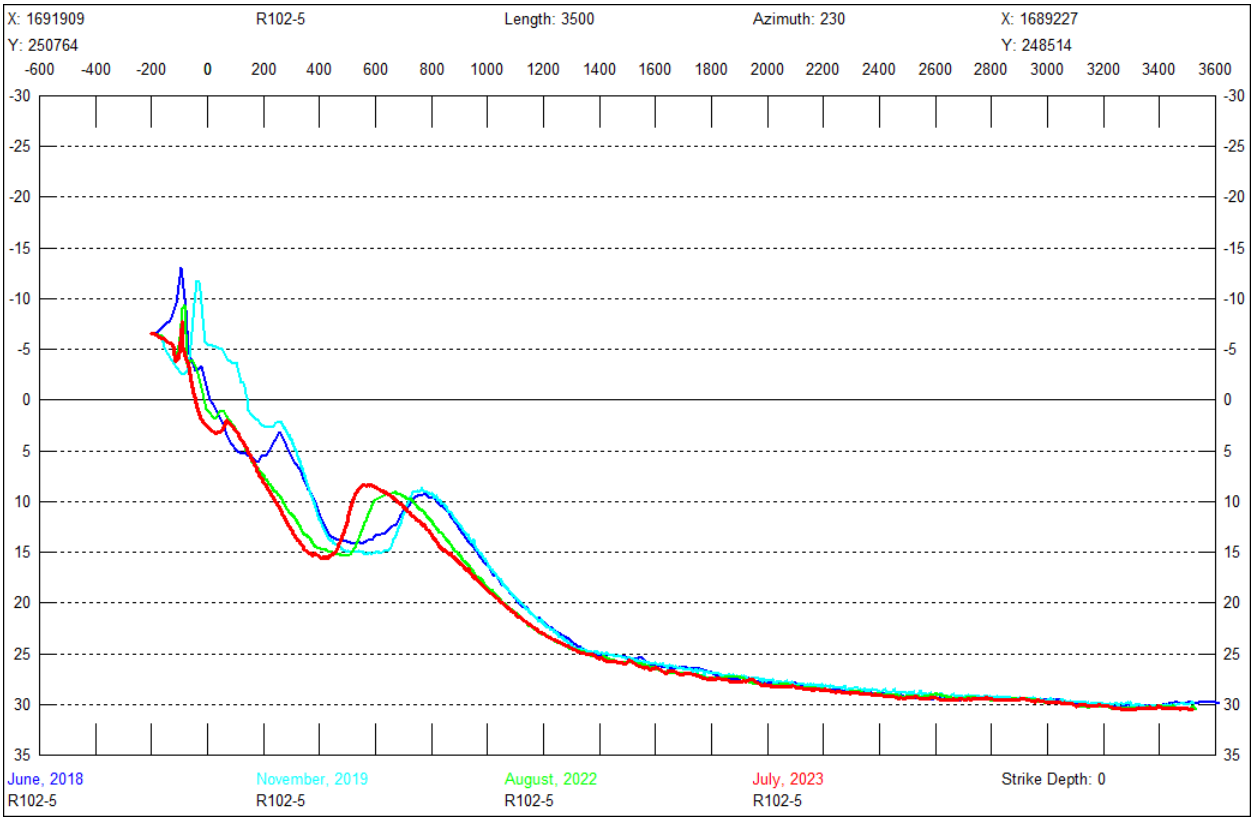
Length: 3500
Azimuth: 230
X: 1688958
Y: 251208
Y: 248959
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R102
November, 2019
R102
August, 2022
R102
July, 2023
R102
Strike Depth: 0


X: 1691909
R102-5
Length: 3500
Azimuth: 230
X: 1689227
Y: 250764
Y: 248514
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R102-5
November, 2019
R102-5
August, 2022
R102-5
July, 2023
R102-5
Strike Depth: 0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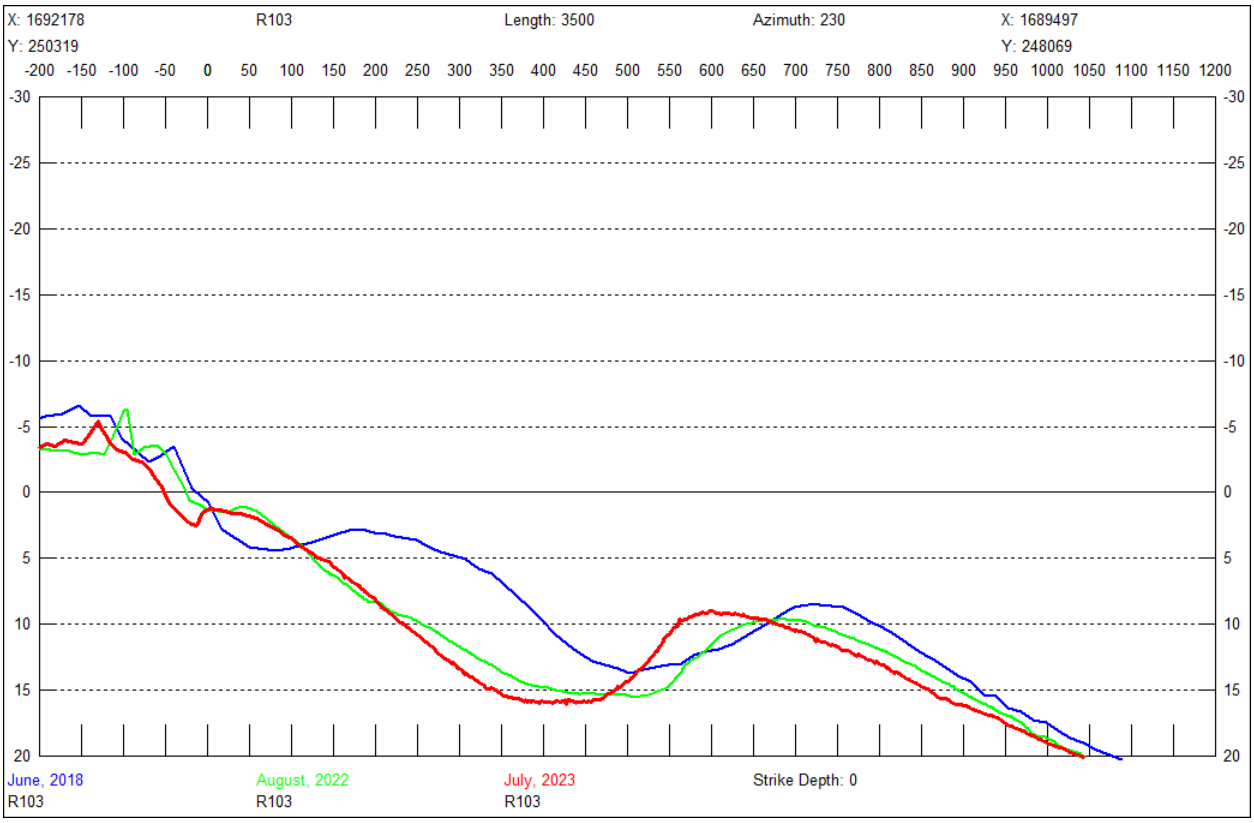
Length: 3500
Azimuth: 230
X: 1689227
Y: 250764
Y: 248514
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R102-5
November, 2019
R102-5
August, 2022
R102-5
July, 2023
R102-5
Strike Depth: 0


X: 1692178
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Length: 3500
Azimuth: 230
X: 1689497
Y: 250319
Y: 248069
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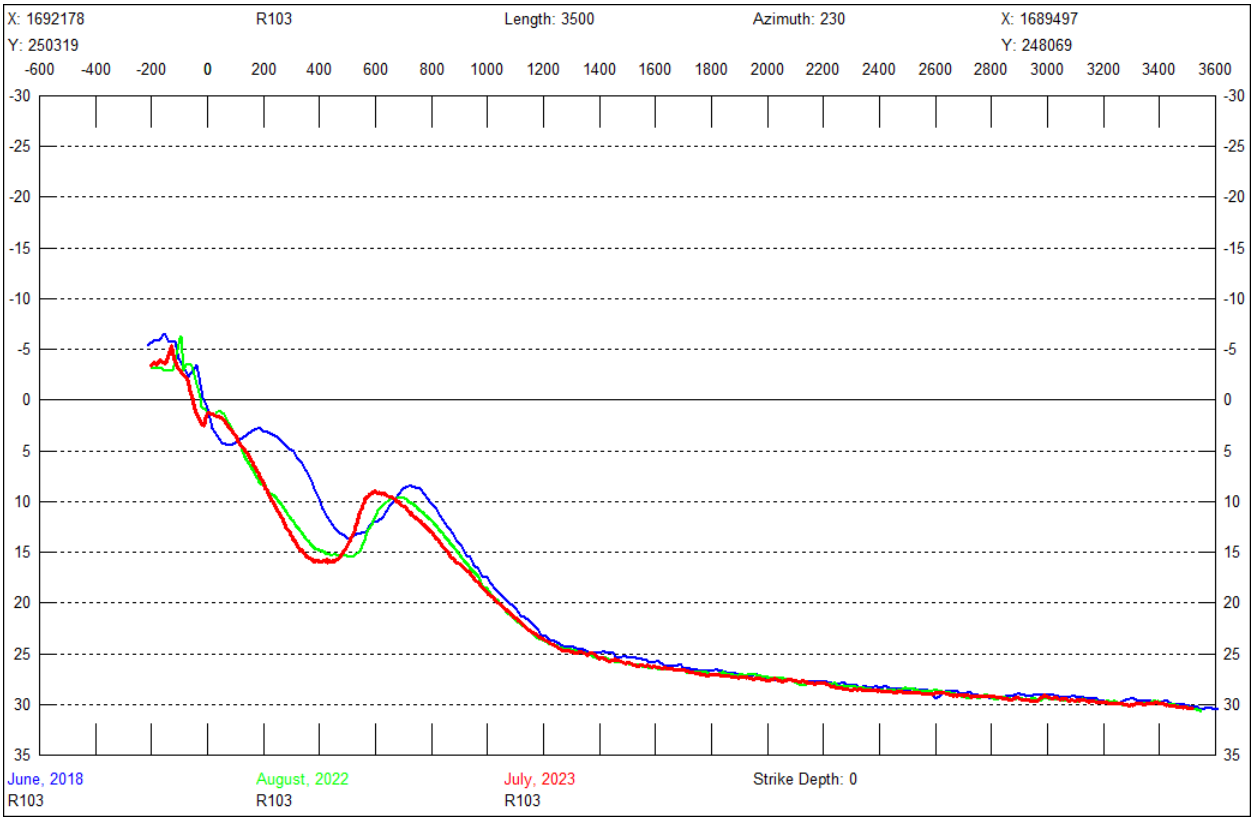
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R103
August, 2022
R103
July, 2023
R103
Strike Depth: 0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Length: 3500
Azimuth: 230
X: 1689497
Y: 250319
Y: 248069
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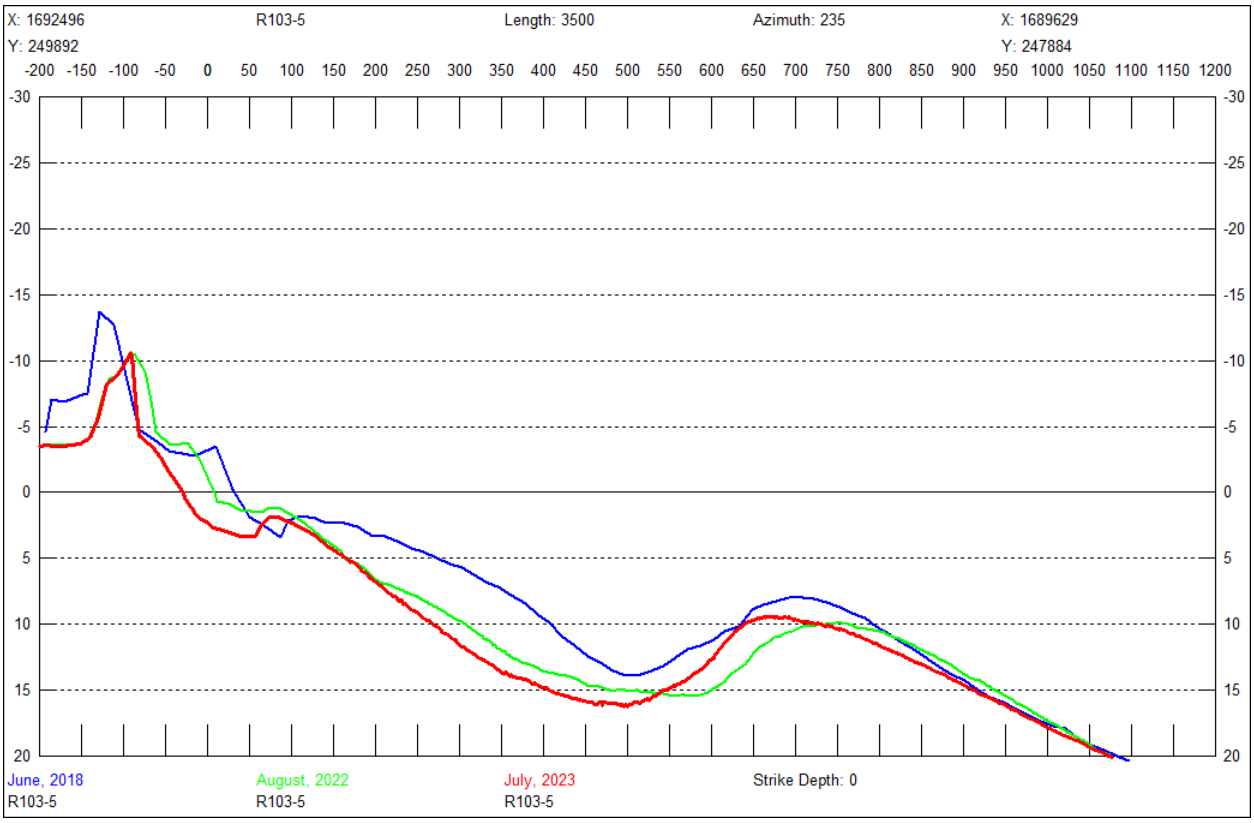
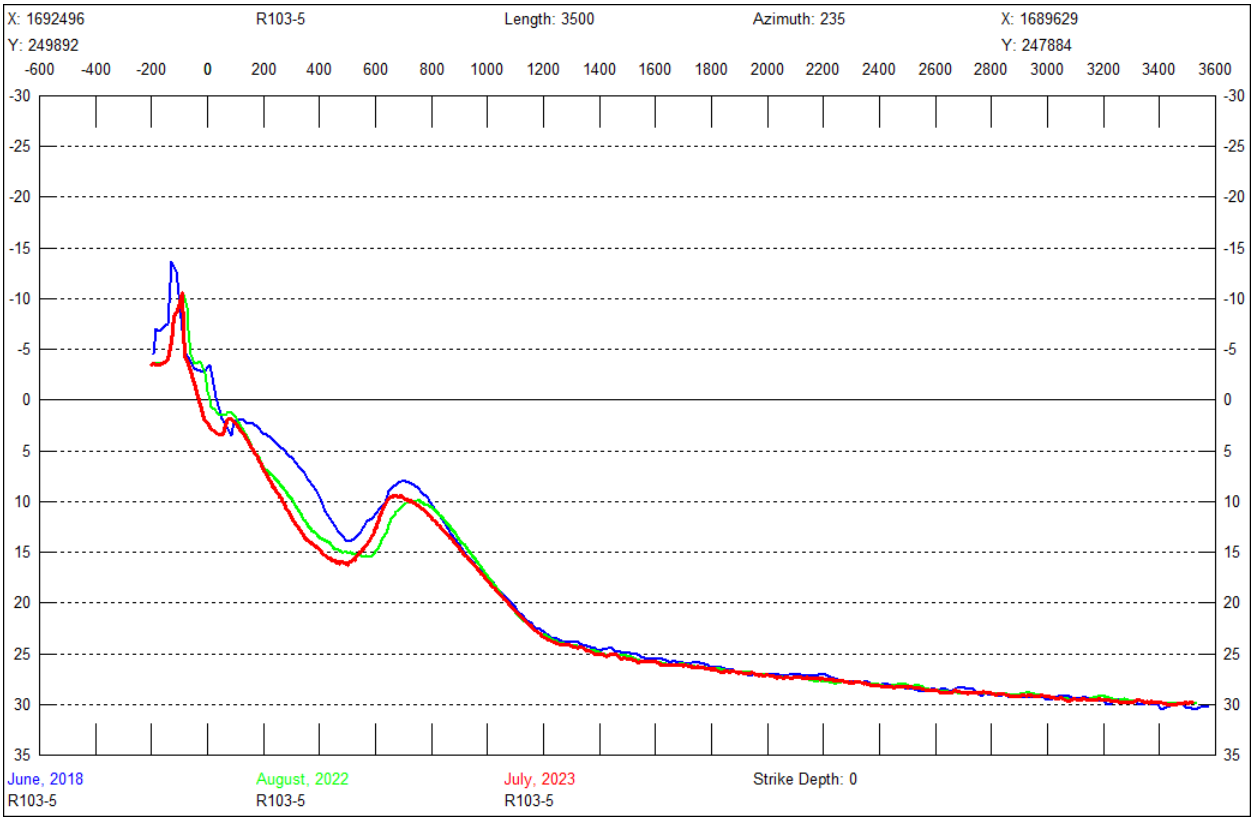
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R103
August, 2022
R103
July, 2023
R103
Strike Depth: 0


X: 1692496
R103-5
Length: 3500
Azimuth: 235
X: 1689629
Y: 249892
Y: 247884
June, 2018
R103-5
August, 2022
R103-5
July, 2023
R103-5
Strike Depth: 0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R103-5
Length: 3500
Azimuth: 235
X: 1689629
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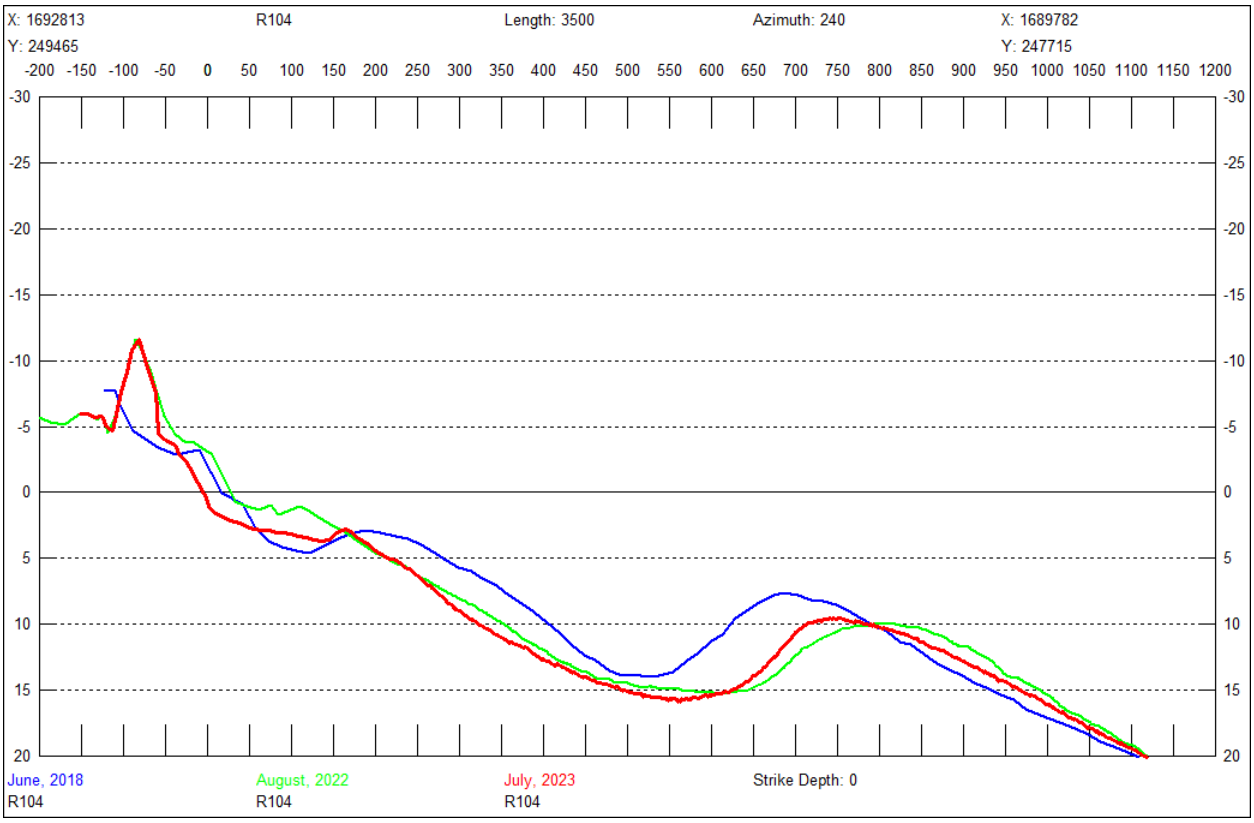
Y: 247884
June, 2018
R103-5
August, 2022
R103-5
July, 2023
R103-5
Strike Depth: 0


X: 1692813
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Length: 3500
Azimuth: 240
X: 1689782
Y: 249465
Y: 247715
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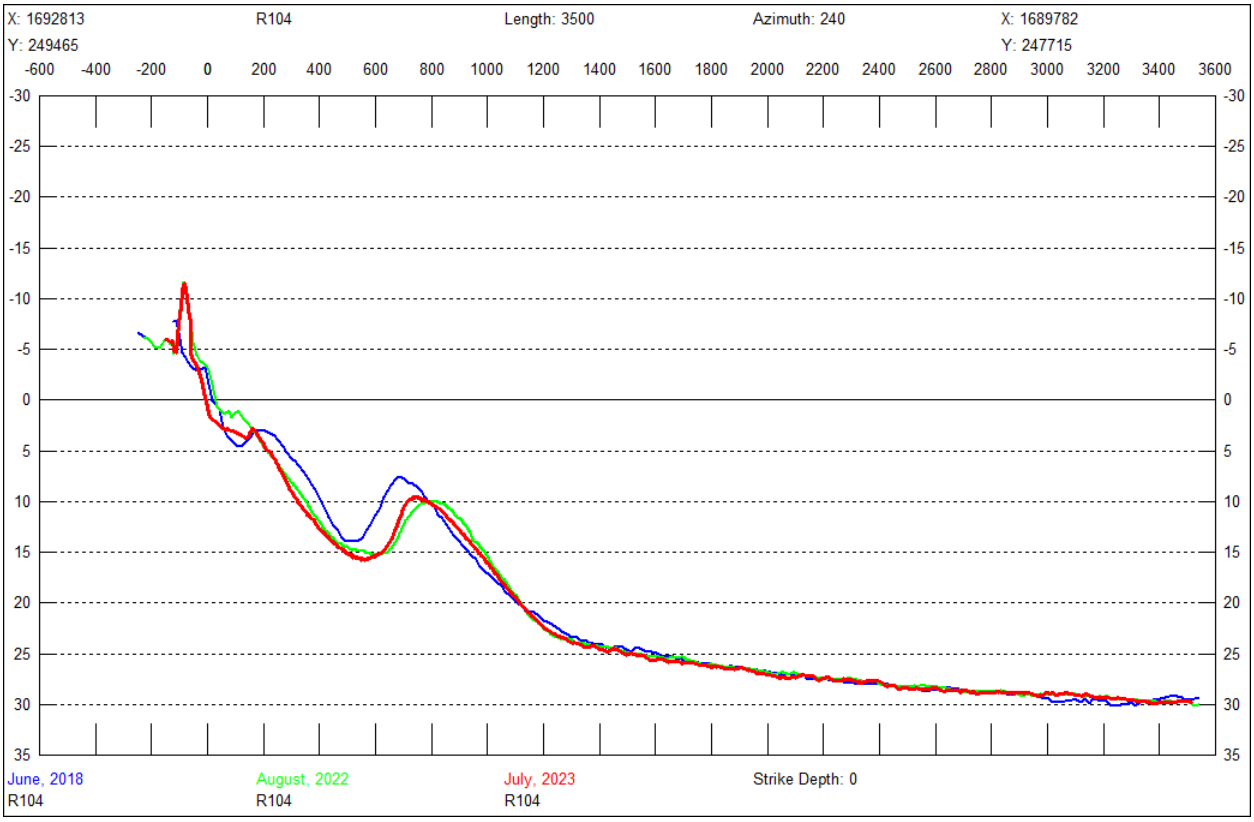
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R104
August, 2022
R104
July, 2023
R104
Strike Depth: 0


