AIRPORT CONSTRUCTION PLAN FOR

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS

MITCHELL MUNICIPAL AIRPORT

MITCHELL, SOUTH DAKOTA

AIP 3-46-0037-028-2025

DESCRIPTION OF WORK

The project shall consist of the reconstruction and decoupling of Runway 18/36, construction of new runway turnarounds and taxiways, realignment of Taxiway C, and runway and taxiway lighting and electrical improvements at the Mitchell Municipal Airport. The work shall include: existing asphalt and concrete pavement removal, excavation, grading, subbase and base course installation, asphalt paving, pavement markings, underdrain pipe installation, site restoration, seeding, mulching, taxiway and runway edge lighting, runway and taxiway signage, precision approach path indicator (PAPI) light installation, runway end identifier lights (REIL) installation, airport beacon relocation, and various other items of related construction.

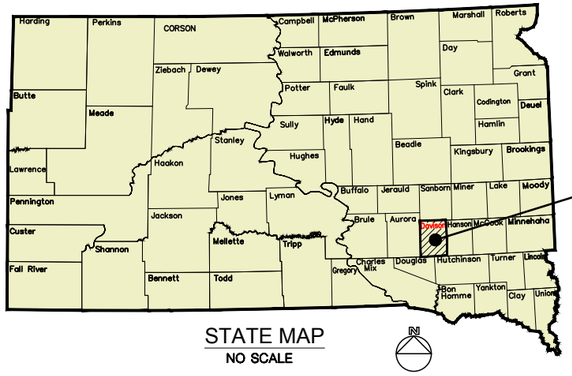


VICINITY MAP
NO SCALE

MAYOR AND CITY COUNCIL

Mayor	Jordan Hanson
Council Member	Dan Sabers
Council Member	Tim Goldhammer
Council Member	Kevin McCardle
Council Member	Marty Barington
Council Member	Mike Bathke
Council Member	Susan Tjarks
Council Member	Jeff Smith
Council Member	John Doescher

Public Works Director/Engineer	Joe Schroeder
City Administrator	Stephanie Ellwein
Airport Manager	Dan London



STATE MAP
NO SCALE

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ENGINEER CERTIFICATION

I HEREBY CERTIFY THAT TO THE BEST OF MY PROFESSIONAL ABILITY THESE PLANS AND SPECIFICATIONS WERE DEVELOPED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH ALL APPLICABLE FEDERAL STANDARDS AND REQUIREMENTS. NO DEVIATIONS FROM OR MODIFICATIONS TO STANDARDS SET FORTH BY THE FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULARS WILL BE NECESSARY OTHER THAN THOSE PREVIOUSLY APPROVED BY F.A.A. EXCEPT FOR THOSE LISTED ABOVE.

Brooke B. Edgar, P.E.
SD REG. NO. 13637

PROFESSIONAL ENGINEER
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

SPONSOR APPROVAL

OWNER: CITY OF MITCHELL

I 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. NO DEVIATIONS FROM OF MODIFICATIONS TO STANDARDS AS SET FORTH IN FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULARS WILL BE NECESSARY OTHER THAN THOSE PREVIOUSLY APPROVED BY THE F.A.A. EXCEPT FOR THOSE LISTED ABOVE.

Mayor _____ DATE _____

CONSTRUCTION PLAN APPROVALS

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF AIR, RAIL, & TRANSIT

JACK DOKKEN, AIR, RAIL, & TRANSIT PROGRAM MANAGER

COVER SHEET

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Date:	5/29/26
Dwg. No:	7141-DET

W
S
N
E

SCALE 11X17
1"=600' HORIZ

LEGEND

- STAGING AREA
- PROPOSED PAVEMENT CONSTRUCTION AREAS
- PROPOSED PAVEMENT REMOVAL AREAS
- PROPOSED CONSTRUCTION HAUL ROUTE

RUNWAY 13-31
RUNWAY 18-36
PARALLEL TAXIWAY
HANGAR TAXILANE
GA APRON
AIRPORT RD
GATE
STAGING AREA (PHASE 1A/1B)
HAUL ROUTE (PHASE 1A/1B)
CONSTRUCT ASPHALT TAXIWAY
EXISTING WETLAND
HAUL ROUTE (PHASE 4)
STAGING AREA (PHASE 4)
EXISTING ASPHALT PAVEMENT TO BE REMOVED
CONSTRUCT ASPHALT TAXIWAY
HAUL ROUTE (PHASE 4)
EXISTING ASPHALT/ CONCRETE PAVEMENT TO BE REMOVED
HAUL ROUTE (PHASE 2)
HAUL ROUTE (PHASE 3)
ILS CRITICAL AREA
HAUL ROUTE (PHASE 2/3)
STAGING AREA (PHASE 2/3)
TEMPORARY GATE (PHASE 2/3)
CONSTRUCT ASPHALT TURN AROUND (ALTERNATE BID 2)
CONSTRUCT 75' WIDE ASPHALT RUNWAY
EXISTING ASPHALT/CONCRETE PAVEMENT TO BE REMOVED
CONSTRUCT ASPHALT TURN AROUND (ALTERNATE BID 1)
EXISTING WETLAND
HIGHWAY 37
HIGHWAY 37
RWY OBJECT FREE AREA
RWY SAFETY AREA
RWY OBSTACLE FREE ZONE
RWY PROTECTION ZONE
PRIMARY SURFACE
800'
500'
400'
1000'
200'
150'
250'
1510'
300'

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the owner is a duly Registered Professional Engineer under the law of the State of South Dakota. License No. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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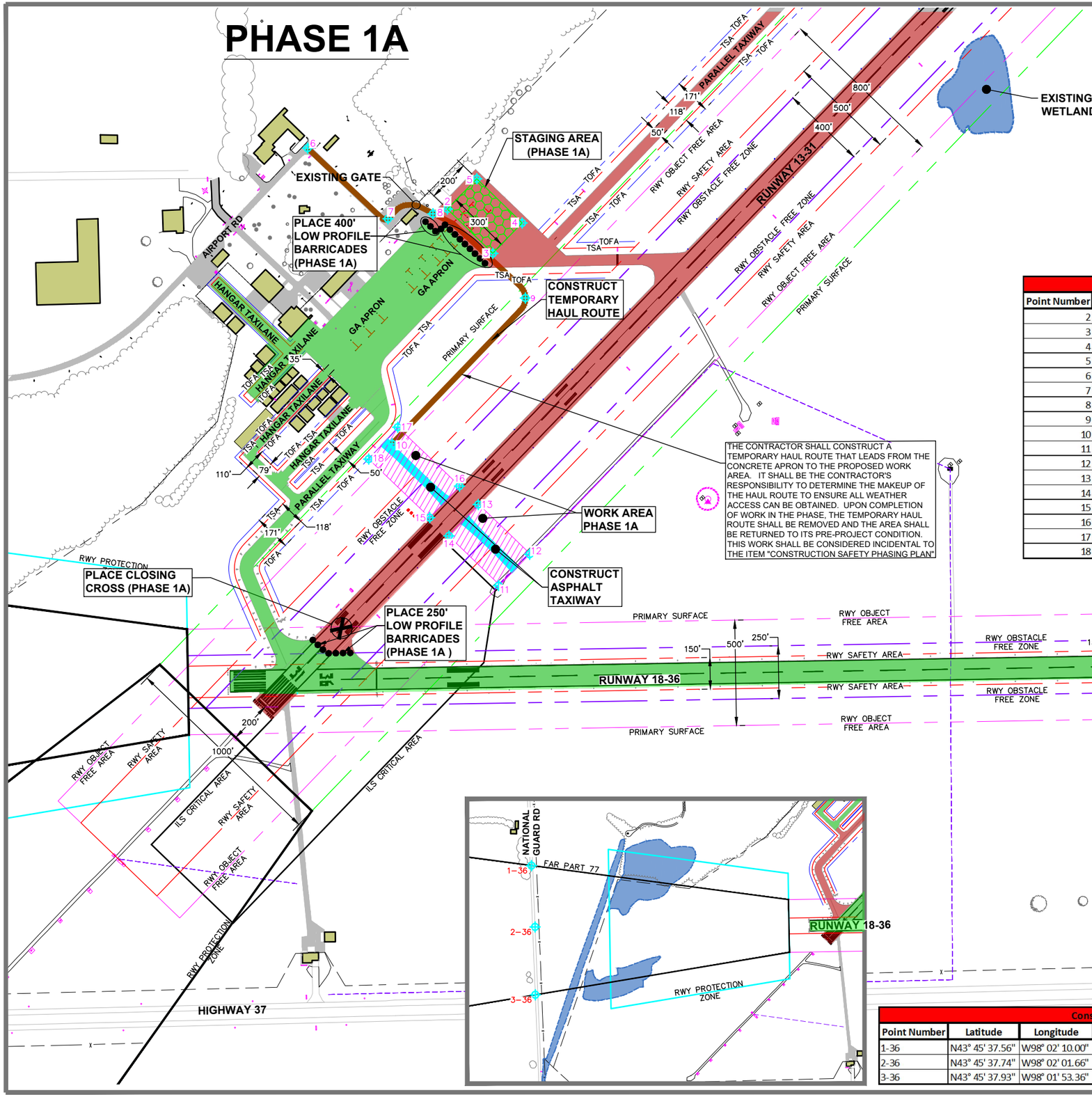
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

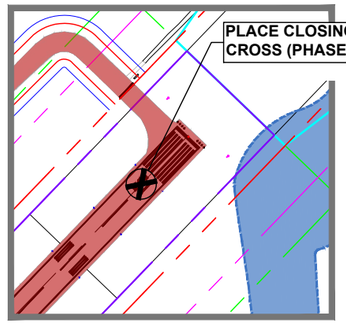
PROJECT LAYOUT

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

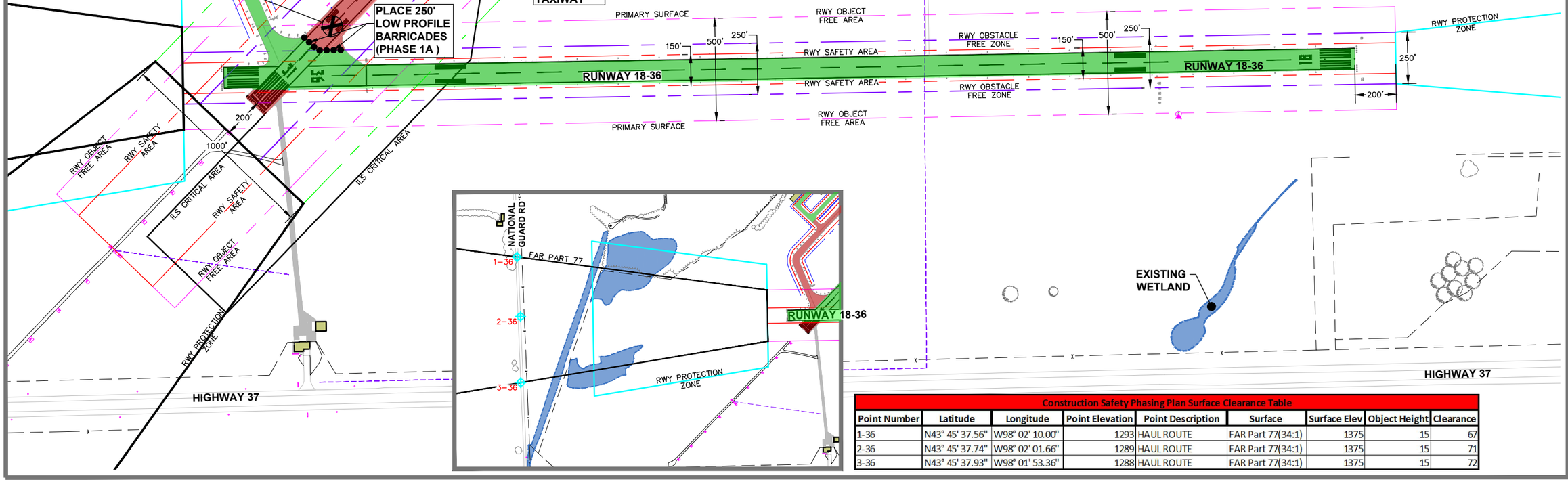
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-03 PLAYOUT
Date:	5/28/26

PHASE 1A





Construction Safety Phasing Plan Coordinate Table				
Point Number	Latitude	Longitude	Point Elevation	Point Description
2	N43° 46' 13.84"	W98° 02' 32.31"	1292	STAGING AREA
3	N43° 46' 15.95"	W98° 02' 29.43"	1296	STAGING AREA
4	N43° 46' 17.34"	W98° 02' 31.37"	1296	STAGING AREA
5	N43° 46' 15.24"	W98° 02' 34.25"	1292	STAGING AREA
6	N43° 46' 07.33"	W98° 02' 36.32"	1294	HAUL ROUTE
7	N43° 46' 11.07"	W98° 02' 31.74"	1292	HAUL ROUTE
8	N43° 46' 13.18"	W98° 02' 32.03"	1291	HAUL ROUTE
9	N43° 46' 17.46"	W98° 02' 26.52"	1297	HAUL ROUTE
10	N43° 46' 11.16"	W98° 02' 17.18"	1297	HAUL ROUTE
11	N43° 46' 16.14"	W98° 02' 07.98"	1303	WORK AREA
12	N43° 46' 17.57"	W98° 02' 10.00"	1302	WORK AREA
13	N43° 46' 15.19"	W98° 02' 13.21"	1303	WORK AREA
14	N43° 46' 13.76"	W98° 02' 11.21"	1303	WORK AREA
15	N43° 46' 12.89"	W98° 02' 12.39"	1303	WORK AREA
16	N43° 46' 14.32"	W98° 02' 14.40"	1303	WORK AREA
17	N43° 46' 11.43"	W98° 02' 18.24"	1297	WORK AREA
18	N43° 46' 10.06"	W98° 02' 16.19"	1297	WORK AREA



Construction Safety Phasing Plan Surface Clearance Table							
Point Number	Latitude	Longitude	Point Elevation	Point Description	Surface	Surface Elev	Object Height	Clearance
1-36	N43° 45' 37.56"	W98° 02' 10.00"	1293	HAUL ROUTE	FAR Part 77(34:1)	1375	15	67
2-36	N43° 45' 37.74"	W98° 02' 01.66"	1289	HAUL ROUTE	FAR Part 77(34:1)	1375	15	71
3-36	N43° 45' 37.93"	W98° 01' 53.36"	1288	HAUL ROUTE	FAR Part 77(34:1)	1375	15	72

SCALE 11X17
1"=500' HORIZ

LEGEND

- WORK AREA
- PAVEMENT OPEN TO TRAFFIC
- PAVEMENT CLOSED TO TRAFFIC
- PAVEMENT TO BE CONSTRUCTED
- PAVEMENT TO BE REMOVED
- CLOSING CROSS
- LOW PROFILE BARRICADE

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota.
License Number No.
Date

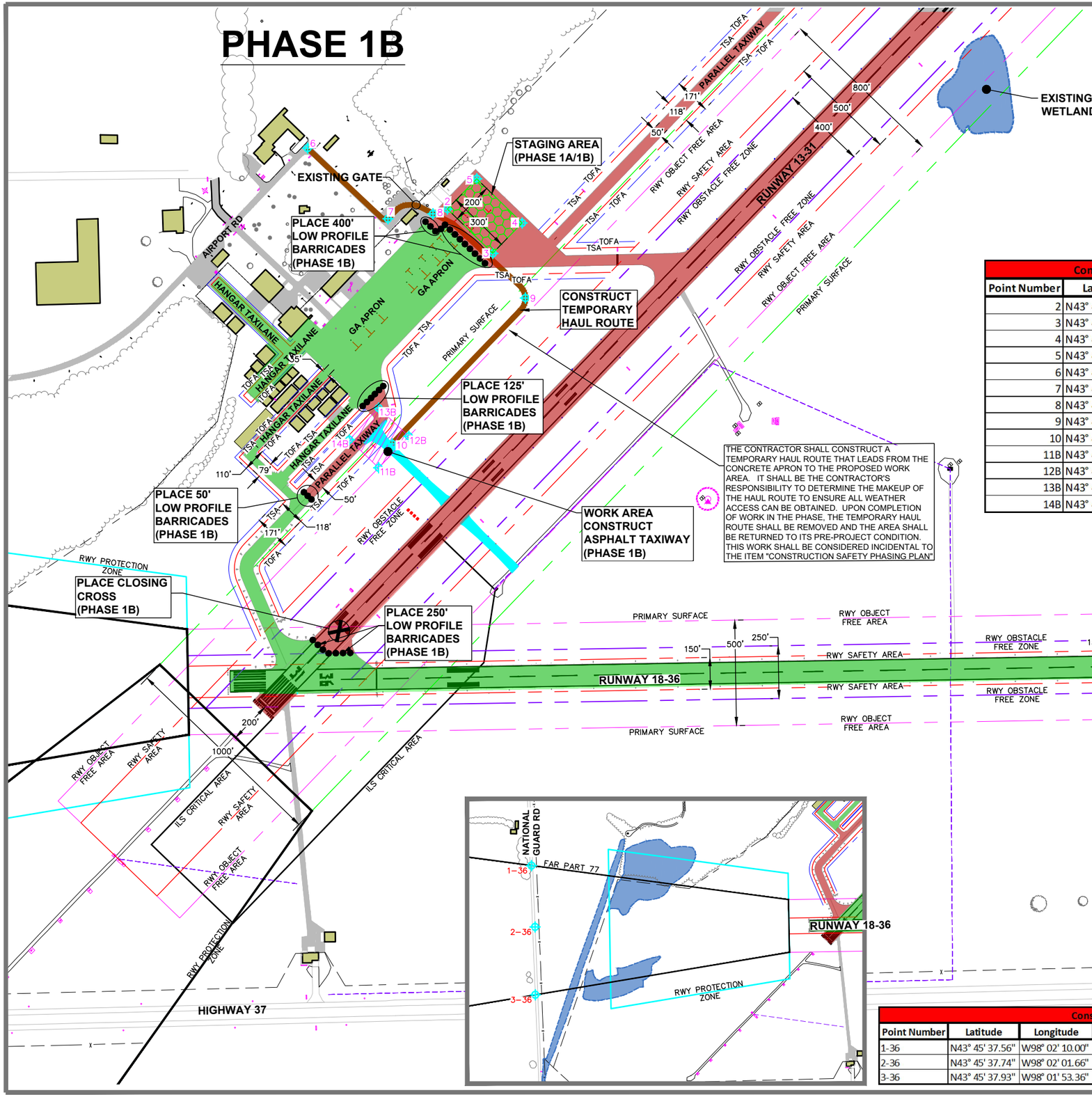
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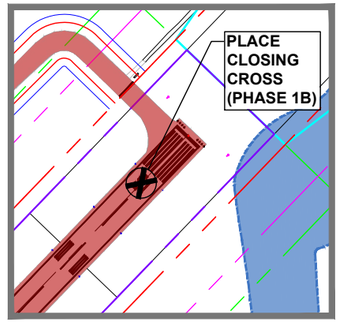
CONSTRUCTION SAFETY AND PHASING PLAN (PHASE 1A)

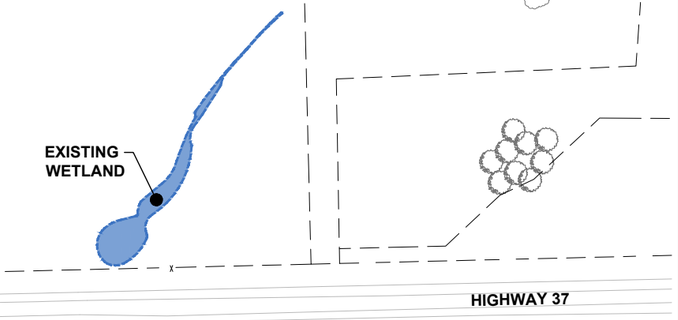
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPP(1A)
Date:	5/28/26

PHASE 1B







Construction Safety Phasing Plan Coordinate Table				
Point Number	Latitude	Longitude	Point Elevation	Point Description
2	N43° 46' 13.84"	W98° 02' 32.31"	1292	STAGING AREA
3	N43° 46' 15.95"	W98° 02' 29.43"	1296	STAGING AREA
4	N43° 46' 17.34"	W98° 02' 31.37"	1296	STAGING AREA
5	N43° 46' 15.24"	W98° 02' 34.25"	1292	STAGING AREA
6	N43° 46' 07.33"	W98° 02' 36.32"	1294	HAUL ROUTE
7	N43° 46' 11.07"	W98° 02' 31.74"	1292	HAUL ROUTE
8	N43° 46' 13.18"	W98° 02' 32.03"	1291	HAUL ROUTE
9	N43° 46' 17.46"	W98° 02' 26.52"	1297	HAUL ROUTE
10	N43° 46' 11.16"	W98° 02' 17.18"	1297	HAUL ROUTE
11B	N43° 46' 10.54"	W98° 02' 15.67"	1297	WORK AREA
12B	N43° 46' 11.95"	W98° 02' 17.65"	1298	WORK AREA
13B	N43° 46' 10.54"	W98° 02' 19.49"	1297	WORK AREA
14B	N43° 46' 09.17"	W98° 02' 17.46"	1297	WORK AREA

Construction Safety Phasing Plan Surface Clearance Table								
Point Number	Latitude	Longitude	Point Elevation	Point Description	Surface	Surface Elev	Object Height	Clearance
1-36	N43° 45' 37.56"	W98° 02' 10.00"	1293	HAUL ROUTE	FAR Part 77(34:1)	1375	15	67
2-36	N43° 45' 37.74"	W98° 02' 01.66"	1289	HAUL ROUTE	FAR Part 77(34:1)	1375	15	71
3-36	N43° 45' 37.93"	W98° 01' 53.36"	1288	HAUL ROUTE	FAR Part 77(34:1)	1375	15	72

W S N E

SCALE 11X17
1"=500' HORIZ

LEGEND

- WORK AREA
- PAVEMENT OPEN TO TRAFFIC
- PAVEMENT CLOSED TO TRAFFIC
- PAVEMENT TO BE CONSTRUCTED
- PAVEMENT TO BE REMOVED
- CLOSING CROSS
- LOW PROFILE BARRICADE

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License No.

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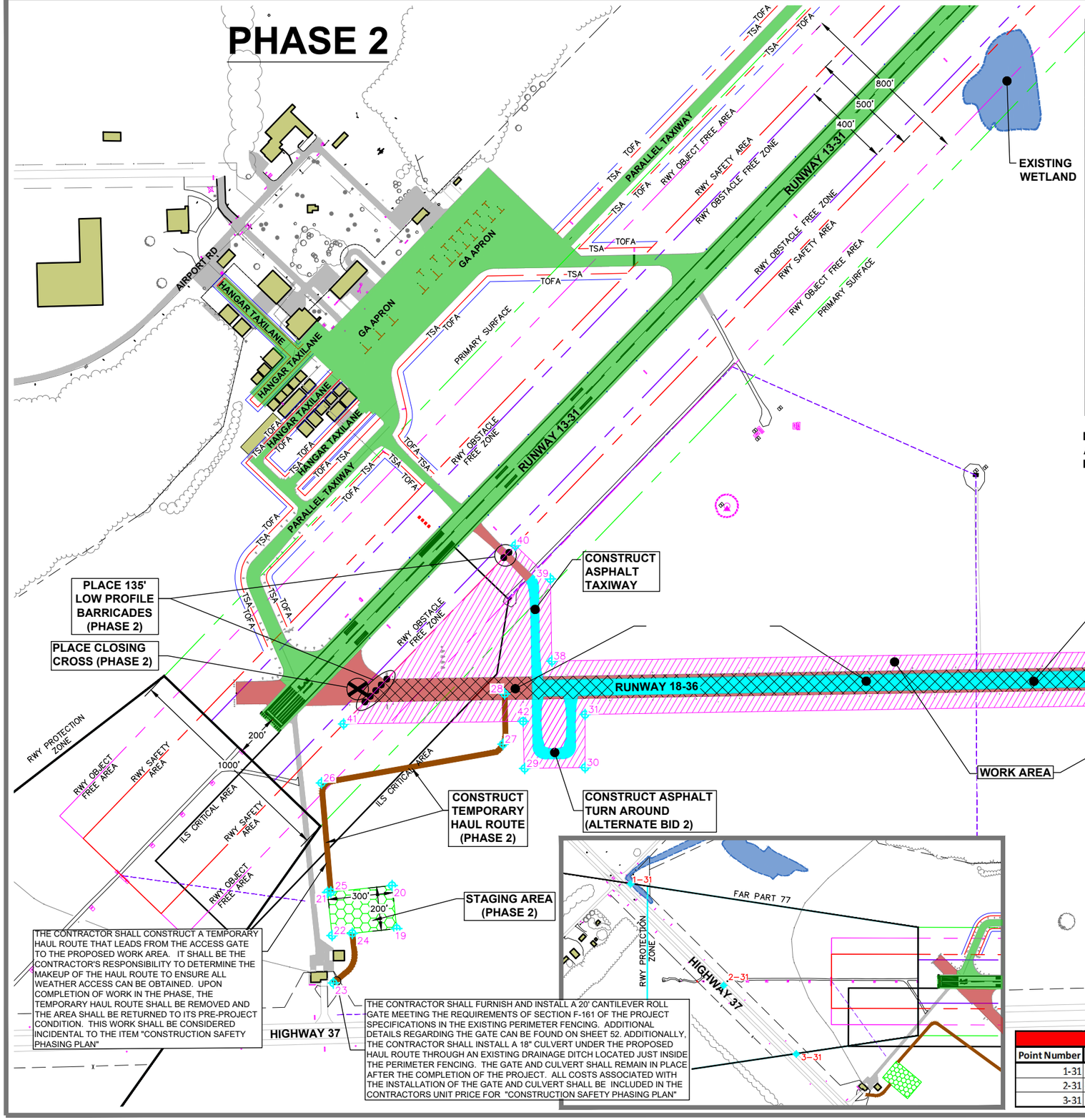
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY AND PHASING PLAN (PHASE 1B)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPP(1B)
Date:	5/28/26

PHASE 2



THE CONTRACTOR SHALL CONSTRUCT A TEMPORARY HAUL ROUTE THAT LEADS FROM THE ACCESS GATE TO THE PROPOSED WORK AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MAKEUP OF THE HAUL ROUTE TO ENSURE ALL WEATHER ACCESS CAN BE OBTAINED. UPON COMPLETION OF WORK IN THE PHASE, THE TEMPORARY HAUL ROUTE SHALL BE REMOVED AND THE AREA SHALL BE RETURNED TO ITS PRE-PROJECT CONDITION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "CONSTRUCTION SAFETY PHASING PLAN"

THE CONTRACTOR SHALL FURNISH AND INSTALL A 20' CANTILEVER ROLL GATE MEETING THE REQUIREMENTS OF SECTION F-161 OF THE PROJECT SPECIFICATIONS IN THE EXISTING PERIMETER FENCING. ADDITIONAL DETAILS REGARDING THE GATE CAN BE FOUND ON SHEET 52. ADDITIONALLY, THE CONTRACTOR SHALL INSTALL A 18" CULVERT UNDER THE PROPOSED HAUL ROUTE THROUGH AN EXISTING DRAINAGE DITCH LOCATED JUST INSIDE THE PERIMETER FENCING. THE GATE AND CULVERT SHALL REMAIN IN PLACE AFTER THE COMPLETION OF THE PROJECT. ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE GATE AND CULVERT SHALL BE INCLUDED IN THE CONTRACTORS UNIT PRICE FOR "CONSTRUCTION SAFETY PHASING PLAN"

Construction Safety Phasing Plan Coordinate Table

Point Number	Latitude	Longitude	Point Elevation	Point Description
19	N43° 46' 10.69"	W98° 01' 47.03"	1302	STAGING AREA
20	N43° 46' 10.50"	W98° 01' 49.74"	1303	STAGING AREA
21	N43° 46' 07.55"	W98° 01' 49.34"	1301	STAGING AREA
22	N43° 46' 07.74"	W98° 01' 46.63"	1301	STAGING AREA
23	N43° 46' 07.78"	W98° 01' 43.64"	1302	HAUL ROUTE
24	N43° 46' 08.66"	W98° 01' 46.75"	1302	HAUL ROUTE
25	N43° 46' 07.70"	W98° 01' 49.36"	1301	HAUL ROUTE
26	N43° 46' 07.32"	W98° 01' 56.23"	1302	HAUL ROUTE
27	N43° 46' 15.61"	W98° 01' 58.57"	1300	HAUL ROUTE
28	N43° 46' 15.71"	W98° 02' 01.73"	1303	HAUL ROUTE
29	N43° 46' 16.57"	W98° 01' 57.03"	1301	WORK AREA
30	N43° 46' 19.35"	W98° 01' 57.06"	1300	WORK AREA
31	N43° 46' 19.37"	W98° 02' 00.39"	1300	WORK AREA
32	N43° 46' 54.12"	W98° 02' 00.76"	1284	WORK AREA
33	N43° 46' 54.18"	W98° 01' 56.51"	1277	WORK AREA
34	N43° 46' 56.94"	W98° 01' 56.58"	1275	WORK AREA
35	N43° 46' 56.94"	W98° 02' 00.79"	1282	WORK AREA
36	N43° 46' 59.47"	W98° 02' 00.79"	1279	WORK AREA
37	N43° 46' 59.48"	W98° 02' 04.19"	1279	WORK AREA
38	N43° 46' 17.88"	W98° 02' 03.77"	1301	WORK AREA
39	N43° 46' 17.84"	W98° 02' 08.95"	1302	WORK AREA
40	N43° 46' 16.24"	W98° 02' 11.09"	1300	WORK AREA
41	N43° 46' 08.36"	W98° 01' 59.93"	1302	WORK AREA
42	N43° 46' 16.54"	W98° 02' 00.00"	1301	WORK AREA

NOTE:
ALL CONTRACTOR EQUIPMENT SHALL BE REMOVED FROM THE RUNWAY 13/31 OBJECT FREE AREA (OFA) WHEN NOT IN USE.

Construction Safety Phasing Plan Surface Clearance Table

Point Number	Latitude	Longitude	Point Elevation	Point Description	Surface	Surface Elev	Object Height	Clearance
1-31	N43° 45' 38.57"	W98° 01' 40.54"	1286	HAUL ROUTE	FAR Part 77(50:1)	1358	15	57
2-31	N43° 45' 51.36"	W98° 01' 40.80"	1301	HAUL ROUTE	FAR Part 77(50:1)	1339	15	23
3-31	N43° 46' 00.69"	W98° 01' 40.99"	1306	HAUL ROUTE	FAR Part 77(50:1)	1326	15	5

SCALE 11X17
1"=500' HORIZ

LEGEND

- WORK AREA
- PAVEMENT OPEN TO TRAFFIC
- PAVEMENT CLOSED TO TRAFFIC
- PAVEMENT TO BE CONSTRUCTED
- PAVEMENT TO BE REMOVED
- CLOSING CROSS
- LOW PROFILE BARRICADE

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Seal Expiration No.

SPN Helms
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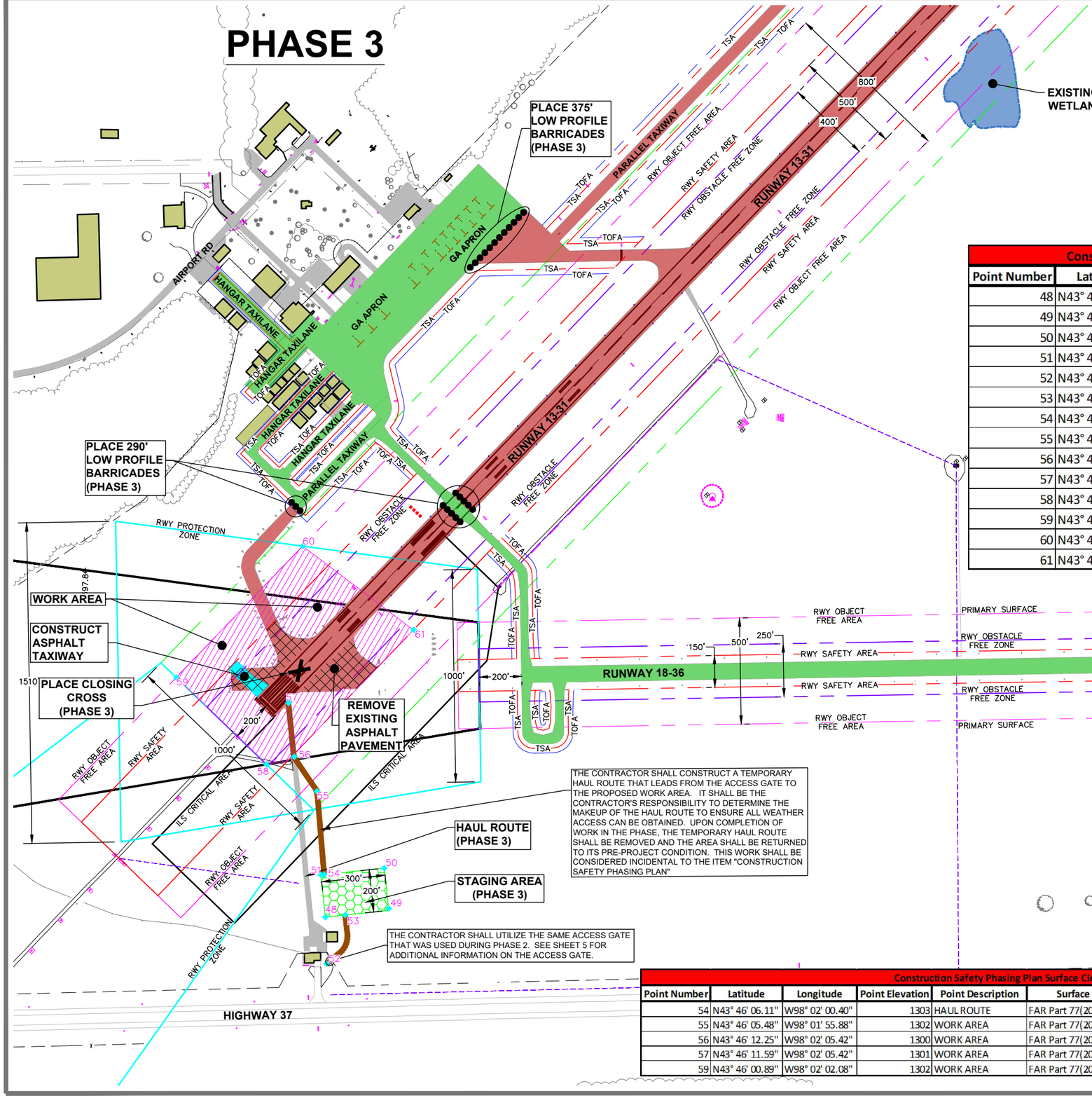
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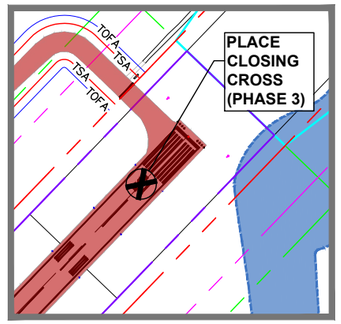
CONSTRUCTION SAFETY AND PHASING PLAN (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPP(2)
Date:	5/28/26

PHASE 3





THE CONTRACTOR SHALL CONSTRUCT A TEMPORARY HAUL ROUTE THAT LEADS FROM THE ACCESS GATE TO THE PROPOSED WORK AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MAKEUP OF THE HAUL ROUTE TO ENSURE ALL WEATHER ACCESS CAN BE OBTAINED. UPON COMPLETION OF WORK IN THE PHASE, THE TEMPORARY HAUL ROUTE SHALL BE REMOVED AND THE AREA SHALL BE RETURNED TO ITS PRE-PROJECT CONDITION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "CONSTRUCTION SAFETY PHASING PLAN"

THE CONTRACTOR SHALL UTILIZE THE SAME ACCESS GATE THAT WAS USED DURING PHASE 2. SEE SHEET 5 FOR ADDITIONAL INFORMATION ON THE ACCESS GATE.

Construction Safety Phasing Plan Coordinate Table

Point Number	Latitude	Longitude	Point Elevation	Point Description
48	N43° 46' 07.74"	W98° 01' 46.63"	1301	STAGING AREA
49	N43° 46' 10.69"	W98° 01' 47.03"	1302	STAGING AREA
50	N43° 46' 10.50"	W98° 01' 49.74"	1303	STAGING AREA
51	N43° 46' 07.55"	W98° 01' 49.34"	1301	STAGING AREA
52	N43° 46' 07.78"	W98° 01' 43.64"	1302	HAUL ROUTE
53	N43° 46' 08.66"	W98° 01' 46.75"	1302	HAUL ROUTE
54	N43° 46' 07.70"	W98° 01' 49.36"	1301	HAUL ROUTE
55	N43° 46' 07.39"	W98° 01' 54.70"	1303	HAUL ROUTE
56	N43° 46' 06.35"	W98° 01' 56.93"	1304	HAUL ROUTE
57	N43° 46' 06.11"	W98° 02' 00.40"	1303	HAUL ROUTE
58	N43° 46' 05.06"	W98° 01' 56.47"	1302	WORK AREA
59	N43° 46' 00.89"	W98° 02' 02.08"	1302	WORK AREA
60	N43° 46' 06.84"	W98° 02' 10.45"	1302	WORK AREA
61	N43° 46' 11.96"	W98° 02' 05.00"	1302	WORK AREA

Construction Safety Phasing Plan Surface Clearance Table

Point Number	Latitude	Longitude	Point Elevation	Point Description	Surface	Surface Elev	Object Height	Clearance
54	N43° 46' 06.11"	W98° 02' 00.40"	1303	HAUL ROUTE	FAR Part 77(20:1)	1351	15	32
55	N43° 46' 05.48"	W98° 01' 55.88"	1302	WORK AREA	FAR Part 77(20:1)	1351	15	34
56	N43° 46' 12.25"	W98° 02' 05.42"	1300	WORK AREA	FAR Part 77(20:1)	1319	15	4
57	N43° 46' 11.59"	W98° 02' 05.42"	1301	WORK AREA	FAR Part 77(20:1)	1323	15	7
59	N43° 46' 00.89"	W98° 02' 02.08"	1302	WORK AREA	FAR Part 77(20:1)	1377	15	60

W S N E

SCALE 11X17
1"=500' HORIZ

LEGEND

- WORK AREA
- PAVEMENT OPEN TO TRAFFIC
- PAVEMENT CLOSED TO TRAFFIC
- PAVEMENT TO BE CONSTRUCTED
- PAVEMENT TO BE REMOVED
- CLOSING CROSS
- LOW PROFILE BARRICADE

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the duly licensed Registered Professional Engineer under the law of the State of South Dakota. License No.

Date

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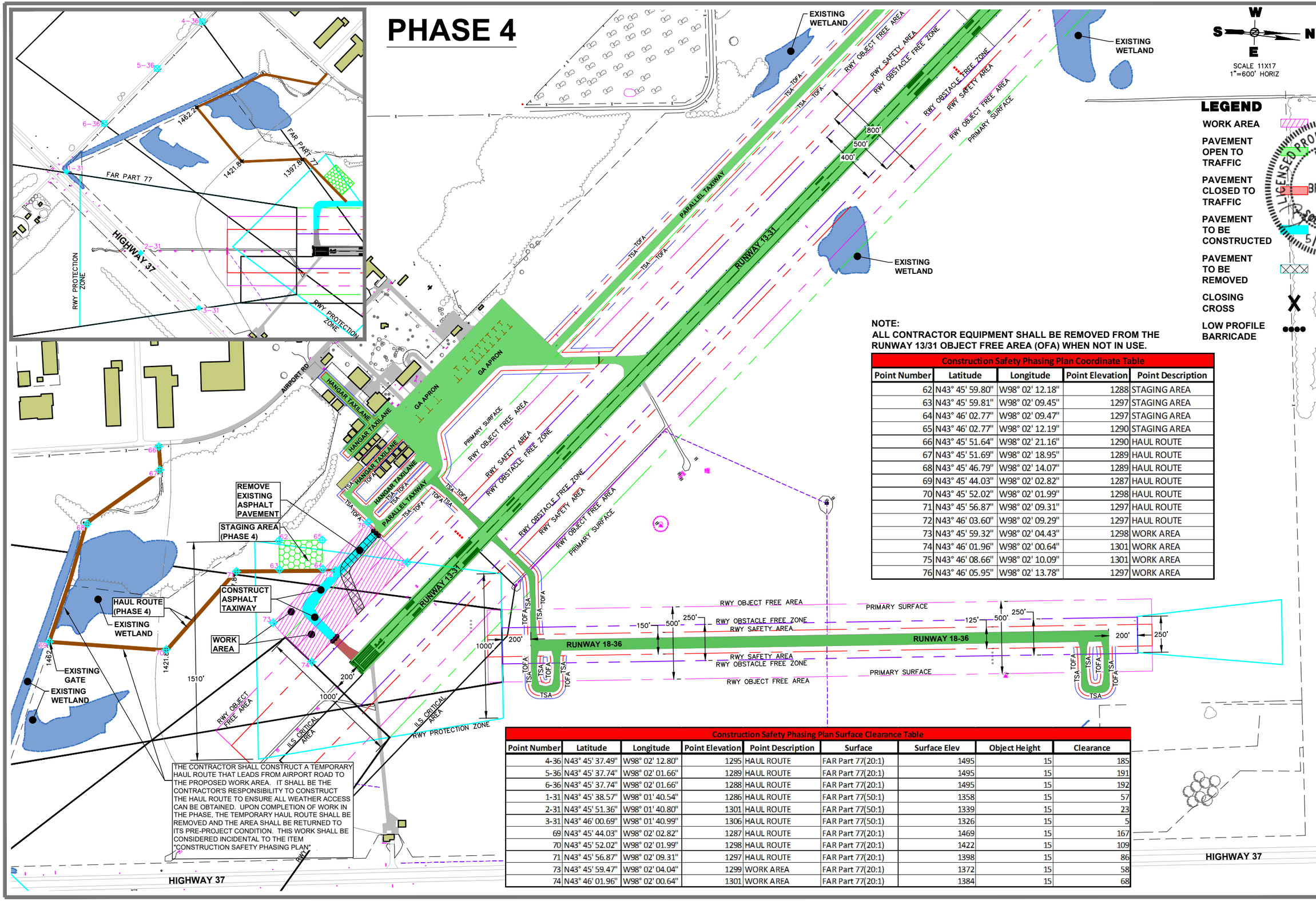
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY AND PHASING PLAN (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPP(3)
Date:	5/28/26

PHASE 4



THE CONTRACTOR SHALL CONSTRUCT A TEMPORARY HAUL ROUTE THAT LEADS FROM AIRPORT ROAD TO THE PROPOSED WORK AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE HAUL ROUTE TO ENSURE ALL WEATHER ACCESS CAN BE OBTAINED. UPON COMPLETION OF WORK IN THE PHASE, THE TEMPORARY HAUL ROUTE SHALL BE REMOVED AND THE AREA SHALL BE RETURNED TO ITS PRE-PROJECT CONDITION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "CONSTRUCTION SAFETY PHASING PLAN"

SCALE 11X17
1"=600' HORIZ

LEGEND

- WORK AREA
- PAVEMENT OPEN TO TRAFFIC
- PAVEMENT CLOSED TO TRAFFIC
- PAVEMENT TO BE CONSTRUCTED
- PAVEMENT TO BE REMOVED
- CLOSING CROSS
- LOW PROFILE BARRICADE

NOTE:
ALL CONTRACTOR EQUIPMENT SHALL BE REMOVED FROM THE RUNWAY 13/31 OBJECT FREE AREA (OFA) WHEN NOT IN USE.

Construction Safety Phasing Plan Coordinate Table

Point Number	Latitude	Longitude	Point Elevation	Point Description
62	N43° 45' 59.80"	W98° 02' 12.18"	1288	STAGING AREA
63	N43° 45' 59.81"	W98° 02' 09.45"	1297	STAGING AREA
64	N43° 46' 02.77"	W98° 02' 09.47"	1297	STAGING AREA
65	N43° 46' 02.77"	W98° 02' 12.19"	1290	STAGING AREA
66	N43° 45' 51.64"	W98° 02' 21.16"	1290	HAUL ROUTE
67	N43° 45' 51.69"	W98° 02' 18.95"	1289	HAUL ROUTE
68	N43° 45' 46.79"	W98° 02' 14.07"	1289	HAUL ROUTE
69	N43° 45' 44.03"	W98° 02' 02.82"	1287	HAUL ROUTE
70	N43° 45' 52.02"	W98° 02' 01.99"	1298	HAUL ROUTE
71	N43° 45' 56.87"	W98° 02' 09.31"	1297	HAUL ROUTE
72	N43° 46' 03.60"	W98° 02' 09.29"	1297	HAUL ROUTE
73	N43° 45' 59.32"	W98° 02' 04.43"	1298	WORK AREA
74	N43° 46' 01.96"	W98° 02' 00.64"	1301	WORK AREA
75	N43° 46' 08.66"	W98° 02' 10.09"	1301	WORK AREA
76	N43° 46' 05.95"	W98° 02' 13.78"	1297	WORK AREA

Construction Safety Phasing Plan Surface Clearance Table

Point Number	Latitude	Longitude	Point Elevation	Point Description	Surface	Surface Elev	Object Height	Clearance
4-36	N43° 45' 37.49"	W98° 02' 12.80"	1295	HAUL ROUTE	FAR Part 77(20:1)	1495	15	185
5-36	N43° 45' 37.74"	W98° 02' 01.66"	1289	HAUL ROUTE	FAR Part 77(20:1)	1495	15	191
6-36	N43° 45' 37.74"	W98° 02' 01.66"	1288	HAUL ROUTE	FAR Part 77(20:1)	1495	15	192
1-31	N43° 45' 38.57"	W98° 01' 40.54"	1286	HAUL ROUTE	FAR Part 77(50:1)	1358	15	57
2-31	N43° 45' 51.36"	W98° 01' 40.80"	1301	HAUL ROUTE	FAR Part 77(50:1)	1339	15	23
3-31	N43° 46' 00.69"	W98° 01' 40.99"	1306	HAUL ROUTE	FAR Part 77(50:1)	1326	15	5
69	N43° 45' 44.03"	W98° 02' 02.82"	1287	HAUL ROUTE	FAR Part 77(20:1)	1469	15	167
70	N43° 45' 52.02"	W98° 02' 01.99"	1298	HAUL ROUTE	FAR Part 77(20:1)	1422	15	109
71	N43° 45' 56.87"	W98° 02' 09.31"	1297	HAUL ROUTE	FAR Part 77(20:1)	1398	15	86
73	N43° 45' 59.47"	W98° 02' 04.04"	1299	WORK AREA	FAR Part 77(20:1)	1372	15	58
74	N43° 46' 01.96"	W98° 02' 00.64"	1301	WORK AREA	FAR Part 77(20:1)	1384	15	68

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13653
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota License No.

Date

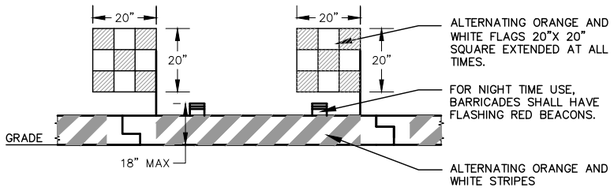
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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

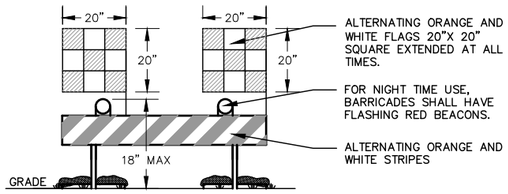
CONSTRUCTION SAFETY AND PHASING PLAN (PHASE 4)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

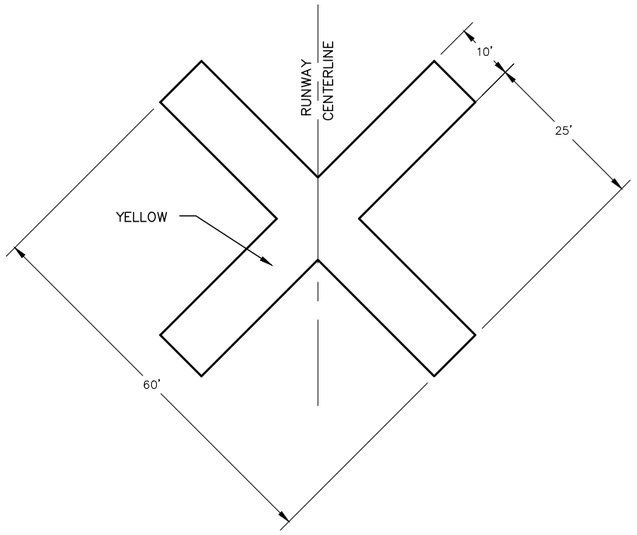
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPP(4)
Date:	5/28/26



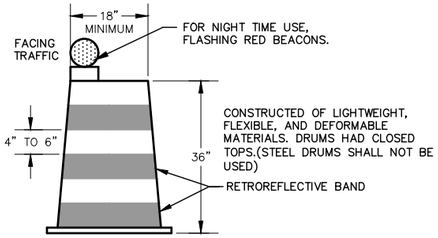
LOW PROFILE BARRICADE DETAIL
NO SCALE



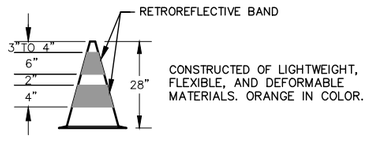
LOW PROFILE BARRICADE DETAIL
NO SCALE



CLOSING CROSS DETAIL
NO SCALE



DRUM DETAIL
NO SCALE



TUBULAR MARKERS DETAIL
NO SCALE

TEMPORARY CONSTRUCTION HAUL ROUTES

TEMPORARY CONSTRUCTION HAUL ROUTES ARE REQUIRED FOR ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL FOLLOW THE ROUTES DEPICTED IN THE CSPP LAYOUT SHEETS AS CLOSELY AS POSSIBLE. MINOR DEVIATIONS FROM THE ROUTES SHOWN WILL BE ALLOWED UPON APPROVAL FROM THE RPR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS OF HAUL ROUTE CONSTRUCTION. THE HAUL ROUTES SHOULD BE CONSTRUCTED TO SUPPORT CONSTRUCTION TRAFFIC AND PROVIDE ACCESS IN A REASONABLE TIME FRAME AFTER PERIODS OF INCLEMENT WEATHER.

AFTER THE WORK ON THE INDIVIDUAL PHASE IS COMPLETE, THE CONTRACTOR SHALL REMOVE THE TEMPORARY HAUL ROUTES AND RESTORE THE AREA TO ITS PRE- PROJECT CONDITION. THE UNIT PRICE FOR BID ITEM "CONSTRUCTION SAFETY PHASING PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE CONSTRUCTION AND RECLAMATION OF THE TEMPORARY HAUL ROADS.

SITE RECLAMATION

THE CONTRACTOR SHALL COMPLETE ALL SITE RECLAMATION, INCLUDING TOPSOILING, SEEDING, AND MULCHING, UPON THE COMPLETION OF EACH PHASE OF THE PROJECT. THE CONTRACTOR WILL NOT BE ALLOWED TO BEGIN WORK ON THE NEXT PHASE OF THE PROJECT UNTIL THE PREVIOUS PHASES WORK AREA IS FULLY RECLAIMED AND READY TO OPEN TO AIR TRAFFIC.

ACCESS GATES

THE CONTRACTOR SHALL INSTALL NEW 20' CANTILEVER ROLL GATES AT LOCATIONS DESIGNATED ON SHEET 5. THIS ROLL GATE WILL BE USED BY ALL CONTRACTOR EQUIPMENT AND PERSONNEL TO ACCESS THE PROJECT FOR PHASES 2, AND 4. THE GATE SHALL BE LEFT IN PLACE UPON COMPLETION OF THE PROJECT. ALL COSTS ASSOCIATED WITH THIS GATE INSTALLATION SHALL BE INCLUDED IN THE CONTRACTOR PRICE FOR THE BID ITEM "CONSTRUCTION SAFETY PHASING PLAN" AND NO ADDITIONAL PAYMENT WILL BE MADE. EXISTING GATES WILL BE UTILIZED DURING PHASES 1 AND 4 OF THE PROJECT.

PHASE 4 CONSTRUCTION HAUL ROUTE

IN ORDER TO CONSTRUCT THE PHASE 4 TEMPORARY HAUL ROUTE THE CONTRACTOR MAY BE REQUIRED TO FURNISH FILL MATERIAL TO PROVIDE A PASSABLE ROUTE FOR CONSTRUCTION TRAFFIC. DETERMINING THE AMOUNT AND TYPE OF MATERIAL USED TO CONSTRUCT THE ROAD WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ADDITIONALLY, THE PROPOSED ROUTE PASSES ALONG EXISTING WETLAND AREAS. THE CONTRACTOR MUST USE CAUTION TO ENSURE THAT THESE WETLAND AREAS ARE NOT IMPACTED IN ANY WAY. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF THIS HAUL ROAD, INCLUDING ANY FILL MATERIAL, SHOULD INCLUDED IN THE CONTRACTOR'S PRICE FOR THE BID ITEM "CONSTRUCTION SAFETY PHASING PLAN" AND NO ADDITIONAL PAYMENT WILL BE MADE.

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License No.

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY AND PHASING PLAN DETAILS

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-04
VP. No:	CSPPD
Date:	5/28/26

Description of Work

The project shall consist of the reconstruction and decoupling of Runway 18/36, construction of new runway turnarounds and taxiways, realignment of Taxiway C, and runway and taxiway lighting and electrical improvements at the Mitchell Municipal Airport. The work shall include: existing asphalt and concrete pavement removal, excavation, grading, subbase and base course installation, asphalt paving, pavement markings, underdrain pipe installation, site restoration, seeding, mulching, taxiway and runway edge lighting, runway and taxiway signage, precision approach path indicator (PAPI) light installation, runway end identifier lights (REIL) installation, airport beacon relocation, and various other items of related construction.

Coordination

This Construction Safety Phasing Plan (CSPP) shall be discussed, at the Pre-Bid Conference (if applicable), Pre-Construction Conference and Construction Progress Meetings. A schedule for Construction Progress Meetings shall be developed by the Engineer, Sponsor, and Contractor at the Pre-Construction Conference.

Any changes to the CSPP shall not be implemented until approved, in writing, by the Sponsor and the FAA.

At least seventy two (72) hours prior to the Pre-Construction Conference and/or start of construction, the Sponsor shall notify the local Tech Operations (Tech Ops) SSC Manager (contact information can be obtained from the MOCC at 800-322-8879). The Sponsor should request to have a Tech Ops representative attend the Pre-Construction Conference for the purpose of identifying all FAA facilities, their associated critical areas, their associated cables (power and control) and schedule shutdown of these facilities, if necessary. The local FAA Tech Ops office shall be coordinated with and invited to all meetings pertaining to the above proposal and any/all concerns must be addressed/resolved prior to the start of construction. The Contractor shall be responsible for locating utility lines and hand digging to locate FAA cabling and shall provide adequate provisions to protect all FAA cables exposed during the proposed work. The Sponsor/Contractor shall be responsible for notifying the Tech Ops District Office representative at the project Pre-Construction Conference should cable relocation be necessary. Any damage to FAA cables, access roads, or FAA facilities during the construction will require the Contractor to replace any damaged cables, perform access road repairs, or replace FAA facilities to the Tech Ops District Office's requirements, at the Contractor's expense. If any FAA cables are damaged, the Contractor shall replace the cables in their entirety. The splicing of cables is not an acceptable form of repair.

Phasing

Phase 1A: Taxiway Construction inside Runway 13/31 OFA

- Excavation, grading, and paving for taxiway construction inside Runway 13/31 Object Free Area (OFA).
- Installation of MITL, taxiway signage and associated airport electrical work.
- During work on Phase 1A, Runway 13/31 will be closed to aircraft traffic. All operations will utilize Runway 18/36 which will remain open during the duration of Phase 1A. **The contractor shall be responsible for completing the work in Phase 1A in 35 calendar days (5 weeks) or less.** Failure to complete the work in the allotted time frame will result in the assessment of liquidated damages per the special conditions of the project specifications.
- At no point during work on Phase 1A, shall any contractor: vehicles, equipment, or personnel enter into the safety area of any active runway or taxiway.
- The contractor will not be allowed to proceed to the next phase of construction until all site reclamation, including seeding and mulching is complete, and the project area is ready to be opened to air traffic.
- See CSPP Layout Sheet (Sheet #3) for details.

Phase 1B: Taxiway Construction inside Taxiway C TOFA

- Excavation, grading, and paving for taxiway construction inside Taxiway C Taxiway Object Free Area (TOFA).
- Installation of MITL, taxiway signage and associated airport electrical work.
- During work on Phase1B, Runway 13/31 will be closed to aircraft traffic. All operations will utilize Runway 18/36 which will remain open during the duration of Phase 1B.
- During Phase 1B, a portion of Taxiway C will be closed to allow for work inside the its TOFA to be completed. **The contractor shall be responsible for completing the work in Phase 1B in 14 calendar days (2 weeks) or less.** Failure to complete the work in the allotted time frame will result in the assessment of liquidated damages per the special conditions of the project specifications.
- **Work on Phase 1A and 1B shall be completed concurrently.**
- At no point during work on Phase 1B, shall any contractor: vehicle equipment, or personnel enter into the safety area of any active runway or taxiway.
- The contractor will not be allowed to proceed to the next phase of construction until all site reclamation, including seeding and mulching is complete, and the project area is ready to be opened to air traffic.
- See CSPP Layout Sheet (Sheet #4) for details.

Phase 2: Runway 18/36 Reconstruction and Turnaround and Taxiway Construction outside of Runway 13/31 OFA

- Pavement removals, excavation, grading, and paving for Runway 18/36 construction and turnaround and taxiway construction outside Runway 13/31 Object Free Area (OFA).
- Installation of MIRL, PAPI, REIL, MITL, runway and taxiway signage and associated airport electrical work.
- Airport rotating beacon relocation.
- Pavement Markings
- During work on Phase 2, Runway 18/36 will be closed to aircraft traffic. All operations will utilize Runway 13/31 which will remain open during the duration of Phase 2.
- **All work, including seeding and mulching, on Phases 1A and 1B shall be completed prior to beginning work on Phase 2.**
- At no point during work on Phase 2, shall any contractor: vehicle, equipment, or personnel enter into the safety area of any active runway or taxiway.
- See CSPP Layout Sheet (Sheet #5) for details.

Phase 3: Runway 18/36 Pavement Removal and Taxiway Construction inside of Runway 13/31 OFA

- Runway 18/36 pavement removals, site restoration, excavation, grading, and paving for taxiway construction inside Runway 13/31 Object Free Area (OFA).
- Installation of MITL and taxiway signage and associated airport electrical work.
- During work on Phase 3, Runway 13/31 will be closed to aircraft traffic. All operations will utilize the newly constructed Runway 18/36 which will opened prior to beginning work on Phase 3.
- **The contractor shall be responsible for completing the Phase 3 work in 28 calendar 28 (4 weeks) or less.** Failure to complete the work in the allotted time frame may result is the assessment of liquidated damages per the special conditions of the project specifications.
- **All work, including seeding and mulching on Phases 1A, 1B and 2 shall be completed prior to beginning work on Phase 3.**
- At no point during work on Phase 3, shall any contractor: vehicle, equipment, or personnel enter into the safety area of any active runway or taxiway.
- See CSPP Layout Sheet (Sheet #6) for details.

Phase 4: Taxiway C Realignment and Construction outside of Runway 13/31 OFA

- Pavement removals, excavation, grading, and paving for Taxiway C realignment and construction outside Runway 13/31 Object Free Area (OFA).
- Installation of MITL, taxiway signage and associated airport electrical work.
- Pavement Markings
- **All work, including seeding and mulching on Phase 1A, 1B, 2, and 3 shall be completed prior to beginning work on Phase 4.**
- At no point during work on Phase 4, shall any contractor: vehicle, equipment, or personnel enter into the safety area of any active runway or taxiway.
- See CSPP Layout Sheet (Sheet #7) for details.

Areas and Operations Affected by Construction Activity

The following Airport Facilities shall remain Open to Air Traffic:

Phase 1A: Taxiway Construction inside Runway 13/31 OFA

- Runway 18/36
- Taxiway C
- GA Apron
- Hangar Taxilanes

Phase 1B: Taxiway Construction inside Taxiway C TOFA

- Runway 18/36
- Taxiway C (900' from Hangar Taxilanes to Runway 13/31)
- GA Apron
- Hangar Taxilanes

Phase 2: Runway 18/36 Reconstruction and Turnaround and Taxiway Construction outside of Runway 13/31 OFA

- Runway 13/31
- Taxiway A
- Taxiway B
- Taxiway C
- GA Apron
- Hangar Taxilanes

Phase 3: Runway 18/36 Pavement Removal and Taxiway Construction inside of Runway 13/31 OFA

- Runway 18/36
- Runway 18/36 Turnaround(s)
- Newly Constructed Connector Taxiways
- GA Apron
- Hangar Taxilanes

Phase 4: Taxiway C Realignment and Construction outside of Runway 13/31 OFA

- Runway 13/31
- Runway 18/36
- Newly Constructed Connector Taxiways
- Taxiway A
- Taxiway B
- Taxiway C (800' from GA Apron to end of Hangar Taxilanes)
- GA Apron
- Hangar Taxilanes

The following Airport Facilities shall remain closed to Air Traffic:

Phase 1A: Taxiway Construction inside Runway 13/31 OFA

- Runway 13/31
- Taxiway A
- Taxiway B
- 300' x 350' Portion of GA Apron

Phase 1B: Taxiway Construction inside Taxiway C TOFA

- Runway 13/31
- Taxiway A
- Taxiway B
- Taxiway C (800' from GA Apron to end of Hangar Taxilanes)
- 300' x 350' Portion of GA Apron

Phase 2: Runway 18/36 Reconstruction and Turnaround and Taxiway Construction outside of Runway 13/31 OFA

- Runway 18/36

Phase 3: Runway 18/36 Pavement Removal and Taxiway Construction inside of Runway 13/31 OFA

- Runway 13/31
- Taxiway A
- Taxiway B
- Taxiway C (900' from Hangar Taxilanes to Runway 13/31)

Phase 4: Taxiway C Realignment and Construction outside of Runway 13/31 OFA

- Taxiway C (900' from Hangar Taxilanes to Runway 13/31)

Navigation Aid (NAVAID) Protection

Airport Owned NAVAIDs

The **Airport Manager** shall shut down all Airport owned NAVAIDs that are associated with closed and/or displaced runways and issue the proper Notice to Airmen (NOTAM). The Contractor shall take precaution as to not damage existing facilities or underground cabling. In the event Airport owned NAVAIDs or the cabling is damaged by the Contractor, the Contractor shall repair or replace the affected facilities at the direction of the Engineer, and at the Contractor's expense. The following Airport owned NAVAIDs shall be shut down:

Phase 1A: Taxiway Construction inside Runway 13/31 OFA

- Runway 13/31 HIRL
- Runway 13/31 PAPI
- Runway 13/31 REIL
- Taxiway A MITL
- Taxiway B MITL

Phase 1B: Taxiway Construction inside Taxiway C TOFA

- Runway 13/31 HIRL
- Runway 13/31 PAPI
- Runway 13/31 REIL
- Taxiway A MITL
- Taxiway B MITL
- Taxiway C MITL (800' from GA Apron to end of Hangar Taxilanes)

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the undersigned is a duly Registered Professional Engineer under the law of the State of South Dakota. Registration No.

