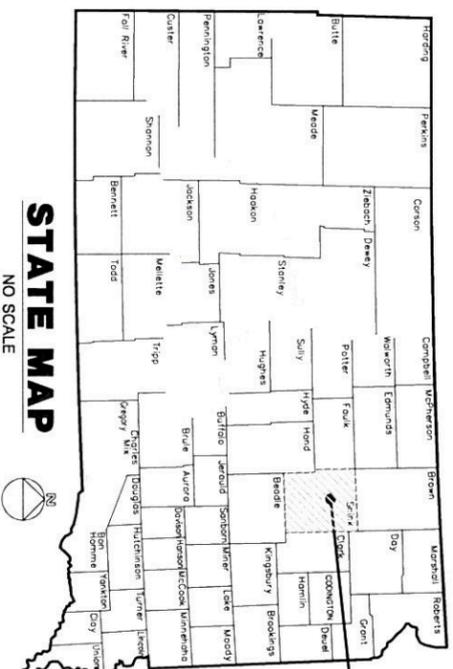
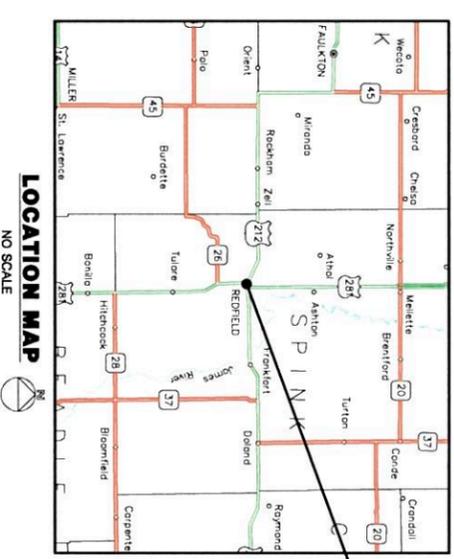
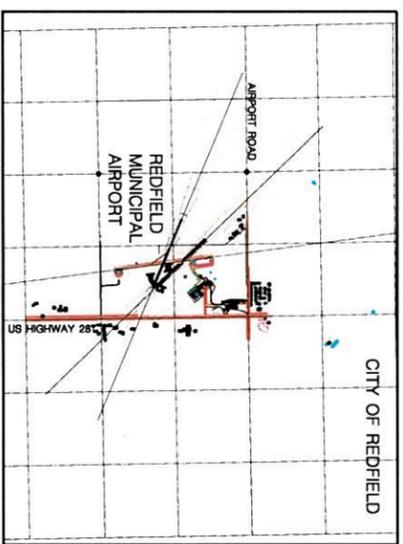


AIRPORT LAYOUT PLAN FOR (1D8) REDFIELD MUNICIPAL AIRPORT REDFIELD, SOUTH DAKOTA OWNER CITY OF REDFIELD SEPTEMBER 2019 AIP#3-46-0049-010-2016

FAA APPROVAL LETTER



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 - 10 APRON AREA EXISTING LAYOUT PLAN
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 - 20 EXHIBIT 'A' PROPERTY MAP TABLES



PROFESSIONAL ENGINEER'S CERTIFICATION

13637
SOUTH DAKOTA
3/29/2020

HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE PLANS AND SPECIFICATIONS WERE DEVELOPED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH ALL APPLICABLE FEDERAL STANDARDS AND REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF AIRPORTS AND AIRPORT FACILITIES. I AM NOT PROVIDING ANY DESIGN OR CONSTRUCTION SERVICES TO ANY OTHER PROJECTS AT THE SAME TIME AS THIS PROJECT. I AM NOT PROVIDING ANY DESIGN OR CONSTRUCTION SERVICES TO ANY OTHER PROJECTS AT THE SAME TIME AS THIS PROJECT. I AM NOT PROVIDING ANY DESIGN OR CONSTRUCTION SERVICES TO ANY OTHER PROJECTS AT THE SAME TIME AS THIS PROJECT.

BY: *Jack Douken*
DATE: 3/29/2020

AIRPORT SPONSORS APPROVAL

CITY OF REDFIELD

HEREBY APPROVE THESE PROJECT PLANS AND SPECIFICATIONS, CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER THAT THEY HAVE BEEN DEVELOPED TO THE BEST OF HIS PROFESSIONAL ABILITY IN ACCORDANCE WITH FEDERAL STANDARDS AND NO DEVIATIONS FROM OR MODIFICATIONS TO STANDARDS AS SET FORTH IN FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULARS WILL BE NECESSARY OTHER THAN THOSE PREVIOUSLY APPROVED BY THE FAA EXCEPT FOR THOSE LISTED ON PAGE 9 OF THIS A.L.P.

MAJOR: *Jeffrey Abbin* DATE: 3/29/2020

A.L.P. APPROVALS

FEDERAL AVIATION ADMINISTRATION
CONDITIONALLY APPROVAL SUBJECT TO LETTER DATED: 7/17/20
FAA DISTRICT OFFICE
BISMARCK, NORTH DAKOTA

TITLE: *J.P. Gil* *AVIATION MANAGER*

A.L.P. APPROVAL DATE: 7/17/20

A.L.P. AIRSPACE APPROVAL DATE: 2020-04-14-3572-NRA

AIRSPACE CASE NO: 2020-04-14-3572-NRA

SD-DOT

ACCEPTED
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

JACK DOUKEN
DEPARTMENT OF TRANSPORTATION
DIVISION OF FINANCE AND MANAGEMENT
OFFICE OF AIR, RAIL AND TRANSIT

DATE: 4-9-20

1 COVER SHEET
1 OF 20

AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

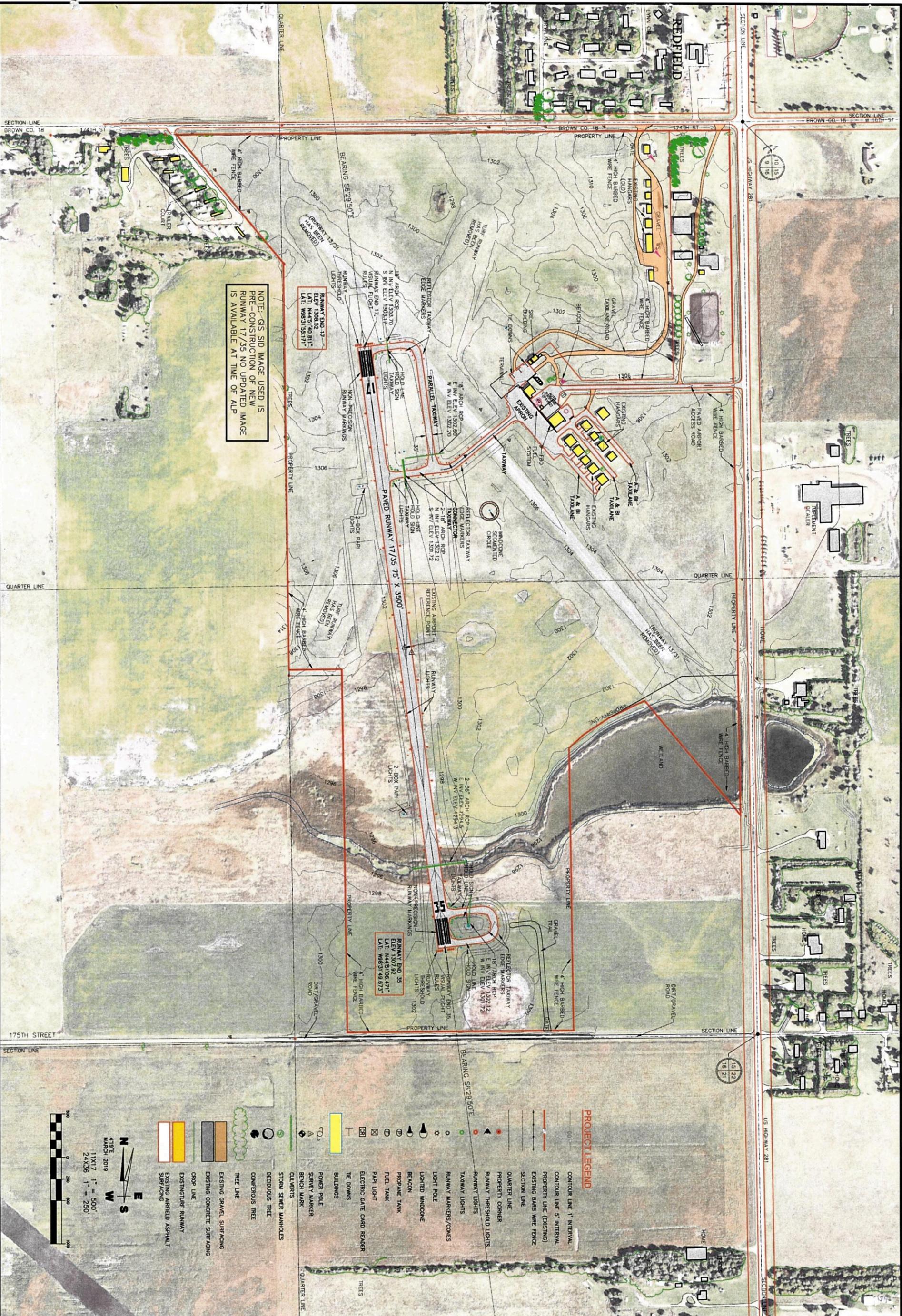
Drawn By: HELMS
Chk' By: HELMS
Proj. No: A-6302
Dwg. No: 6302-PNT II
VP. No: SHEET I
Date: 3-2019

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

221 Brown County Highway 19
P.O. Box 111,
Aberdeen, S.D. 57401
Phone: 605.225.1212, Fax: 605.225.3189
Email: terry@helmsengineering.com

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19

I hereby certify that this plan, specification, or report was prepared by me or under my supervision and that I am a duly Registered Professional Engineer under the Law of the State of South Dakota. Registration No. _____



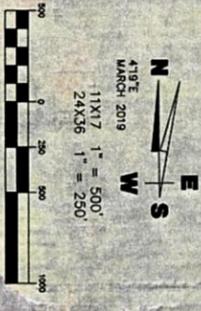
NOTE: GIS SID IMAGE USED IS PRE-CONSTRUCTION OF NEW RUNWAY 17/35 NO UPDATED IMAGE IS AVAILABLE AT TIME OF ALP

RUNWAY END 17
ELEV 1308.52
LAT: N44°31'40.811"
LON: W98°31'55.171"

RUNWAY END 35
ELEV 1307.92
LAT: N44°31'06.471"
LON: W98°31'48.673"

PROJECT LEGEND

- CONTOUR LINE 1' INTERVAL
- CONTOUR LINE 5' INTERVAL
- PROPERTY LINE (EXISTING)
- EXISTING BARRIER WIRE FENCE
- SECTION LINE
- QUARTER LINE
- PROPERTY CORNER
- RUNWAY THRESHOLD LIGHTS
- RUNWAY LIGHTS
- TAXIWAY LIGHTS
- RUNWAY MARKERS/CONES
- LIGHT POLE
- LIGHTED WINDCONE
- BEACON
- PROPANE TANK
- FUEL TANK
- PAPER LIGHT
- ELECTRIC GATE CARD READER
- TE DOWN
- BUILDINGS
- POWER POLE
- SURVEY MARKER
- BENCH MARK
- QUARTERS
- STONE SEWER MANHOLES
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE LINE
- EXISTING GRANITE SURFACING
- EXISTING CONCRETE SURFACING
- OROP LINE
- EXISTING GRANITE RUNWAY SURFACING
- EXISTING ASPHALT SURFACING



2 OF **20**

AIRFIELD TOPOGRAPHIC SURVEY

AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

Drawn By: HELMS
Chk' By: HELMS
Proj. No: A-6302
Dwg. No: 6302-PNT II
VP. No: SHEET2
Date: 11-2014

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

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Registration No. _____

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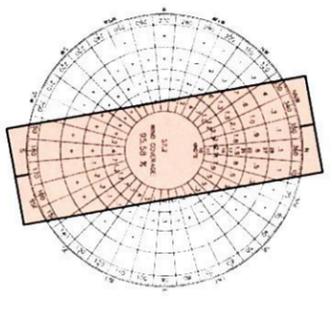
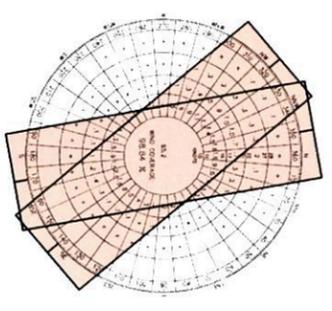
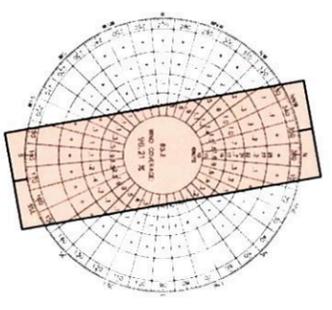
Item	Runway/End/Description	Surface	Latitude	Longitude	Scope	Surface Elevation	Item Elevation	Obstruction	Comments	Proposed Action
	Runway End 17 Part 77 Approach Surface (No Obstructions found in current Airport Survey)									
	Runway End 17 AC 150/5300 - 13A Approach Surface (No Obstructions found in current Airport Survey)									
	Runway End 17 AC 150/5300 - 13A Approach Vertical Guidance Surface (No Obstructions found in current Airport Survey)									
	Runway End 17 AC 150/5300 - 13A Departure Surface									
5	17	Top Tree	N44° 51' 49.031"	W108° 32' 08.433"		1331.5	1338.8	5.4	Obstruction	Off Airport Property
13	17	Top Trees	N44° 51' 54.041"	W108° 31' 47.967"		1340.3	1347.7	7.4	Obstruction	Off Airport Property
	Runway End 35 Part 77 Approach Surface (No Obstructions found in current Airport Survey)									
	Runway End 35 AC 150/5300 - 13A Approach Surface (No Obstructions found in current Airport Survey)									
	Runway End 35 AC 150/5300 - 13A Approach Vertical Guidance Surface (No Obstructions found in current Airport Survey)									
	Runway End 31 AC 150/5300 - 13A Departure Surface									
9	35	Top Trees	N44° 50' 48.297"	W108° 32' 00.270"		1343.2	1356	12.8	Obstruction	Off Airport Property
11	35	Top Trees	N44° 50' 48.884"	W108° 31' 32.731"		1350.43	1791.00	8.3	Obstruction	Off Airport Property

Runway	Date	Family	Aircraft Models	Approach Category	Design Group	Takeoff Weight	Wingspan	Tail Height	Approach Speed
17/35	Existing Future Ultimate	Small General Aviation	Boeing/Cessna King Air 200 (Moderate Aircraft)	B	II	12,500 lbs or less	49'-79" feet	20' < 30' feet	91 - 121 knots
14/32	Future Ultimate	Small General Aviation	Piper Super Cub	A	I	12,500 lbs or less	49'-79" feet	20' < 30' feet	Less than 50 knots