X: 1692813
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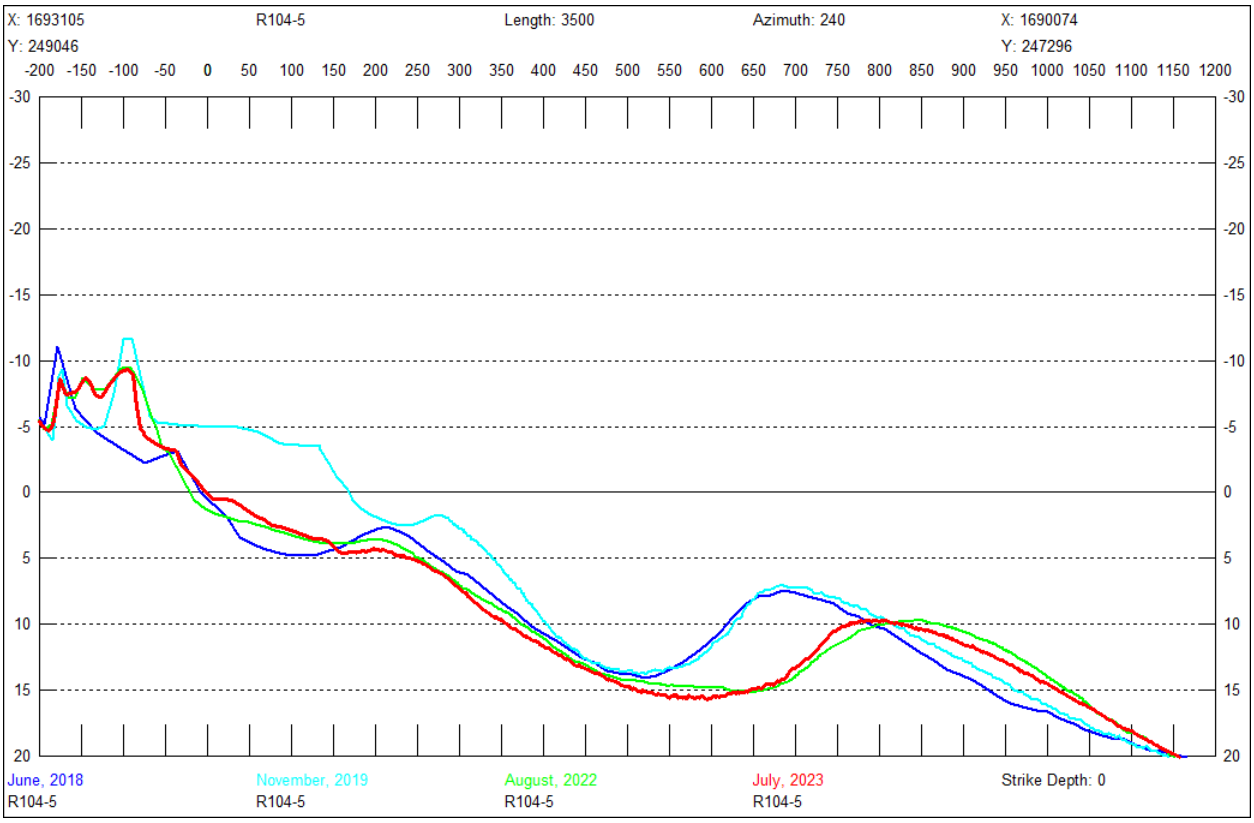
Length: 3500
Azimuth: 240
X: 1689782
Y: 249465
Y: 247715
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R104
August, 2022
R104
July, 2023
R104
Strike Depth: 0


X: 1693105
R104-5
Length: 3500
Azimuth: 240
X: 1690074
Y: 249046
Y: 247296
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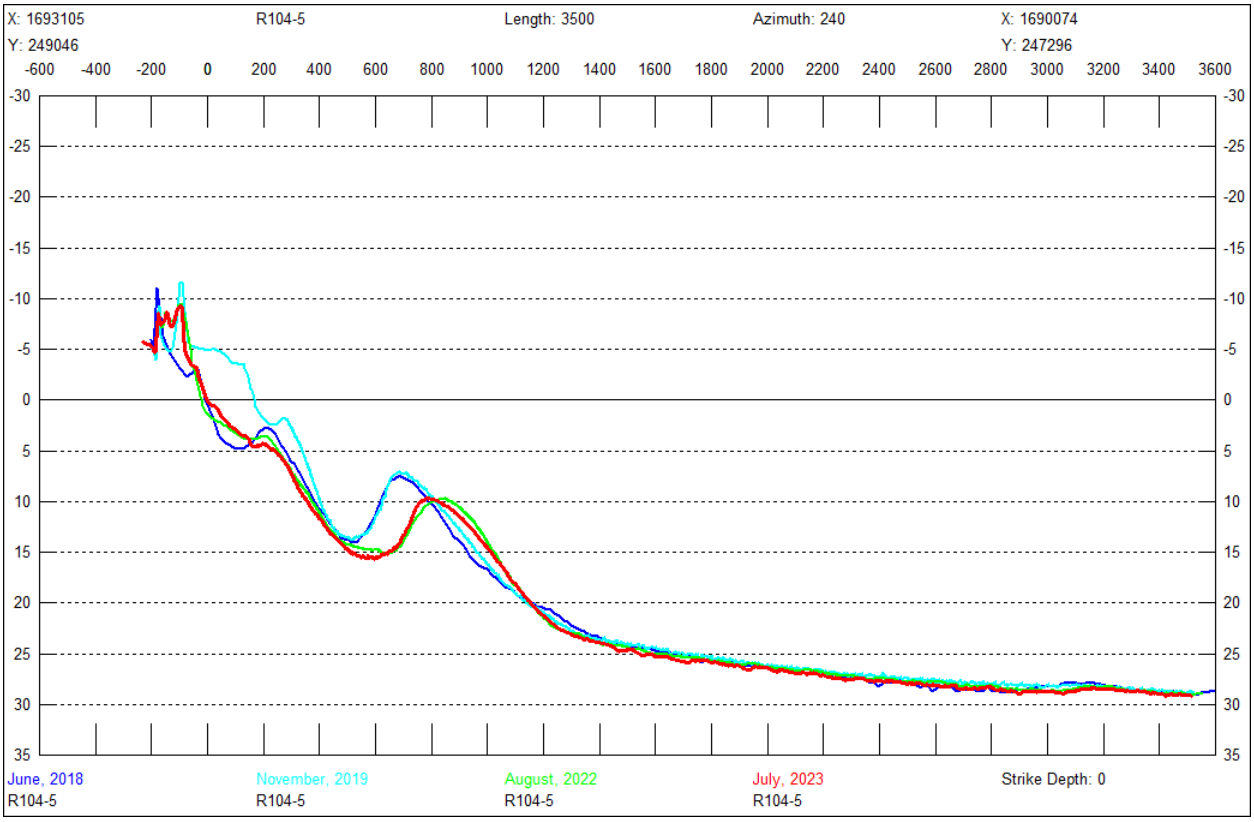
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R104-5
November, 2019
R104-5
August, 2022
R104-5
July, 2023
R104-5
Strike Depth: 0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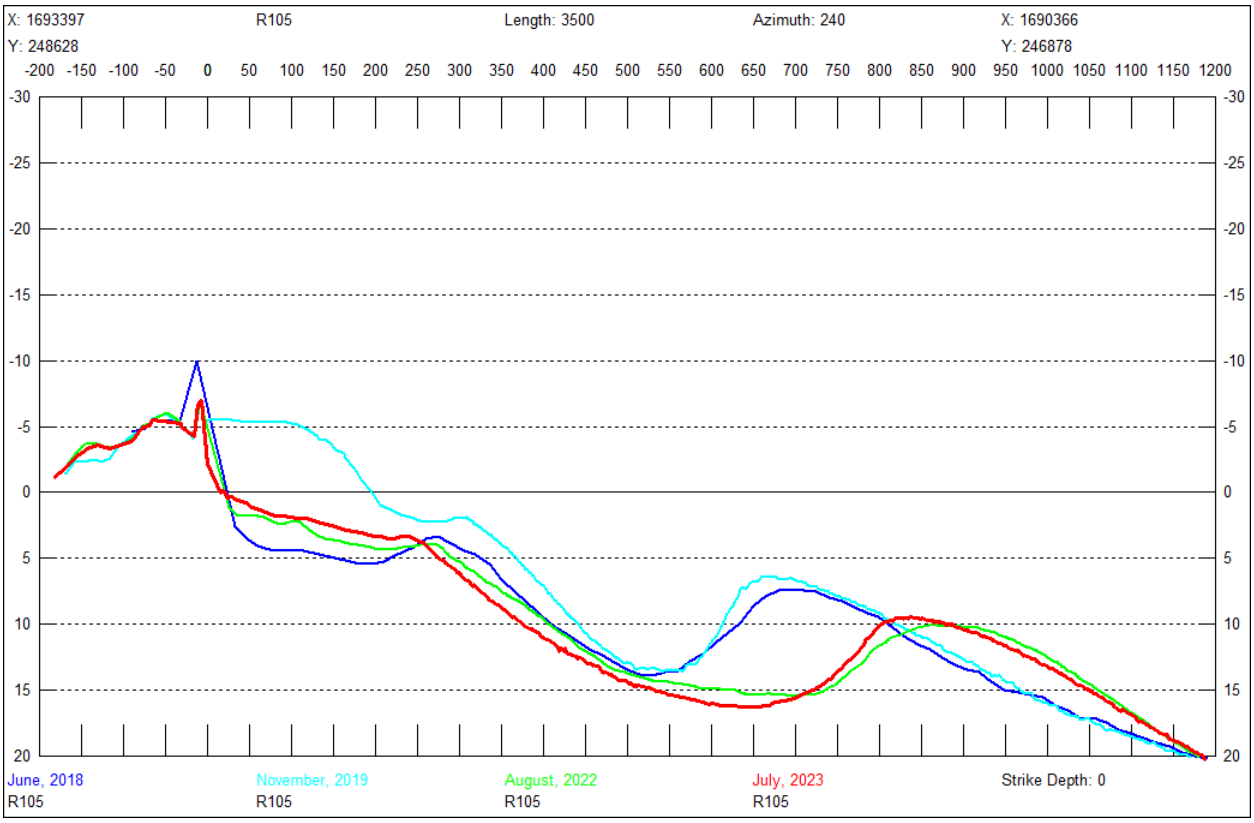
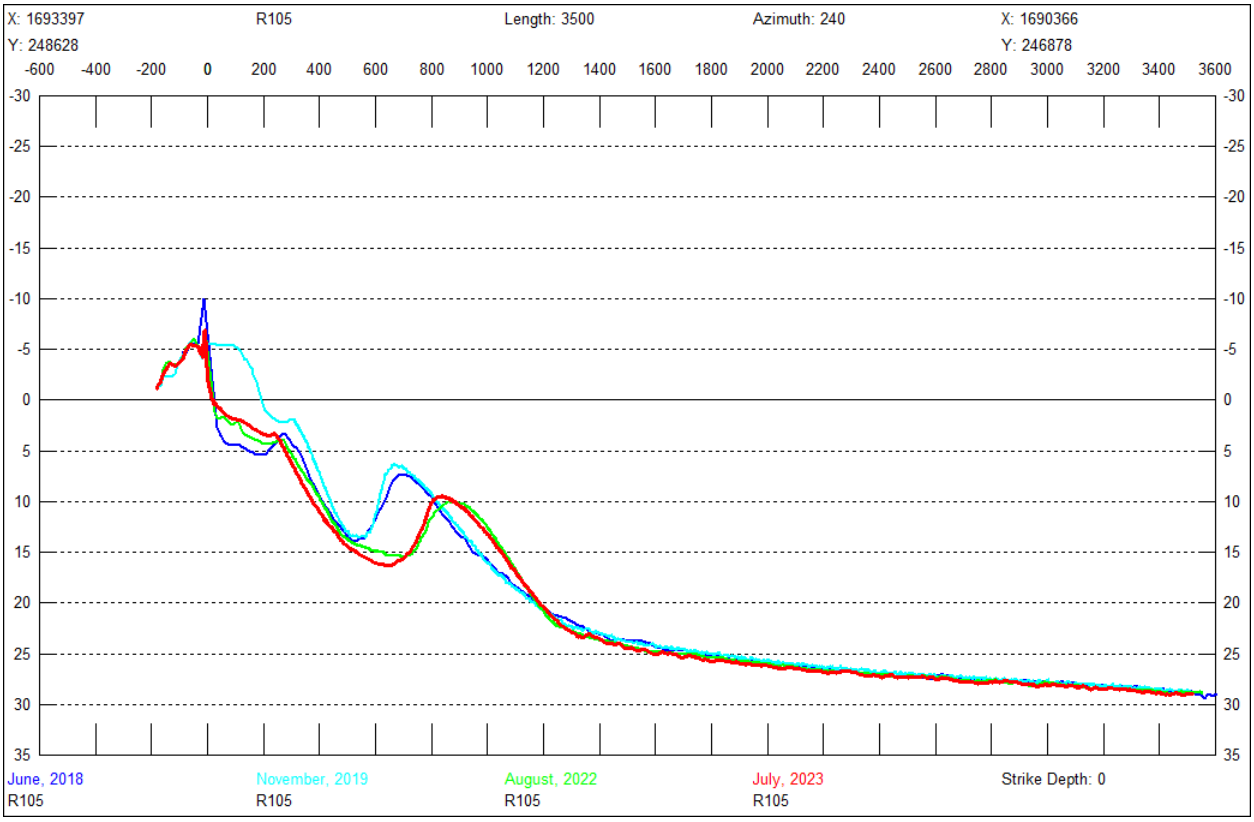
R104-5
Length: 3500
Azimuth: 240
X: 1690074
Y: 249046
Y: 247296
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R104-5
November, 2019
R104-5
August, 2022
R104-5
July, 2023
R104-5
Strike Depth: 0


X: 1693397
R105
Length: 3500
Azimuth: 240
X: 1690366
Y: 248628
Y: 246878
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
June, 2018
R105
November, 2019
R105
August, 2022
R105
July, 2023
R105
Strike Depth: 0


X: 1693397
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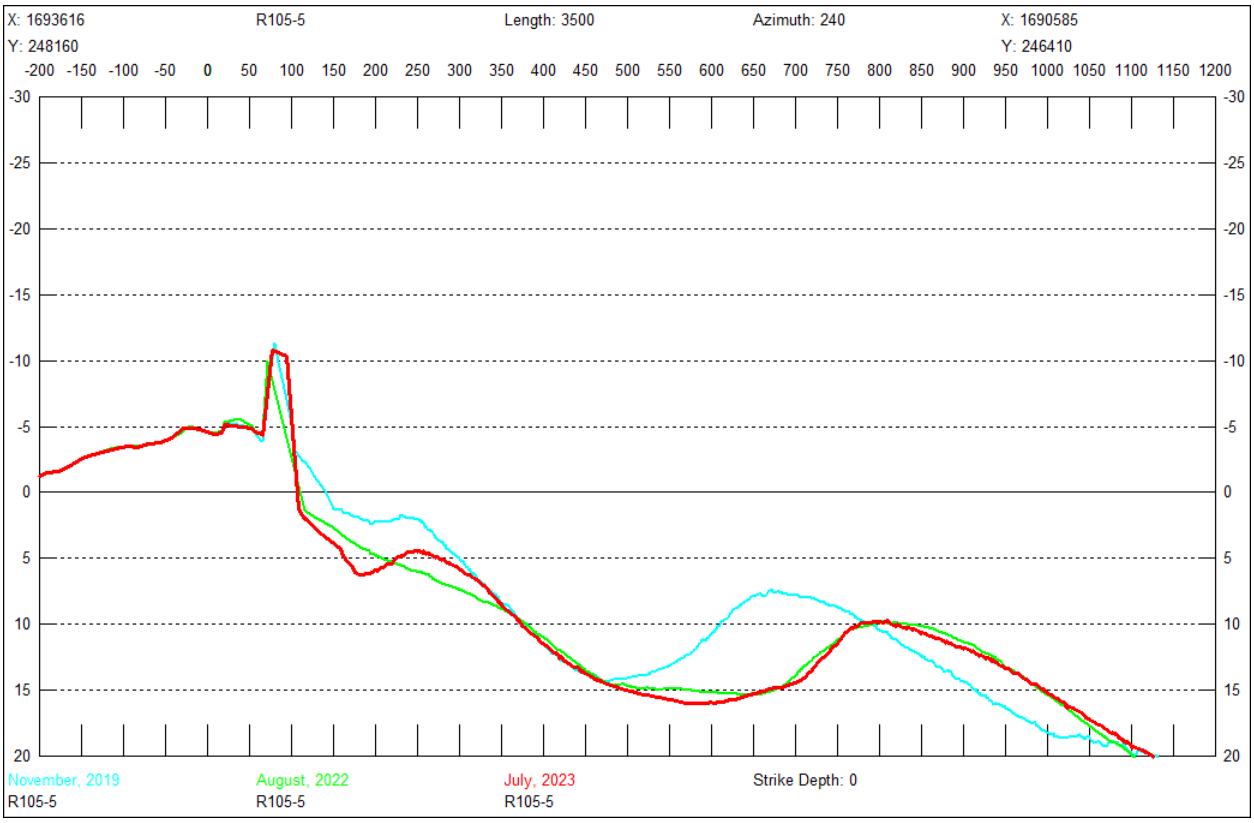
Length: 3500
Azimuth: 240
X: 1690366
Y: 248628
Y: 246878
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R105
November, 2019
R105
August, 2022
R105
July, 2023
R105
Strike Depth: 0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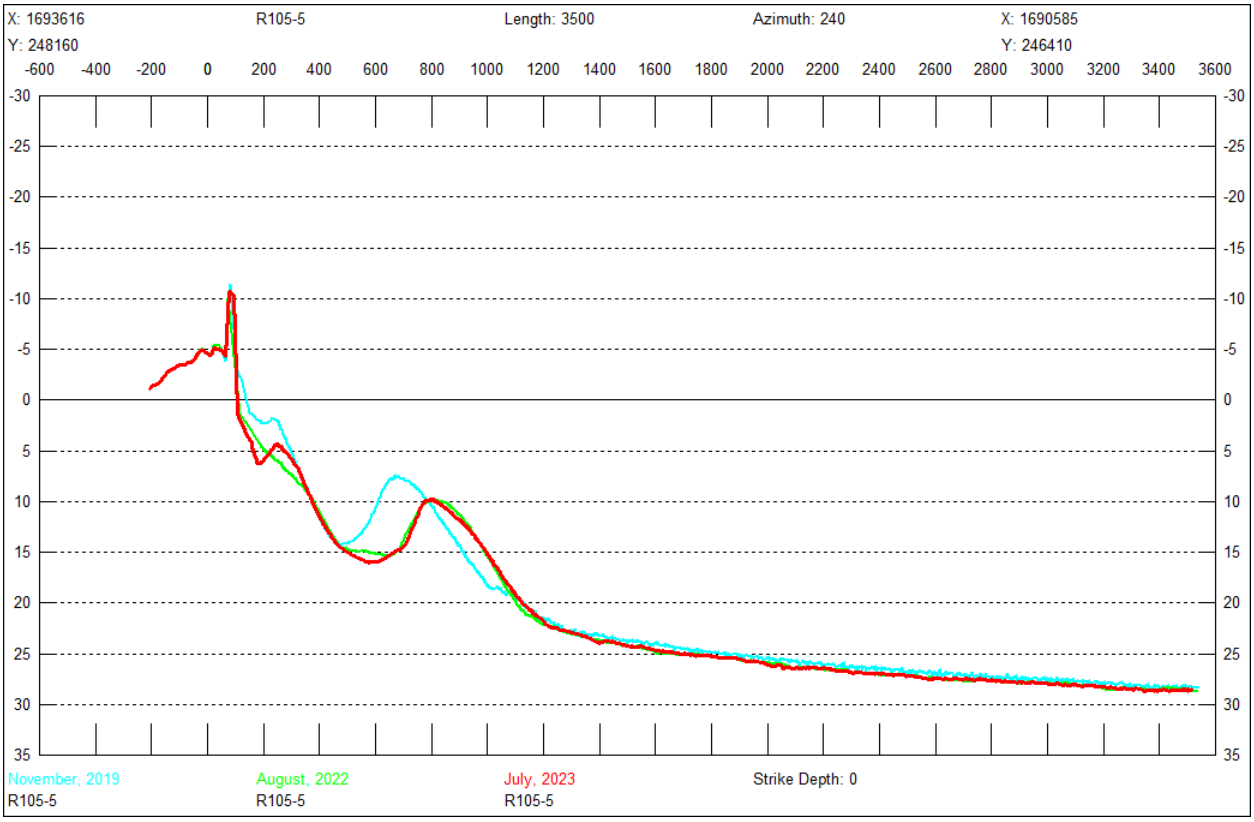
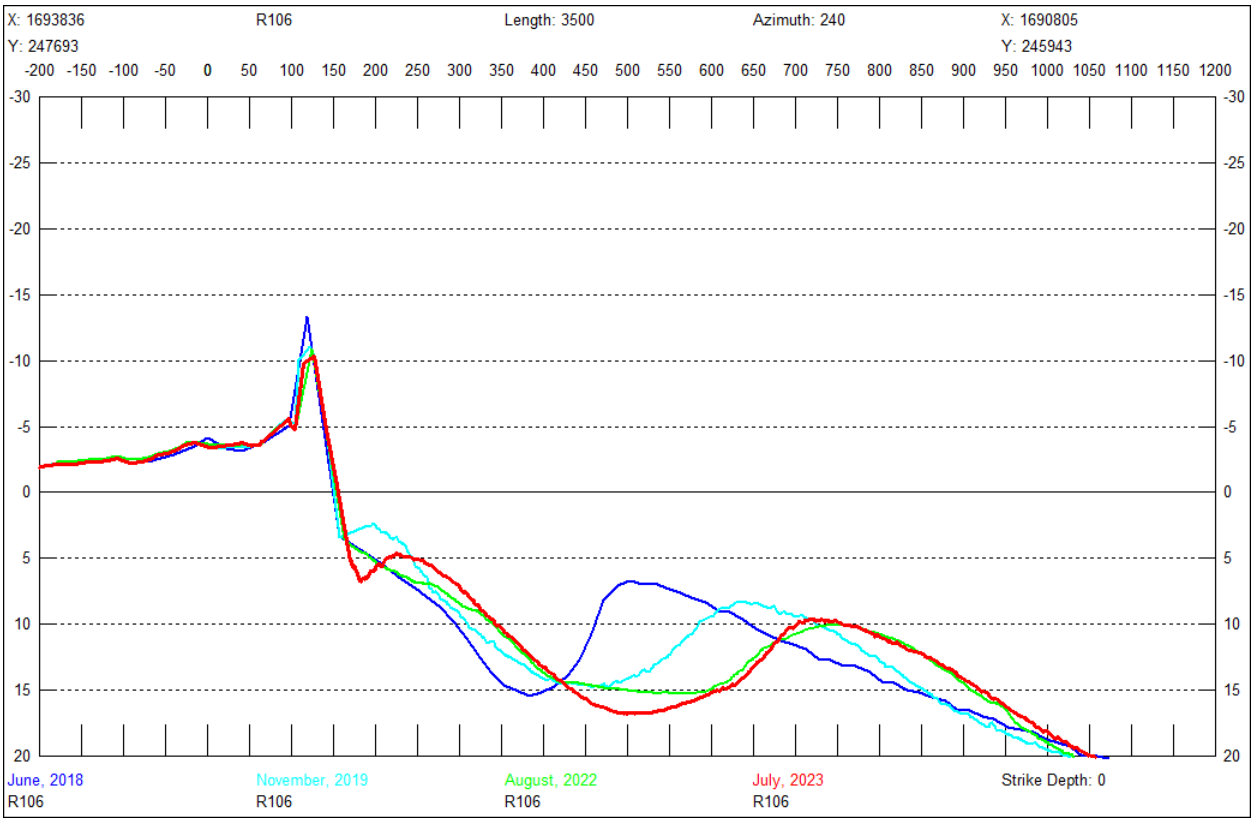
R105-5
Length: 3500
Azimuth: 240
X: 1690585
Y: 248160
Y: 246410
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R105-5
August, 2022
R105-5
July, 2023
R105-5
Strike Depth: 0