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY PHASING PLAN NOTES

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-DET CSPPN(1)
Date:	5/28/26

Phase 2: Runway 18/36 Reconstruction and Turnaround and Taxiway Construction outside of Runway 13/31 OFA

- Runway 18/36 MIRL
- Runway 18/36 PAPI
- Runway 18 REIL
- Airport Rotating Beacon

Phase 3: Runway 18/36 Pavement Removal and Taxiway Construction inside of Runway 13/31 OFA

- Runway 13/31 HIRL
- Runway 13/31 PAPI
- Runway 13/31 REIL
- Taxiway A MITL
- Taxiway B MITL
- Taxiway C MITL (900' from Hangar Taxilanes to Runway 13/31)

Phase 4: Taxiway C Realignment and Construction outside of Runway 13/31 OFA

- Taxiway C MITL (900' from Hangar Taxilanes to Runway 13/31)

FAA Owned NAVAIDs

In the event FAA owned NAVAIDs are affected and will need to be shutdown, the Contractor shall notify the **Airport Manager** 30 days in advance of when the affected facility will need to be shut down. FAA personnel shall shut down all affected FAA NAVAIDs and issue the proper NOTAMs. The Contractor shall take precaution as to not damage existing facilities or underground cabling. In the event FAA owned NAVAIDs or the cabling is damaged by the Contractor, the Contractor shall repair or replace the affected facilities at the direction of the FAA, at the Contractor's expense. Unless specifically shown in the Plans, the Contractor shall not have personnel or equipment located in the Critical Areas of FAA NAVAIDs (see CSPP Layout Sheet(s) for Critical Area locations, if applicable). The following FAA owned NAVAIDs shall be shut down:

Phase 1A: Taxiway Construction inside Runway 13/31 OFA

- Runway 31 MALSR
- Runway 13/31 ILS

Phase 1B: Taxiway Construction inside Taxiway C TOFA

- Runway 31 MALSR
- Runway 13/31 ILS

Phase 2: Runway 18/36 Reconstruction and Turnaround and Taxiway Construction outside of Runway 13/31 OFA

- Runway 31 MALSR
- Runway 13/31 ILS

Phase 3: Runway 18/36 Pavement Removal and Taxiway Construction inside of Runway 13/31 OFA

- Runway 31 MALSR
- Runway 13/31 ILS

Phase 4: Taxiway C Realignment and Construction outside of Runway 13/31 OFA

- None (No FAA Owned NAVAIDs will be impacted during this phase)

Contractor Access

Stockpiled Construction Materials

Stockpiled materials and equipment storage are not permitted within the Runway/Taxiway Safety Area (RSA/TSA), Obstacle Free Zone (OFZ), or the Runway/Taxiway Object Free Area (ROFA/TOFA) of an operational runway/taxiway. Stockpiled construction materials shall be stockpiled, if necessary, in the Construction Staging Area as shown on the CSPP Layout Sheet(s). No marking or lighting is required; however, the Contractor shall ensure that the materials do not become wildlife attractants and take measures to ensure they do not become Foreign Object Debris (FOD) hazards.

Vehicle and Pedestrian Operations

Vehicle and pedestrian access routes must be controlled to prevent inadvertent or unauthorized entry of persons, vehicles, or animals onto the Area of Operations (AOA). The Contractor shall access the Airport as shown on the CSPP Layout Sheet(s). No other access shall be allowed. When the construction access gate is not in use for hauling or construction access, the Contractor shall close and lock the gate. When the gate is unlocked or open, the Contractor shall monitor the construction access gate to prevent any unauthorized access. The Contractor shall provide a padlock and place this lock through the Airport's lock and chain. Prior to entering and leaving the Airport each day, the Contractor shall notify Airport Operations.

The Construction Staging Area, as shown on the CSPP Layout Sheet(s), shall be used for parking the Contractor's equipment and vehicles (including personal vehicles). All equipment shall be parked in the Construction Staging Area when not in use. The Contractor shall be required to strip and stockpile a minimum of 6" of topsoil from the site. Upon completion of the construction, the Contractor shall be required to place the salvaged topsoil, grade to drain, and seed and fertilize the disturbed area. This work shall be considered incidental to the Construction Safety Phasing Plan item with no additional compensation being made. The requirements of this paragraph shall also pertain to haul/access routes on-site from the Construction Staging Area to the work area.

The Contractor shall utilize the haul/access routes shown on the CSPP Layout Sheet(s) unless authorized, in writing, by the Sponsor. Maintenance and upkeep of the haul roads are the responsibility of the contractor. Haul roads in any airport traffic areas must be especially monitored for dust and debris to prevent any potential FOD situations. A mechanical sweeper shall be used to remove FOD and contaminants from paved haul routes. Application of water on dirt or gravel haul routes must be provided as often as necessary to control dust. The contractor is responsible for any damage caused by construction traffic on the haul roads, regardless of whether in an approved or un-approved traffic area. Special attention shall be given to ensure that if construction traffic is to share or cross any ARFF routes (if applicable) that ARFF right of way is not impeded at any time, and that construction traffic on haul roads does not interfere with NAVAIDs or approach surfaces of operational runways. Following construction completion, the contractor shall grade, reseed, clean or otherwise restore the haul route areas to their original conditions prior to construction activities. Work necessary in maintaining the haul roads and compliance with safety and security shall be considered incidental to the Construction Safety Phasing Plan item with no additional compensation being made.

All vehicles and/or equipment shall be provided with either a 3-foot by 3-foot square flag having a checkered pattern of international orange and white squares at least 1 foot on each side that is on a staff attached to the vehicle so that the flag will be readily visible or a yellow flashing light that is mounted on the uppermost part of the vehicle structure.

At no time shall equipment or personnel enter portions of the active AOA outside the contract area unless permitted and accompanied by an airport approved escort.

The Contractor may monitor air traffic on CTAF 122.8.

Wildlife Management

The Mitchell Municipal Airport implements a Wildlife Hazard Management Plan (WHMP) and has a Wildlife/Security Fence around the perimeter of the airport property to minimize the risk of wildlife strikes, particularly with large wildlife. In order to minimize increasing the Wildlife Attractants on the airport, the Contractor shall clean up trash, food scraps, and waste from the construction site daily. All existing fencing, regardless of type, shall remain undisturbed unless the Plans specifically require any alterations and all gates shall remain closed when not in use. Any temporary grading shall be performed in a manner as to not result in having standing water and shall be re-seeded with the short grass seed mix provided in the specifications or otherwise approved by the Engineer.

The Contractor shall notify the Airport Manager immediately if deer or other large animals are sighted on the airport.

Foreign Object Debris (FOD) Management

Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. Construction contractors must not leave or place FOD on or near active aircraft movement areas. Materials capable of creating FOD must be continuously removed during the construction project. Fencing (other than security fencing) may be necessary to contain material that can be carried by wind into areas where aircraft operate.

The Contractor shall sweep and/or pick up any and all debris that is either dropped, tracked, or blown onto or into an active aircraft movement area daily or as required by the Engineer.

Hazardous Materials (HAZMAT) Management

The Contractor shall not be allowed to perform any major mechanical/maintenance work in the Construction Staging Area. Any spills shall be contained, cleaned up, and disposed of expeditiously at the Contractor's expense. See Storm Water Pollution Prevention Plan (SWPPP) for more details.

Notification of Construction Activities

Responsible Representatives

Persons who have questions concerning policies, procedures, or requirements of the Construction Safety Phasing Plan, should contact the Airport Manager or Engineer. Persons who observe a security violation, suspicious act or any serious act that may endanger persons or property, should immediately contact the Airport Manager.

• Airport Sponsor (City of Mitchell)	(605) 996-1228
• Airport Manager (Dan London)	(605) 999-7208 - Cell
• Engineer (Helms and Associates)	(605) 225-1212
• FAA ADO (Jason Kraal)	(701) 323-7383
• SD-DOT Construction Engineer (Brock Antijunti)	(605) 773-7390

Contact Information for Contractor(s) and Subcontractor(s) will be provided at the Pre-Construction Conference

NOTAMs

Only the airport operator may initiate or cancel NOTAMs on airport conditions, and is the only entity that can close or open a runway. The airport operator must coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities with tenants and the local air traffic users, and must provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM. The airport operator must file and maintain a list of authorized representatives with the FSS. Only the FAA may issue or cancel NOTAMs on shutdown or irregular operation of FAA owned facilities. Any person having reason to believe that a NOTAM is missing, incomplete, or inaccurate must notify the airport operator.

Contractor shall coordinate with the Airport Manager for the issuance of all NOTAMs related to the project construction. The Airport Manager and FAA shall generate and issue NOTAMs based on the Contractor's construction schedule and facility impacts.

Emergency Notification Procedure and Coordination with ARFF

In the case of a life threatening situation, including situations that require the Airport Rescue and Fire Fighting (ARFF) unit, dial 911 and contact the Airport Manager immediately thereafter. The Airport Manager will coordinate any emergency response. Any other coordination and/or communication required with the ARFF, if applicable, shall be channeled through the Airport Manager.

Notification to the FAA

Any person proposing construction or alteration of objects that affect navigable airspace, as defined in Part 77, must notify the FAA. This includes construction equipment and proposed parking areas for this equipment (i.e. cranes, graders, other equipment) on airports. FAA Form 7460-1, Notice of Proposed Construction or Alteration, can be used for this purpose and submitted to the appropriate FAA Airports Regional or District Office. Further guidance is available on the FAA web site at https://oeaaa.faa.gov.

The Contractor shall submit a 7460-1 to the FAA for airspace analysis for any and all structures, equipment, stockpiles, batch plants, etc., that will exceed 16' above ground level (AGL). Prior to placing any of these items, the Contractor shall obtain a "Determination of No Hazard to Air Navigation" and provide the Sponsor and Engineer copies.

If FAA NAVAIDs are shut down for any phase of the project, FAA Tech Ops shall be notified. The Airport Manager shall coordinate with Tech Ops a minimum of 7 days prior to the actual shutdown of the facilities.

Date

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 Registered Professional Engineer under the law of the State of South Dakota. License or Registration No.

LICENSED PROFESSIONAL ENGINEER
REG. NO. 36577
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SOUTH DAKOTA
5/27/2026

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CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY PHASING PLAN NOTES

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	CSPPN(2)
Date:	5/28/26

Inspection Requirements

The Engineer, Airport Manager, and Contractor shall conduct periodic inspections of the construction site to ensure that areas surrounding the sites are safe for aircraft operations. Airport Operations personnel will note any discrepancies on the daily inspection checklist.

The Airport Manager shall coordinate with the FAA airport safety certification inspector for final inspections prior to opening areas for aircraft operations.

Frequent inspections will be made by the Airport Manager and the Engineer to ensure that the Contractor is following the recommended safety procedures. Any deficiencies noted by these inspections shall be corrected by the Contractor and verified by the Engineer immediately prior to commencing any additional work.

Underground Utilities

The Contractor shall be responsible for locating and preserving all existing utilities in their present condition. Existing utilities shown on the plans are for general information only and shall be located by the Contractor via SD One Call (800) 781-7474 prior to the start of construction. The **Mitchell Municipal Airport (605) 999-7208** shall be contacted for locating all airport owned utilities. Existing utilities included but not limited to:

- Underground and Overhead Electrical
- Underground Electrical Duct
- Duct Markers
- Underground and Overhead Telephone
- Airport Lighting and Underground Cable
- Culverts and Drainage Structures

See “Coordination” regarding FAA utilities.

Penalties

If at any point a safety violation is noted, all construction activities in the area of the violation will be immediately terminated. Before construction can resume, the Contractor shall provide a written statement demonstrating to the Sponsor that construction can once again occur without violations to the safety procedures. The Contractor is not eligible for additional compensation for the down-time damages or any other claims when construction is terminated or progress is slowed due to a safety violation.

If multiple safety violations occur, the person or persons responsible will not be allowed on the airfield for the remainder of the project. The Contractor is not eligible for additional compensation for the down-time damages or any other claims when construction is terminated or progress is slowed due to a safety violation.

The duty of the Engineer or Sponsor to conduct construction review of the Contractors performance is not intended to include review of the adequacy of the Contractor's safety measures, in or near the construction site. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and will not be limited to normal working hours.

Special Conditions

In the event of an aircraft emergency, severe weather conditions, or any issue that may affect aircraft operations, the Contractor's personnel and/or equipment may be required to immediately vacate the area. The Contractor will receive notification from the Airport Manager and/or the Engineer when special conditions require the construction site to be vacated.

Runway and Taxiway Visual Aids

Areas where aircraft will be operating shall be clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, the Contractor shall verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs, and visual NAVAIDs remain in place and operational. See details for Runway and Taxiway Visual Aids in the CSPP Layout Sheet(s).

General

Airport markings, lighting, signs, and visual NAVAIDs must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, or other wind currents and constructed of materials that would minimize damage to an aircraft in the event of inadvertent contact (frangible couplings). Items used to secure such markings must be of a color similar to the marking.

Markings

Markings must be in compliance with the standards of AC 150/5340-1, Standards for Airport Markings. Runways and runway exit taxiways closed to aircraft operations are marked with a yellow X.

Temporarily Closed Runways. For runways that have been temporarily closed, place an X at each end of the runway directly on or as near as practicable to the runway designation numbers.

Displaced Thresholds. Pavement markings for a displaced threshold consist of a runway threshold bar and white arrowheads with and without arrow shafts. These markings are required to identify the portion of the runway before the displaced threshold to provide centerline guidance for pilots during approaches, takeoffs, and landing rollouts from the opposite direction. See AC 150/5340-1.

Permanently Closed Taxiways. AC 150/5300-13 notes that it is preferable to remove the pavement, but for pavement that is to remain, place an X at the entrance to both ends of the closed section. Obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed taxiway.

Temporarily Closed Taxiways. Place barricades outside the safety area of intersecting taxiways. For runway/taxiway intersections, place an X at the entrance to the closed taxiway from the runway. If the taxiway will be closed for an extended period, obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed section. If the centerline markings will be reused upon reopening the taxiway, it is preferable to paint over the marking. This will result in less damage to the pavement when the upper layer of paint is ultimately removed.

If unable to paint temporary markings on the pavement, construct them from any of the following materials: fabric, colored plastic, painted sheets of plywood, or similar materials. They must be properly configured and appropriately secured to prevent movement by prop wash, jet blast, or other wind currents.

Lighting and Visual NAVAIDs

When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. Alternately, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators and/or increase the current above its normal value. Secure, identify, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources.

Temporarily Closed Runways. For runways that have been temporarily closed, but for an extended period, and for those with pilot controlled lighting, disconnect the lighting circuits or secure switches to prevent inadvertent activation.

Displaced Thresholds. Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light in the opposite direction. See AC 150/5340-30 for details on lighting displaced thresholds.

Temporary runway thresholds and runway ends must be lighted if the runway is lighted and it is the intended threshold for night landings or instrument meteorological conditions.

Temporary threshold lights and end lights and related visual NAVAIDs are installed outboard of the edges of the full-strength pavement only when they cannot be installed on the pavement. They are installed with bases at grade level or as low as possible, but not more than 3 in (7.6 cm) above ground. When any portion of a base is above grade, place properly compacted fill around the base to minimize the rate of gradient change so aircraft can, in an emergency, cross at normal landing or takeoff speeds without incurring significant damage. See AC 150/5370-10.

Issue a NOTAM to inform pilots of temporary lighting conditions.

Temporarily Closed Taxiways. If possible, deactivate the taxiway lighting circuits. When deactivation is not possible (for example other taxiways on the same circuit are to remain open), cover the light fixture in such a way as to prevent light leakage (**This shall be the responsibility of the Contractor**).

Signs

To the extent possible, signs must be in conformance with AC 150/5345-44, Specification for Runway and Taxiway Signs and AC 150/5340-18, Standard for Airport Sign Systems. Any time a sign does not serve its normal function; it must be covered or removed to prevent misdirecting pilots (**This shall be the responsibility of the Contractor**). Note that information signs identifying a crossing taxiway continue to perform their normal function even if the crossing taxiway is closed.

Marking and Signs for Access Routes

All exits and entrances to Federal, County, State, and Local roads shall be signed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). This includes all pit and airport entrances as required. This work shall be considered incidental to the Construction Safety Phasing Plan item with no additional compensation being made.

Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, Frangible Connections, which may require modification to size and height guidance in the MUTCD.

Orange Construction Signs, if applicable, comprise a message in black on an orange background. Temporary signs must meet the standards for such signs in Engineering Brief 93, Guidance for the Assembly and Installation of Temporary Orange Construction Signs.

Hazard Marking, Lighting, and Signing

The Contractor shall install Hazard Marking, Lighting and Signing as detailed in the CSPP Layout Sheet(s).

Equipment

Barricades, including traffic cones, (weighted or sturdily attached to the surface) are acceptable methods used to identify and define the limits of construction and hazardous areas on airports. Careful consideration must be given to selecting equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast. The spacing of barricades must be such that a breach is physically prevented barring a deliberate act. If barricades are intended to exclude vehicles, gaps between barricades must be smaller than the width of the excluded vehicles, generally 4 ft. If barricades are intended to exclude pedestrians, they must be continuously linked. Continuous linking may be accomplished through the use of ropes, securely attached to prevent FOD.

Lights must be red, either steady burning or flashing, and must meet the luminance requirements of the State Highway Department. Batteries powering lights will last longer if lights flash. Lights must be mounted on barricades and spaced at no more than 10 ft. Lights must be operated between sunset and sunrise and during periods of low visibility whenever the airport is open for operations. They may be operated by photocell, but this may require that the contractor turn them on manually during periods of low visibility during daytime hours.

Barricades are not permitted in any active safety area. Within a runway or taxiway object free area, and on aprons, use flashing or steady burning red lights as noted above, collapsible barricades marked with diagonal, alternating orange and white stripes; to separate all construction/maintenance areas from the movement area. Barricades may be supplemented with alternating orange and white flags at least 20 by 20 in (50 by 50 cm) square and securely fastened to eliminate FOD. All barricades adjacent to any open runway or taxiway / taxilane safety area, or apron must be as low as possible to the ground, and no more than 18 in high, exclusive of supplementary lights and flags. Barricades must be of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, or other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 in (7.6 cm) above the ground.

The Contractor shall have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The contractor must file the contact person's information with the airport operator. Lighting should be checked for proper operation at least once per day, preferably at dusk.

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the proper of a Registered Professional Engineer under the law of the State of South Dakota. Registration No.

LICENSED PROFESSIONAL ENGINEER
REG. NO. 36577
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

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CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY PHASING PLAN NOTES

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	CSPPN(3)
Date:	5/28/26

Protection of Runway and Taxiway Safety Areas

See CSPP Layout Sheet(s) for dimensions and details.

Runway Safety Area (RSA)

A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway (see AC 150/5300-13). Construction activities within the existing RSA are subject to the following conditions:

1. No construction may occur within the existing RSA while the runway is open for aircraft operations.

2. Open trenches or excavations are not permitted within the RSA while the runway is open. If possible, backfill trenches before the runway is opened. If the runway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the runway across the trench without damage to the aircraft. The Contractor shall mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

3. Erosion Control. Soil erosion must be controlled to maintain RSA standards, that is, the RSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

Runway Object Free Area (ROFA)

Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use, and material should not be stockpiled in the ROFA if not necessary. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval.

Taxiway Safety Area (TSA)

A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. (See AC 150/5300-13.) Construction activities within the TSA are subject to the following conditions:

1. No construction may occur within the TSA while the taxiway is open for aircraft operations.

2. Open trenches or excavations are not permitted within the TSA while the taxiway is open. If possible, backfill trenches before the taxiway is opened. If the taxiway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the taxiway across the trench without damage to the aircraft.

3. Erosion Control. Soil erosion must be controlled to maintain TSA standards, that is, the TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

Taxiway Object Free Area (TOFA)

Unlike the Runway Object Free Area, aircraft wings regularly penetrate the taxiway object free area during normal operations. Thus the restrictions are more stringent. No construction may occur within the taxiway object free area while the taxiway is open for aircraft operations.

Obstacle Free Zone (OFZ)

In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations.

Runway Approach/Departure Areas and Clearways

Construction equipment that is being utilized for work in an active runway's approach and/or departure area shall not exceed 16' AGL. Any equipment exceeding these requirements shall not be used unless an FAA Form 7460-1 is filed with the FAA (See Notification to the FAA) and a copy of the “Determination of No Hazard to Air Navigation” has been provided to the Engineer and Airport Sponsor by the Contractor.

Other Limitations on Construction

1. No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.

2. No use of open flame welding or torches unless fire safety precautions are provided and the airport operator has approved their use.

3. No use of electrical blasting caps on or within 1,000 feet (300 meters) of the airport property.

4. Construction activities shall be limited to daylight hours.

Safety Plan Compliance Document (SPCD)

Prior to the Pre-Construction Conference and issuance of a Notice to Proceed, the Contractor shall submit, in writing, to the Airport Sponsor a Safety Plan Compliance Document in accordance with AC 150/5370-2.

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the duly licensed Registered Professional Engineer under the law of the State of South Dakota License No.

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CIVIL ENGINEERS & LAND SURVEYORS

CONSTRUCTION SAFETY PHASING PLAN NOTES

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	CSPPN(4)
Date:	5/28/26

DESCRIPTION OF WORK
The project shall consist of the reconstruction and decoupling of Runway 18/36, construction of new runway turnarounds and taxiways, realignment of Taxiway C, and runway and taxiway lighting and electrical improvements at the Mitchell Municipal Airport. The work shall include: existing asphalt and concrete pavement removal, excavation, grading, subbase and base course installation, asphalt paving, pavement markings, underdrain pipe installation, site restoration, seeding, mulching, taxiway and runway edge lighting, runway and taxiway signage, precision approach path indicator (PAPI) light installation, runway end identifier lights (REIL) installation, airport beacon relocation, and various other items of related construction.

GENERAL NOTES
The Contractor shall take all precautions necessary to avoid property damage to adjacent properties during construction of this project. The Contractor shall be held solely responsible for any damages to the adjacent properties occurring during the construction of this project.

NOTE REGARDING EXISTING UTILITIES
The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor shall call the appropriate utility companies at least 48 hours before any excavation to request exact field location of utilities.

It is the responsibility of the contractor to relocate all utilities requiring relocation. It is the responsibility of the contractor to verify in the field, the locations of existing water mains, water services, sewer mains and sewer services. The contractor shall be responsible for locating and preserving all existing utilities in their present condition. Existing utilities shown on the plans are for general information only and are to be located by the contractor prior to the start of construction.

Existing utilities included but not limited to:
Underground and overhead electrical
Underground and overhead cable television
Underground water system
Underground sewer system
Underground and overhead telephone
Underground natural gas

PROJECT CLEANUP AND SAFETY
The general contractor shall take all precautions necessary to avoid property damage to adjacent properties during the construction phases of this project. The contractor is held solely responsible for any damages to the adjacent properties occurring during the construction phases of this project.

The designs represented in these plans are in accordance with established practices of civil engineering for the design functions and uses intended by the owner. However, neither Helms and Associates, nor its personnel can or do warranty these designs or plans as constructed except in the specific cases where Helms and Associates personnel observe and control the physical construction on a contemporary basis at the site.

In accordance with generally accepted construction practices, the contractor is solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work this requirement applies continuously and is not limited to normal working hours.

The duty of the engineer or owner to conduct construction review of the contractor's performance is not intended to include review of the adequacy of the contractor's safety measures, in, on, or near the construction site.The contractor shall clean the entire site on a daily basis and should not restrict local traffic over night. All roads leading to the site shall be cleaned as needed as specified by the owners representative.

COORDINATION OF WORK
The City of Mitchell reserves the right to award contracts for other work at the Airport. The contractor shall coordinate his/her work with other contractors to insure the timely completion of all work as bid.

WASTE DISPOSAL SITE
The Contractor shall be required to furnish a site satisfactory to the Engineer for the disposal of broken concrete, rock, non-salvageable asphalt surfacing and other construction/demolition debris generated by this project. The waste disposal site may not be in a stream, stream bank, lake, lake shore or wetland, unless the Contractor has obtained a “404” permit from the U.S. Army Corps of Engineers. No waste including plant foundations shall be burned on site

EXISTING WETLANDS
Existing wetlands shall remain off limits to all construction activity, the Contractor shall take precautions not to traffic any haul roads through a wetland, unless noted by the Engineer.

A wetland is defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally included swamps, marshes, bogs, and similar areas.

CONSTRUCTION EQUIPMENT
The Contractor shall utilize construction and compaction equipment of appropriate size and weight to accomplish the required results without jeopardizing the stability of the subgrade.

STAGING AREA AND TEMPORARY HAUL ROUTES
The Contractor shall be responsible for returning the staging areas and temporary haul routes to their original conditions, The Contractor shall scarify and loosen compacted soils, replace topsoil, and seed the areas upon completion of the work. No additional compensation shall be allowed for staging area or haul route restoration, and should be considered as incidental work.

HAUL ROADS
Contractor shall obtain written permission from the proper state, county, and municipal authorities for use of local roads as haul roads. A copy shall be sent to the Owner and Engineer prior to construction. The Contractor shall obtain a written release from all cities, counties, and townships owning or maintaining the haul roads used by the Contractor upon completion of the construction. The Contractor shall not traffic loaded trucks on any of the existing asphalt pavement that is to receive an overlay. Additional compensation for maintaining and for final haul road restoration will not be considered.

ITEMS TO BE REMOVED AND SALVAGED
When items are to be removed and salvaged as shown on the plans a site will be designated by the Owner where items are to be stockpiled on airport property.

ENVIRONMENTAL COMMITMENTS
The contractor is responsible for obtaining material source (aggregate, offsite borrow, etc.) clearance for material quality, cultural resources, and threatened or endangered species before taking materials from offsite.

If any construction activity results in discovery of cultural resources, work shall cease until the FAA Airports District Office (ADO) in Bismarck is notified per the Discovery Plan for General Aviation (GA) Projects in the Dakotas. The Contractor would be required to protect the material until cultural resource concerns have been addressed.

CONTAMINATED MATERIAL
The Contractor shall give notice to the Owner if contaminated soil is encountered on the project. The Owner will contact the Department of Agriculture and Natural Resources (DANR) and consultant to inspect and monitor removal of any contaminated soil.Contaminated soil may be disposed of at the Mitchell Regional Landfill (phone (605) 995-8448). Piping located in areas of contamination shall require the installation of ductile iron pipe with nitrile butadiene gaskets. Backfill material for trenches located in contaminated soil areas shall be as paid for as Excess Unclassified Excavation.

FIELD LABORATORY
Per the Technical Specifications, the Field Laboratory is for the structure and other incidentals to bring in and setup the laboratory. At the Owner's request, this item may be eliminated from the Contract if Quality Assurance (QA) testing will performed in the QA testing firm's own laboratory.

If eliminated, there will no additional compensation to the Contractor for the Field Laboratory. The decision to eliminate this item will be discussed at the Pre-Construction Conference and will be finalized prior to the Contractor installing the Field Laboratory on-site.

WATERING
This item shall consist of furnishing and applying water required in the compaction of embankments, subgrades, subbases, base courses, and for other purposes in accordance with the requirements of these specifications or as directed by the Engineer.

Water, when requested, shall be applied at the locations, in the amounts, and during the hours, including nights, as directed by the Engineer. An adequate water supply shall be provided by the Contractor. The equipment used for watering shall be of ample capacity and of such design as to assure uniform application of water in the amounts directed by the Engineer.

When the Bid Schedule does not contain an estimated quantity for watering, the performance of this work including providing and maintaining water plant(s), shall not be paid for directly but shall be considered as a subsidiary obligation of the Contractor covered under other contract items.

EROSION CONTROL MATERIALS
Materials used for High Flow Silt Fence shall be listed on the South Dakota Department of Transportation's Approved Products List.

STORM DRAINAGE PROVISIONS
Since the proposed construction activities involves the disturbance of more than 1-acre, an EPA National Pollutant Discharge Elimination Systems (NPDES) storm water general permit for South Dakota construction activities is required. The City will file a Notice of Intent with the NPDES department prior to start of construction activities. The Contractor will be required to sign the Owner's Storm Water Pollution Prevention Plan as provided in the plan sheets and in Section 01560 of the project specifications. A copy of this plan will be required to be on-site during construction activities. The Contractor may contact the SD Department of Agricultural and Natural Resources at 605-773-3351 or 1-800-SDSTORM for more information concerning this program.

The Contractor shall provide for and maintain drainage of storm waters away from existing buildings, homes, and exposed surfaces or provide immediate pumping of ponded areas on the work site. No compensation will be made for damage resulting from improper drainage during construction.

AIRFIELD LIGHTING
Multiple phases of construction will require the Contractor to isolate portions of the Airfield Lighting Circuit as associated Runways/Taxiways are Closed for construction. It shall be the Contractor's responsibility to install jumpers for the circuits to isolate the areas that are “Closed” or to cover the applicable lights/signs per the Construction Safety Phasing Plan Notes.

This work shall be considered incidental to the Construction Safety Phasing Plan with no additional compensation being made.

CONDUITS
Coordination will need to take place between construction trades as conduit for utilities may be needed under the new surfacing.

DISPOSAL OF EXCESS MATERIAL
Excess material generated from this project will be disposed of on airport property at a location determined by the owner. The location of the disposal area will be discussed and finalized during the project's pre-construction meeting. The excess material disposal area shall be stripped of topsoil to a depth of 6 inches and stockpiled. The excess material shall then be placed, compacted, and graded as to provide positive drainage. Salvaged topsoil shall then be placed and the area shall be seeded. The contractor's price for "Disposal of Excess Material" should costs associated with the transporting and placing of the excess material, as well as the cost of stripping, stockpiling, and placing topsoil at the excess material disposal site(s). The contractor shall be aware that due to the phasing of the project, excess material may need to be hauled around runways, and taxiway that are open to aircraft to remain out of their designated safety areas.

SUBBASE COURSE (FURNISHED)
The contractor shall furnish a material meeting the requirements provided in Section “P-154 Subbase Course” of the project specifications for use as the furnished subbase material. The contractor's unit price for “Subbase Course (Furnished)” shall include all costs associated with the furnishing, placing, and compacting of the subbase material. Compensation for the material will be paid for on a per cubic yard basis per Section P-154 of the specifications. Additionally, due to construction sequencing, all pavements to be constructed in Phases 1A/1B shall utilize the furnished material for the entirety of the subbase course.

SUBBASE COURSE (RECYCLED)
Pavements constructed during Phases 2, 3, and 4 shall utilize recycled material for use as a portion (entirety in Phases 3 and 4) of the subbase course. The existing runway includes nominal depths of 5 ¼” of asphalt surfacing overlaying 10” of concrete surfacing. These depths are only nominal, and actual depths will vary across the area of pavement surfacing to be removed. After pavement removal, this material shall be recycled for reuse as subbase course. The contractor is responsible for developing a method of processing, and recycling the removed asphalt and concrete in order to produce a subbase material meeting the requirements of Section “P-154 Subbase Course” of the project specifications. The contractor's price for “Subbase Course (Recycled)” shall include all costs and work required to process, place, and compact the recycled material to the requirements specified in Section P-154. Compensation for the material will be paid for on a per cubic yard basis per Section P-154 of the specifications.

GRAVEL SURFACING
The contractor shall furnish a material meeting the requirements for “Gravel Surfacing” as listed in Table 1 of Section 882 “Aggregates for Granular Bases and Surfacing” in the SD DOT's 2025 edition of *Standard Specifications for Roads and Bridges*. The material shall be paid for on a per ton basis and the unit price per ton should include all costs necessary to furnish, transport, and install the gravel surfacing material. Scale tickets shall be provided to the RPR at the time of delivery.

REMOVE AND DISPOSE EXISTING UNDERDRAIN / STORM SEWER MANHOLE AND CLEANOUTS AND UNDERDRAIN PIPE
The contractor shall remove existing underdrain / storm sewer cleanouts at locations designated in the project plans. The contractor shall be responsible for removing the structures and disposing of them at an off-airport location of their choosing. The unit price for the structure removal shall include all costs necessary to complete this work. Existing underdrain pipe connected to the structures shall be removed as the contractor deems necessary. At no point will any existing underdrain pipe be allowed in a proposed paving section or be located within the top 12” of any grass areas. The removal of the underdrain pipe shall be considered incidental to the structure removal and no additional compensation will be made for the removal of the existing underdrain pipe.

ADJUST EXISTING STORM SEWER MANHOLE
The contractor shall adjust the casting elevation of an existing storm sewer manhole to match the final pavement elevation in this location. The existing casting shall be salvaged and re-used. The contractor shall determine and furnish the number of adjustment rings they deem necessary. The unit price for this item shall include all labor, equipment, and materials needed to complete this work. The existing manhole structure shall be protected during construction to ensure a proper seal can be attained after the casting adjustment. Damage caused to the structure during construction as a result of contractor negligence will result in the replacement of the structure at no cost to the owner.

REMOVE AND SALVAGE ASPHALT / CONCRETE PAVEMENT (15" NOMINAL DEPTH)
The contractor is responsible for developing a method of pavement removal to allow for the recycling and reuse of the removed pavement as subbase as described above. The contractors unit price for the pavement removal items shall include all costs necessary to remove and stockpile the existing pavement prior to recycling. The 15" depth listed on the unit item is nominal only and the actual depths of asphalt and concrete surfacing vary across from 12" to 18" across the area of pavement to be removed. Additional costs to remove existing pavement in excess of the 15" nominal depth shall be considered incidental to the bid item and no additional compensation will be made.

LICENSED PROFESSIONAL ENGINEER REG. NO. 13605 BROOKE B. EDGAR SOUTH DAKOTA 5/27/2026

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License Number No.

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CIVIL ENGINEERS & LAND SURVEYORS

PLAN NOTES

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-DET NOTES
Date:	5/28/26

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL , SOUTH DAKOTA
HELMS A-7141
ESTIMATE OF QUANTITIES

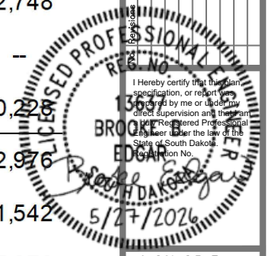
Base Bid - Runway 18/36 Reconstruction and Taxiway Improvements

Item No.	Spec No.	Item Description	Quantity	Unit
1	C-105	Mobilization (Max 10% of Project Costs)	1.0	L.S.
2	C-100	Contractor Quality Control Program	1.0	L.S.
3	S-100	Construction Safety Phasing Plan	1.0	L.S.
4	P-101	Asphalt Transition Cold Milling (2" Nominal Depth)	20	SqYd
5	P-101	Remove and Salvage Asphalt / Concrete Pavement (15' Nominal Depth)	63,417	SqYd
6	P-101	Remove and Salvage Concrete Intersection Pavement (10" Nominal Depth)	1,037	SqYd
7	P-101	Remove and Salvage Asphalt Pavement / Base Material (24" Nominal Depth)	6,605	SqYd
8	P-101	Remove and Salvage Asphalt Access Road Pavement / Base Material (6" Nominal Depth)	2,400	SqYd
9	P-152	Unclassified Excavation	74,166	CuYd
10	P-152	Disposal of Excess Material	10,143	CuYd
11	P-154	Subbase Course (Furnished)	13,081	CuYd
12	P-154	Subbase Course (Recycled)	24,552	CuYd
13	P-154	Geotextile Separator Fabric	52,745	SqYd
14	P-154	Geogrid	1,500	SqYd
15	P-208	Aggregate Base Course	9,123	CuYd
16	P-401	Asphalt Base/Surface Course	11,887.3	Ton
17	P-401	Asphalt Binder (PG 64-34)	832.1	Ton
18	P-602	Emulsified Asphalt Prime Coat	64.7	Ton
19	P-603	Emulsified Asphalt Tack Coat	21.6	Ton
20	P-605	Route and Seal Existing / New Asphalt Joint	527	Ft
21	P-620	Temporary Runway and Taxiway Pavement Markings (Yellow)	19,590	SqFt
22	P-620	Temporary Runway and Taxiway Pavement Markings (Black)	643	SqFt
23	P-620	Temporary Runway and Taxiway Pavement Markings (White)	2,028	SqFt
24	P-620	Runway and Taxiway Pavement Markings (Yellow)	19,590	SqFt
25	P-620	Runway and Taxiway Pavement Markings (Black)	643	SqFt
26	P-620	Runway and Taxiway Pavement Markings (White)	2,028	SqFt
27	D-701	12" RCP Pipe (Class III)	96	Ft
28	D-701	12" RCP Flared Ends (Class III)	2	Each
29	D-701	15" RCP Pipe (Class III)	240	Ft
30	D-701	15" RCP Flared End (Class III)	6	Each
31	D-705	4" Perforated Underdrain Pipe	12,034	Ft
32	D-705	4"Solid Wall Underdrain Pipe	196	Ft
33	D-705	Underdrain Cleanout	33	Each
34	D-705	Connect Underdrain to RCP Storm Sewer	9	Each
35	D-705	Underdrain Tee	2	Each
36	T-901	Seeding and Fertilizing	42.0	Acre
37	T-905	Topsoil (Removed from Stockpile)	17,276	CuYd
38	T-905	Topsoil (Furnished from off the Site)	2,229	CuYd
39	T-908	Mulching	203,333	SqYd
40	Plans	Gravel Surfacing	93.0	Ton
41	Plans	Remove and Salvage Existing Gravel Access Road	649	SqYd
42	Plans	Construct Salvaged Gravel/Millings Access Road (12" Nominal Depth)	361	SqYd
43	Plans	Remove and Dispose Existing Underdrain / Storm Manhole	11	Each
44	Plans	Remove and Dispose Existing Underdrain Cleanout	12	Each
45	Plans	Adjust Existing Storm Sewer Manhole Lid	1	Each
46	Plans	Inlet Protection	4	Each
47	Plans	Culvert Protection	2	Each
48	Plans	Erosion Control Wattle	13	Each
49	01 51 26	Temporary Phasing Work, Electrical	1.0	L.S.
50	Plan	Locating Underground Utility Work	1.0	L.S.
51	02 01 00	Verify Underground Utility Work (Pothole)	5	Each
52	34 43 26.13	L-821 Airfield Lighting Control Panel, Type I (Conventional), Class W (Wall Mounted), Style 1 (Unlighted), Mode 1 (Generic)	1	Each
53	34 43 26.16	L-854, Type 1 Air-to-Ground Radio Control Equipment w/ Heavy Duty Antenna & Mounting Brackets	1	Each
54	34 43 26.19	L-829 Constant Current Regulator (CCR) w/ Monitoring Options, Class 1 (6.6A), Style 1 (3-Step), Size 7.5 kW	1	Each
55	Plan	Electrical Vault Work, Complete	1.0	L.S.
56	Plan	Electrical Equipment Rack	3	Each
57	L-101	De-Energize Existing Rotating Beacon at Electrical Vault Building	1.0	L.S.
58	L-101	L-802A, LED, Class 2, w/ Bird Spikes, w/ Dual L-810 LED Steady Burn Red Obstruction Lights, Mounted on New Tip-Down Pole	1	Each
59	L-103	40' Tip-Down Pole, Primed & Painted, Including Concrete Footing & Site Pad	1	Each
60	L-107	Remove & Salvage Existing Supplemental Windcone; Remove & Dispose of Concrete Footing & Junction Box	2	Each
61	L-107	L-806, LED, Style 1B (Internally Lit), Size 1 (8 Feet) w/ Single L-810 LED Steady Burn Red Obstruction Light Including Concrete Footing & Site Pad	2	Each
62	L-108	1/C No. 8 AWG, 5kV, L-824, Type C Cable Installed in Conduit	22,328	Ft
63	L-108	1/C No. 4 Cu. AWG, 600V, THWN-2, Installed in Conduit	11,620	Ft
64	L-108	1/C No. 6 Cu. AWG, 600V, THWN-2, Installed in Conduit	6,338	Ft
65	L-108	1/C No. 8 Cu. AWG, 600V, THWN-2, Installed in Conduit	7,218	Ft
66	L-108	1/C No. 6 Cu. AWG, 600V (GND), THWN-2, Installed in Conduit	5,810	Ft
67	L-108	1/C No. 8 Cu. AWG, 600V (GND), THWN-2, Installed in Conduit	8,571	Ft
68	L-108	1/C No. 10 Cu. AWG, 600V (GND), THWN-2, Installed in Conduit	3,609	Ft
69	L-108	1/C No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Including Trenching or Plowing, Including Ground Rods, Connections & Terminations	15,819	Ft
70	Plan	Core Drill Existing Light Base Can	4	Each
71	L-110	Remove & Dispose of Existing Cable in Conduit; Abandon Remaining Conduit	22,920	Ft
72	L-110	Remove & Dispose of Existing Cable in Conduit; Conduit to Remain	2,141	Ft
73	L-110	Abandon Existing DEB Counterpoise	1	L.S.
74	L-110	Trenching & Backfilling or Plowing for Conduit	20,676	Ft
75	L-110	Non-Encased, Electrical Conduit, (1) 2 Inch, Type I, Sch. 40 PVC in Trench or SDR 13 HDPE Plowed	14,713	Ft
76	L-110	Non-Encased, Electrical Conduit, (2) 2 Inch, Type I, Sch. 40 PVC in Joint Trench or SDR 13 HDPE Plowed	4,694	Ft
77	L-110	Non-Encased, Electrical Conduit, (3) 2 Inch, Type I, Sch. 40 PVC in Joint Trench or SDR 13 HDPE Plowed	673	Ft
78	L-110	Non-Encased, Electrical Conduit, (1) 2 Inch, Type III, SDR 11 HDPE, Bored	570	Ft
79	L-110	Boring for Electrical Conduit, (1) 2 Inch	570	Ft
80	L-110	Sand-Encased, Electrical Conduit, (1) 2 Inch, Type III, Sch. 80 PVC in Trench	30	Ft
81	L-110	Sand-Encased, Electrical Conduit, (2) 2 Inch, Type III, Sch. 80 PVC in Joint Trench	506	Ft
82	L-110	Sand-Encased, Electrical Conduit, (3) 2 Inch, Type III, Sch. 80 PVC in Joint Trench	60	Ft
83	L-110	Lower Existing Conduit & Conductors Including Trenching/Excavation & Backfilling	200	Ft
84	L-110	Cable Markers	14	Each
85	L-115	Remove & Dispose of Existing Electrical Manhole & Concrete Site Pad	12	Each
86	L-115	Adjust Electrical Manhole/Junction Box to Finished Grade Including 48"x48" Concrete Site Pad	2	Each
87	L-115	L-867B (12"), Class 1A, Electrical Junction Box with Flat Etched Steel Cover	29	Each
88	L-115	L-867B (12"), Class 1A, Light Base Can w/ Steel Cover	9	Each
89	L-125	Remove & Salvage Existing Runway End Identifier Light (REIL); Remove & Dispose of Concrete Site Pads, Footings, & Junction Box	1	Set
90	L-125	Remove & Salvage Existing Runway Threshold Light & Transformer; Remove & Dispose of Light Base Can & Concrete	16	Each
91	L-125	Remove & Salvage Existing Runway Edge Light & Transformer; Remove & Dispose of Light Base Can & Concrete	50	Each
92	L-125	Remove & Salvage Existing Taxiway Edge Lights & Transformers; Remove & Dispose of Light Base Can & Concrete	50	Each
93	L-125	Remove & Salvage Existing Precision Approach Path Indicators (PAPI) & Electrical Equipment Rack; Remove & Dispose of Screw-Anchor Footings, Site Pads, & Landscape Rock (4 units per Set)	2	Set
94	L-125	Remove & Salvage Existing Sign & Transformer; Remove & Dispose of Junction Box & Concrete Sign Pad	9	Each
95	L-125	L-849I, Style E (3 Brightness Steps), LED, Runway End Identifier Light (REIL), Including Footing & Site Pad	1	Set
96	L-125	L-861, 30-Inch Elevated, Mode 1, LED, Medium Intensity Runway Light (MIRL), White/Yellow, Including Base Can & Concrete	40	Each
97	L-125	L-861E, 30-Inch Elevated, Mode 1, LED, Medium Intensity Runway Light (MIRL), Red/Green, Including Base Can & Concrete	16	Each
98	L-125	L-861T, 30-Inch Elevated, Mode 1, LED, Medium Intensity Taxiway Light (MITL), Blue, Including Base Can & Concrete	76	Each
99	L-125	L-862, 30-Inch Elevated, Mode 1, Quartz, High Intensity Runway Light (HIRL), White/Yellow, Including L-868B (11.25" B.C.) to L-867B (10.25" B.C.) Bolt Circle Conversion/Adapter Ring	4	Each
100	L-125	L-858Y, Direction, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module Including Junction Box & Concrete Sign Pad	1	Each
101	L-125	L-858Y, Destination, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 3-Module Including Junction Box & Concrete Sign Pad	1	Each
102	L-125	L-858Y, Destination, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 4-Module Including Junction Box & Concrete Sign Pad	1	Each
103	L-125	L-858Y, Direction, LED, Airfield Sign, Size 2, Style 3, Class 2, Mode 2, 2-Module Including Junction Box & Concrete Sign Pad	3	Each
104	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module, Including Junction Box & Concrete Sign Pad	1	Each
105	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 3, Class 2, Mode 2, 2-Module, Including Junction Box & Concrete Sign Pad	1	Each
106	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 3, Class 2, Mode 2, 3-Module, Including Junction Box & Concrete Sign Pad	2	Each
107	L-125	L-858L/Y, Location/Destination, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 3-Module, Including Junction Box & Concrete Sign Pad	1	Each
108	L-125	L-880, Style A (Voltage Driven), Class 2, LED, Precision Approach Path Indicator (PAPI) w/ Baffles, Concrete Footings & Site Pads	2	Set
109	L-125	Spare Parts	1	L.S.

* Note: If Alternate Bids #1 and #2 are accepted, the quantities for bid items #9 and #33 will be reduced in a Construction Change Order during the project based on the earthwork balances of the selected Alternate Bid(s).

Earthwork Table (Base Bid)

Description	Cut (CuYd)	Fill (CuYd)
Runway and Taxiways	36,662	12,748
Strip and Stockpile 6" Topsoil	17,276	--
Scarify & Recompact	20,228	20,228
Subtotal	74,166	32,976
35% Shrinkage	--	11,542
Topsoil (Removed from Stockpile)		17,276
Topsoil (Furnished from off the Site)		2,229
Disposal of Excess Material	--	10,143
Balance	74,166	74,166



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

Date

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

ESTIMATE OF QUANTITIES
BASE BID

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	QTY (BASE BID)
Date:	5/28/26

Alternate Bid 1 - Runway 18 Turnaround

Item No.	Spec No.	Item Description	Quantity	Unit
1	P-152	Unclassified Excavation	5,435	CuYd
2	P-154	Subbase Course (Furnished)	1,465	CuYd
3	P-154	Subbase Course (Recycled)	2,021	CuYd
4	P-154	Geotextile Separator Fabric	4,153	SqYd
5	P-154	Geogrid	500	SqYd
6	P-208	Aggregate Base Course	638	CuYd
7	P-401	Asphalt Base/Surface Course	902.9	Ton
8	P-401	Asphalt Binder (PG 64-34)	63.2	Ton
9	P-602	Emulsified Asphalt Prime Coat	4.9	Ton
10	P-603	Emulsified Asphalt Tack Coat	1.6	Ton
11	P-605	Route and Seal Existing / New Asphalt Joint	120	Ft
12	P-620	Temporary Pavement Markings (Yellow)	520	SqFt
13	P-620	Temporary Pavement Markings (Black)	153	SqFt
14	P-620	Pavement Markings (Yellow)	520	SqFt
15	P-620	Pavement Markings (Black)	153	SqFt
16	D-701	15" RCP Culvert	150	Ft
17	D-701	15" RCP Flared Ends	1	Each
18	D-705	4" Perforated Underdrain Pipe	1,495	Ft
19	D-705	Underdrain Cleanout	6	Each
20	D-705	Connect Underdrain to Storm Sewer	4	Each
21	D-751	2' x 3' Type B Inlet w/ Type E Frame and Grate and 6' x 6' Concrete Apron	1	Each
22	T-905	Topsoil (Removed from Stockpile)	1,258	CuYd
23	Plans	Inlet Protection	2	Each
24	L-108	1/C No. 8 AWG, 5kV, L-824, Type C Cable Installed in Conduit	1,958	Ft
25	L-108	1/C No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Including Trenching or Plowing, Including Ground Rods, Connections & Terminations	1,760	Ft
26	L-110	Trenching & Backfilling or Plowing for Conduit	1,926	Ft
27	L-110	Non-Encased, Electrical Conduit, (1) 2 Inch, Type I, Sch. 40 PVC in Trench or SDR 13 HDPE Plowed	1,816	Ft
28	L-110	Sand-Encased, Electrical Conduit, (2) 2 Inch, Type III, Sch. 80 PVC in Joint Trench	110	Ft
29	L-110	Cable Markers	4	Each
30	L-125	**DEDUCT** - L-861, 30-Inch Elevated, Mode 1, LED, Medium Intensity Runway Light (MIRL), White/Yellow, Including Base Can & Concrete	-1	Each
31	L-125	L-861T, 30-Inch Elevated, Mode 1, LED, Medium Intensity Taxiway Light (MITL), Blue, Including Base Can & Concrete	43	Each
32	L-125	L-858Y, Direction, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module Including Junction Box & Concrete Sign Pad	1	Each
33	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module, Including Junction Box & Concrete Sign Pad	1	Each
34	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 3-Module, Including Junction Box & Concrete Sign Pad	1	Each

Alternate Bid 3 - Lighting and Electrical (Solar Powered Beacon)

Item No.	Spec No.	Item Description	Quantity	Unit
1	Plan	**DEDUCT** - Electrical Equipment Rack (Beacon)	-1	Each
2	L-101	**DEDUCT** - L-802A, LED, Class 2, w/ Bird Spikes, w/ Dual L-810 LED Steady Burn Red Obstruction Lights, Mounted on New Tip-Down Pole	-1	Each
3	L-101	L-802A, LED, Class 2, Solar, w/ Bird Spikes, w/ Dual L-810 LED Steady Burn Red Obstruction Lights, Mounted on New Tip-Down Pole	1	Each
4	L-103	**DEDUCT** - L-103 40' Tip-Down Pole, Primed & Painted, Including Concrete Footing & Site Pad	-1	Each
5	L-103	L-103 40' Tip-Down Pole, Primed & Painted, Including Concrete Footing & Site Pad & Solar Power Supply (SPS)	1	Each
6	L-108	**DEDUCT** - 1/C No. 8 Cu. AWG, 600V, THWN-2, Installed in Conduit	-7,218	Ft
7	L-108	**DEDUCT** - 1/C No. 10 Cu. AWG, 600V (GND), THWN-2, Installed in Conduit	-3,609	Ft
8	L-110	**DEDUCT** - Trenching & Backfilling or Plowing for Conduit	-2,578	Ft
9	L-110	**DEDUCT** - Non-Encased, Electrical Conduit, (1) 2 Inch, Type I, Sch. 40 PVC in Trench or SDR 13 HDPE Plowed	-2,578	Ft
10	L-110	**DEDUCT** - Non-Encased, Electrical Conduit, (1) 2 Inch, Type III, SDR 11 HDPE, Bored	-207	Ft
11	L-110	**DEDUCT** - Boring for Electrical Conduit, (1) 2 Inch	-207	Ft
11	L-115	**DEDUCT** - L-867B (12"), Class 1A, Electrical Junction Box with Flat Etched Steel Cover	-5	Each

Alternate Bid 2 - Runway 36 Turnaround

Item No.	Spec No.	Item Description	Quantity	Unit
1	P-152	Unclassified Excavation	6,035	CuYd
2	P-152	Disposal of Excess Material	1,226	CuYd
3	P-154	Subbase Course (Furnished)	990	CuYd
4	P-154	Subbase Course (Recycled)	1,265	CuYd
5	P-154	Geotextile Separator Fabric	2,698	SqYd
6	P-154	Geogrid	500	SqYd
7	P-208	Aggregate Base Course	400	CuYd
8	P-401	Asphalt Base/Surface Course	567.2	Ton
9	P-401	Asphalt Binder (PG 64-34)	39.7	Ton
10	P-602	Emulsified Asphalt Prime Coat	3.1	Ton
11	P-603	Emulsified Asphalt Tack Coat	1.0	Ton
12	P-605	Route and Seal Existing / New Asphalt Joint	120	Ft
13	P-620	Temporary Pavement Markings (Yellow)	452	SqFt
14	P-620	Temporary Pavement Markings (Black)	153	SqFt
15	P-620	Pavement Markings (Yellow)	452	SqFt
16	P-620	Pavement Markings (Black)	153	SqFt
17	D-701	12" RCP Culvert	114	Ft
18	D-701	12" RCP Flared Ends	2	Each
19	D-705	4" Perforated Underdrain Pipe	1,207	Ft
20	D-705	Underdrain Cleanout	4	Each
21	D-705	Connect Underdrain to Storm Sewer	4	Each
22	T-905	Topsoil (Removed from Stockpile)	1,352	CuYd
23	Plans	Culvert Protection	2	Each
24	L-108	1/C No. 8 AWG, 5kV, L-824, Type C Cable Installed in Conduit	1,562	Ft
25	L-108	1/C No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Including Trenching or Plowing, Including Ground Rods, Connections & Terminations	1,260	Ft
26	L-110	Trenching & Backfilling or Plowing for Conduit	1,377	Ft
27	L-110	Non-Encased, Electrical Conduit, (1) 2 Inch, Type I, Sch. 40 PVC in Trench or SDR 13 HDPE Plowed	1,317	Ft
28	L-110	Sand-Encased, Electrical Conduit, (2) 2 Inch, Type III, Sch. 80 PVC in Joint Trench	60	Ft
29	L-110	Cable Markers	2	Each
30	L-125	**DEDUCT** - L-861, 30-Inch Elevated, Mode 1, LED, Medium Intensity Runway Light (MIRL), White/Yellow, Including Base Can & Concrete	-1	Each
31	L-125	L-861T, 30-Inch Elevated, Mode 1, LED, Medium Intensity Taxiway Light (MITL), Blue, Installed on Existing L-867B Light Base Can	9	Each
32	L-125	L-861T, 30-Inch Elevated, Mode 1, LED, Medium Intensity Taxiway Light (MITL), Blue, Including Base Can & Concrete	30	Each
33	L-125	L-858Y, Direction, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module Including Junction Box & Concrete Sign Pad	1	Each
34	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 2-Module, Including Junction Box & Concrete Sign Pad	1	Each
35	L-125	L-858R/L, Mandatory/Location, LED, Airfield Sign, Size 2, Style 2, Class 2, Mode 2, 3-Module, Including Junction Box & Concrete Sign Pad	1	Each

Earthwork Table (Alternate Bid 1)

Description	Cut (CuYd)	Fill (CuYd)
Runway 18 Turnaround	1,974	4,176
Strip and Stockpile 6" Topsoil	1,902	--
Scarify & Recompact	1,559	1,559
Subtotal	5,435	5,735
35% Shrinkage	--	2,007
Topsoil (Removed from Stockpile)		1,258
Excess Material from Base Bid	3,565	--
Balance	9,000	9,000

Earthwork Table (Alternate Bid 2)

Description	Cut (CuYd)	Fill (CuYd)
Runway 36 Turnaround	2,646	1,241
Strip and Stockpile 6" Topsoil	2,069	--
Scarify & Recompact	1,320	1,320
Subtotal	6,035	2,561
35% Shrinkage	--	896
Topsoil (Removed from Stockpile)		1,352
Disposal of Excess Material	--	1,226
Balance	6,035	6,035

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13659
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the duly licensed Registered Professional Engineer under the law of the State of South Dakota. License No.

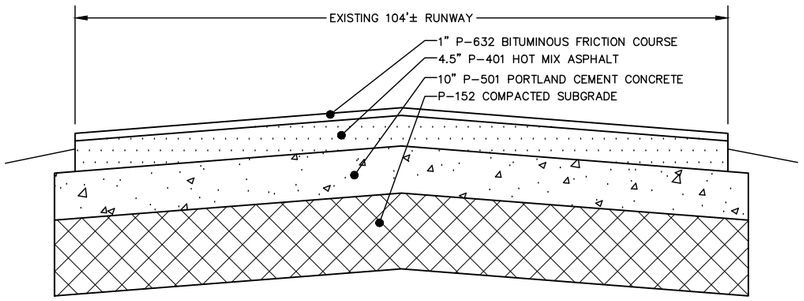
416 Production St N.
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Email: bobb@helmsengineering.com

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CIVIL ENGINEERS & LAND SURVEYORS

ESTIMATE OF QUANTITIES
ALTERNATE BIDS 1 - 3

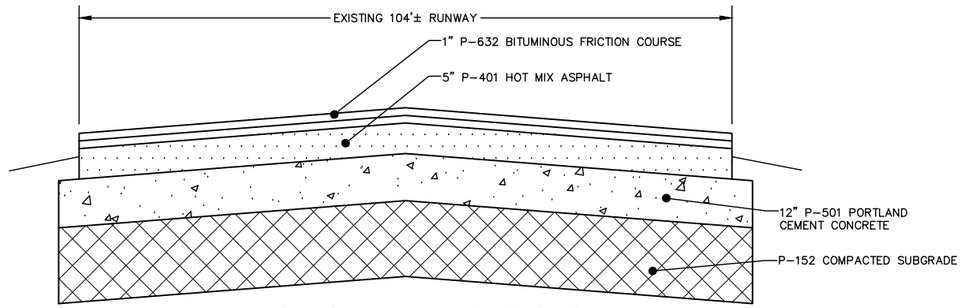
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	QTY (ALT BIDS)
Date:	5/28/26



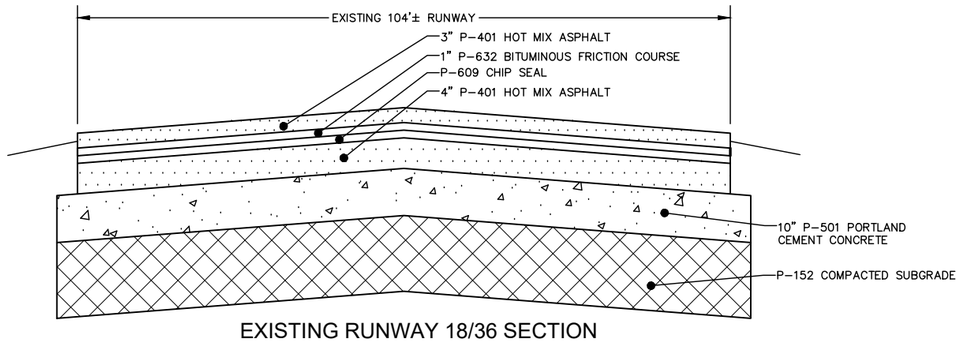
EXISTING RUNWAY 18/36 SECTION

STA: 302+50–350+50
NO SCALE



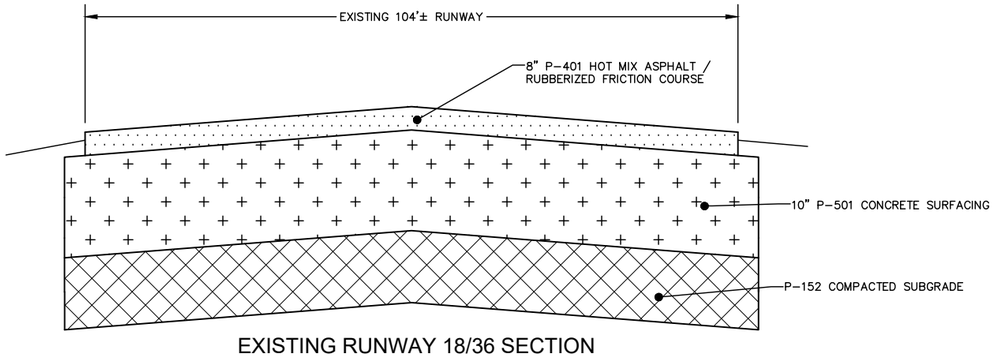
EXISTING RUNWAY 18/36 SECTION

STA: 350+50–352+50
NO SCALE



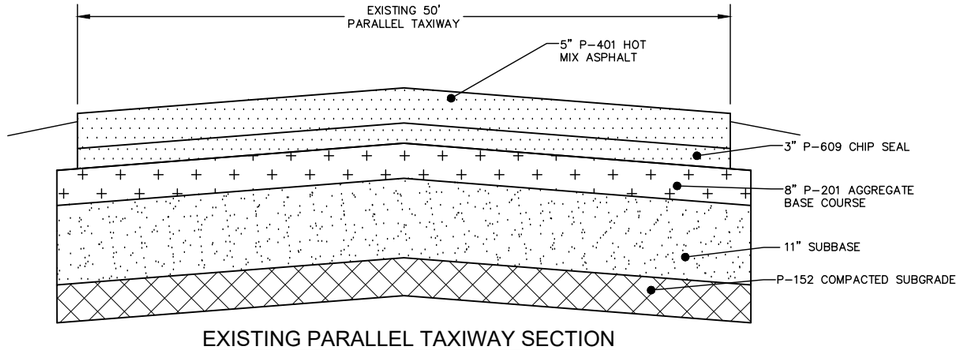
EXISTING RUNWAY 18/36 SECTION

STA: 352+50–354+50
NO SCALE



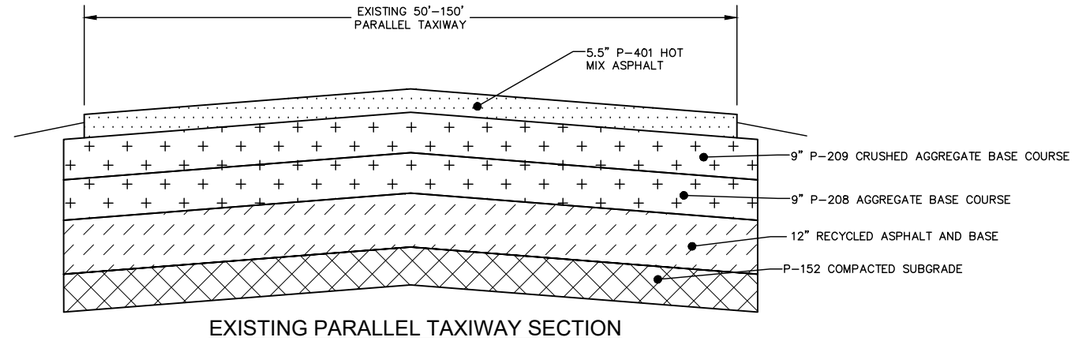
EXISTING RUNWAY 18/36 SECTION

(SOUTH OF RUNWAY 13/31)
NO SCALE



EXISTING PARALLEL TAXIWAY SECTION

STA: 100+50, 25'L/R –110+15, 250/310'L
NO SCALE



EXISTING PARALLEL TAXIWAY SECTION

STA: 110+15, 250/310'L –112+60, 175'/260'L
NO SCALE

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. Reg. No.