Runway	Approach Type	Category	A	B	C	D
Runway End 17 Existing	Visual Flight Rules (Current)		1 mile Visibility			
Runway End 17 Existing (RNAV/GPS Underconstruction)	RNAV(GPS)		Developed by FAA Flight Procedures			
Runway End 35 Existing	Visual Flight Rules (Current)		1 mile Visibility			
Runway End 35 Existing (RNAV/GPS Underconstruction)	RNAV(GPS)		Developed by FAA Flight Procedures			
Runway End 17 Future, Ultimate	RNAV(GPS)		LPV	Developed by FAA Flight Procedures	N/A	
			LP	Developed by FAA Flight Procedures	N/A	
			LNAV	Developed by FAA Flight Procedures	N/A	
			Circling	Developed by FAA Flight Procedures	N/A	
Runway End 35 Future, Ultimate	RNAV(GPS)		LPV	Developed by FAA Flight Procedures	N/A	
			LP	Developed by FAA Flight Procedures	N/A	
			LNAV	Developed by FAA Flight Procedures	N/A	
			Circling	Developed by FAA Flight Procedures	N/A	
Turf Runway End 14 Future, Ultimate	Visual Flight Rules		N/A (Circling)			
Turf Runway End 32 Future, Ultimate	Visual Flight Rules		N/A (Circling)			

Airport Project History

Fiscal Year	Current Status	Project Name	Description
1996	Granted	9-39-063-C601	Acquire Land and Aviation Easements, construct NW/SE Runway (2900 x 600) with Turnarounds, NE/SW Landing Strip (2600 x 250), Connecting Taxiway, Apron, Access Road and Auto Parking Area, Install Ship Markers, Wind Cone, Electrical Ducts, and Fencing. Remove Obstructions.
1968	Granted	G A 62-01-68	Purchase and install Low Intensity Lighting System on NW/SE Landing Strip
1987	Granted	Redfield - 3-46-004-01-67	Reconstruct Runway 13/31, Taxiway's, Aprons, Construct 400' Runway Extension
1997	Granted	Redfield - 3-46-004-02-97	Rehabilitate Runway 13/31, Apron, Taxiway, Apron Expansion, Hangar Area Taxiways, Marking
2001	Granted	DOT-3-46-4608-01-2001 Redfield	Rehabilitate Runway 13/31, Apron, Taxiway, Apron, Marking
2005	Granted	Redfield - 3-46-004-02-2005	Acquire Card Reader for Fuel System
2006	Granted	Redfield - 3-46-004-04-2006	Airport Layout Plan Update
2008	Granted	DOT 3-46-4600-10-2008 Redfield	Payment Maintenance
2008	Granted	Redfield - 3-46-004-05-2008	Payment Maintenance
2009	Granted	Redfield DOT Payment Marking	Payment Marking Improvements
2010	Granted	Redfield - 3-46-004-06-2010	Phase II EA, Wildlife Assessment, Design and Construction Engineering for SREGA Terminal Building
2012	Granted	Redfield - 3-46-004-07-2012	Design for Runway Realignment (17/35), Turnarounds, Connector Taxiway, Lighting, Wetland Mitigation, Obstruction of existing Runway 13/31
2014	Granted	Redfield - 3-46-004-08-2014	Acquire land (2.25 acres and 60.3 acre) for Phase II of Runway Construction and conduct Wildlife Hazard site visit and Wildlife Hazard Management Plan. Per Federal Grant Dated 8/16/2016
2016	Granted	Redfield - 3-46-004-09-2016	Master Plan Update with GIS Survey and Runway Protection Zone analysis
2016	Granted	Redfield - 3-46-004-10-2016	Bidding, Construction Administration and Engineering, Wetland Mitigation, Easement Acquisition, Initial Monitoring, PAPI Flight Check, Construction of Runway 17/35.
2017	Granted	Redfield - 3-46-004-11-2017	



EXISTING ALL WEATHER WINDROSE DATA TABLE

Runway	Wind	Frequency	Direction
Runway 17/35	10.5 KNOTS	13 KNOTS	96.21%
Runway 17/35	92.78%	96.21%	

FUTURE/ULTIMATE ALL WEATHER WINDROSE DATA TABLE

Runway	Wind	Frequency	Direction
Runway 17/35	10.5 KNOTS	13 KNOTS	96.21%
Runway 17/35	92.78%	96.59%	

FUTURE/ULTIMATE IFR WEATHER WINDROSE DATA TABLE

Runway	Wind	Frequency	Direction
Runway 17/35	10.5 KNOTS	13 KNOTS	95.58%
Runway 17/35	91.61%	95.58%	

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Registration No. _____

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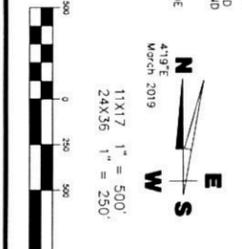
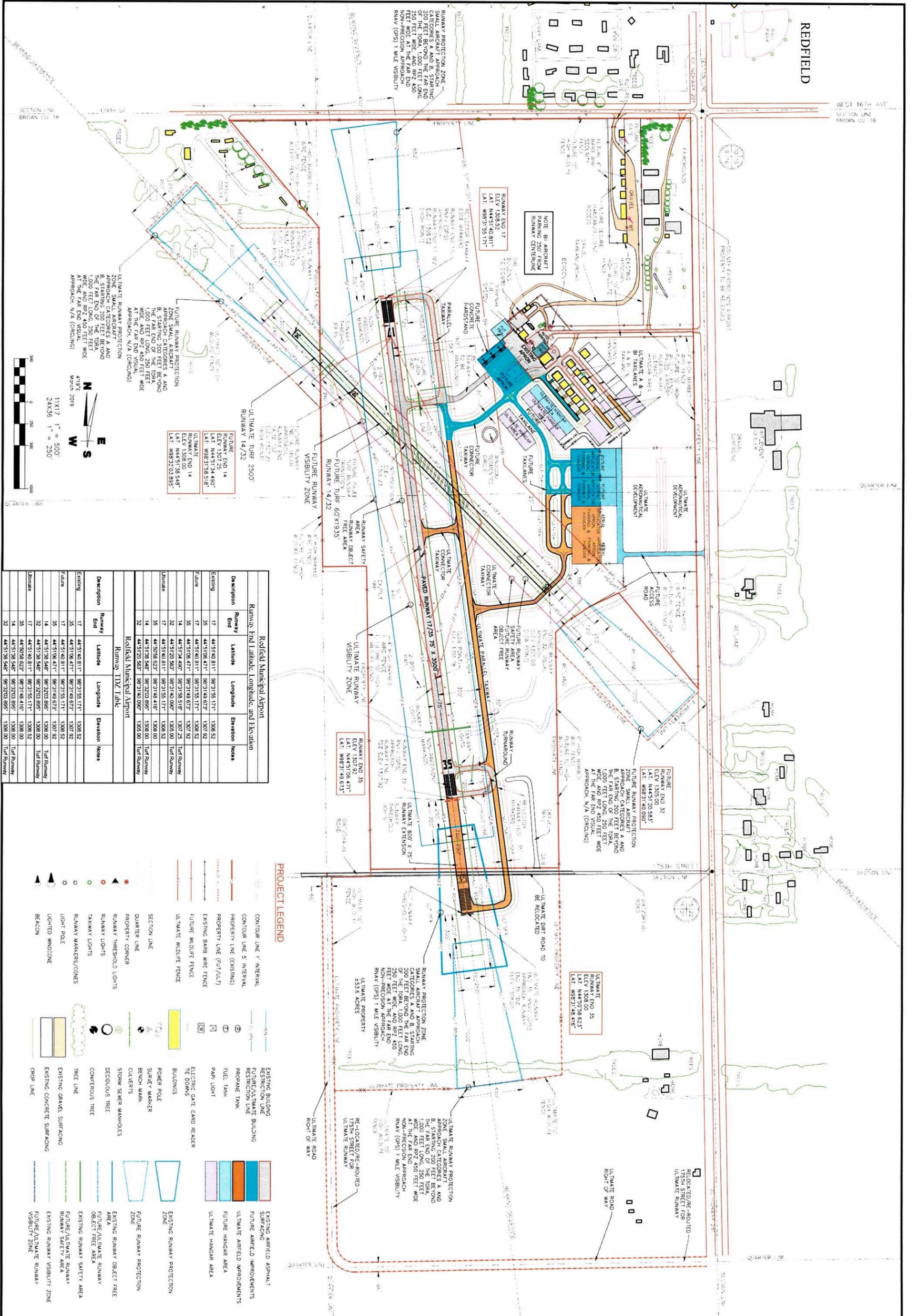
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Email: terrylh@helmsengineering.com

Drawn By: HELMS
Chk' By: HELMS
Proj. No: A-6302
Dwg. No: 6302-PNT II
VP. No: SHEET 2B
Date: 3-2019

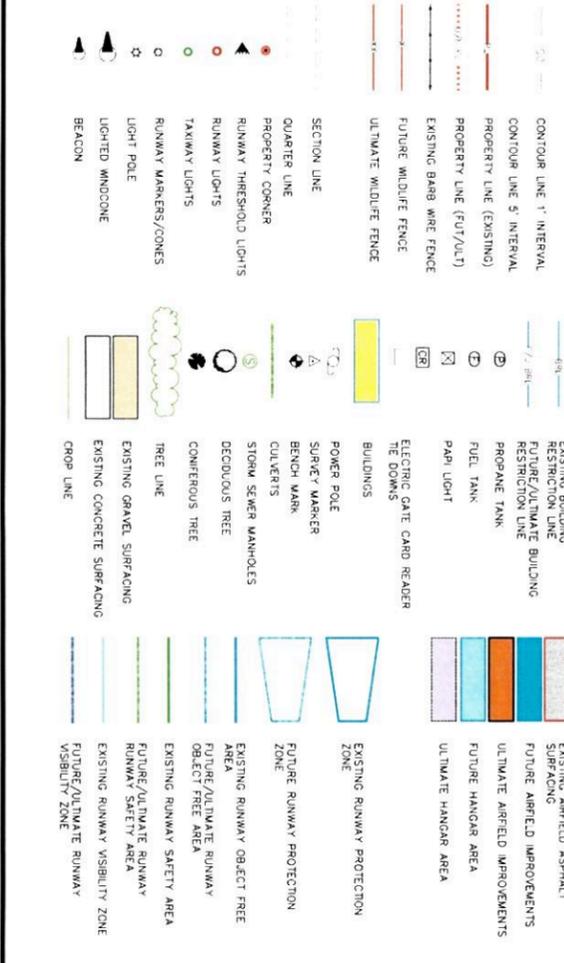
AIRFIELD DATA TABLES
AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

REDFIELD

WEST 16TH AVE
SECTION LINE
BROWN CO. 18



Runway End	Latitude	Longitude	Elevation	Notes
17	44°51'40.811"	98°31'55.171"	1308.52	
14	44°51'40.811"	98°31'55.171"	1307.92	
13	44°51'40.811"	98°31'55.171"	1307.92	
12	44°51'40.811"	98°31'55.171"	1307.92	
11	44°51'40.811"	98°31'55.171"	1307.92	
10	44°51'40.811"	98°31'55.171"	1307.92	
9	44°51'40.811"	98°31'55.171"	1307.92	
8	44°51'40.811"	98°31'55.171"	1307.92	
7	44°51'40.811"	98°31'55.171"	1307.92	
6	44°51'40.811"	98°31'55.171"	1307.92	
5	44°51'40.811"	98°31'55.171"	1307.92	
4	44°51'40.811"	98°31'55.171"	1307.92	
3	44°51'40.811"	98°31'55.171"	1307.92	
2	44°51'40.811"	98°31'55.171"	1307.92	
1	44°51'40.811"	98°31'55.171"	1307.92	



AIRFIELD GROUND SURFACES

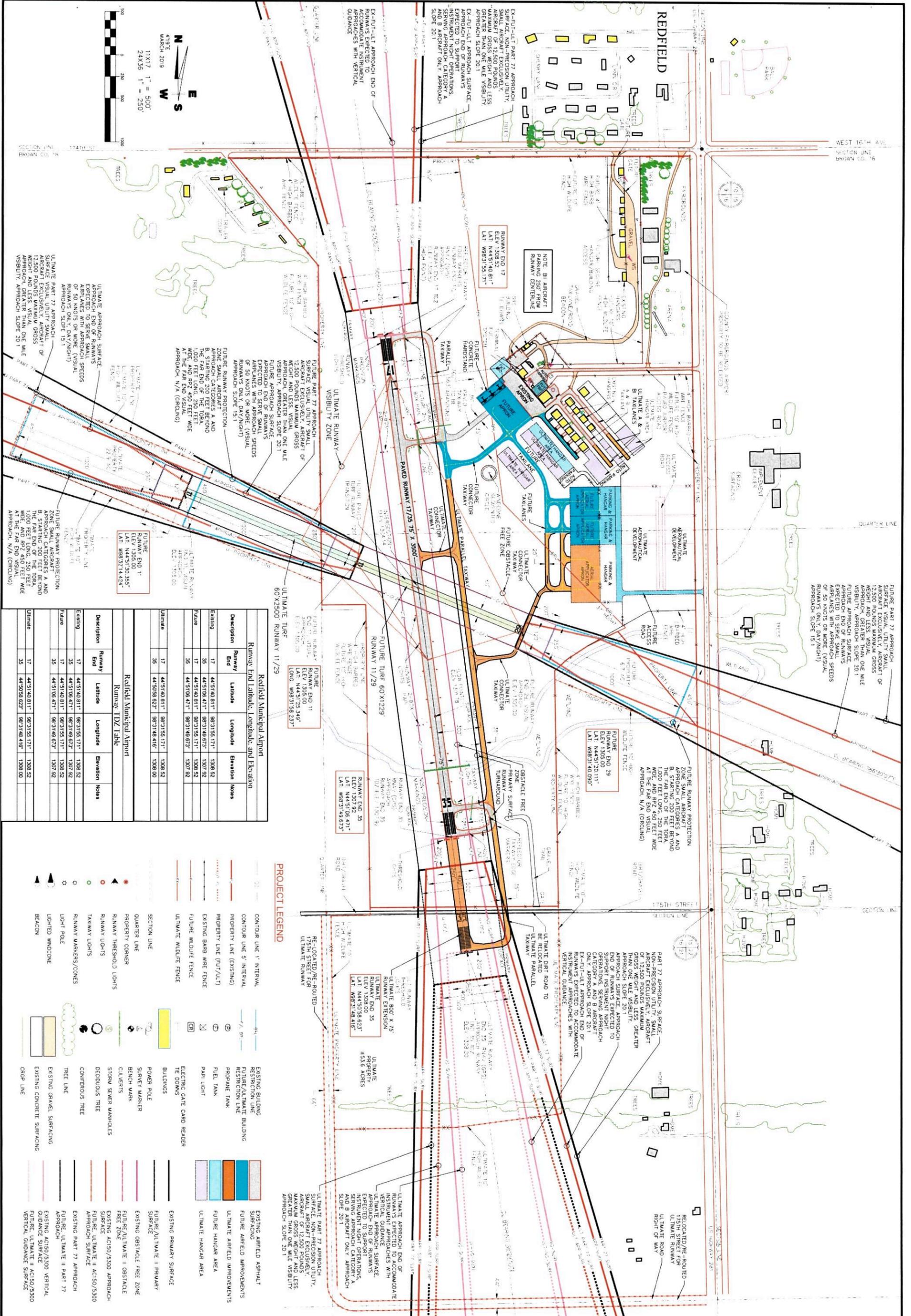
AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

Drawn By: HELMS
Chk' By: HELMS
Proj. No: A-6302
Dwg. No: 6302-PNT II
SHEET 15
V.P. No:
Date: 3-2019