X: 1693616
R105-5
Length: 3500
Azimuth: 240
X: 1690585
Y: 248160
Y: 246410
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R105-5
August, 2022
R105-5
July, 2023
R105-5
Strike Depth: 0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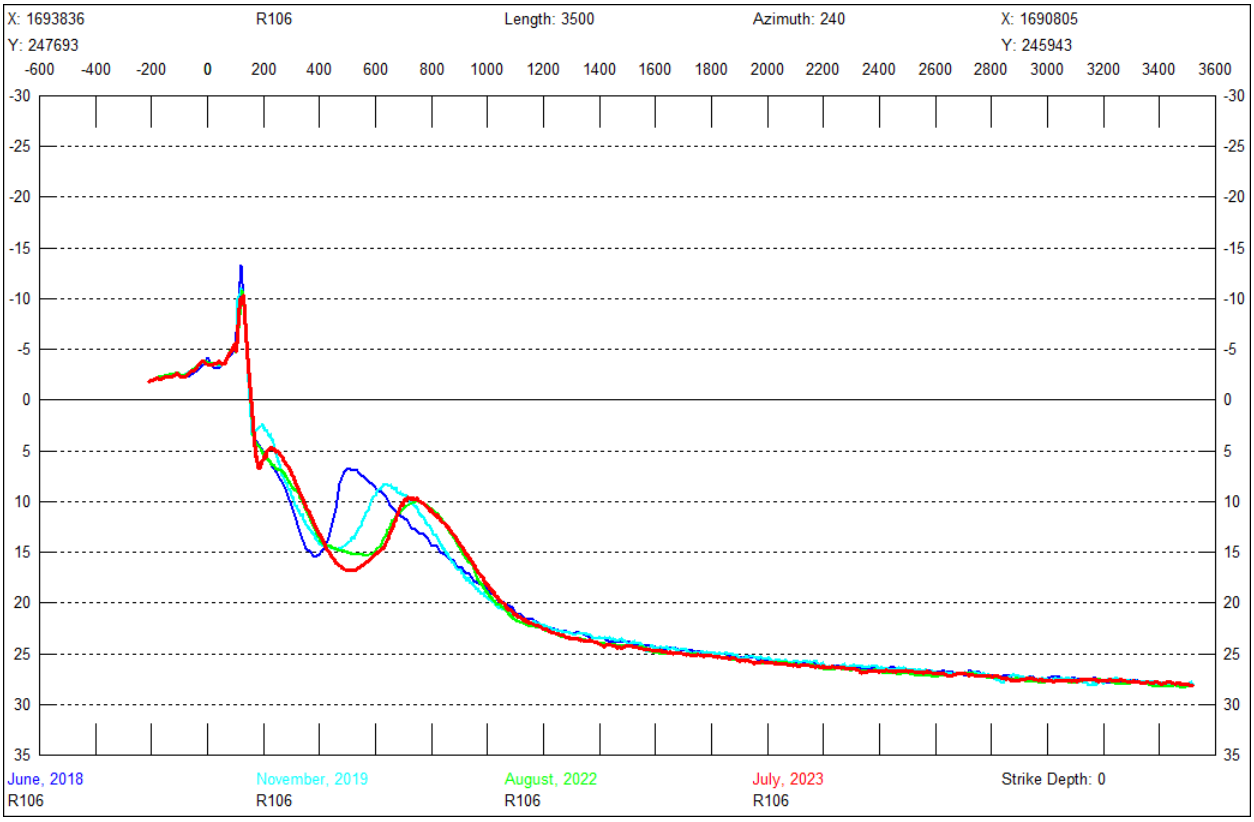
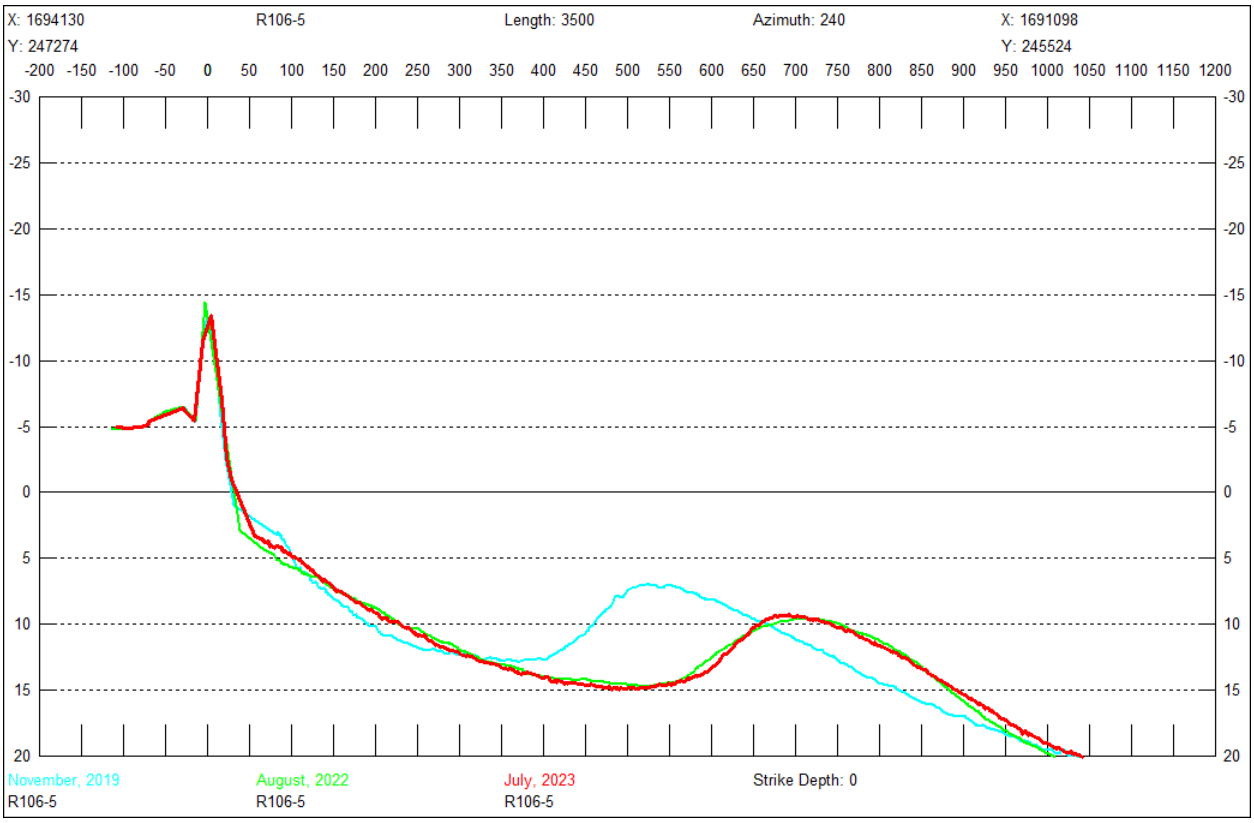
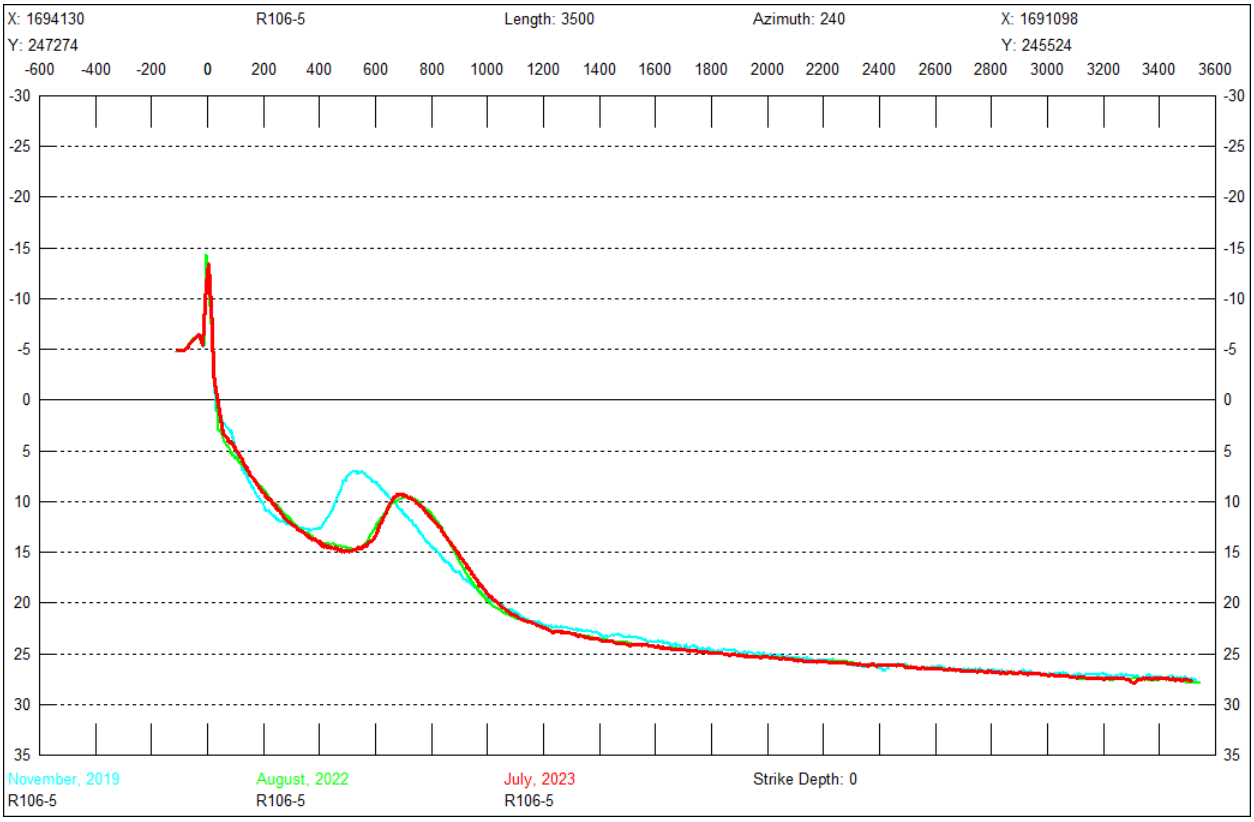
R106
Length: 3500
Azimuth: 240
X: 1690805
Y: 247693
Y: 245943
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R106
R106
R106
R106


X: 1693836
R106
Length: 3500
Azimuth: 240
X: 1690805
Y: 247693
Y: 245943
June, 2018
November, 2019
August, 2022
July, 2023
Strike Depth: 0
R106
R106
R106
R106


X: 1694130
R106-5
Length: 3500
Azimuth: 240
X: 1691098
Y: 247274
Y: 245524
-200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200
-30 -25 -20 -15 -10 -5 0 5 10 15 20
November, 2019
R106-5
August, 2022
R106-5
July, 2023
R106-5
Strike Depth: 0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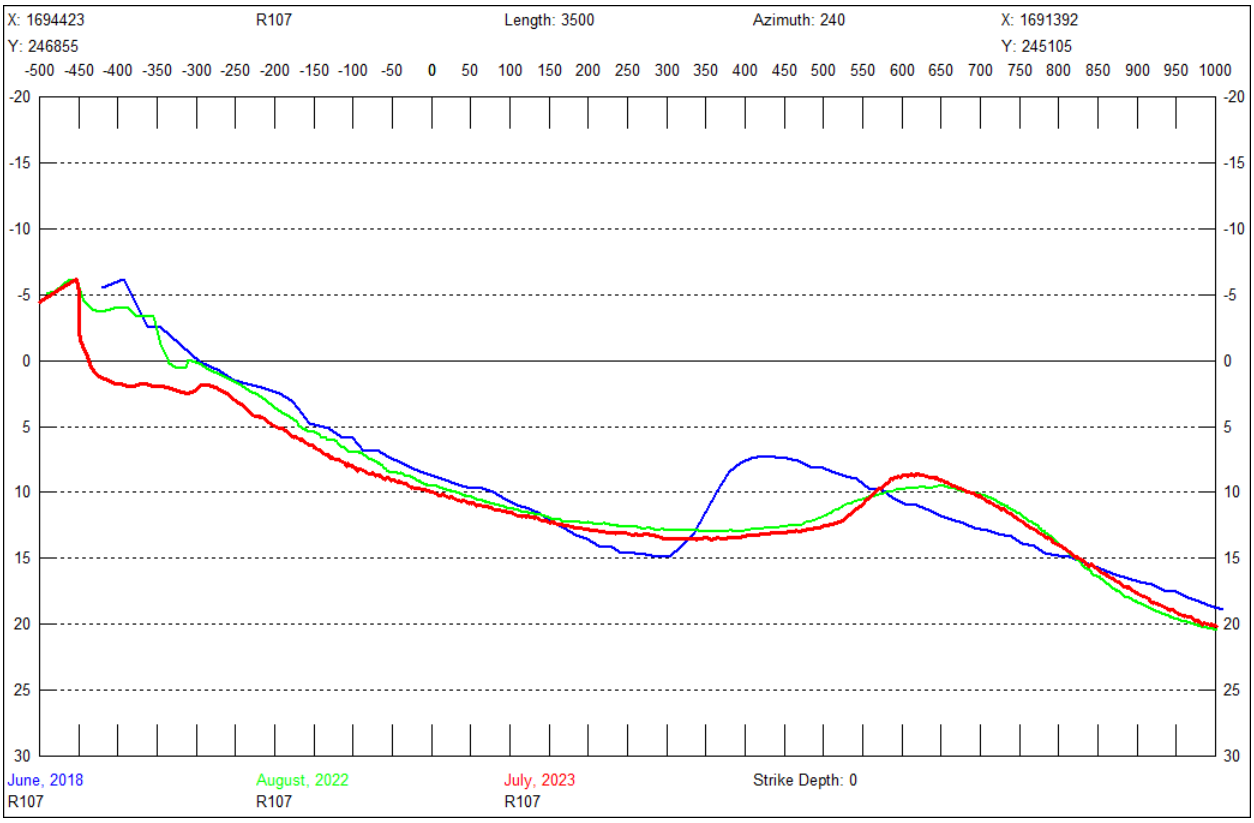
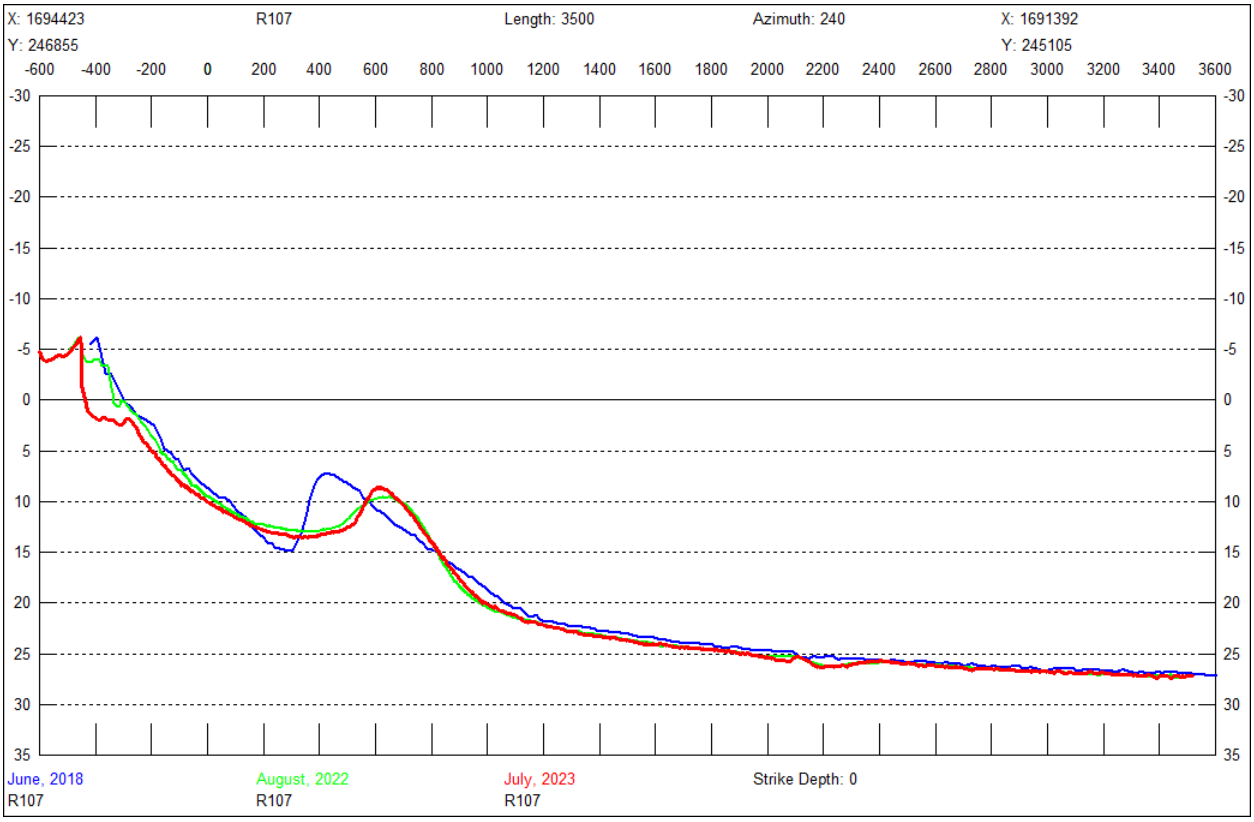
R106-5
Length: 3500
Azimuth: 240
X: 1691098
Y: 247274
Y: 245524
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R106-5
August, 2022
R106-5
July, 2023
R106-5
Strike Depth: 0