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

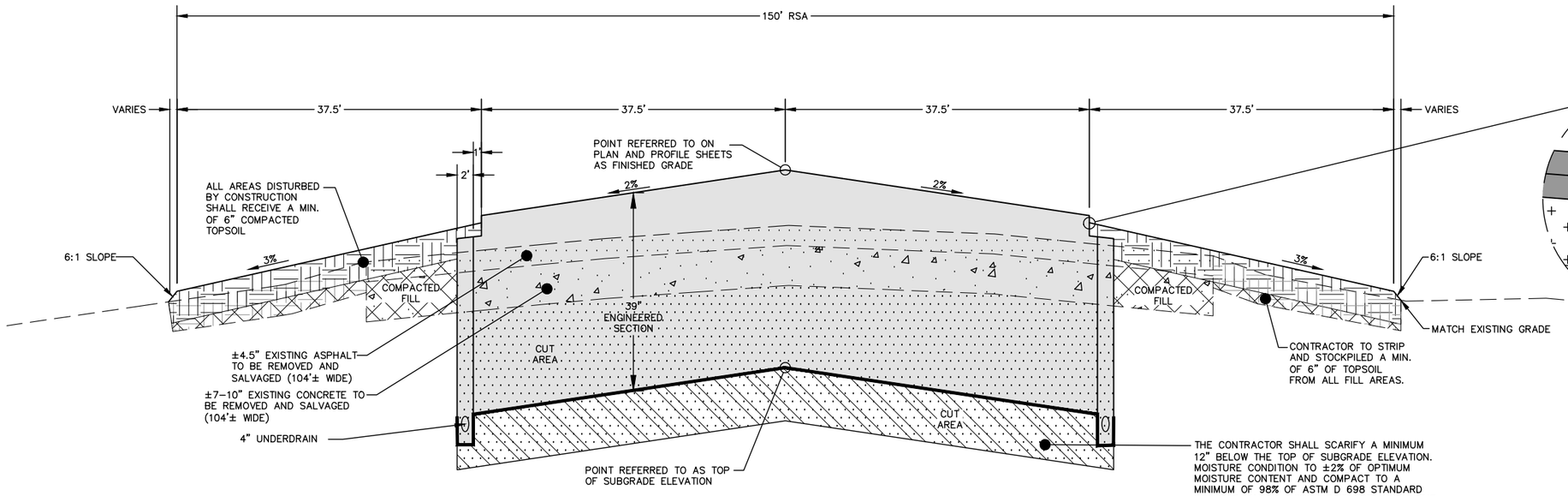
416 Production St N.
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Aberdeen, S.D. 57402
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Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
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EXISTING PAVEMENT TYPICAL SECTIONS

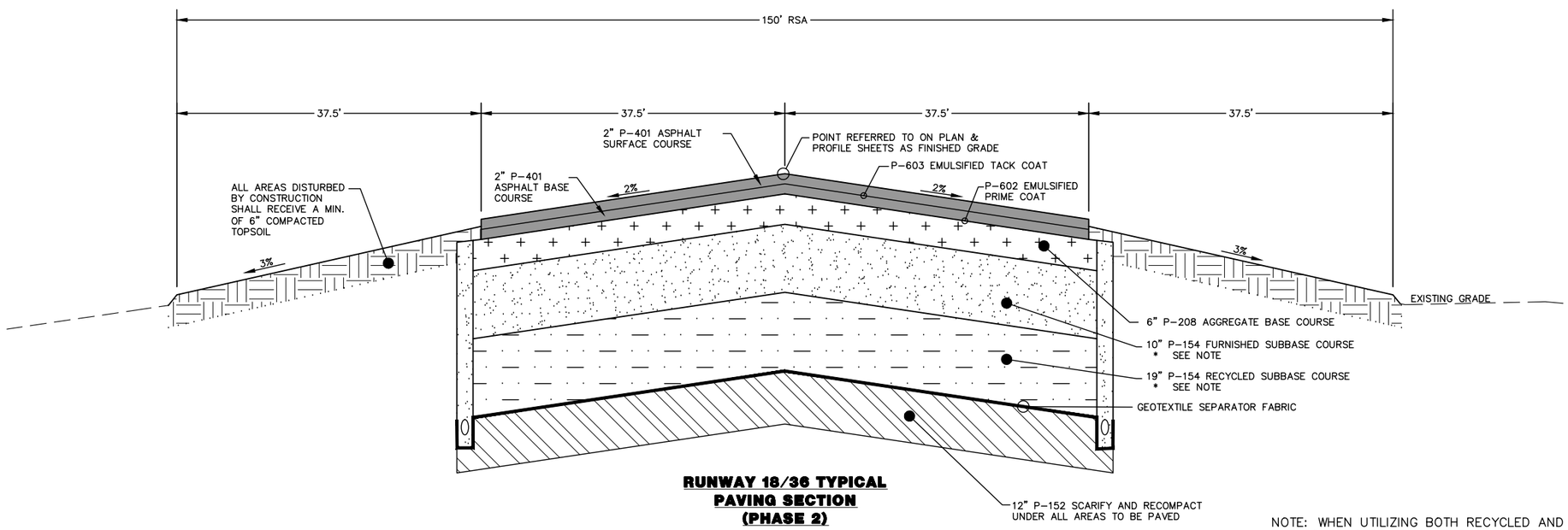
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	EX-SECT
Date:	5/28/26



RUNWAY 18/36 TYPICAL GRADING SECTION (PHASE 2)

NO SCALE



RUNWAY 18/36 TYPICAL PAVING SECTION (PHASE 2)

NO SCALE

NOTE: WHEN UTILIZING BOTH RECYCLED AND FURNISHED SUBBASE COURSE, THE CONTRACTOR SHALL ENSURE A UNIFORM DEPTH OF EACH MATERIAL ACROSS THE ENTIRE PAVEMENT SECTION. THE SUBBASE MATERIAL DEPTHS SHOWN MAY CHANGE BASED AMOUNT OF RECYCLED MATERIAL GENERATED DURING CONSTRUCTION. RECYCLED SUBBASE MATERIAL GENERATED FROM PHASE 2 REMOVALS MUST BE FULLY UTILIZED IN PHASE 2 CONSTRUCTION.

ALTERNATIVELY, PRIOR TO PLACEMENT THE CONTRACTOR SHALL HAVE THE OPTION TO BLEND THE RECYCLED AND FURNISHED MATERIAL INTO A SINGLE UNIFORM SUBBASE MATERIAL.

Date

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 Registered Professional Engineer under the law of the State of South Dakota. Registration No.

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

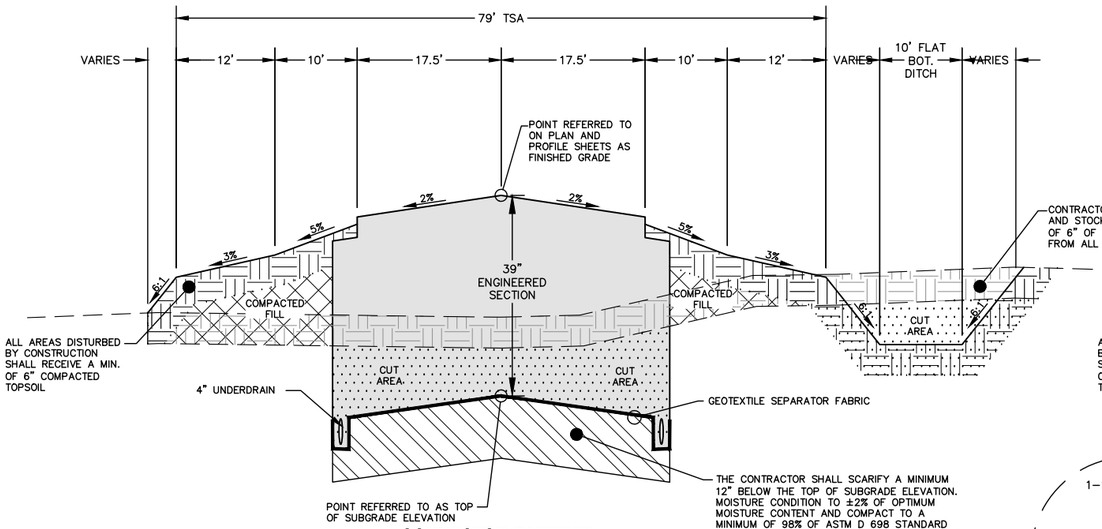
416 Production St N.
P.O. Box 111
Aberdeen, S.D. 57402
Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

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RUNWAY 18-36 TYPICAL SECTIONS

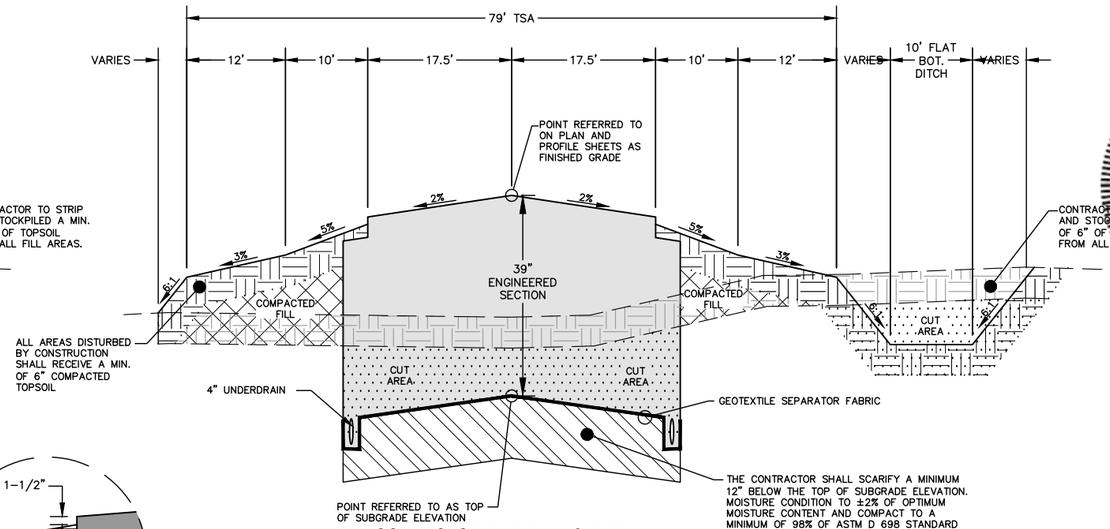
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	18-36TYP
Date:	5/28/26



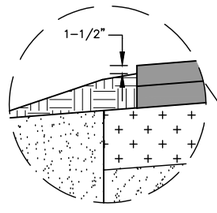
CONNECTOR TAXIWAY GRADING SECTION (PHASE 1A/1B)

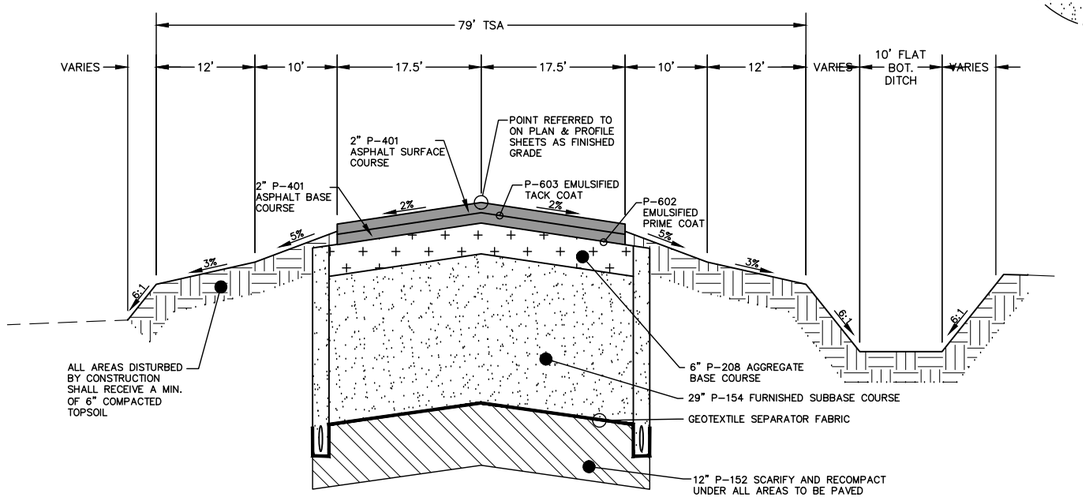
NO SCALE



CONNECTOR TAXIWAY & TURN AROUND TYPICAL GRADING SECTION (PHASE 2)

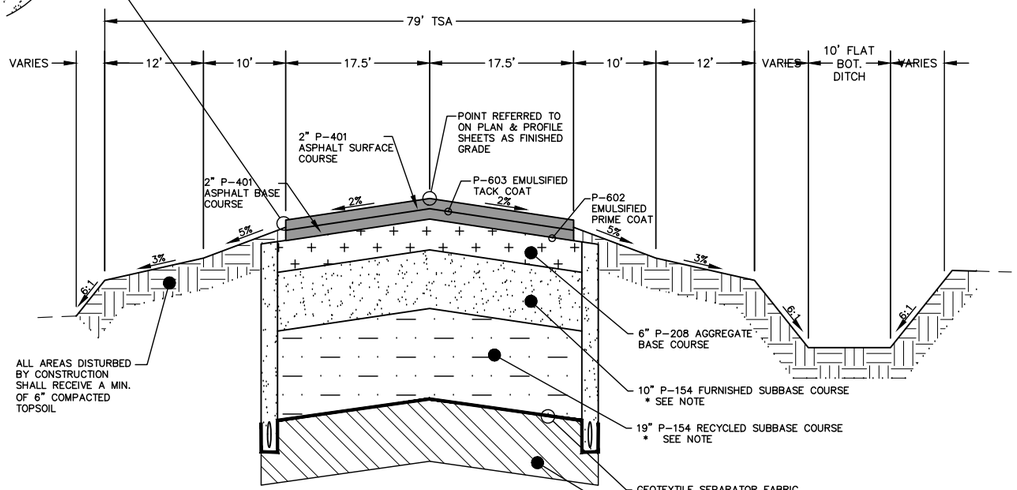
NO SCALE





CONNECTOR TAXIWAY TYPICAL PAVING SECTION (PHASE 1A/1B)

NO SCALE



CONNECTOR TAXIWAY & TURN AROUND TYPICAL GRADING SECTION (PHASE 2)

NO SCALE

NOTE: WHEN UTILIZING BOTH RECYCLED AND FURNISHED SUBBASE COURSE, THE CONTRACTOR SHALL ENSURE A UNIFORM DEPTH OF EACH MATERIAL ACROSS THE ENTIRE PAVEMENT SECTION. THE SUBBASE MATERIAL DEPTHS SHOWN MAY CHANGE BASED AMOUNT OF RECYCLED MATERIAL GENERATED DURING CONSTRUCTION. RECYCLED SUBBASE MATERIAL GENERATED FROM PHASE 2 REMOVALS MUST BE FULLY UTILIZED IN PHASE 2 CONSTRUCTION

ALTERNATIVELY, PRIOR TO PLACEMENT THE CONTRACTOR SHALL HAVE THE OPTION TO BLEND THE RECYCLED AND FURNISHED MATERIAL INTO A SINGLE UNIFORM SUBBASE MATERIAL.

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License No.

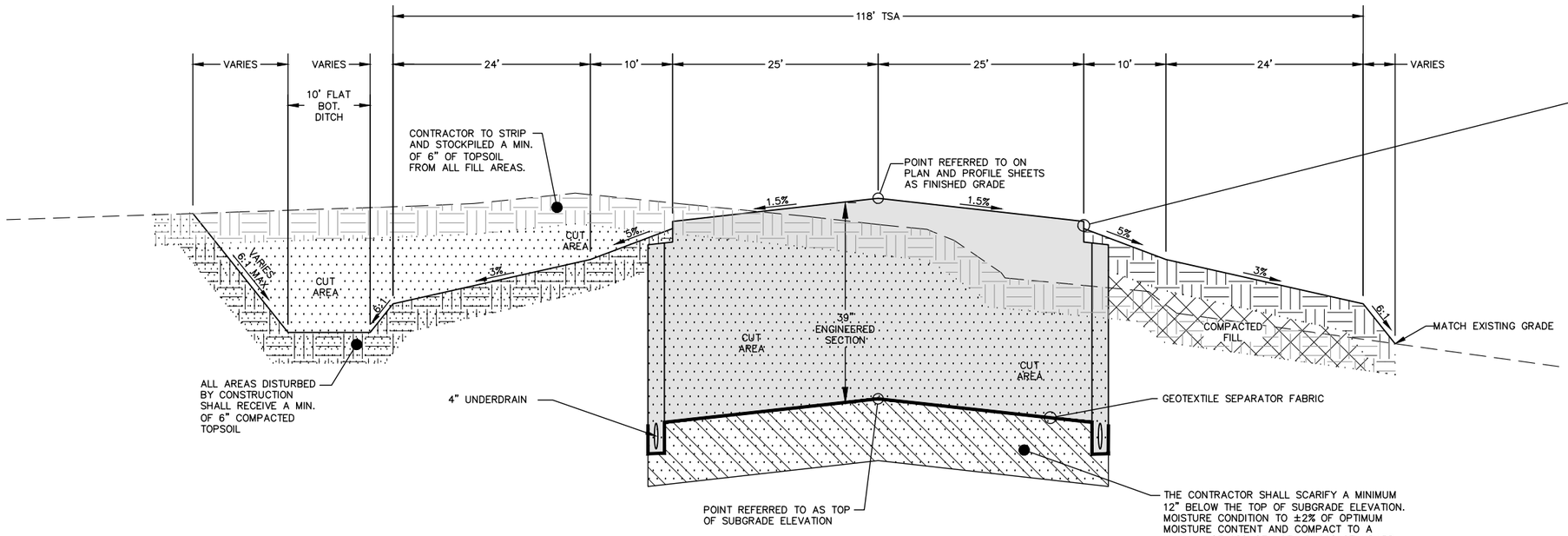
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Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

CONNECTOR TAXIWAY & TURN AROUND TYPICAL SECTIONS

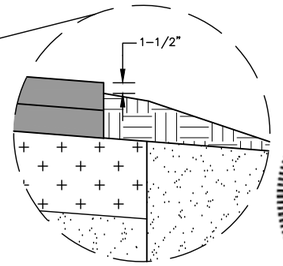
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS MITCHELL, SOUTH DAKOTA

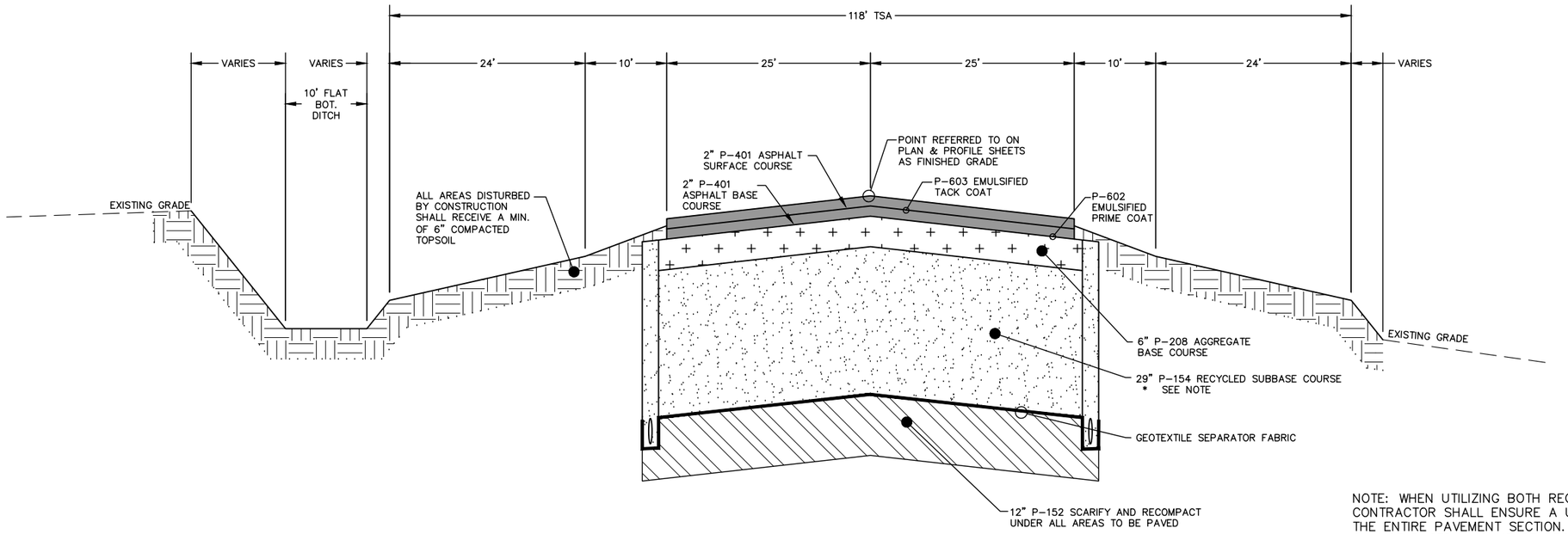
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	B2 TAXI
Date:	5/28/26



TAXIWAY TYPICAL GRADING SECTION (PHASES 3/4)

NO SCALE





TAXIWAY TYPICAL PAVING SECTION (PHASES 3/4)

NO SCALE

NOTE: WHEN UTILIZING BOTH RECYCLED AND FURNISHED SUBBASE COURSE, THE CONTRACTOR SHALL ENSURE A UNIFORM DEPTH OF EACH MATERIAL ACROSS THE ENTIRE PAVEMENT SECTION. THE SUBBASE MATERIAL DEPTHS SHOWN MAY CHANGE BASED AMOUNT OF RECYCLED MATERIAL GENERATED DURING CONSTRUCTION. RECYCLED SUBBASE MATERIAL GENERATED FROM PHASES 3/4 REMOVALS MUST BE FULLY UTILIZED IN PHASES 3/4 CONSTRUCTION

ALTERNATIVELY, PRIOR TO PLACEMENT THE CONTRACTOR SHALL HAVE THE OPTION TO BLEND THE RECYCLED AND FURNISHED MATERIAL INTO A SINGLE UNIFORM SUBBASE MATERIAL.

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212
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Email: bobb@helmsengineering.com

Date

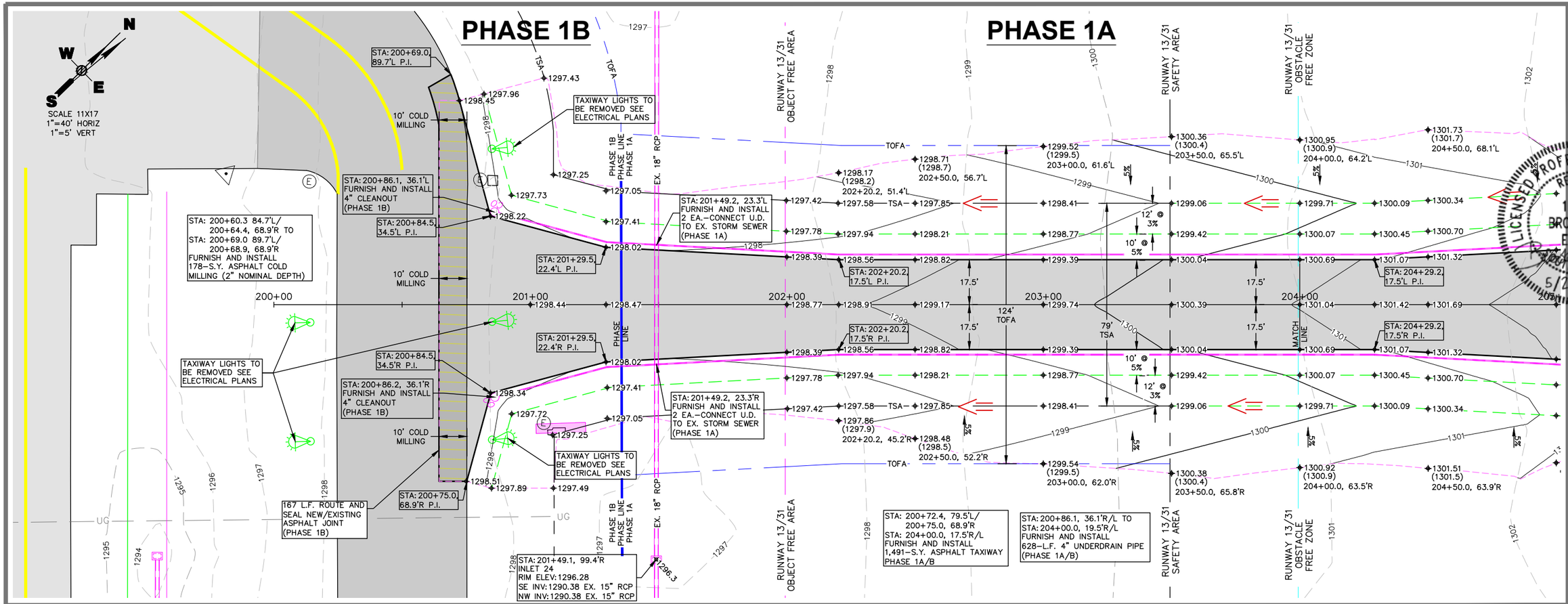
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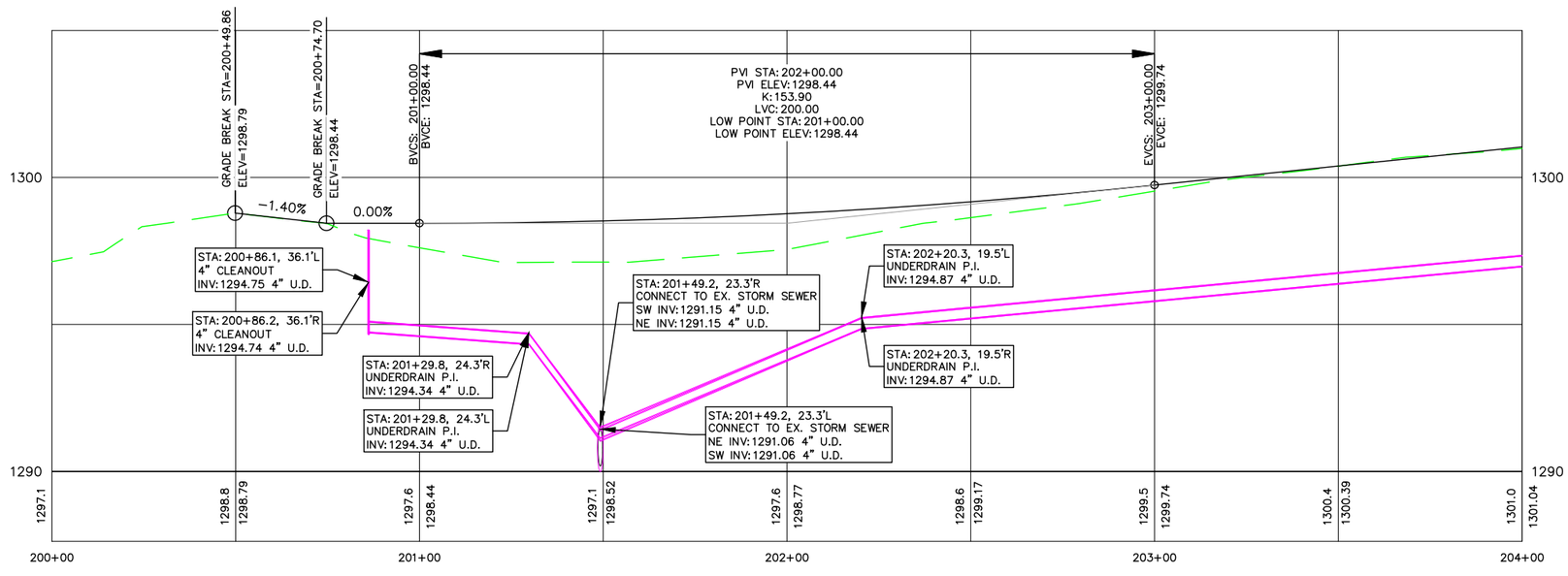
LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

PARALLEL TAXIWAY TYPICAL SECTIONS

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	B1 TAXI
Date:	5/28/26





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Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13609
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota.
License No.

CONNECTOR TAXIWAY
STA: 200+00 - 204+00 (PHASE 1)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-02 CT(1)
Date:	5/28/26

PHASE 1A

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

RUNWAY 13/31 OBSTACLE FREE ZONE

STA: 204+00.0, 17.5'R/L
STA: 205+37.4, 27.0'R/L
FURNISH AND INSTALL
611–S.Y. ASPHALT TAXIWAY
(PHASE 1A)

STA: 205+19.6, 24.3'L
FURNISH AND INSTALL
4" CLEANOUT
(PHASE 1A)

STA: 205+19.6, 24.3'R
FURNISH AND INSTALL
4" CLEANOUT
(PHASE 1A)

STA: 204+00.0, 19.5'R/L TO
STA: 205+19.6, 24.3'R/L
FURNISH AND INSTALL
240–L.F. 4" UNDERDRAIN PIPE
(PHASE 1A)

P.I. 205+99.4

STA: 205+37.4
27.0'L P.I.

STA: 205+37.4
27.0'R P.I.

110 L.F. ROUTE AND
SEAL NEW / EXISTING
ASPHALT JOINT
(PHASE 1A)

STA: 206+61.6
27.0'L P.I.

STA: 206+79.2, 24.3'L
FURNISH AND INSTALL
4" CLEANOUT
(PHASE 1A)

STA: 206+79.2, 24.3'R
FURNISH AND INSTALL
4" CLEANOUT
(PHASE 1A)

STA: 206+61.6
27.0'R P.I.

PHASE 1A

EXISTING RUNWAY
DISTANCE REMAINING SIGN
TO REMAIN UNDISTURBED.

RUNWAY 13/31 SAFETY AREA

STA: 206+61.6, 27.0'R/L
STA: 209+00.0, 17.5'R/L
FURNISH AND INSTALL
1004–S.Y. ASPHALT TAXIWAY
(PHASE 1A)

STA: 206+78.9
22.4'L P.I.

STA: 206+78.9
22.4'R P.I.

STA: 207+69.6
17.5'L P.I.

STA: 207+69.6
17.5'R P.I.

STA: 209+00.0
17.5'R P.I.

MATCH LINE

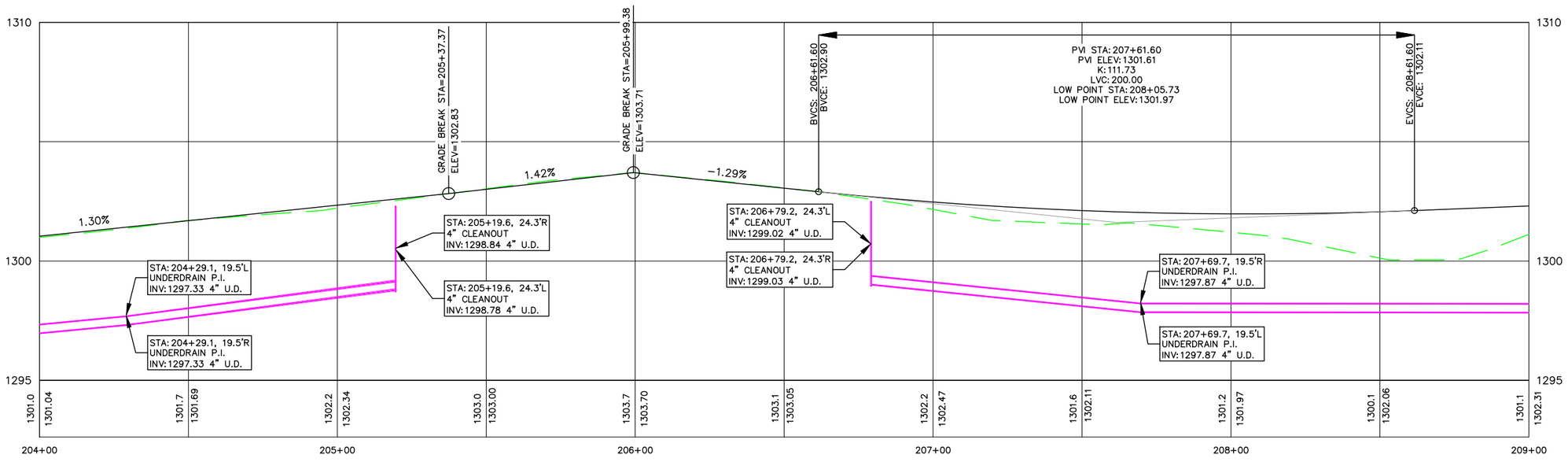
TOFA

FLAT DITCH

79' TSA

124' TOFA

STA: 206+79.2, 24.3'R/L TO
STA: 209+00.0, 19.5'R/L
FURNISH AND INSTALL
618–L.F. 4" UNDERDRAIN PIPE
(PHASE 1A)



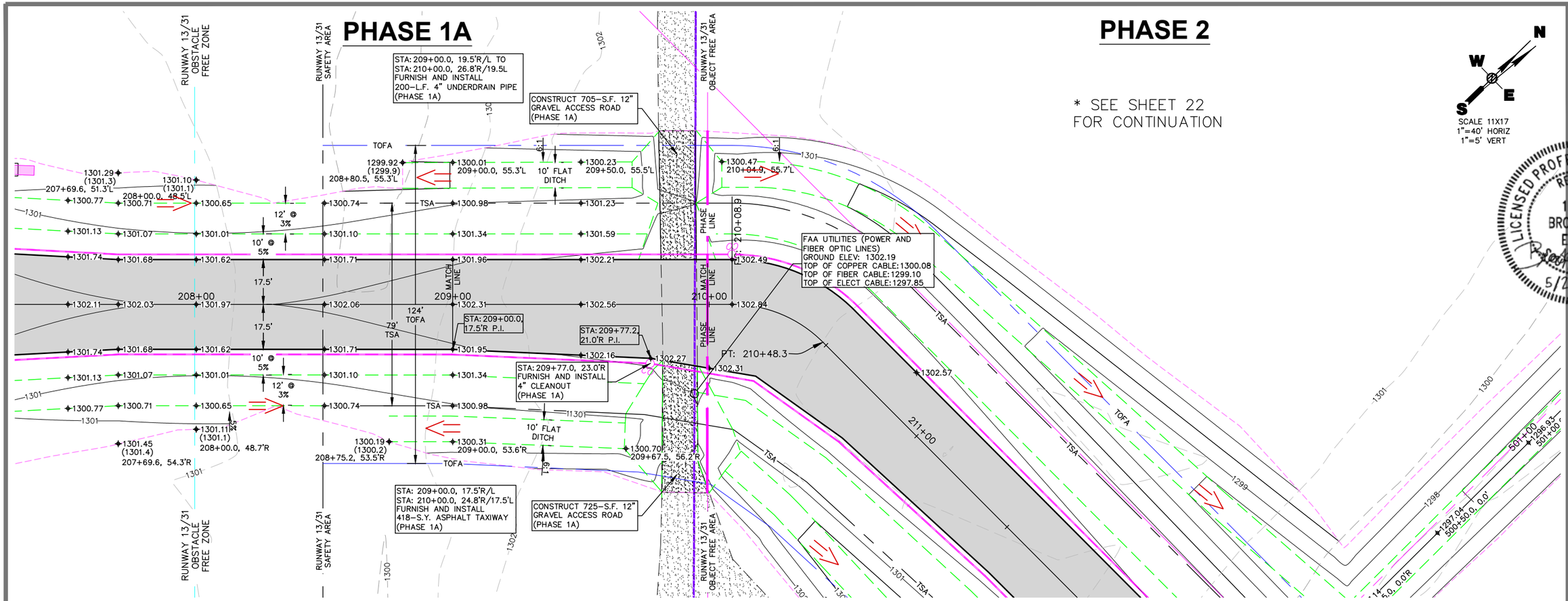
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License Number 13650
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

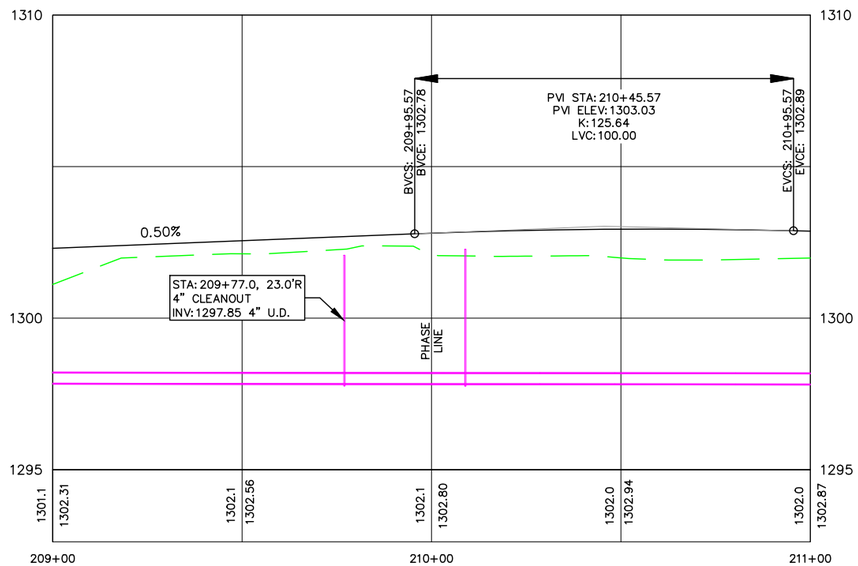
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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Phone: 605.225.1212
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Email: bobb@helmsengineering.com

CONNECTOR TAXIWAY
STA: 204+00 - 209+00 (PHASE 1)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(2)
Date:	5/28/26





SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License No.

Date

CONNECTOR TAXIWAY
STA: 209+00 - 210+00 (PHASE 1)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(3)
Date:	5/28/26

PHASE 2

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

SEE SHEET 39 FOR DITCH CONTINUATION

RUNWAY 18/36 SAFETY AREA

RUNWAY 13/31 OBJECT FREE AREA

PHASE LINE

MATCH LINE

1296.86
212+70.2, 200.0'L

10' FLAT DITCH

1296.97
212+70.2, 150.0'L

1297.08
212+70.1, 100.0'L

STA: 212+70.0, 55.0'R TO
STA: 212+70.0, 57.0'L
FURNISH AND INSTALL
112 L.F.– 12" RCP
2–EA. 12" FLARED ENDS
(PHASE 2)

1299.64
210+50.0, 59.7'L

1299.29
210+80.0, 61.9'L

1299.06
211+00.0, 63.3'L

1298.39
211+57.5, 67.0'L

1297.91
212+00.0, 69.7'L

1297.43
212+50.0, 73.0'L

1297.14

1297.93
213+00.0, 70.4'L

1299.15
213+46.8, 64.2'L

1300.52
214+00.0, 60.8'L

1301.38
214+32.0, 59.9'L

TOFA

STA: 212+70.0, 19.5'L
FURNISH AND INSTALL
2 EA. CONNECT U.D.
RCP (PHASE 2)

1301.60 1301.55 TSA 1301.38 1301.25 1301.12 1301.18 TSA 1301.45 TSA 1301.94

12' @ 3%

10' @ 5%

1301.96 1301.91 1301.74 1301.61 1301.48 1301.54 1301.81 1302.30

1302.59 1302.57 1302.52 1302.35 1302.23 1302.10 1302.16 1302.42 1302.91 1303.41

STA: 213+46.8,
17.5'L P.I.

STA: 214+37.5,
22.3'L P.I.

211+00 212+00 213+00 214+00

1302.94 1302.92 1302.87 1302.70 1302.58 1302.45 1302.51 1302.77 1303.32 1303.86

STA: 210+08.9, 19.5'L
FURNISH AND INSTALL
4" CLEANOUT
(PHASE 2)

1300.47
210+04.9, 55.7'L

RC: 210+08.9

1302.49

1302.90

PT: 210+48.3
1302.84

STA: 210+80.1,
21.0'R P.I.

STA: 211+57.5,
17.5'R P.I.

STA: 210+28.6,
26.1'R P.I.

1302.50 1302.47 1302.38 1302.35 1302.23 1302.10 1302.16 1302.42 1302.97 1303.51

10' @ 5%

12' @ 3%

1301.85 1301.74 1301.61 1301.48 1301.54 1301.81 1302.35 1302.89

45 L.F. ROUTE AND
SEAL ASPHALT
PHASING JOINT
(PHASE 2)

10' FLAT DITCH

1301.77

1301.49

1301.37 TSA 1301.25 1301.12 1301.18 1301.44 TSA 1301.99 1302.53

STA: 209+77.2,
21.0'R P.I.

1301.40

PHASE 1A

FAA UTILITIES (POWER AND
FIBER OPTIC LINES)
GROUND ELEV: 1302.19
TOP OF COPPER CABLE:1300.08
TOP OF FIBER CABLE:1299.10
TOP OF ELECT CABLE:1297.85

210+57.5, 62.4'R
(1300.6)

1299.96
211+00.0, 61.6'R

1299.12
211+58.6, 63.7'R

1298.43
212+00.0, 66.4'R

1297.68
212+50.0, 70.2'R

1297.39
212+69.7, 71.9'R

1298.22
213+00.0, 67.3'R

1299.58
213+50.0, 60.9'R

1301.45
(1301.4)
214+18.6, 54.3'R

STA: 212+70.0, 19.5'R
FURNISH AND INSTALL
2–EA. CONNECT U.D.
TO RCP (PHASE 2)

STA: 210+00.0, 26.8'R/19.5'L
STA: 214+00.0, 19.5'R/22.3'L
FURNISH AND INSTALL
794–L.F. 4" UNDERDRAIN PIPE
(PHASE 2)

STA: 210+00.0, 24.8'R/17.5L
STA: 214+00.0, 17.5'R/ 20.4' L
FURNISH AND INSTALL
1633–S.Y. ASPHALT TAXIWAY
(PHASE 2)

1300.16

209+00 210+00 211+00 212+00 213+00 214+00

1301 1302 1299 1300

6:1 10:1

Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO. 13659
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

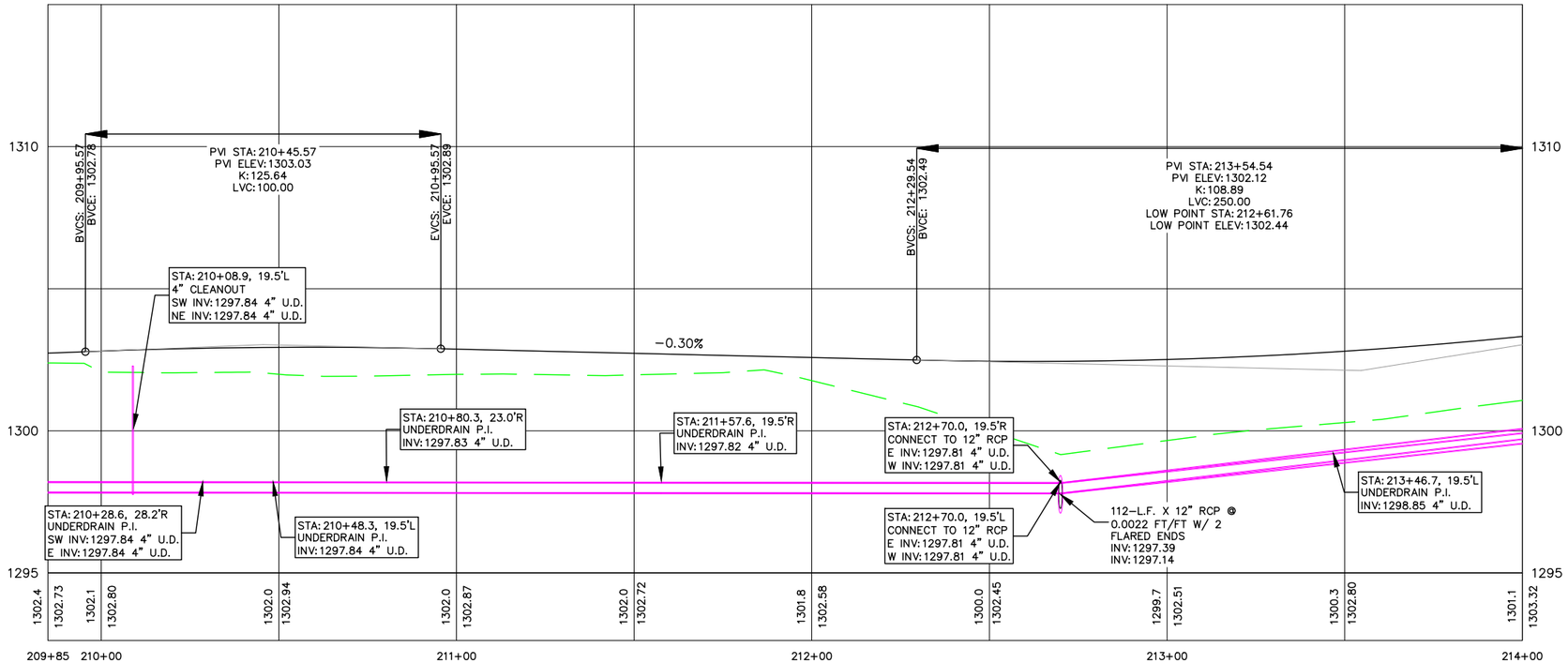
CONNECTOR TAXIWAY
STA: 210+00 - 214+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(3B)
Date:	5/28/26

PHASE 2

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO.
13654
BROOKE B.
EDGAR
SOUTH DAKOTA
5/27/2026

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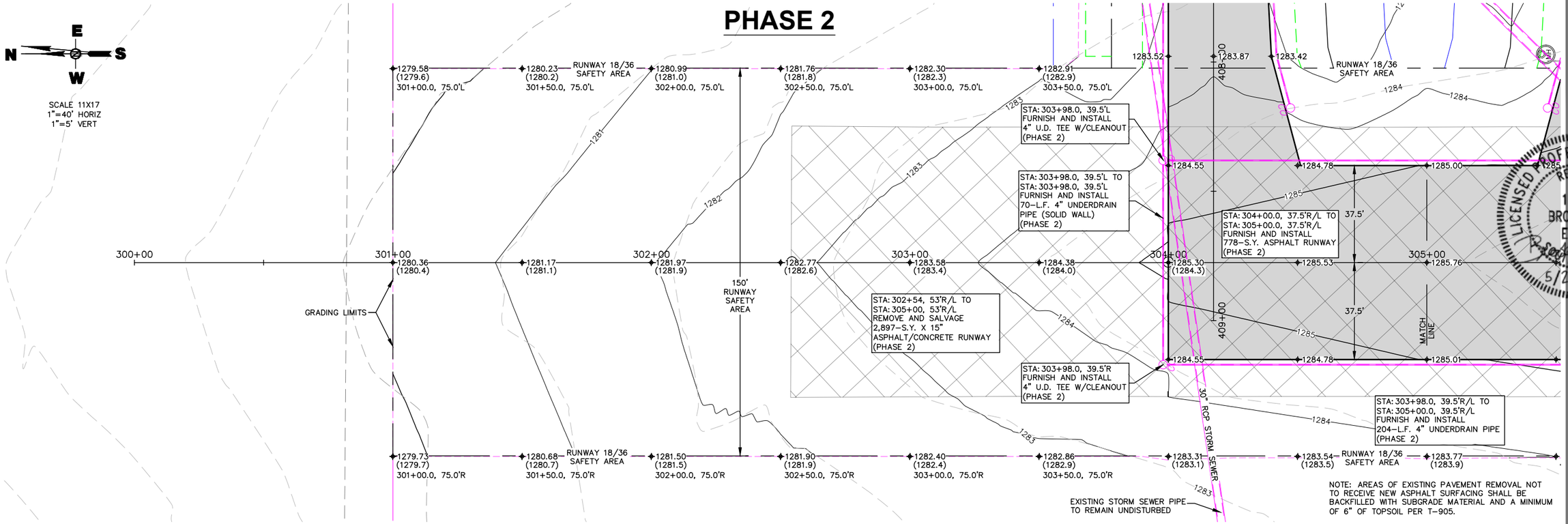
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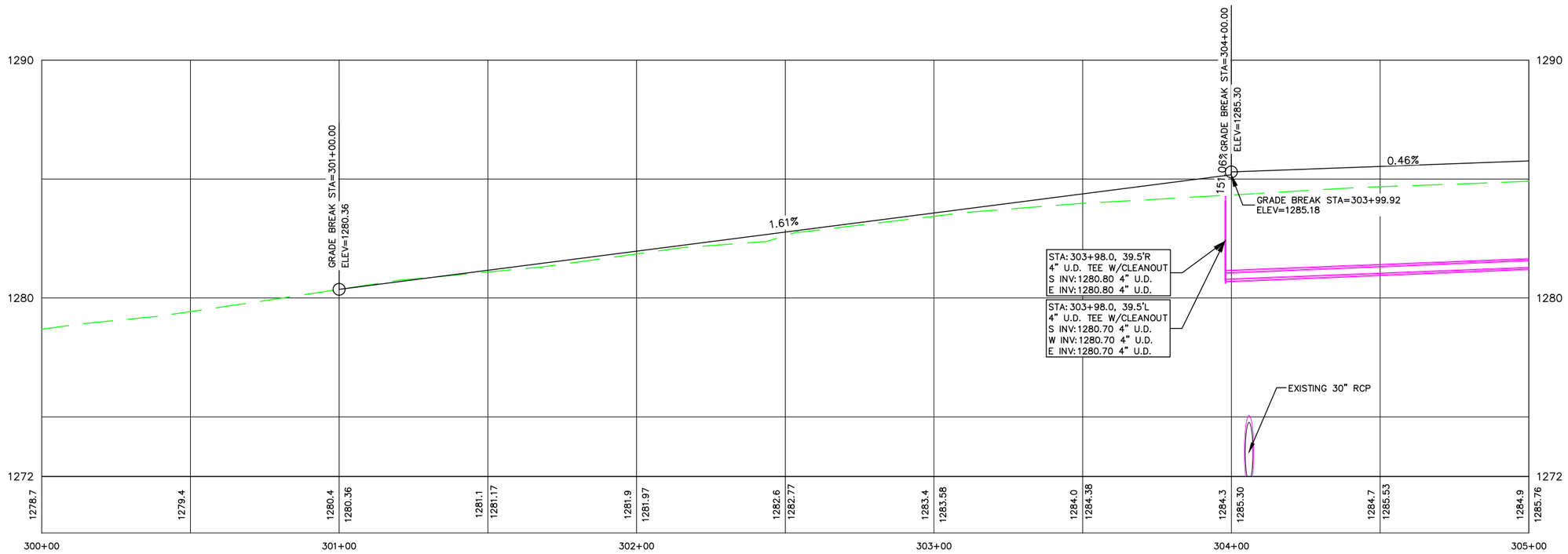
CONNECTOR TAXIWAY
STA: 210+00 - 214+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(4)
Date:	5/28/26

PHASE 2





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CIVIL ENGINEERS & LAND SURVEYORS

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

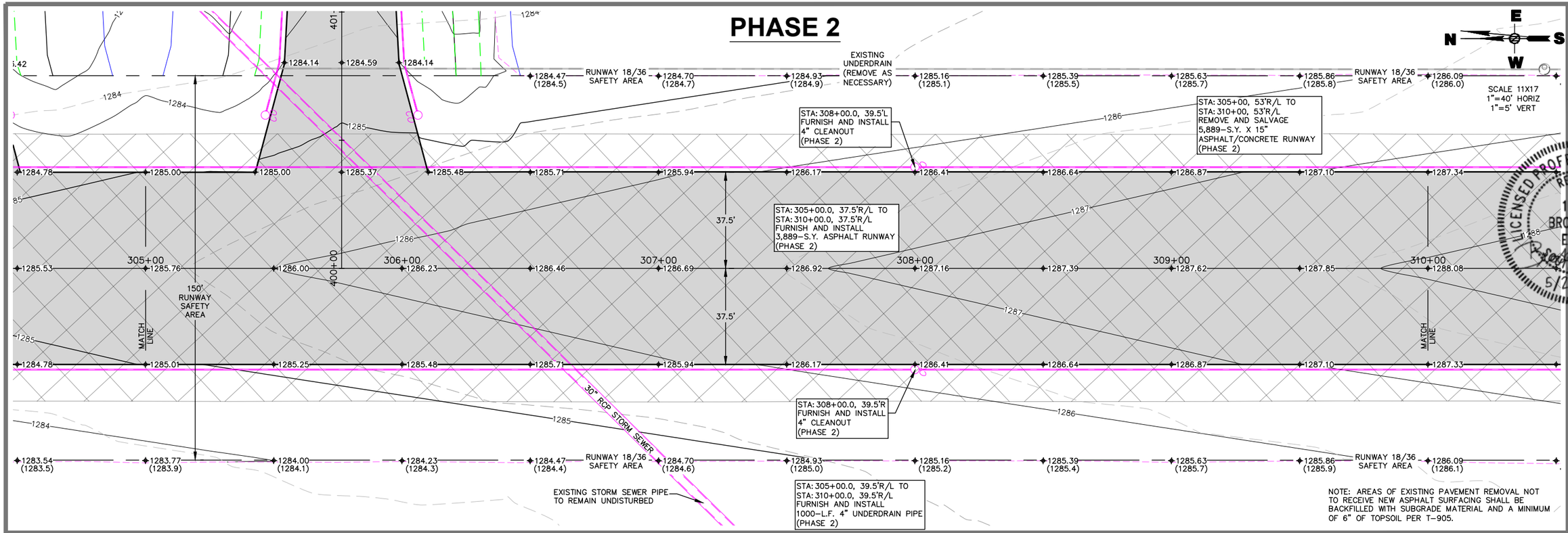
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Date of Seal or Certification No.