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Redfield Municipal Airport

Runway	End Latitude	End Longitude	Elevation	Notes
17	44°51'40.811"	98°31'55.171"	1308.52	
11	44°51'40.811"	98°31'55.171"	1308.52	
29	44°51'40.811"	98°31'55.171"	1308.52	
35	44°51'40.811"	98°31'55.171"	1308.52	

PROJECT LEGEND

— 1/4" —	CONTOUR LINE 1' INTERVAL	— 1/4" —	EXISTING AIRFIELD ASPHALT SURFACING
— 1/4" —	CONTOUR LINE 5' INTERVAL	— 1/4" —	EXISTING AIRFIELD IMPROVEMENTS
— 1/4" —	PROPERTY LINE (EXISTING)	— 1/4" —	FUTURE AIRFIELD IMPROVEMENTS
— 1/4" —	PROPERTY LINE (FUT/ULT)	— 1/4" —	ULTIMATE AIRFIELD AREA
— 1/4" —	EXISTING BARRIER WIRE FENCE	— 1/4" —	ULTIMATE HANGAR AREA
— 1/4" —	FUTURE WILDLIFE FENCE	— 1/4" —	ULTIMATE HANGAR AREA
— 1/4" —	ULTIMATE WILDLIFE FENCE	— 1/4" —	EXISTING PRIMARY SURFACE
— 1/4" —	SECTION LINE	— 1/4" —	FUTURE/ULTIMATE II PRIMARY SURFACE
— 1/4" —	QUARTER LINE	— 1/4" —	EXISTING OBSTACLE FREE ZONE
— 1/4" —	PROPERTY CORNER	— 1/4" —	FUTURE/ULTIMATE II OBSTACLE FREE ZONE
— 1/4" —	RUNWAY THRESHOLD LIGHTS	— 1/4" —	EXISTING AC150/5300 APPROACH SURFACE
— 1/4" —	RUNWAY LIGHTS	— 1/4" —	FUTURE/ULTIMATE II AC150/5300 APPROACH SURFACE
— 1/4" —	TAXIWAY LIGHTS	— 1/4" —	EXISTING PART 77 APPROACH SURFACE
— 1/4" —	RUNWAY MARKERS/CONES	— 1/4" —	FUTURE/ULTIMATE II PART 77 APPROACH SURFACE
— 1/4" —	LIGHT POLE	— 1/4" —	EXISTING AC150/5300 VERTICAL GUIDANCE SURFACE
— 1/4" —	LIGHTED WINDCONE	— 1/4" —	FUTURE/ULTIMATE II AC150/5300 VERTICAL GUIDANCE SURFACE
— 1/4" —	BEACON	— 1/4" —	
— 1/4" —	EXISTING BUILDING	— 1/4" —	
— 1/4" —	EXISTING RESTRICTION LINE BUILDING	— 1/4" —	
— 1/4" —	EXISTING RESTRICTION LINE	— 1/4" —	
— 1/4" —	PROPOSED TANK	— 1/4" —	
— 1/4" —	FUEL TANK	— 1/4" —	
— 1/4" —	PART LIGHT	— 1/4" —	
— 1/4" —	ELECTRIC GATE CARD READER	— 1/4" —	
— 1/4" —	TE DOMES	— 1/4" —	
— 1/4" —	BUILDINGS	— 1/4" —	
— 1/4" —	POWER POLE	— 1/4" —	
— 1/4" —	SURVEY MARKER	— 1/4" —	
— 1/4" —	BENCH MARK	— 1/4" —	
— 1/4" —	CULVERTS	— 1/4" —	
— 1/4" —	STONE SEWER MANHOLES	— 1/4" —	
— 1/4" —	DECIDUOUS TREE	— 1/4" —	
— 1/4" —	CONIFEROUS TREE	— 1/4" —	
— 1/4" —	TREE LINE	— 1/4" —	
— 1/4" —	EXISTING GRAVEL SURFACING	— 1/4" —	
— 1/4" —	EXISTING CONCRETE SURFACING	— 1/4" —	
— 1/4" —	EXISTING CRIP LINE	— 1/4" —	

AIRFIELD PART 77 AND 150/5300-13A APPROACH SURFACES RUNWAY OPTION 11/29

AIRPORT LAYOUT PLAN REDFIELD MUNICIPAL AIRPORT REDFIELD, SOUTH DAKOTA

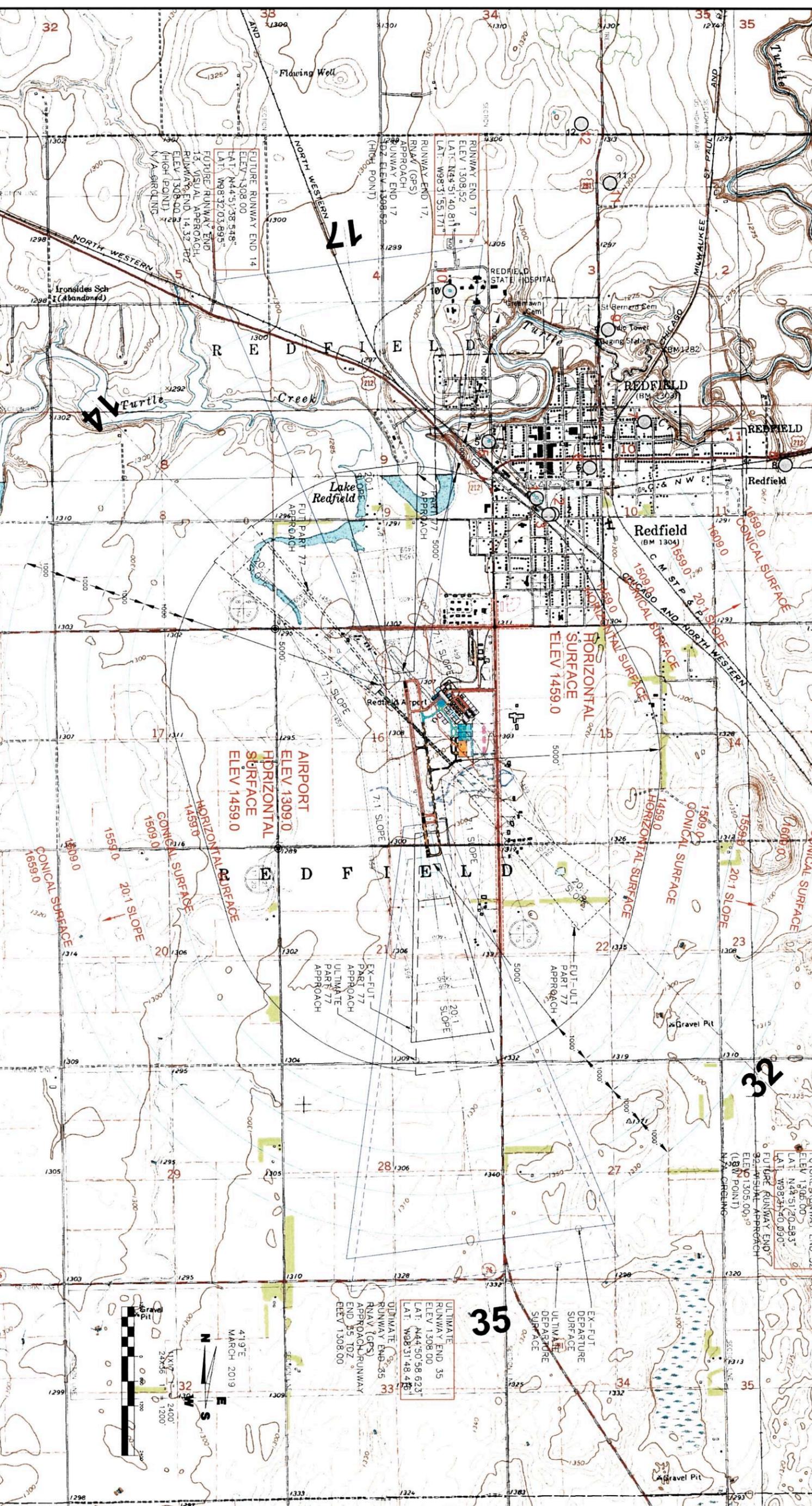
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Item	Description	Owner/Business	Surface Disturbance	Object (Feet)	Latitude	Longitude	Proposed Action	Notes
1	Gen Elevator	Asteria Cooperator & Redfield Grain	1500.10	31.0	N44°52'23.800"	W98°31'10.108"	No record of airspace	
2	Tower	The Burlington Northern and Santa Fe Railway Co	1493.00	64.5	N44°52'30.000"	W98°31'00.000"	1996-143-1498.0E	
3	Tower	The Burlington Northern and Santa Fe Railway Co	1482.60	90.6	N44°52'19.900"	W98°31'00.000"	1996-143-1100.0E	
4	Tower	Ibn Sully School District, Hamand, SD	1597.40	163.00	N44°52'32.000"	W98°31'00.000"	1996-143-1094.0E	
5	Water Tower	City of Redfield, South Dakota	1598.30	112.2	N44°52'27.700"	W98°31'25.590"	No Record of Airspace	
6	Antenna	Spink County Communications, Redfield, SD	1597.20	112.50	N44°52'30.910"	W98°30'52.580"	1996-143-8890.0E	
7	Tower	James Valley Telecommunications, Canton, SD	1590.70	123.00	N44°52'41.580"	W98°30'53.770"	No Record of Airspace	
8	Tower	James Valley Telecommunications, Canton, SD	1629.00	146.50	N44°52'20.700"	W98°31'17.000"	2006-143-0982.0E	
9	Tower - Free Standing	Redfield State Hospital, South Dakota Developmental Center	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	SD State tower information	
10	Water Tower	Redfield State Hospital, South Dakota Developmental Center	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	SD State tower information	
11	Tower	Northern Electric, Cooperator &	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	No record of airspace to FAA	
12	Antenna Tower	Northern Electric, Cooperator &	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	No record of airspace to FAA	
13	Tower - Free Standing	SA Structures, LLC	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	2010-143-1194.0E	
14	Tower - Free Standing	SA Structures, LLC	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	2010-143-1194.0E	
15	Tower - Free Standing	SA Structures, LLC	1629.00	147.90	N44°52'03.900"	W98°31'05.900"	2010-143-1194.0E	



8 OF **20**

AIRFIELD AIRSPACE PLAN (PART 77)

AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

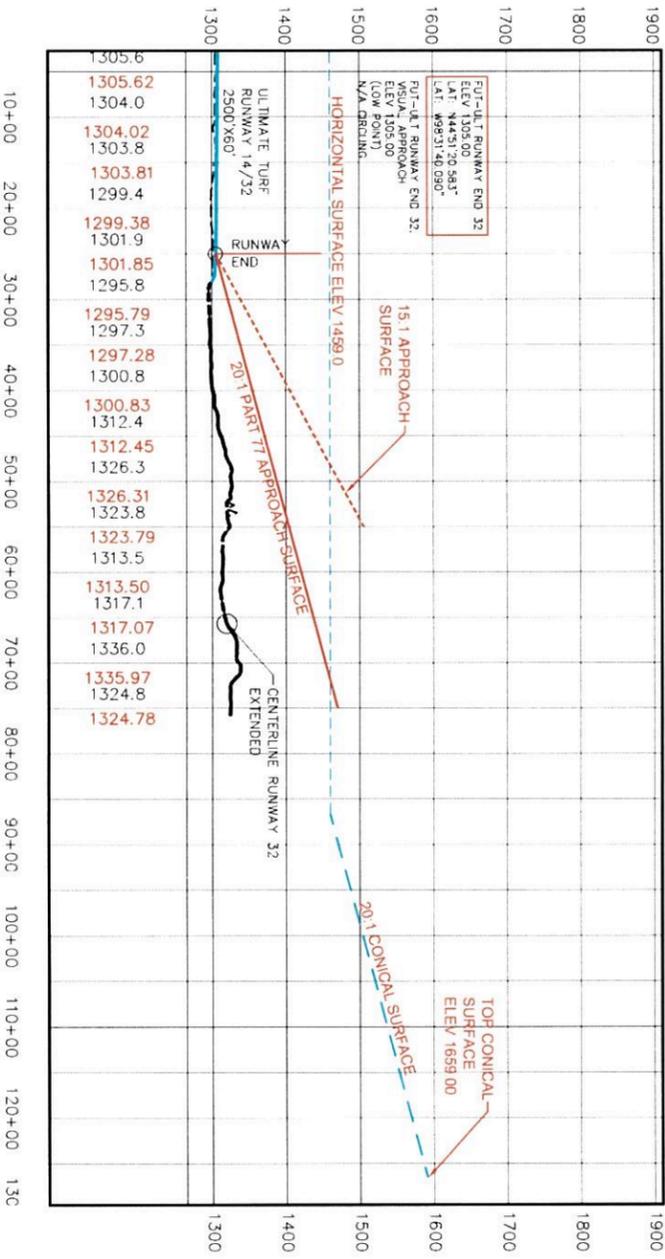
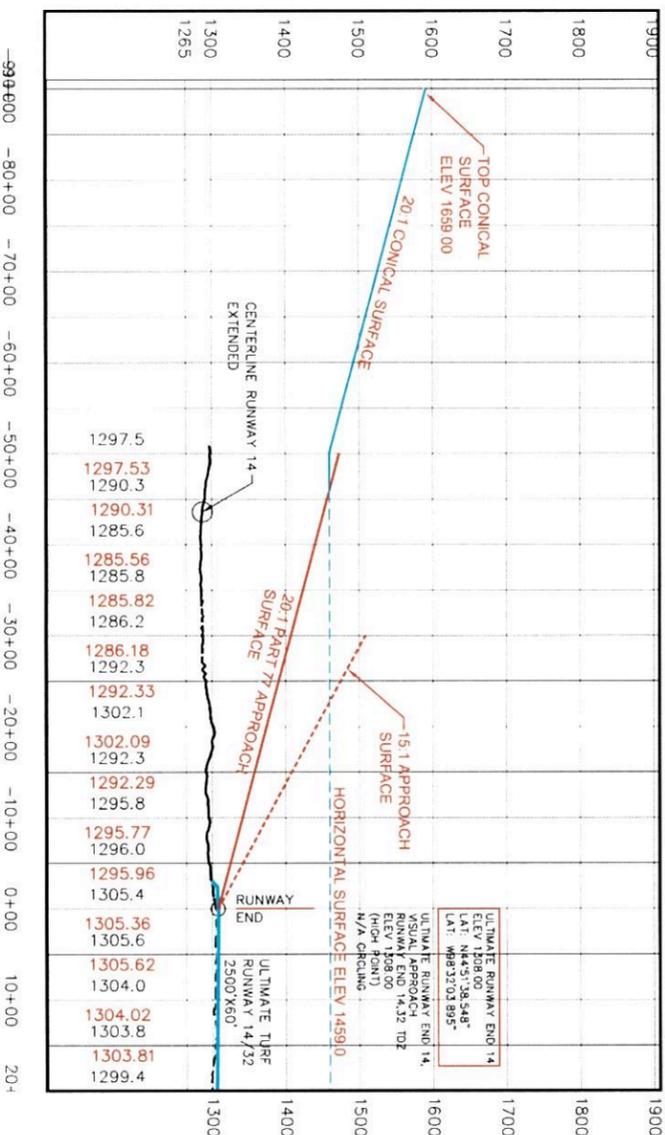
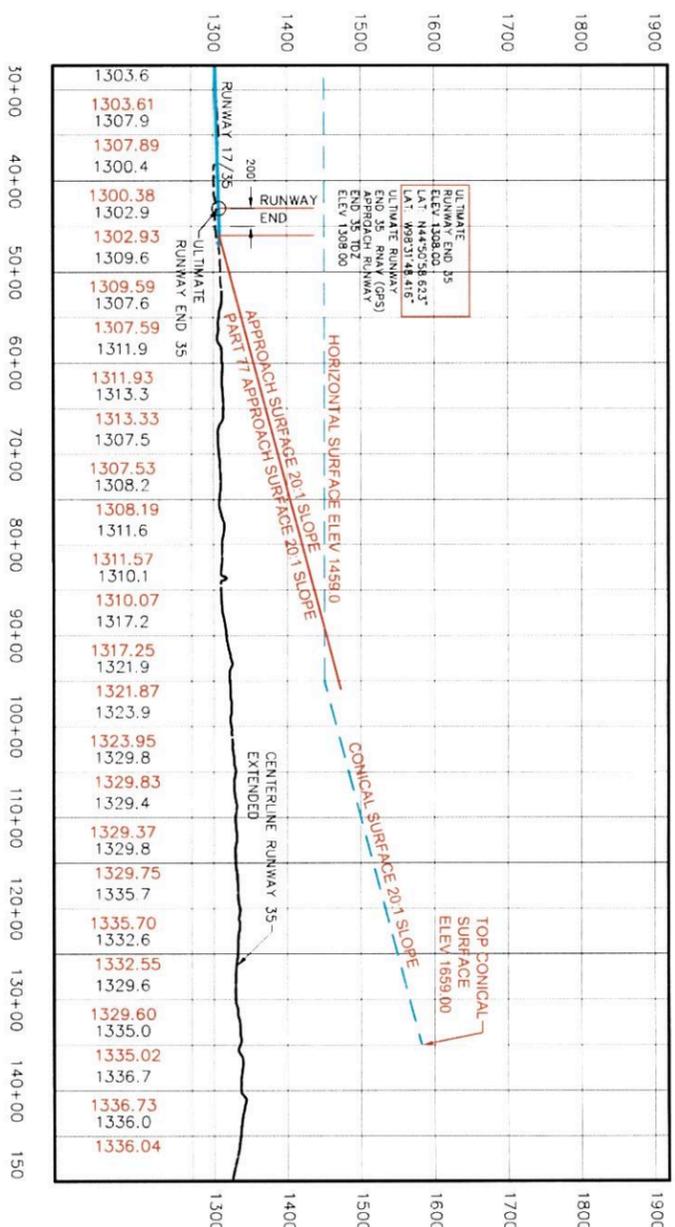
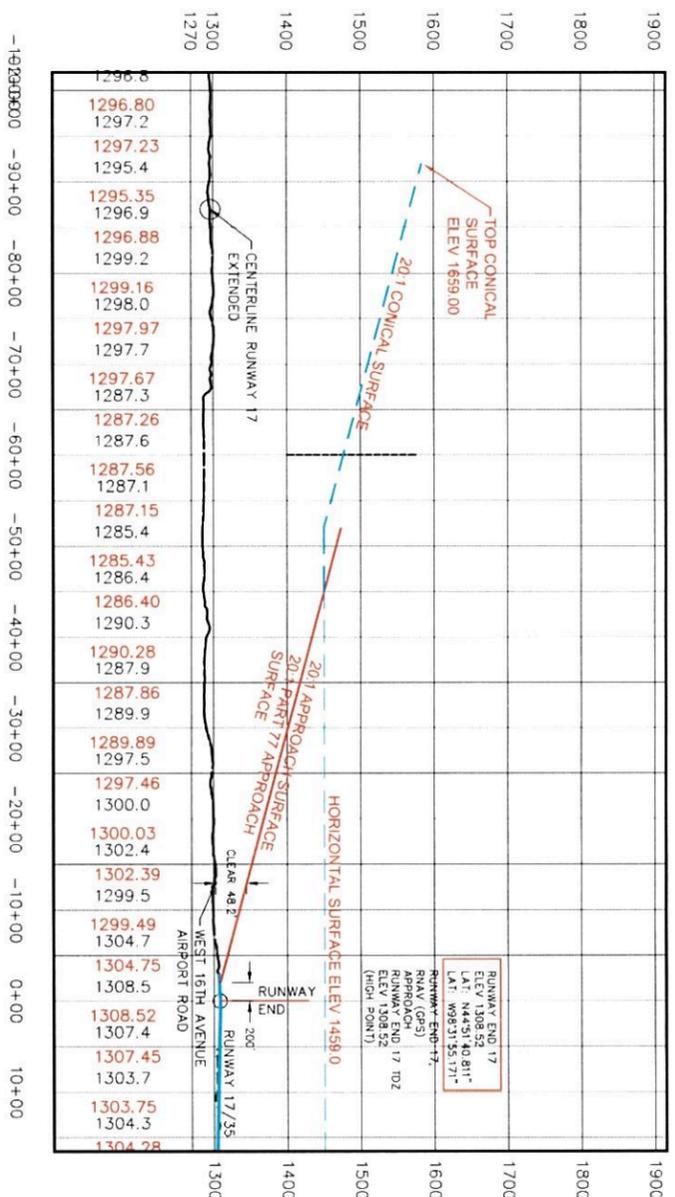
4197E
 MARCH 2019

Drawn By: HELMS
 Chk' By: HELMS
 Proj. No: A-6302
 Dwg. No: 6302-44
 VP. No: SHEET8
 Date: 11-2014

Helms & Associates
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No.	Revisions	By	App.	Date
2	FAA RUNWAY LENGTH REMISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19



SCALE: 1" = 2400'
11X17
24X36 1" = 1200'

Drawn By: HELMS
 Chk' By: HELMS
 Proj. No: A-6302
 Dwg. No: 6302-04
 VP. No: SHEET9
 Date: 11-2014

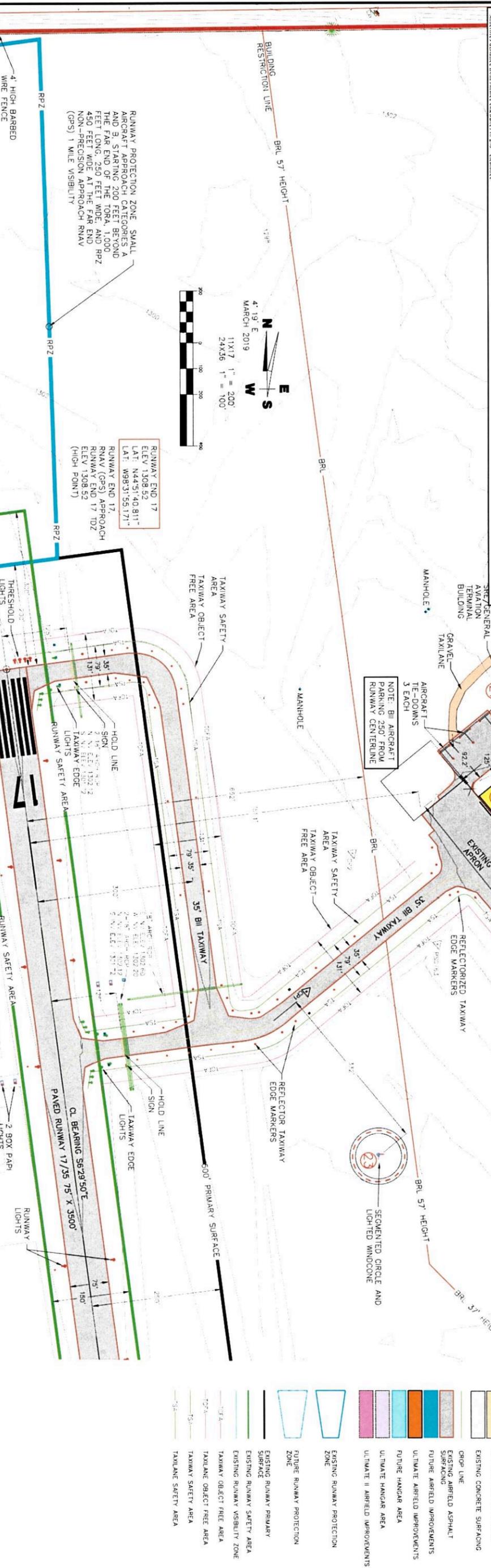
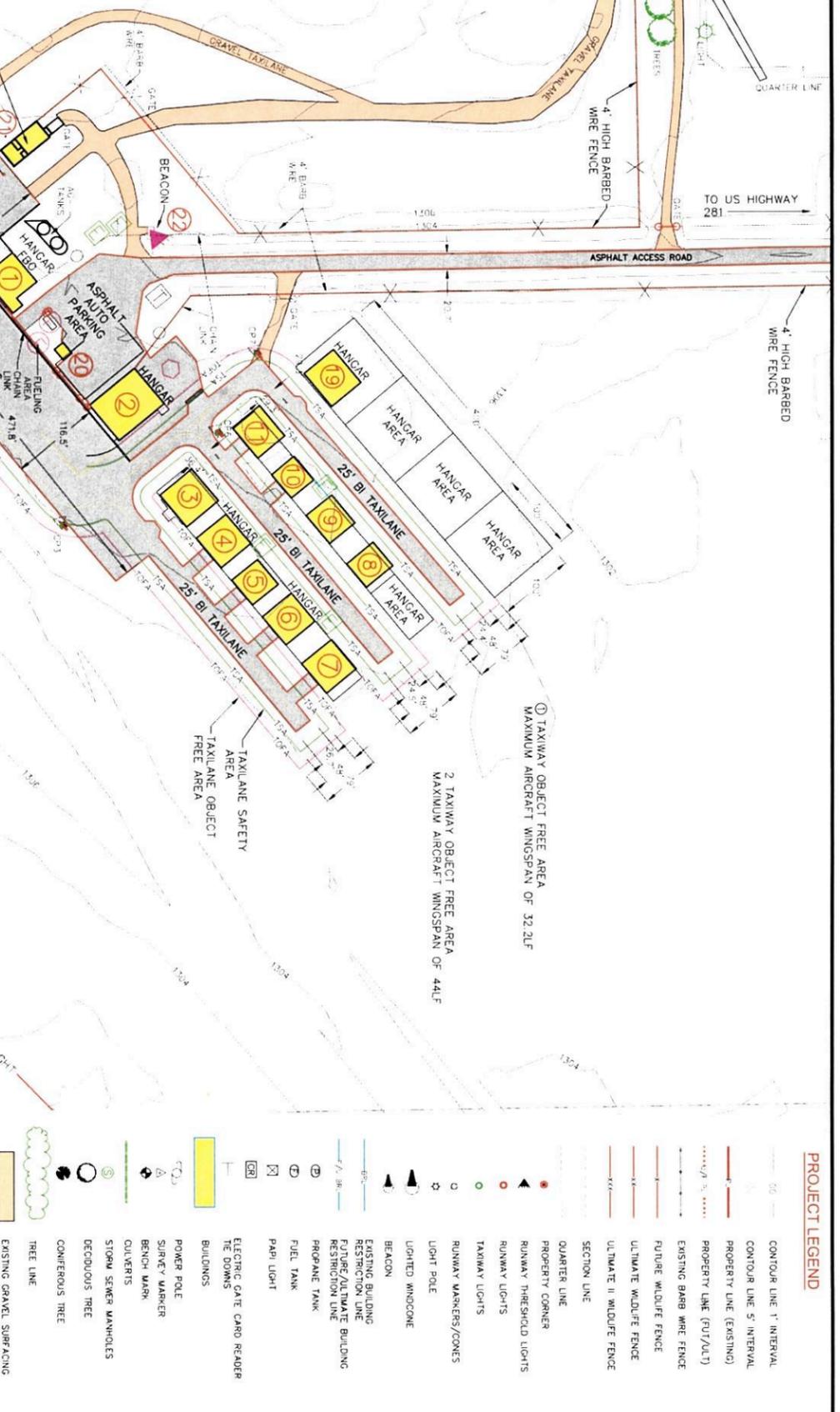


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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
 Registration No. _____

No.	Revisions	By	App.	Date
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOITTEY (FAA)	Helms	Helms	9/19

Item	Description	Type	Owner/Builder	CL Runway (Trans. 7-1)	Distance	Surface Object Elevation	Object Clearance (Feet)	Clearance	Trussing	Proposed Action	Notes
1	Hanger	Proac Hangar II	W. Bierl Bks	1307.70	616.60	1395.79	1321.90	70.9			
2	Hanger	Proac Hangar II	Dakota Air Service	1307.40	732.70	1420.07	1321.90	88.2			
3	Hanger	Proac Hangar II	Parrell Farms	1307.10	808.10	1423.54	1322.90	100.5			
4	Hanger	Proac Hangar II	Randy Johnson	1306.90	846.70	1427.86	1320.30	107.7			
5	Hanger	Proac Hangar II	Redfield Ty and Club	1306.80	864.00	1433.37	1317.10	116.3			
6	Hanger	Proac Hangar II	Parrell Farms	1306.70	919.00	1437.99	1320.70	117.3			
7	Hanger	Proac Hangar II	Parrell Farms	1306.50	962.00	1443.93	1320.00	123.9			
8	Hanger	Proac Hangar II	Rock	1306.00	1027.00	1455.04	1325.00	130.0			
9	Hanger	Proac Hangar II	Rock	1305.00	991.00	1458.00	1320.90	127.1			
10	Hanger	Proac Hangar II	Dave Apple	1307.10	956.00	1443.07	1319.90	123.8			
11	Hanger	Proac Hangar II	Bill Stepp	1307.20	913.00	1437.03	1321.10	116.5			
12	Hanger	Proac Hangar II	VIA Schmeider	0.00	0.00	0.00	1321.00	0.0			*Hangar clearance not calculated
13	Hanger	Proac Hangar II	Rock	0.00	0.00	0.00	1322.00	0.0			*Hangar clearance not calculated
14	Hanger	Proac Hangar II	Rock	0.00	0.00	0.00	1322.00	0.0			*Hangar clearance not calculated
15	Hanger	Proac Hangar II	VIA Schmeider	0.00	0.00	0.00	1321.20	0.0			*Hangar clearance not calculated
16	Hanger	Proac Hangar II	Redfield	0.00	0.00	0.00	1318.25	0.0			*Hangar clearance not calculated
17	Hanger	Proac Hangar II	Bill Stepp	0.00	0.00	0.00	1325.20	0.0			*Hangar clearance not calculated
18	Hanger	Proac Hangar II	Charles Boyd Shop	0.00	0.00	0.00	1324.20	0.0			*Hangar clearance not calculated
19	Hanger	Proac Hangar II	Parrell Farms	1307.40	1016.00	1452.54	1327.40	124.1			*Hangar clearance not calculated
20	Hanger	Proac Hangar II	Parrell Farms	1307.50	696.70	1407.05	1318.30	88.7			
21	Shed/Ck	Farmall	Redfield Municipal Airport	1308.10	662.00	1402.07	1325.00	77.7			
22	Beacon	NAAVD	Redfield Municipal Airport	1307.90	840.80	1438.01	1319.80	88.2			
23	Lighted Windcone	NAAVD	Redfield Municipal Airport	1307.20	312.90	1353.35	1305.00	48.3			