X: 1694423
R107
Length: 3500
Azimuth: 240
X: 1691392
Y: 246855
Y: 245105
-500 -450 -400 -350 -300 -250 -200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000
-20 -15 -10 -5 0 5 10 15 20 25 30
June, 2018
R107
August, 2022
R107
July, 2023
R107
Strike Depth: 0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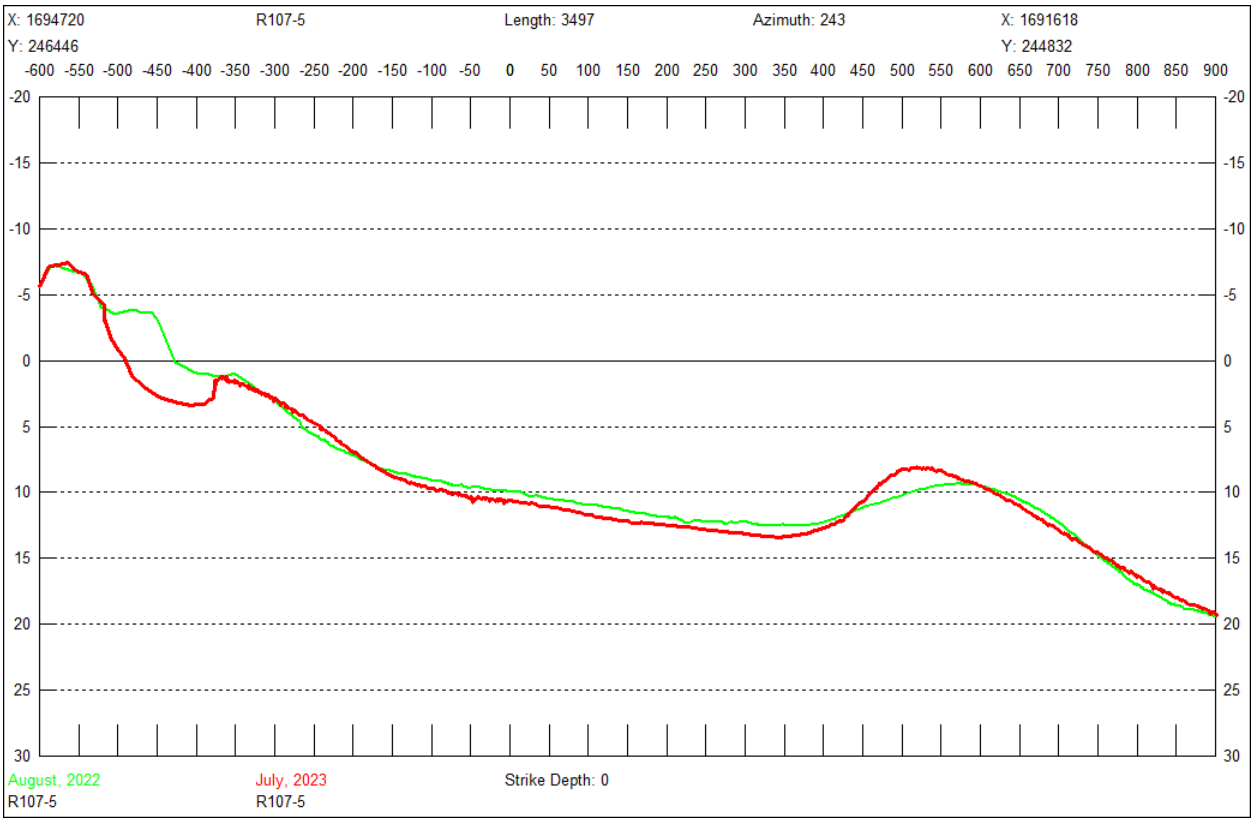
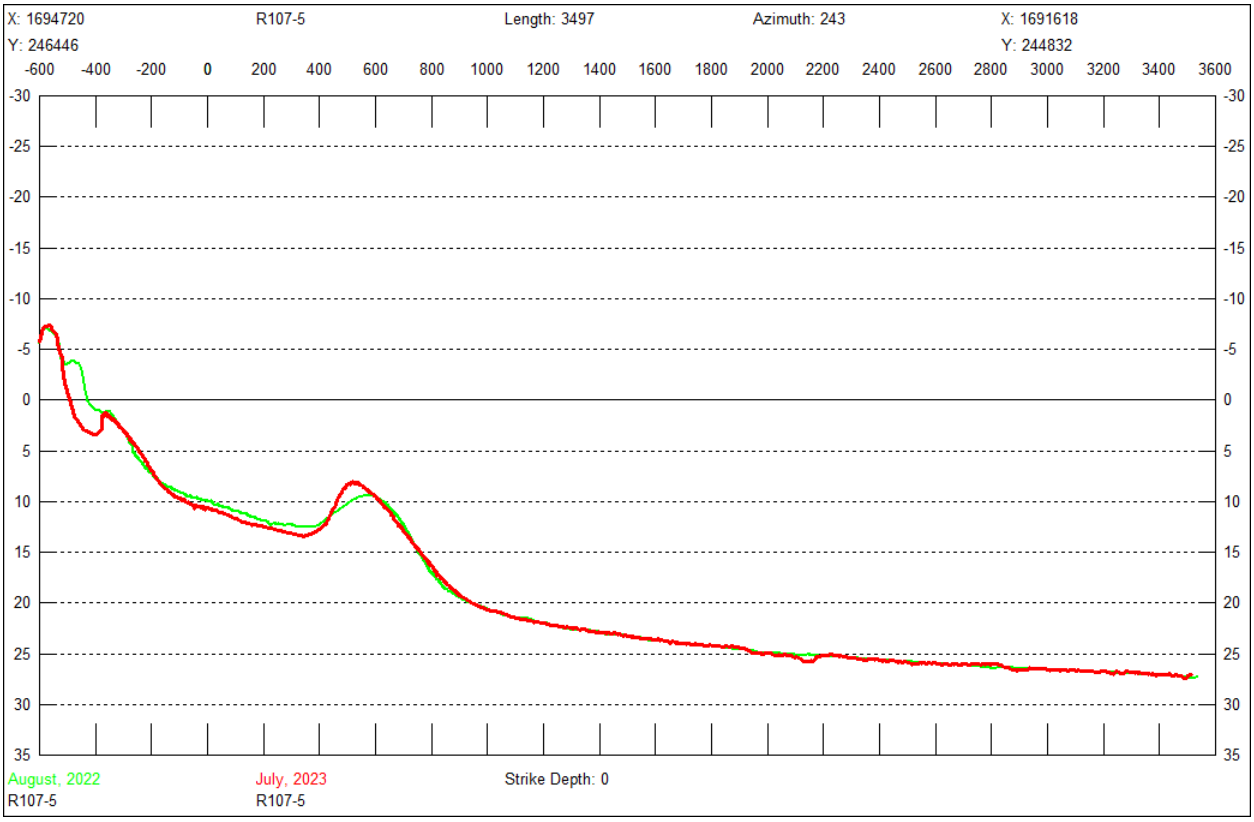
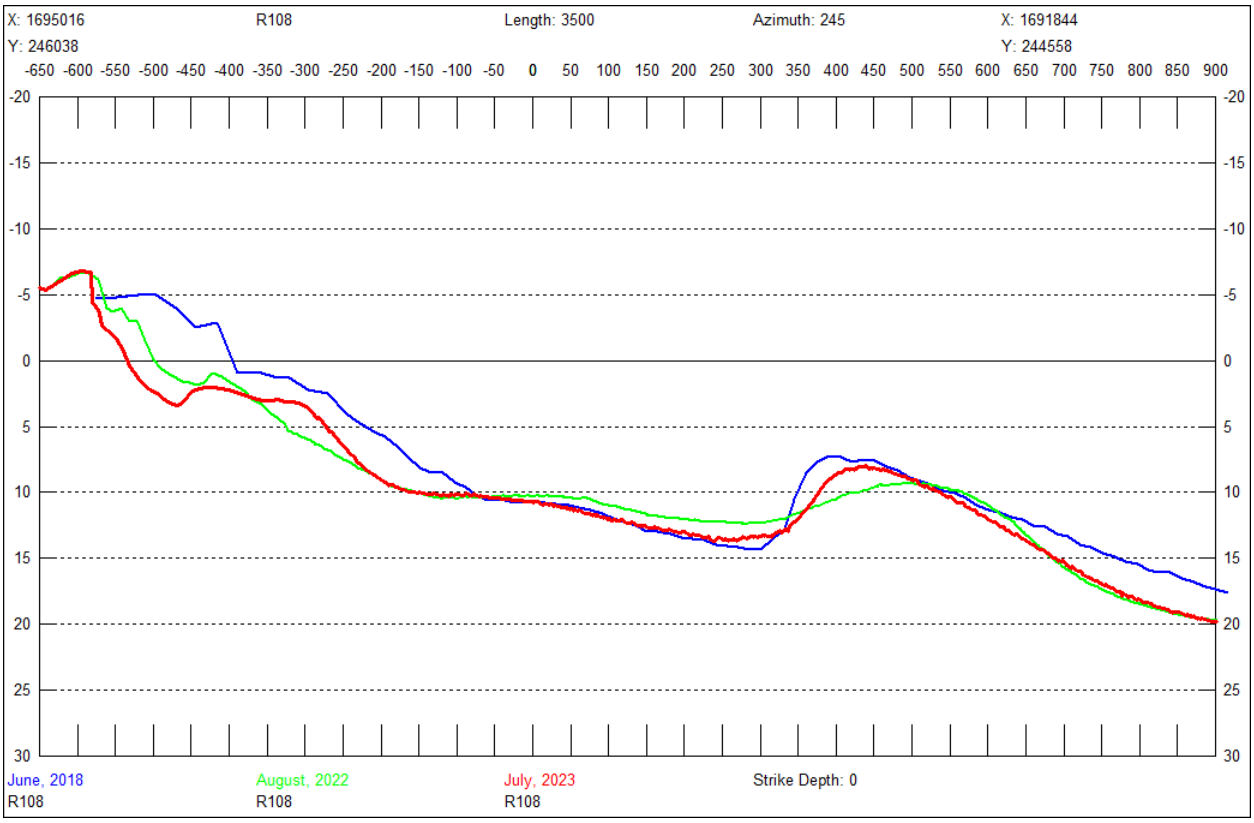
R107
Length: 3500
Azimuth: 240
X: 1691392
Y: 246855
Y: 245105
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R107
August, 2022
R107
July, 2023
R107
Strike Depth: 0


X: 1694720
R107-5
Length: 3497
Azimuth: 243
X: 1691618
Y: 246446
Y: 244832
August, 2022
R107-5
July, 2023
R107-5
Strike Depth: 0


X: 1694720
R107-5
Length: 3497
Azimuth: 243
X: 1691618
Y: 246446
Y: 244832
August, 2022
R107-5
July, 2023
R107-5
Strike Depth: 0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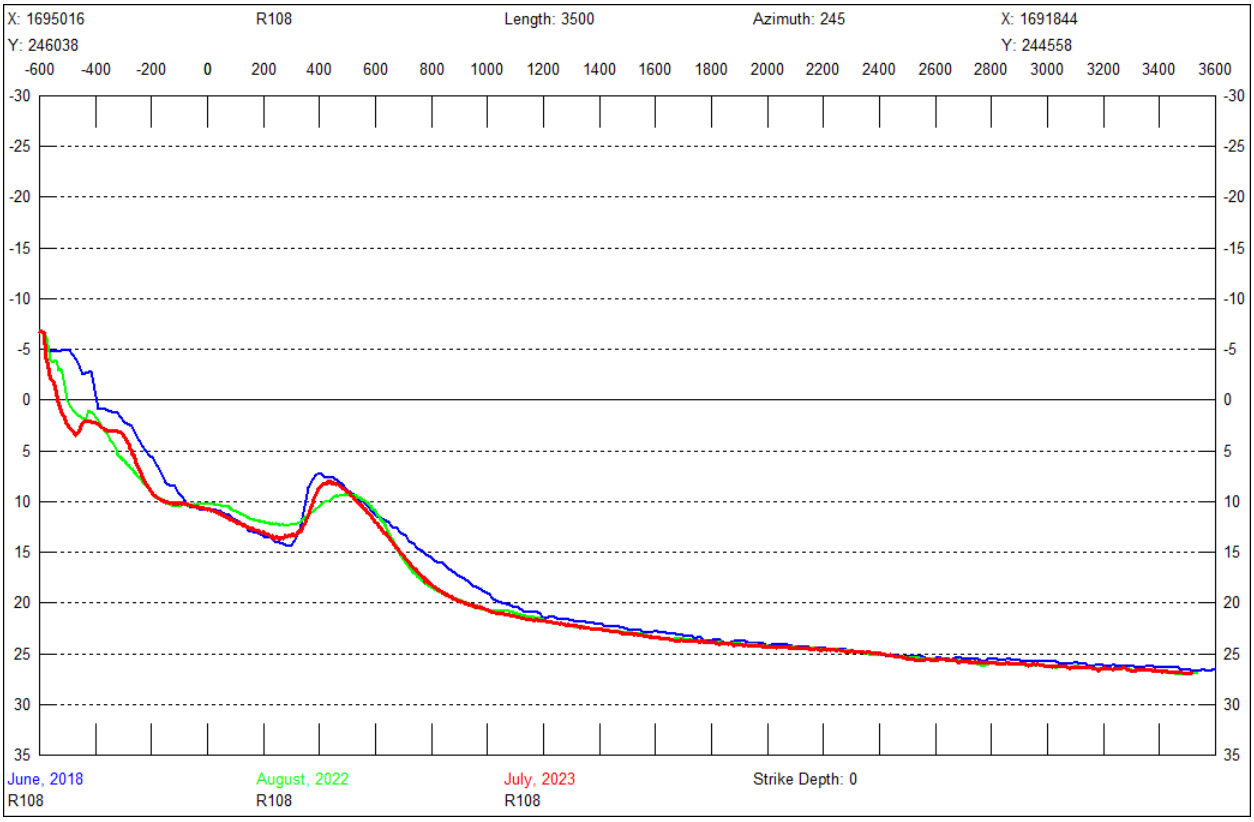
Length: 3500
Azimuth: 245
X: 1691844
Y: 246038
Y: 244558
-650 -600 -550 -500 -450 -400 -350 -300 -250 -200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
-20 -15 -10 -5 0 5 10 15 20 25 30
June, 2018
R108
August, 2022
R108
July, 2023
R108
Strike Depth: 0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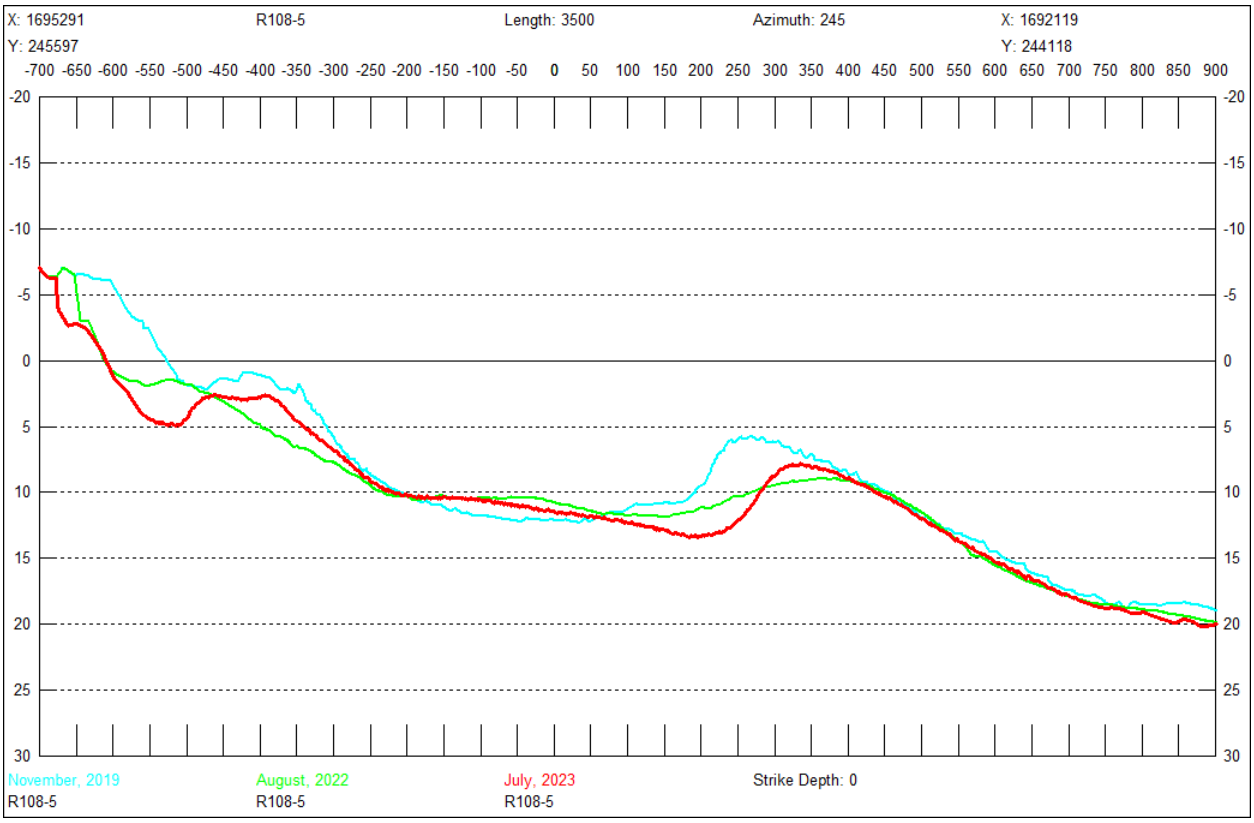
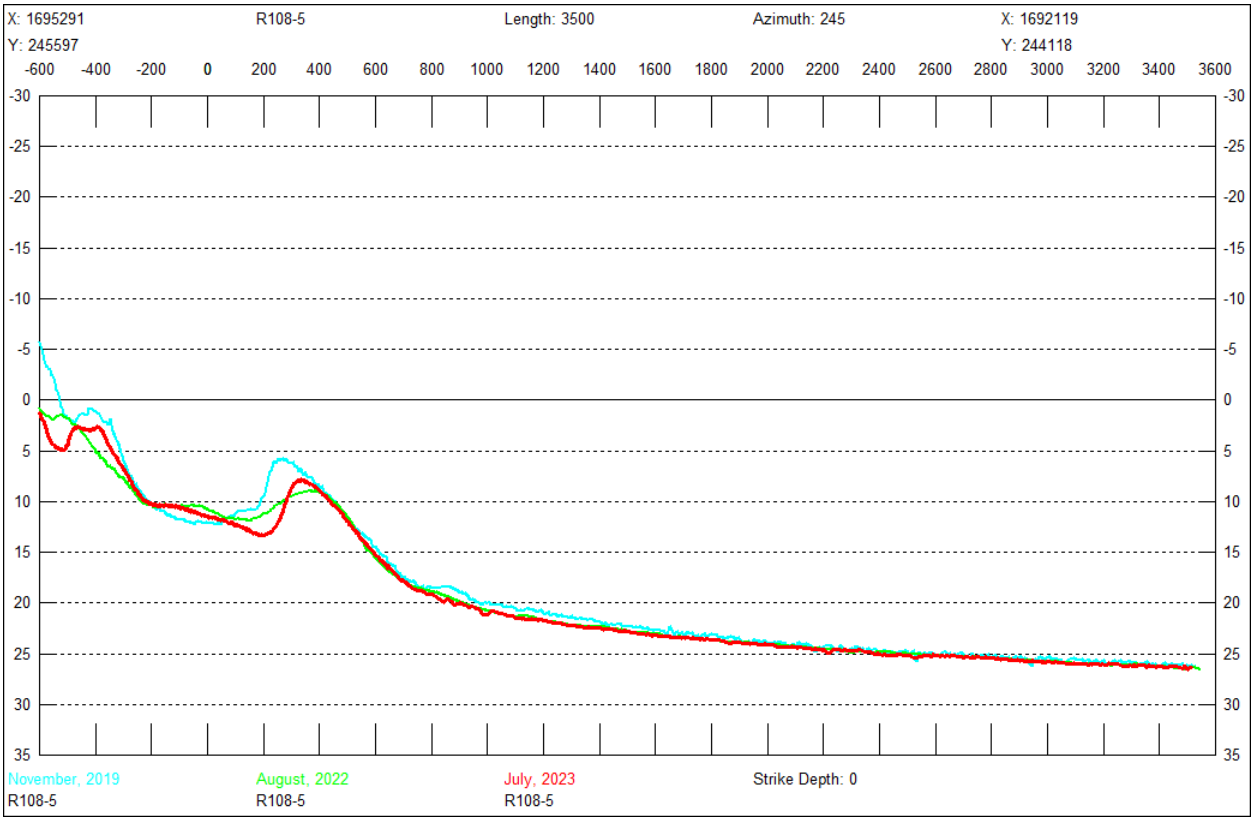
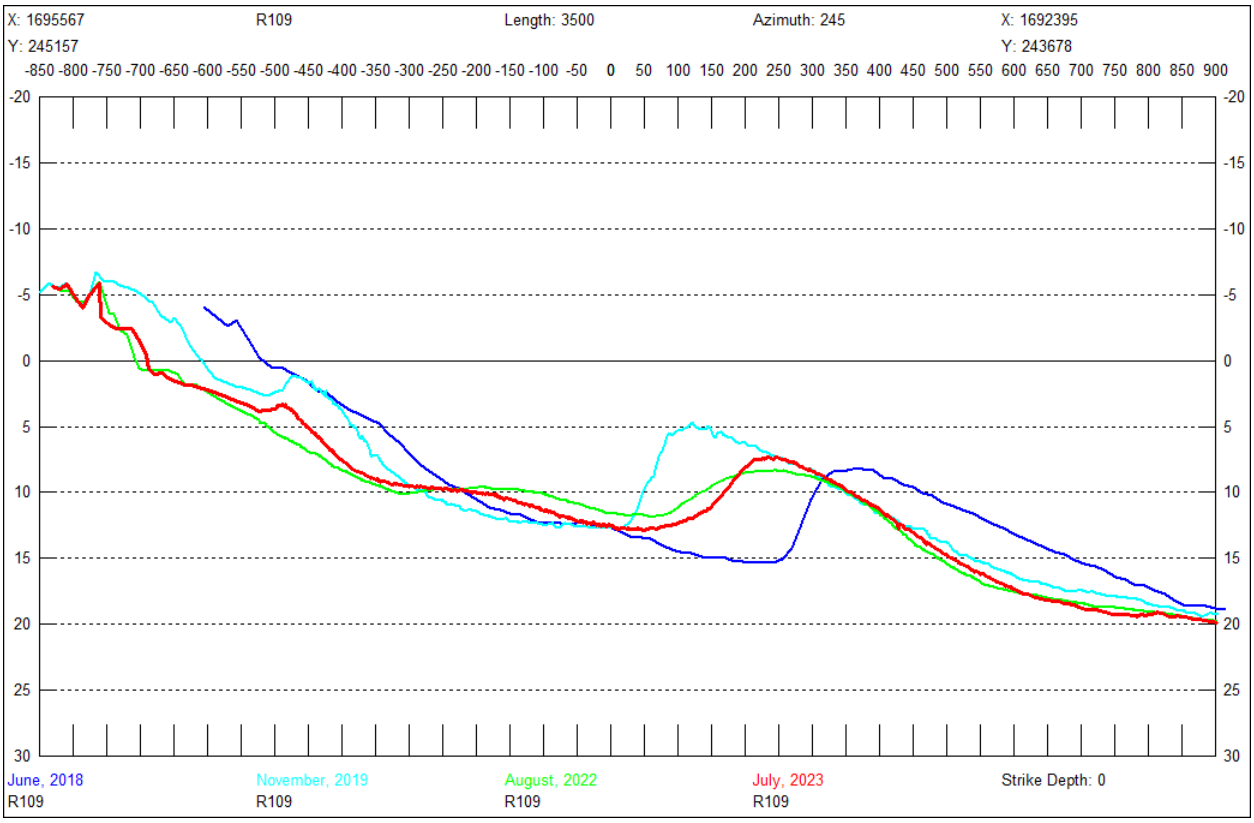
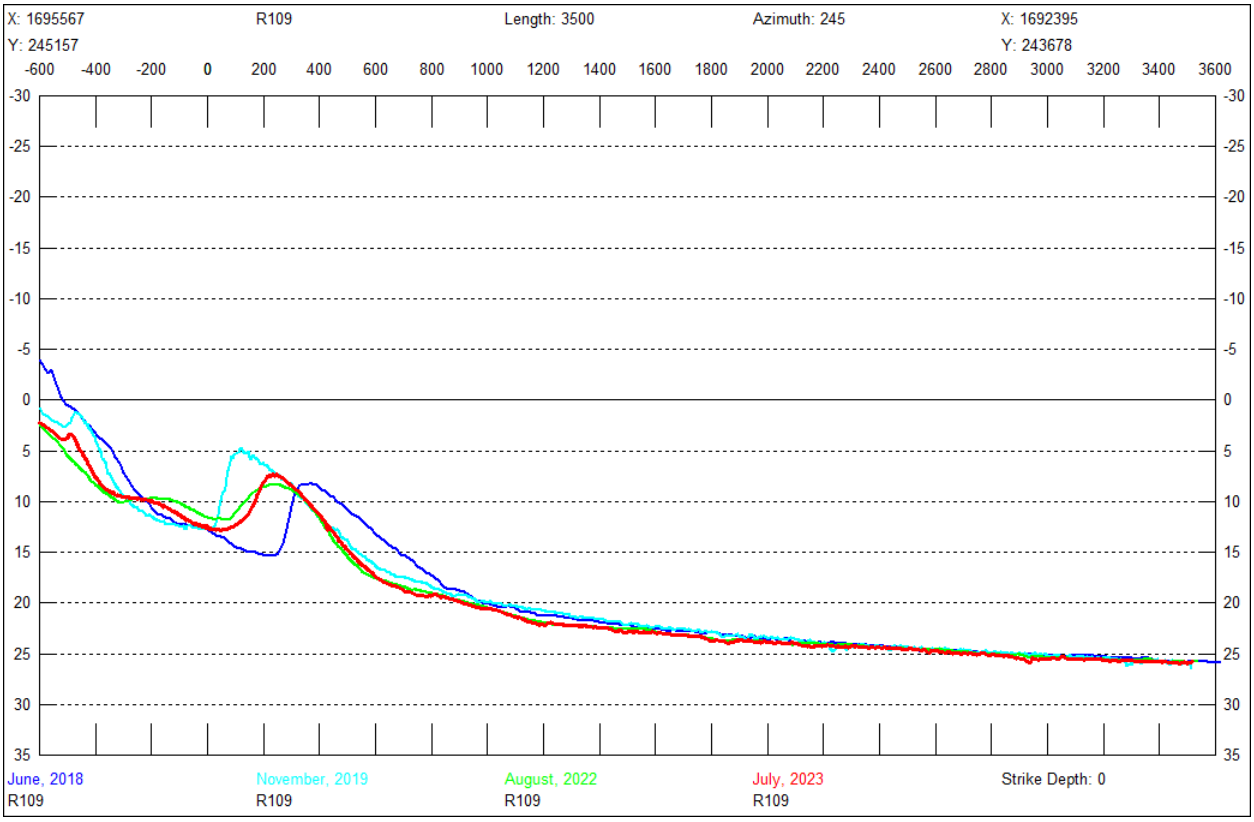
R108
Length: 3500
Azimuth: 245
X: 1691844
Y: 246038
Y: 244558
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R108
August, 2022
R108
July, 2023
R108
Strike Depth: 0