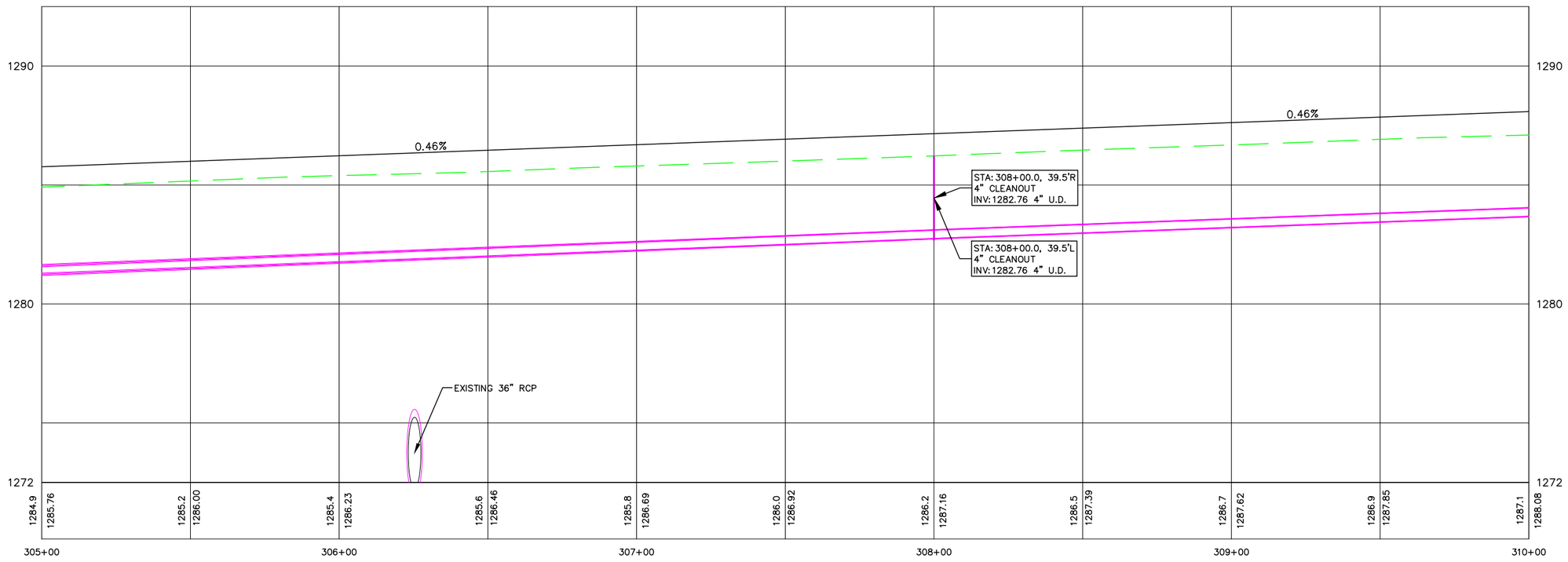
RUNWAY 18/36
STA: 300+00 - 305+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(1)
Date:	5/28/26

PHASE 2





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Date

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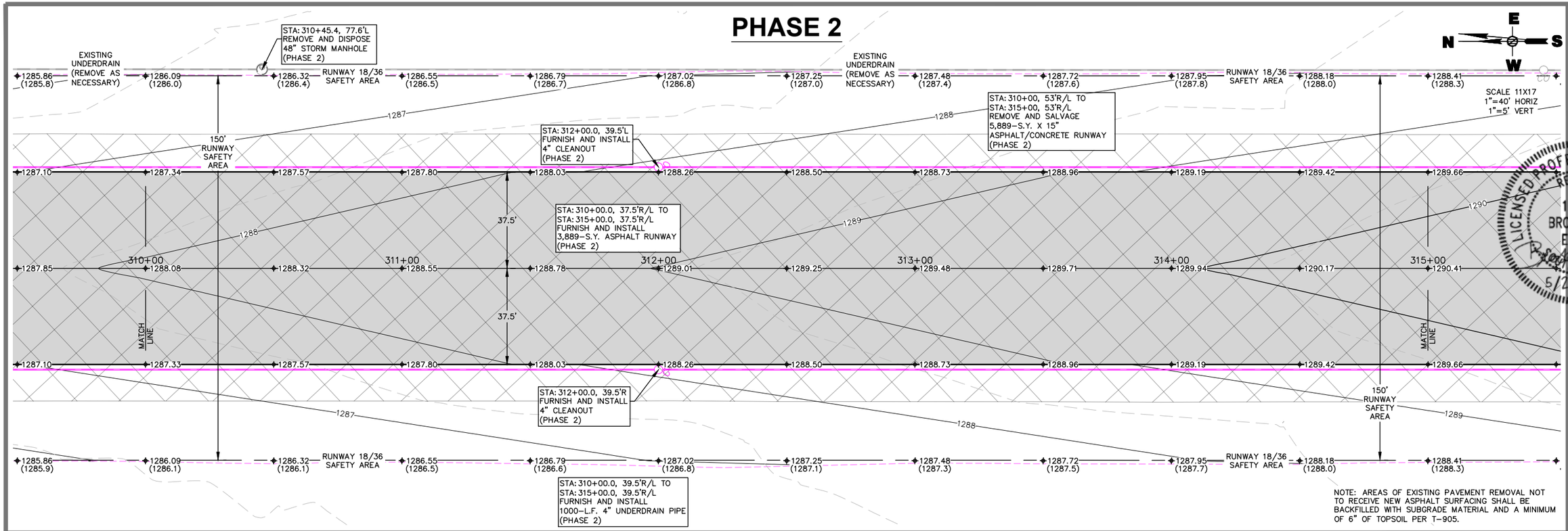
LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

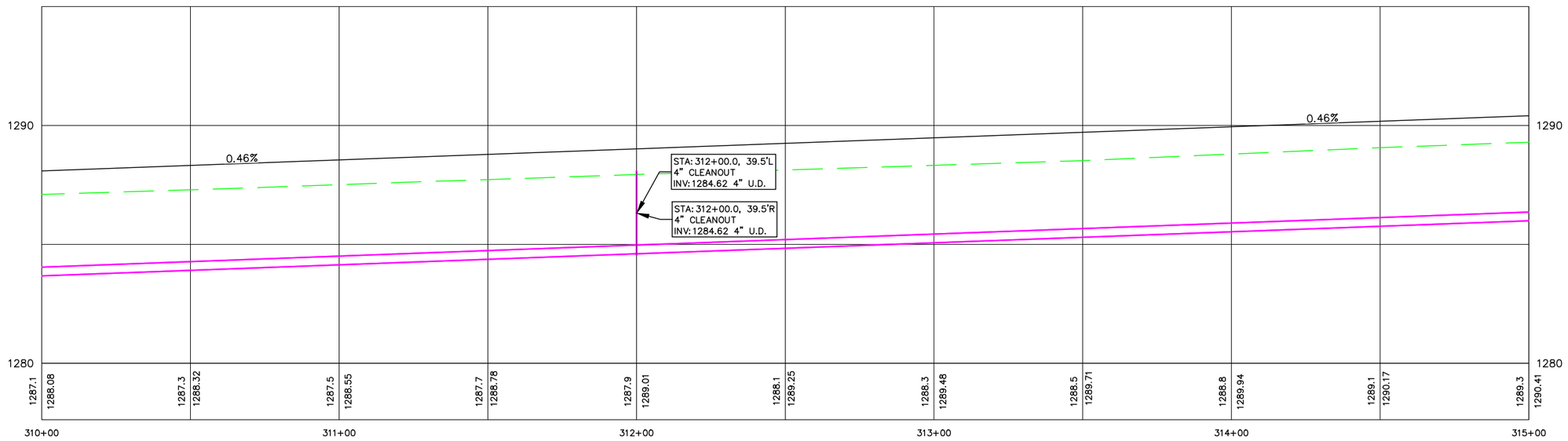
RUNWAY 18/36
STA: 305+00 - 310+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(2)
Date:	5/28/26

PHASE 2





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LICENSED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
5/27/2026

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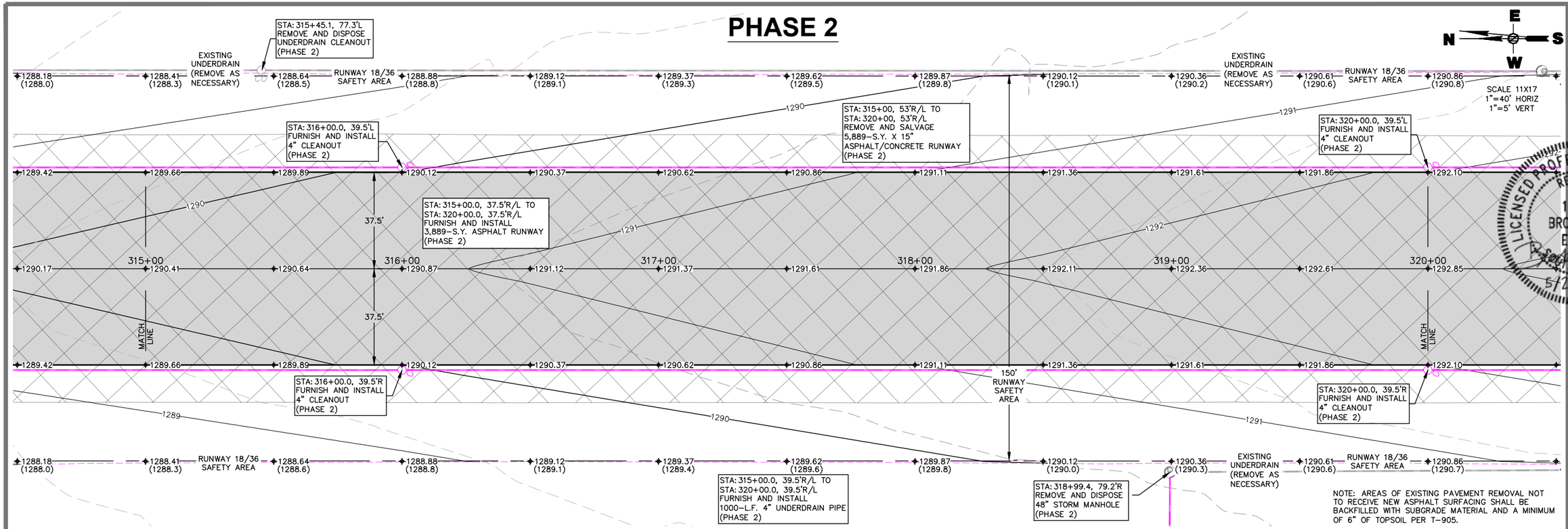
Date

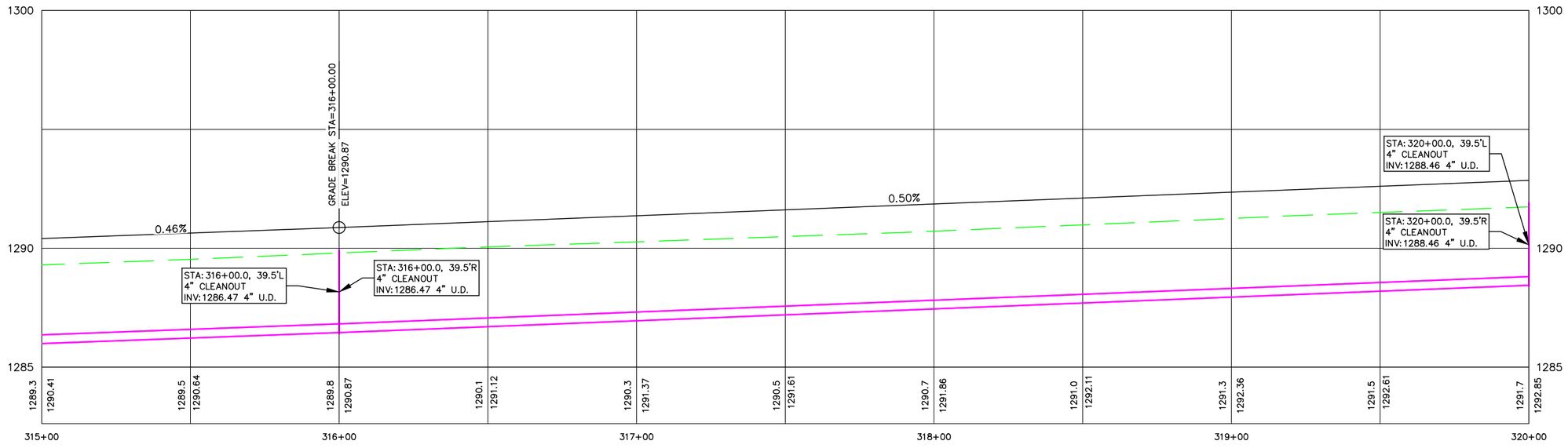
RUNWAY 18/36
STA: 310+00 - 315+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(3)
Date:	5/28/26

PHASE 2





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CIVIL ENGINEERS & LAND SURVEYORS

Date

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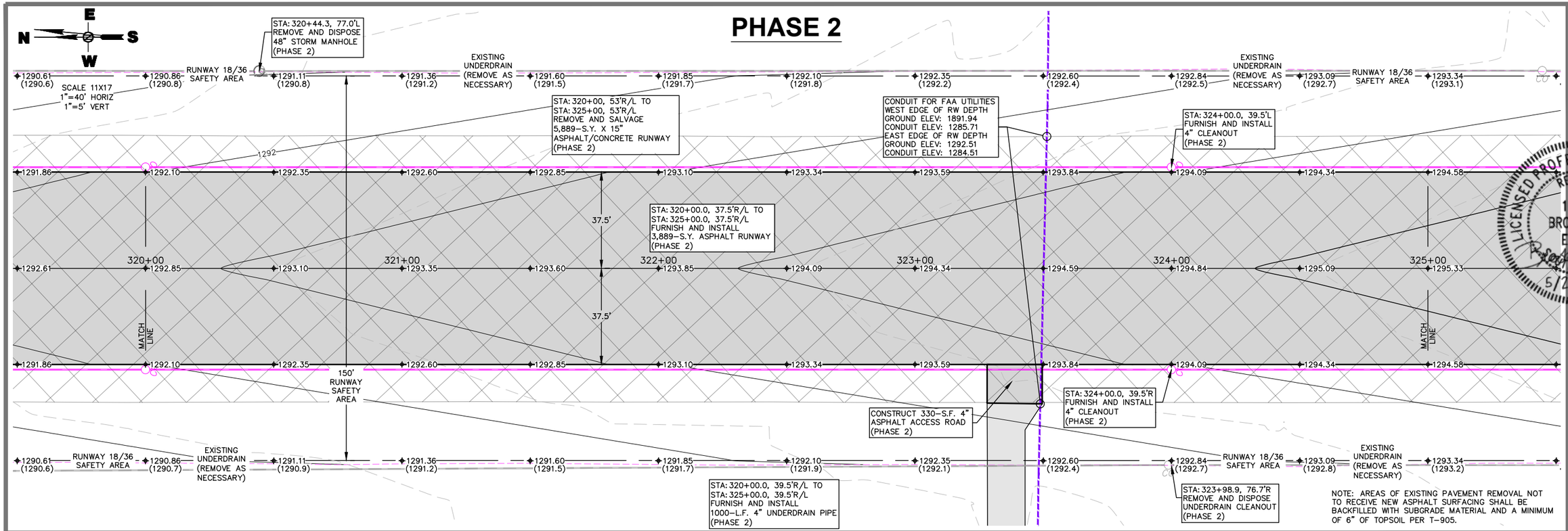
LICENSED PROFESSIONAL ENGINEER
REG. NO.
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

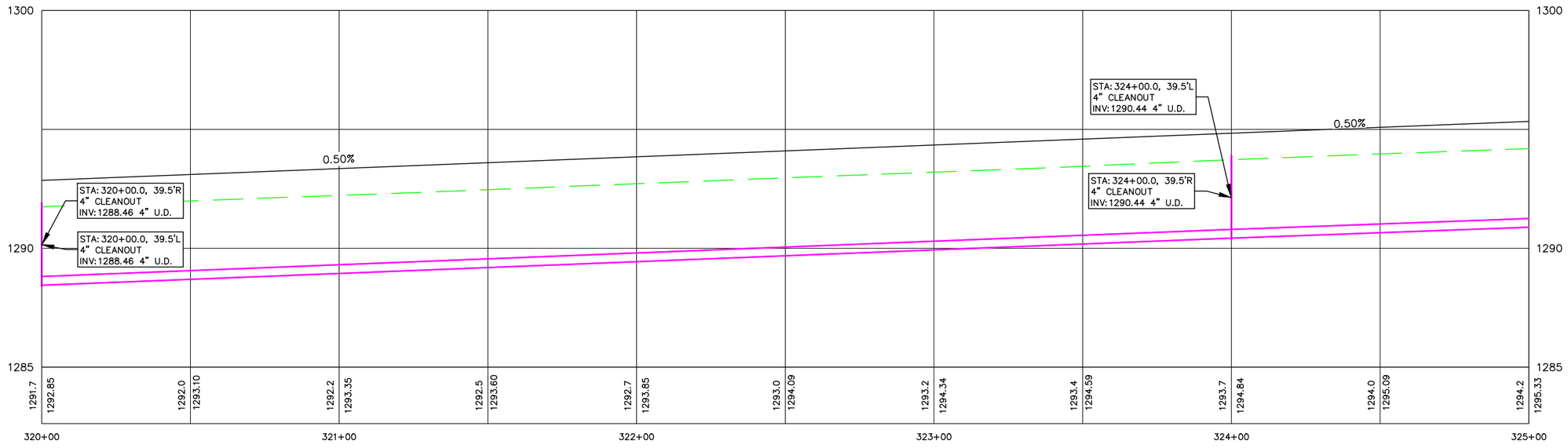
RUNWAY 18/36
STA: 315+00 - 320+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(4)
Date:	5/28/26

PHASE 2





Date

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Reg. No. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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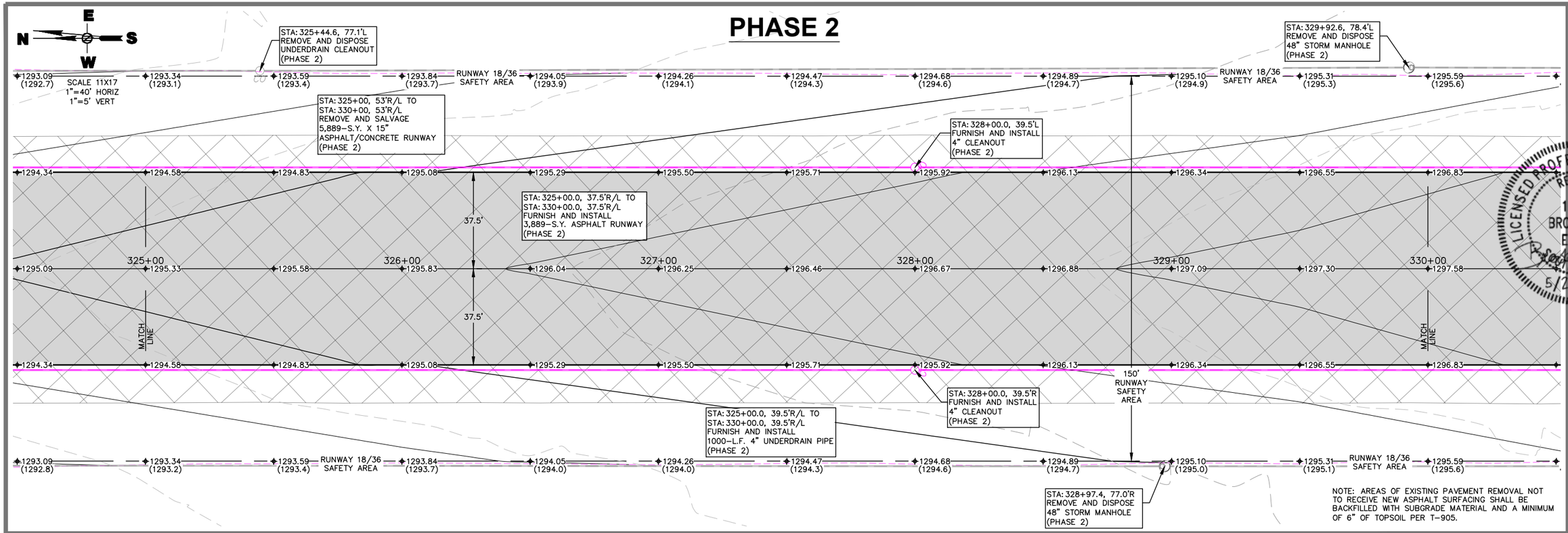
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RUNWAY 18/36
STA: 320+00 - 325+00 (PHASE 2)

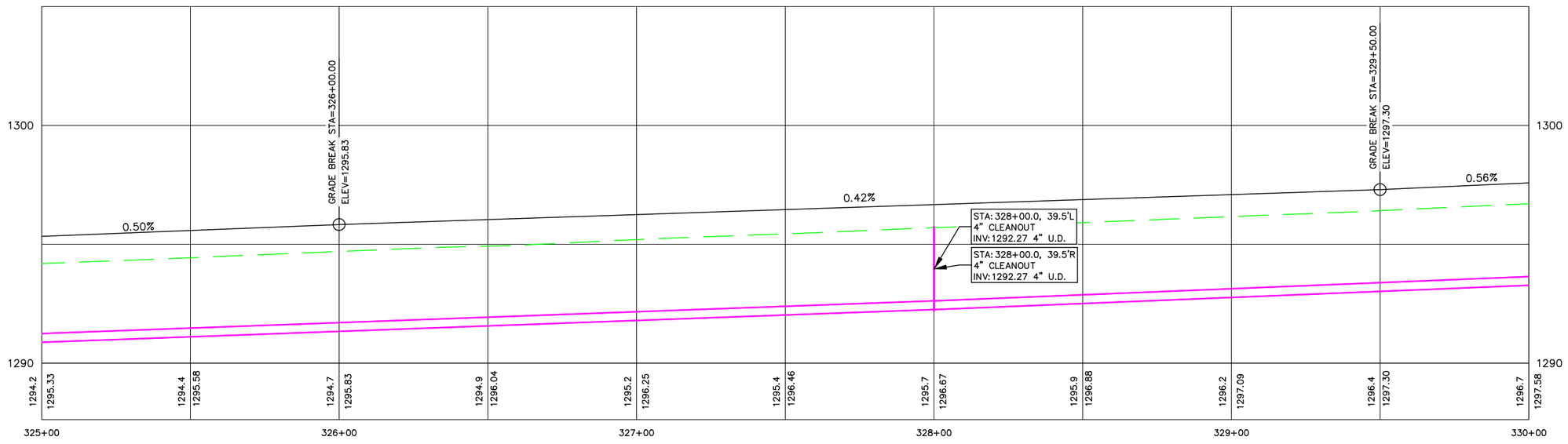
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(5)
Date:	5/28/26

PHASE 2



NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.



Date

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BROOKE B. EDGAR

SOUTH DAKOTA

5/27/2026

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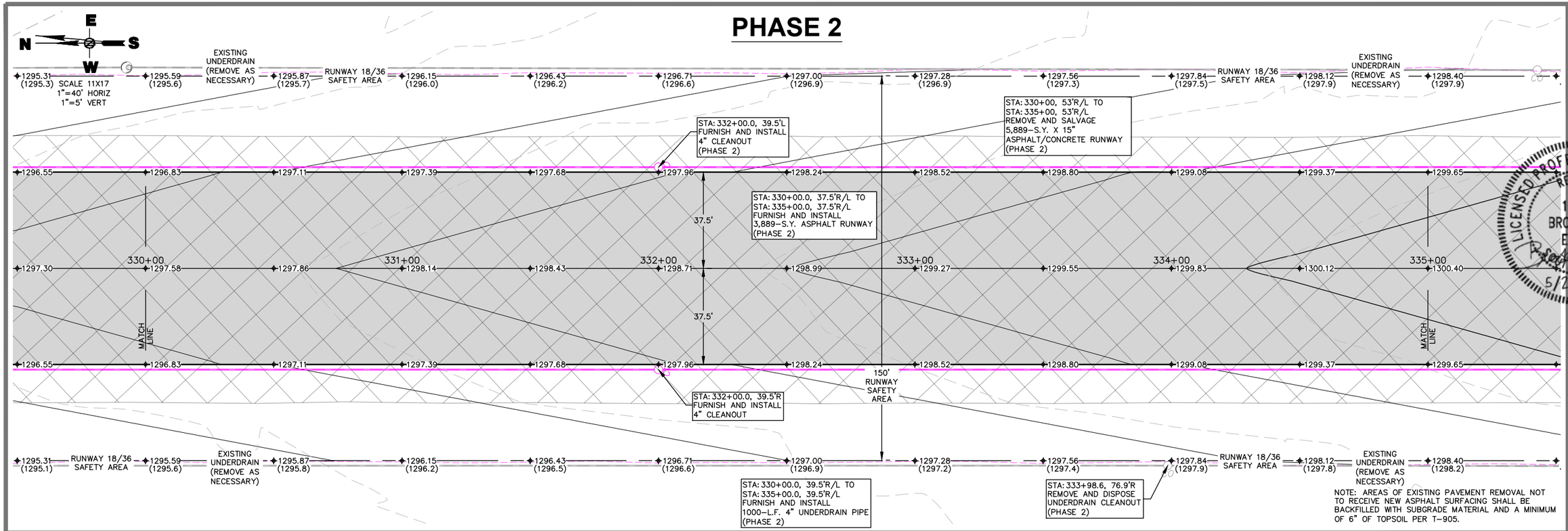
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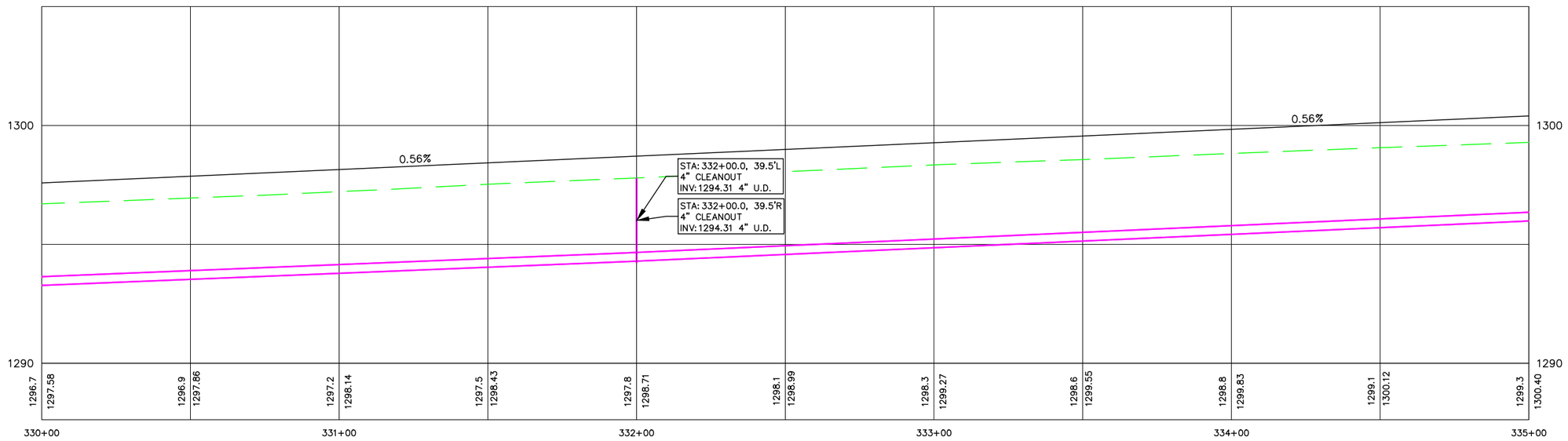
RUNWAY 18/36
STA: 325+00 - 330+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(6)
Date:	5/28/26

PHASE 2





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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

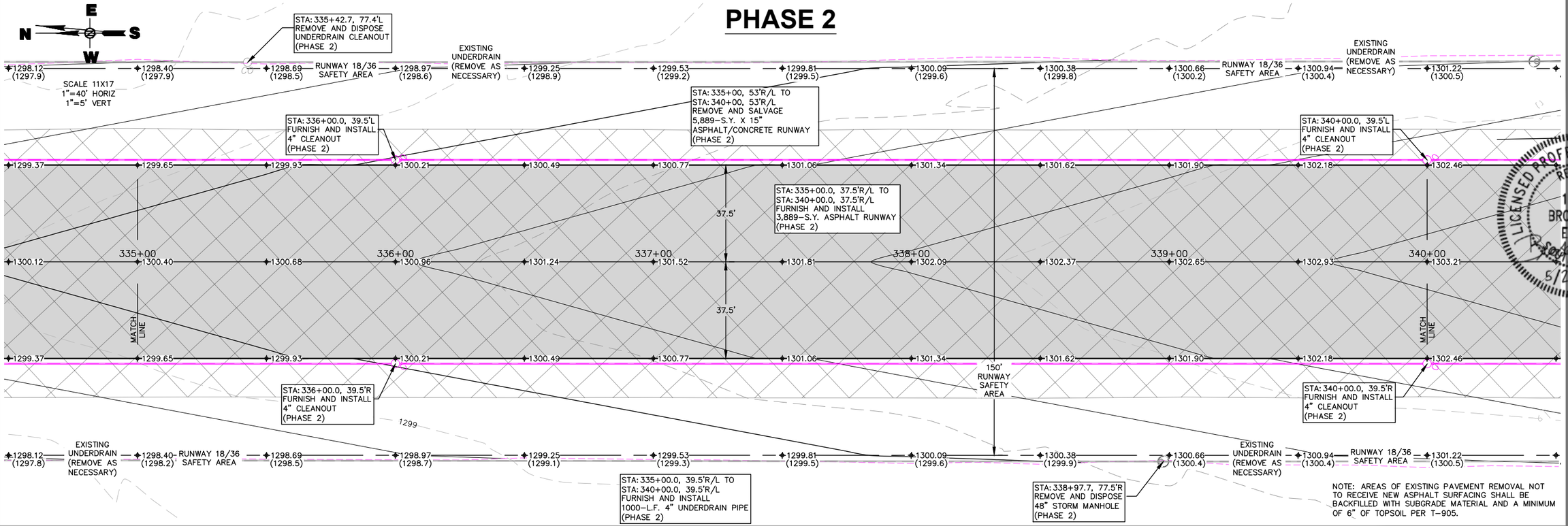
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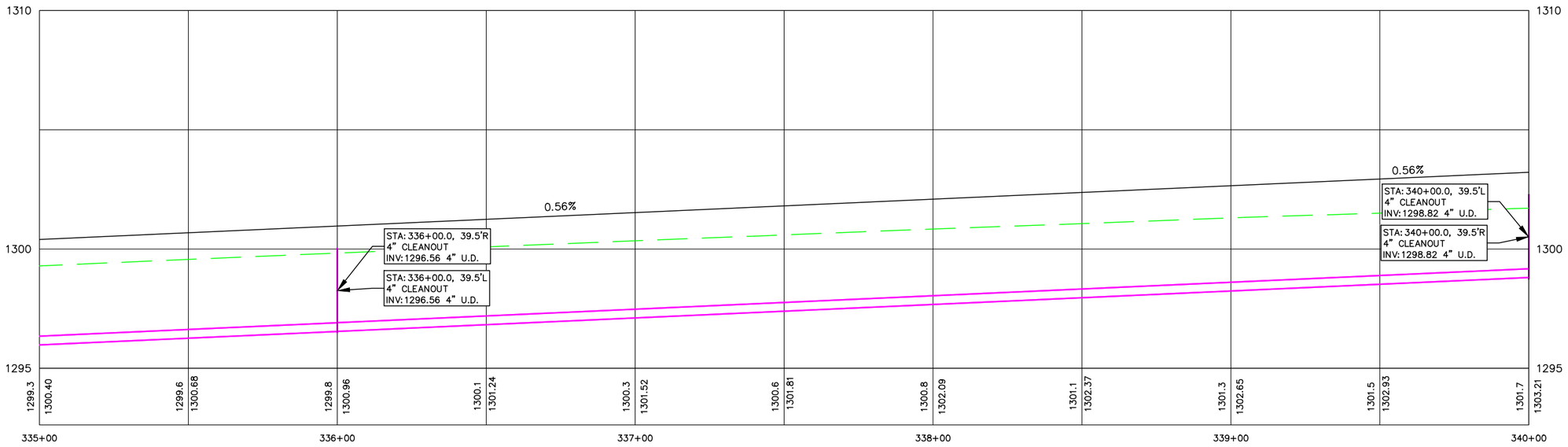
RUNWAY 18/36
STA: 330+00 - 335+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(7)
Date:	5/28/26

PHASE 2





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CIVIL ENGINEERS & LAND SURVEYORS

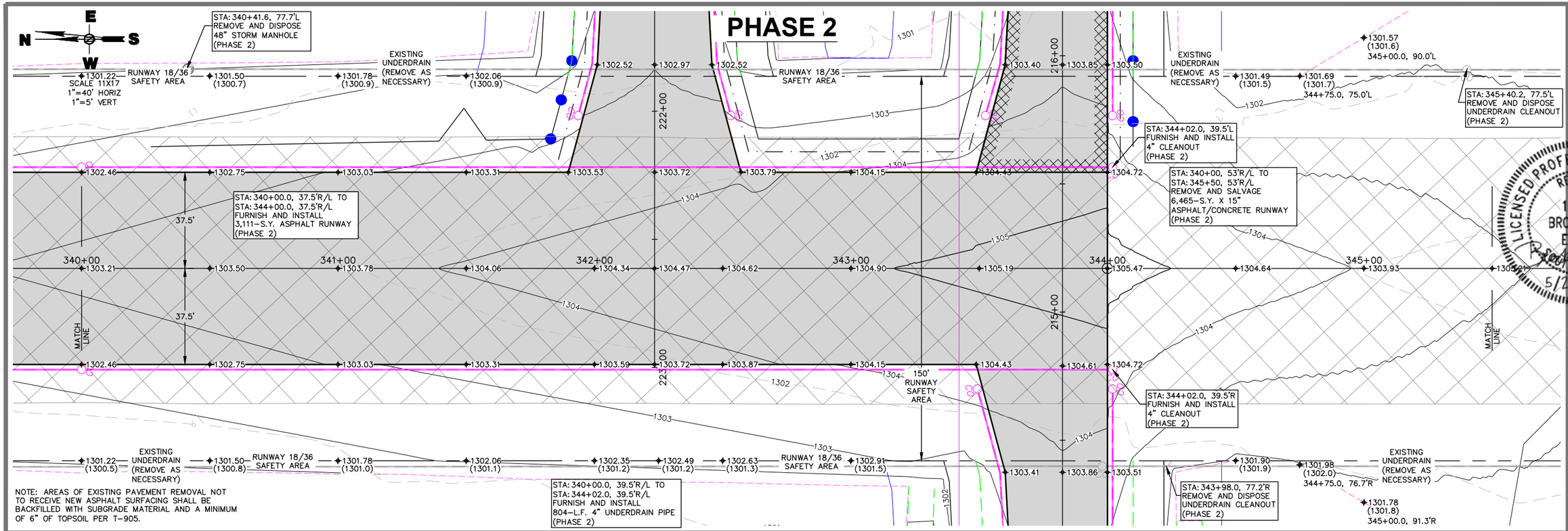
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BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

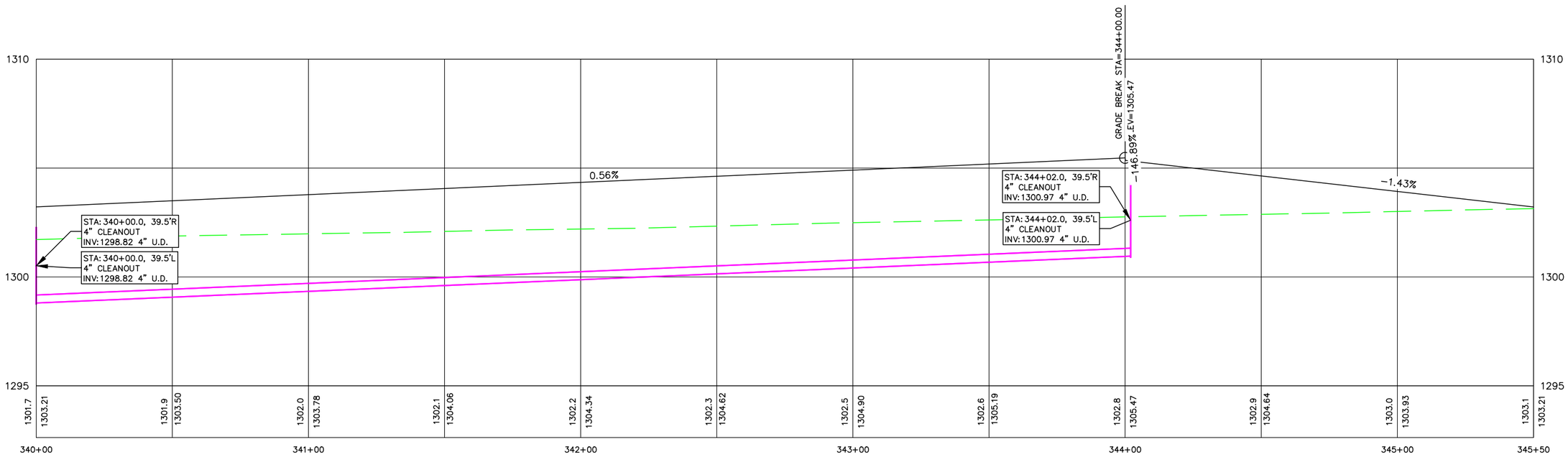
Date

RUNWAY 18/36
STA: 335+00 - 340+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(8)
Date:	5/28/26





SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

RUNWAY 18/36
STA: 340+00 - 345+50 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(9)
Date:	5/28/26

PHASE 2

E
N S
W

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

RUNWAY 18/36
OBJECT FREE AREA

ILS CRITICAL
AREA BOUNDARY

RUNWAY 13/31
OBJECT FREE AREA

RUNWAY 18/36
SAFETY AREA

EXISTING
UNDERDRAIN
(REMOVE AS
NECESSARY)

✦1301.26
(1301.3)
345+50.0, 119.9'L

✦1300.98
(1301.0)
346+00.0, 150.0'L

✦1301.28
(1301.3)
346+50.0, 150.0'L

✦1301.29
(1301.3)
347+00.0, 150.0'L

✦1301.31
(1301.3)
347+50.0, 150.0'L

✦1301.54
(1301.5)
348+00.0, 150.0'L

✦1301.53
(1301.5)
348+50.0, 150.0'L

✦1301.54
(1301.5)
349+00.0, 150.0'L

✦1301.55
(1301.5)
349+50.0, 150.0'L

✦1301.58
(1301.6)
350+00.0, 150.0'L

✦1301.56
(1301.6)
350+50.0, 150.0'L

✦1301.60
(1301.6)
351+00.0, 150.0'L

STA: 349+90.5, 77.5'L
REMOVE AND DISPOSE
48" STORM MANHOLE
(PHASE 2)

✦1302.05
(1302.8)

STA: 345+50, 53'R/L TO
STA: 350+73.1, 53'R
351+74.3, 51'L
REMOVE AND SALVAGE
6,600–S.Y. X 15"
ASPHALT/CONCRETE RUNWAY
(PHASE 2)

PHASE LINE

MATCH LINE

✦1303.21
346+00 ✦1302.50
✦1302.50
347+00 ✦1302.50
✦1302.50
348+00 ✦1302.50
✦1302.50
349+00 ✦1302.50
✦1302.50
350+00 ✦1302.50
✦1302.50
351+00 ✦1302.50

NOTE:
ALL CONTRACTOR EQUIPMENT SHALL BE REMOVED FROM THE
RUNWAY 13/31 OBJECT FREE AREA (OFA) WHEN NOT IN USE.

STA: 348+98.7, 77.3'R
REMOVE AND DISPOSE
48" STORM MANHOLE
(PHASE 2)

PHASE 3

✦1301.41
(1301.4)
345+50.0, 120.7'R

✦1301.09
(1301.1)
346+00.0, 150.0'R

✦1301.06
(1301.1)
346+50.0, 150.0'R

✦1301.07
(1301.1)
347+00.0, 150.0'R

✦1301.22
(1301.2)
347+50.0, 150.0'R

✦1301.31
(1301.3)
348+00.0, 150.0'R

✦1301.57
(1301.6)
348+50.0, 150.0'R

✦1301.58
(1301.6)
349+00.0, 150.0'R

✦1301.53
(1301.5)
349+50.0, 150.0'R

✦1301.74
(1301.7)
350+00.0, 150.0'R

✦1302.01
(1302.0)
350+54.5, 150.0'R

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT
TO RECEIVE NEW ASPHALT SURFACING SHALL BE
BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM
OF 6" OF TOPSOIL PER T–905.

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota.
License Seal Expiration No.

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Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

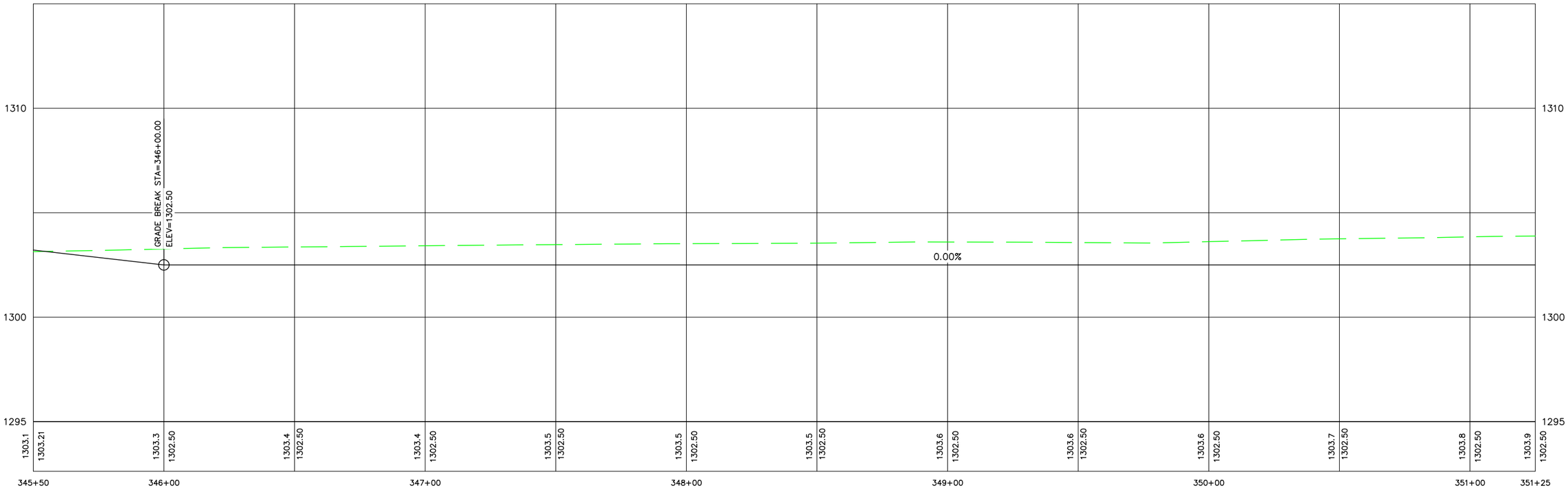
RUNWAY 18/36
STA: 345+50 - 351+25 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(10)
Date:	5/28/26

PHASE 2

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



Date

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License No.

LICENSED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
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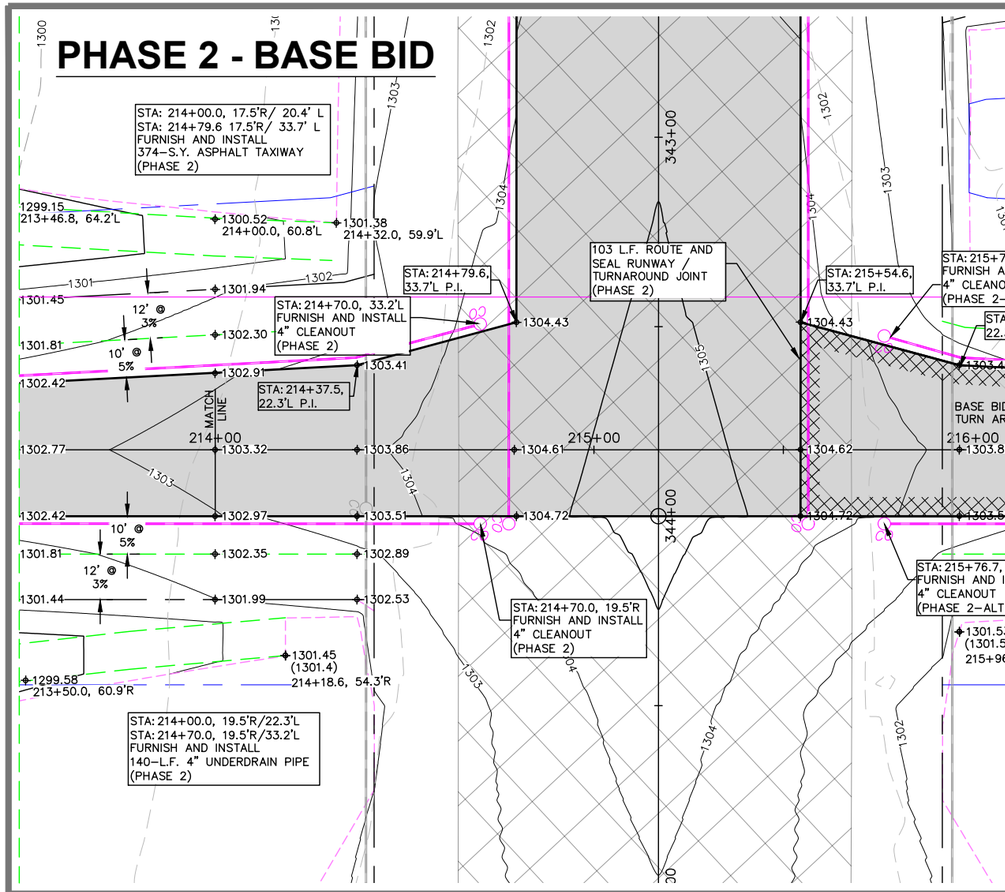
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

RUNWAY 18/36
STA: 345+00 - 351+25 (PHASE 2)

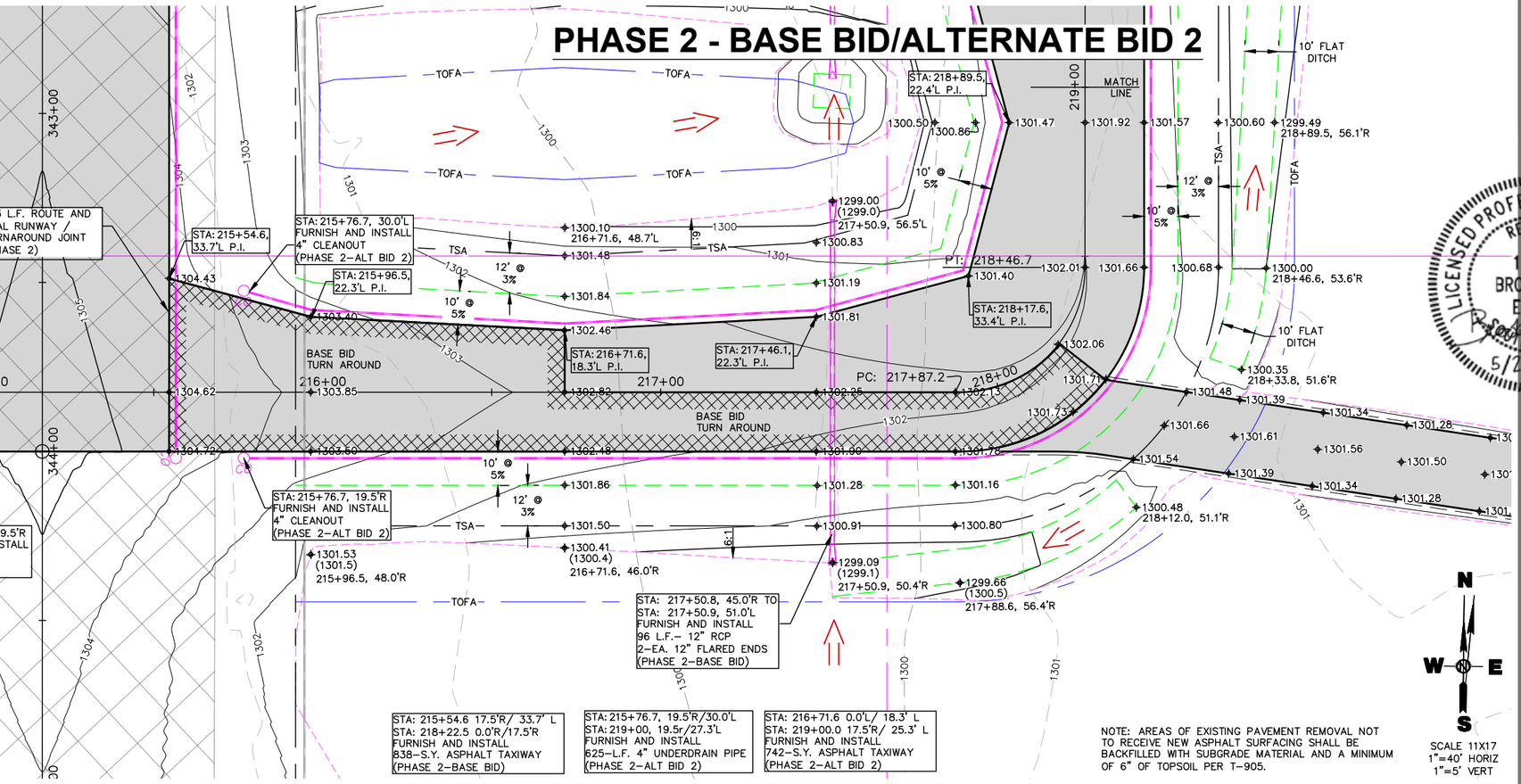
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(10.5)
Date:	5/28/26

PHASE 2 - BASE BID

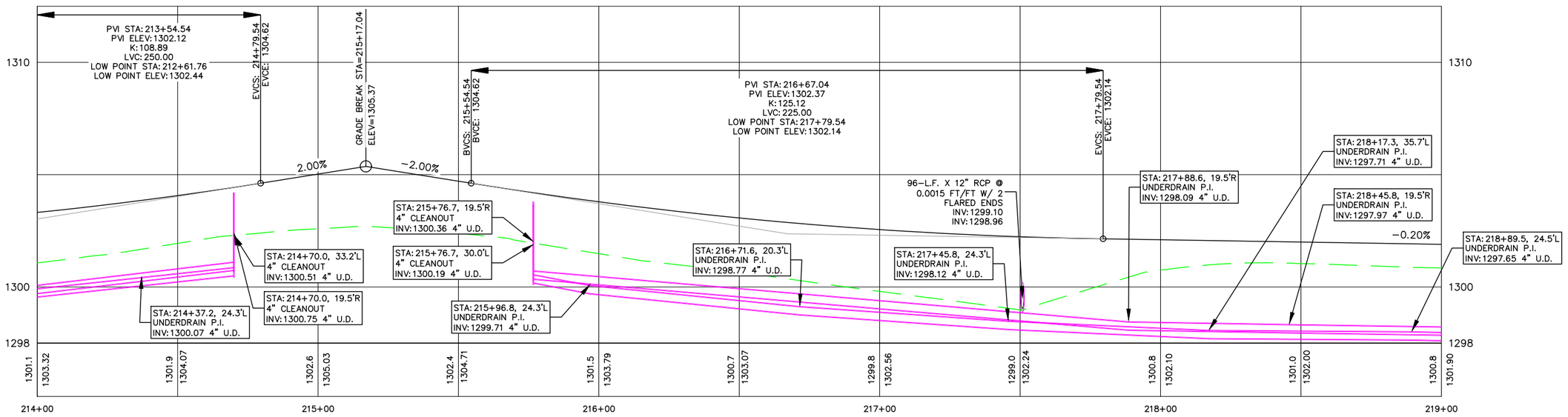


PHASE 2 - BASE BID/ALTERNATE BID 2



NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T–905.

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



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CIVIL ENGINEERS & LAND SURVEYORS

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BROOKE EDGAR

SOUTH DAKOTA

5/27/2026

CONNECTOR TAXIWAY
STA: 214+00 - 219+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(5)
Date:	5/28/26

PHASE 2 - ALTERNATE BID 2

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.

STA: 220+27.5, 60.0'L FURNISH AND INSTALL 12" FLARED END (PHASE 2-ALT BID 2)

STA: 219+00.0 17.5'R/ 25.3' L
STA: 222+23.8 33.6'R/L
FURNISH AND INSTALL 1554-S.Y. ASPHALT TAXIWAY (PHASE 2-ALT BID 2)

68 L.F. ROUTE AND SEAL RUNWAY / TURNAROUND JOINT (PHASE 2)

STA: 222+01.7, 29.7'L FURNISH AND INSTALL 4" CLEANOUT (PHASE 2-ALT BID 2)

STA: 222+01.7, 29.8'R FURNISH AND INSTALL 4" CLEANOUT (PHASE 2-ALT BID 2)

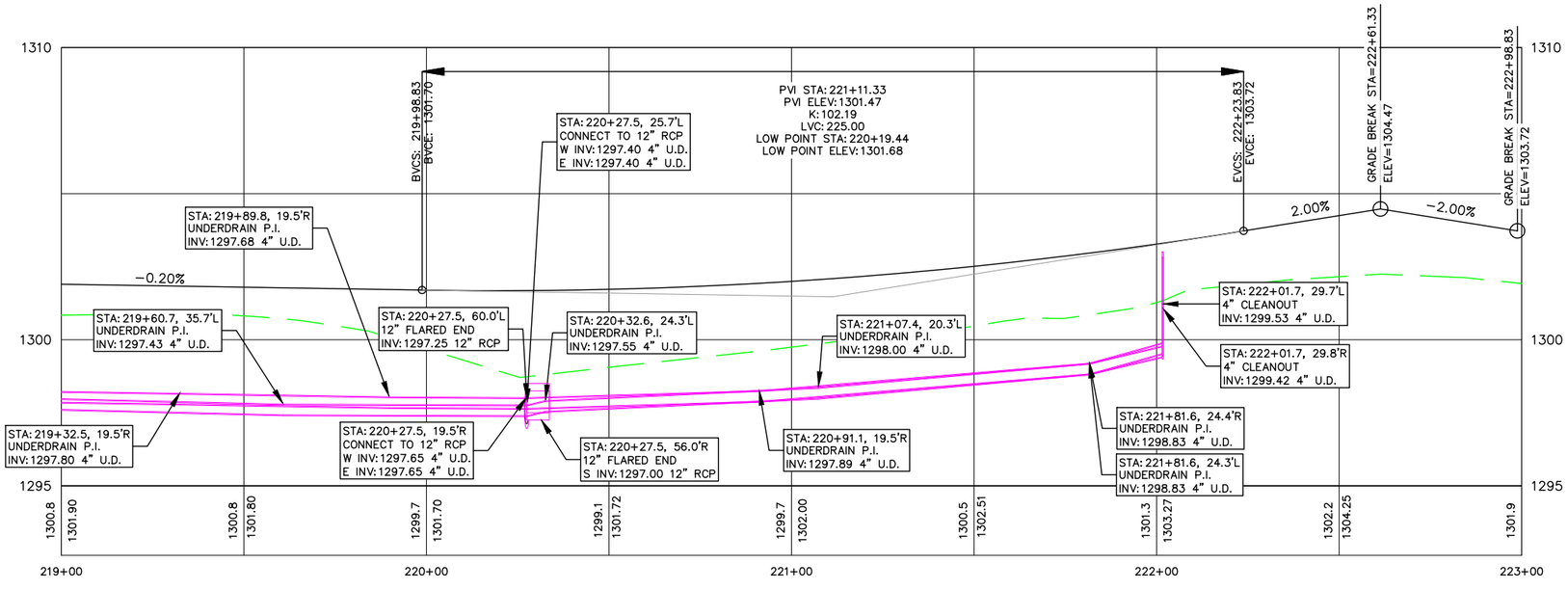
STA: 220+27.5, 25.7'L FURNISH AND INSTALL 2-EA. CONNECT U.D. TO RCP (ALT BID 2)

STA: 220+27.5, 19.5'R FURNISH AND INSTALL 2-EA. CONNECT U.D. TO RCP (ALT BID 2)

STA: 220+27.5, 60.0'L TO STA: 220+27.5, 56.0'R FURNISH AND INSTALL 114 L.F.- 12" RCP 1-EA. 12" FLARED END (PHASE 2-ALT BID 2)

STA: 219+00, 19.5'R/27.3'L TO STA: 222+02, 30'R/'L FURNISH AND INSTALL 582-L.F. 4" UNDERDRAIN PIPE (PHASE 2-ALT BID 2)

SEE SHEET 40 FOR DITCH CONTINUATION



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Date

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REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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CONNECTOR TAXIWAY
STA: 219+00 - 223+00 (PHASE 2)

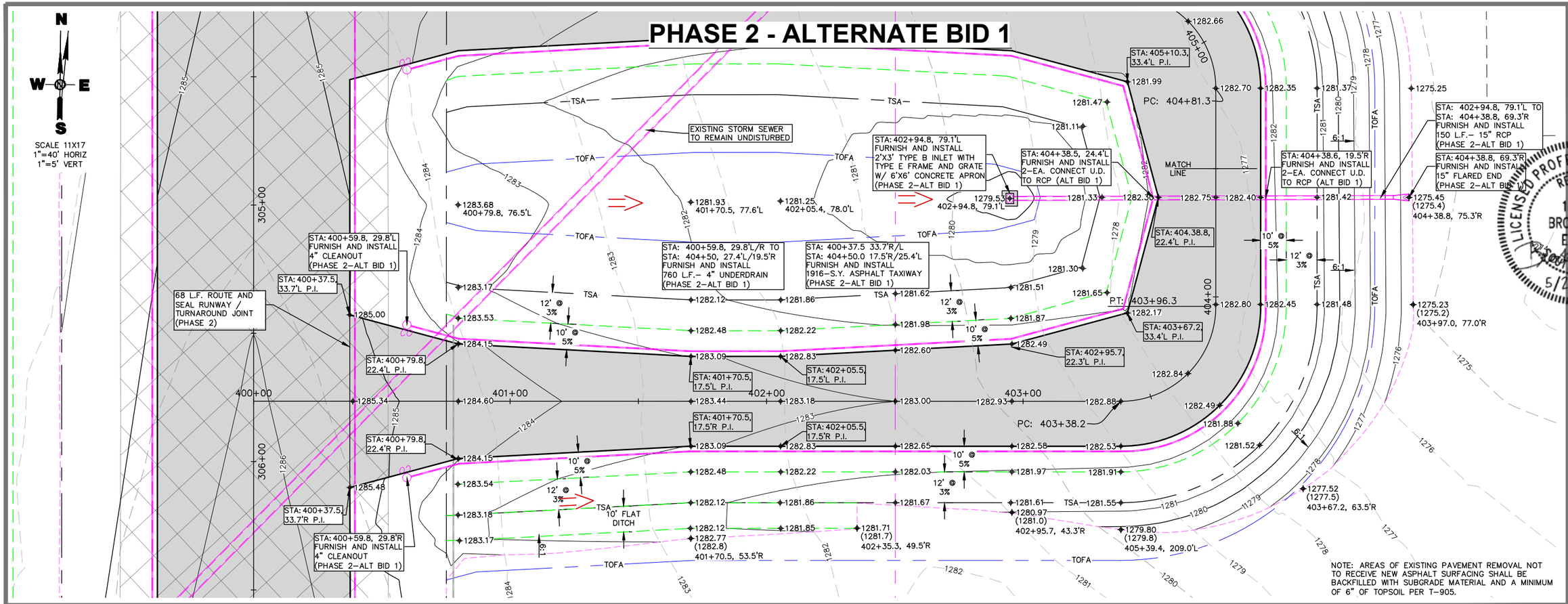
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	CT(6)
Date:	5/28/26

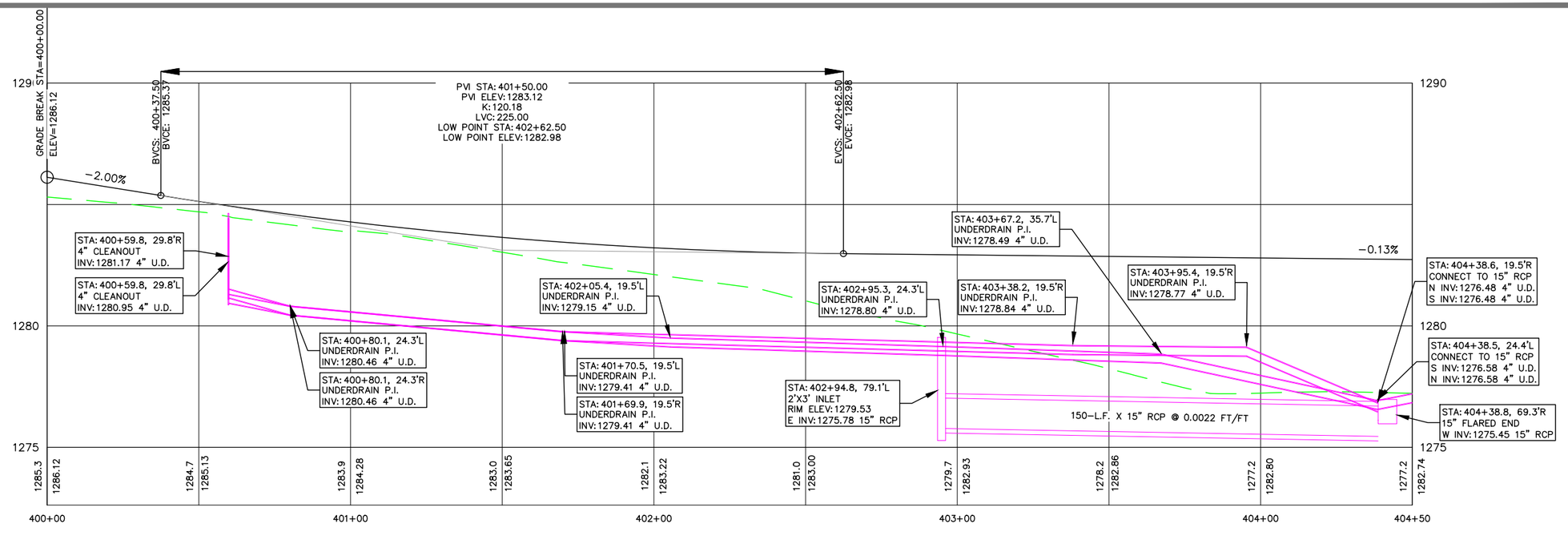
PHASE 2 - ALTERNATE BID 1

N
W E
S

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T–905.



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LICENSED PROFESSIONAL ENGINEER
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BROOKE B. EDGAR
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5/27/2026

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Date: 5/27/2026
License Number No. 3639

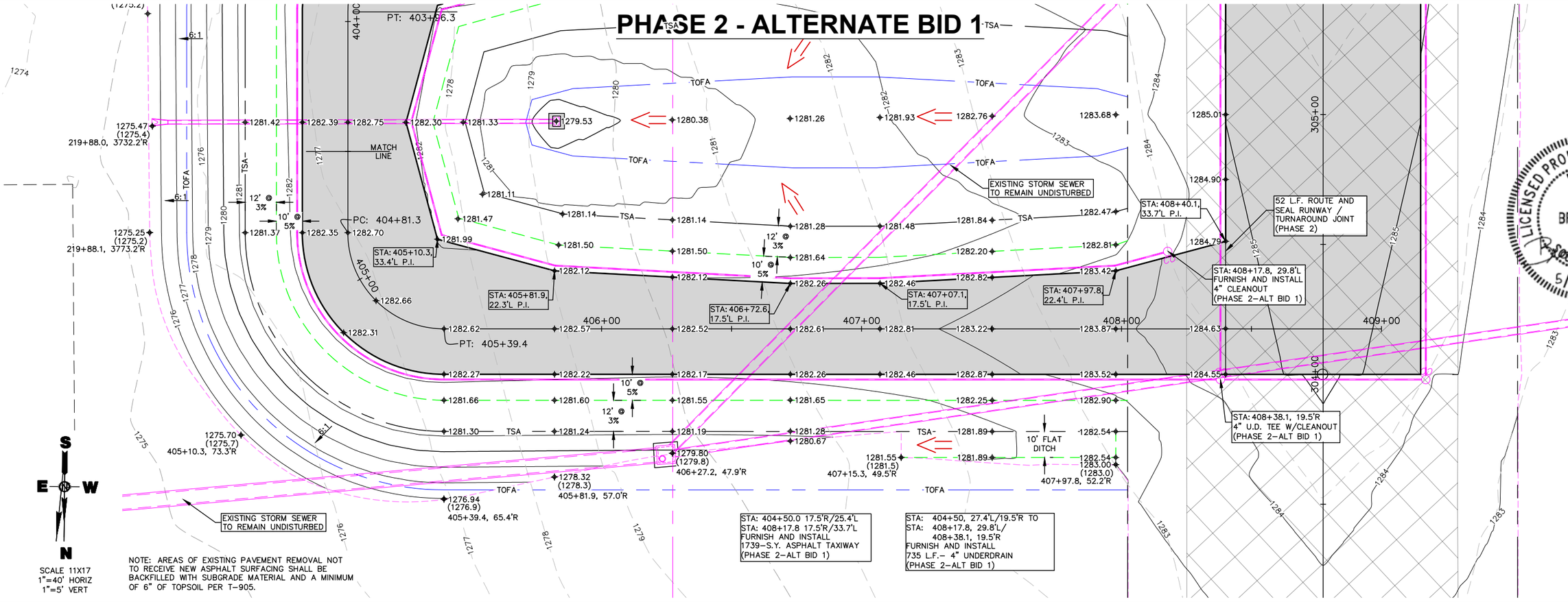
Date

18 END TURNAROUND
STA: 400+00 - 404+50 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

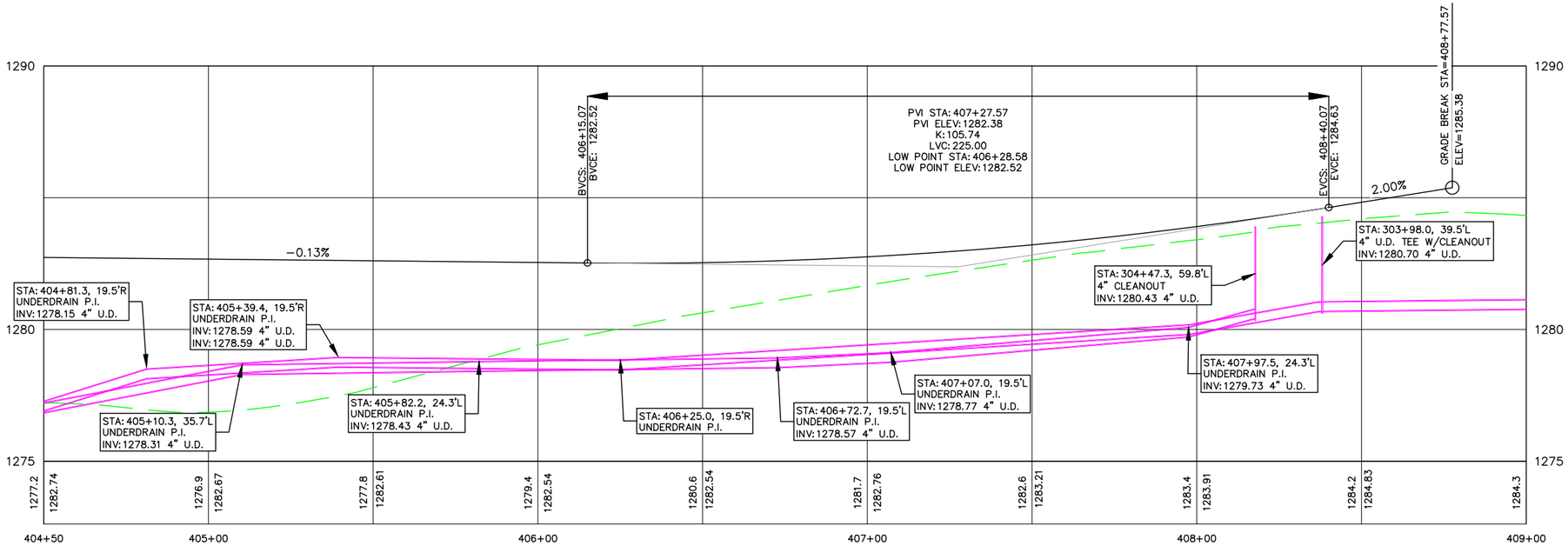
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	TA(1)
Date:	5/28/26

PHASE 2 - ALTERNATE BID 1



SCALE 11X17
1"=40' HORIZ
1"=5' VERT

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.