PROJECT LEGEND

- 5' INTERNAL CONTOUR LINE 5' INTERVAL
- PROPERTY LINE (EXISTING)
- PROPERTY LINE (FUTURE)
- EXISTING BARRIER FENCE
- FUTURE WILDLIFE FENCE
- ULTIMATE WILDLIFE FENCE
- ULTIMATE II WILDLIFE FENCE
- SECTION LINE
- QUARTER CORNER
- PROPERTY CORNER
- RUNWAY THRESHOLD LIGHTS
- RUNWAY LIGHTS
- TAXIWAY LIGHTS
- RUNWAY MARKERS/CONES
- LIGHT POLE
- LIGHTED WINDCONE
- BEACON
- EXISTING BUILDING RESTRICTION LINE
- FUTURE/ULTIMATE BUILDING RESTRICTION LINE
- PROGRAM TANK
- FUEL TANK
- PAUL LIGHT
- ELECTRIC GATE CARP REARER TE DOWNS
- BUILDINGS
- POWER POLE
- SURVEY WARNER
- BENCH MARK
- CULVERTS
- STORM SEWER MANHOLES
- DECIDUOUS TREE
- CONCRETE TREE
- TREE LINE
- EXISTING GRAVEL SURFACING
- EXISTING CONCRETE SURFACING
- OROP LINE
- EXISTING AIRFIELD ASPHALT SURFACING
- FUTURE AIRFIELD IMPROVEMENTS
- ULTIMATE AIRFIELD IMPROVEMENTS
- FUTURE HANGAR AREA
- ULTIMATE HANGAR AREA
- ULTIMATE II AIRFIELD IMPROVEMENTS
- EXISTING RUNWAY PROTECTION ZONE
- FUTURE RUNWAY PROTECTION ZONE
- EXISTING RUNWAY PRIMARY SURFACE
- EXISTING RUNWAY SAFETY AREA
- EXISTING RUNWAY VISIBILITY ZONE
- TAXIWAY OBJECT FREE AREA
- TAXIWAY SAFETY AREA
- TAXIWAY OBJECT FREE AREA
- TAXIWAY SAFETY AREA

APRON AREA EXISTING LAYOUT PLAN

AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

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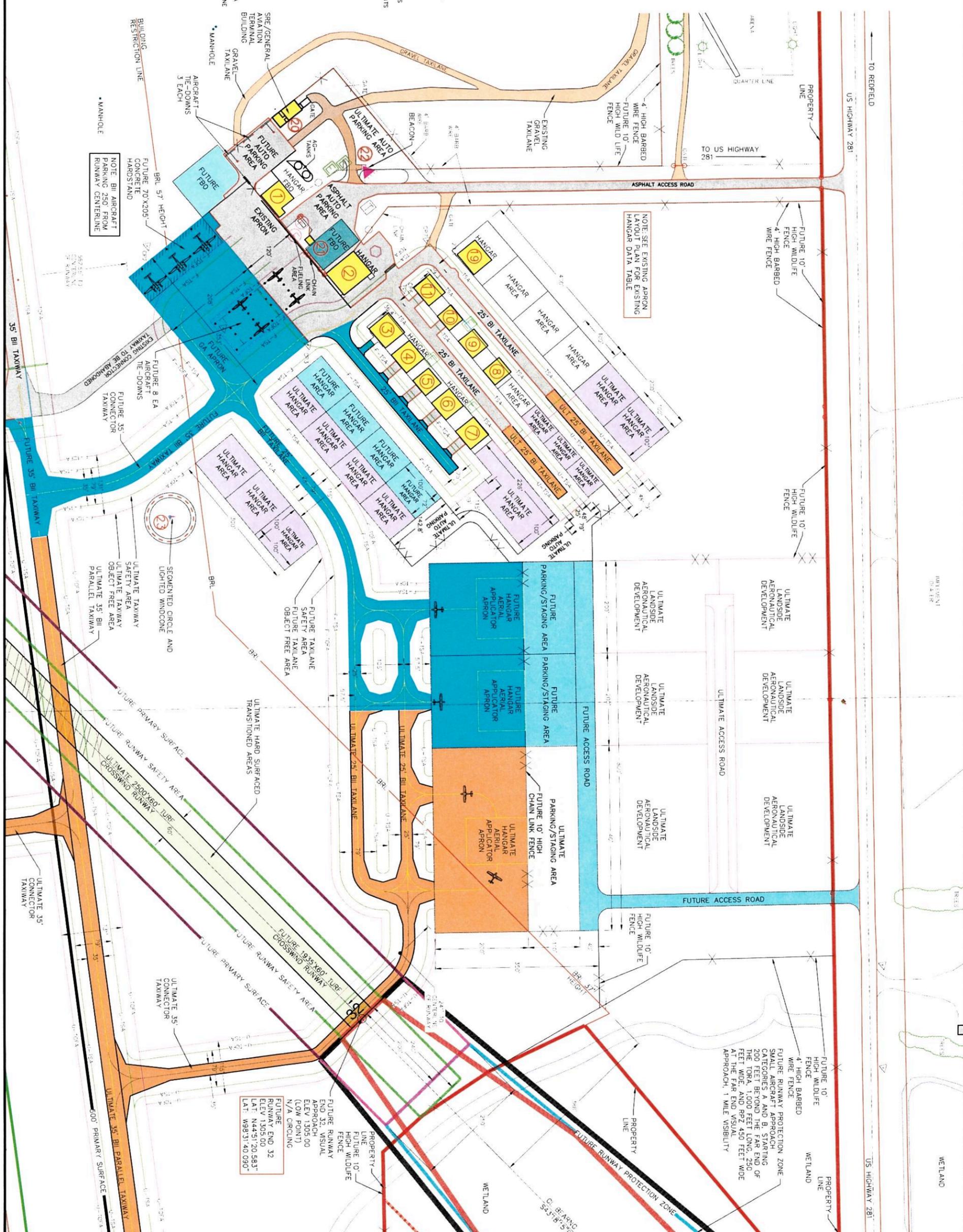
Drawn By: HELMS
Chk' By: HELMS
Proj. No.: A-6302
Dwg. No.: 6302-PNT II
S/P. No.: SHEET 10
Date: 3-2019

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19

PROJECT LEGEND

- CONTOUR LINE 1' INTERVAL
- CONTOUR LINE 5' INTERVAL
- PROPERTY LINE (EXISTING)
- PROPERTY LINE (FUTURE)
- EXISTING BARRIER FENCE
- FUTURE WILDLIFE FENCE
- ULTIMATE WILDLIFE FENCE
- ULTIMATE II WILDLIFE FENCE
- SECTION LINE
- QUARTER LINE
- PROPERTY CORNER
- RUNWAY THRESHOLD LIGHTS
- RUNWAY LIGHTS
- TAXIWAY LIGHTS
- RUNWAY MARKERS/CONES
- LIGHT POLE
- LIGHTED WINDCONE
- BEACON
- EXISTING BUILDING
- FUTURE/ULTIMATE BUILDING
- RESTRICTION LINE
- PROPRANE TANK
- FUEL TANK
- PAPER LIGHT
- ELECTRIC GATE CARD READER
- BUILDINGS
- POWER POLE
- SURVEY MARKER
- BENCH MARK
- CULVERTS
- STORM SEWER MANHOLES
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE LINE
- EXISTING GRAVEL SURFACING
- EXISTING CONCRETE SURFACING
- CROP LINE
- EXISTING AIRFIELD ASPHALT SURFACING
- FUTURE AIRFIELD IMPROVEMENTS
- FUTURE HANGAR AREA
- FUTURE HANGAR AREA
- ULTIMATE HANGAR AREA
- EXISTING RUNWAY PROTECTION ZONE
- EXISTING RUNWAY PROTECTION ZONE
- EXISTING RUNWAY SURFACE
- EXISTING RUNWAY SAFETY AREA
- EXISTING RUNWAY VISIBILITY ZONE
- TAXIWAY OBJECT FREE AREA
- TAXIWAY OBJECT FREE AREA
- TAXIWAY SAFETY AREA
- TAXIWAY SAFETY AREA

419'E
MARCH 2019
11x17 1" = 200'
24x36 1" = 100'



11 OF 20

FUTURE-ULTIMATE APRON AREA EXISTING LAYOUT PLAN

AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

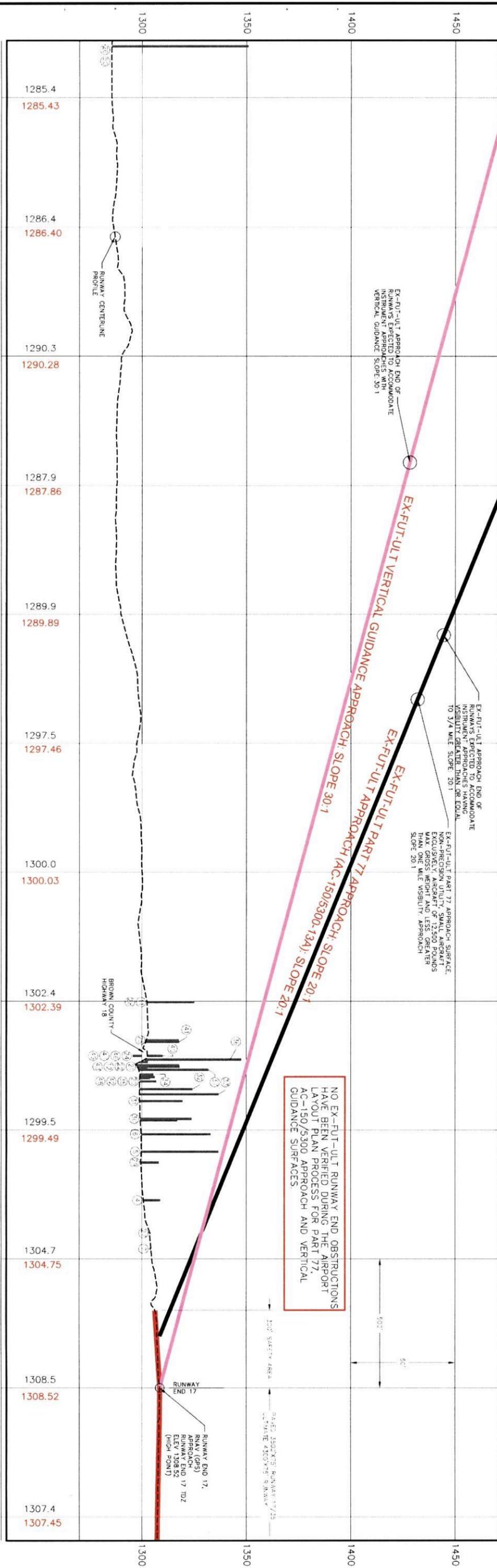
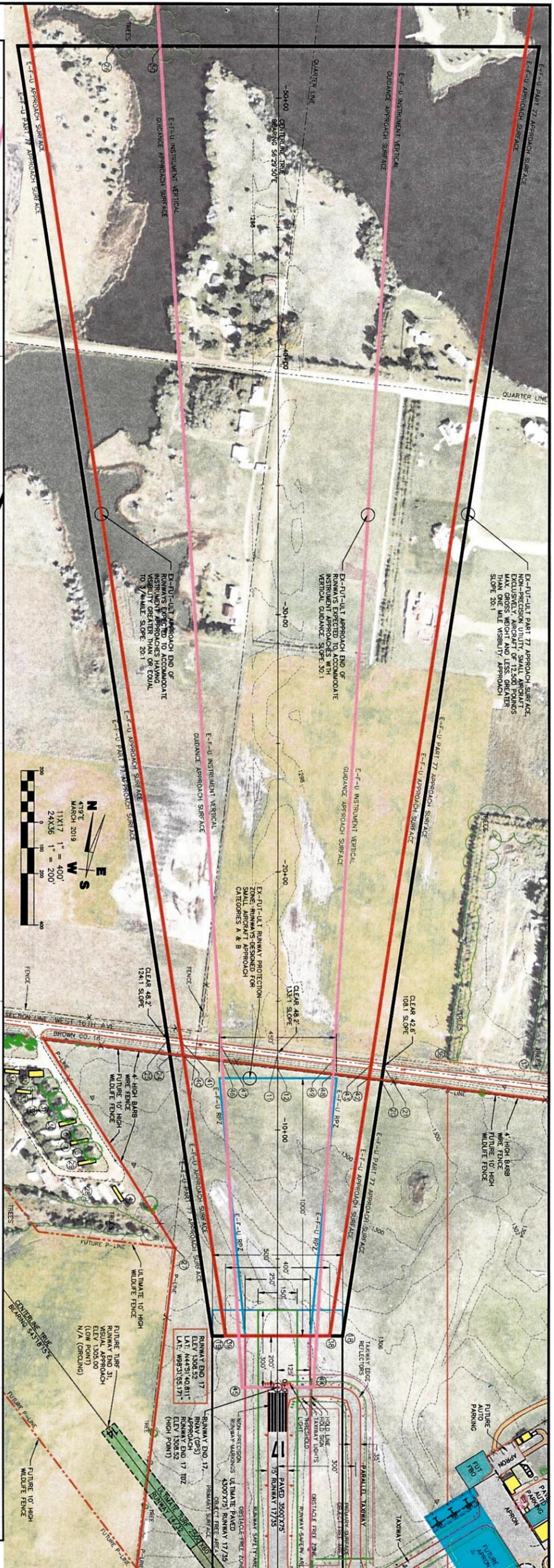
Drawn By: HELMS
Chk' By: HELMS
Proj. No: A-6302
Dwg. No: 6302-PNT II
VP. No: SHEET11
Date: 3-2019

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
Registration No. _____

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1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19



NO EX-FUT-ULT RUNWAY END OBSTRUCTIONS HAVE BEEN VERIFIED DURING THE AIRPORT LAYOUT PLAN PROCESS FOR PART 77, AC-150/5300 APPROACH AND VERTICAL GUIDANCE SURFACES.