X: 1695291
R108-5
Length: 3500
Azimuth: 245
X: 1692119
Y: 245597
Y: 244118
November, 2019
R108-5
August, 2022
R108-5
July, 2023
R108-5
Strike Depth: 0


X: 1695291
R108-5
Length: 3500
Azimuth: 245
X: 1692119
Y: 245597
Y: 244118
November, 2019
R108-5
August, 2022
R108-5
July, 2023
R108-5
Strike Depth: 0


X: 1695567
R109
Length: 3500
Azimuth: 245
X: 1692395
Y: 245157
Y: 243678
-850 -800 -750 -700 -650 -600 -550 -500 -450 -400 -350 -300 -250 -200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
-20 -15 -10 -5 0 5 10 15 20 25 30
June, 2018
R109
November, 2019
R109
August, 2022
R109
July, 2023
R109
Strike Depth: 0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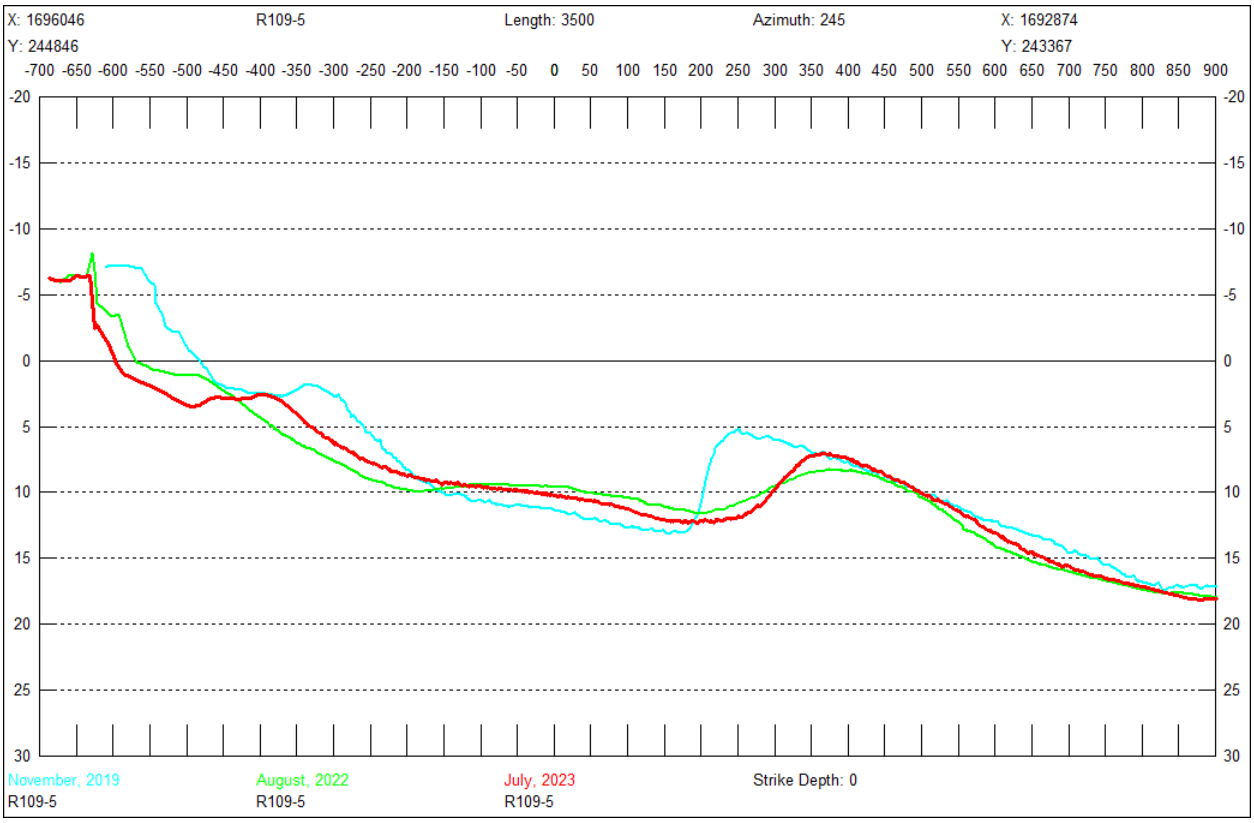
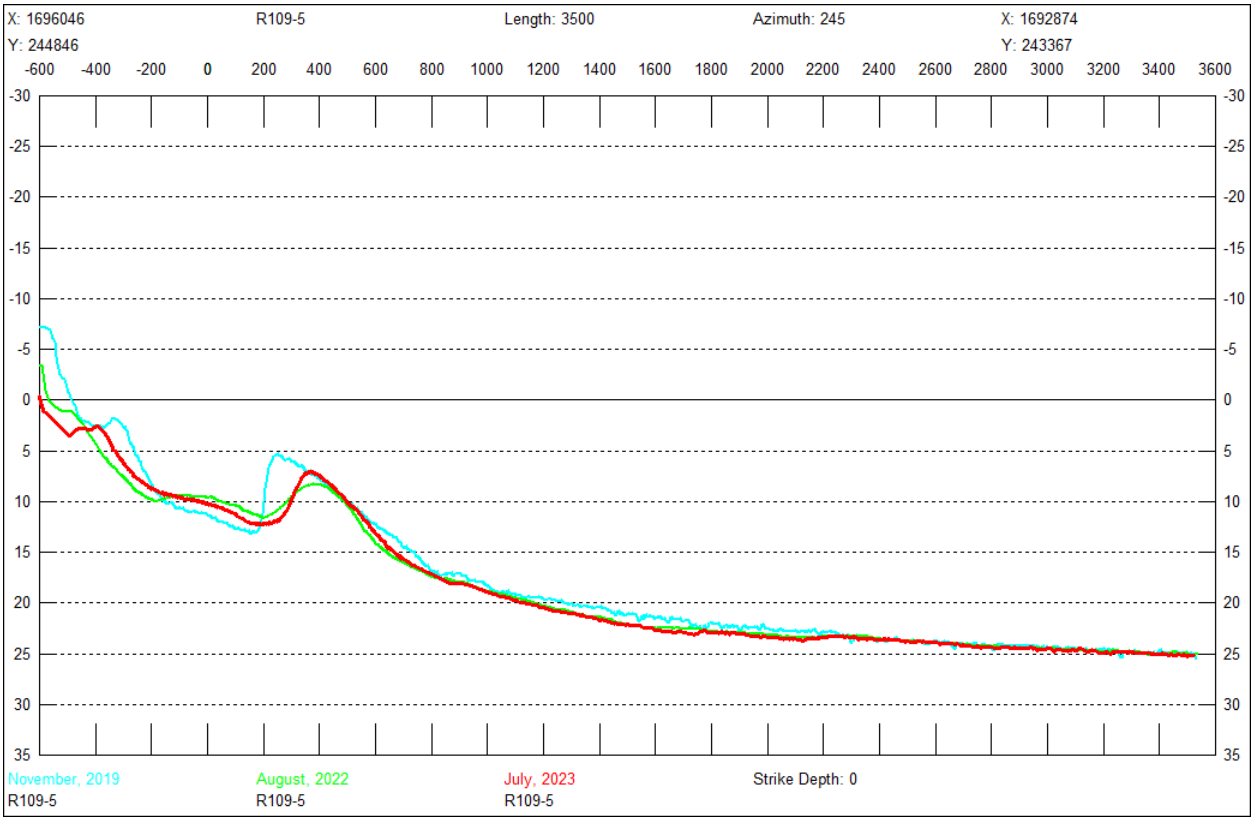
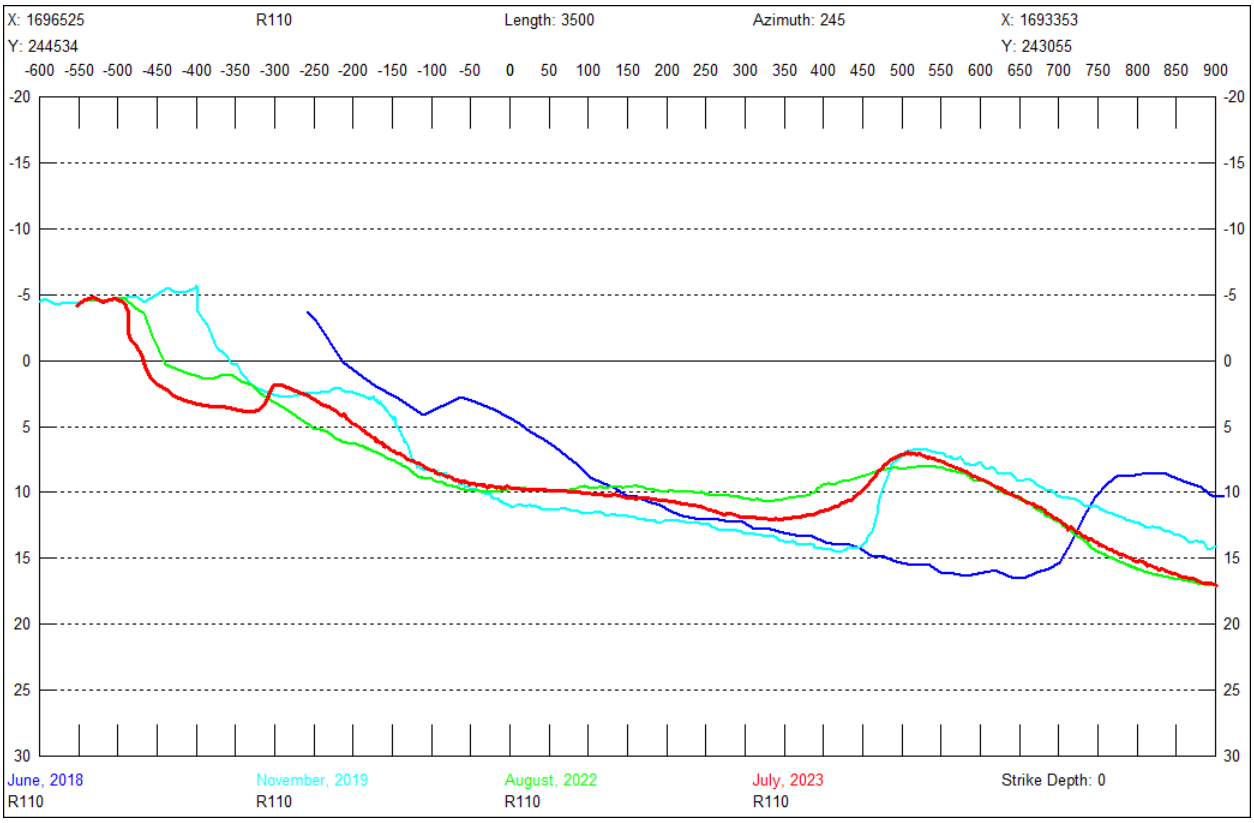
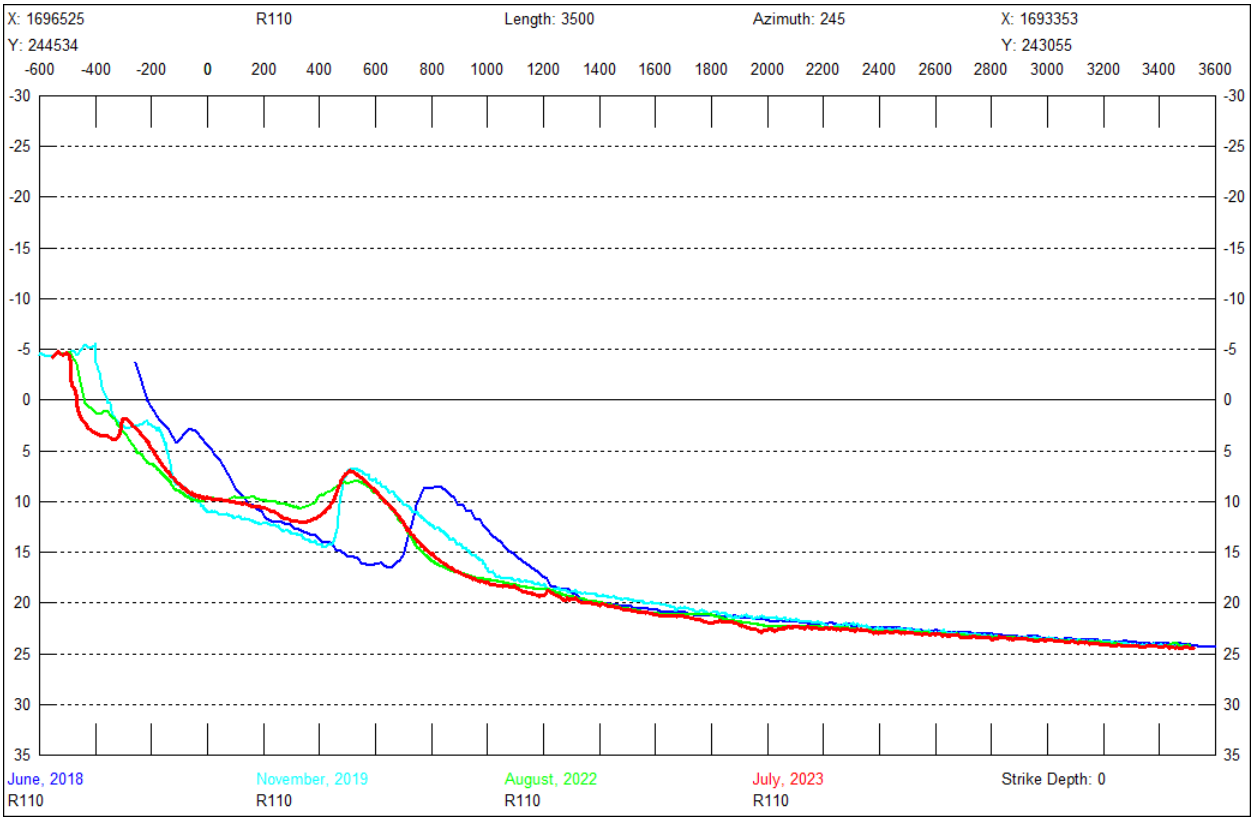
Length: 3500
Azimuth: 245
X: 1692395
Y: 245157
Y: 243678
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R109
November, 2019
R109
August, 2022
R109
July, 2023
R109
Strike Depth: 0


X: 1696046
R109-5
Length: 3500
Azimuth: 245
X: 1692874
Y: 244846
Y: 243367
-700 -650 -600 -550 -500 -450 -400 -350 -300 -250 -200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
-20 -15 -10 -5 0 5 10 15 20 25 30
November, 2019
R109-5
August, 2022
R109-5
July, 2023
R109-5
Strike Depth: 0


X: 1696046
R109-5
Length: 3500
Azimuth: 245
X: 1692874
Y: 244846
Y: 243367
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
November, 2019
R109-5
August, 2022
R109-5
July, 2023
R109-5
Strike Depth: 0


X: 1696525
R110
Length: 3500
Azimuth: 245
X: 1693353
Y: 244534
Y: 243055
-600 -550 -500 -450 -400 -350 -300 -250 -200 -150 -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900
-20 -15 -10 -5 0 5 10 15 20 25 30
June, 2018
R110
November, 2019
R110
August, 2022
R110
July, 2023
R110
Strike Depth: 0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R110
Length: 3500
Azimuth: 245
X: 1693353
Y: 244534
Y: 243055
-600 -400 -200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600
-30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
June, 2018
R110
November, 2019
R110
August, 2022
R110
July, 2023
R110
Strike Depth: 0