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LICENSED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
5/27/2026

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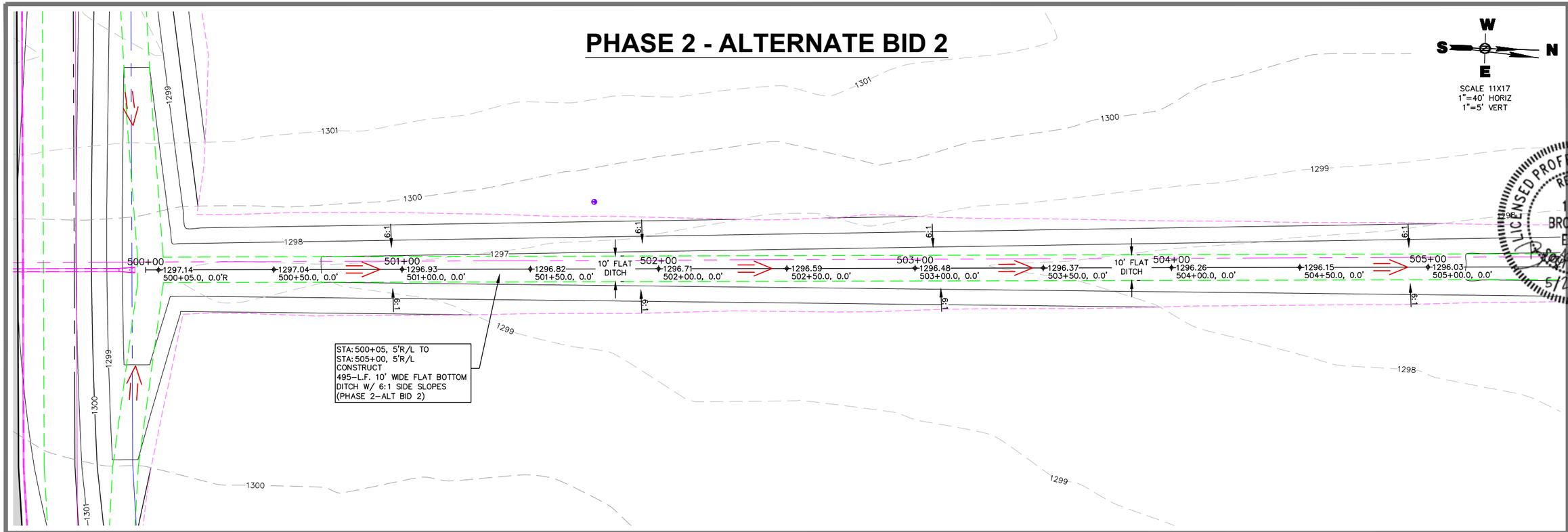
Date

18 END TURNAROUND
STA: 404+50 - 409+00 (PHASE 2)

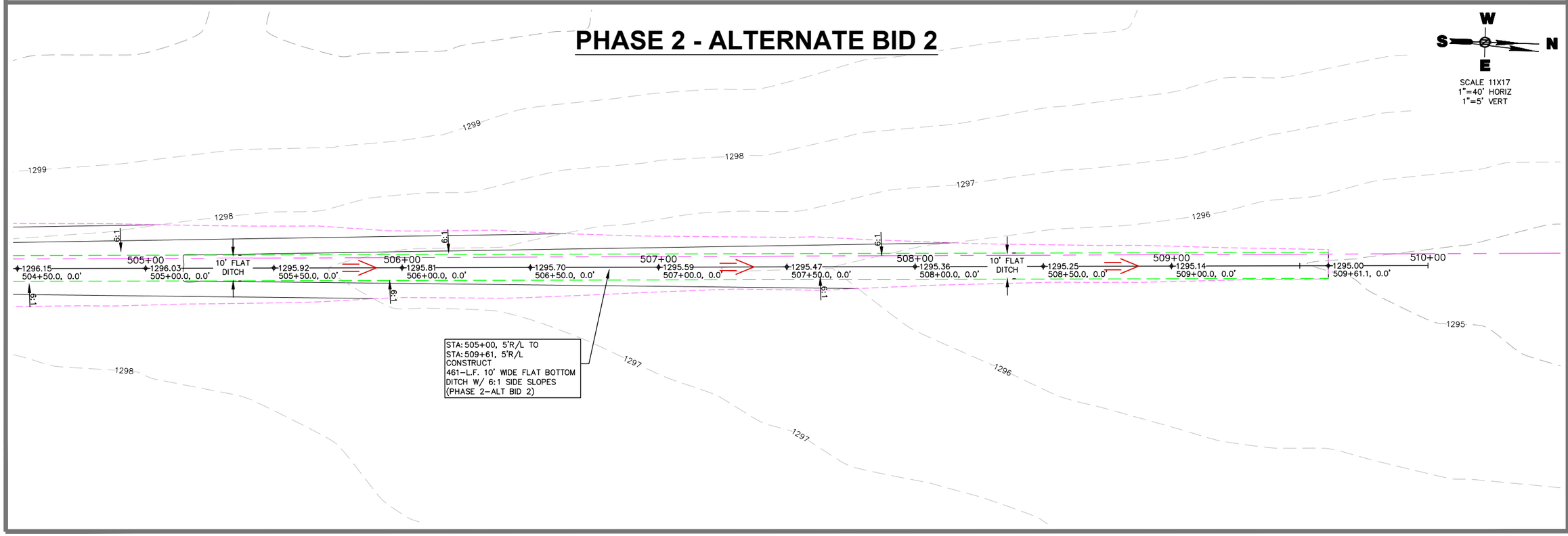
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	TA(2)
Date:	5/28/26

PHASE 2 - ALTERNATE BID 2



PHASE 2 - ALTERNATE BID 2



Date

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SOUTH DAKOTA
5/27/2026

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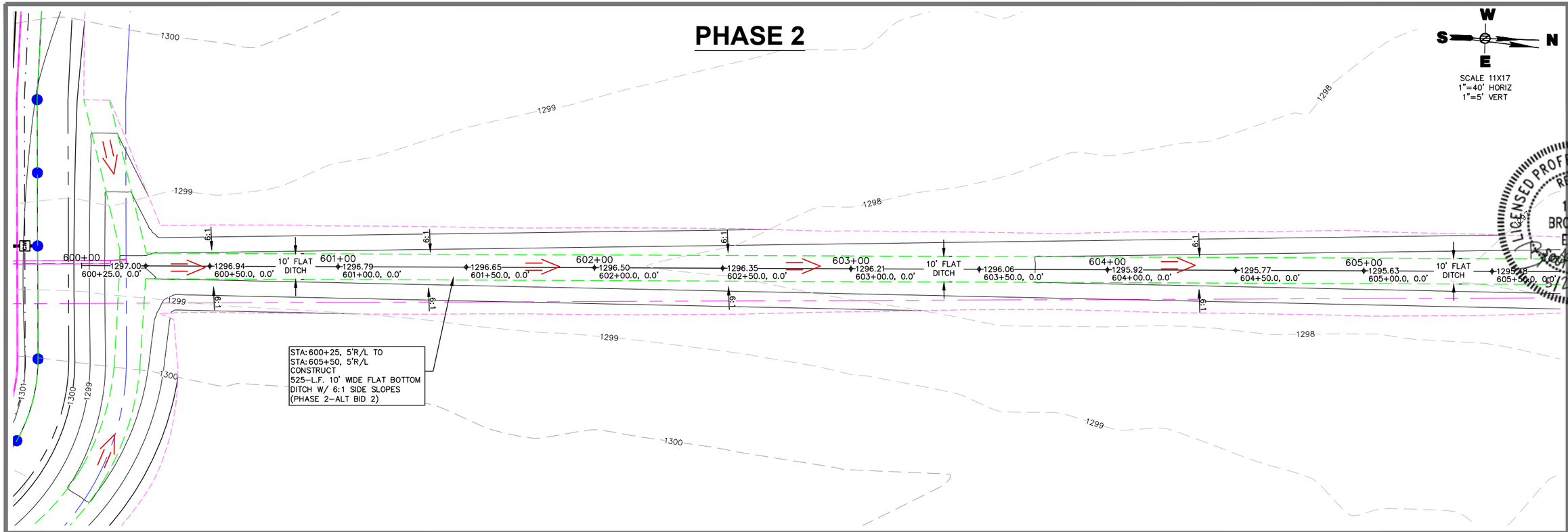
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CIVIL ENGINEERS & LAND SURVEYORS

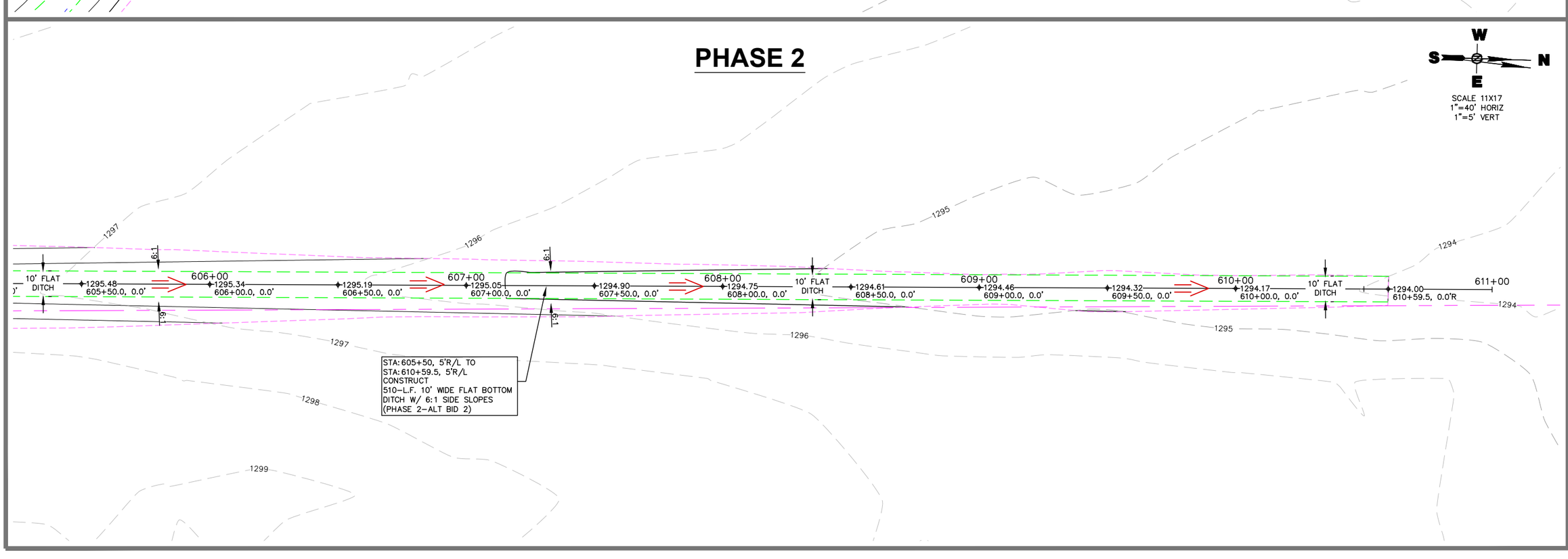
CONNECTOR TAXIWAY DITCH
STA: 500+00 - 510+00 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	DITCH(1)
Date:	5/28/26

PHASE 2





Date

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5/27/2026

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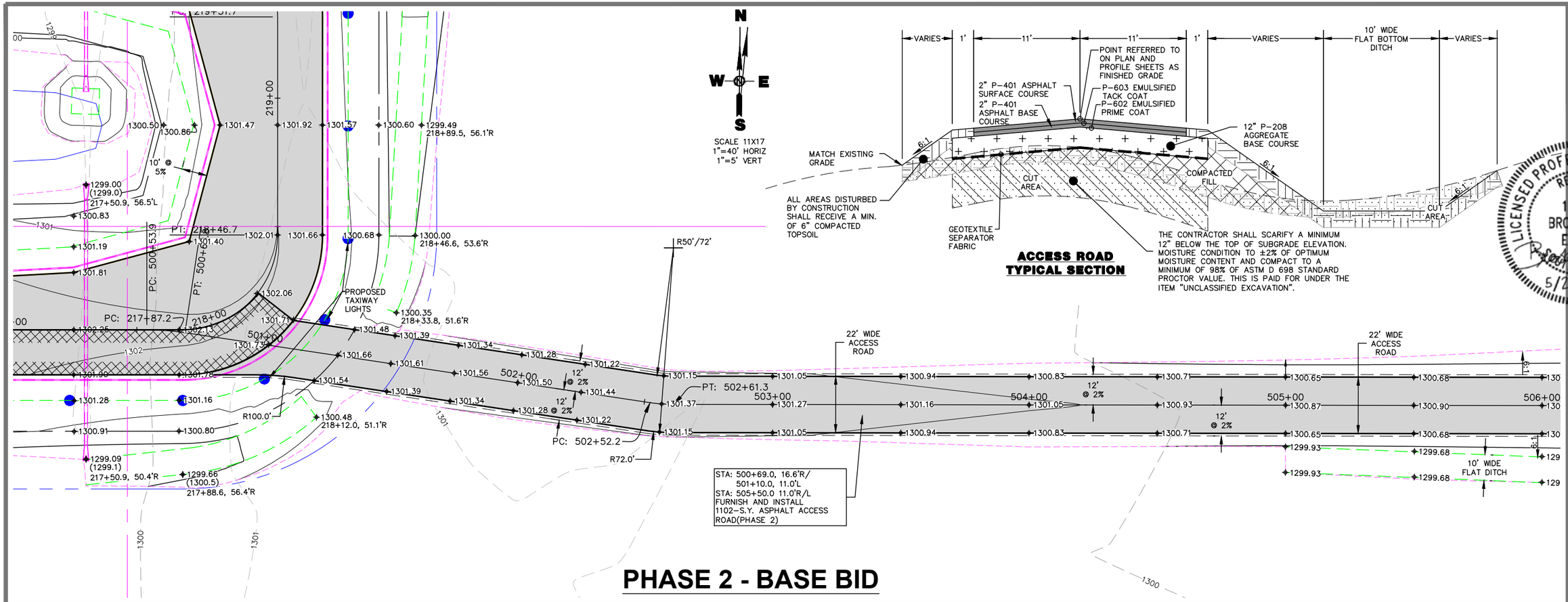
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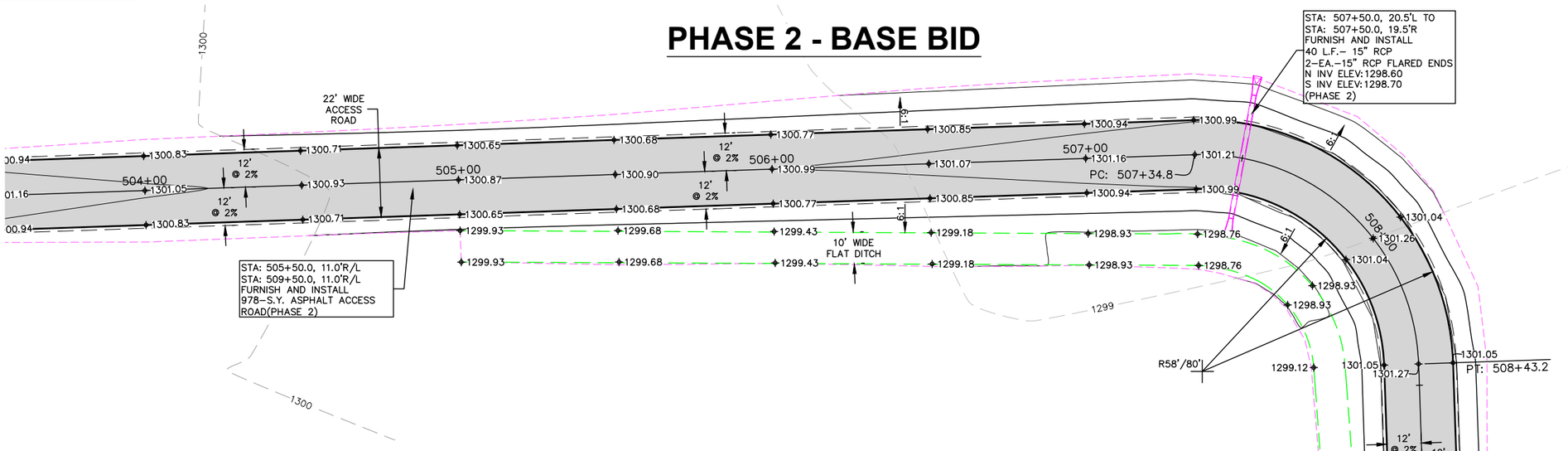
TURN AROUND DITCH
STA: 600+00 - 611+00 (PHASE 2)

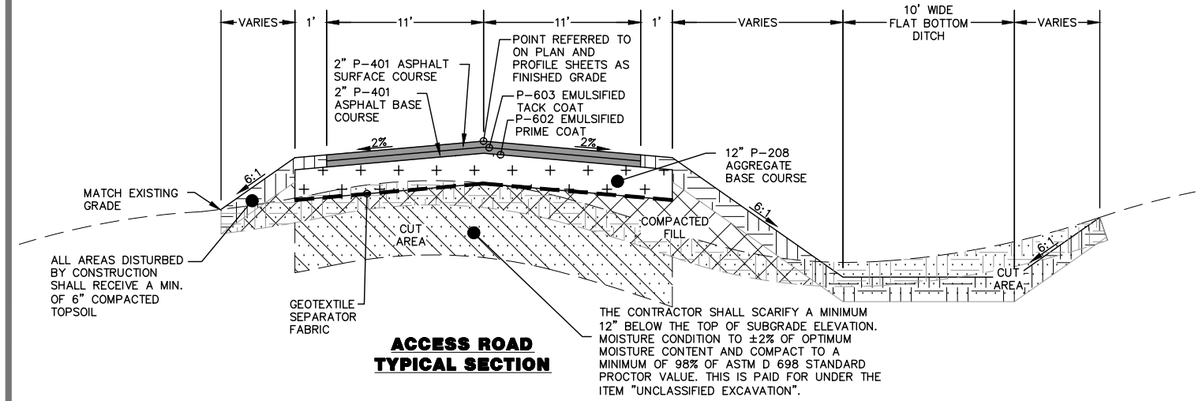
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-02 DITCH(2)
Date:	5/28/26

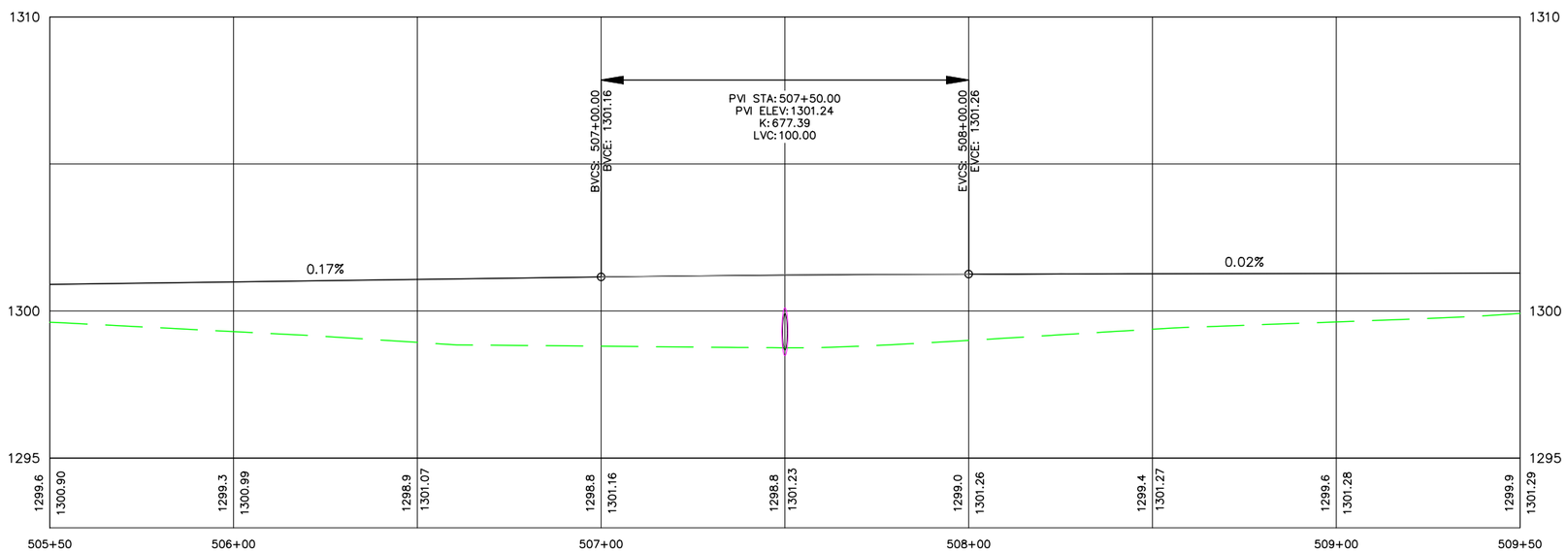

N
W
E
S
SCALE 11X17
1"=40' HORIZ
1"=5' VERT
VARIES
1'
11'
11'
1'
VARIES
10' WIDE
FLAT BOTTOM
DITCH
VARIES
POINT REFERRED TO ON PLAN AND PROFILE SHEETS AS FINISHED GRADE
2" P-401 ASPHALT SURFACE COURSE
2" P-401 ASPHALT BASE COURSE
P-603 EMULSIFIED TACK COAT
P-602 EMULSIFIED PRIME COAT
12" P-208 AGGREGATE BASE COURSE
MATCH EXISTING GRADE
6:1
CUT AREA
COMPACTED FILL
ALL AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE A MIN. OF 6" COMPACTED TOPSOIL
GEOTEXTILE SEPARATOR FABRIC
THE CONTRACTOR SHALL SCARIFY A MINIMUM 12" BELOW THE TOP OF SUBGRADE ELEVATION. MOISTURE CONDITION TO ±2% OF OPTIMUM MOISTURE CONTENT AND COMPACT TO A MINIMUM OF 98% OF ASTM D 698 STANDARD PROCTOR VALUE. THIS IS PAID FOR UNDER THE ITEM "UNCLASSIFIED EXCAVATION".
ACCESS ROAD
TYPICAL SECTION
PC: 219+51.7
PT: 218+46.7
PC: 500+53.9
PT: 500+68.9
PC: 217+87.2
219+00
218+00
217+00
501+00
502+00
503+00
504+00
505+00
506+00
PROPOSED TAXWAY LIGHTS
R50'/72'
R100.0'
R72.0'
PC: 502+52.2
PT: 502+61.3
12' @ 2%
22' WIDE ACCESS ROAD
10' @ 5%
10' WIDE FLAT DITCH
STA: 500+69.0, 16.6'R/ 501+10.0, 11.0'L
STA: 505+50.0 11.0'R/L
FURNISH AND INSTALL
1102-S.Y. ASPHALT ACCESS ROAD(PHASE 2)
1300.50
1300.86
1301.47
1301.92
1301.57
1300.60
1299.49
218+89.5, 56.1'R
1299.00
(1299.0)
217+50.9, 56.5'L
1300.83
1301.19
1301.81
1300.68
1300.00
218+46.6, 53.6'R
1302.06
1302.25
1302.13
1301.71
1301.48
1300.35
218+33.8, 51.6'R
1301.39
1301.34
1301.28
1301.22
1301.66
1301.61
1301.56
1301.50
1301.44
1301.54
1301.39
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1300.83
1300.71
1300.65
1300.68
1301.00
1301.28
1301.16
1300.91
1300.80
1300.48
218+12.0, 51.1'R
1299.09
(1299.1)
217+50.9, 50.4'R
1299.66
(1300.5)
217+88.6, 56.4'R
1299.93
1299.68
1300.87
1300.90
1300.93
1300.88
1300.83
1300.78
1300.73
1300.68
1300.63
1300.58
1300.53
1300.48
1300.43
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1300.28
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1299.78
1299.73
1299.68
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1299.38
1299.33
1299.28
1299.23
1299.18
1299.13
1299.08
1299.03
1298.98

PHASE 2 - BASE BID





ACCESS ROAD
TYPICAL SECTION



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SOUTH DAKOTA
5/27/2026

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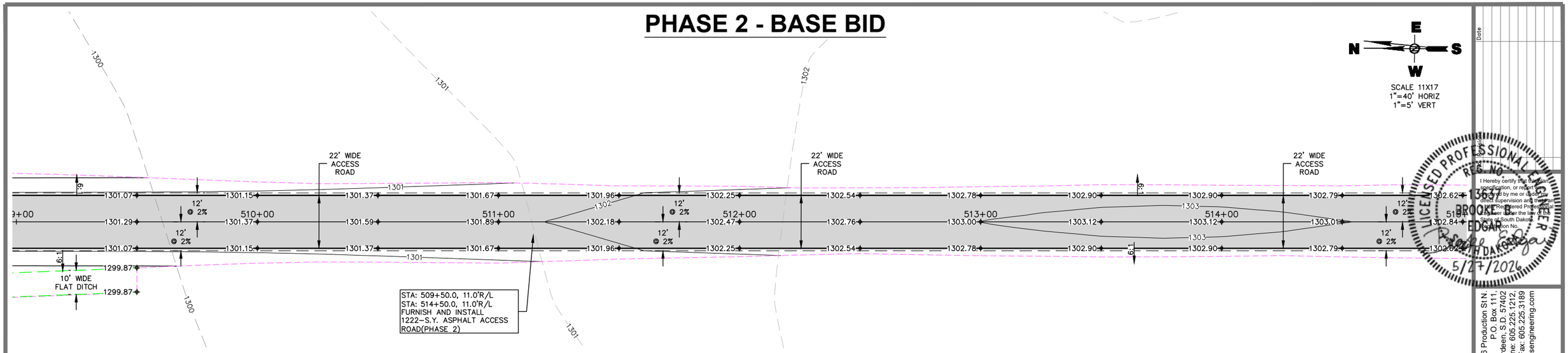
SCALE 11X17
1"=40' HORZ
1"=4' VERT

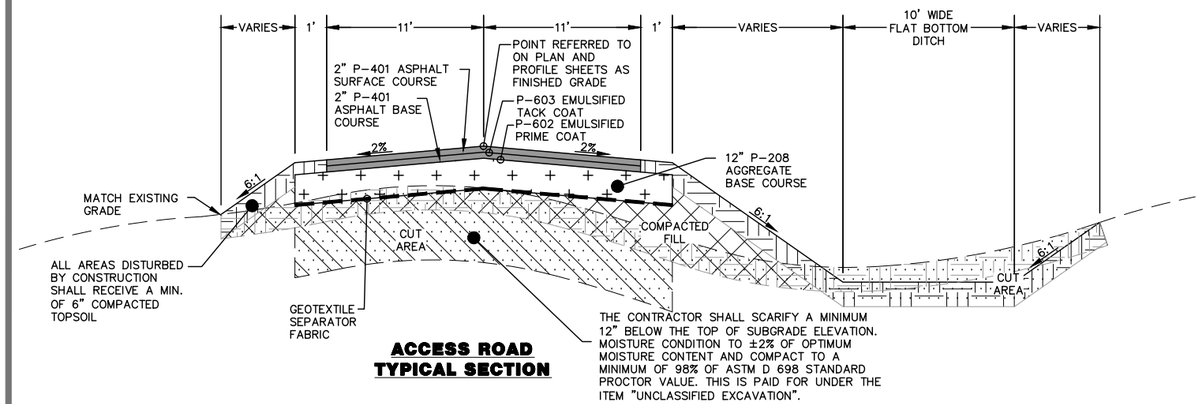
ACCESS ROAD
STA:505+50 TO 509+50 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

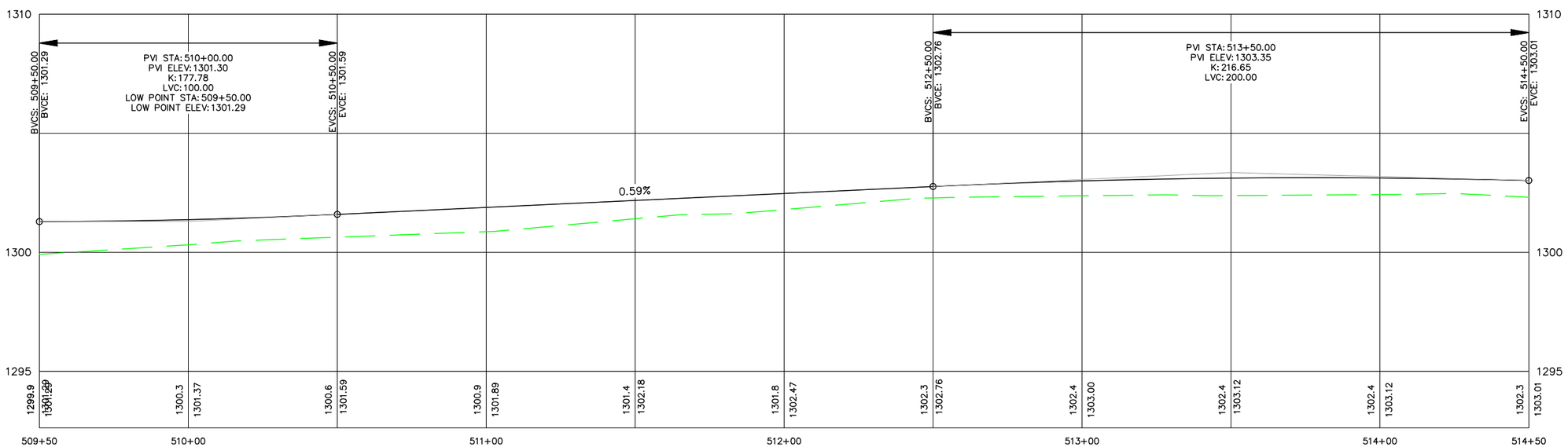
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	AR(2)
Date:	5/28/26

PHASE 2 - BASE BID





ACCESS ROAD TYPICAL SECTION



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Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. Certificate No. 13651

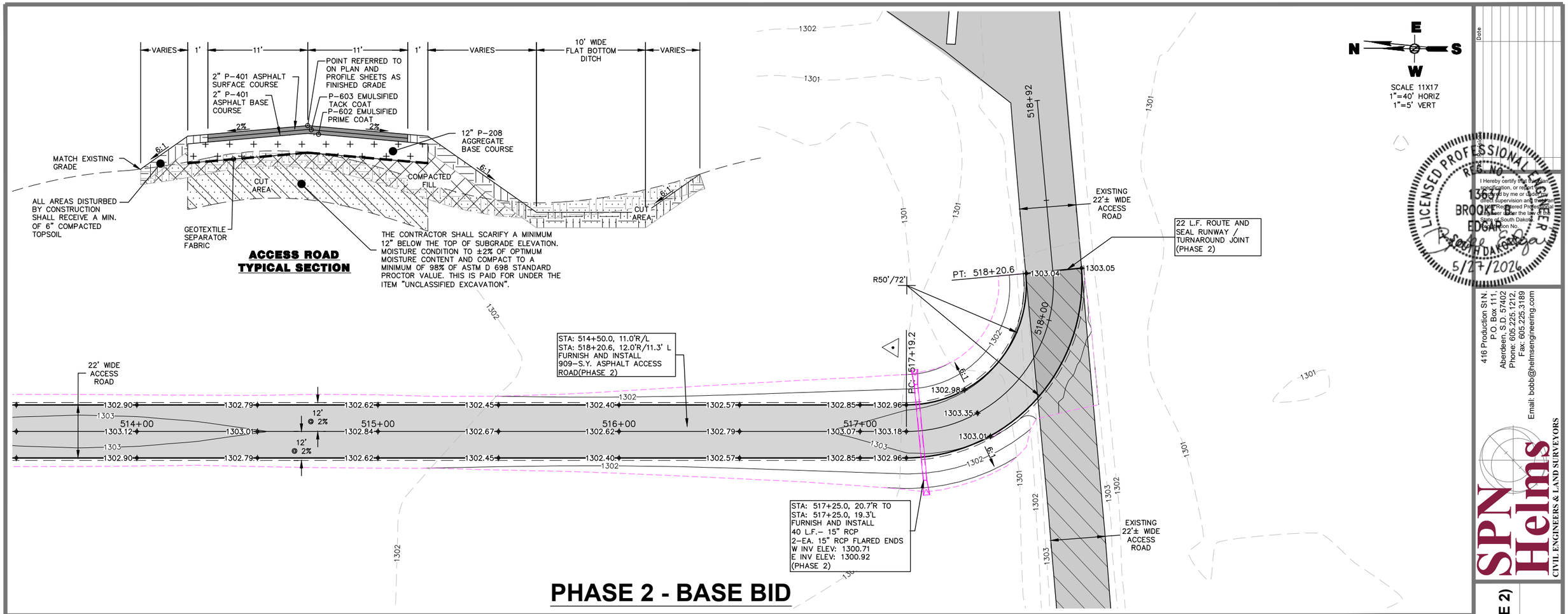
LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

ACCESS ROAD
STA:509+50 TO 514+50 (PHASE 2)

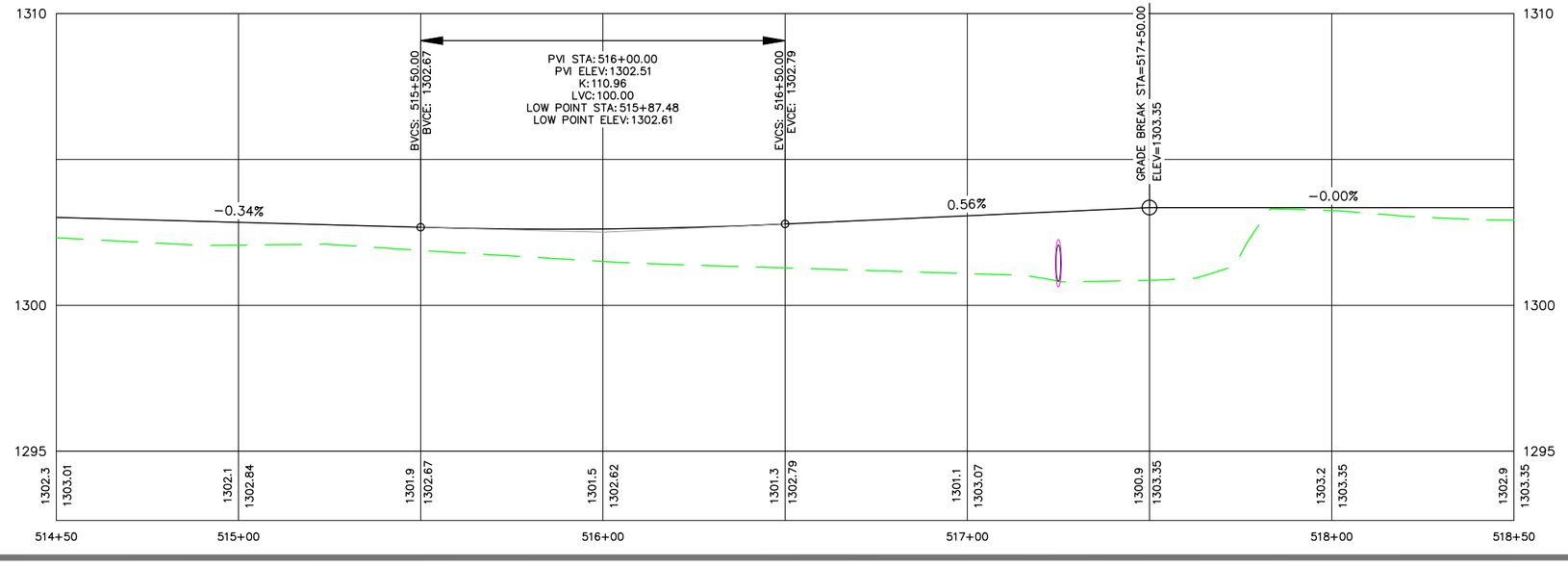
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	AR(3)
Date:	5/28/26

ACCESS ROAD TYPICAL SECTION



PHASE 2 - BASE BID



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Aberdeen, S.D. 57402
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LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

ACCESS ROAD STA:509+50 TO 514+50 (PHASE 2)

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	AR(4)
Date:	5/28/26

PHASE 2

PHASE 3

1301.54 (1301.5) 349+00.0, 150.0'L
1301.55 (1301.5) 349+50.0, 150.0'L
1301.58 (1301.6) 350+00.0, 150.0'L
1301.56 (1301.6) 350+50.0, 150.0'L
1301.60 (1301.6) 351+00.0, 150.0'L
1301.88 (1301.9) 351+50.0, 150.0'L
1301.98 (1302.0) 352+00.0, 150.0'L
1302.08 (1302.1) 352+50.0, 150.0'L
1302.17 (1302.2) 353+00.0, 150.0'L
1302.28 (1302.3) 353+50.0, 150.0'L
1302.36 (1302.4) 353+86.8, 150.0'L
1302.44 (1302.5) 354+45.4, 140.1'L

RUNWAY 13/31 OBJECT FREE AREA
RUNWAY 13/31 SAFETY AREA
RUNWAY 13/31 OBSTACLE FREE ZONE

1302.05 (1302.8)

STA: 352+52.4, 66.0'L
REMOVE AND DISPOSE
UNDERDRAIN CLEANOUT
(PHASE 3)

EXISTING UNDERDRAIN (REMOVE AS NECESSARY)

PHASE LINE

349+00 1302.50
350+00 1302.50
351+00 1302.50
352+00 1302.50
353+00 1303.18
354+00 1303.77
1302.50
1302.84
1303.52

STA: 350+73.1, 53'R
351+74.3, 51'L TO
STA: 353+17, 72'R/
354+47 63'L
REMOVE AND SALVAGE
3,855-S.Y. X 15"
ASPHALT/CONCRETE RUNWAY
(PHASE 3)

STA: 352+55.3, 65.4'R
REMOVE AND DISPOSE
UNDERDRAIN CLEANOUT
(PHASE 3)

STA: 352+37.6, 79.0'R
REMOVE AND DISPOSE
48" STORM MANHOLE
(PHASE 3)

REMOVE AND DISPOSE
1037-S.Y. X 10" CONCRETE
RUNWAY INTERSECTION
(PHASE 3)

STA: 352+50.3, 116.8'R
REMOVE AND DISPOSE
48" STORM MANHOLE
(PHASE 3)

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.

1301.58 (1301.6) 349+00.0, 150.0'R
1301.53 (1301.5) 349+50.0, 150.0'R
1301.74 (1301.7) 350+00.0, 150.0'R
1302.01 (1302.0) 350+54.5, 150.0'R

???
(1303.4)
351+47.9, 242.3'R

112+46.1, 416.7'L
1303.4'

2+00.0, 410.4'L

N E S W

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

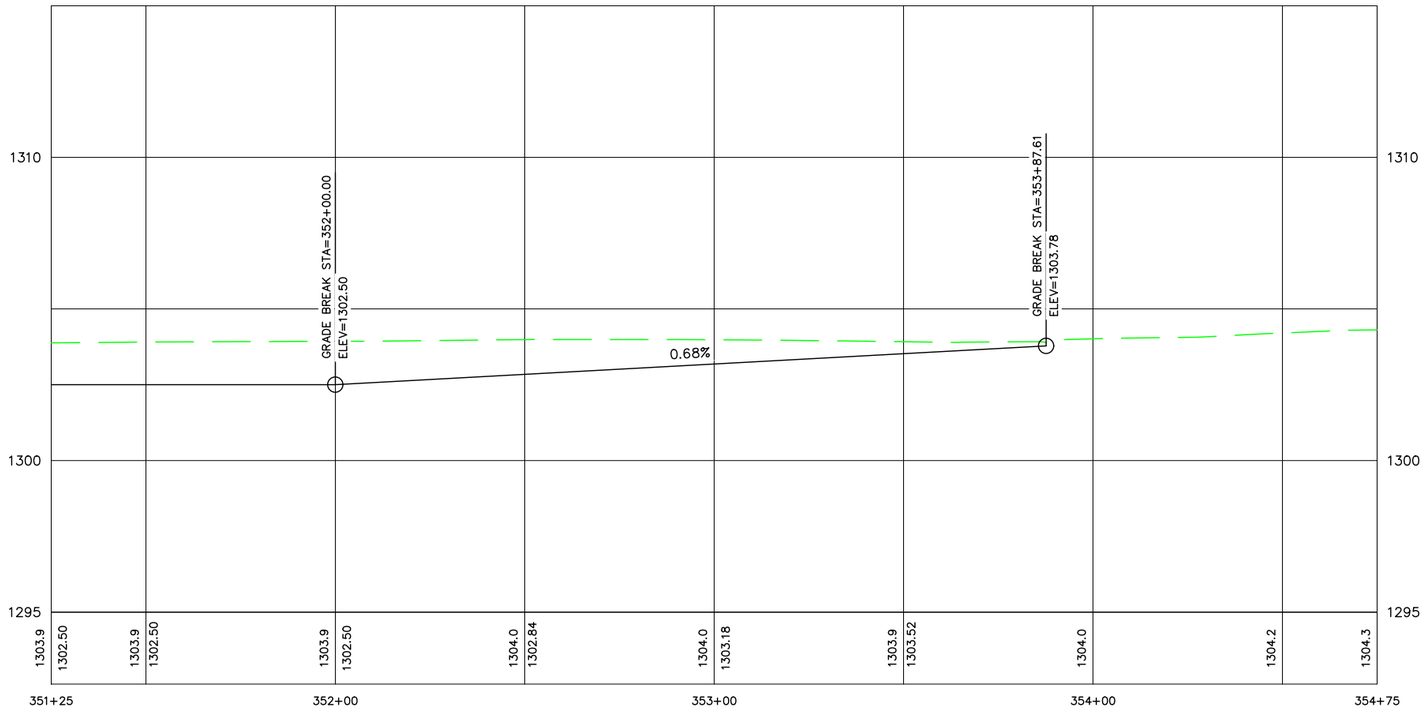
RUNWAY 18/36
STA: 351+25- 354+75 (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(11)
Date:	5/28/26

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

PHASE 3



Date

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LICENSED PROFESSIONAL ENGINEER
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RUNWAY 18/36
STA: 349+75- 354+75 (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	18-36(12)
Date:	5/28/26

PHASE 4

PHASE 3

RUNWAY 13/31 SAFETY AREA

PHASE LINE

RUNWAY 13/31 OBST. FREE ZONE

STA:110+33.6, 26.3'L P.I.

STA:110+58.4, 27'R/29.4'L TO STA:112+35.7, 27'R/50'L FURNISH AND INSTALL 360-L.F. 4" UNDERDRAIN PIPE (PHASE 3)

STA:110+58.4, 25'R/27.4'L TO STA:112+44.4, 25'R/ 51'L FURNISH AND INSTALL 2,522-S.Y. ASPHALT TAXIWAY (PHASE 3)

REMOVE AND SALVAGE 2,340-S.Y. X 15" ASPHALT/CONCRETE RUNWAY (PHASE 3)

EXISTING ELECTRICAL CANS

STA:111+72.3, 32.0'L P.I.

REMOVE AND DISPOSE UNDERDRAIN CLEANOUT (PHASE 3)

EXISTING UNDERDRAIN (REMOVE AS NECESSARY)

REMOVE AND SALVAGE 2,280-S.Y. X 24" ASPHALT TAXIWAY PAVEMENT/BASE (PHASE 3)

STA:112+35.7, 27.0'R FURNISH AND INSTALL 4" CLEANOUT (PHASE 3)

STA:112+35.7, 50.4'L FURNISH AND INSTALL 4" CLEANOUT (PHASE 3)

75 L.F. ROUTE AND SEAL RUNWAY / TAXIWAY JOINT (PHASE 3)

STA:112+44.4, 50.6'L P.I.

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

Date

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SOUTH DAKOTA
1/27/2026

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PARALLEL TAXIWAY A
STA: 110+50 - 113+50 (PHASE 3)

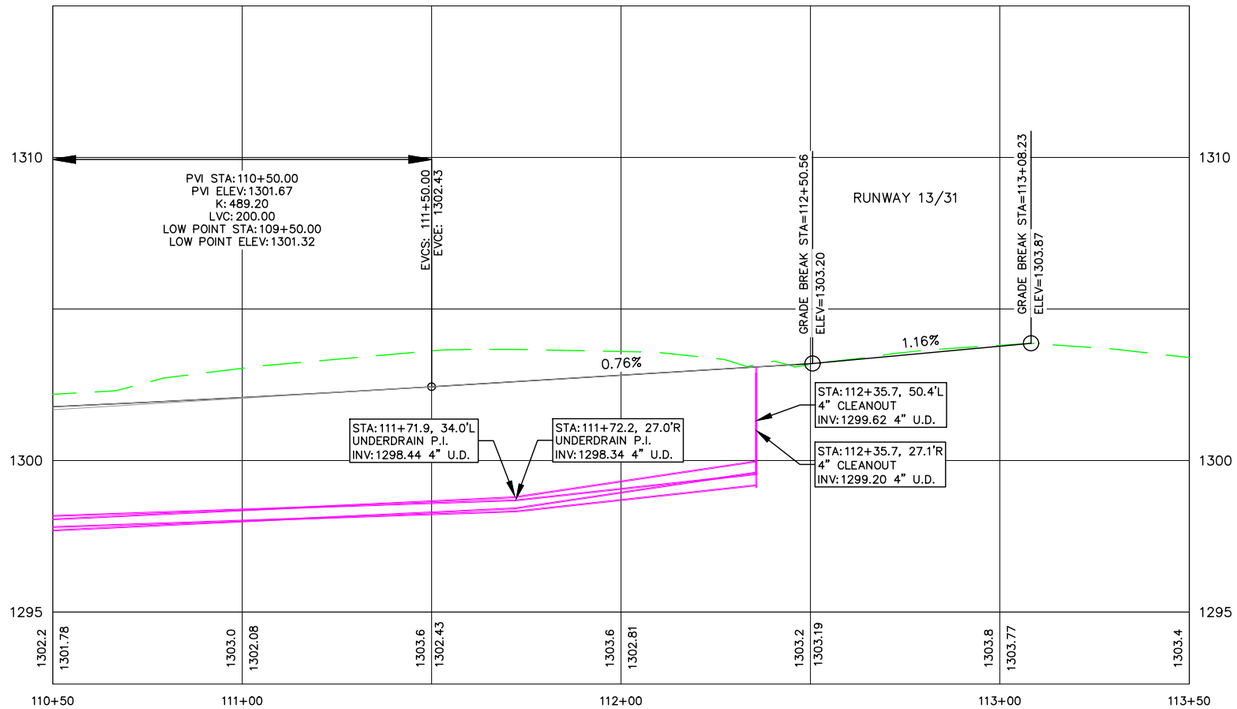
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(3.3)
Date:	5/28/26

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

PHASE 3

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Date

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CIVIL ENGINEERS & LAND SURVEYORS

PARALLEL TAXIWAY A
STA: 110+50 - 113+50 (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(4.4)
Date:	5/28/26

PHASE 3

EXISTING ASPHALT ACCESS ROAD

EXISTING ASPHALT ACCESS ROAD

MATCHLINE

MATCHLINE

REMOVE AND SALVAGE
1242–S.Y. X 6" DEPTH EXISTING ASPHALT ACCESS ROAD
FURNISH AND INSTALL
1242–S.Y. X 6" DEPTH TOPSOIL
1242–S.Y. GRASS SEEDING
(PHASE 3)

STRIP AND STOCKPILE
361–S.Y. X 6" DEPTH TOPSOIL
361–S.Y. x 6" SUBGRADE PLACE AND SHAPE
361–S.Y. X 12" DEPTH SALVAGED GRAVEL SURFACING
(PHASE 3)

REMOVE AND SALVAGE
649–S.Y. X 6" DEPTH GRAVEL ACCESS ROAD SURFACING
FURNISH AND INSTALL
649–S.Y. X 6" DEPTH TOPSOIL
649–S.Y. GRASS SEEDING
(PHASE 3)

EXISTING GRAVEL ACCESS ROAD

EXISTING GRAVEL ACCESS ROAD

18'

18'±

1301 1302 1303

N W E S

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
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SOUTH DAKOTA
5/27/2026

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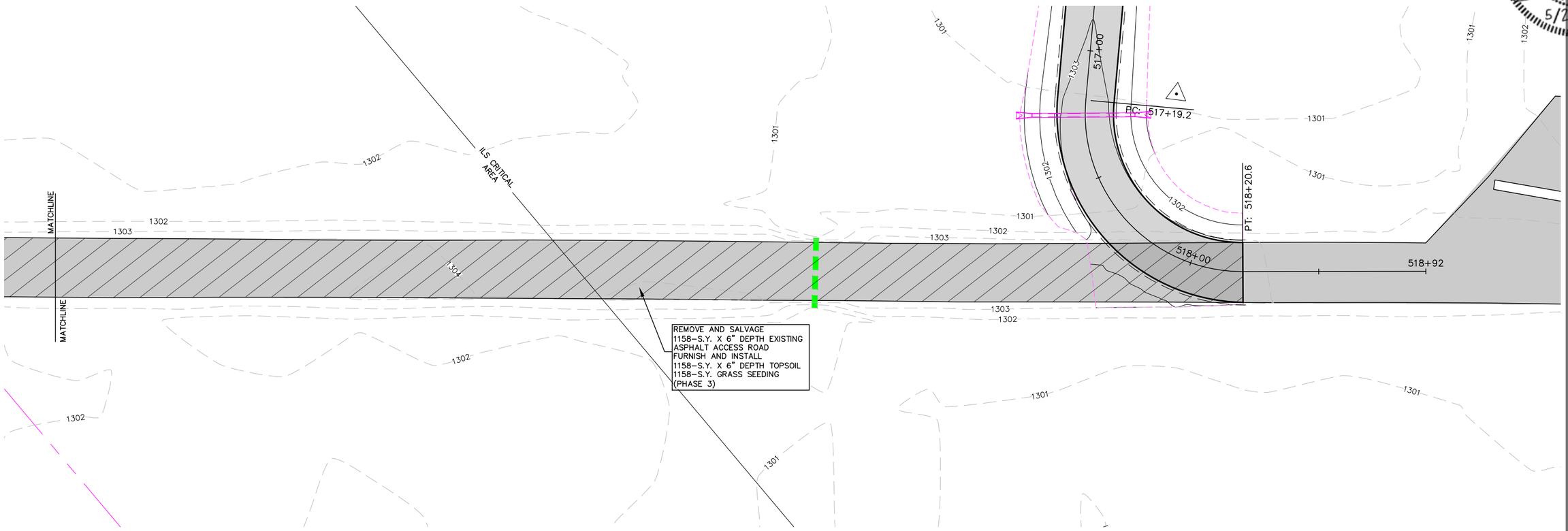
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CIVIL ENGINEERS & LAND SURVEYORS

ACCESS ROAD REMOVALS (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	EX-AR(1)
Date:	5/28/26

PHASE 3



N
W E
S

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

Date

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ACCESS ROAD REMOVALS (PHASE 3)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	EX-AR(2)
Date:	5/28/26

PHASE 4

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

RUNWAY 13/31 SAFETY AREA — PHASE LINE — PHASE LINE — PHASE LINE — PHASE LINE — RUNWAY 13/31 SAFETY AREA — PHASE LINE

RUNWAY 13/31 OBJECT FREE AREA — RUNWAY 13/31 OBJECT FREE AREA

GRADING LIMITS

MILL AND SALVAGE
4325,–S.Y. X 24" ASPHALT TAXIWAY PAVEMENT/BASE

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T–905.

EX. 18" RCP

STA:100+50.0, 98.8'L
FURNISH AND INSTALL
CONNECT TO EX. 15" RCP
STORM SEWER
(PHASE 4)

STA:100+50.0, 98.8'L TO
STA:100+50.0, 27.0'R
FURNISH AND INSTALL
126–L.F. 4" UNDERDRAIN
(SOLID WALL) (PHASE 4)

STA:100+50.0, 27.0'L
FURNISH AND INSTALL
4" TEE W/CLEANOUT
(PHASE 4)

50 L.F. ROUTE AND SEAL EXISTING / NEW TAXIWAY JOINT
(PHASE 4)

STA:100+50.0, 27.0'R
FURNISH AND INSTALL
4" TEE W/CLEANOUT
(PHASE 4)

STA:100+50.0, 25'R/L TO
STA:105+00.0, 25'R/ 26'L
FURNISH AND INSTALL
2,501–S.Y. ASPHALT TAXIWAY
(PHASE 4)

STA:100+50.0, 27'R/L TO
STA:105+00.0, 27'R/28'L
FURNISH AND INSTALL
900–L.F. 4" UNDERDRAIN PIPE
(PHASE 4)

ADJUST EXISTING MH RIM
RIM EXISTING: 1298.90
PROPOSED: 1299.39

STA:104+76.3
25.0'L P.I.

EXISTING UNDERDRAIN (REMOVE AS NECESSARY)

EXISTING UNDERDRAIN (REMOVE AS NECESSARY)

MATCH LINE

100+00 — 101+00 — 102+00 — 103+00 — 104+00 — 105+00

100+50.0, 98.8'L — 1297.64 (1297.7)
101+00.0, 80.5'L — 1297.65 (1297.8)
101+50.0, 82.8'L — 1297.54 (1297.8)
102+00.0, 90.9'L — 1297.29 (1297.6)
102+36.4, 98.3'L — 1296.90 (1297.6)
103+00.0, 133.6'L — 1297.46 (1297.3)
103+10.0, 68.9'L — 1297.70 (1297.3)
103+50.0, 69.9'L — 1297.52 (1297.1)
103+50.0, 149.5'L — 1298.02 (1297.1)
103+50.0, 170.3'L — 1297.91 (1297.2)
104+00.0, 71.7'L — 1297.26 (1297.2)
104+00.0, 149.5'L — 1298.91 (1297.3)
104+50.0, 74.0'L — 1297.01 (1297.3)
104+50.0, 149.5'L — 1299.79 (1298.9)
104+76.3, 75.4'L — 1296.87 (1297.1)
104+76.3, 149.5'L — 1299.68 (1299.39)
105+00.0, 77.5'L — 1296.75 (1297.1)
105+00.0, 149.5'L — 1299.47 (1299.37)

1297.54 — 1297.69 — 1297.83 — 1297.96 — 1297.78 — 1297.59
1299.10 — 1299.97 — 1300.72
1298.94 — 1299.88 — 1300.14
1299.37 — 1299.92 — 1300.69 — 1301.05
1297.72 — 1297.72 — 1297.71 — 1297.71 — 1297.70 — 1297.69 — 1297.67 — 1297.72 — 1297.86 — 1297.95 — 1298.02
1298.44 — 1298.44 — 1298.43 — 1298.43 — 1298.42 — 1298.41 — 1298.41 — 1298.45 — 1298.58 — 1298.68 — 1298.74
1299.06 — 1299.05 — 1299.05 — 1299.04 — 1299.04 — 1299.03 — 1299.02 — 1299.06 — 1299.19 — 1299.29 — 1299.36
1299.44 — 1299.43 — 1299.42 — 1299.42 — 1299.41 — 1299.40 — 1299.40 — 1299.44 — 1299.57 — 1299.74
1299.06 — 1299.05 — 1299.05 — 1299.04 — 1299.04 — 1299.03 — 1299.02 — 1299.06 — 1299.19 — 1299.37
1298.44 — 1298.44 — 1298.43 — 1298.43 — 1298.42 — 1298.41 — 1298.41 — 1298.44 — 1298.57 — 1298.75
1297.72 — 1297.72 — 1297.71 — 1297.71 — 1297.70 — 1297.69 — 1297.68 — 1297.72 — 1297.86 — 1298.03

TSA — TOFA — 10' @ 5% — 24' @ 3% — 25' — 171' TOFA — 118' TSA — 1.5% — 10' FLAT DITCH

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LICENSED PROFESSIONAL ENGINEER
REG. NO.
13654
BROOKE B.
EDGAR
SOUTH DAKOTA
5/27/2026

Date

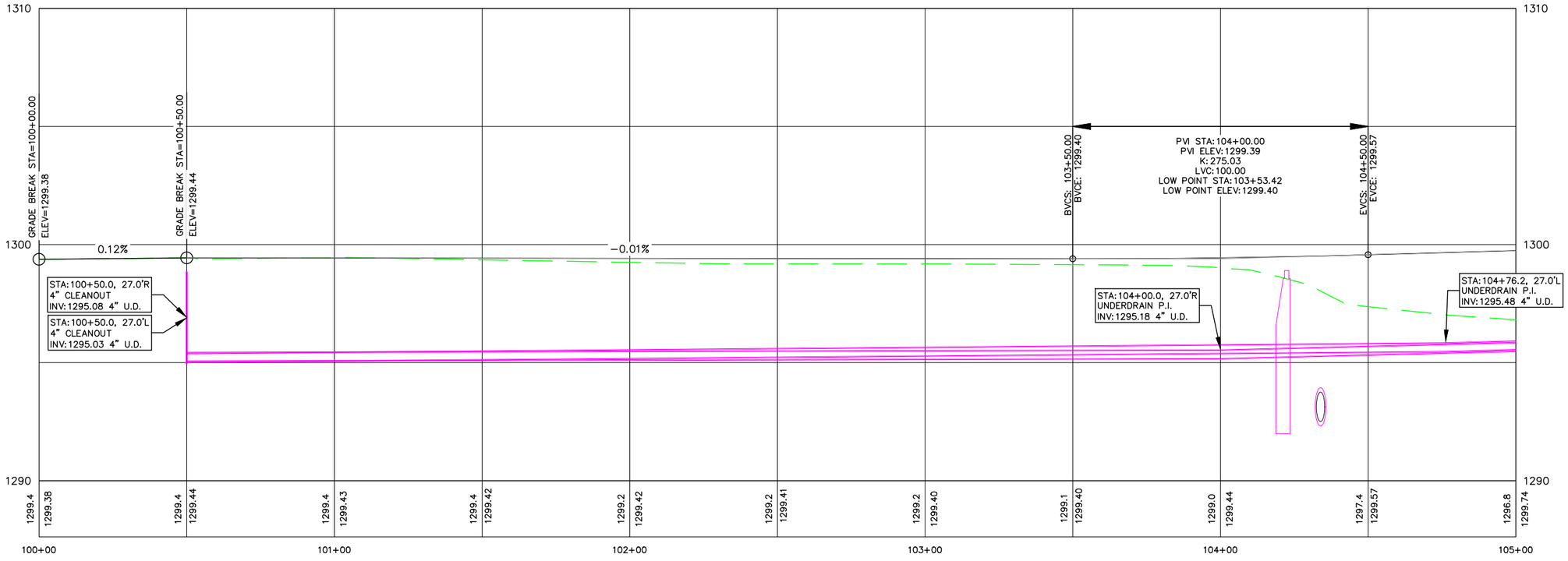
PARALLEL TAXIWAY A
STA: 100+00 - 105+00 (PHASE 4)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(1)
Date:	5/28/26

PHASE 4

SCALE 11X17
1"=40' HORIZ
1"=5' VERT



Date

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

PARALLEL TAXIWAY A
STA: 100+00 - 105+00 (PHASE 4)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(1.5)
Date:	5/28/26

PHASE 4

REMOVE AND DISPOSE UNDERDRAIN CLEANOUT (PHASE 4)

ELECTRICAL CAN TO BE REMOVED SEE ELECTRICAL PLANS

PHASE LINE

RUNWAY 13/31 SAFETY AREA

RUNWAY 13/31 OBJECT FREE AREA

TOFA

TSA

STA: 110+33.6, 26.3'L P.I.

STA: 108+95.0, 32.0'L P.I.

STA: 107+71.7, 50.6'L P.I.

PT: 108+18.8

PC: 107+24.6

RAD. 60.0'

STA: 106+48.4, 32.0'L P.I.

STA: 104+76.3, 25.0'L P.I.

STA: 106+88.4, 44.3'L FURNISH AND INSTALL 2-EA. CONNECT TO 15" RCP (PHASE 4)

STA: 106+88.4, 27.0'R FURNISH AND INSTALL 2- EA. CONNECT TO 15" RCP (PHASE 4)

STA:105+00.0, 27'R/L TO STA:110+58.4, 27'R/29.4'L FURNISH AND INSTALL 1080-L.F. 4" UNDERDRAIN PIPE (PHASE 4)

STA: 106+88.4, 73.1'R TO STA: 106+88.4, 86.8'L FURNISH AND INSTALL 160 L.F.- 15" RCP 2-EA. 15" FLARED ENDS (PHASE 4)

STA:105+00.0, 25'R/ 26'L TO STA:110+58.4, 25'R/27.4'L FURNISH AND INSTALL 3,625-S.Y. ASPHALT TAXIWAY (PHASE 4)

GRADING LIMITS

EX. 18" RCP

10' FLAT DITCH

MATCH LINE

NOTE:
ALL CONTRACTOR EQUIPMENT SHALL BE REMOVED FROM THE RUNWAY 13/31 OBJECT FREE AREA (OFA) WHEN NOT IN USE.