12 OF **20**

RUNWAY END 17 APPROACH SURFACES

AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

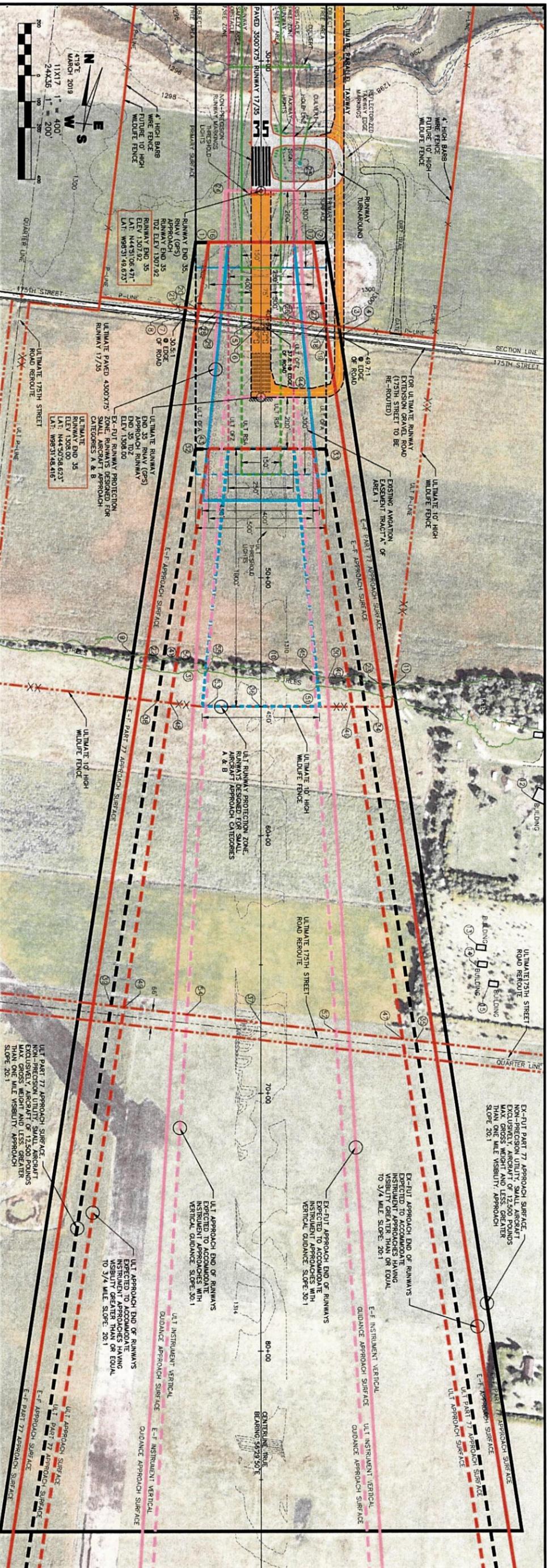
Drawn By: Helms
 Chk' By: Helms
 Proj. No: A-6302
 Dwg. No: 6302-02
 VP. No: SHEE-112
 Date: 3/2018

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1. Helms certifies that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of South Dakota. Registration No. _____

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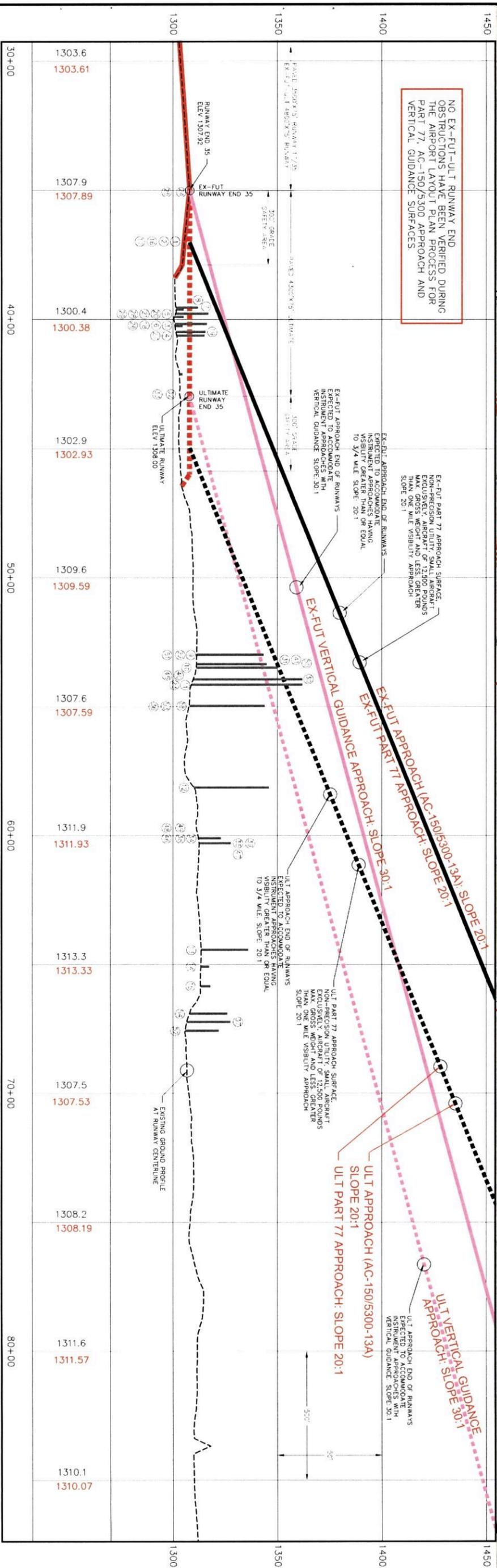
NO EX-FUT-ULT RUNWAY END OBSTRUCTIONS HAVE BEEN VERIFIED DURING THE AIRPORT LAYOUT PLAN PROCESS FOR PART 77, AC-150/5300 APPROACH AND VERTICAL GUIDANCE SURFACES

EX-FUT APPROACH END OF RUNWAYS EXPECTED TO ACCOMMODATE INSTRUMENT APPROACHES WITH VERTICAL GUIDANCE SLOPE 30:1

EX-FUT PART 77 APPROACH SURFACE, NON-PRECISION UTILITY, SMALL AIRCRAFT EXCLUSIVELY AIRCRAFT OF 12,500 POUNDS MAX. GROSS WEIGHT AND LESS THAN ONE MILE VISIBILITY APPROACH SLOPE 20:1

ULT APPROACH (AC-150/5300-13A) SLOPE 20:1

ULT APPROACH (AC-150/5300-13A) SLOPE 20:1



RUNWAY END 35 APPROACH SURFACES
 AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

Drawn By: Helms
 Chk' By: Helms
 Proj. No: A-6302
 Dwg. No: 6302-02
 VP. No: SHEET13
 Date: 3/2018

Helms & ASSOCIATES
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No.	Revisions	By	App.	Date
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2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
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RUNWAY END 17

Redfield Municipal Airport												
E-x-Fut Runway End: 17, Part 77 Approach Surface Obstructions, Nonprecision 20:1												
Runway Elevation: 1308.52												
Date:	11-2018											
Item	Description	Distance (ft) (From T1) Approach Surface End	Distance (ft) (From T1) Surface Slope	Surf. Elevation	Object Elevation at Base	Object Height	Object Top Elevation	Object Top Clearance (Feet/ft)	Object Slope	Object Clearance	Proposed Action	Notes
417	Tree	277.0	0.0	1327.0	138.9	0.0	1327.0	6.1	1:3	1320.9		
417	Tree	714.0	0.0	1314.0	113.0	0.0	1314.0	58.1	1:1	1313.0		
617	Tree	784.0	0.0	1407.9	113.0	0.0	1313.0	69.9	1:1	1313.0		
717	Tree	339.0	0.0	1339.0	134.0	0.0	1339.0	34.6	1:1	1334.0		
817	Tree	30.0	0.0	1308.2	130.5	0.0	1308.2	7.0	1:1	1301.2		
2017	4' Barb Wire Fence	499.25	0.0	1327.98	128.96	4.0	1322.98	5.1	1:1	1322.98		
2117	4' Barb Wire Fence	1048.6	0.0	1303.5	130.3	15.0	1318.5	42.6	1:1	1313.5		
1117	4' Barb Wire Fence	1297.0	0.0	1327.7	128.7	15.0	1312.7	55.9	1:1	1317.7		
1417	4' Barb Wire Fence	1088.6	0.0	1329.4	129.4	15.0	1314.4	50.1	1:1	1319.4		
2417	4' Barb Wire Fence	500.0	0.0	1328.5	136.0	4.0	1324.5	207.5	1:1	1319.5		Verify Tree Elevations
2717	Tree	379.8	0.0	1318.9	134.3	0.0	1318.9	34.6	1:1	1313.9		
2817	Power Pole	1297.0	0.0	1412.8	132.2	0.0	1322.8	107.6	1:1	1322.8		
2917	Tree	623.0	0.0	136.0	138.2	0.0	136.0	84.9	1:1	136.0		
3017	Power Pole	543.0	0.0	1420.0	132.4	0.0	1320.0	96.5	1:1	1320.0		
3117	Tree	913.0	0.0	1410.0	113.0	0.0	1310.0	100.0	1:1	1310.0		
3217	Power Pole	993.0	0.0	1412.0	124.8	0.0	1312.0	110.3	1:1	1312.0		
3317	Power Pole	556.0	0.0	1414.0	136.8	0.0	1316.0	98.1	1:1	1316.0		
3417	Tree	919.0	0.0	1413.0	136.8	0.0	1313.0	103.1	1:1	1313.0		
3517	Tree	1015.0	0.0	1413.0	136.8	0.0	1315.0	117.9	1:1	1315.0		
3617	Tree	1026.0	0.0	1429.0	136.3	0.0	1326.0	123.5	1:1	1326.0		
3717	Tree	1073.0	0.0	1397.0	147.7	0.0	1397.0	48.7	1:1	1397.0		
3717	Tree	1013.0	0.0	1440.0	112.0	0.0	1322.0	108.9	1:1	1322.0		
1217	Power Pole	1038.0	0.0	1378.0	128.7	10.0	1368.0	51.7	1:1	1368.0		
2417	Power Pole	1088.6	0.0	1327.98	128.96	10.0	1307.98	49.1	1:1	1307.98		
2417	Power Pole	1088.6	0.0	1327.98	128.96	10.0	1307.98	49.1	1:1	1307.98		

Redfield Municipal Airport												
E-x-Fut Runway End: 17, Part 77 Approach Surface Obstructions, Nonprecision 20:1												
Runway Elevation: 1308.52												
Date:	11-2018											
1217	4' Barb wire fence	1038.0	0.0	1327.98	128.96	4.0	1322.98	57.7	1:1	1322.98		
1117	4' Barb wire fence	1277.0	0.0	1327.7	128.7	15.0	1312.7	55.9	1:1	1317.7		
2617	Tree	909.0	0.0	1382.5	136.0	4.0	1382.5	207.5	1:1	1382.5		Verify Tree Elevations
2817	Tree	30.0	0.0	1308.2	130.5	0.0	1308.2	7.0	1:1	1301.2		
3017	Tree	0.0	0.0	1308.2	130.5	0.0	1308.2	6.2	1:1	1301.2		
3117	Tree	1188.0	0.0	1327.0	138.0	4.0	1327.0	52.9	1:1	1327.0		
4117	4' Barb wire fence	1113.0	0.0	1313.0	130.0	15.0	1313.0	47.2	1:1	1313.0		
4217	4' Barb wire fence	1025.0	0.0	1318.0	130.0	4.0	1318.0	54.6	1:1	1318.0		
4317	4' Barb wire fence	1053.0	0.0	1321.0	130.0	15.0	1321.0	41.1	1:1	1321.0		
1217	Power Pole	1038.0	0.0	1327.98	128.96	10.0	1307.98	51.7	1:1	1307.98		
4017	Power Pole	1088.6	0.0	1327.98	128.96	10.0	1307.98	49.1	1:1	1307.98		
4217	Power Pole	1088.6	0.0	1327.98	128.96	10.0	1307.98	49.1	1:1	1307.98		

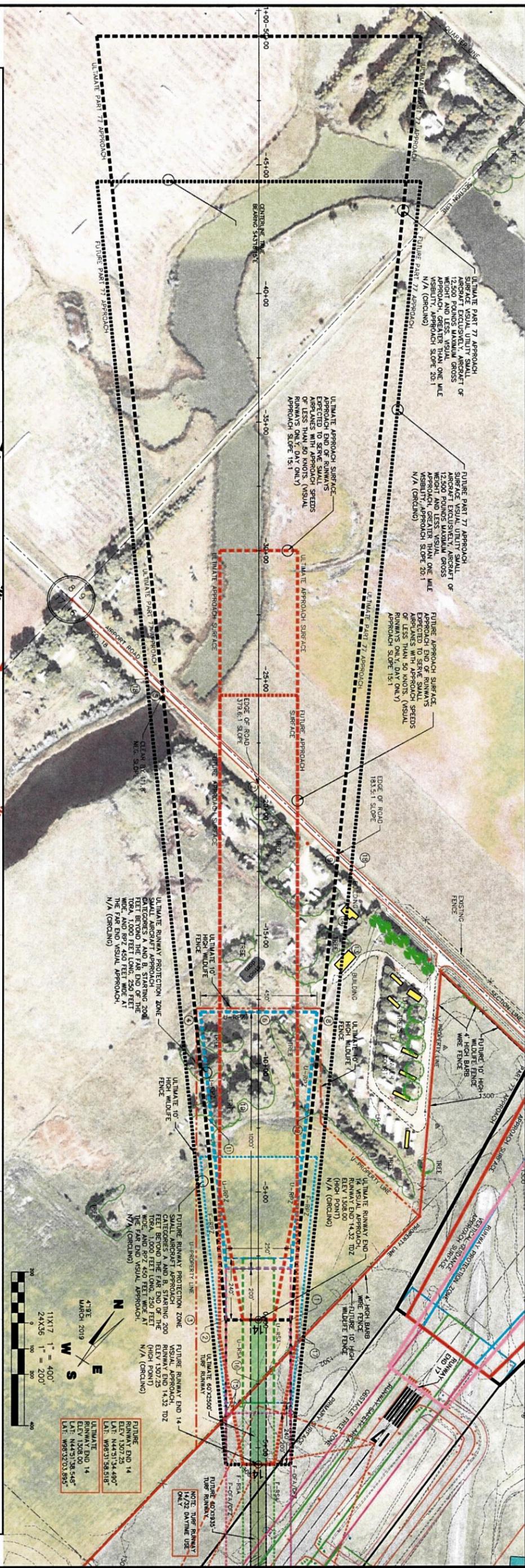
RUNWAY END 35

Redfield Municipal Airport												
E-x-Fut Runway End: 35, Part 77 Approach Surface Obstructions, Nonprecision 20:1												
Runway Elevation: 1307.92												
Date:	12-2018											
135	Ground	0.0	0.0	1307.92	130.0	0.0	1307.92	6.8	1:1	1307.92		
235	Ground	0.0	0.0	1307.92	130.0	0.0	1307.92	7.8	1:1	1307.92		
435	4' Barb Wire Fence	327.4	0.0	1321.2	130.2	14.0	1307.0	19.6	1:1	1307.0		
435	Edge of Road	382.7	0.0	1320.0	130.2	14.0	1313.0	10.8	1:1	1313.0		
635	4' Barb Wire Fence	290.0	0.0	1322.4	130.2	4.0	1302.4	17.2	1:1	1302.4		
635	Edge of Road	316.0	0.0	1321.7	130.2	15.0	1316.0	7.5	1:1	1316.0		
835	Edge of Road	227.0	0.0	1321.7	130.2	15.0	1317.0	4.8	1:1	1317.0		
835	4' Barb Wire Fence	254.0	0.0	1320.0	130.2	4.0	1300.0	14.6	1:1	1300.0		
435	Tree	1348.0	0.0	1311.0	134.1	0.0	1311.0	44.3	1:1	1311.0		
435	Tree	1348.0	0.0	1309.2	134.1	0.0	1310.0	40.7	1:1	1310.0		
1135	Tree	1175.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1235	Tree	1115.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1235	Tree	2113.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1235	Building	1664.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1235	Building	2142.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1435	Building	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1435	Building	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
1435	Building	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	1348.0	0.0	1311.0	134.1	0.0	1311.0	44.3	1:1	1311.0		
435	Tree	1348.0	0.0	1309.2	134.1	0.0	1310.0	40.7	1:1	1310.0		
435	Tree	1175.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	1115.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2113.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	1664.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2142.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		
435	Tree	2887.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		