APPENDIX 3

Ground Digital Photos

2023 ST. JOSEPH PENINSULA BEACH

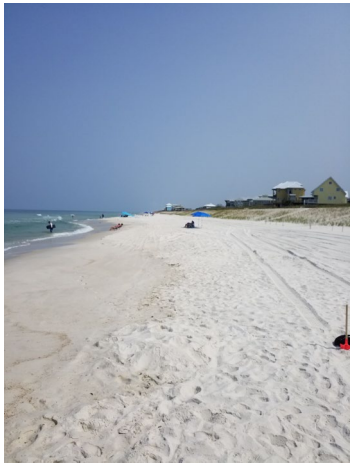
RENOURISHMENT TOPOGRPAHIC & HYDROGRAPHIC

Ground Digital Photography

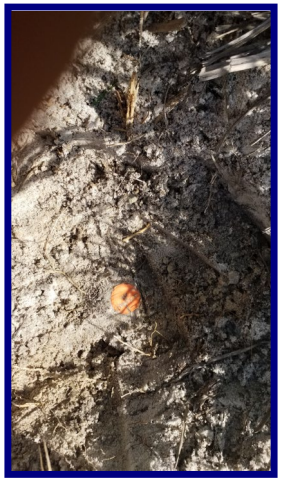
Monument – R-85°

East View

South View

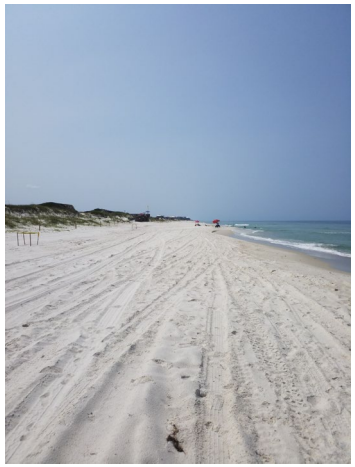


North View

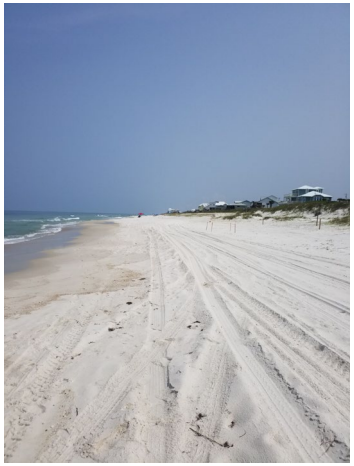


Monument View

East View



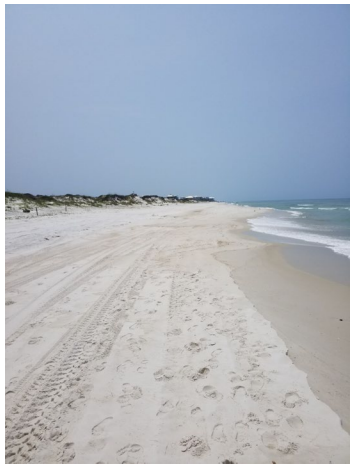
South View



North View

Monument View

East View

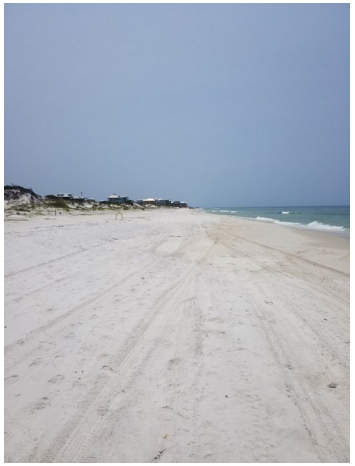


South View

North View

Monument View

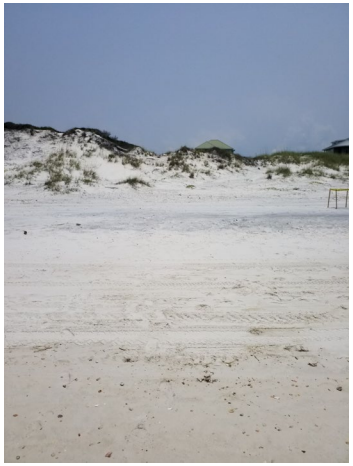
East View



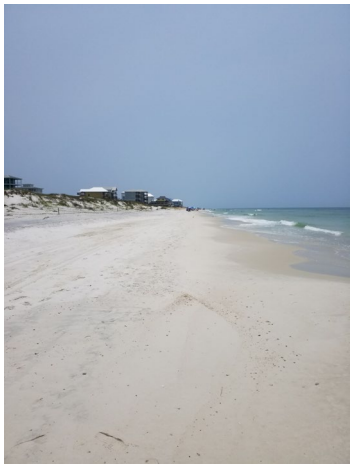
South View

North View

Monument View



East View

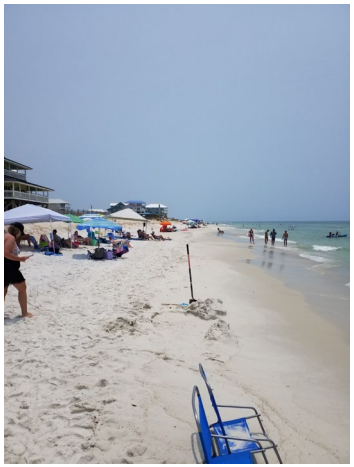


South View

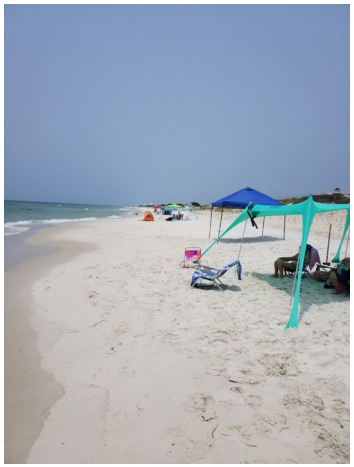
North View

Monument View

East View

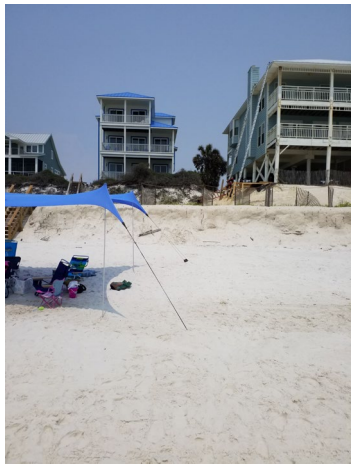


South View

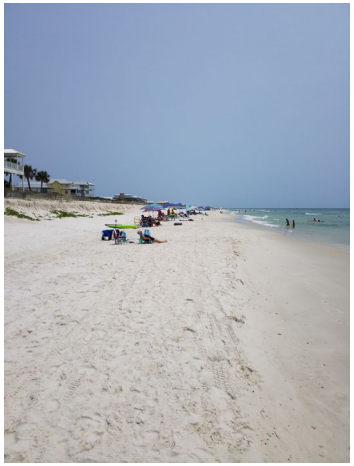


North View

Monument View



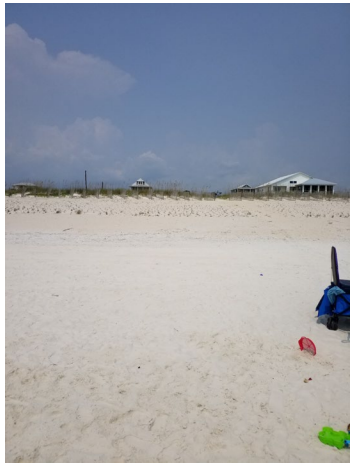
East View



South View

North View

Monument View



East View

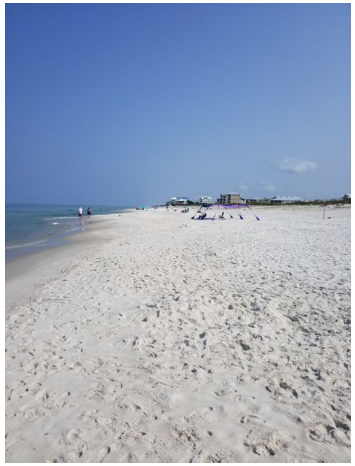
South View

North View

Monument View

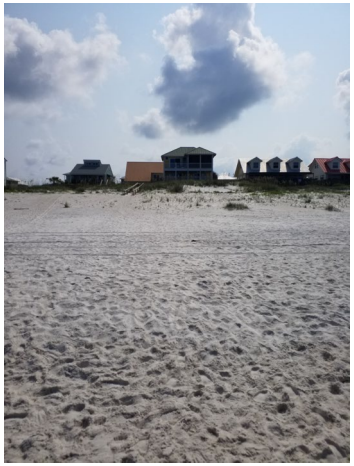
East View

South View

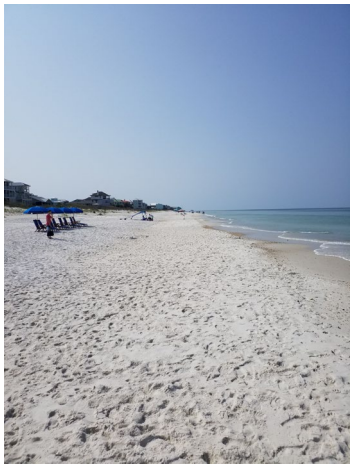


North View

Monument View



East View

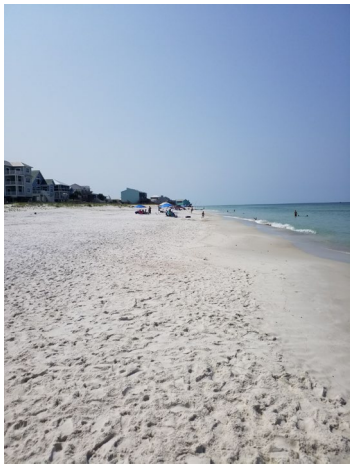


South View

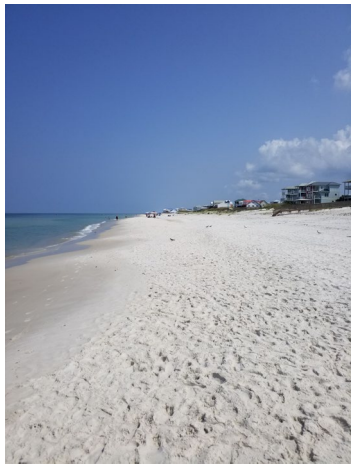
North View

Monument View

East View



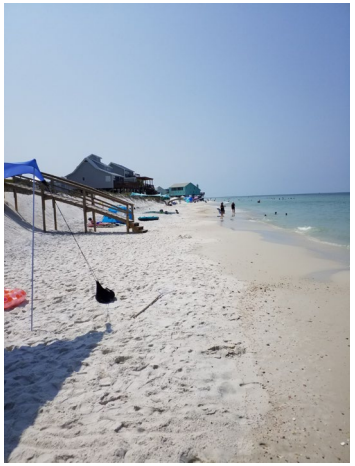
South View



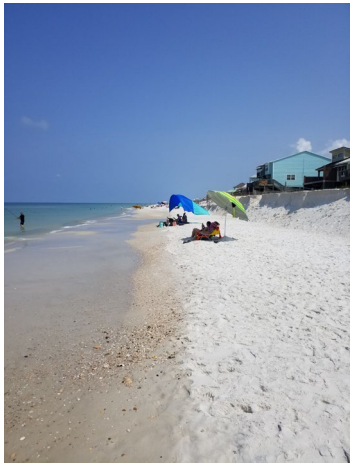
North View

Monument View

East View



South View

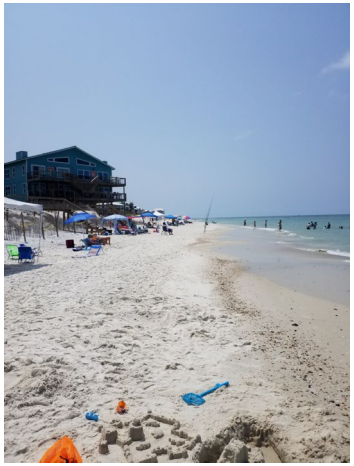


North View

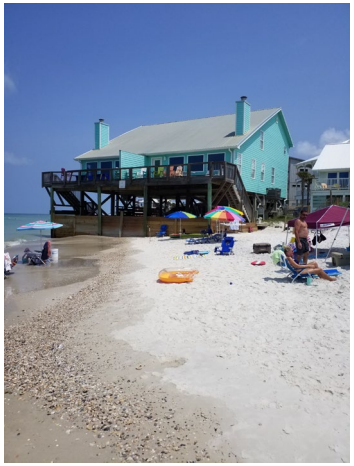
No Image Available

Monument View

East View



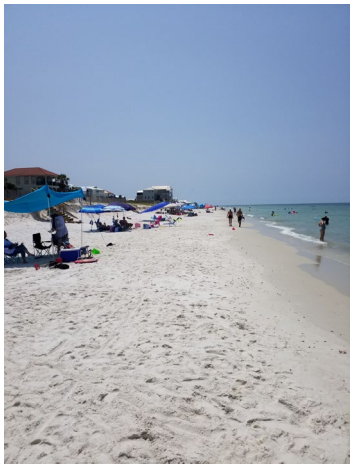
South View



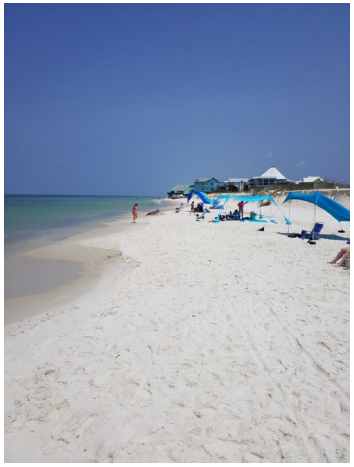
North View

Monument View

East View



South View

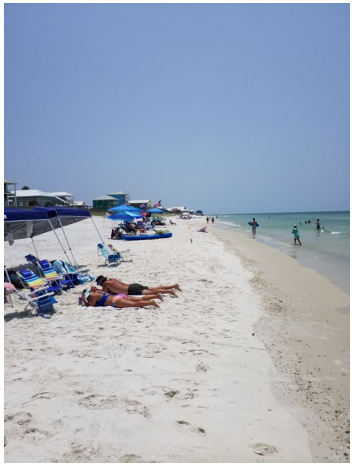


North View

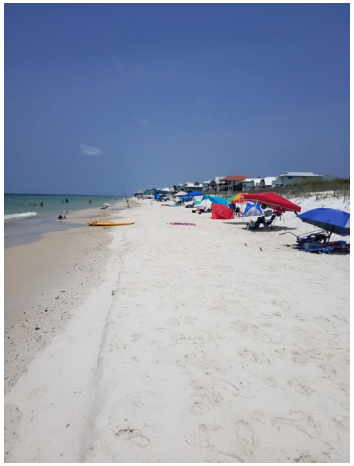
No Image Available

Monument View

East View



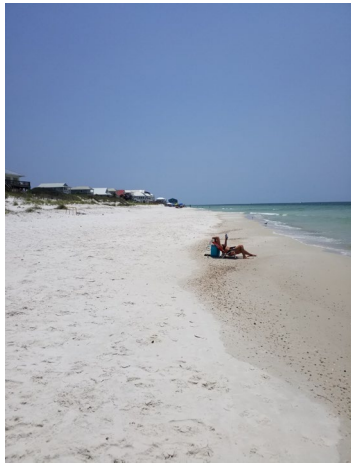
South View



North View

Monument View

East View

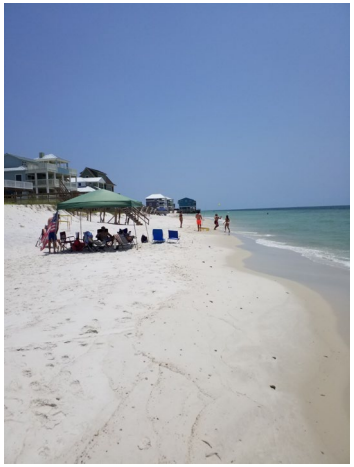


South View

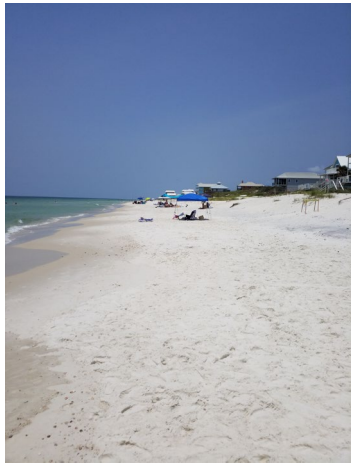
North View

Monument View

East View



South View

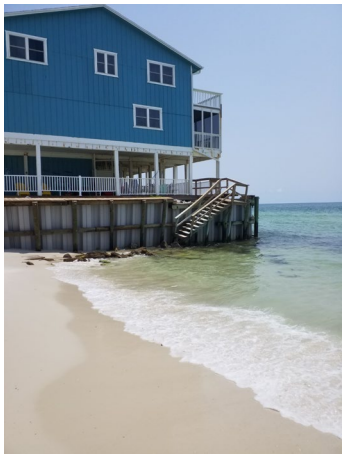


North View

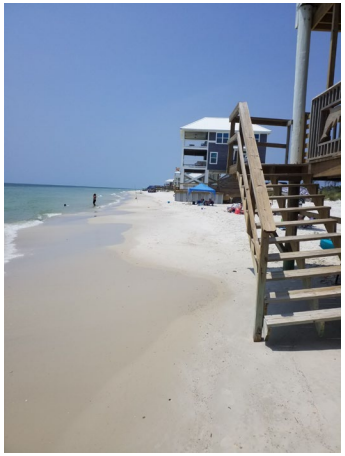
No Image Available

Monument View

East View



South View



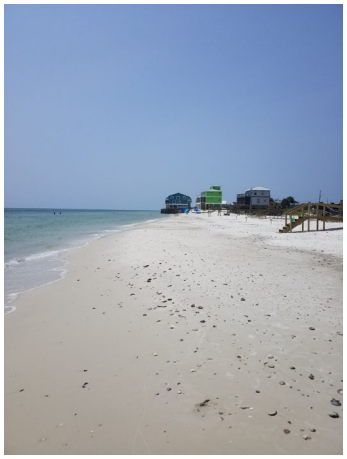
North View

No Image Available

Monument View

East View

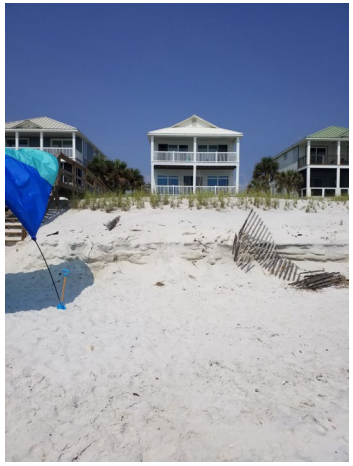
South View



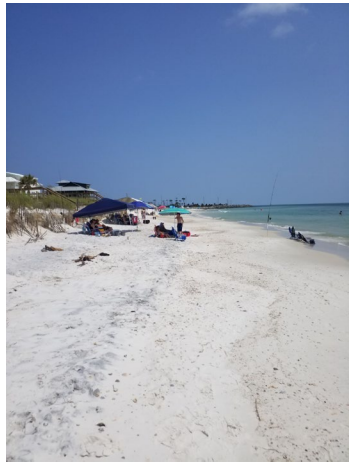
North View

No Image Available

Monument View



East View

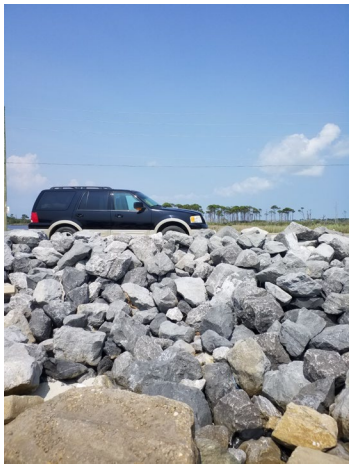


South View

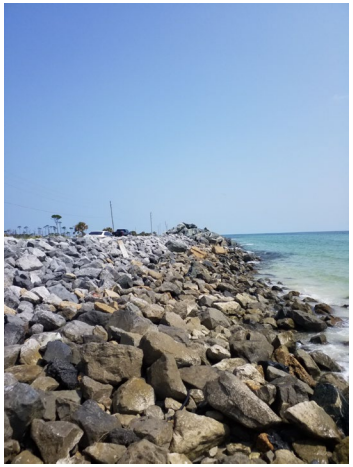
North View

No Image Available

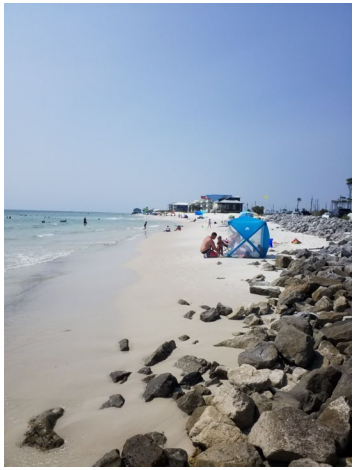
Monument View



East View



South View



North View

No Image Available

Monument View

East View

South View

North View

Monument View

East View

South View

North View

No Image Available

Monument View

East View

South View

North View

No Image Available

Monument View

East View

South View

North View

No Image Available

Monument View

2023 ST. JOSEPH PENINSULA BEACH
RENOURISHMENT TOPOGRPAHIC & HYDROGRAPHIC
Ground Digital Photography
Monument - R-110°

East View

South View

North View

No Image Available

Monument View

APPENDIX 4(A)

Federally Compliant Metadata

(Monument Information Report)

```
Identification_Information:
  Citation:
    Citation_Information:
      Originator: Dewberry Engineers Inc.
      Publication_Date: Unpublished Material
      Title: 2023 St. Joseph Peninsula Beach Renourishment Topographic and Hydrographic Survey
      Geospatial_Data_Presentation_Form: Entity Point
      Online_Linkage: App5-50165723_MIR.xls
  Description:
    Abstract:   Dewberry was contracted by MRD Associates, Inc.
                to provide Topographic and Hydrographic Surveys for the physical
                monitoring of the beach, and offshore areas of the 2023 St. Joseph Peninsula
                Beach Renourishment project.

                The beach and offshore profile survey consists of FDEP reference monuments R-85
                through R-110 in Gulf County.

                This data is neccessary to regularly observe and assess, with quantitative
                measurements, the performance of the project, any adverse effects which have
                occured, and the need for any adjustments, modifications, or mitigative responce
                to the project.
  Time_Period_of_Content:
    Time_Period_Information:
      Range_of_Dates/Times:
        Beginning_Date: 20230711
        Ending_Date: 20230725
    Currentness_Reference: Ground condition
  Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: Yearly
  Spatial_Domain:
    Bounding_Coordinates:
      West_Bounding_Coordinate: -85.424258
      East_Bounding_Coordinate: -85.354186
      North_Bounding_Coordinate: 29.795917
      South_Bounding_Coordinate: 29.662453
  Keywords:
    Theme:
      Theme_Keyword_Thesaurus: None
      Theme_Keyword: Monumentation
    Place:
      Place_Keyword_Thesaurus: None
      Place_Keyword: Cape San Blas
      Place_Keyword: Gulf County
      Place_Keyword: Florida
    Stratum:
      Stratum_Keyword_Thesaurus: None
      Stratum_Keyword: Control
  Access_Constraints: None
  Use_Constraints:
```

```
      The data shown within is based on field and/or site conditions at the time of field
      survey.  The user is responsilble for the results of an application of the data other
      than its intended purpose.
  Point_of_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Frederick C. Rankin
        Contact_Organization: Dewberry
      Contact_Address:
        Address_Type: mailing and physical
        Address:
          Dewberry
          203 Aberdeen Parkway
        City: Panama City
        State_or_Province: FL
        Postal_Code: 32405
        Country: USA
      Contact_Voice_Telephone: (850) 522-0644
      Contact_Facsimile_Telephone: (850) 522-1011
      Contact_Electronic_Mail_Address: erankin@dewberry.com
  Data_Set_Credit: Dewberry
Data_Quality_Information:
  Attribute_Accuracy:
    Attribute_Accuracy_Report: All attributes are assumed to be accurate; however, no tests
                                          were performed.
  Logical_Consistency_Report: These data are logically consistent.
  Completeness_Report: No omissions.
  Positional_Accuracy:
    Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
        RTK is a process where GPS signal corrections are transmitted in real time from a
          reference receiver at a known location to one or more remote rover receivers. The use
          of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and
          other variables in GPS geometry, increasing positioning accuracy up to within a
          centimeter. Using the code phase of GPS signals, as well as the carrier phase, which
          delivers the most accurate GPS information, RTK provides differential corrections to
          produce the most precise GPS positioning.
        The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect
          of any kinematic system, particularly in real-time where the velocity of a rover
          receiver should not degrade either the achievable performance or the system's overall
          reliability. After the receiver resolves the ambiguities correctly, the accuracy of
          each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical
          (depending on antenna multipath rejection capability) plus 1 ppm for double frequency
          and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers
          are within this range. They are all based on the assumption that the integers are
          estimated correctly.
      Quantitative_Horizontal_Positional_Accuracy_Assessment:
        Horizontal_Positional_Accuracy_Value: 0.20
    Vertical_Positional_Accuracy:
      Vertical_Positional_Accuracy_Report:
```

RTK is a process where GPS signal corrections are transmitted in real time from a reference receiver at a known location to one or more remote rover receivers. The use of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and other variables in GPS geometry, increasing positioning accuracy up to within a centimeter. Using the code phase of GPS signals, as well as the carrier phase, which delivers the most accurate GPS information, RTK provides differential corrections to produce the most precise GPS positioning.

The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect of any kinematic system, particularly in real-time where the velocity of a rover receiver should not degrade either the achievable performance or the system's overall reliability. After the receiver resolves the ambiguities correctly, the accuracy of each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical (depending on antenna multipath rejection capability) plus 1 ppm for double frequency and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers are within this range. They are all based on the assumption that the integers are estimated correctly.

Lineage:

Process_Step:

Process_Description:

Dewberry conducted control and range monument location and verification with the use of Spectra Precision Epoch 85 GNSS RTK GPS Systems.

Process_Date: 20230728

Process_Step:

Process_Description:

Horizontal and vertical positions for recovered control and range monuments were entered into the DEP spreadsheet "GU03I.xls". This spreadsheet shows the differences between field measured and DEP published northings, eastings, and elevations for each monument.

Process_Date: 20230728

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Planar:

Grid_Coordinate_System:

Grid_Coordinate_System_Name: State Plane Coordinate System 1983

State_Plane_Coordinate_System:Florida North

SPCS_Zone_Identifier: 903

Transverse_Mercator:

Scale_Factor_at_Central_Meridian: 0.999941

Longitude_of_Central_Meridian: -84.5000

Latitude_of_Projection_Origin: 29.0000

False_Easting: 1968500.0000

False_Northing: 0.0000

Planar_Coordinate_Information:

Planar_Coordinate_Encoding_Method: coordinate Pair

Coordinate_Representation:

Abscissa_Resolution: 0.0000

Ordinate_Resolution: 0.0000

Planar_Distance_Units: survey feet

```
  Vertical_Coordinate_System_Definition:
    Depth_System_Definition:
      Depth_Datum_Name: North American Vertical Datum of 1988
      Depth_Distance_Units: feet
      Depth_Resolution: 0.000001
      Depth_Encoding_Method: Explicit depth coordinate included with horizontal coordinates
Entity_and_Attribute_Information:
  Detailed_Description:
    Entity_Type:
      Entity_Type_Label: App5-50165723_MIR.xls
      Entity_Type_Definition:
        File contains northings, eastings, and elevations for monuments as published by DEP,
          found by Dewberry, and used by Dewberry, differences between given vs. found,
          given vs. used, and found vs. used.
      Entity_Type_Definition_Source: Dewberry
    Attribute:
      Attribute_Label: DEP Given MON ID
      Attribute_Definition: Range monument name
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label: DEP Given M. DATE
      Attribute_Definition: Date the monumentation was set.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Date defining the feature
      Attribute_Label: DEP GIVEN NORTHING
      Attribute_Definition: Northing coordinates based on State Plane Coordinate System, Florida
                            North Zone, 901, North American Datum of 1983.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label: DEP GIVEN EASTING
      Attribute_Definition: Easting coordinates based on State Plane Coordinate System, Florida
                            North Zone, 901, North American Datum of 1983.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label: DEP GIVEN AZ
      Attribute_Definition: Azimuth from the monument which is the baseline of survey for the
                            profile lines.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Azimuth defining the feature
      Attribute_Label: DEP GIVEN NAVD
      Attribute_Definition: Elevations based on the North American Vertical Datum of 1988
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Elevations defining the feature
      Attribute_Label: Dewberry FOUND MON ID
```

Attribute_Definition: Range monument name
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Monument names defining feature
Attribute_Label: Dewberry FOUND M. Date
Attribute_Definition: Date the monumentation was recovered.
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Dates defining feature
Attribute_Label: Dewberry FOUND NORTHING
Attribute_Definition: Northing coordinates based on State Plane Coordinate System, Florida
                      North Zone, 901, North American Datum of 1983.
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Northing coordinates defining feature
Attribute_Label: Dewberry FOUND EASTING
Attribute_Definition: Easting coordinates based on State Plane Coordinate System, Florida
                      North Zone, 901, North American Datum of 1983.
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Easting coordinates defining feature
Attribute_Label: Dewberry FOUND AZ
Attribute_Definition: Azimuth of monument found
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Azimuth defining feature
Attribute_Label: Dewberry FOUND NAVD
Attribute_Definition: Elevations based on North American Vertical Datum of 1988
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Elevations defining feature
Attribute_Label: Dewberry USED MON ID
Attribute_Definition: Monument names used by Dewberry
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Names defining feature
Attribute_Label: Dewberry USED M. Date
Attribute_Definition: Dates monuments were used by Dewberry
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Dates defining feature
Attribute_Label: Dewberry USED NORTHING
Attribute_Definition: Northing coordinates based on State Plane Coordinate System, Florida
                      North Zone, 901, North American Datum of 1983.
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Northing coordinates defining feature
Attribute_Label: Dewberry USED EASTING
Attribute_Definition: Easting coordinates based on State Plane Coordinate System, Florida
                      North Zone, 901, North American Datum of 1983.

Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Easting coordinates defining feature
Attribute_Label: Dewberry USED AZ
Attribute_Definition: Azimuth used by Dewberry
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Azimuth defining feature
Attribute_Label: Dewberry USED NAVD
Attribute_Definition: Elevations based on North American Vertical Datum of 1988
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Elevations defining feature
Attribute_Label: Range monument name
Attribute_Definition: Names of range monument
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Names defining feature
Attribute_Label: GIVEN VS. FOUND Northing
Attribute_Definition: Difference between Given Northing and Found Northing
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. FOUND Easting
Attribute_Definition: Difference between Given Easting and Found Easting
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. FOUND Azimuth
Attribute_Definition: Difference between Given Azimuth and Found Azimuth
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. FOUND NAVD
Attribute_Definition: Difference between Given NAVD and Found NAVD elevation
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. USED NORTHING
Attribute_Definition: Difference between Given Northing and Used Northing
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. USED Easting
Attribute_Definition: Difference between Given Easting and Used Easting
Attribute_Definition_Source: Dewberry
Attribute_Domain_Values:
  Unrepresentable_Domain: Value defining feature
Attribute_Label: GIVEN VS. USED Azimuth
Attribute_Definition: Difference between Given and Used Azimuths

```
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
    Attribute_Label: GIVEN VS. USED NAVD
    Attribute_Definition: Difference between Given and Used NAVD elevations
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
    Attribute_Label: FOUND VS. USED NORTHING
    Attribute_Definition: Difference between Found and Used Northing
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
    Attribute_Label: FOUND VS. USED EASTING
    Attribute_Definition: difference between Found and Used Easting
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
    Attribute_Label: FOUND VS. USED Azimuth
    Attribute_Definition: Difference between Found VS. Used Azimuth
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
    Attribute_Label: FOUND VS. USED NAVD
    Attribute_Definition: Difference between Found and Used NAVD elevation
    Attribute_Definition_Source: Dewberry
    Attribute_Domain_Values:
      Unrepresentable_Domain: Value defining feature
Metadata_Reference_Information:
  Metadata_Date: 20230728
  Metadata_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Frederick C. Rankin
        Contact_Organization: Dewberry Engineers Inc.
      Contact_Address:
        Address_Type: mailing and physical
        Address:
          Dewberry
          203 Aberdeen Parkway
        City: Panama City
        State_or_Province: FL
        Postal_Code: 32405
        Country: USA
      Contact_Voice_Telephone: (850) 522-0644
      Contact_Facsimile_Telephone: (850) 522-1011
      Contact_Electronic_Mail_Address: erankin@dewberry.com
  Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata
  Metadata_Standard_Version: FGDC-STD-001-1998
```

APPENDIX 4(B)

Federally Compliant Metadata

(FDEP ASCII files)

Identification_Information:
  Citation:
    Citation_Information:
      Originator: Dewberry Engineers Inc.
      Publication_Date: Unpublished Material
      Title: 2023 St. Joseph Peninsula Beach Renourishment Topographic and Hydrographic Survey
      Geospatial_Data_Presentation_Form: Entity Point
      Online_Linkage: App6-50165723_FINAL_NAVD.dep
  Description:
    Abstract: Dewberry was contracted by MRD Associates, Inc.
               to provide Topographic and Hydrographic Surveys for the physical
               monitoring of the beach, and offshore areas of the 2023 St. Joseph Peninsula
               Beach Renourishment project.

               The beach and offshore profile survey consists of FDEP reference monuments R-85
               through R-110 in Gulf County.

               This data is neccessary to regularly observe and assess, with quantitative
               measurements, the performance of the project, any adverse effects which have
               occured, and the need for any adjustments, modifications, or mitigative responce
               to the project.
  Time_Period_of_Content:
    Time_Period_Information:
      Range_of_Dates/Times:
        Beginning_Date: 20230711
        Ending_Date: 20230725
    Currentness_Reference: Ground condition
  Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: Yearly
  Spatial_Domain:
    Bounding_Coordinates:
      West_Bounding_Coordinate: -85.424258
      East_Bounding_Coordinate: -85.354186
      North_Bounding_Coordinate: 29.795917
      South_Bounding_Coordinate: 29.662453
  Keywords:
    Theme:
      Theme_Keyword_Thesaurus: None
      Theme_Keyword: Monumentation
    Place:
      Place_Keyword_Thesaurus: None
      Place_Keyword: Cape San Blas
      Place_Keyword: Gulf County
      Place_Keyword: Florida
    Stratum:
      Stratum_Keyword_Thesaurus: None
      Stratum_Keyword: Control
  Access_Constraints: None
  Use_Constraints:

The data shown within is based on field and/or site conditions at the time of field survey. The user is responsilble for the results of an application of the data other than its intended purpose.

Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Frederick C. Rankin
Contact_Organization: Dewberry
Contact_Address:
Address_Type: mailing and physical
Address:
Dewberry
203 Aberdeen Parkway
City: Panama City
State_or_Province: FL
Postal_Code: 32405
Country: USA
Contact_Voice_Telephone: (850) 522-0644
Contact_Facsimile_Telephone: (850) 522-1011
Contact_Electronic_Mail_Address: erankin@dewberry.com
Data_Set_Credit: Dewberry

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report: All attributes are assumed to be accurate; however, no tests were performed.
Logical_Consistency_Report: These data are logically consistent.
Completeness_Report: No omissions.
Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report:
RTK is a process where GPS signal corrections are transmitted in real time from a reference receiver at a known location to one or more remote rover receivers. The use of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and other variables in GPS geometry, increasing positioning accuracy up to within a centimeter. Using the code phase of GPS signals, as well as the carrier phase, which delivers the most accurate GPS information, RTK provides differential corrections to produce the most precise GPS positioning.

The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect of any kinematic system, particularly in real-time where the velocity of a rover receiver should not degrade either the achievable performance or the system's overall reliability. After the receiver resolves the ambiguities correctly, the accuracy of each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical (depending on antenna multipath rejection capability) plus 1 ppm for double frequency and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers are within this range. They are all based on the assumption that the integers are estimated correctly.

Quantitative_Horizontal_Positional_Accuracy_Assessment:
Horizontal_Positional_Accuracy_Value: 0.20
Vertical_Positional_Accuracy:
Vertical_Positional_Accuracy_Report:

RTK is a process where GPS signal corrections are transmitted in real time from a reference receiver at a known location to one or more remote rover receivers. The use of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and other variables in GPS geometry, increasing positioning accuracy up to within a centimeter. Using the code phase of GPS signals, as well as the carrier phase, which delivers the most accurate GPS information, RTK provides differential corrections to produce the most precise GPS positioning.

The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect of any kinematic system, particularly in real-time where the velocity of a rover receiver should not degrade either the achievable performance or the system's overall reliability. After the receiver resolves the ambiguities correctly, the accuracy of each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical (depending on antenna multipath rejection capability) plus 1 ppm for double frequency and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers are within this range. They are all based on the assumption that the integers are estimated correctly.

Lineage:

Process_Step:

Process_Description:

Offshore Hydrographic Surveys were conducted with the use of a Spectra Precision Epoch 85 GNSS RTK GPS Systems System onboard the survey vessell "Nemo", together with Coastal Oceanographics HYPACK Software (version 2019), and a Ross 825B fathometer.

Process_Date: 20230728

Process_Step:

Process_Description:

Upland Topographic Surveys were conducted with the use of Spectra Precision Epoch 85 GNSS RTK GPS Systems.

Process_Date: 20230728

Process_Step:

Process_Description:

Processing of data was performed with the use of Coastal Oceanographics HYPACK Software (version 2019), and AutoCAD Civil 3D Land Desktop.

Process_Date: 20230728

Process_Step:

Process_Description:

Redundancy checks for quality control/quality assurance were conducted as follows:

1.) Horizontal and vertical checks were performed on Control and Range monuments and compared to DEP published data.

2.) Sound velocity calibrations were made at the beginning and end of each day with the use of Odom Digibar Pro Soung Velocity Probe.

Process_Date: 20230728

Process_Step:

Process_Description:

Final survey maps were reviewed and edited by a Florida Licensed Professional Surveyor and Mapper.

Process_Date: 20230728

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

```
    Planar:
      Grid_Coordinate_System:
        Grid_Coordinate_System_Name: State Plane Coordinate System 1983
        State_Plane_Coordinate_System: Florida North
          SPCS_Zone_Identifier: 903
          Transverse_Mercator:
            Scale_Factor_at_Central_Meridian: 0.999941
            Longitude_of_Central_Meridian: -84.5000
            Latitude_of_Projection_Origin: 29.0000
            False_Easting: 1968500.0000
            False_Northing: 0.0000
      Planar_Coordinate_Information:
        Planar_Coordinate_Encoding_Method: coordinate Pair
        Coordinate_Representation:
          Abscissa_Resolution: 0.0000
          Ordinate_Resolution: 0.0000
        Planar_Distance_Units: survey feet
  Vertical_Coordinate_System_Definition:
    Depth_System_Definition:
      Depth_Datum_Name: North American Vertical Datum of 1988
      Depth_Distance_Units: feet
      Depth_Resolution: 0.000001
      Depth_Encoding_Method: Explicit depth coordinate included with horizontal coordinates


Entity_and_Attribute_Information:
  Detailed_Description:
    Entity_Type:
      Entity_Type_Label: App6-50165723_FINAL_NAVD.dep
      Entity_Type_Definition:
        This file contains a list of coordinates within the headers of each set of data.  The
        data that follows each header is a list of stations and elevations based on the
        coordinate referenced in the header.
      Entity_Type_Definition_Source: Dewberry
    Attribute:
      Attribute_Label:
      Attribute_Definition:
        Header (first line) containing monument ID, establisheddate, coordinates based on the
          State Plane Coordinate System, Florida North Zone, 903, North American Datum of 1983,
          azimuth and elevation.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label:
      Attribute_Definition:
        Header (second line) containing upland date, beach date, offshore date, total number of
                                      upland points, beach points, and offshore points.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
```

```
      Attribute_Label:
      Attribute_Definition:
        Data following header consists of lists of eastings, northings, and elevations along
          the profile line.
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Elevations defining the feature
Metadata_Reference_Information:
  Metadata_Date: 20230728
  Metadata_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Frederick C. Rankin
        Contact_Organization: Dewberry Engineers Inc.
      Contact_Address:
        Address_Type: mailing and physical
        Address:
          Dewberry
          203 Aberdeen Parkway
        City: Panama City
        State_or_Province: FL
        Postal_Code: 32405
        Country: USA
      Contact_Voice_Telephone: (850) 522-0644
      Contact_Facsimile_Telephone: (850) 522-1011
      Contact_Electronic_Mail_Address: erankin@dewberry.com
  Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata
  Metadata_Standard_Version: FGDC-STD-001-1998
```

APPENDIX 4(C)

Federally Compliant Metadata

(XYZ Data)

```
Identification_Information:
  Citation:
    Citation_Information:
      Originator: Dewberry Engineers Inc.
      Publication_Date: Unpublished Material
      Title: 2023 St. Joseph Peninsula Beach Renourishment Topographic and Hydrographic Survey
      Geospatial_Data_Presentation_Form: Entity Point
      Online_Linkage: App7-50165723.xyz
  Description:
    Abstract:   Dewberry was contracted by MRD Associates, Inc.
                to provide Topographic and Hydrographic Surveys for the physical
                monitoring of the beach, and offshore areas of the 2023 St. Joseph Peninsula
                Beach Renourishment project.

                The beach and offshore profile survey consists of FDEP reference monuments R-85
                through R-110 in Gulf County.

                This data is neccessary to regularly observe and assess, with quantitative
                measurements, the performance of the project, any adverse effects which have
                occured, and the need for any adjustments, modifications, or mitigative responce
                to the project.
  Time_Period_of_Content:
    Time_Period_Information:
      Range_of_Dates/Times:
        Beginning_Date: 20230711
        Ending_Date: 20230725
    Currentness_Reference: Ground condition
  Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: Yearly
  Spatial_Domain:
    Bounding_Coordinates:
      West_Bounding_Coordinate: -85.424258
      East_Bounding_Coordinate: -85.354186
      North_Bounding_Coordinate: 29.795917
      South_Bounding_Coordinate: 29.662453
  Keywords:
    Theme:
      Theme_Keyword_Thesaurus: None
      Theme_Keyword: Monumentation
    Place:
      Place_Keyword_Thesaurus: None
      Place_Keyword: Cape San Blas
      Place_Keyword: Gulf County
      Place_Keyword: Florida
    Stratum:
      Stratum_Keyword_Thesaurus: None
      Stratum_Keyword: Control
  Access_Constraints: None
  Use_Constraints:
```

```
      The data shown within is based on field and/or site conditions at the time of field
      survey.  The user is responsilble for the results of an application of the data other
      than its intended purpose.
  Point_of_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Frederick C. Rankin
        Contact_Organization: Dewberry
      Contact_Address:
        Address_Type: mailing and physical
        Address:
          Dewberry
          203 Aberdeen Parkway
        City: Panama City
        State_or_Province: FL
        Postal_Code: 32405
        Country: USA
      Contact_Voice_Telephone: (850) 522-0644
      Contact_Facsimile_Telephone: (850) 522-1011
      Contact_Electronic_Mail_Address: erankin@dewberry.com
  Data_Set_Credit: Dewberry
Data_Quality_Information:
  Attribute_Accuracy:
    Attribute_Accuracy_Report: All attributes are assumed to be accurate; however, no tests
                                          were performed.
  Logical_Consistency_Report: These data are logically consistent.
  Completeness_Report: No omissions.
  Positional_Accuracy:
    Horizontal_Positional_Accuracy:
      Horizontal_Positional_Accuracy_Report:
        RTK is a process where GPS signal corrections are transmitted in real time from a
          reference receiver at a known location to one or more remote rover receivers. The use
          of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and
          other variables in GPS geometry, increasing positioning accuracy up to within a
          centimeter. Using the code phase of GPS signals, as well as the carrier phase, which
          delivers the most accurate GPS information, RTK provides differential corrections to
          produce the most precise GPS positioning.
        The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect
          of any kinematic system, particularly in real-time where the velocity of a rover
          receiver should not degrade either the achievable performance or the system's overall
          reliability. After the receiver resolves the ambiguities correctly, the accuracy of
          each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical
          (depending on antenna multipath rejection capability) plus 1 ppm for double frequency
          and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers
          are within this range. They are all based on the assumption that the integers are
          estimated correctly.
      Quantitative_Horizontal_Positional_Accuracy_Assessment:
        Horizontal_Positional_Accuracy_Value: 0.20
    Vertical_Positional_Accuracy:
      Vertical_Positional_Accuracy_Report:
```

RTK is a process where GPS signal corrections are transmitted in real time from a reference receiver at a known location to one or more remote rover receivers. The use of an RTK capable GPS system can compensate for atmospheric delay, orbital errors and other variables in GPS geometry, increasing positioning accuracy up to within a centimeter. Using the code phase of GPS signals, as well as the carrier phase, which delivers the most accurate GPS information, RTK provides differential corrections to produce the most precise GPS positioning.

The RTK process begins with a preliminary ambiguity resolution. This is a crucial aspect of any kinematic system, particularly in real-time where the velocity of a rover receiver should not degrade either the achievable performance or the system's overall reliability. After the receiver resolves the ambiguities correctly, the accuracy of each position computation is between 0.5 to 2 cm horizontal and 1 to 3 cm vertical (depending on antenna multipath rejection capability) plus 1 ppm for double frequency and 2 ppm for single frequency. All RTK accuracy specifications from all manufacturers are within this range. They are all based on the assumption that the integers are estimated correctly.

Lineage:

Process_Step:

Process_Description:

Offshore Hydrographic Surveys were conducted with the use of a Spectra Epoch 85 RTK GPS System onboard the survey vessell "Nemo", together with Coastal Oceanographics HYPACK Software (version 2019), and a Ross 825B fathometer.

Process_Date: 20230728

Process_Step:

Process_Description:

Upland Topographic Surveys were conducted with the use of Spectra Epoch 85 RTK GPS Systems.

Process_Date: 20230728

Process_Step:

Process_Description:

Processing of data was performed with the use of Coastal Oceanographics HYPACK Software (version 2019), and AutoCAD Civil 3D Land Desktop.

Process_Date: 20230728

Process_Step:

Process_Description:

Redundancy checks for quality control/quality assurance were conducted as follows:

1.) Horizontal and vertical checks were performed on Control and Range monuments and compared to DEP published data.

2.) Sound velocity calibrations were made at the beginning and end of each day with the use of Odom Digibar Pro Soung Velocity Probe.

Process_Date: 20230728

Process_Step:

Process_Description:

Final survey maps were reviewed and edited by a Florida Licensed Professional Surveyor and Mapper.

Process_Date: 20230728

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

```
    Planar:
      Grid_Coordinate_System:
        Grid_Coordinate_System_Name: State Plane Coordinate System 1983
        State_Plane_Coordinate_System: Florida North
          SPCS_Zone_Identifier: 903
          Transverse_Mercator:
            Scale_Factor_at_Central_Meridian: 0.999941
            Longitude_of_Central_Meridian: -84.5000
            Latitude_of_Projection_Origin: 29.0000
            False_Easting: 1968500.0000
            False_Northing: 0.0000
      Planar_Coordinate_Information:
        Planar_Coordinate_Encoding_Method: coordinate Pair
        Coordinate_Representation:
          Abscissa_Resolution: 0.0000
          Ordinate_Resolution: 0.0000
        Planar_Distance_Units: survey feet
  Vertical_Coordinate_System_Definition:
    Depth_System_Definition:
      Depth_Datum_Name: North American Vertical Datum of 1988
      Depth_Distance_Units: feet
      Depth_Resolution: 0.000001
      Depth_Encoding_Method: Explicit depth coordinate included with horizontal coordinates
Entity_and_Attribute_Information:
  Detailed_Description:
    Entity_Type:
      Entity_Type_Label: App7-50162723.xyz
      Entity_Type_Definition: file contains eastings, northings, and elevations for data points.
      Entity_Type_Definition_Source: Dewberry
    Attribute:
      Attribute_Label:
      Attribute_Definition:
        Easting coordinate based on the State Plane Coordinate System, Florida North Zone, 903,
          North American Datum of 1983
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label:
      Attribute_Definition:
        Northing coordinate based on the State Plane Coordinate System, Florida North Zone, 903,
          North American Datum of 1983
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Coordinates defining the feature
      Attribute_Label:
      Attribute_Definition: elevation based on the North American Vertical Datum of 1988
      Attribute_Definition_Source: Dewberry
      Attribute_Domain_Values:
        Unrepresentable_Domain: Elevation defining the feature
 Metadata_Date: 20230728
```

Metadata_Contact:
  Contact_Information:
    Contact_Person_Primary:
      Contact_Person: Frederick C. Rankin
      Contact_Organization: Dewberry Engineers Inc.
    Contact_Address:
      Address_Type: mailing and physical
      Address:
        Dewberry
        203 Aberdeen Parkway
      City: Panama City
      State_or_Province: FL
      Postal_Code: 32405
      Country: USA
    Contact_Voice_Telephone: (850) 522-0644
    Contact_Facsimile_Telephone: (850) 522-1011
    Contact_Electronic_Mail_Address: erankin@dewberry.com
Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998