NOTE: AREAS OF EXISTING PAVEMENT REMOVAL NOT TO RECEIVE NEW ASPHALT SURFACING SHALL BE BACKFILLED WITH SUBGRADE MATERIAL AND A MINIMUM OF 6" OF TOPSOIL PER T-905.

SCALE 11X17
1"=40' HORIZ
1"=5' VERT

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Date

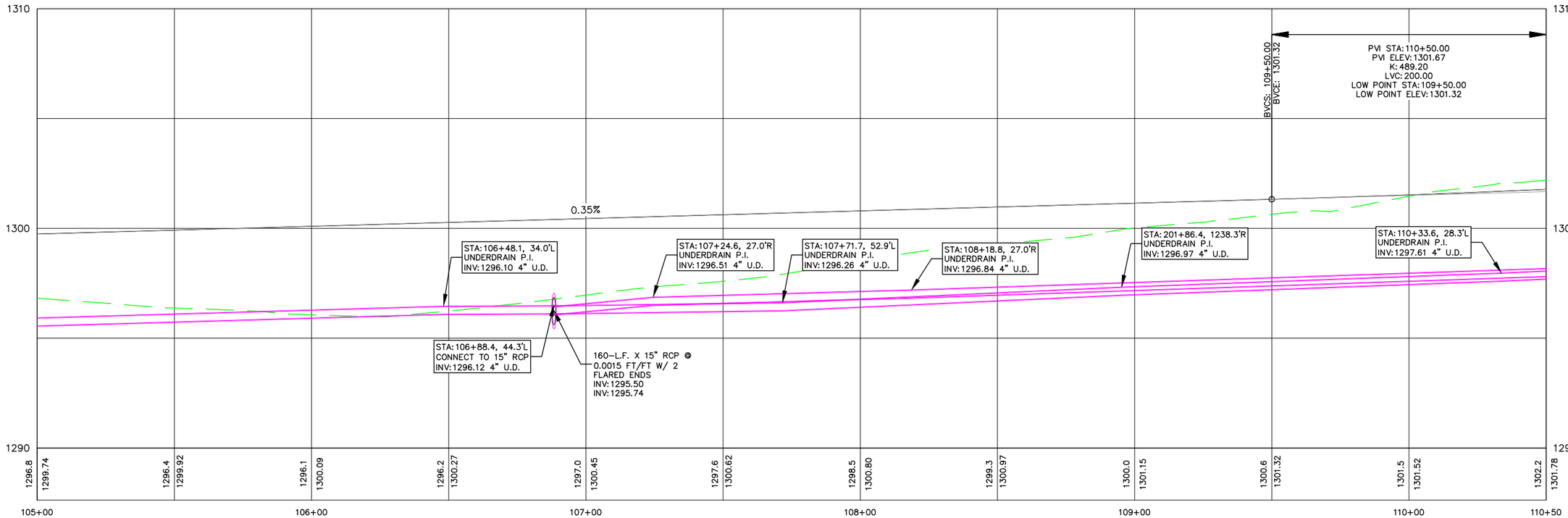
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CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
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Aberdeen, S.D. 57402
Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

PARALLEL TAXIWAY A
STA: 105+00 - 110+50 (PHASE 4)

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(2)
Date:	5/28/26

PHASE 4



SCALE 11X17
1"=40' HORIZ
1"=5' VERT

Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

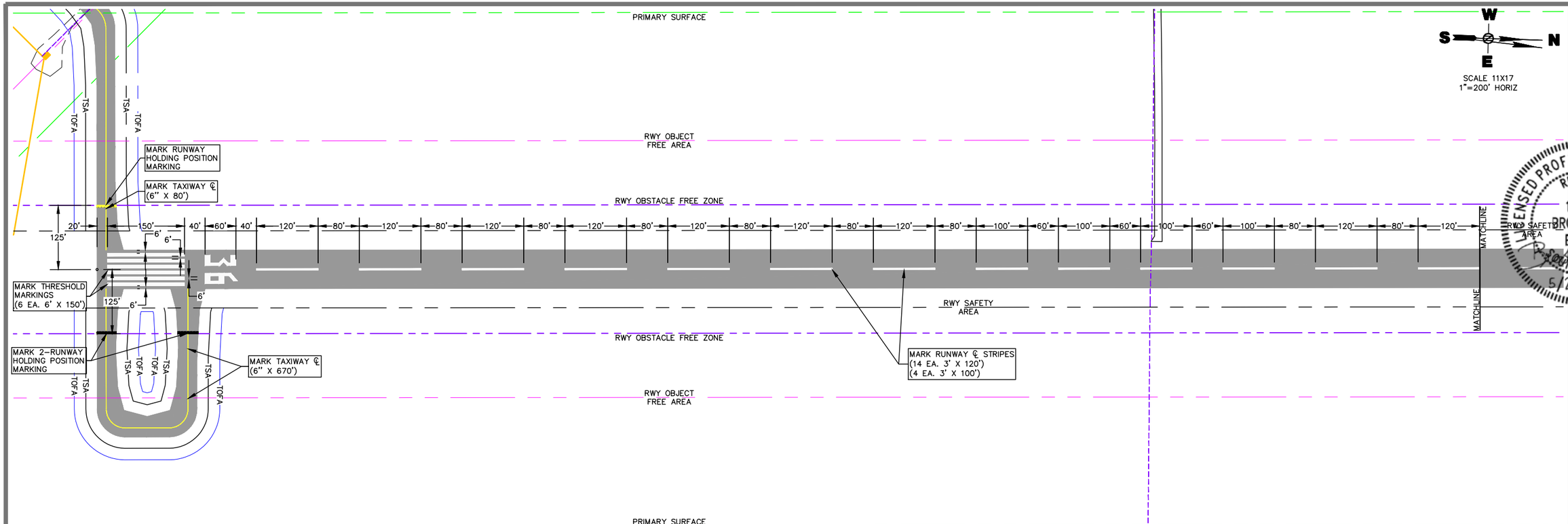
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Fax: 605.225.3189
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PARALLEL TAXIWAY A
STA: 105+00 - 110+50 (PHASE 4)

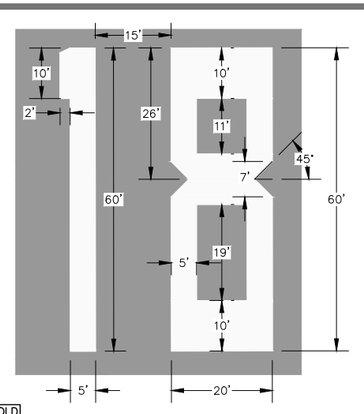
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

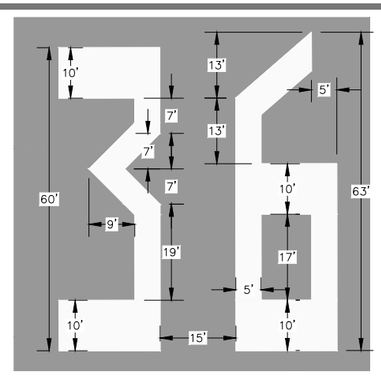
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-02
VP. No:	PAR(2.5)
Date:	5/28/26



SCALE 11X17
1"=200' HORIZ

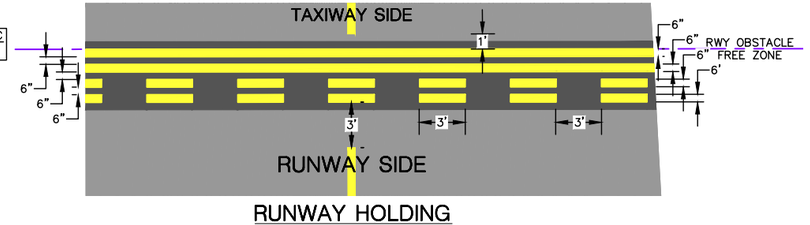
SCALE 11X17
1"=200' HORIZ





RUNWAY DESIGNATION MARKING

NO SCALE



RUNWAY HOLDING POSITION MARKING

NO SCALE

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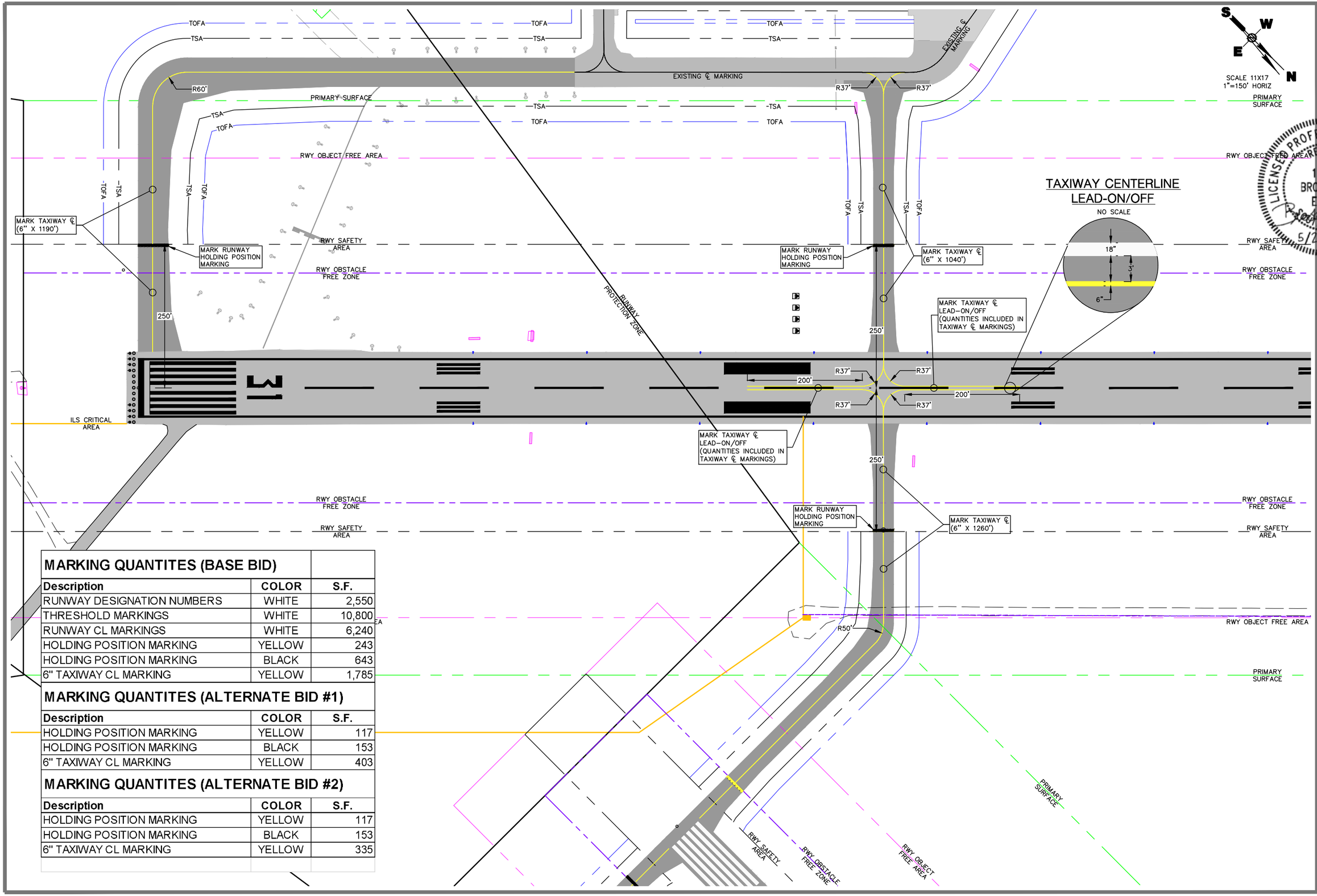
Date

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Registration No.
REG. NO. 3654
LICENSED PROFESSIONAL ENGINEER
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

MARKING PLAN

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-03
VP. No:	MARK(1)
Date:	5/28/26



MARKING QUANTITES (BASE BID)

Description	COLOR	S.F.
RUNWAY DESIGNATION NUMBERS	WHITE	2,550
THRESHOLD MARKINGS	WHITE	10,800
RUNWAY CL MARKINGS	WHITE	6,240
HOLDING POSITION MARKING	YELLOW	243
HOLDING POSITION MARKING	BLACK	643
6" TAXIWAY CL MARKING	YELLOW	1,785

MARKING QUANTITES (ALTERNATE BID #1)

Description	COLOR	S.F.
HOLDING POSITION MARKING	YELLOW	117
HOLDING POSITION MARKING	BLACK	153
6" TAXIWAY CL MARKING	YELLOW	403

MARKING QUANTITES (ALTERNATE BID #2)

Description	COLOR	S.F.
HOLDING POSITION MARKING	YELLOW	117
HOLDING POSITION MARKING	BLACK	153
6" TAXIWAY CL MARKING	YELLOW	335

Date

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LICENSED PROFESSIONAL ENGINEER
13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

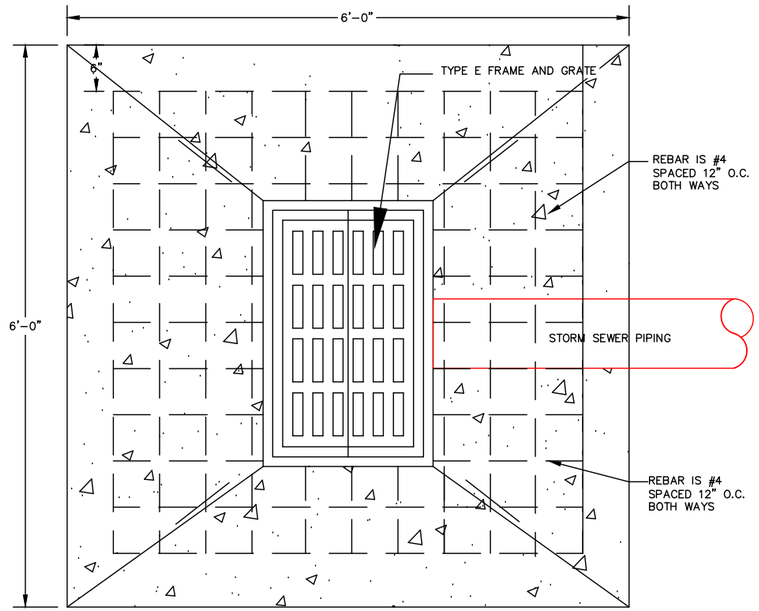
416 Production St N.
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Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

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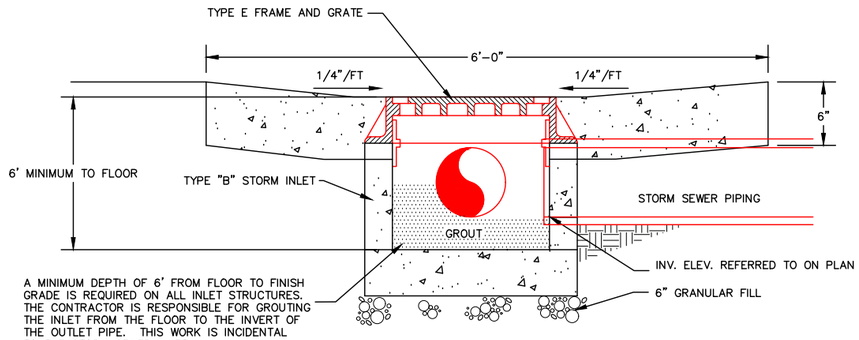
MARKING PLAN

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-03
VP. No:	MARK(2)
Date:	5/28/26



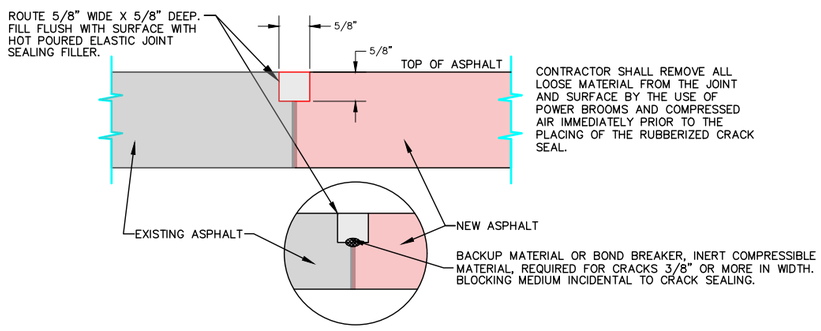
PLAN VIEW



ELEVATION VIEW

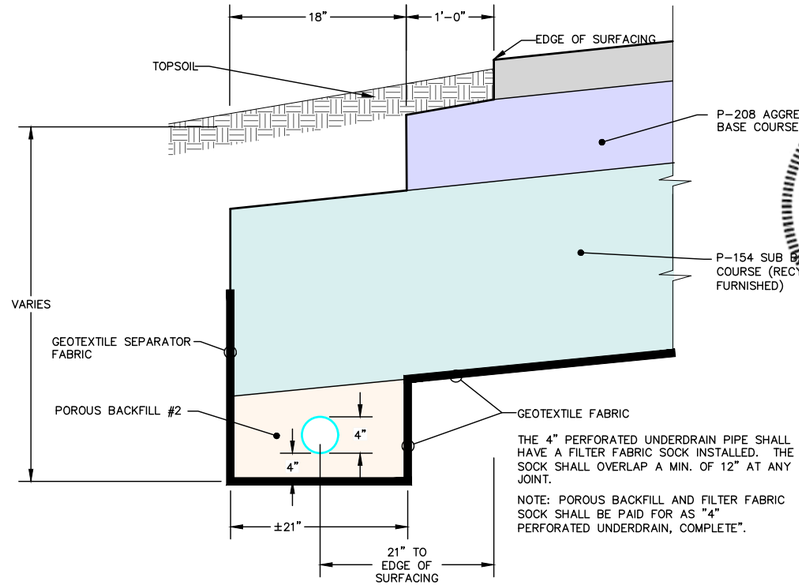
STORM SEWER AREA DRAIN W / APRON

NO SCALE



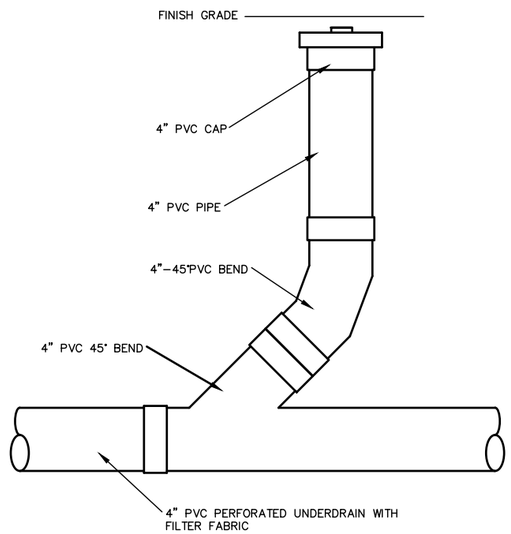
ROUTING AND SEALING DETAIL

NO SCALE

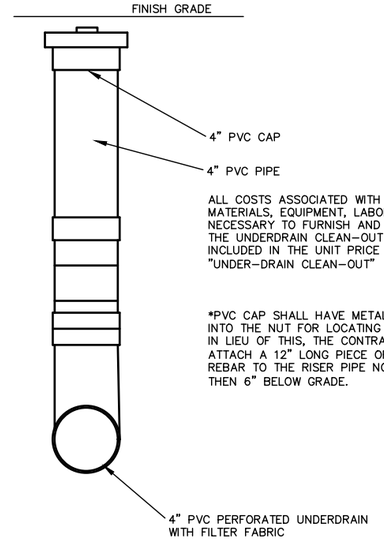


UNDERDRAIN DETAIL

NO SCALE



SIDE VIEW



FRONT VIEW

UNDERDRAIN CLEAN-OUT

NO SCALE

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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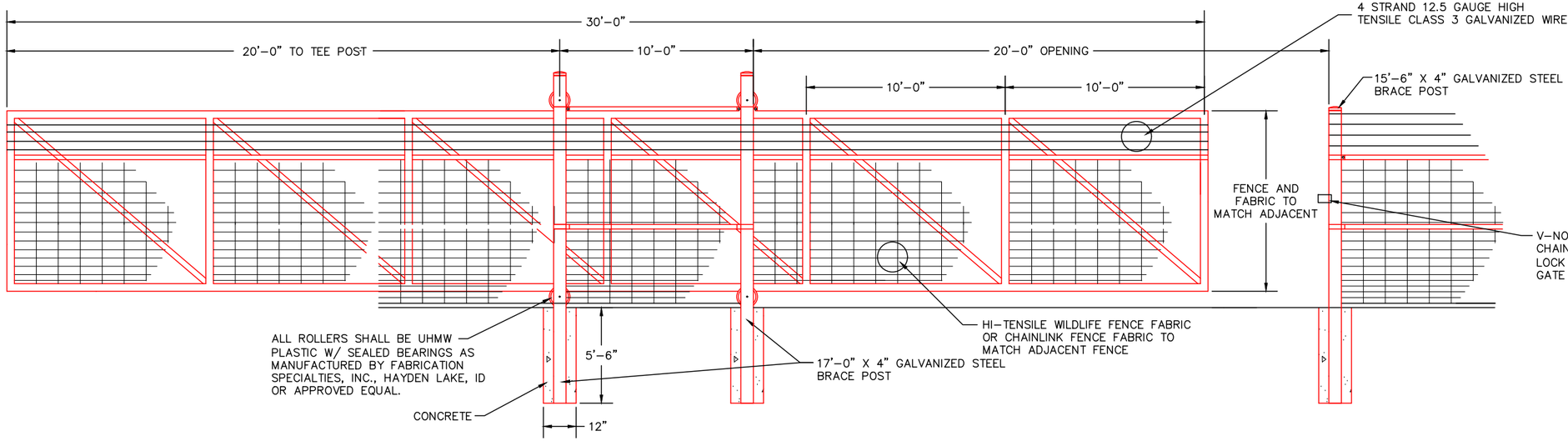
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DETAILS

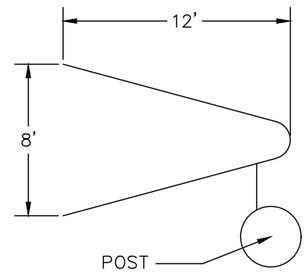
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	DET(1)
Date:	5/28/26



20' CANTILEVERED ROLL GATE DETAIL

NO SCALE



V-NOTCHED GUIDE

NO SCALE

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13653
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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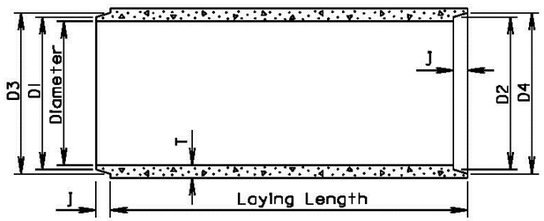
DETAILS

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

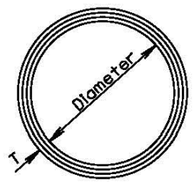
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-DET DET(F)
Date:	5/28/26

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
Diameters at joints: ± 3/16" for 30" Dia. or less and ± 1/4" for 36" or greater.
Length of joint (J): ± 1/4".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

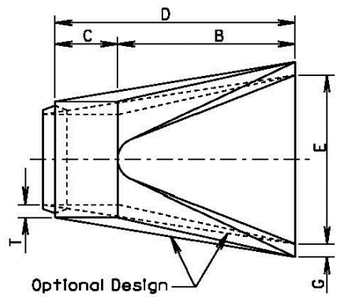
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

Not more than 2 four-foot sections shall be permitted near the ends of any culvert. Four-foot lengths shall be used only to secure the required length of culvert.

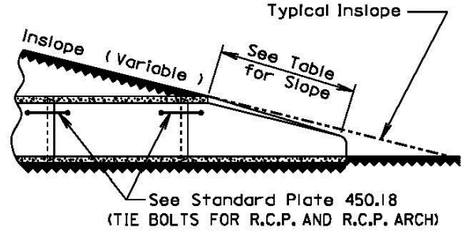
Diam. (In.)	Approx. Wt. /Ft. (lb.)	T (In.)	J (In.)	D1 (In.)	D2 (In.)	D3 (In.)	D4 (In.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

June 26, 2015

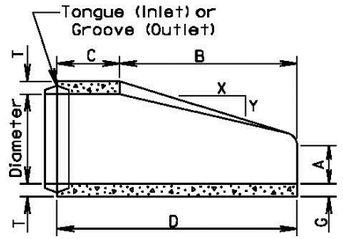
Published Date: 2026	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01 Sheet 1 of 1



TOP VIEW



SLOPE DETAIL

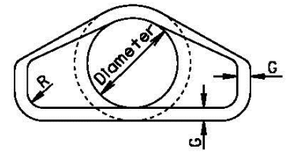


LONGITUDINAL SECTION

GENERAL NOTES:

Lengths of concrete pipe shown on plan sheets are between flared ends only.

Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Specifications.



END VIEW

Dia. (In.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (In.)	A (In.)	B (In.)	C (In.)	D (In.)	E (In.)	G (In.)	R (In.)
12	530	2.4: 1	2	4	24	48 7/8	72 7/8	24	2	1 1/2
15	740	2.4: 1	2 1/4	6	27	46	73	30	2 1/4	1 1/2
18	990	2.3: 1	2 1/2	9	27	46	73	36	2 1/2	1 1/2
21	1280	2.4: 1	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	1 1/2
24	1520	2.5: 1	3	9 1/2	43 1/2	30	73 1/2	48	3	1 1/2
27	1930	2.5: 1	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	1 1/2
30	2190	2.5: 1	3 1/2	12	54	19 3/4	73 3/4	60	3 1/2	1 1/2
36	4100	2.5: 1	4	15	63	34 3/4	97 3/4	72	4	1 1/2
42	5380	2.5: 1	4 1/2	21	63	35	98	78	4 1/2	1 1/2
48	6550	2.5: 1	5	24	72	26	98	84	5	1 1/2
54	8240	2: 1	5 1/2	27	65	33 1/4	98 1/4	90	5 1/2	1 1/2
60	8730	1.9: 1	6	35	60	39	99	96	5	1 1/2
66	10710	1.7: 1	6 1/2	30	72	27	99	102	5 1/2	1 1/2
72	12520	1.8: 1	7	36	78	21	99	108	6	1 1/2
78	14770	1.8: 1	7 1/2	36	90	21	111	114	6 1/2	1 1/2
84	18160	1.6: 1	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2
90	20900	1.5: 1	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	6

June 26, 2015

Published Date: 2026	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10 Sheet 1 of 1

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SOUTH DAKOTA
5/27/2026

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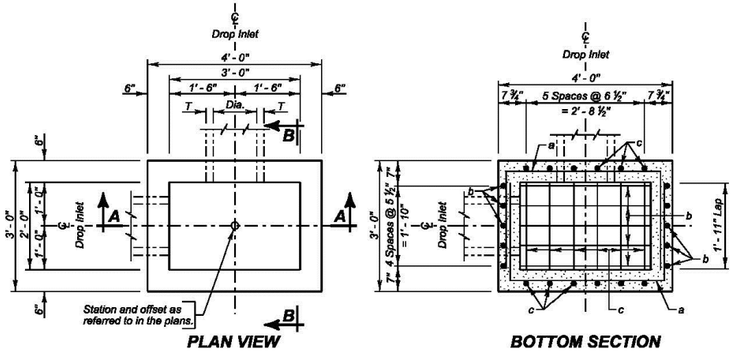
Date

SPN Helms
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Aberdeen, S.D. 57402
Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

DETAILS

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-DET DET(2)
Date:	5/28/26



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	51.19	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

* *Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.*

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

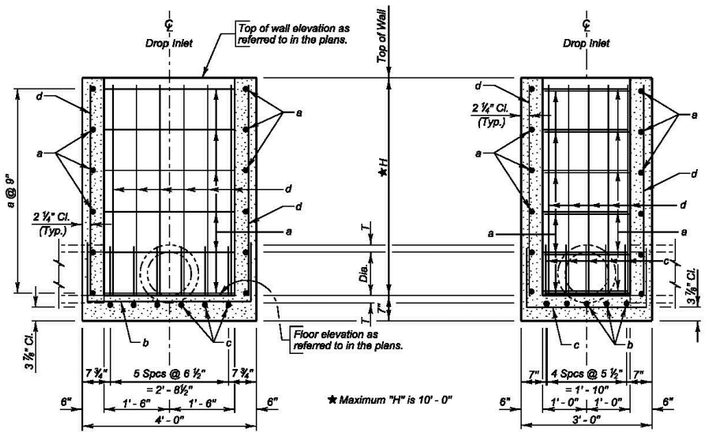
Maximum R.C.P. diameter shall not exceed 18 inches on the 2-foot wide side and shall not exceed 24 inches (24 inches for R.C. arch) on the 3-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09

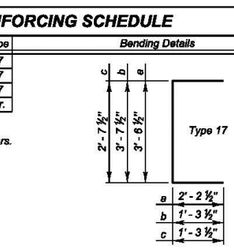
March 31, 2024

Published Date: 2026	SDDOT	2'X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01 Sheet 1 of 2



REINFORCING SCHEDULE

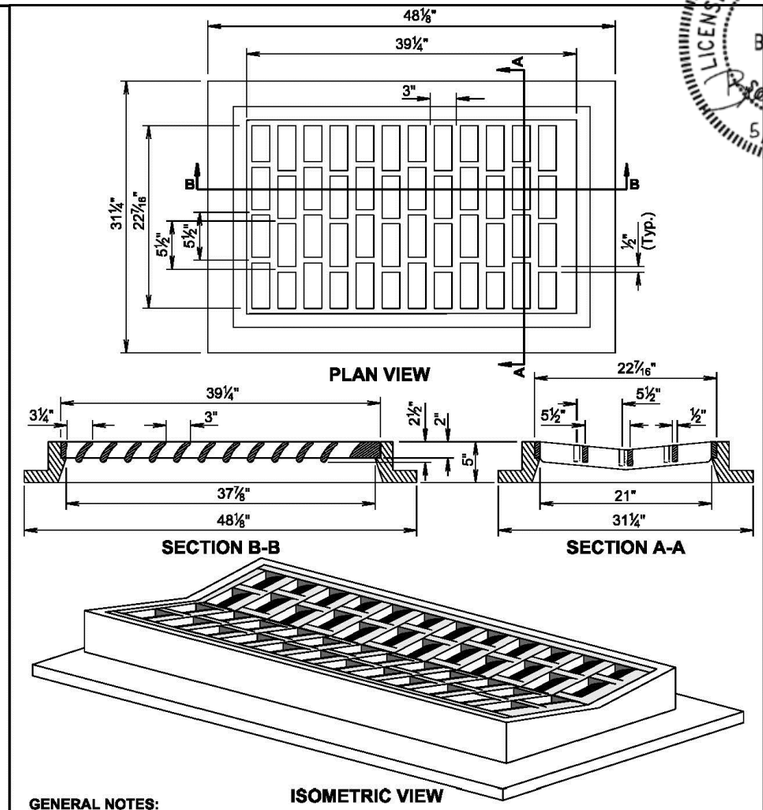
Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	8' - 0"	17	
b	5	5	6' - 3"	17	
c	6	4	5' - 3"	17	
d	22	4	H - 2"	Str.	



NOTE: All dimensions are out to out of bars.

March 31, 2024

Published Date: 2026	SDDOT	2'X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01 Sheet 2 of 2



GENERAL NOTES:

The product dimensions may vary from those shown on the standard plate depending on the manufacturer. Grate size and configuration will be similar to the standard plate for hydraulic capacity and bicycle safety. Any variation in dimensions will be approved by the Engineer and the type E frame and grate will be from a manufacturer on the approved products list.

Design load for the grate will meet the requirements of AASHTO HL-93.

The type E frame and grate is used typically with valley gutter and type P gutter.

June 1, 2022

Published Date: 2026	SDDOT	TYPE E FRAME AND GRATE	PLATE NUMBER 670.86 Sheet 1 of 1

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5/27/2026

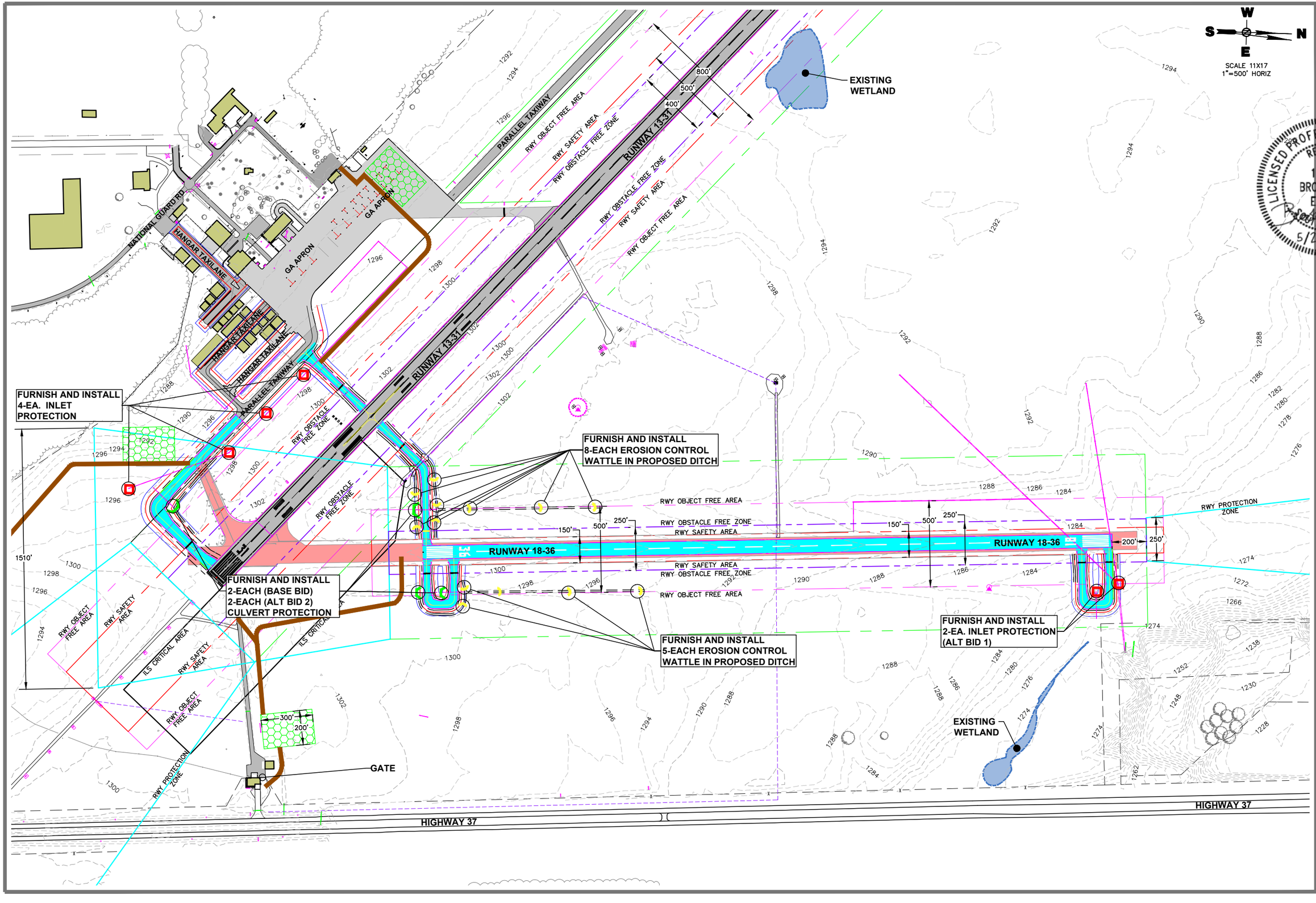
I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota.
License Number No.

Date

DETAILS

RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	DET(3)
Date:	5/28/26



I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the contents are that of a Registered Professional Engineer under the law of the State of South Dakota.
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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

STORM WATER POLLUTION PREVENTION PLAN

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No: / VP. No:	7141-03 SWPPP
Date:	5/28/26

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

General Permit Authorizing Stormwater Discharges Associated with Construction Activities Under the South Dakota Surface Water Discharge System

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Article 74:52., owners and operators of stormwater discharges from construction activities, located in the state of South Dakota must be authorized to discharge in accordance with the conditions and requirements set forth in the General Permit.

The owner must obtain coverage under the general permit and all operators at the site must comply with the permit conditions.

(The numbers left of the title headings are **reference numbers** to the GENERAL PERMIT AUTHORIZING STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES (General Stormwater Permit))

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

5.3 (3a): **Project Limits** (See Title Sheet)

5.3 (3b): **Project Description** (See Title Sheet)

5.3 (3c): **Site Map(s)** (See Title Sheet and Plans)

5.3 (3d): **Major Soil Disturbing Activities** (check all that apply)

- X Clearing and grubbing
- X Excavation/ Borrow
- X Filling
- ____ Other (describe):

5.3 (3e): **Total Project Area:** 270 acres

5.3 (3f): **Total Area to be Disturbed:** 54 acres

5.3 (3g): **Maximum Area to be Disturbed at One Time:** 40 acres

5.3 (3h): **Existing Vegetative Cover (%):** 65%

5.3 (3i): **Description of Vegetative Cover:** Grass that are mowed or baled within airport property.

5.3 (3j): **Soil Properties**: AASHTO Soil Classification A-6 and A-7

5.3 (3k): **Name of Receiving Water Body/Bodies**: James River

5.3 (3l): **Location of Construction Support Activity Areas:** See CSPP Project Layout Sheet

5.3 (4): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

- Install perimeter protection where runoff may exit site.
- Install perimeter protection around stockpiles.
- Install channel and ditch bottom protection
- Remove soil and topsoil.
- Install utilities and storm sewers.
- Install inlet and culvert protection after completing storm drainage and other utility installations.
- Final paving.
- Final grading and topsoil replacement.
- Removal of protection devices.
- Reseed all areas disturbed by removal activities.

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

- ___ Natural Buffers (within 50 ft of Waters of State)
- X Silt Fence
- ___ Erosion Control Wattles
- ___ Temporary Berm / Windrow
- ___ Stabilized Construction Entrances
- ___ Entrance/Exit Equipment Tire Wash
- ___ Other:

Structural Erosion and Sediment Controls

- X Silt Fence
- ___ Temporary Berm / Windrow
- X Erosion Control Wattles
- ___ Temporary Sediment Barriers
- ___ Erosion Bales
- ___ Temporary Slope Drain
- ___ Turf Reinforcement Mat
- ___ Riprap
- ___ Gabions
- ___ Rock Check Dams
- ___ Sediment Traps/Basins
- X Culvert Inlet Protection
- ___ Transition Mats
- X Median/ Area Drain Inlet Protection
- ___ Curb Inlet Protection
- ___ Interceptor Ditch
- ___ Concrete Washout Facility
- ___ Work Platform
- ___ Temporary Water Barrier
- ___ Temporary Water Crossing
- ___ Permanent Stormwater Ponds
- ___ Permanent Open Vegetated Swales
- X Natural Depressions to allow for Infiltration
- ___ Sequential Systems that combine several practices
- ___ Other:

Dust Controls

- ___ Tarps & Wind Impervious Fabrics
- X Watering
- X Stockpile location/ orientation
- ___ Dust Control Chlorides
- ___ Other:

Dewatering BMPs

- ___ Sediment Basins
- ___ Dewatering bags
- ___ Weir Tanks
- ___ Temporary Diversion Channel
- ___ Other:

Stabilization Practices (See Detail Plan Sheets)

Stabilization measures shall begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. **Temporary stabilization shall be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (3.18).**

- ___ Vegetation Buffer Strips
- ___ Temporary Seeding (Cover Crop Seeding)
- X Permanent Seeding
- ___ Sodding
- ___ Planting (Woody Vegetation for Soil Stabilization)
- X Mulching (Grass Hay or Straw)
- X Fiber Mulching (Wood Fiber Mulch)
- ___ Soil Stabilizer
- X Bonded Fiber Matrix
- ___ Fiber Reinforced Matrix
- X Erosion Control Blankets
- ___ Surface Roughening (e.g. tracking)
- ___ Other:

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetland? Yes ___ No X If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404-permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches ⅓ of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be included with the weekly progress report for each site inspection, this report will also be used to document changes to SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The Resident Project Representative and the Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The Resident Project Representative will complete and provide a copy of the inspection and maintenance reports to the Project Engineer.

Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and the duly authorized Registered Professional Engineer under the law of the State of South Dakota License No.

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

SWPPP NOTES

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
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Proj. No:	A-7141
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VP. No:	SWPPPN(1)
Date:	5/28/26

5.3 (7): POST-CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8A): Spill Prevention and Response Procedures

Material Management

House Keeping

- Only needed products will be stored on-site by the Contractor.
- Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

Hazardous Materials

- Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- In surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

Spill Control Practices

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measured taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

Spill Response

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DANR
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities

5.3 (8b): WASTE MANGAGEMENT PROCEDURES

Waste Disposal

All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

Hazardous Waste

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

Sanitary Waste

Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply)

- X Concrete and Portland Cement
- ___ Detergents
- X Paints
- X Metals
- X Bituminous Materials
- X Petroleum Based Products
- X Diesel Exhaust Fluid
- ___ Cleaning Solvents
- X Wood
- X Cure
- ___ Texture
- X Chemical Fertilizers
- ___ Other:

Product Specific Practices

Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

Fertilizers

Fertilizers will be applied only in the amounts specified by the Engineer. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

Paints

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

Concrete Trucks

Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- ___ Discharge from water line flushing
- ___ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- X Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

Date

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

LICENSED PROFESSIONAL ENGINEER
REG. NO.
13654
BROOKE B.
EDGAR
SOUTH DAKOTA
5/27/2026

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

SWPPP NOTES

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	SWPPPN(2)
Date:	5/28/26

5.4: SWPPP CERTIFICATIONS

Certification of Compliance with Federal, State, and Local Regulations

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for the sediment and erosion control plans, permits, notices or documentation as appropriate.

Mitchell Municipal Airport

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assume that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment knowing violations.

_____

Authorized Signature (See the General Permit, Section 7.4 (1))

Prime Contractor

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

Contractor Information:

Prime Contractor Name:_____

Contractor Contact Name:_____

Address:_____

City:_____State:_____Zip:_____

Office Phone:_____Field:_____

Cell Phone:_____Fax:_____

Erosion Control Supervisor

Name:_____

Address:_____

City:_____State:_____Zip:_____

Office Phone:_____Field:_____

Cell Phone:_____Fax:_____

Project Engineer

Name: Brooke Edgar

Business Address: 416 Production St. N

Job Office Location: Aberdeen, SD

City: Aberdeen State: SD Zip: 57402

Office Phone: (605) 225-1212 Field:_____

Cell Phone:_____Fax: (605) 225-3189

SD DANR Contact Spill Report

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

SD DANR Contact for Hazardous Materials

- (605) 773-3153

National Response Center Hotline

- (800) 424-8802

SD DANR Stormwater Contact Information

- SD DANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.1: REQUIRED SWPPP MODIFICATIONS

5.5 (1): Conditions Requiring SWPPP Modification

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part of the SWPPP begins to work on the site.
- When Changes to construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This included changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operations control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SD DANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of applications.

5.5 (2): Deadlines for SWPPP Modification

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

5.5 (3): Documentation of Modifications to the Plan

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

5.5 (4): Required Notice to Other Operators

All modification made to you SWPPP must be signed and certified as required in the General Stormwater Permit Section 7.4.

5.5 (5): Required Notice to Other Operators

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The Project Engineer will modify the SWPPP and drawings on the plans will be modified to reflect the needed changes. Copies of the SWPPP modifications will be given to the Contractor Erosion Control Supervisor and a copy will be emailed Owner.

6.1 SPECIAL CONDITIONS - NOT APPLICABLE

7.1 EMERGENCY SPILL NOTIFICATION

In the event of a spill, the Contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

A release or spill of regulated substance (includes petroleum and petroleum products) must be reported to SD DANR immediately **if any one of the following** conditions exists:

- The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
- The release or spill causes an immediate danger to human health or safety
- The release or spill exceeds 25 gallons
- The release or spill causes a sheen on surface water
- The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
- The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:54:01
- The release or spill of any substance that harms or threatens to harm wildlife or aquatic life.
- The release or spill of crude oil in field activities under SDCL 45-9 is greater than 1 barrel (42 gallons); or
- The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

To report a release or spill, call SD DANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for release. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge shall be sent to the SD DANR within 14 days of the discharge.

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13605
BROOKE EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License Number No.

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SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

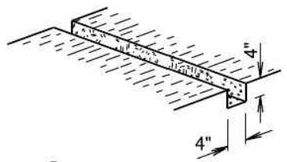
Date

SWPPP NOTES

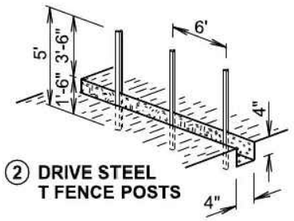
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

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VP. No:	SWPPPN(3)
Date:	5/28/26

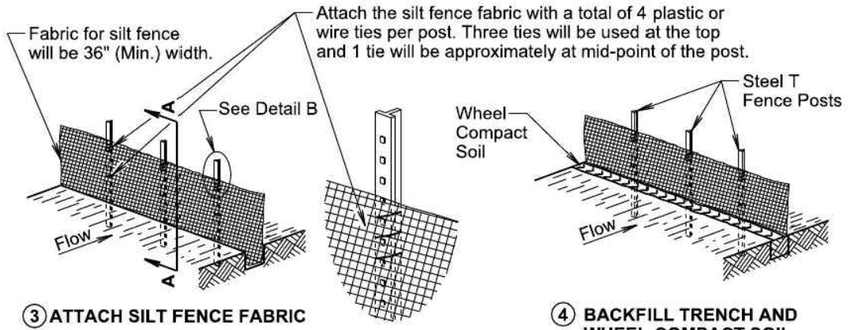
MANUAL HIGH FLOW SILT FENCE INSTALLATION



① EXCAVATE TRENCH



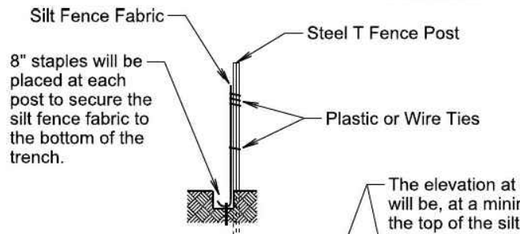
② DRIVE STEEL T FENCE POSTS



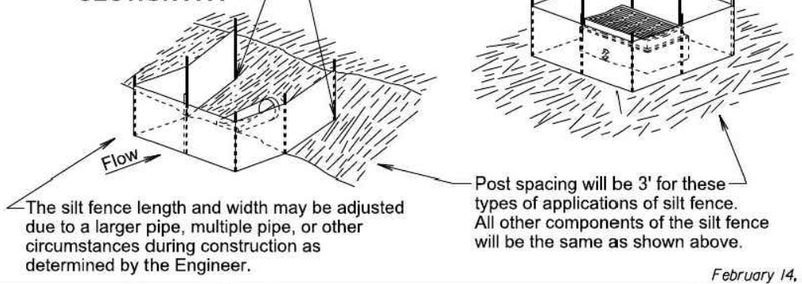
③ ATTACH SILT FENCE FABRIC

DETAIL B

④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



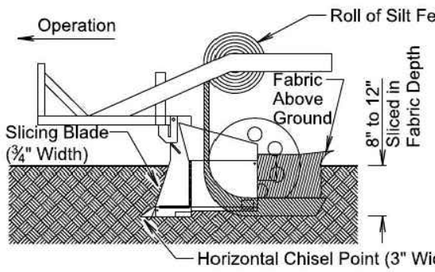
SECTION A-A



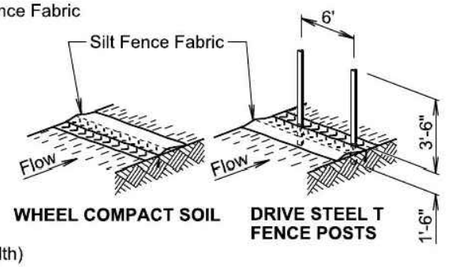
February 14, 2020

Published Date: 3rd Qtr. 2022	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

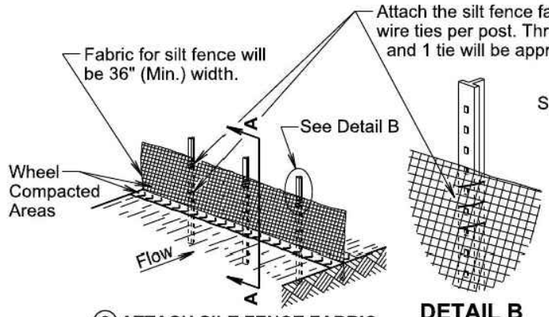


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



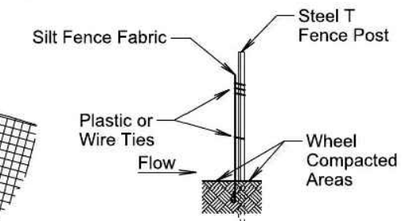
WHEEL COMPACT SOIL — DRIVE STEEL T FENCE POSTS

② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

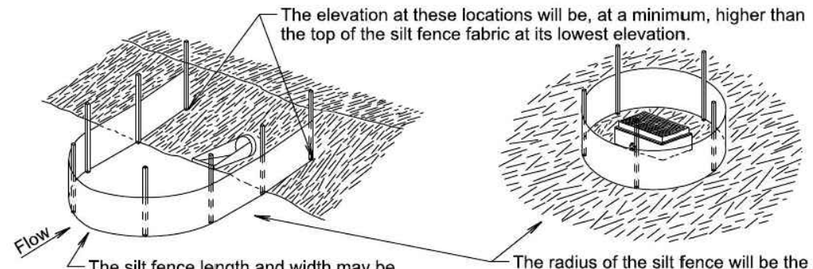


③ ATTACH SILT FENCE FABRIC

DETAIL B



SECTION A-A



GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 3rd Qtr. 2022	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13651
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. Reg. Certificate No.

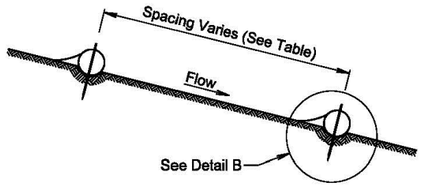
416 Production St N.
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Fax: 605.225.3189
Email: bobb@helmsengineering.com

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CIVIL ENGINEERS & LAND SURVEYORS

SWPPP NOTES

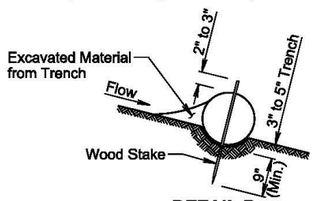
RUNWAY 18/36 RECONSTRUCTION AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	SWPPPD(1)
Date:	5/28/26

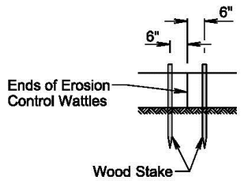


ELEVATION VIEW
(Cut or Fill Slope Installation)

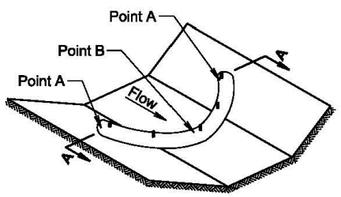
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



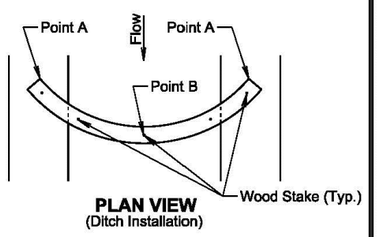
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

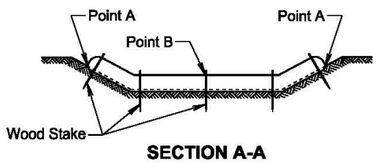


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

DITCH INSTALLATION	
Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

February 14, 2020

Published Date: 2026	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06	Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

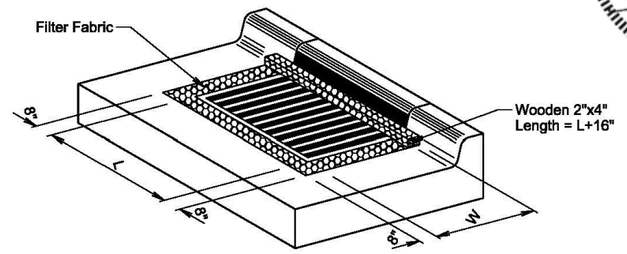
All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

February 14, 2020

Published Date: 2026	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06	Sheet 2 of 2

L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate will be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric will be the type specified in the plans.

The filter fabric will be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric will be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

The Contractor and Engineer will inspect the sediment control device in accordance with the storm water permit. The Contractor will maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment will be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

February 14, 2020

Published Date: 2026	SDDOT	SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES	PLATE NUMBER 734.10	Sheet 1 of 1

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. License No.

Date

SPN Helms
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Phone: 605.225.1212
Fax: 605.225.3189
Email: bobb@helmsengineering.com

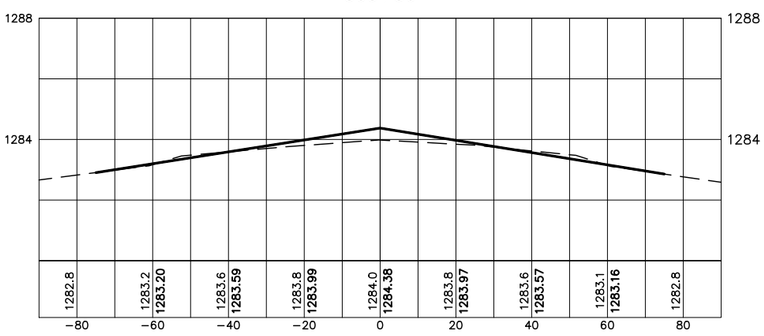
SWPPP NOTES

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

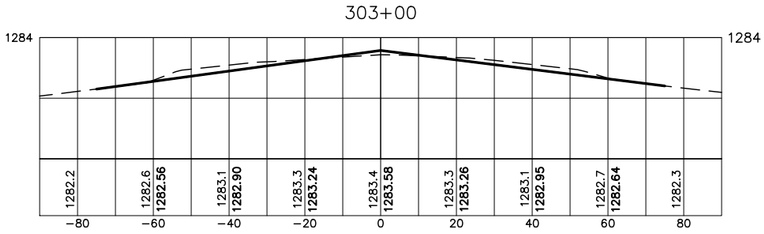
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-DET
VP. No:	SWPPPD(2)
Date:	5/28/26

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1"=4' VERT.