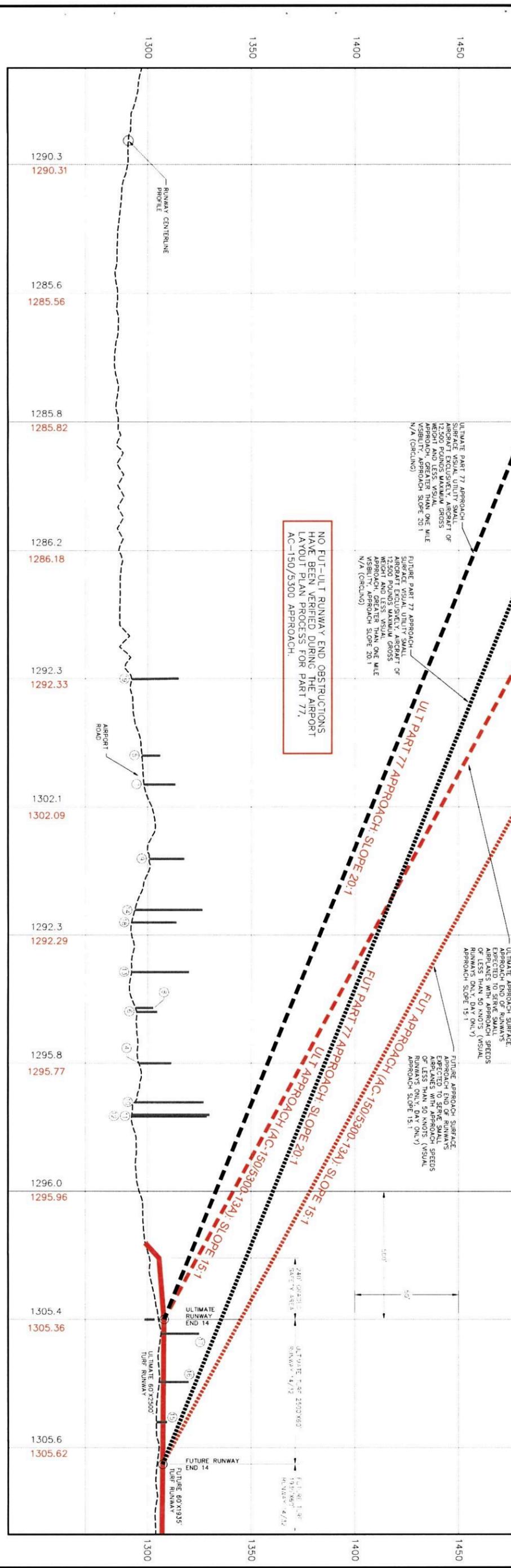
RUNWAY END 35

Redfield Municipal Airport												
E-x-Fut Runway End: 35, Part 77 Approach Surface Obstructions, Nonprecision 20:1												
Runway Elevation: 1307.92												
Date:	12-2018											
535	4' Barb Wire Fence	290.0	0.0	1322.0	130.2	4.0	1302.0	0	1:1	1302.0		17.2
635	Edge of Road	316.0	0.0	1321.7	130.2	15.0	1316.0	7.5	1:1	1316.0		7.5
635	Tree	1348.0	0.0	1311.0	134.1	0.0	1311.0	44.3	1:1	1311.0		44.3
635	Tree	1348.0	0.0	1309.2	134.1	0.0	1310.0	40.7	1:1	1310.0		40.7
1735	Ground	0.0	0.0	1307.92	130.2	0.0	1307.92	0	1:1	1307.92		6.7
1735	Ground	0.0	0.0	1307.92	130.2	0.0	1307.92	0	1:1	1307.92		7.8
1835	4' Barb Wire Fence	121.6	0.0	1324.0	130.6	4.0	1318.0	6.0	1:1	1318.0		19.4
2035	4' Barb Wire Fence	138.0	0.0	1325.2	130.6	4.0	1319.0	4.3	1:1	1319.0		9.7
2035	Edge of Road	200.4	0.0	1320.0	130.2	15.0	1315.0	1.5	1:1	1315.0		5.2
2135	Edge of Road	206.0	0.0	1320.0	130.2	15.0	1316.0	2.0	1:1	1316.0		5.2
2135	Tree	1664.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		44.4
2135	Tree	1664.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		44.4
2135	Tree	1711.0	0.0	1307.0	135.0	0.0	1307.0	31.2	1:1	1307.0		44.4
535	4' Barb Wire Fence	290.0	0.0	1322.0	130.2	4.0	1302.0	0	1:1	1302.0		11.2
2035	Edge of Road	216.0	0.0	1324.0	130.6	10.0	1318.0	13.4	1:1	1318.0		13.4
2035	Edge of Road	240.4	0.0	1320.0	130.2	10.0	1313.0	7.4	1:1	1313.0		9.7

Redfield Municipal Airport												
Ultimate Runway End: 35, Part 77 Approach Surface Obstructions, Nonprecision 20:1												
Runway Elevation: 1308.00												
Date:	12-2018											
1035	Tree	848.0	0.0	1330.0	135.0	0.0	1330.0	0.3	1:1	1330.0		0.3
1235	Building											



NO FUTURE RUNWAY END OBSTRUCTIONS HAVE BEEN VERIFIED DURING THE AIRPORT LAYOUT PLAN PROCESS FOR PART 77, AC-150/5300 APPROACH.



15 OF **20**

RUNWAY END 14 APPROACH SURFACES

AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

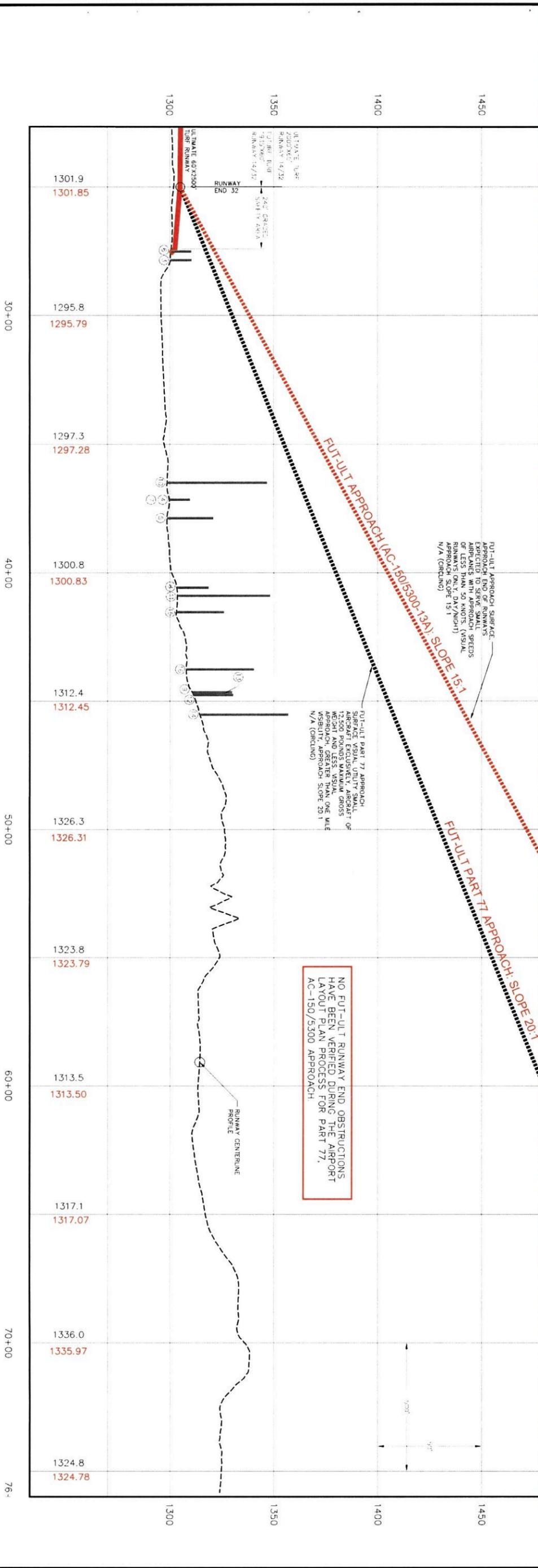
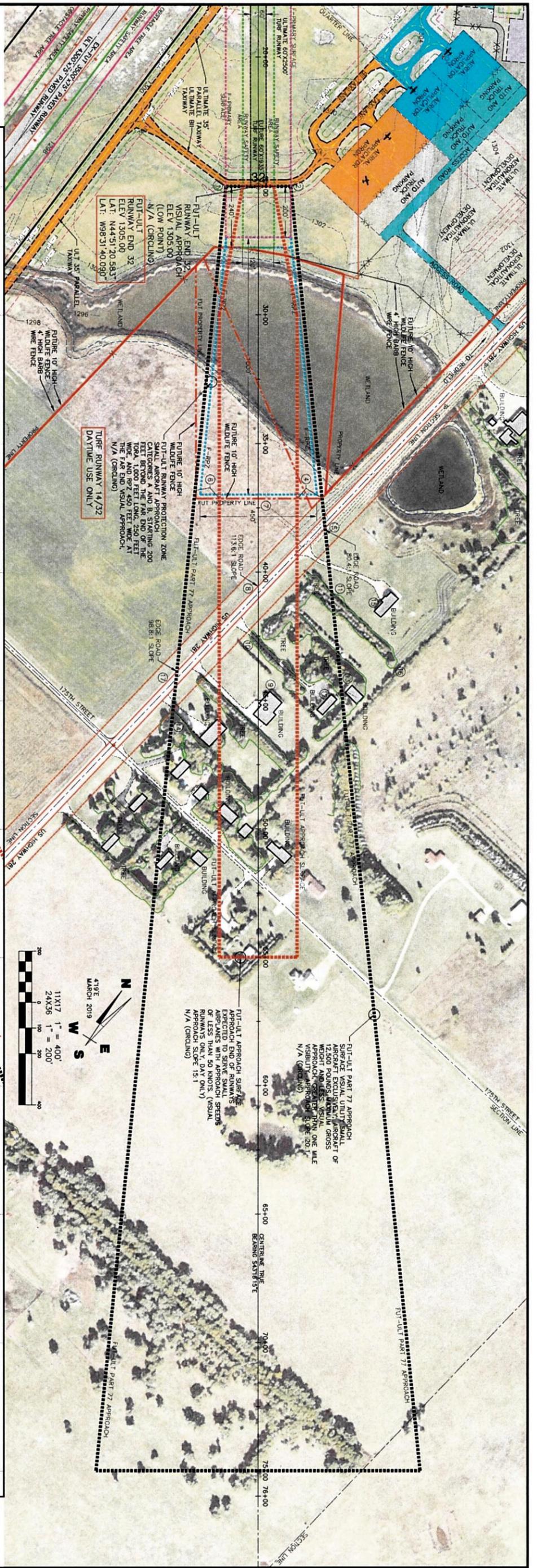
Drawn By: Helms
 Chk' By: Helms
 Proj. No: A-6302
 Dwg. No: 6302-02
 Y.P. No: SHEF115
 Date: 3/2019

Helms & ASSOCIATES
 CIVIL ENGINEERS & LAND SURVEYORS

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 Phone: 605.225.1212,
 Fax: 605.225.3189
 Email: bobh@helmsengineering.com

1. Helms certifies that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
 Registration No. _____

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19



16 OF 20

RUNWAY END 32 APPROACH SURFACES

AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

Drawn By: Helms
 Chk' By: Helms
 Proj. No: A-6302
 Dwg. No: 6302-02
 VP. No: SHEET16
 Date: 11/2018

Helms & ASSOCIATES
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
 Registration No. _____

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTITE (FAA)	Helms	Helms	9/19

RUNWAY END 14

Redfield Municipal Airport		Runway Elevation: 1307.25			Future Turf Runway End: 14, Part 77 Approach Surface Obstructions, Nonprecision 20:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
714	Edge of Road	2851.00	0.00	20	1489.00	1286.50	1510	1313.50	126.4			
1014	Tree Groove	1386.00	0.00	20	1376.55	1282.20	1510	1327.25	40.3			
1114	Tree Groove	1358.00	0.00	20	1375.15	1291.70	1510	1328.70	46.5			
1214	Tree Groove	1356.00	0.00	20	1375.05	1295.00	1510	1330.00	45.1			
1314	Building	1491.00	0.00	20	1403.50	1301.50	1510	1326.50	83.3			
1414	Building	2140.00	0.00	20	1414.25	1301.50	1510	1326.50	87.8			
1514	Future 10' W Adir Fence	1816.00	0.00	20	1315.50	1305.50	1510	1315.50	0.0			
1614	Future 10' W Adir Fence	3210.00	0.00	20	1323.45	1295.00	1510	1305.00	18.5			
1714	Future 10' W Adir Fence	5100.00	0.00	20	1323.75	1301.70	1510	1310.70	22.5			
1814	Edge of Road	2114.00	0.00	20	1412.95	1291.00	1510	1314.00	99.0			
1914	Edge of Road	3853.00	0.00	20	1460.20	1300.00	1510	1315.00	145.3			

Redfield Municipal Airport		Runway Elevation: 1307.25			Future Turf Runway End: 14, Approach Surface Obstructions, Nonprecision 20:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
714	Edge of Road	2851.00	0.00	15	1484.12	1286.50	1510	1313.50	126.6			
1014	Tree Groove	1386.00	0.00	15	1399.65	1282.20	1510	1327.25	72.5			
1114	Tree Groove	1358.00	0.00	15	1397.78	1291.70	1510	1328.70	69.1			
1214	Tree Groove	1356.00	0.00	15	1397.65	1295.00	1510	1330.00	67.7			
1314	Building	1931.00	0.00	15	1455.32	1292.00	1510	1320.00	113.3			
1414	Building	2140.00	0.00	15	1449.92	1301.50	1510	1320.50	123.4			
1514	10' W Adir Fence	1654.00	0.00	15	1318.25	1305.00	1510	1309.50	8.8			
1614	10' W Adir Fence	3210.00	0.00	15	1328.85	1295.00	1510	1320.00	8.8			
1714	10' W Adir Fence	5100.00	0.00	15	1341.25	1300.30	1510	1325.30	16.0			
1814	Edge of Road	2114.00	0.00	15	1448.18	1291.00	1510	1314.00	134.2			
1914	Edge of Road	3853.00	0.00	15	1511.28	1300.00	1510	1315.00	146.0			

Redfield Municipal Airport		Runway Elevation: 1308.00			Ultimate Turf Runway End: 14, Part 77 Approach Surface Obstructions, Nonprecision 20:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
1114	Ground	0.00	0.00	20	1308.00	1299.30	0.0	1299.30	8.7			
214	Ground	0.00	0.00	20	1308.00	1301.50	0.0	1301.50	4.5			
314	10' W Adir Fence	0.00	0.00	20	1308.00	1301.50	10.0	1311.50	0.0	Remarks: New Fence Location	Construction of Ultimate Turf Runway	
414	10' W Adir Fence	1003.00	0.00	20	1388.00	1282.50	10.0	1302.50	55.6			
514	10' W Adir Fence	2203.00	0.00	20	1418.00	1291.20	15.0	1306.20	111.8			
614	10' W Adir Fence	1203.00	0.00	20	1388.00	1284.70	10.0	1304.70	63.3			
714	10' W Adir Fence	2883.00	0.00	20	1412.40	1285.50	15.0	1313.50	98.9			
814	10' W Adir Fence	1215.00	0.00	20	1387.50	1282.80	10.0	1302.80	60.1			
914	Edge of Road	1788.00	0.00	20	1397.50	1302.80	15.0	1317.80	23.2			
1014	Tree Groove	848.00	0.00	20	1350.45	1292.30	15.0	1327.20	23.2			
1114	Tree Groove	793.00	0.00	20	1347.65	1291.70	15.0	1326.70	18.0			
1214	Tree Groove	2919.00	0.00	20	1347.95	1291.00	15.0	1320.00	59.9			
1314	Building	1355.00	0.00	20	1379.89	1291.00	15.0	1320.00	59.9			
1414	Building	1586.00	0.00	20	1387.80	1301.50	15.0	1325.90	61.3			