APPENDIX 5

Monument Information Report

GULF COUNTY RANGE MONUMENT COMPARISON USED BY DEWBERRY
for ST. JOSEPH PENINSULA MONITORING 2023
JULY, 2023

DATUMS: NAD83/90 / NAVD1988

DEP GIVEN CONTROL						CONTROL FOUND BY DEWBERRY 2023						CONTROL USED BY DEWBERRY 2023						GIVEN -VS-FOUND				GIVEN -VS-USED				FOUND-VS-USED			
MON ID	M. DATE	NORTHING	EASTING	AZ	M. ELEV.	MON ID	M. DATE	NORTHING	EASTING	AZ	M. ELE	MON ID	M. DATE	NORTHING	EASTING	AZ	M. ELEV.	ΔN	ΔE	ΔAZ	ΔZ	ΔN	ΔE	ΔAZ	ΔZ	ΔN	ΔE	ΔAZ	ΔZ
R-85A	JUN1983	267183.310	1685165.420	250.0	16.09	R-85A	FOUND PRI	267183.174	1685165.24	250.0	15.61	R-85A	FOUND PRI	267183.174	1685165.24	250.0	15.61	0.136	0.182	0.0	0.48	0.136	0.182	0.0	0.48	0.000	0.000	0.0	0.00
R-86	MAR1997	266166.470	1685425.040	250.0	22.63	R-86	FOUND PRI	266166.381	1685424.93	250.0	25.40	R-86	FOUND PRI	266166.381	1685424.93	250.0	25.40	0.089	0.113	0.0	-2.77	0.089	0.113	0.0	-2.77	0.000	0.000	0.0	0.00
R-87A	JUN1983	265243.550	1685843.120	250.0	20.07	R-87A	JUN1983	265243.446	1685842.85	250.0	20.08	R-87A	JUN1983	265243.446	1685842.85	250.0	20.08	0.104	0.268	0.0	-0.01	0.104	0.268	0.0	-0.01	0.000	0.000	0.0	0.00
R-88A	JUN1983	264261.210	1686167.210	250.0	17.33	R-88A	SET 8011(2023	264261.208	1686167.24	250.0	20.74	R-88A	SET 8011(2023)	264261.208	1686167.24	250.0	20.74	0.002	-0.030	0.0	-3.41	0.002	-0.030	0.0	-3.41	0.000	0.000	0.0	0.00
R-89A	JUN1983	263287.270	1686498.980	250.0	21.80	R-89A	FOUND 8011	263287.265	1686498.98	250.0	8.66	R-89A	FOUND 8011	263287.265	1686498.98	250.0	8.66	0.005	0.003	0.0	13.14	0.005	0.003	0.0	13.14	0.000	0.000	0.0	0.00
R-90A	JUN1983	262295.820	1686796.700	250.0	17.42	R-90A	FOUND 8011	262295.803	1686796.66	250.0	11.32	R-90A	FOUND 8011	262295.803	1686796.66	250.0	11.32	0.017	0.045	0.0	6.10	0.017	0.045	0.0	6.10	0.000	0.000	0.0	0.00
R-91A	JUN1983	261347.820	1687169.720	250.0	20.32	R-91A	FOUND 8011	261347.729	1687169.59	250.0	11.89	R-91A	FOUND 8011	261347.729	1687169.59	250.0	11.89	0.091	0.132	0.0	8.43	0.091	0.132	0.0	8.43	0.000	0.000	0.0	0.00
R-92	MAR1997	260416.700	1687604.080	250.0	8.92	R-92	MAR1997	260416.678	1687604.03	250.0	9.37	R-92	MAR1997	260416.678	1687604.03	250.0	9.37	0.022	0.055	0.0	-0.45	0.022	0.055	0.0	-0.45	0.000	0.000	0.0	0.00
R-93	MAR1997	259475.870	1687925.940	250.0	12.12	R-93	FOUND 8011	259475.807	1687925.72	250.0	14.26	R-93	FOUND 8011	259475.807	1687925.72	250.0	14.26	0.063	0.224	0.0	-2.14	0.063	0.224	0.0	-2.14	0.000	0.000	0.0	0.00
R-94	MAR1997	258535.550	1688321.600	250.0	13.32	R-94	SET 8011(2023	258535.541	1688321.59	250.0	17.82	R-94	SET 8011(2023)	258535.541	1688321.59	250.0	17.82	0.009	0.010	0.0	-4.50	0.009	0.010	0.0	-4.50	0.000	0.000	0.0	0.00
R-95	MAR1997	257542.850	1688704.770	250.0	9.52	R-95	SET 8011(2023	257542.836	1688704.79	250.0	12.43	R-95	SET 8011(2023)	257542.836	1688704.79	250.0	12.43	0.014	-0.024	0.0	-2.91	0.014	-0.024	0.0	-2.91	0.000	0.000	0.0	0.00
R-96	MAR1997	256533.480	1688983.100	250.0	8.62	R-96	DESTROYED			250.0		R-96	DESTROYED	256533.469	1688983.096	250.0	3.95			0.0		0.011	0.004	0.0	4.67			0.0	
R-97	FEB1993	255682.110	1689530.880	250.0	12.95	R-97	FEB1993	255682.116	1689530.73	250.0	12.95	R-97	FEB1993	255682.116	1689530.73	250.0	12.95	-0.006	0.148	0.0	0.00	-0.006	0.148	0.0	0.00	0.000	0.000	0.0	0.00
R-98A	JUN1983	254743.200	1689836.240	250.0	13.59	R-98A	DESTROYED			250.0		R-98A	DESTROYED	254743.196	1689836.240	250.0	7.49			0.0		0.004	0.000	0.0	6.10			0.0	
R-99A	APR1983	253846.400	1690312.090	250.0	15.90	R-99A	FOUND 8011	253846.357	1690312.08	250.0	11.73	R-99A	FOUND 8011	253846.357	1690312.08	250.0	11.73	0.043	0.015	0.0	4.17	0.043	0.015	0.0	4.17	0.000	0.000	0.0	0.00
R-100	MAR1997	253037.800	1690856.340	240.0	16.62	R-100	FOUND PRI	253037.833	1690856.21	240.0	17.20	R-100	FOUND PRI	253037.833	1690856.21	240.0	17.20	-0.033	0.127	0.0	-0.58	-0.033	0.127	0.0	-0.58	0.000	0.000	0.0	0.00
R-101	MAR1997	252057.590	1691193.570	240.0	15.62	R-101	DESTROYED			240.0		R-101	DESTROYED	252057.610	1691193.565	240.0	3.10			0.0		-0.020	0.005	0.0	12.52			0.0	
R-102	MAR1997	251208.440	1691639.240	230.0	7.62	R-102	DESTROYED			230.0		R-102	DESTROYED	251208.440	1691639.240	230.0	7.62			0.0		0.000	0.000	0.0	0.00			0.0	
R-103	MAR1997	250318.730	1692177.880	230.0	8.92	R-103	DESTROYED			230.0		R-103	DESTROYED	250318.730	1692177.880	230.0	8.92			0.0		0.000	0.000	0.0	0.00			0.0	
R-104A	JUN1983	249464.860	1692813.270	240.0	11.05	R-104A	DESTROYED			240.0		R-104A	DESTROYED	249464.860	1692813.270	240.0	11.05			0.0		0.000	0.000	0.0	0.00			0.0	
R-105	MAR1997	248627.760	1693397.030	240.0	5.12	R-105	DESTROYED			240.0		R-105	DESTROYED	248627.760	1693397.030	240.0	5.12			0.0		0.000	0.000	0.0	0.00			0.0	
R-106	MAR1997	247693.110	1693835.910	240.0	3.82	R-106	FOUND 8011	247693.147	1693835.87	240.0	3.45	R-106	FOUND 8011	247693.147	1693835.87	240.0	3.45	-0.037	0.044	0.0	0.37	-0.037	0.044	0.0	0.37	0.000	0.000	0.0	0.00
R-107	MAR1997	246855.250	1694423.110	240.0	5.92	R-107	DESTROYED			240.0		R-107	DESTROYED	246855.250	1694423.110	240.0	5.92			0.0		0.000	0.000	0.0	0.00			0.0	
R-108	MAR1997	246037.550	1695015.990	245.0	5.02	R-108	DESTROYED			245.0		R-108	DESTROYED	246037.550	1695015.990	245.0	5.02			0.0		0.000	0.000	0.0	0.00			0.0	
R-109	MAR1997	245157.080	1695566.850	245.0	6.62	R-109	DESTROYED			245.0		R-109	DESTROYED	245157.080	1695566.850	245.0	6.62			0.0		0.000	0.000	0.0	0.00			0.0	
R-110	MAR1997	244534.430	1696525.390	245.0	6.72	R-110	DESTROYED			245.0		R-110	DESTROYED	244534.430	1696525.390	245.0	6.72			0.0		0.000	0.000	0.0	0.00			0.0	

CONTROL MONUMENT USED BY DEWBERRY for 2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT JULY, 2023	
DATUMS: NAD83/2011 / NAVD1988	
DESIGNATION	51-83-B30
STAMPING	51-83-B30
NORTHING	250030.294
EASTING	1693006.479
HORIZONTAL RMSE	0.06
ELEVATION	10.23
VERTICAL RMSE	0.08
DESCRIPTION	

51-83-B30 LOCATION

51-83-B30 MONUMENT

CONTROL MONUMENT USED BY DEWBERRY for 2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT JULY, 2023	
DATUMS: NAD83/2011 / NAVD1988	
DESIGNATION	51-83-B28
STAMPING	51-83-B28
NORTHING	256319.405
EASTING	1689985.255
HORIZONTAL RMSE	0.07
ELEVATION	14.52
VERTICAL RMSE	0.07
DESCRIPTION	

51-83-B28 LOCATION

51-83-B28 MONUMENT

CONTROL MONUMENT USED BY DEWBERRY for 2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT JULY, 2023	
DATUMS: NAD83/2011 / NAVD1988	
DESIGNATION	51-83-B25
STAMPING	51-83-B25
NORTHING	266503.0257
EASTING	1685812.053
HORIZONTAL RMSE	0.11
ELEVATION	17.43
VERTICAL RMSE	0.06
DESCRIPTION	

51-83-B25 LOCATION

51-83-B25MONUMENT

CONTROL MONUMENT USED BY DEWBERRY for 2023 ST. JOSEPH PENINSULA BEACH RENOURISHMENT JULY, 2023	
DATUMS: NAD83/2011 / NAVD1988	
DESIGNATION	51-83-B21
STAMPING	51-83-B21
NORTHING	278122.649
EASTING	1682188.135
HORIZONTAL RMSE	0.07
ELEVATION	13.94
VERTICAL RMSE	0.06
DESCRIPTION	

51-83-B21 LOCATION

51-83-B21MONUMENT

APPENDIX 6

FDEP ASCII Files

(Provided Digitally)

APPENDIX 7

XYZ Files

(Provided Digitally)

APPENDIX 8(A)

Field Book AF2

BP 50165723 7/18/23

JM ST JOE PENINSULA

EQ. SP80
ROSS 825B
CF-31 TOUGHBOOK
NEMO
DIGIBAR PRO

BASE
CHK
X AT MB BOAT RAMP

WATER ELEV 7.33AM 3.29 - 1.90 = 1.39
4:11 PM 3.29 - 3.13 = 0.16

NEMO 7.4/AM 1.38

SOS 9:29 AM 5046 AVE 31 OBS 5042 USED 5040
2:40 PM 5051 AVE 31 OBS 5042

DRAFT = 1.1

CENTER MOUNT SETUP

	RTK	ROSS
STAR	0	0
FOR	0	0
VERT	-9.63	0

AF3/36

LINE	STATUS	START	STOP	
R-85	FIXED	9:53	9:40	
85.5	FIXED	9:43	9:56	
R-86	FIXED	9:59	10:06	
86.5	FIXED	10:09	10:16	
R-87	FIXED	10:19	10:26	
87.5	FIXED	10:30	10:38	
R-88	FIXED	10:41	10:49	
88.5	FIXED	10:53	11:01	
R-89	FIXED	11:04	11:12	
89.5	FIXED	11:16	11:23	
R90	FIXED	11:26	11:35	
90.5	FIXED	11:38	11:47	
R-91	FIXED	12:00	12:08	
91.5	FIXED	12:12	12:21	
R-92	FIXED	12:25	12:34	
92.5	FIXED	12:38	12:46	
R93	FIXED	12:49	12:58	
93.5	FIXED	1:02	1:09	
R-94	FIXED	1:14	1:22	
94.5	FIXED	1:25	1:33	
R95	FIXED	1:44	1:52	
95.5	FIXED	1:55	2:16	
R-96	FIXED	2:25	2:33	
CHK	FIXED	2:45	3:15	

LOST RATIO START OVER

FLOAT 3 SET

NO DATA RE START

BP 5016 5723 7/19/23

JM ST JOE PENINSULA

EQ: SP80
ROSS 825B
CF-31 TOUGHBOOK
NEMO
DIGI BAR PRO

BASE
CHK

X AT MB BOAT RAMP

WATER ELEV = 7:20 AM 3.29 - 1.95 = 1.34
5:14 PM 3.29 - 3.28 = 0.01

NEMO 7:21 AM 1.28

SOS 8:50 AM 5049 AVE 30' OBS 5045 USED 5045
2:37 PM 5052 AVE 24' OBS 5047

DRAFT = 1.1"

CENTER MOUNT SETUP

	RTK	ROSS
STAR	0	0
FOR	0	0
VERT	-9.63	0

AF3-3.

LINE	STATUS	START	STOP
R-96	FIXED	8:56	9:04
96.5	FIXED	9:07	9:14
R-97	FIXED	9:17	9:25
97.5	FIXED	9:28	9:36
R-98	FIXED	9:39	9:46
98.5	FIXED	9:49	9:57
R-99	FIXED	9:59	10:07
99.5	FIXED	10:09	10:17
R-100	FIXED	10:26	10:27
100.5	FIXED	10:29	10:37
R-101	FIXED	10:40	10:48
101.5	FIXED	10:56	10:58
R-102	FIXED	11:01	11:09
102.5	FIXED	11:12	11:20
R-103	FIXED	11:23	11:31
103.5	FIXED	11:33	11:42
R-104	FIXED	11:46	11:52
104.5	FIXED	11:55	12:03
R-105	FIXED	12:06	12:14
105.5	FIXED	12:17	12:26
R-106	FIXED	12:29	12:37
106.5	FIXED	12:40	12:48
R-107	FIXED	12:51	1:00
107.5	FIXED	1:09	1:19
R-108	FIXED	1:23	1:32
108.5	FIXED	1:38	1:49
R-109	FIXED	1:54	2:04
109.5	FIXED	2:07	2:18
R-110	FIXED	2:21	2:31
CHK	FIXED	2:39	3:16

APPENDIX 8(B)

Field Book 278

7-12-23

D. LEIN A. CURRIE

#	HI	HR	PTS	DESC.
1	4.92	6.56	50,000	CHK IN @ 2 HE = 0.040 VE = 0.102
			50,001 - 50,014	GS, GS, VEG, GS-GS, EOP R107 FALLS IN WATER

7-13-23 D.L. A.C.

#	HI	HR	PTS	DESC.
1	5.36	6.56	50,015	CHK IN @ 2 HE = 0.020 VE - 0.082
			50,016 - 50,025	GS, GS, GS, VEG, GS-GS R110 FALLS IN WATER
			50,026 - 50,035	GS, GS, GS, VEG, GS-GS R109.5 FALLS IN WATER
			50,036 - 50,044	GS, GS, VEG, GS-GS R109 FALLS IN WATER
			50,045 - 50,053	GS, GS, GS, GS, VEG, GS-GS R108.5
			50,054 - 50,064	GS, GS, VEG, GS-GS R108 FALLS IN WATER
			50,065 - 50,076	GS, GS, VEG, GS-GS R107.5
			50,077 - 50,093	RIP, ES, ES, ES, ES, RIP, GS, GS, EOP, EOP, GS, GS, AP, AP GS, GS, GS R106.5
			50,094 -	R106 CIR/8011 FOUND
			50,095 - 50,121	GS - GS
			50,122 - 50,134	AP, AP, GS, GS, EOP, EOP GS, GS, RIP, ES, ES, ES RIP
1	5.38	6.56	50,135	CHK IN @ 2 HE = 0.043 VE = 0.013

#	HI	HR	PTS	DESC.
1	5.38	6.56	50,136 - 50,164	RIP, ES, ES, RIP, GS, GS, EOP, EOP, GS, GS, AP, AP GS - GS R105.5
			50,165 - 50,188	RIP, ES, ES, GS, ES, RIP, GS, GS, EOP, EOP, GS, GS, AP, AP, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, EOW R105 FALLS IN RIP
			50,189 - 50,209	EOP, EOP, GS, GS, GS, RIP, ES, RIP, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, VEG, GS, GS R104.5

7-17-23

D. LEIN A. CURRIE A. BARFIELD

#	HI	HR	PTS	DESC.
1	5.53	6.56	50,210	CHK IN @ 2 HE = 0.019 VE = 0.119
			50,211 - 50,226	BC, BC, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, VEG, GS, GS, GS, R104 FALLS IN WATER
			50,227 - 50,241	GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, VEG, GS, GS R103.5
			50,242 - 50,251	GS - GS, VEG R103 FALLS IN WATER
			50,252 - 50,266	GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, GS, VEG, GS R102.5
			50,267 - 50,285	EOP, GS, EOP, GS, EOP, EOC, ES, GS, GS, ES, ES, GS, ES, BC, BC, GS, GS, GS, GS, BC R102 FALLS IN WATER
			50,286 - 50,311	GS, EOP, EOP, EOC, ES, ES, ES, ES, ES, ES, BC, EOC, GS, GS, BC, GS, GS, BC, GS, BC, GS, GS, GS, GS, GS, VEG, GS R101.5

5016 5723

7-17-23

⊼	HI	HR	PTS	DESC.
1	5.53	6.56	50,312-50,330	GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,VEG,GS,GS,GS R101 FALLS ON EOW
			50,331-50,352	GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS EDGE OF OATS, GS EDGE OF OATS, GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,VEG R100.5
			50,353-50,384	GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS,WW,WW,GS,GS,GS,GS,GS,GS EDGE OF OATS, GS EDGE OF OATS, GS,GS,GS,GS,GS,GS,GS,GS,VEG, R100 FELL IN THICK SAND OATS

7-18-23

D.LEIN A.CURRIE A.BARFIELD

⊼	HI	HR	PTS	DESC.
3	5.34	6.56	50,385	CHK IN @ 4 HE=0.072 VE=0.103
		7.97	50,386-50,424	R 85 LINE
			50,425-50,461	R 85.5 LINE
			50,462-50,491	R 86 LINE
			50,492-50,527	R 86.5 LINE
			50,528-50,556	R 87 LINE
			50,557-50,593	R 87.5 LINE
			50,594-50,624	R 88 LINE
			50,625-50,655	R 88.5 LINE
			50,656-50,680	R 89 LINE

5016 5723 278/69

⊼	HI	HR	PTS	DESC.
3	5.34	7.97	50,681-50,709	R 89.5 LINE
			50,710-50,743	R 90 LINE
			50,744-50,773	R 90.5 LINE
			50,774-50,805	R 91 LINE
			50,806-50,846	R 91.5 LINE
			50,847-50,876	R 92 LINE

7-19-23 D.L. A.C A.B.

⊼	HI	HR	PTS	DESC.
1	5.54	6.56	50,877	CHK IN @ 2 HE=0.020 VE 0.081
		7.97	50,878-50,888	R 92 LINE
			50,889-50,926	R 92.5 LINE
			50,927-50,964	R 93 LINE
			50,965-50,989	R 93.5 LINE
			50,990-51,042	R 94 LINE
			51,043-51,087	R 94.5 LINE
			51,088-51,130	R 95 LINE
			51,131-51,168	R 95.5 LINE
			51,169-51,201	R 96 LINE
			51,202-51,237	R 96.5 LINE
			51,238-51,262	R 97 LINE
			51,263-51,286	R 97.5 LINE
			51,287-51,321	R 98 LINE
			51,322-51,350	R 98.5 LINE
			51,351-51,388	R 99 LINE
			51,389-51,428	R 99.5 LINE
			51,429-51,454	R 100 LINE
			51,455-51,493	R 100.5 LINE
			51,494-51,525	R 101 LINE
			51,526-51,562	R 101.5 LINE
			51,563-51,591	R 102 LINE TWO PIC. TAKEN FOR EAST & SOUTH DIRECTIONS

#	HI	HR	PTS		DESC.
1	5.54	7.97	51,592	51,622	R102.5 LINE
			51,623	51,654	R103 LINE
			51,655	51,686	R103.5 LINE
			51,687	51,721	R104 LINE
			51,722	51,750	R104.5 LINE
			51,751	51,781	R105 LINE

7-20-23 D.L. A.C.

#	HI	HR	PTS		DESC.
1	5.30	6.56	51,782		CHK IN @ 2 HE=0.019 VE=0.070
		7.97	51,783	51,790	R105.5 LINE
			51,791	51,818	R107 LINE
			51,819	51,849	R107.5 LINE
			51,850	51,884	R108 LINE
			51,885	51,897	R108.5 LINE
			51,898	51,926	R109 LINE
			51,927	51,957	R109.5 LINE
			51,958	51,986	R110 LINE

7-25-23
D.LEIN A.CURRIE

#	HI	HR	PTS		DESC.
2	6.73	6.56	51,987		CHK IN @ 1 HE=0.080 VE=0.044
			51,988		R100 MON.
			51,989	52,015	GS, GS, GS EDGE SAND OATS GS-GS R99.5 LINE
			52,016	52,044	GS-GS, CIR/8011 FND R99 LINE
			52,045	52,079	GS,GS,GS,GS,GS, EOC, ES,ES, BC,GS,GS,GS,GS,GS,GS,GS, BC,WW,WW,GS-GS R98.5 LINE

#	HI	HR	PTS		DESC.
2	6.73	6.56	52,080	52,104	GS,GS,GS,GS,GS,BC,GS,GS,GS,GS,GS, BC FNC, FNC/S'WOOD, GS, GS, FNC GS,GS,GS,GS,GS,GS,GS,GS,GS,VEG GS R98 FALLS ON BEACH
			52,105	52,133	GS-GS, VEG R97.5 LINE
			52,134	52,161	VEG,GS,GS,GS,GS,GS,GS,GS,GS,GS,GS, R97 MON, GS,GS,GS,GS,GS,GS,GS,GS, GS,GS,GS,GS, EBP, ES, ES, EBP EOC
			52,162	52,186	VEG GS,GS,GS,GS,GS,GS,GS,GS,GS,GS, GS,GS,GS,GS,GS,GS,GS,EOC,ES,EOC, GS-GS, R96.5 LINE
			52,187	52,204	VEG GS,GS,GS,GS,GS,GS,GS,GS,GS,GS, WW,WW,GS,GS,GS,GS,GS,GS,WW,GS R96 FALLS ON BEACH
			52,205	52,223	GS-GS, R95.5 LINE
			52,224	52,249	GS,GS,GS,GS,GS,GS,GS,GS,GS, EOC, ES, ES, ES, GS,GS,GS,GS, GS,GS,GS,GS,GS,GS,GS,GS, CIR/8011 SET R95
			52,250	52,271	GS-GS R94.5 LINE
			52,272	52,301	GS-GS R94 SET CIR/8011

APPENDIX 8(C)

Field Book 335

SO165723 SJP 7-11-23

	STA	HI				EPOCH PT	
BASE	1	5.24		HE=	0.019	3MIN	410
CHK	2	6.56		VE=	-0.003		
BASE	2	6.52		HE=	0.020	3MIN	411
CHK	1	6.56		VE=	0.099	" "	
TIE	3	6.56	HE=	0.151	VE=	0.044	412
BASE	3	5.25		HE=	0.133	3MIN	413
CHK	2	6.56		VE=	-0.009	" "	
TIE	4	6.56	HE=	0.051	VE=	0.002	414
BASE	4	4.81		HE=	0.033	3MIN	415
CHK	3	6.56		VE=	-0.076		

SO165723 SJP 7-13-23

	STA	HI				
BASE	3	5.0		HE=	0.075	PT500
CHK	4	6.56		VE=	0.045	

UPLAND LINE	TOPO	501-	PTS
R-85	GS, GS, GS, GS, GS, GS, GS, R-85, EOP, GS,	501-	534
R-85.5	GS, GS, GS, BOG, EOG, ES, ES, GS, GS, GS, GS,	535-	566
R-86	GS, GS, GS, GS, GS, GS, GS, R-86, GS, GS,	567-	592
R-86.5	GS, GS, GS, GS, GS, GS, GS, GS, GS, GS	593-	613

CONTROL TIE FB# 335

CONTROL PIC'S (14)

DESC

SI-83-B30
SI-83-B28

SI-83-B28
SI-83-B30
SI-83-B25

SI-83-B25
SI-83-B28
SI-83-B21

SI-83-B21
SI-83-B25

DESC.

SI-83-BRS
SI-83-B21

UNABLE TO ACCESS 200' TALL OAKS. CTR/REF 7137
DROP OFF AT 150' - SCRUB OAKS
SHOT TO 150' - TALL TREES OAKS. CTR/REF 7137
SHOT TO DROP OFF SCRUB OAKS

SCI65773 SJR 7-25-23

	STA	HI			
BASE	3	5.02	HE = 0.147	PT	614
CHK	2	6.56	VE = 0.072		

UPLAND

		PTS.
R-87	65, 65, 65, 65, 65, 65, 65, 65, CM, 65	615 - 646
87.5	65, 65, 65, 65, 65, 65, 65, 65, 65, 65	647 - 661
R 88	65, 65, 65, 65, 65, 65, 65, 65, CIR/REF	662 - 685
88.5	65, 65, 65, 65, 65, 65, 65, 65, 65, 65,	686 - 711
R 89	65, 65, 65, 65, 65, 65, 65, 65, CIR, 65,	712 - 724
89.-	65, 65, 65, 65, 65, 65, 65, 65, 65, 65,	725 - 736
R	65, 65, 65, 65, 65, 65, 65, 65, CIR, 65	737 - 758
.5	65, 65, 65, 65, 65, 65, 65, 65, 65, 65.	759 - 778
R-91	65, 65, 65, 65, 65, 65, 65, 65, CIR, 65,	779 - 795
9.5	65, 65, 65, 65, 65, 65, 65, 65, 65, 65.	796 - 818
R-92	65, 65, 65, 65, 65, 65, 65, 65, CM, 65	819 - 849
92.5	65, 65, 65, 65, 65, 65, 65, 65, 65, 65.	850 - 872
R-93	65, 65, 65, 65, 65, 65, 65, 65, CIR, 65	873 - 897
93.5	65, 65, 65, 65, 65, 65, BDL, 65, 65	898 - 918

FB# 335

(15)

R-87 CM
SCRUB OAKS
CJR - SET R-88

CIR/FALLING PINE TREES R89
TH 61 SCRUB OAKS
CIR/8011 REF R-90
BDL
CIR/8011 REF R-91
BDL
CM
FNC/POOL
CIR/8011 REF
NO SAT INBETWEEN BDLs,