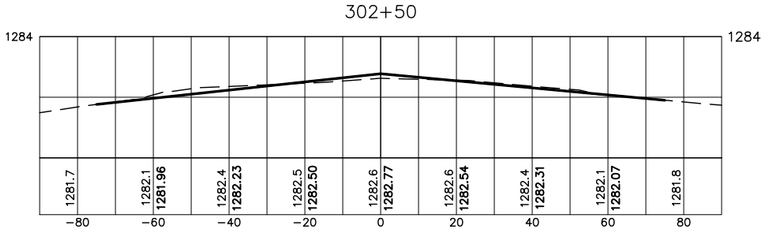
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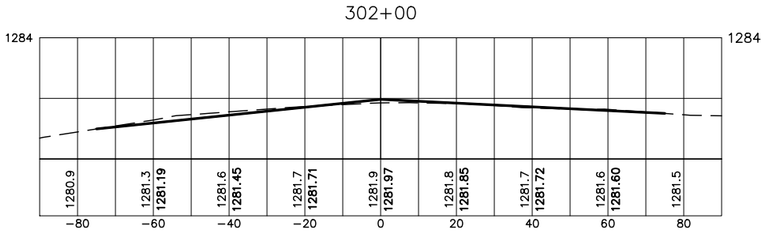
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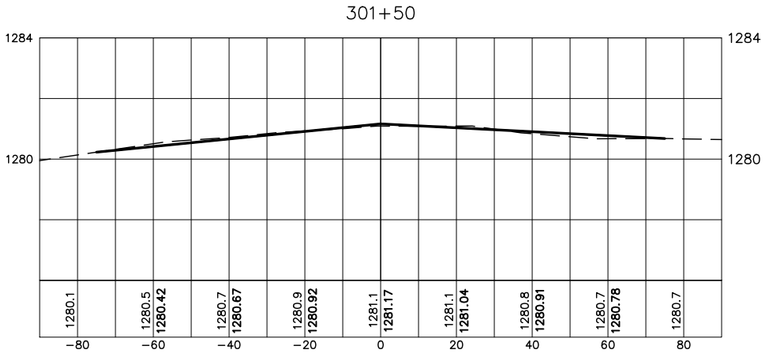
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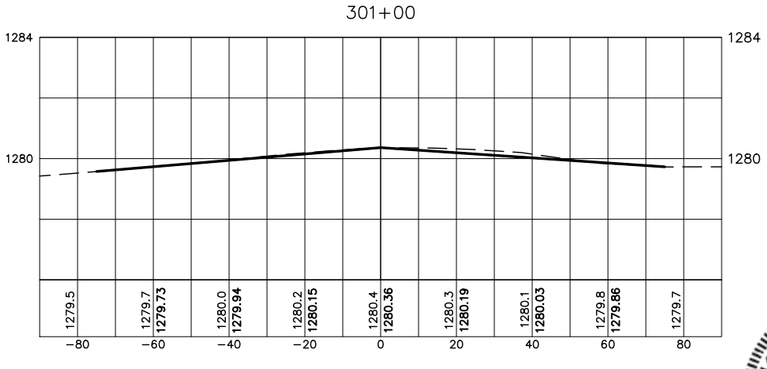
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LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
5/27/2026

Date	Description

Date: 5/28/26
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Dsgn. No: 7141-XS(1)
VP. No: 18-36XS(1)
Chk' By: BBE
Drawn By: TMO

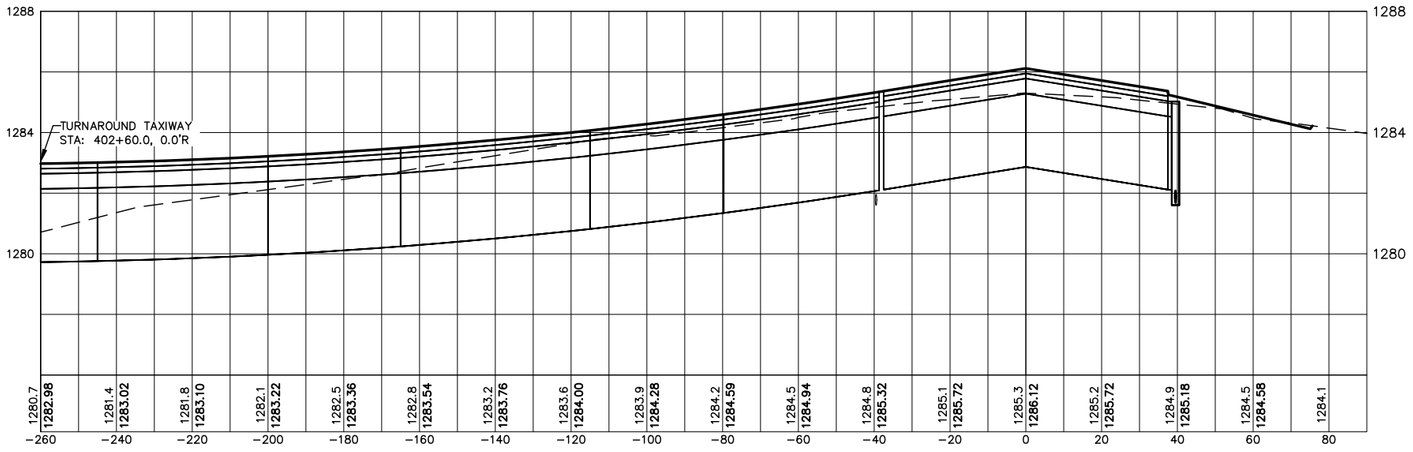
18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

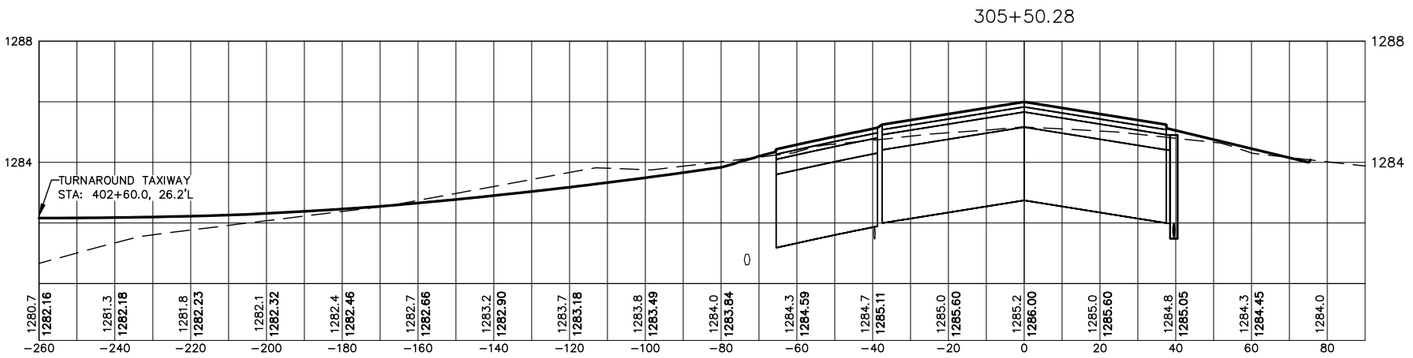
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

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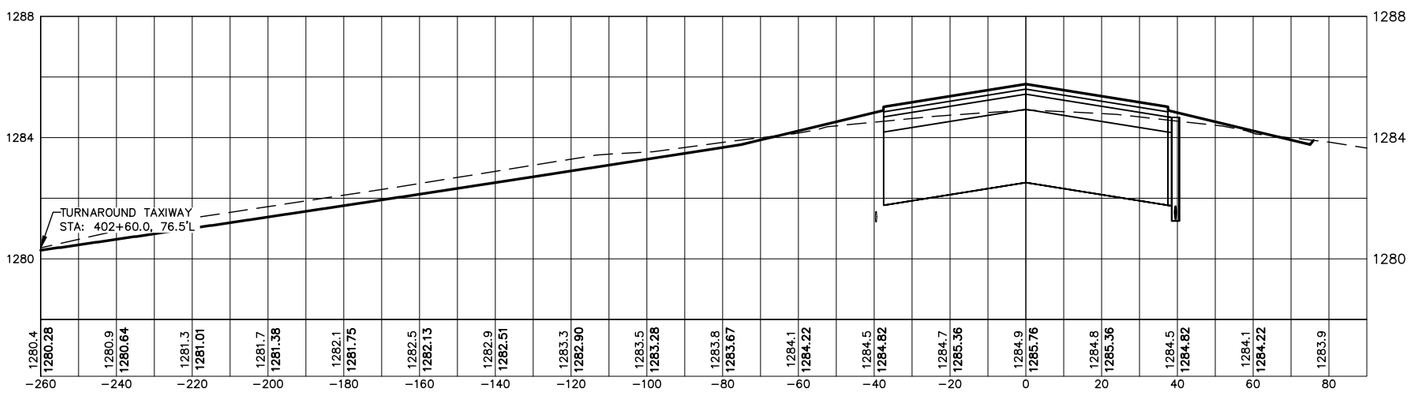
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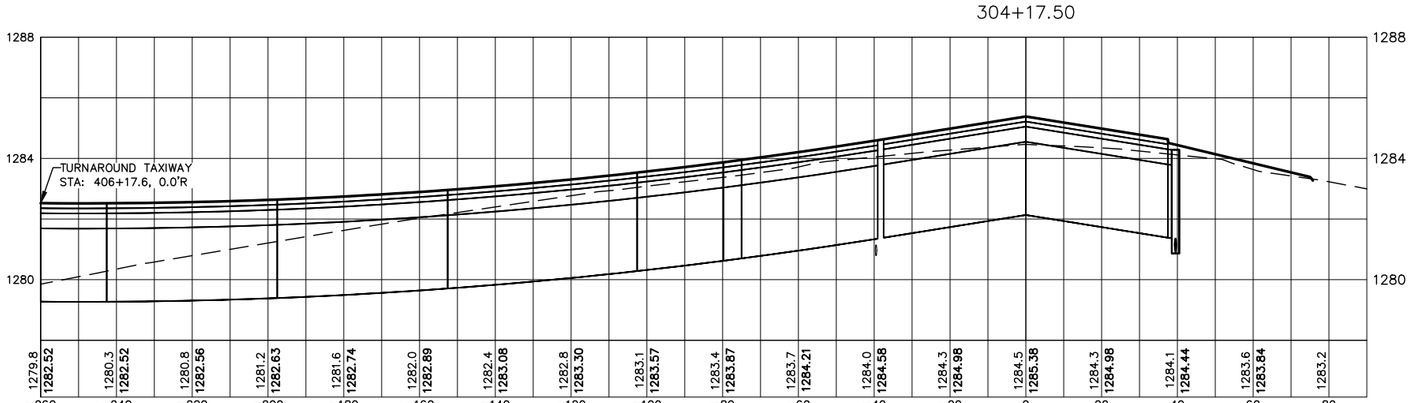
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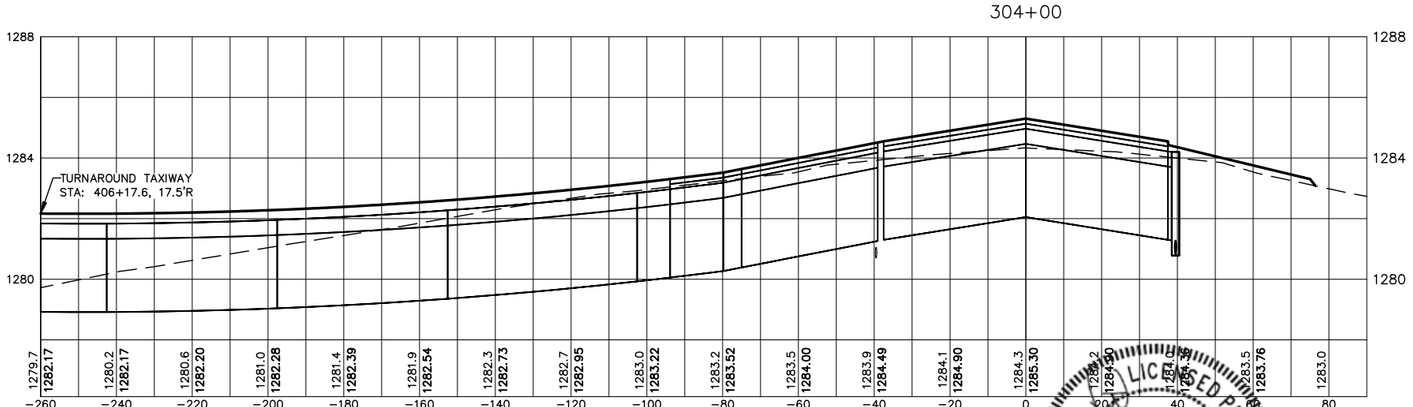
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Date: 5/28/26
Drwg. No: 18-36XS(2)
VP. No: 7141-XS
Proj. No: A-7141
Chk' By: BBE
Drawn By: TMO

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

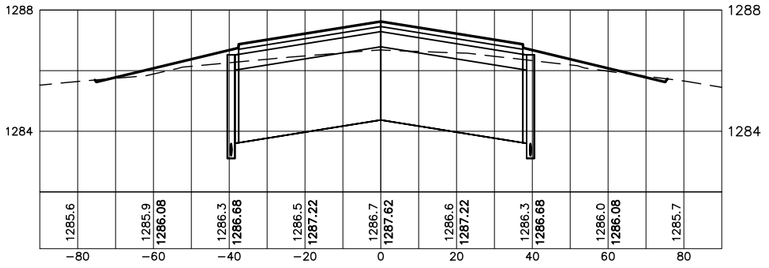
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Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
REGISTERED
13663
BROOKE E. BOBB
Registered Professional Engineer (or Certificate No.)
5/27/2026
My license renewal date is December 31, 2026
Pages or sheets covered by this seal:

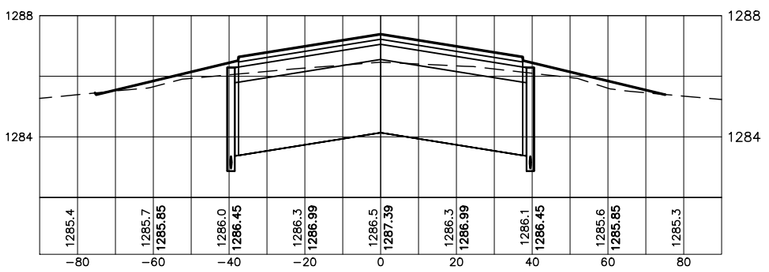
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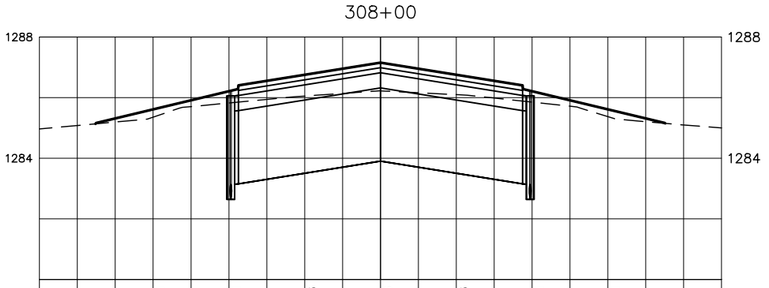
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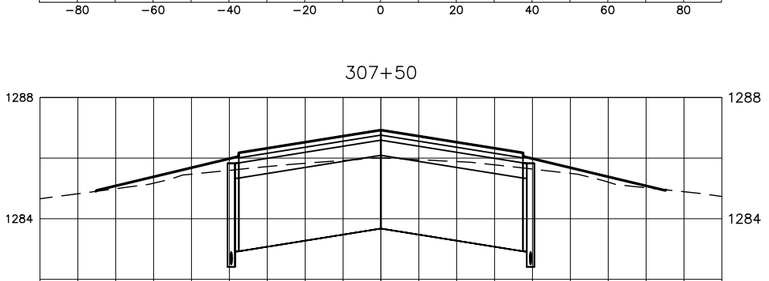
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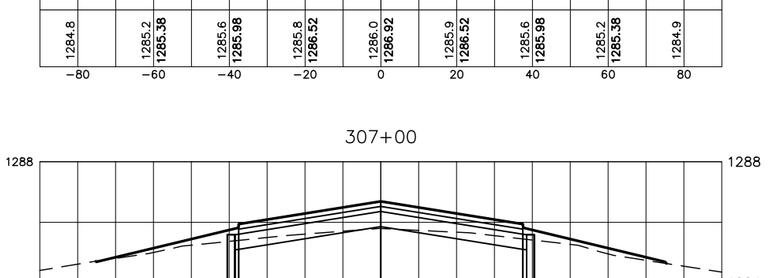
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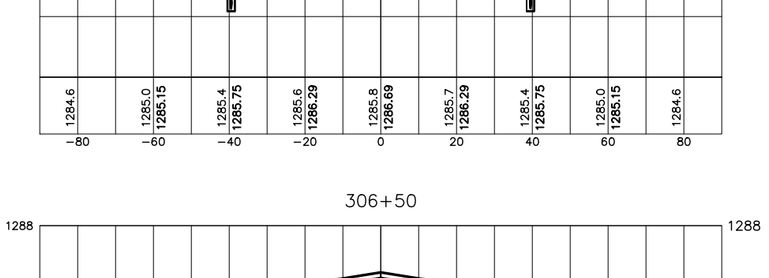
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Proj. No:	A-7141
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18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

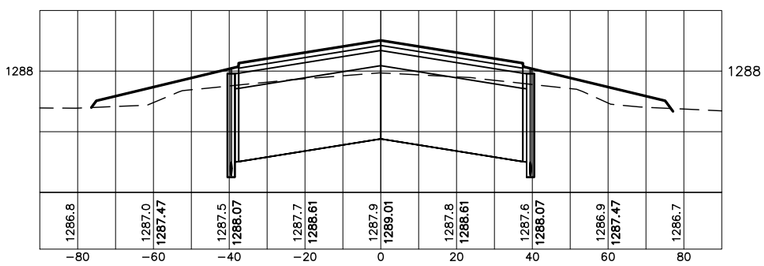
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Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BRODY B. EDWARDS
13607
Registered Professional Engineer
This document originally issued and sealed by me on date shown.
Pages or sheets covered by this seal:
My license renewal date is June 30, 2027
5/27/2026

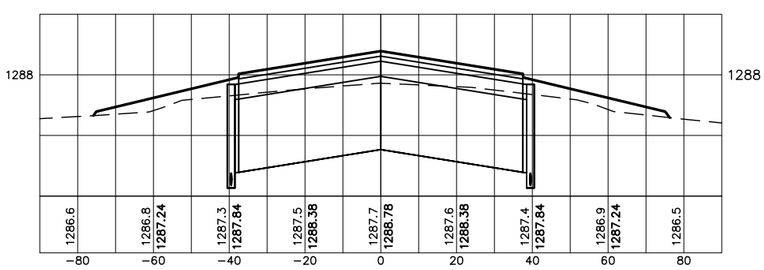
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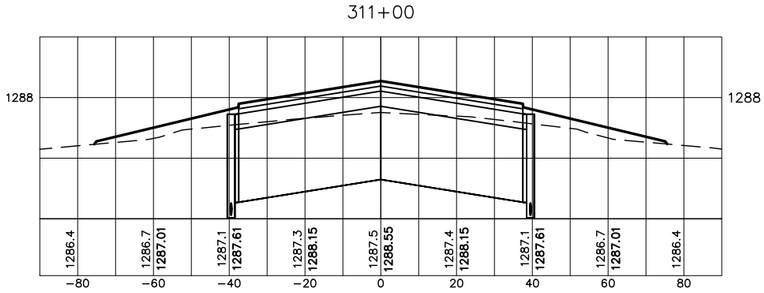
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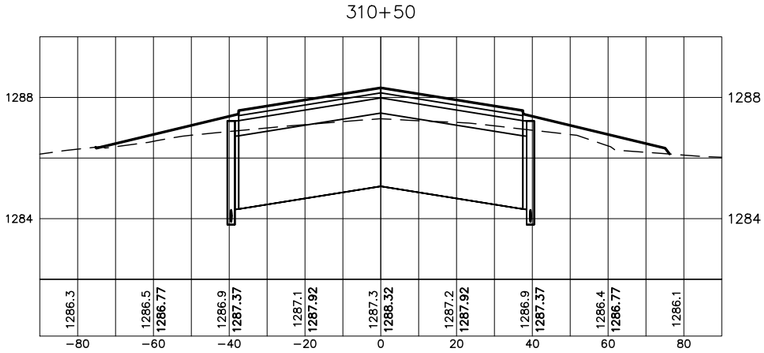
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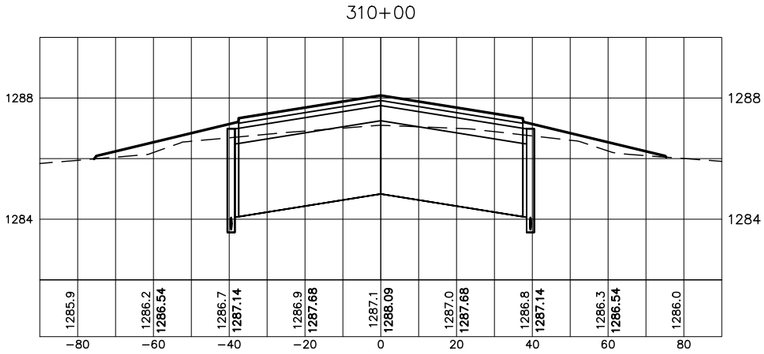
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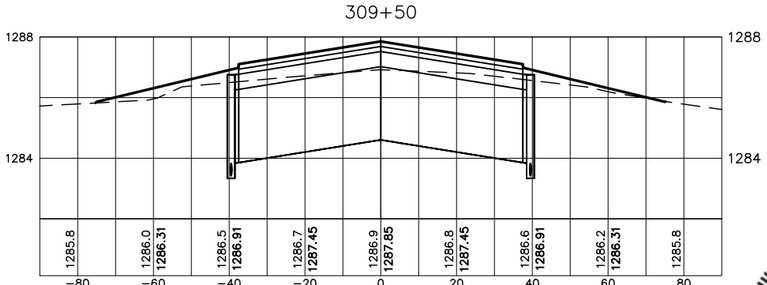
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310+00



309+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDMAN
15637
Registered Professional Engineer
5/27/2026

No.	Revisions	Date

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dept. No:	7141.XS
VP. No:	18-36XS(4)
Date:	5/28/26

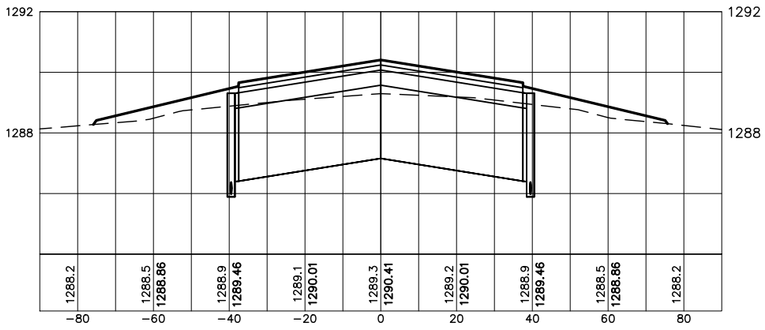
18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

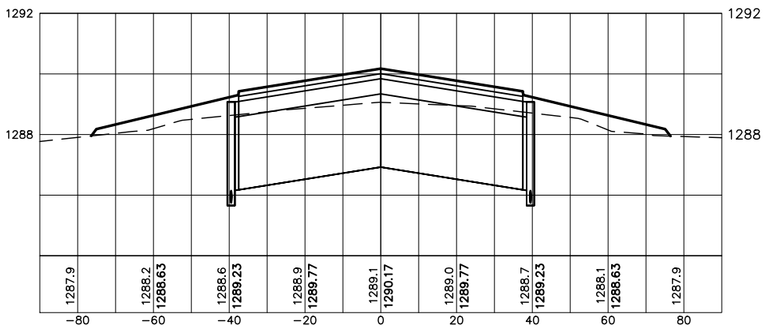
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SCALE 11X17
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1"=5' VERT.

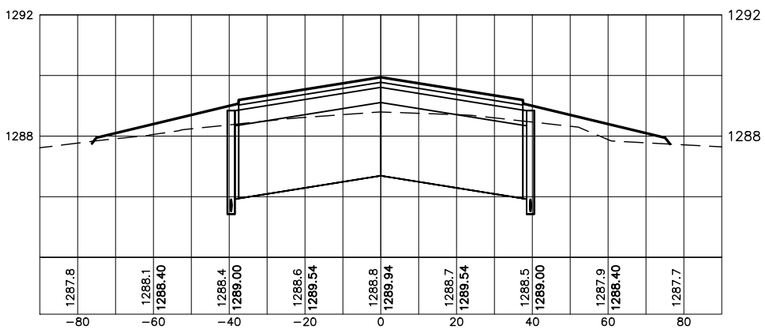
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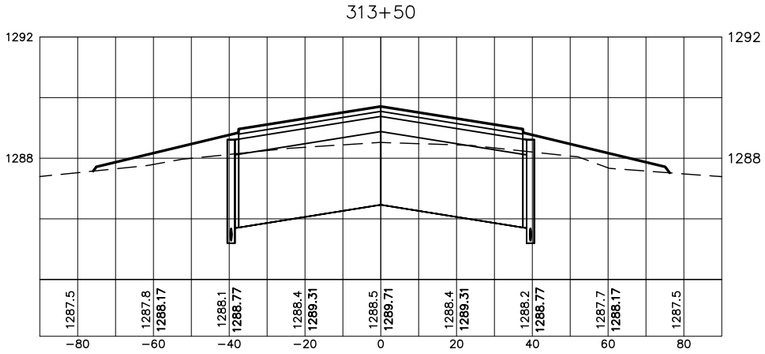
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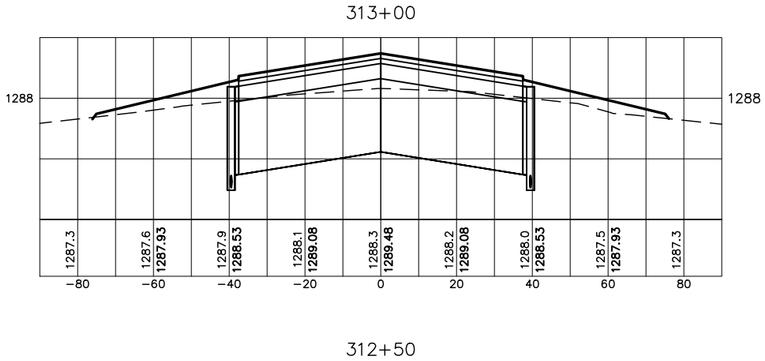
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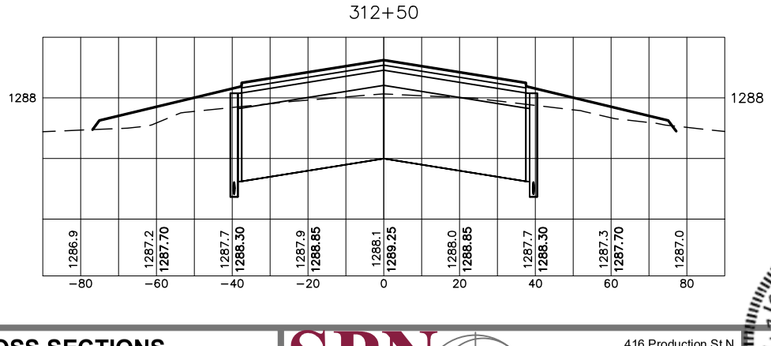
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313+00



312+50



LICENSED PROFESSIONAL ENGINEER
BROOKE E. BERTSCH
15677
Registered Professional Engineer
EDGAR, NE

5/27/2026

Revisions	Date

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

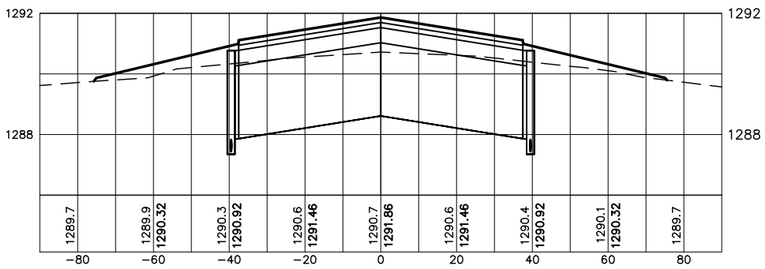
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

416 Production St N.
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Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

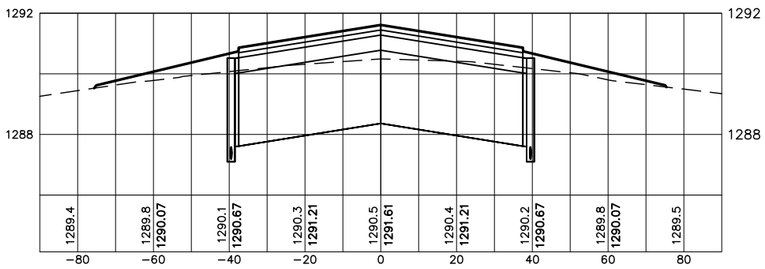
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141-XS(S)
VP. No:	18-36XS(S)
Date:	5/28/26

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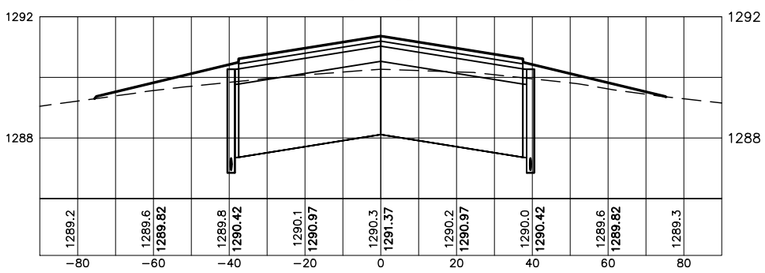
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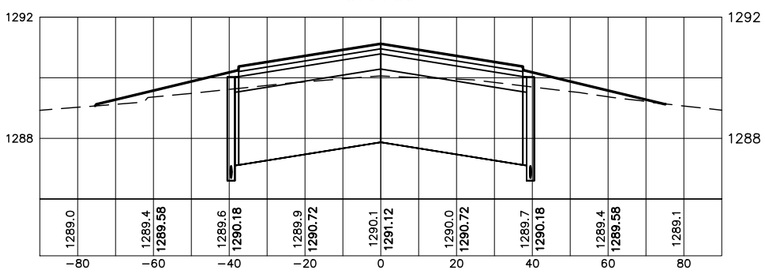
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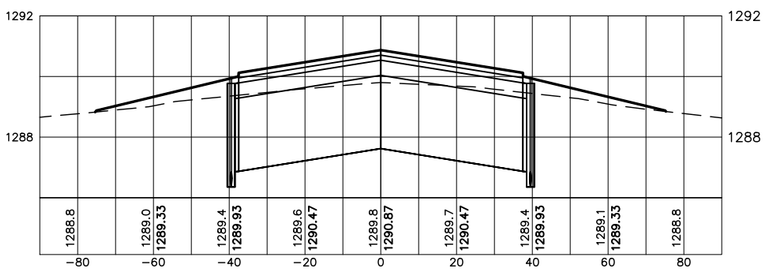
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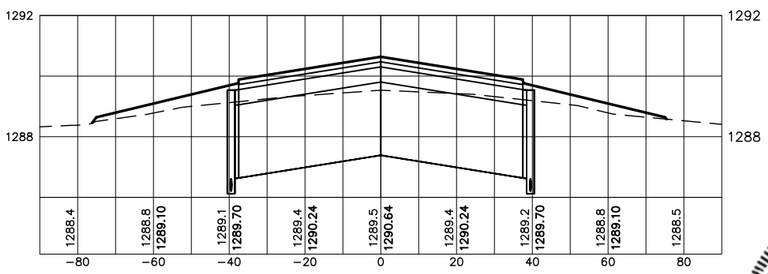
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316+00



315+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDAM
15663
REGISTERED
SOUTH DAKOTA
5/27/2026

Revisions	Date

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

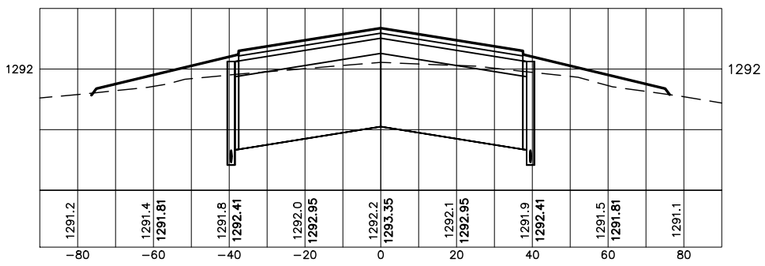
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

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

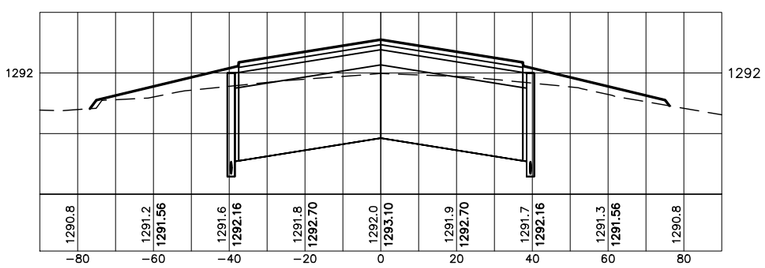
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dept. No:	7141.XSS
VP. No:	18-36(SS)(6)
Date:	5/28/26

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1"=5' VERT.

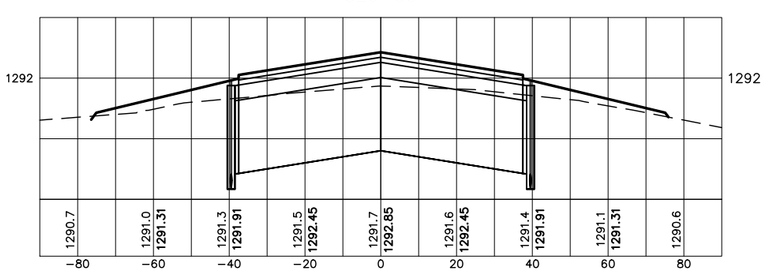
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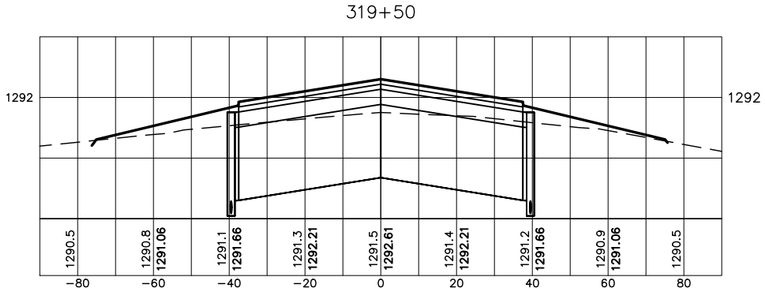
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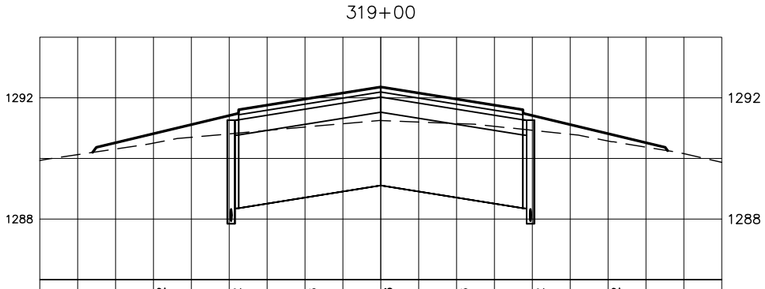
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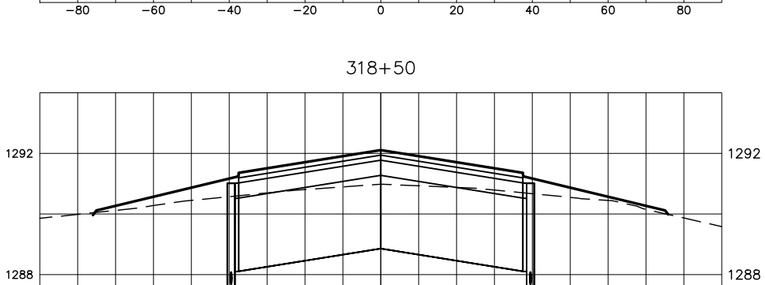
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Date: 5/28/26
VP. No: 18-36(SS)(7)
Proj. No: 7141.XS
Chk' By: BBE
Drawn By: TMO

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

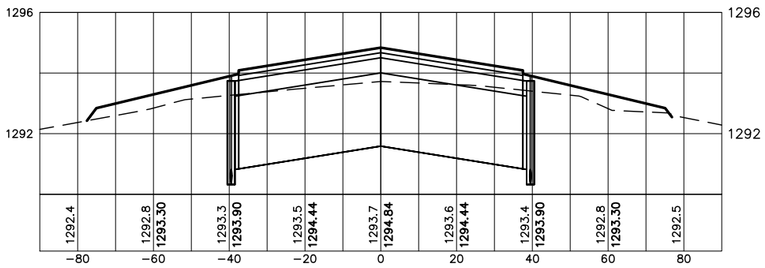
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
REGISTERED
BROOKE E. BOBB
13663
Registered Professional Engineer
EDGAR, SD
5/27/2026

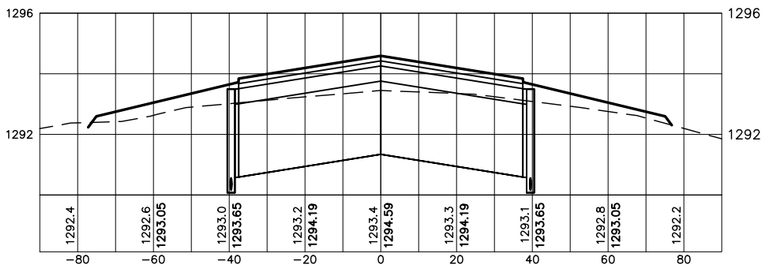
No.	Revisions	Date

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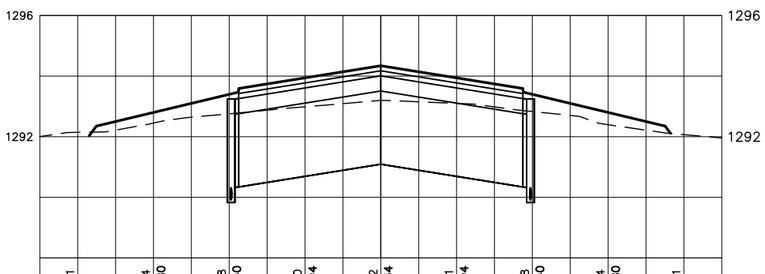
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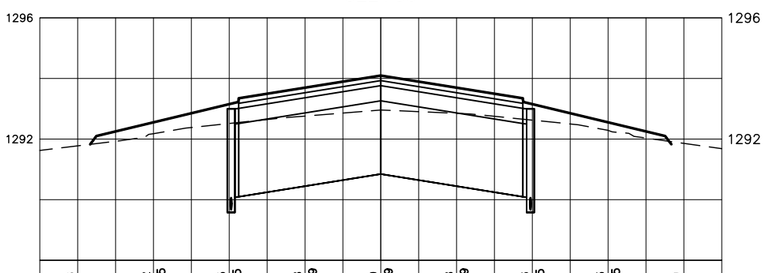
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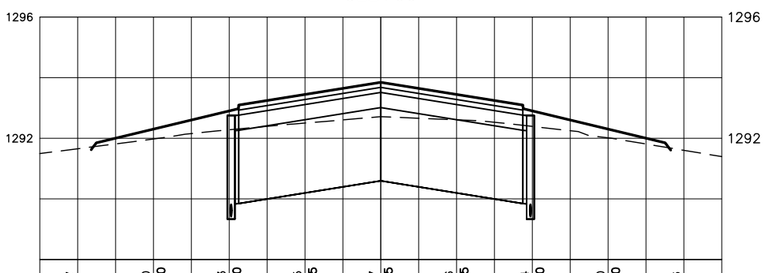
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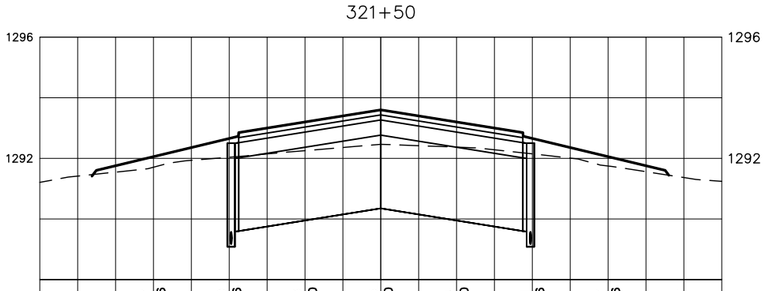
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Date: 5.28.26
Drwg. No: 18-36XS(8)
Proj. No: 7141.XSS
VP. No: A-7141
Chk' By: BBE
Drawn By: TMO

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

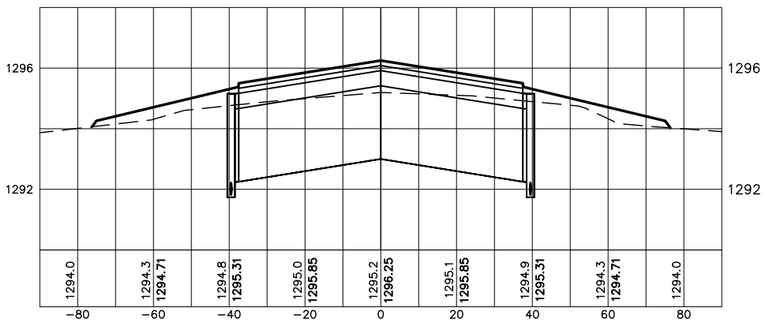
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
13607
Registered Professional Engineer
This document originally issued and sealed by me on date shown.
This document shall not be used for bidding or construction purposes after 2 years from this date.
5/27/2026

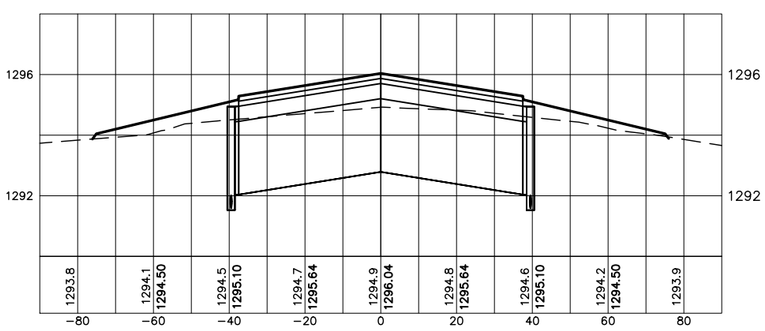
No.	Revisions	Date

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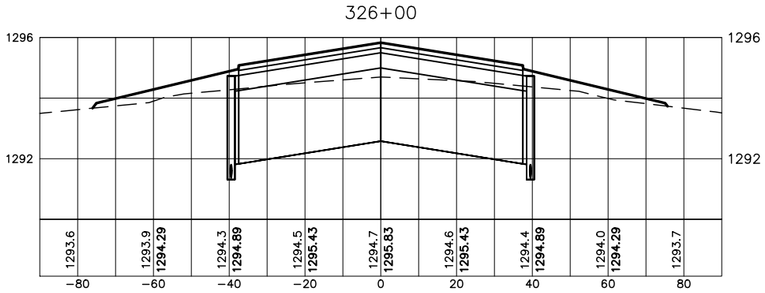
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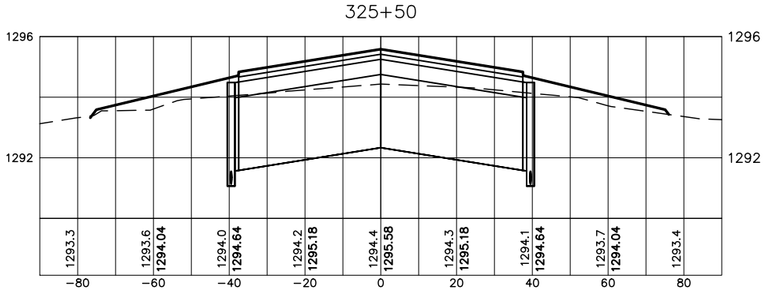
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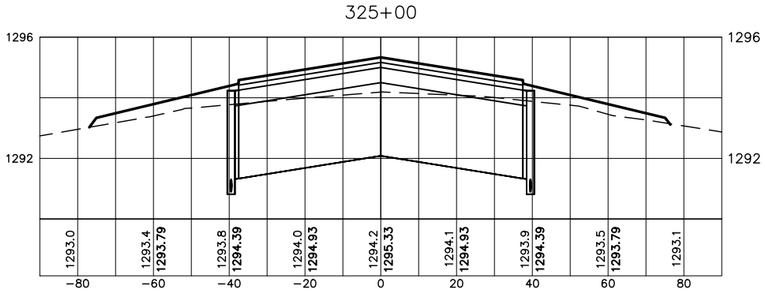
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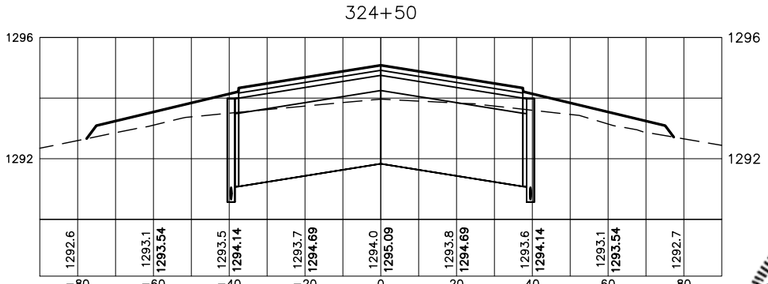
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325+00



324+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDWARDS
13663
Registered Professional Engineer
5/27/2026

Rev.	Description	Date

18-36 CROSS SECTIONS

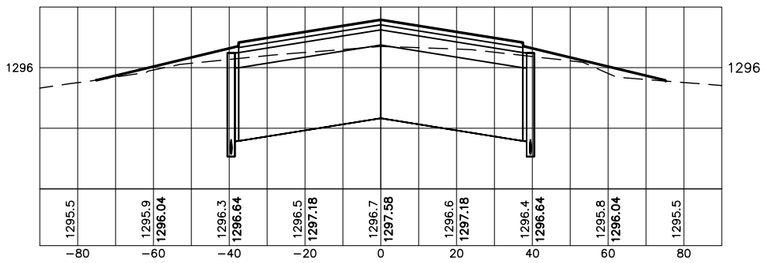
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
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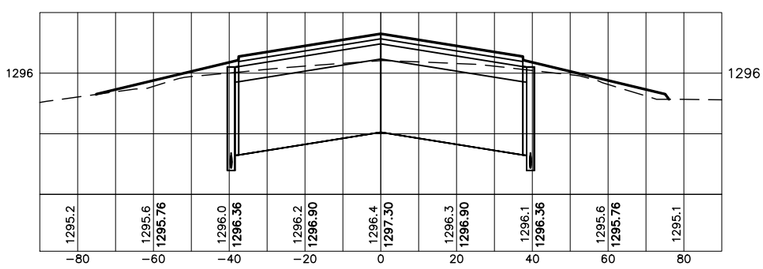
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Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141.XSS
VP. No:	18-36(SS)(9)
Date:	5/26/26

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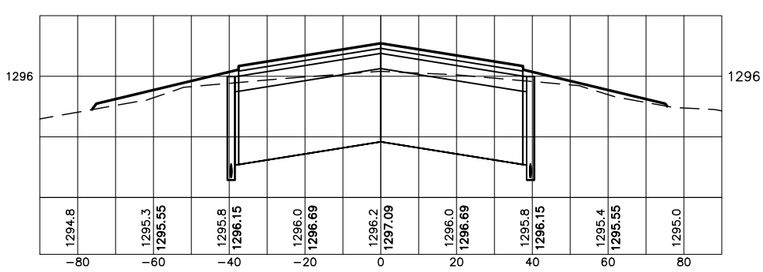
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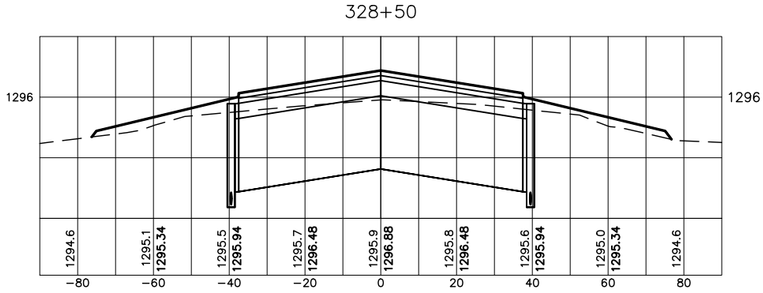
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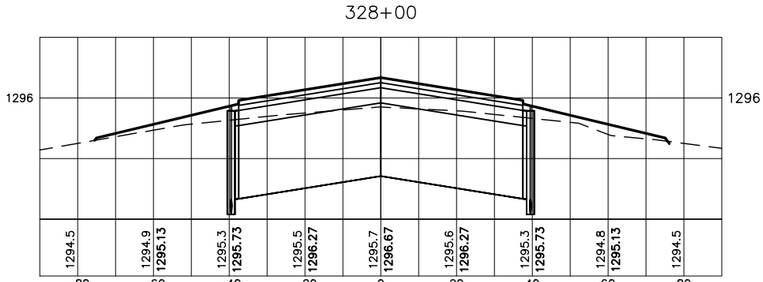
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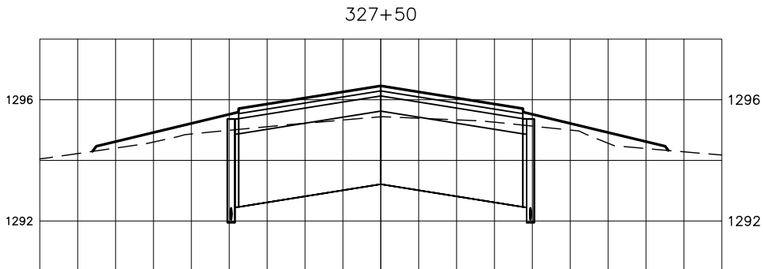
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328+00



327+50



Date: 5/28/26
Drawn By: TMD
Chk'd By: BBE
Proj. No: A-7141
Dwg. No: 18-36XS(01)
VP. No: 7141(XS)

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

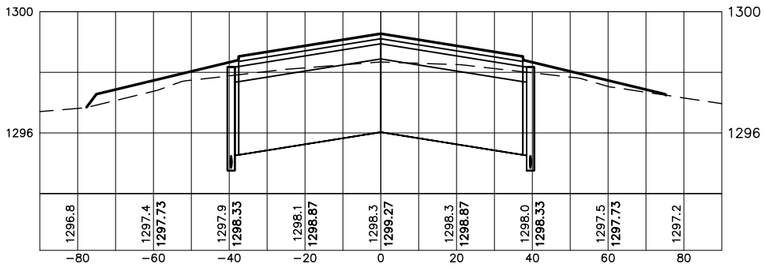
SPN Helms
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LICENSED PROFESSIONAL ENGINEER
REGISTERED
BROOKE B. EDWARDS
13653
5/27/2026

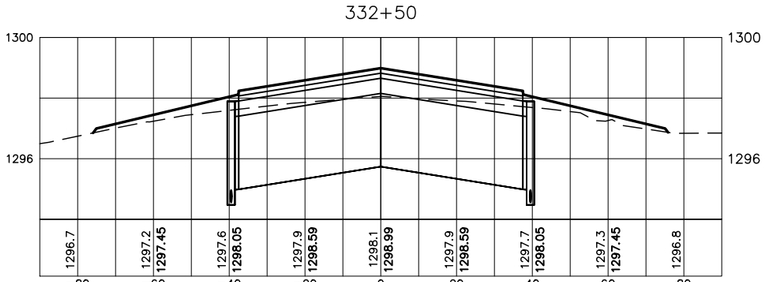
No.	Description	Date

SCALE 11X17
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1"=5' VERT.

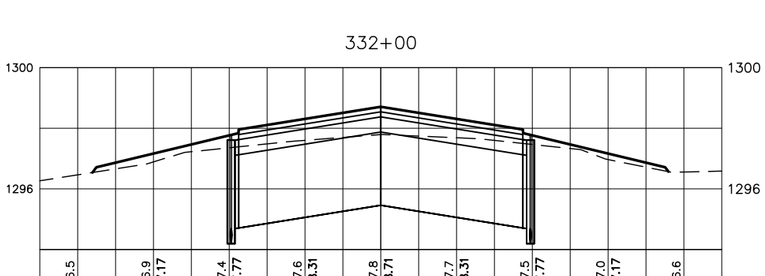
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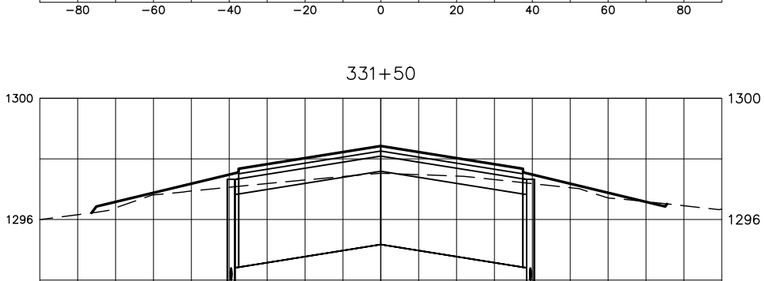
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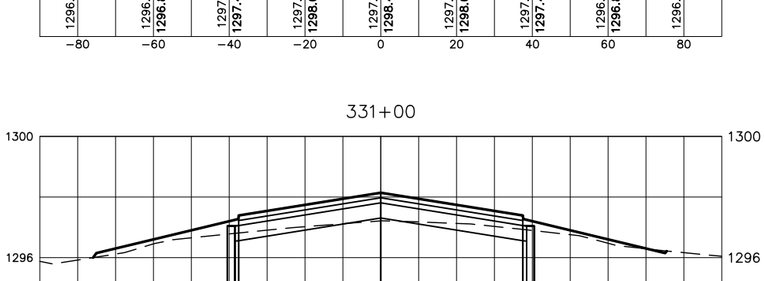
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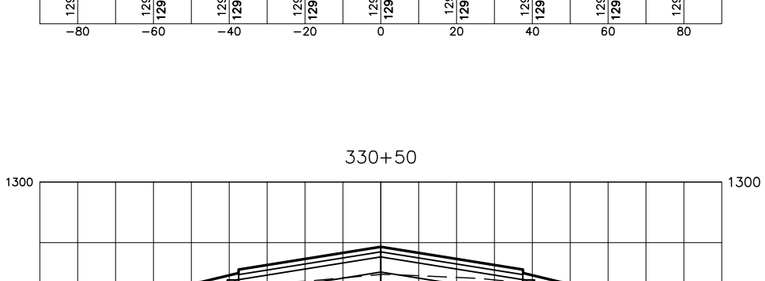
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Date: 5/28/26
Drawn By: TMO
Chk' By: BBE
Proj. No: A-7141
Dept. No: 18-36(SS)(1)
VP. No: 7141(SS)(1)

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

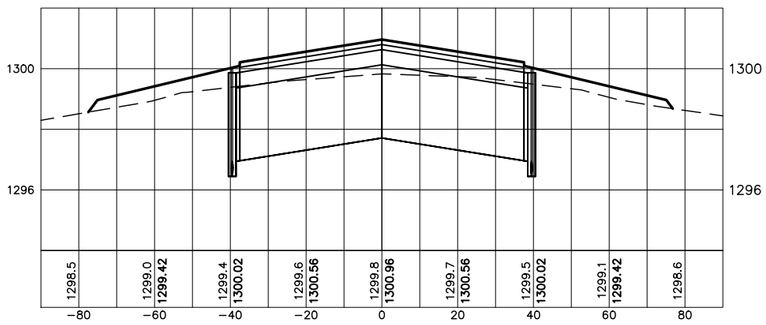
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Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BRADLEY B. EDWARDS
13653
Registered Professional Engineer
5/27/2026

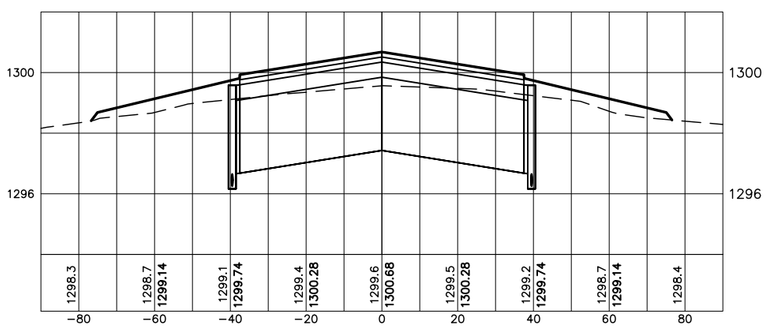
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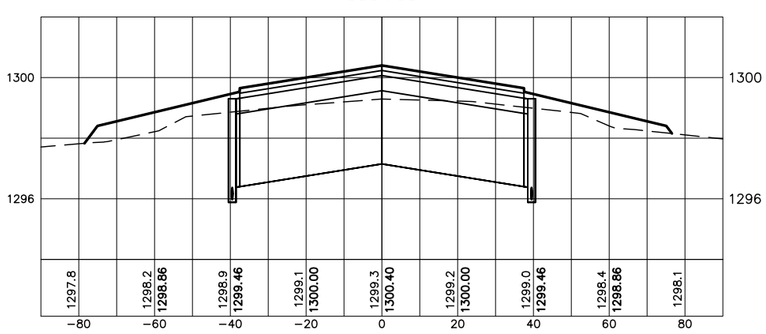
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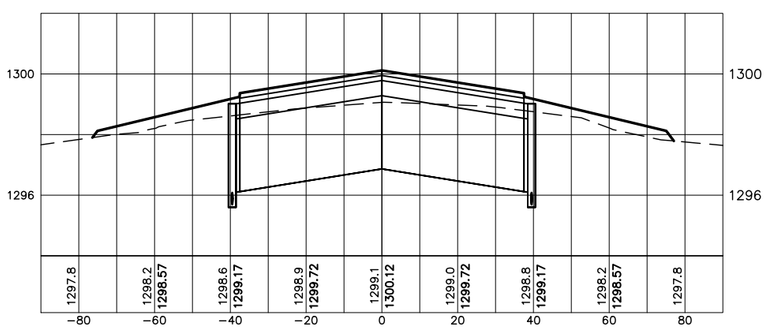
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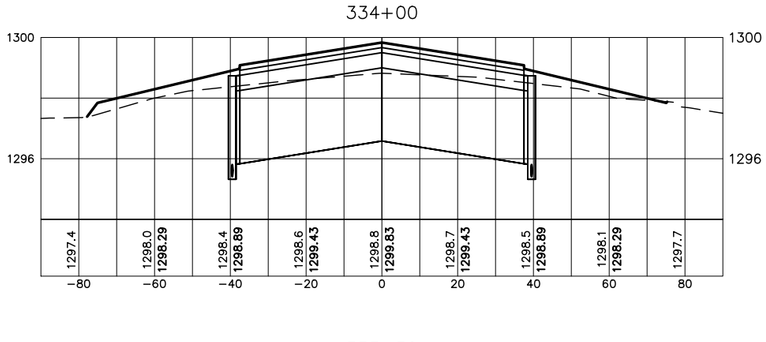
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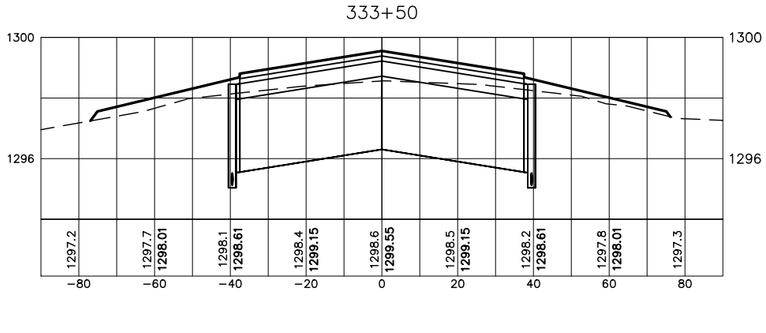
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334+00



333+50



Date: 5.28.26
Drawn By: TMO
Chk' By: BBE
Proj. No: A-7141
Dsgn. No: 18-36(SS12), 7141(SS)
VP. No:

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

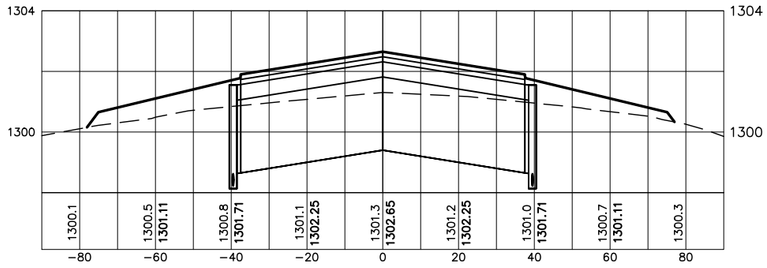
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
REGISTERED
13603
BROOKE E. BOBB
DAKOTA
5/27/2026

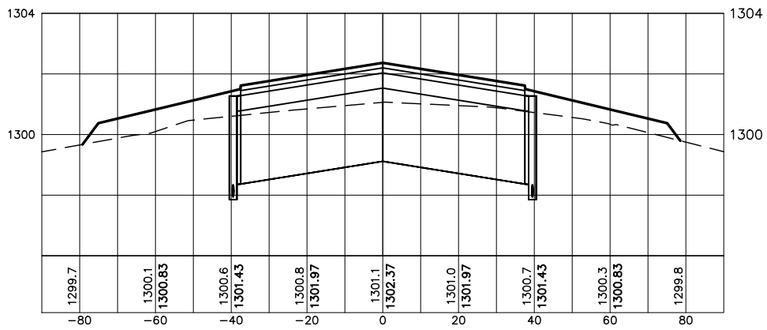
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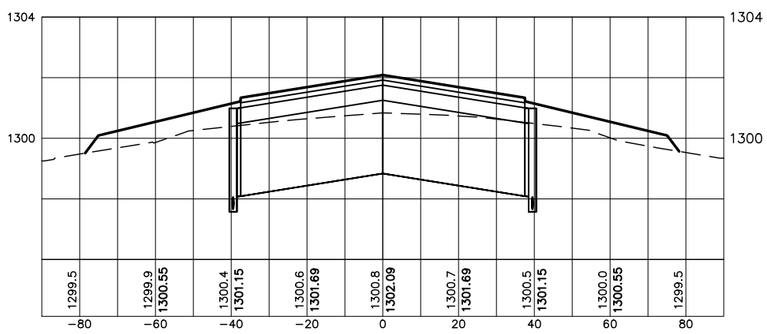
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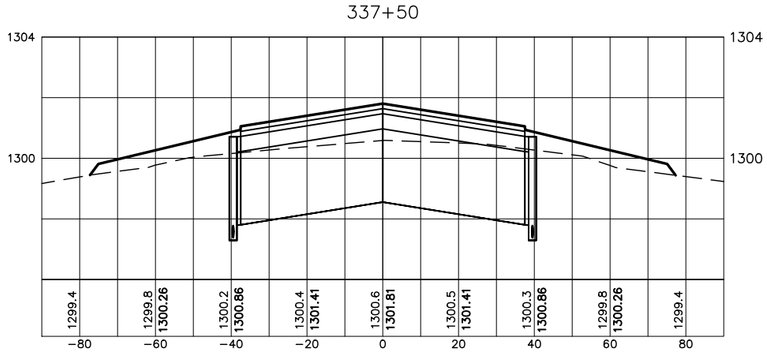
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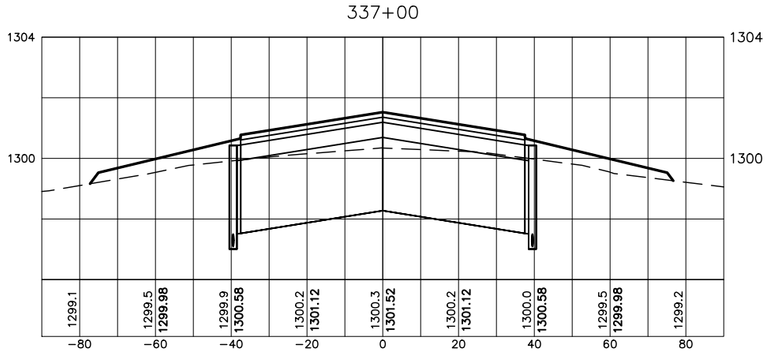
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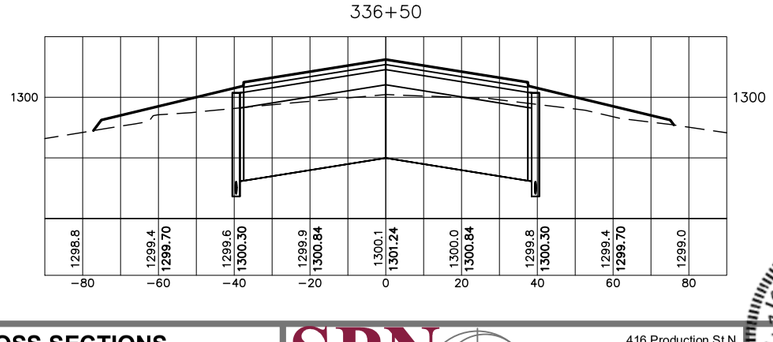
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337+00



336+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. ELLIOTT
13653
Registered Professional Engineer
This document originally issued and sealed by me on date shown.
Pages or sheets covered by this seal: Cover thru 111
My license renewal date is June 30, 2026
5/27/2026

No.	Description	Date

79 OF 111

Date:	5/28/26
Dsgn. No.:	18-36XS(15)
Proj. No.:	A-7141
Chk'd By:	BBE
Drawn By:	TMO

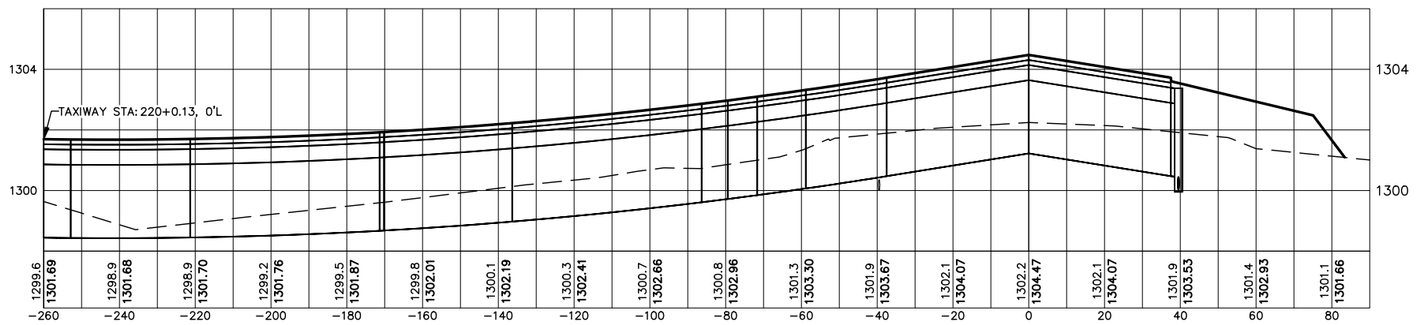
18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

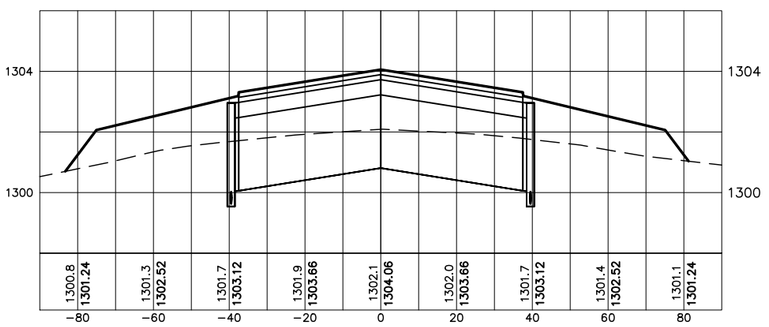
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SCALE 11X17
1"=40' HORIZ.
1"=5' VERT.