Redfield Municipal Airport		Runway Elevation: 1308.00			Ultimate Turf Runway End: 14, Approach Surface Obstructions, Nonprecision 15:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
1114	Ground	0.00	0.00	15	1308.00	1299.30	0.0	1299.30	8.7			
214	Ground	0.00	0.00	15	1308.00	1301.50	0.0	1301.50	4.5			
314	10' W Adir Fence	0.00	0.00	15	1308.00	1301.50	10.0	1311.50	0.0	Remarks: New Fence Location	Construction of Ultimate Turf Runway	
414	10' W Adir Fence	1003.00	0.00	15	1378.00	1282.50	10.0	1302.50	72.3			
514	10' W Adir Fence	2203.00	0.00	15	1424.00	1291.20	15.0	1306.20	148.3			
614	10' W Adir Fence	1203.00	0.00	15	1388.00	1284.70	10.0	1304.70	83.3			
714	10' W Adir Fence	2883.00	0.00	15	1447.25	1285.50	15.0	1313.50	133.7			
814	10' W Adir Fence	1215.00	0.00	15	1389.00	1282.80	10.0	1302.80	86.2			
914	Edge of Road	1788.00	0.00	15	1427.87	1302.80	15.0	1317.80	101.1			
1014	Tree Groove	818.00	0.00	15	1364.53	1292.20	15.0	1327.20	37.3			
1114	Tree Groove	761.00	0.00	15	1360.87	1291.70	15.0	1326.70	32.2			
1214	Tree Groove	2919.00	0.00	15	1361.27	1291.00	15.0	1320.00	31.3			

RUNWAY END 32

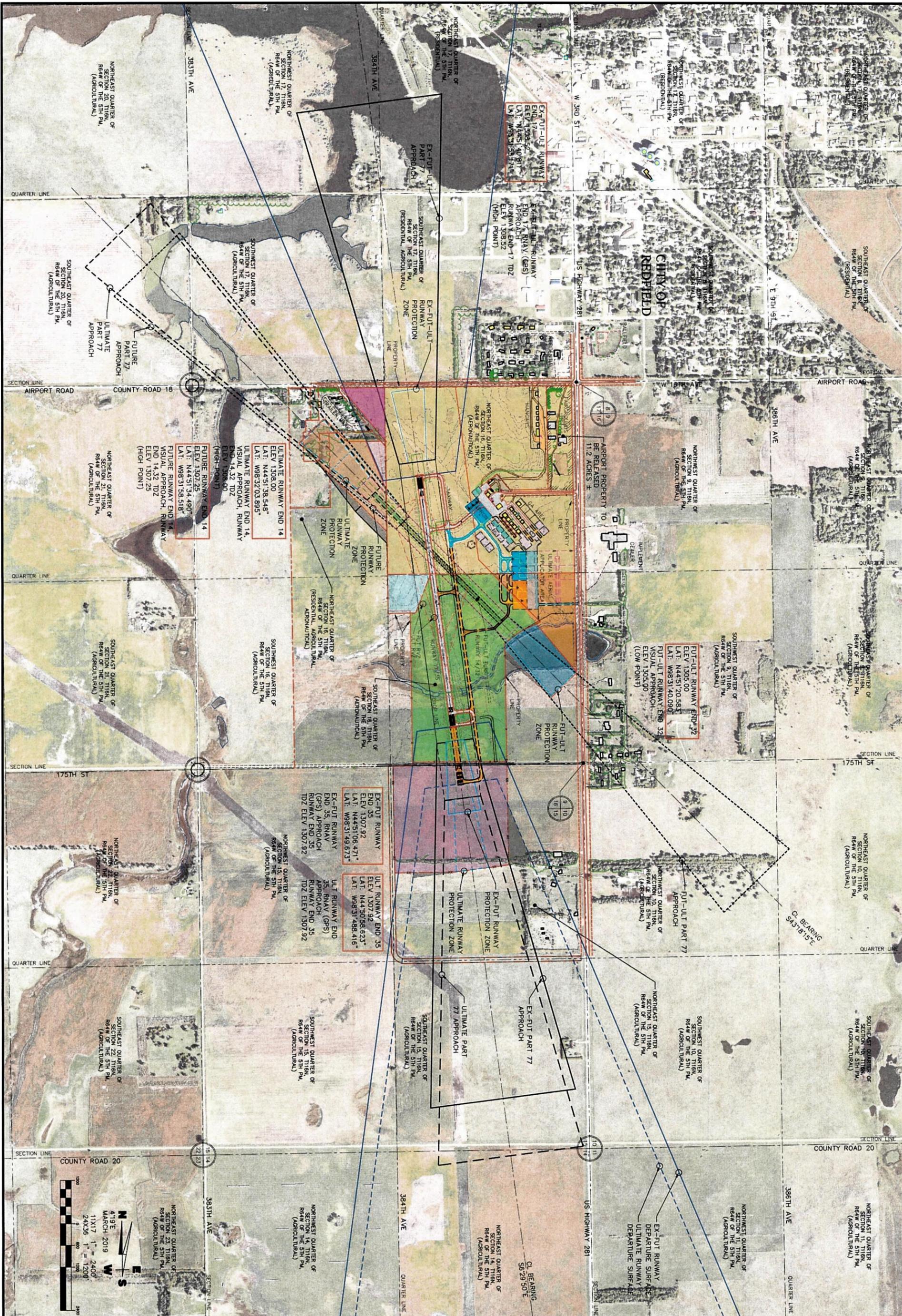
Redfield Municipal Airport		Runway Elevation: 1305.00			(Future-Ultimate) Turf Runway End: 32, Part 77 Approach Surface Obstructions, Nonprecision 20:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
1132	Ground	0.00	0.00	20	1305.00	1302.50	0.0	1302.50	2.5			
2132	Ground	0.00	0.00	20	1305.00	1301.10	0.0	1301.10	1.9			
4132	10' W Adir Fence	1215.00	0.00	20	1362.75	1286.90	13.0	1309.90	56.8			
5132	10' W Adir Fence	1215.00	0.00	20	1360.35	1286.90	13.0	1307.90	48.3			US Highway 281
6132	10' W Adir Fence	1215.00	0.00	20	1368.75	1290.80	10.0	1316.80	55.3			US Highway 281
7132	10' W Adir Fence	1215.00	0.00	20	1368.75	1299.80	10.0	1309.80	56.0			US Highway 281
8132	Edge of Road	1551.00	0.00	20	1388.85	1301.70	15.0	1318.70	64.1			US Highway 281
9132	Building	1467.00	0.00	20	1403.25	1307.00	0.0	1320.00	113.0			
10132	10' W Adir Fence	1150.00	0.00	20	1362.50	1287.00	0.0	1313.00	135.0			
11132	10' W Adir Fence	1380.00	0.00	20	1388.45	1301.40	0.0	1318.40	86.1			
12132	10' W Adir Fence	1594.00	0.00	20	1408.95	1302.20	0.0	1328.50	77.3			
13132	10' W Adir Fence	1703.00	0.00	20	1403.50	1302.10	0.0	1328.50	77.4			US Highway 281
14132	10' W Adir Fence	2925.00	0.00	20	1407.65	1317.00	0.0	1357.00	50.6			
15132	Building	1651.00	157.00	20	1410.98	1325.10	0.0	1328.10	81.0			
16132	Tree Groove	1876.00	194.00	20	1425.51	1330.50	0.0	1348.50	86.0			
17132	Edge of Road	810.00	0.00	20	1400.80	1309.20	13.0	1324.40	78.4			US Highway 281

Redfield Municipal Airport		Runway Elevation: 1305.00			(Future-Ultimate) Turf Runway End: 32, Approach Surface Obstructions, Nonprecision 15:1			Date: 12-2018				
Item	Description	Distance (Long) Approach End	Distance (Trans. 7:1) Approach Slope	Surface Slope	Surface Elevation	Object Elevation at Base	Object Height	Object Top Elevation (Present)	Object Clear (Present)	Proposed Action	Triggering Event for Proposed Action	Notes
1132	Ground	0.00	0.00	15	1305.00	1302.50	0.0	1302.50	2.5			
2132	Ground	0.00	0.00	15	1305.00	1301.10	0.0	1301.10	1.9			
4132	10' W Adir Fence	1215.00	0.00	15	1386.00	1286.90	13.0	1309.90	77.1			
5132	10' W Adir Fence	1215.00	0.00	15	1380.80	1286.90	13.0	1307.90	69.8			US Highway 281
6132	10' W Adir Fence	1215.00	0.00	15	1388.00	1290.80	10.0	1316.80	75.6			US Highway 281
7132	10' W Adir Fence	1215.00	0.00	15	1388.00	1299.80	10.0	1309.80	76.3			US Highway 281
8132	Edge of Road	1551.00	0.00	15	1408.80	1301.70	15.0	1318.70	90.1			US Highway 281
9132	Building	1467.00	0.00	15	1408.00	1301.70	0.0	1320.00	105.0			
10132	10' W Adir Fence	1150.00	0.00	15	1384.00	1287.00	0.0	1313.00	136.0			
11132	10' W Adir Fence	1380.00	0.00	15	1387.00	1301.40	0.0	1324.00	47.3			Verify Tree Elevation
12132	10' W Adir Fence	1594.00	0.00	15	1438.33	1302.10	0.0	1338.10	107.2			US Highway 281
13132	10' W Adir Fence	1703.00	0.00	15	1433.73	1299.20	13.0	1324.40	108.3			US Highway 281

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADO REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
 Registration No. _____

221 Brown County Highway 19
 P.O. Box 111,
 Aberdeen, S.D. 57401
 Phone: 605.225.1212, Fax: 605.225.3189



18 OF 20

LAND USE MAP

AIRPORT LAYOUT PLAN
REDFIELD MUNICIPAL AIRPORT
REDFIELD, SOUTH DAKOTA

Drawn By: HELMS
 Chk' By: HELMS
 Proj. No: A-6302
 Dwg. No: 6302-03
 VP. No: SHEET18
 Date: 11-2014

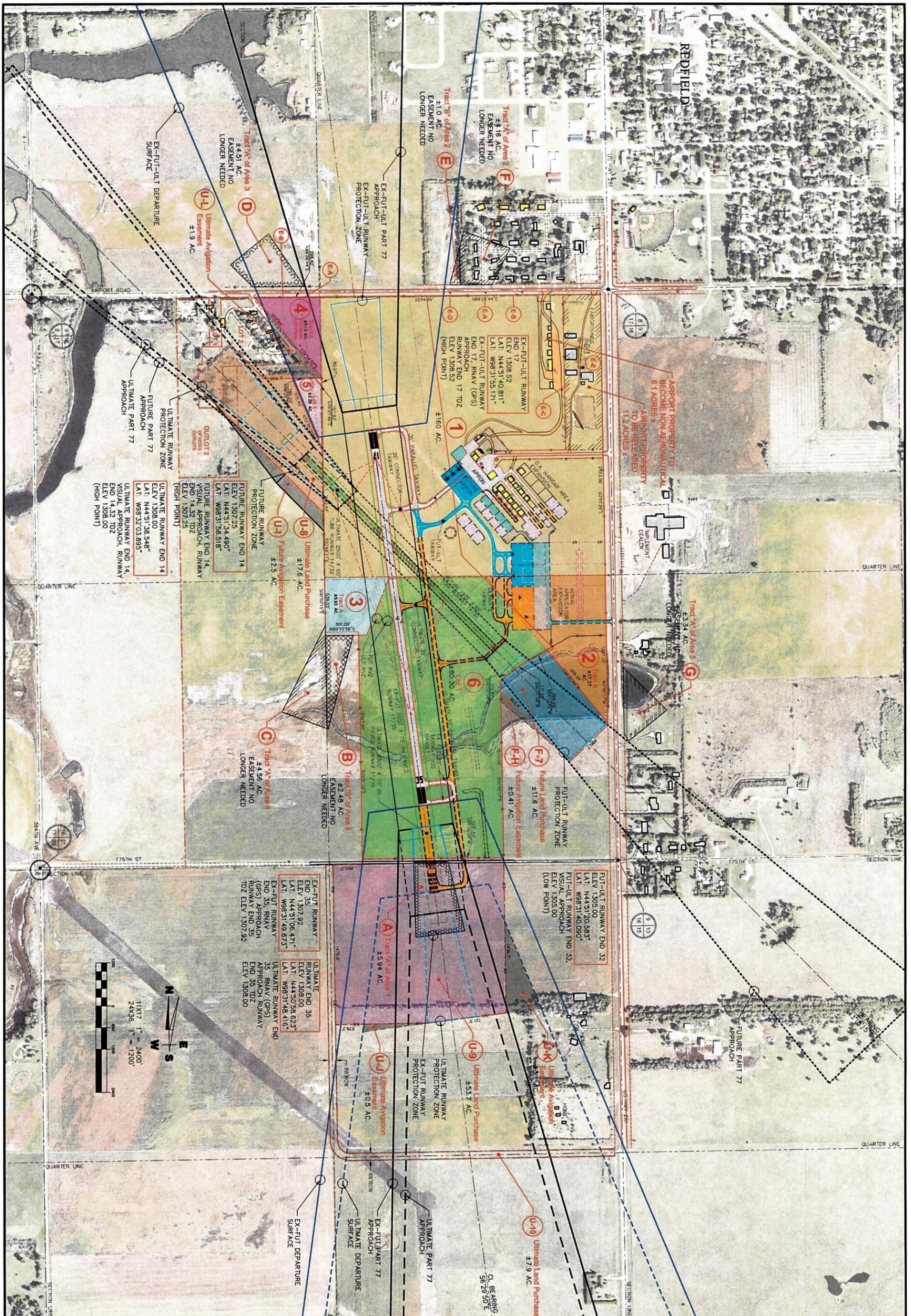
Helms & Associates
 CIVIL ENGINEERS & LAND SURVEYORS

221 Brown County Highway 19
 P.O. Box 111,
 Aberdeen, S.D. 57401
 Phone: 605.225.1212
 Fax: 605.225.3189
 Email: terryh@helmsengineering.com

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the Law of the State of South Dakota. Registration No. _____

No.	Revisions	By	App.	Date
1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADDO REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19

No.	Revisions	By	App.	Date



19 OF **20**

EXHIBIT "A" PROPERTY MAP

AIRPORT LAYOUT PLAN
 REDFIELD MUNICIPAL AIRPORT
 REDFIELD, SOUTH DAKOTA

Drawn By: HELMS
 Chk' By: HELMS
 Proj. No: A-6302
 Dwg. No: 6302-03
 VP. No: SHEET19
 Date: 3-2019

Helms & Associates
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1	Redfield Airport Board	Helms	Helms	5/19
2	FAA RUNWAY LENGTH REVISION/PUBLIC MEETING REVISIONS	Helms	Helms	8/19
3	MINNEAPOLIS ADD REVIEW - SANDY DEPOTTEY (FAA)	Helms	Helms	9/19
No.	Revisions	By	App.	Date