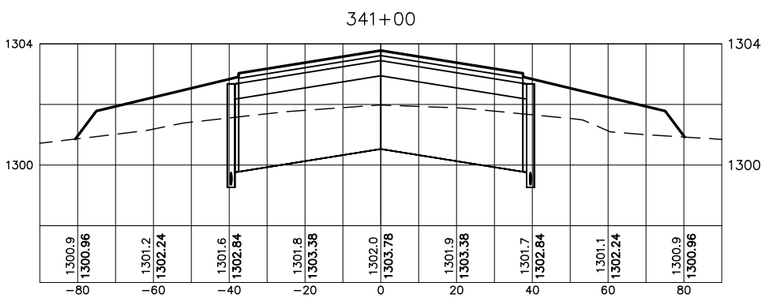
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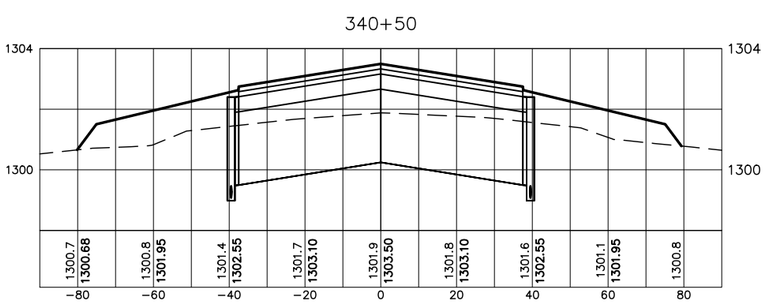
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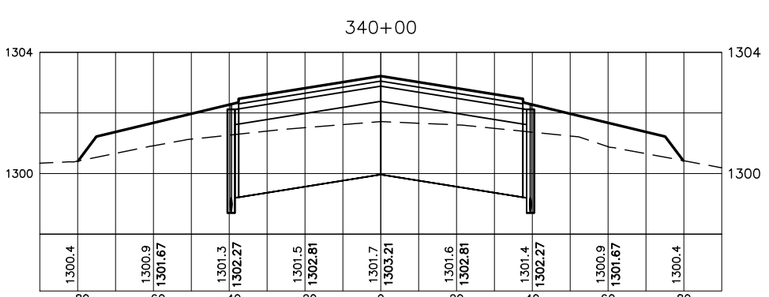
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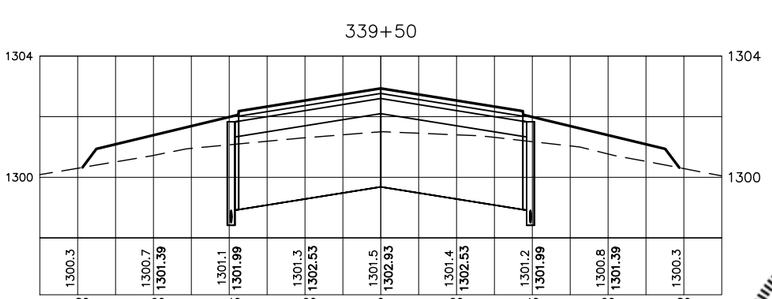
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340+00



339+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
13663
Registered Professional Engineer
This document originally issued and sealed by me on date shown.
Pages or sheets covered by this seal: Entire Plan Set
My license renewal date is June 30, 2026
5/27/2026

Date	Description

18-36 CROSS SECTIONS

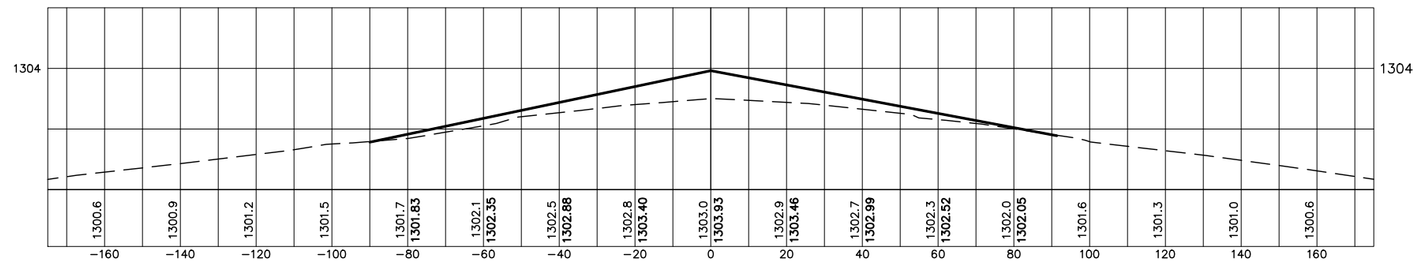
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

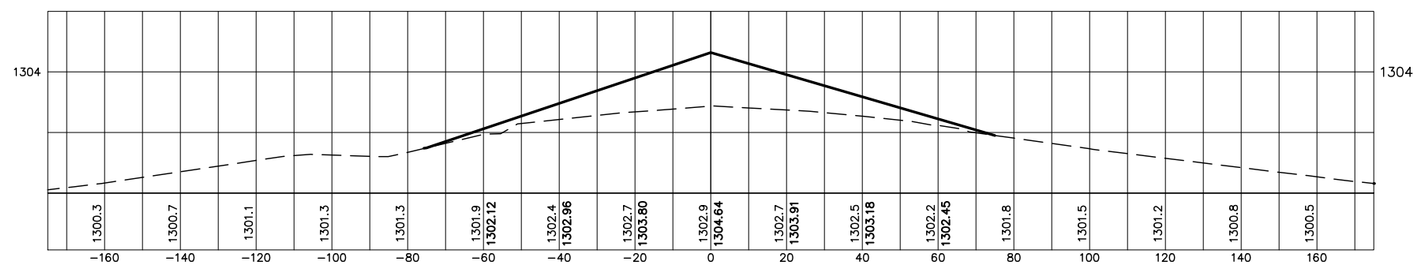
Drawn By:	TMO
Chk By:	BBE
Proj. No:	A-7141
Dsgn. No:	18-36XS(141)
QP. No:	18-36XS(141)
Date:	5/26/26

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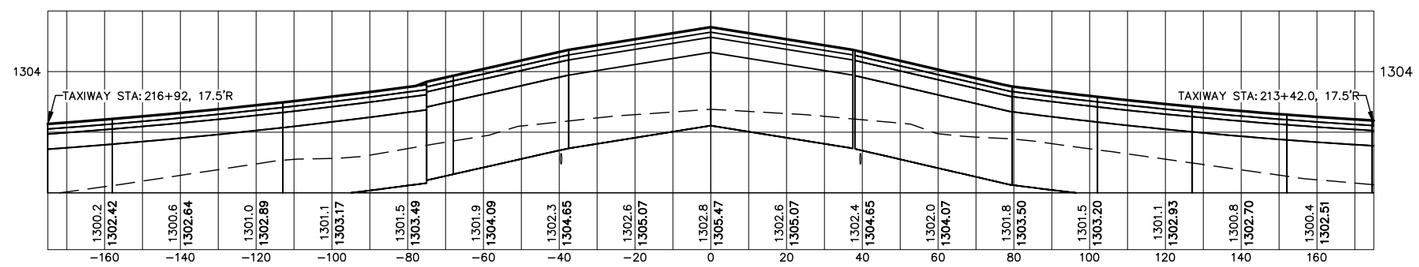
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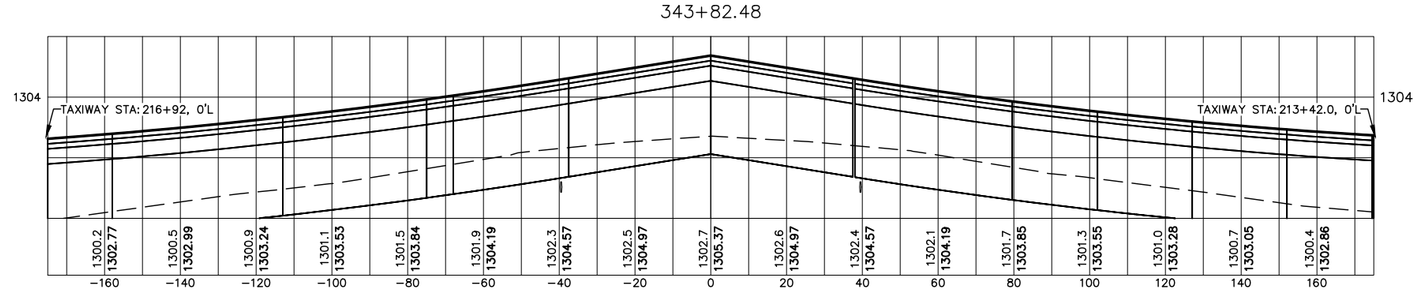
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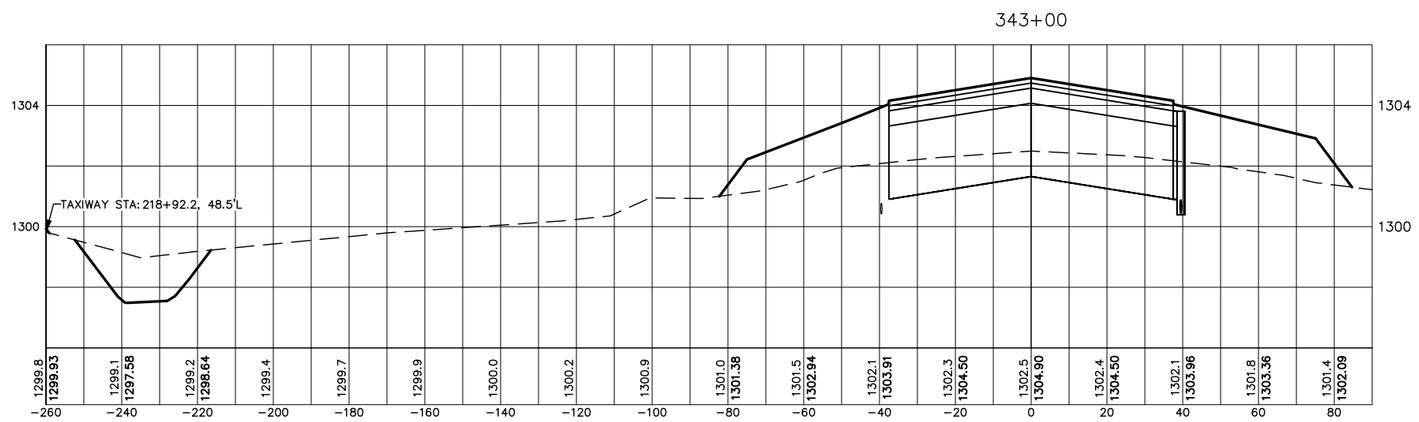
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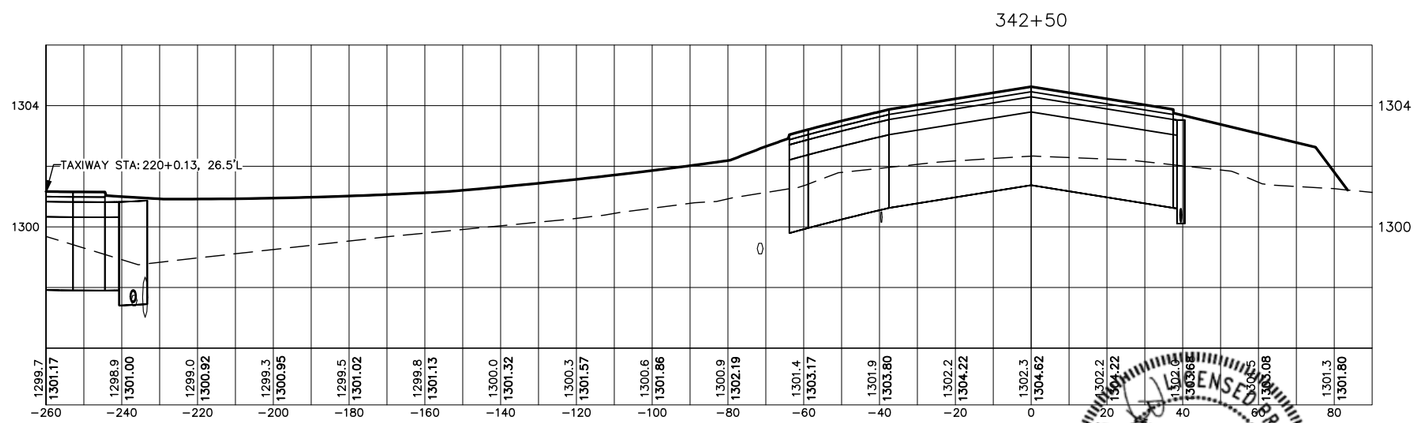
343+82.48



343+00



342+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDDY
13653
Registered Professional Engineer
This item was prepared by me or under my direct supervision
5/27/2026

Date	Description

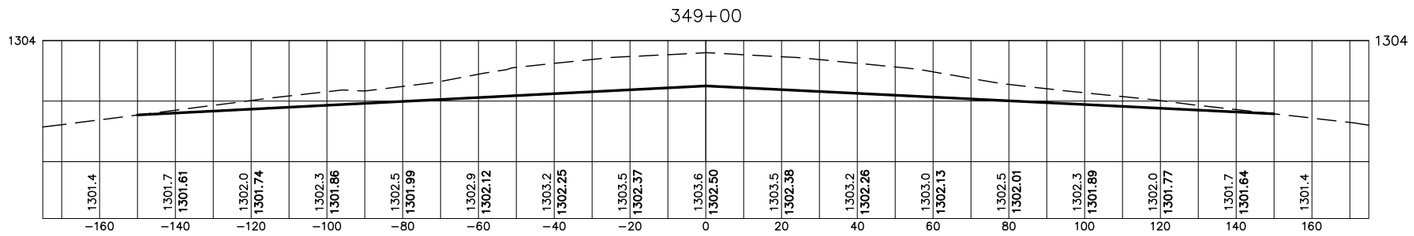
Date	5/26/26
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
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QP. No:	7141-XS(1)

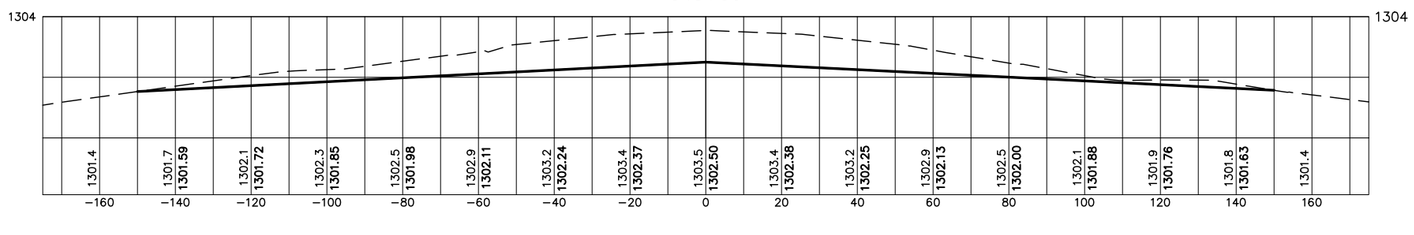
18-36 CROSS SECTIONS

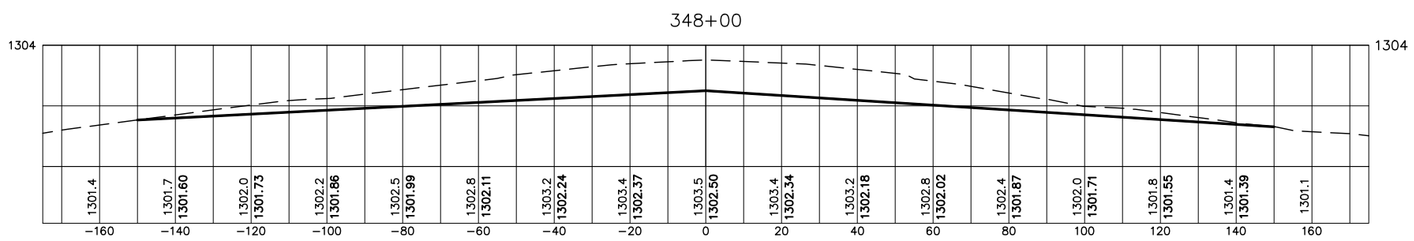
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

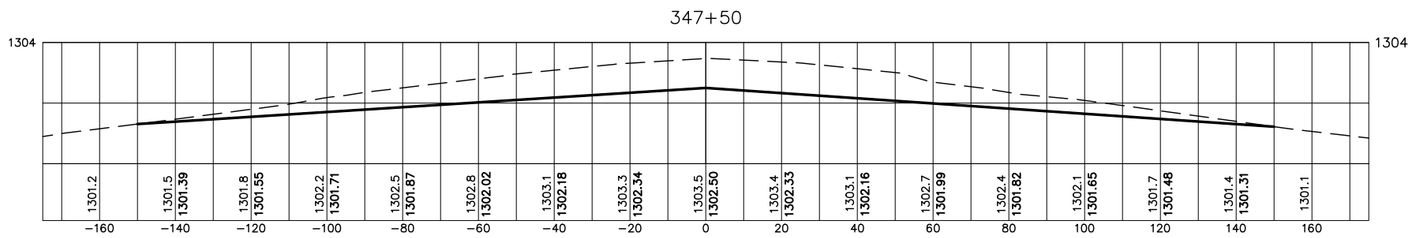
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

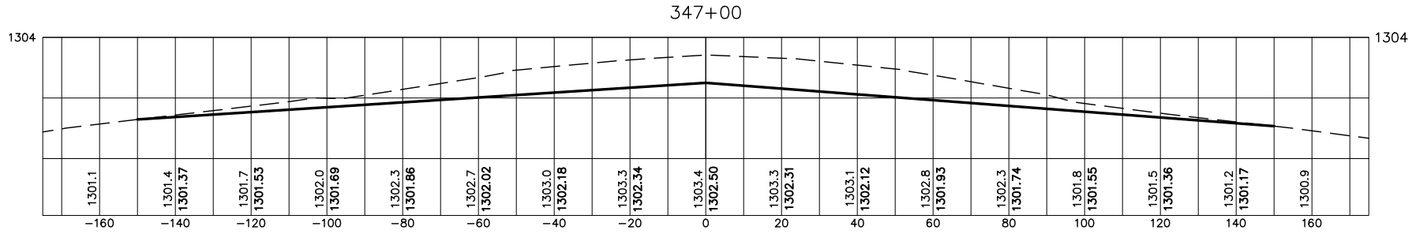
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1"=5' VERT.

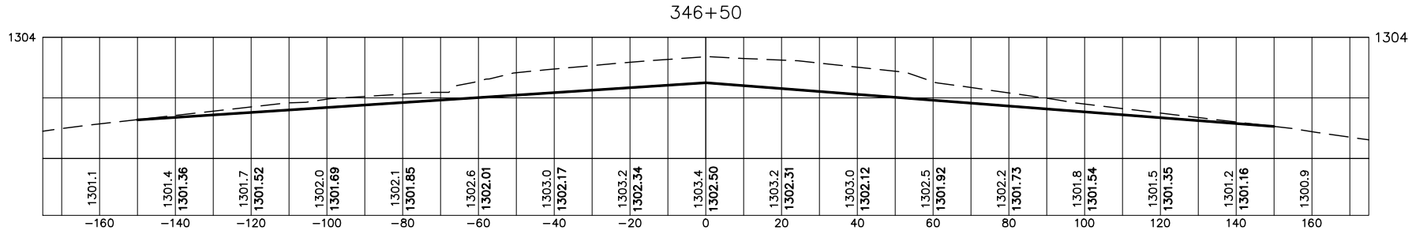


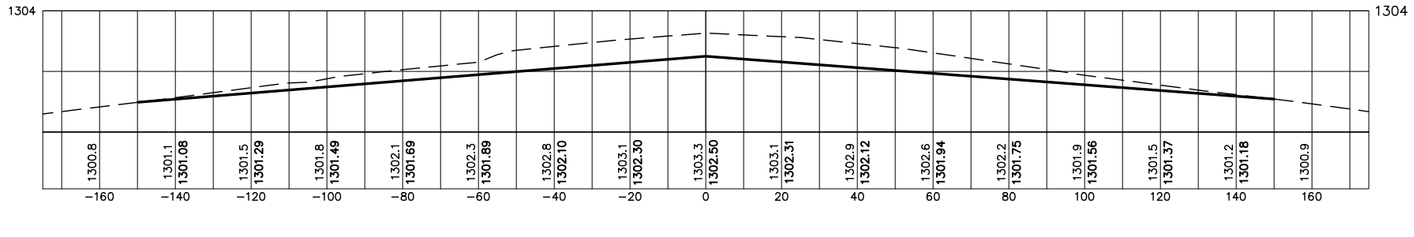


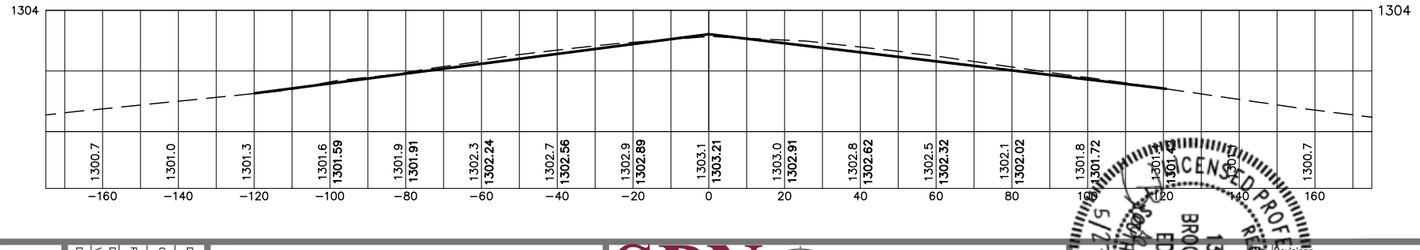












Date: 5/28/26
Dwg. No.: 18-36XS(16)
Proj. No.: A-7141
Chk By: BBE
Drawn By: TMO

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

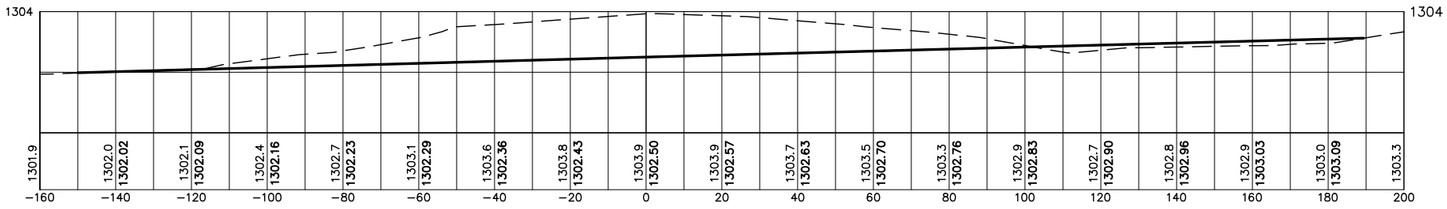
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BROOKE B. ROBERTS
13999
Registered Professional Engineer
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5/27/2026

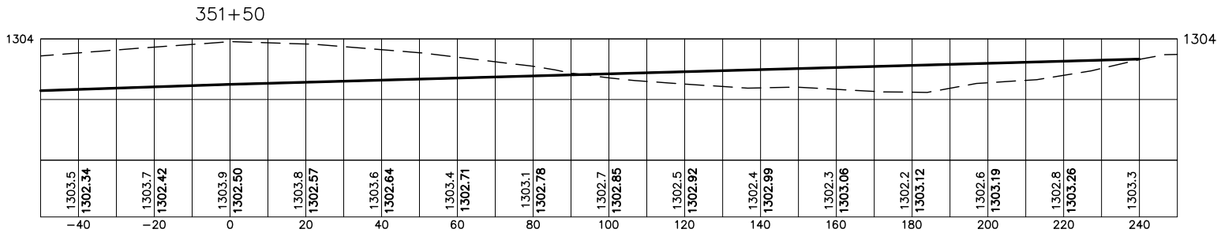
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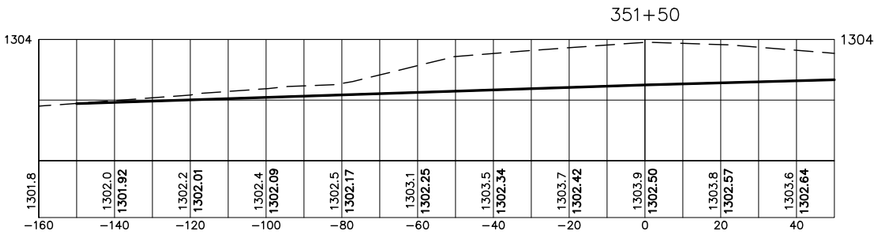
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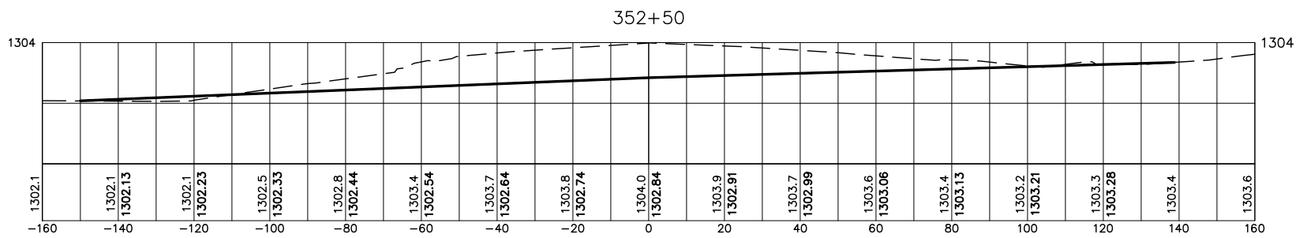
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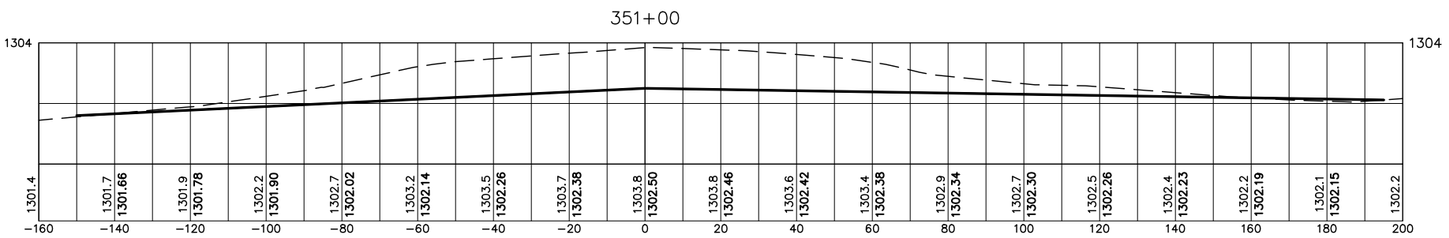
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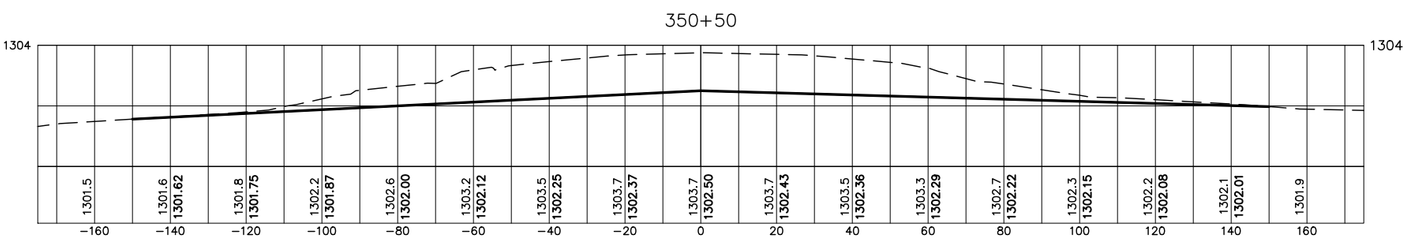
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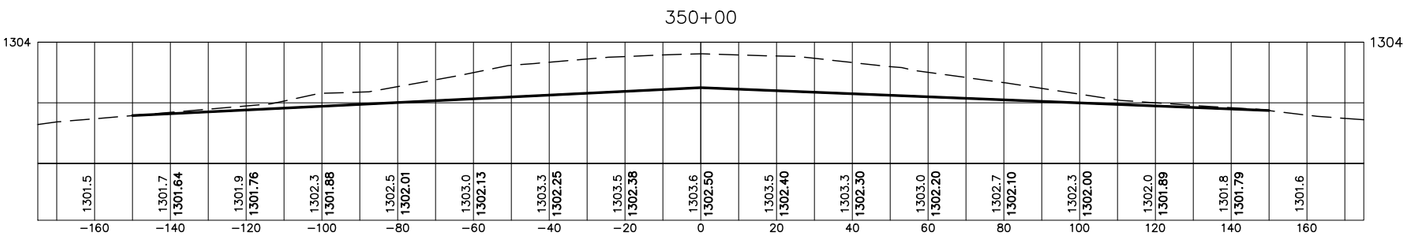
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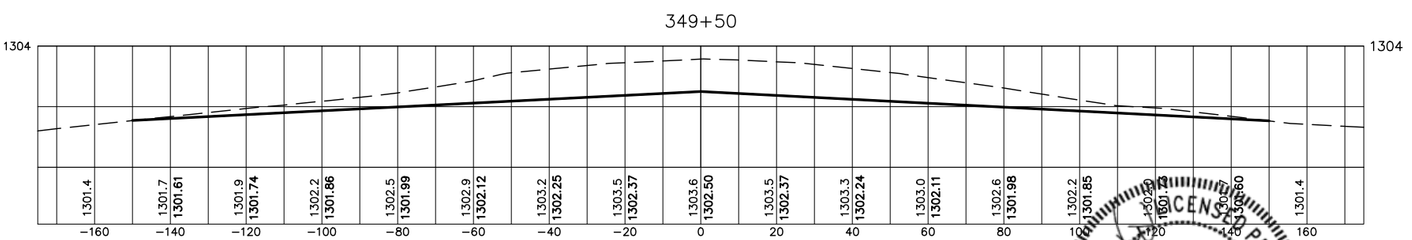
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350+00



349+50



Date	5/28/26
Dwg. No.	18-36XS(17)
Proj. No.	A-7141
Chk By:	BBE
Dwn By:	TMO

18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

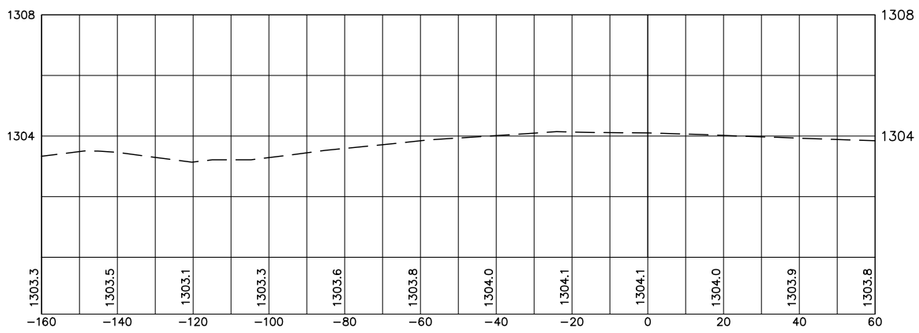
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDWARDS
5/27/2026

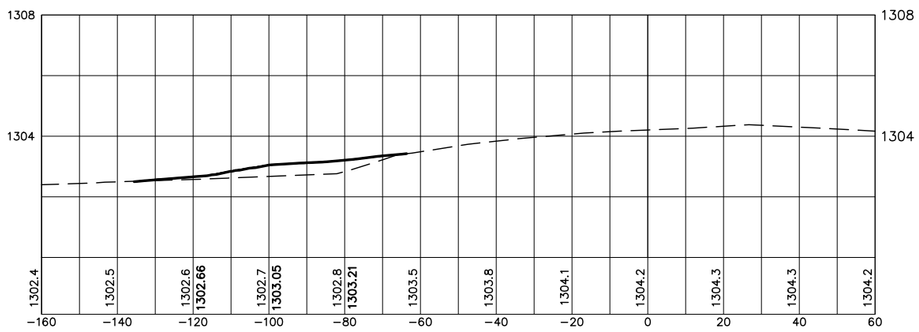
No.	Description	Date

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1"=5' VERT.

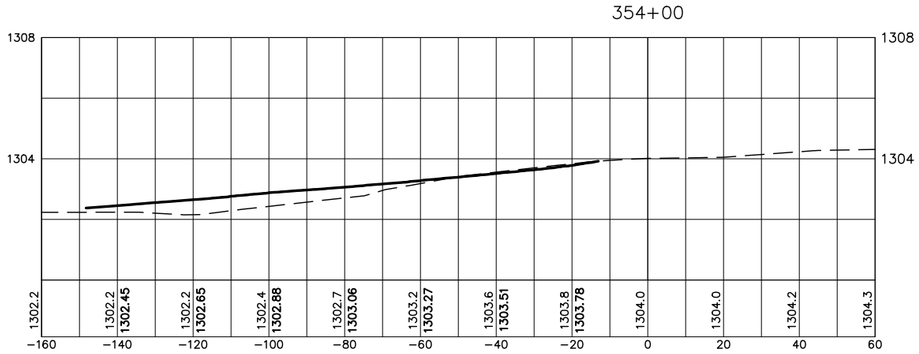
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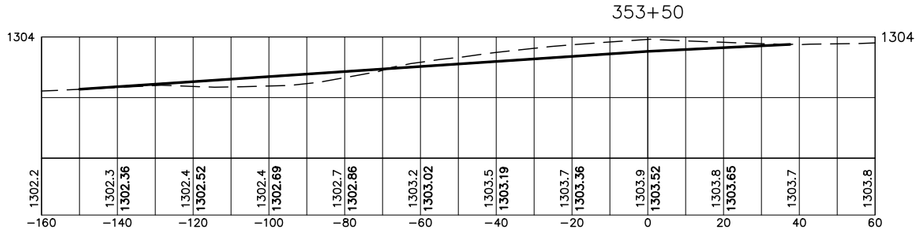
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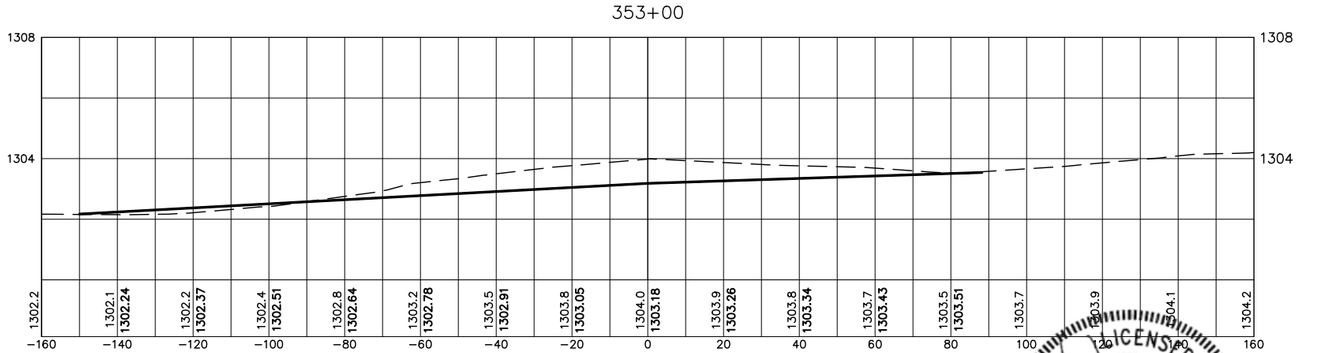
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353+50



353+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDDY
13653
Registered Professional Engineer
This item was prepared by me or under my direct supervision, and I am a duly Licensed Professional Engineer under the laws of the State of South Dakota.
5/27/2026

Date	Description

Date:	5/26/26
Drawing No:	18-36SXS(1)
Proj. No:	A-7141
Chk' By:	BBE
Drawn By:	TMO

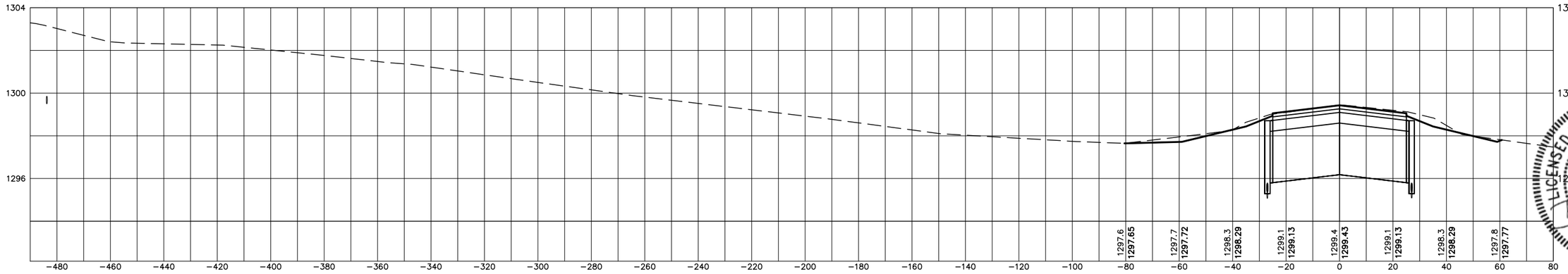
18-36 CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

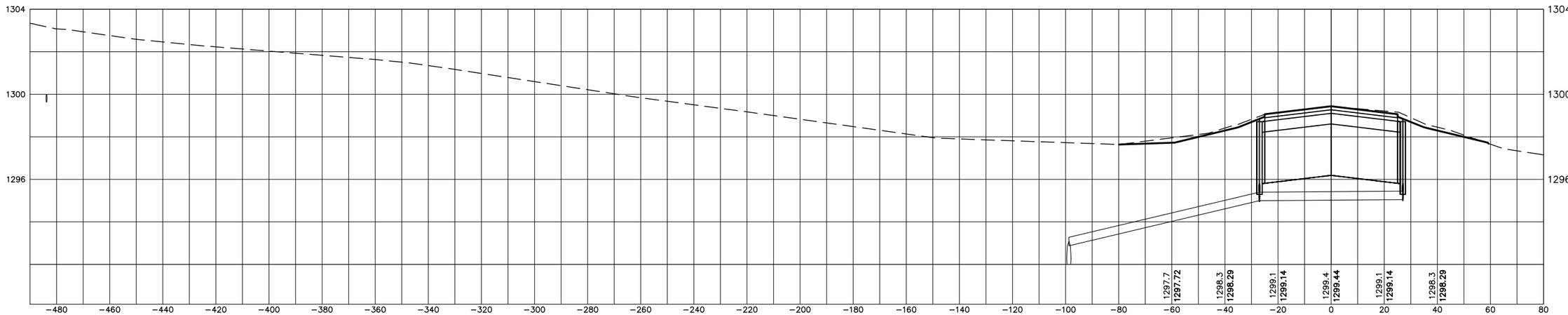
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SCALE 11X17
1"=40' HORIZ.
1"=5' VERT.

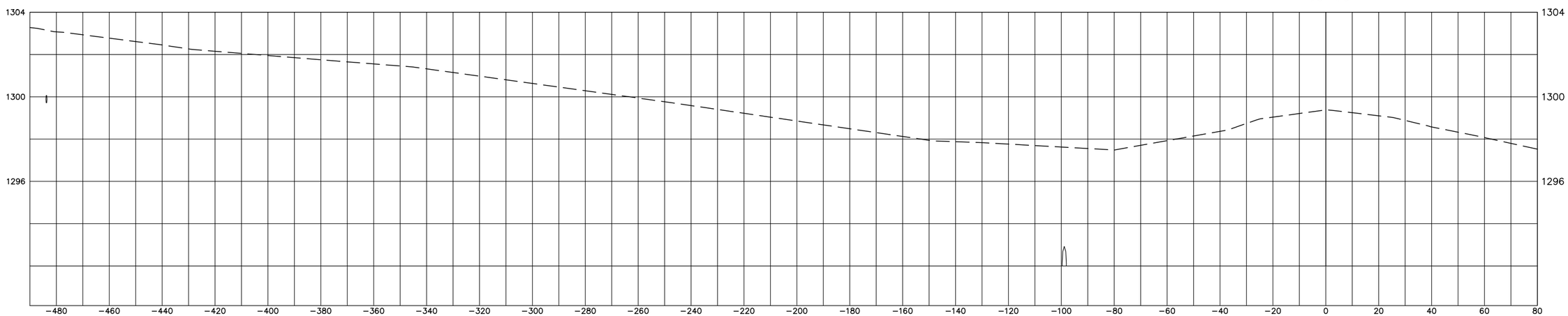
101+00



100+50



100+00



LICENSED PROFESSIONAL ENGINEER
REG. NO. 13607
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Date

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CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

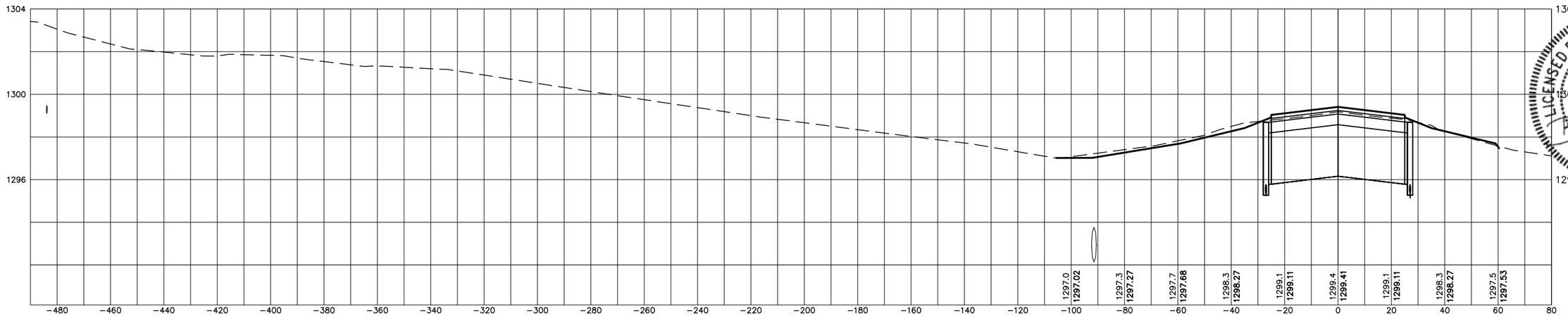
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

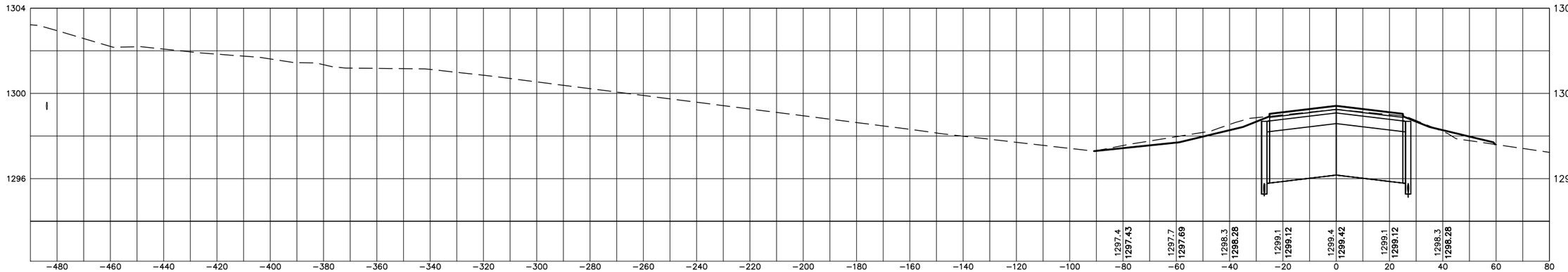
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(1)
Date:	5/28/26

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1"=5' VERT.

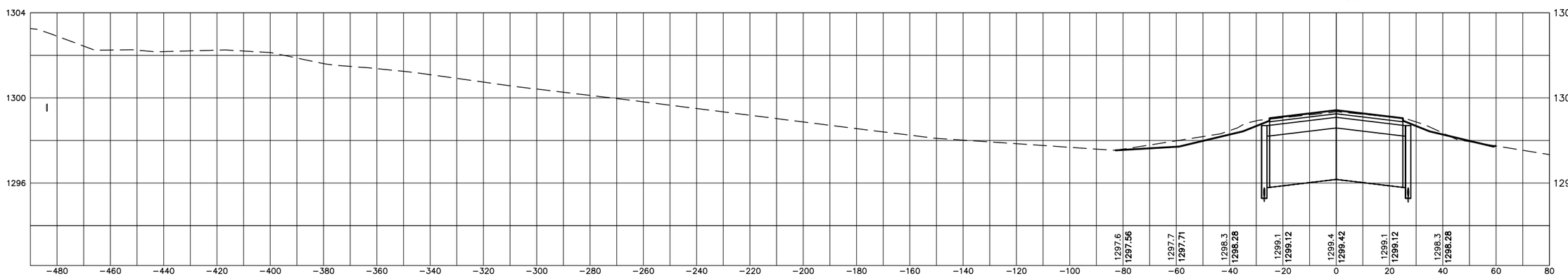
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102+00



101+50



LICENSED PROFESSIONAL ENGINEER
REG. NO. 13609
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Date

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Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

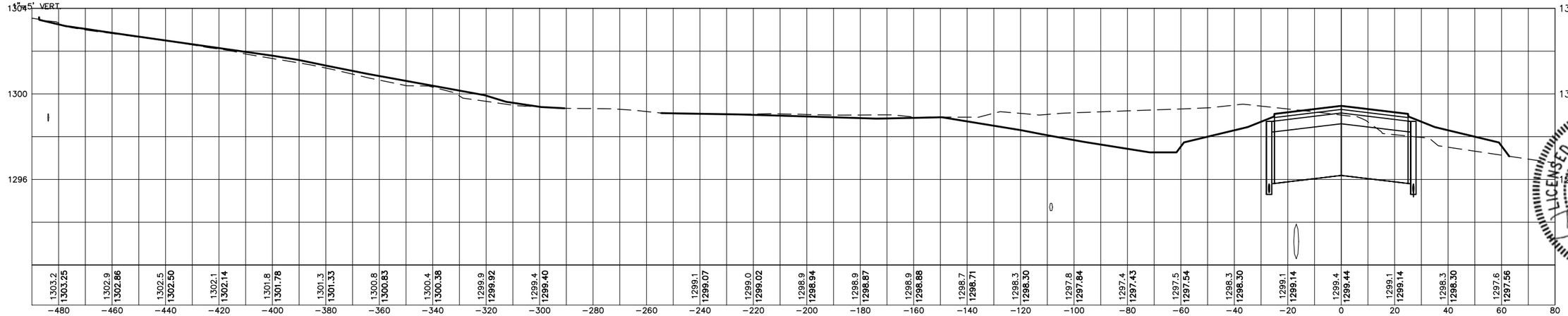
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

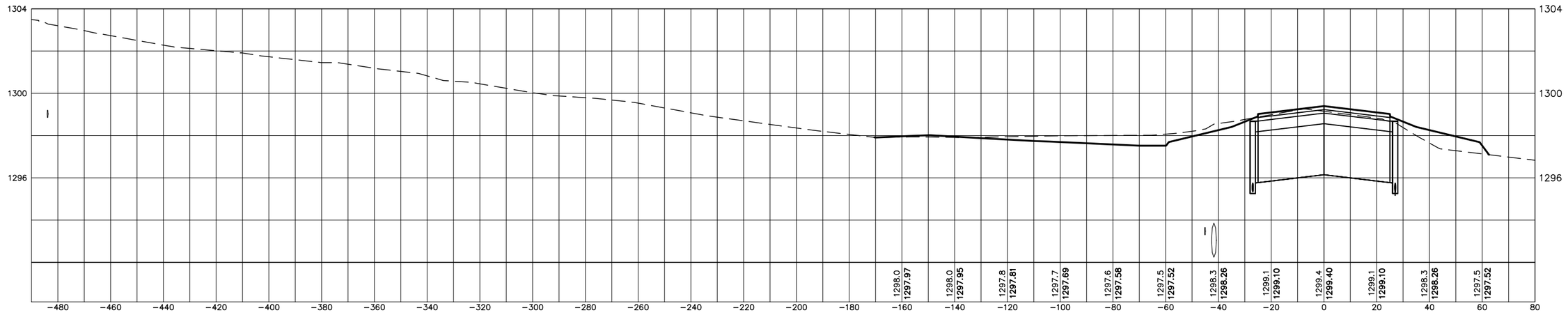
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(2)
Date:	5/28/26

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1"=5' VERT.

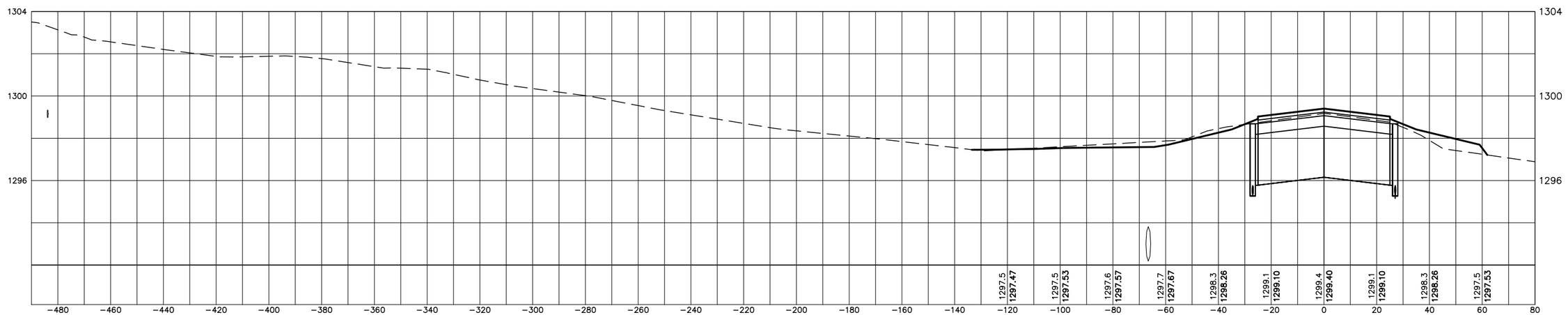
104+00



103+50



103+00



Date

LICENSED PROFESSIONAL ENGINEER
REG. NO.
13605
BROOKE
EDGAR
SOUTH DAKOTA
5/27/2026

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Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

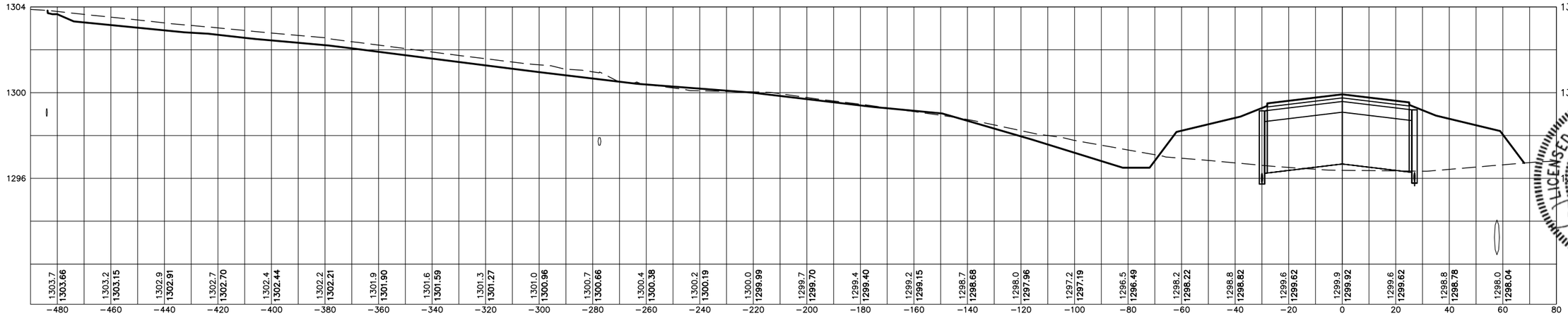
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

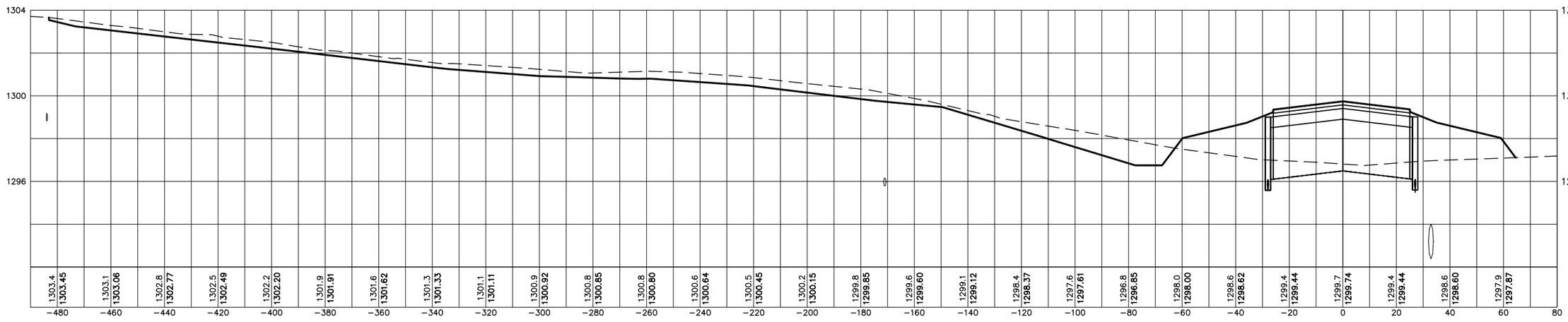
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(3)
Date:	5/28/26

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1"=5' VERT.

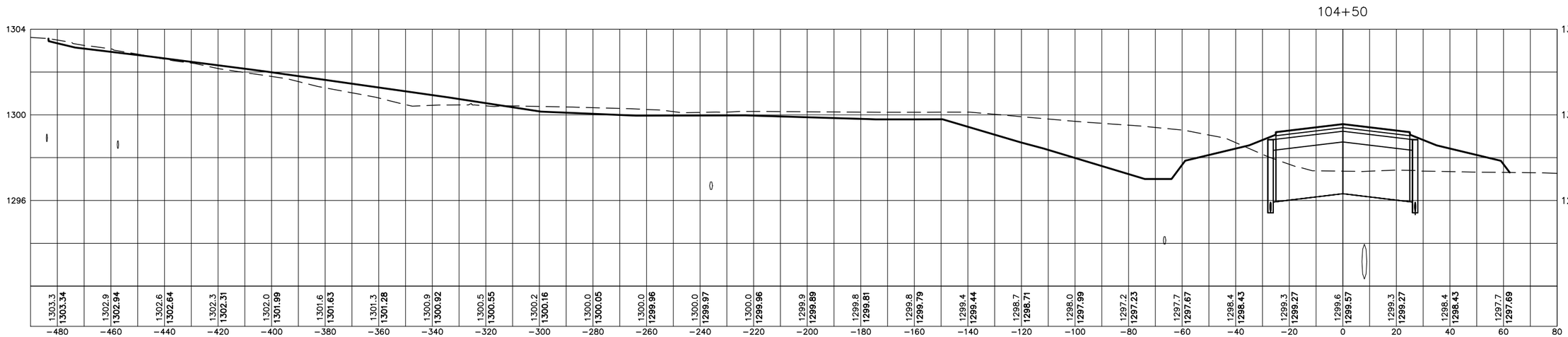
105+50



105+00



104+50



Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO. 13607
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

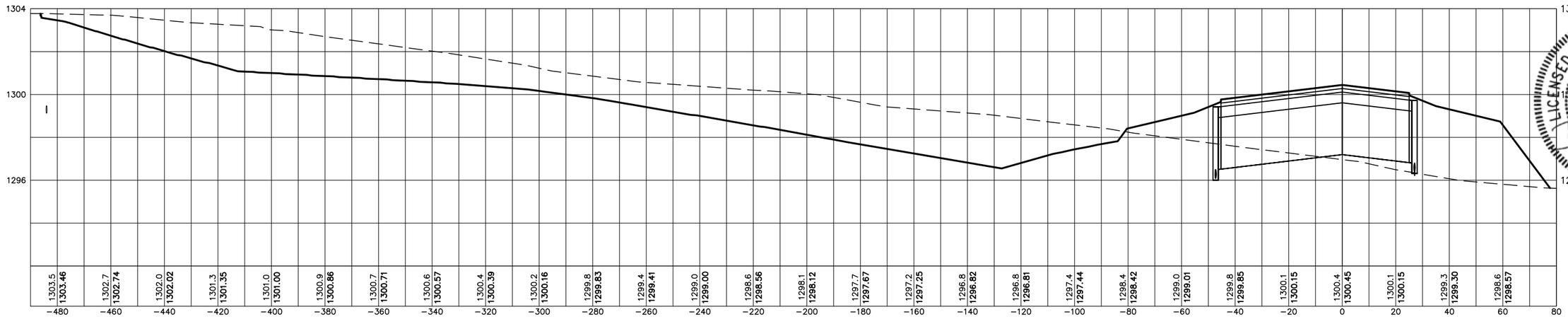
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

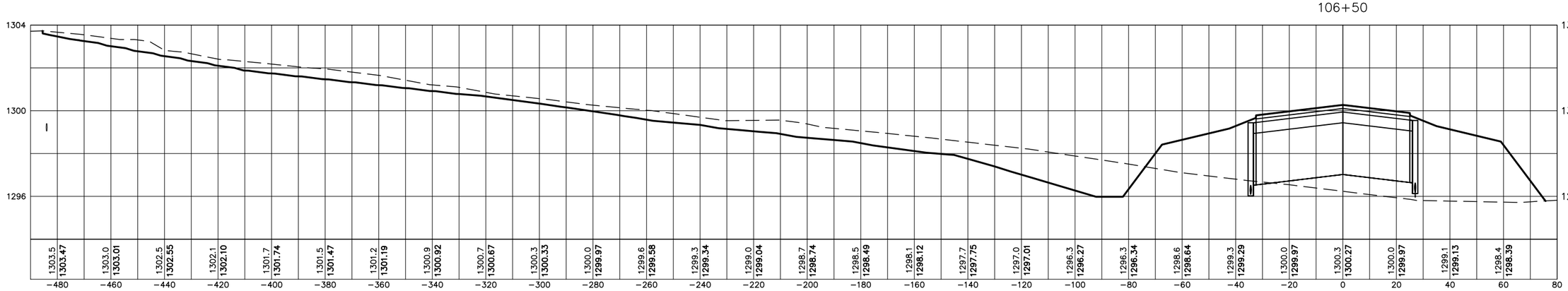
PARALLEL TAXIWAY CROSS SECTIONS

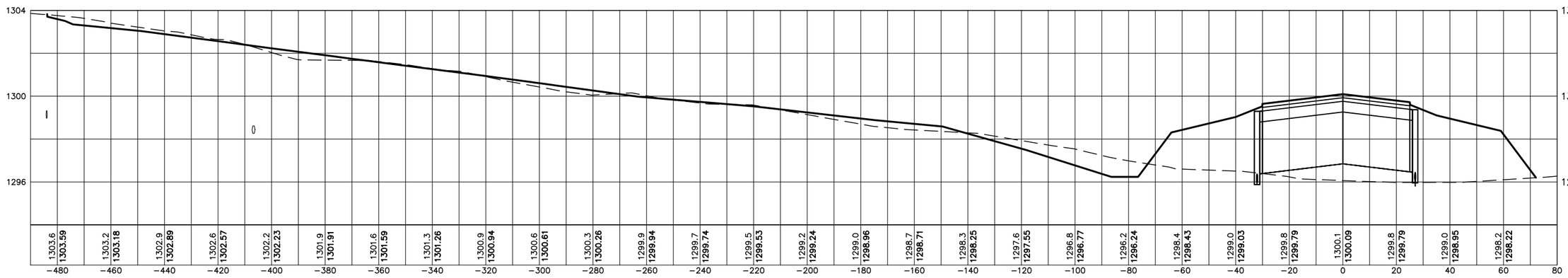
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(4)
Date:	5/28/26

SCALE 11X17
1"=40' HORIZ.
1"=5' VERT.







Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO.
13654
BROOKE B.
EDGAR
SOUTH DAKOTA
5/27/2026

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Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

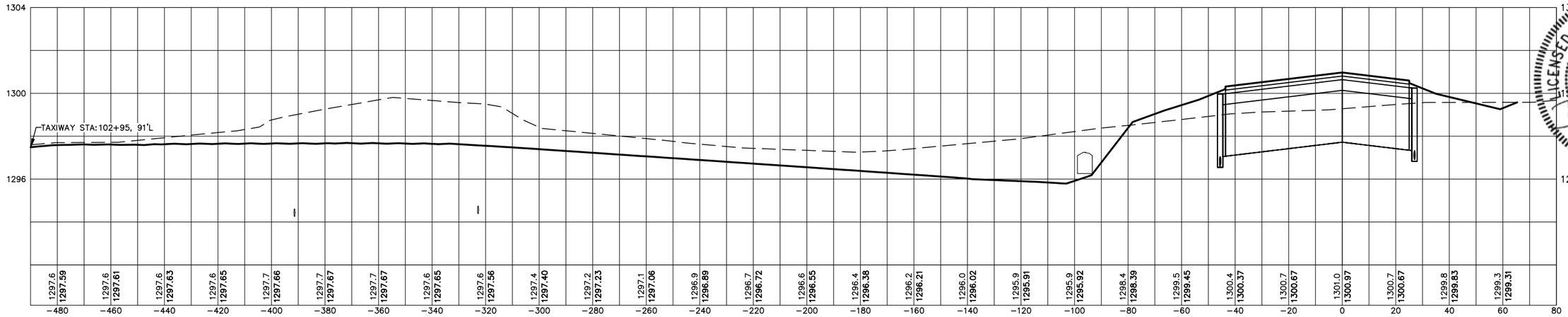
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

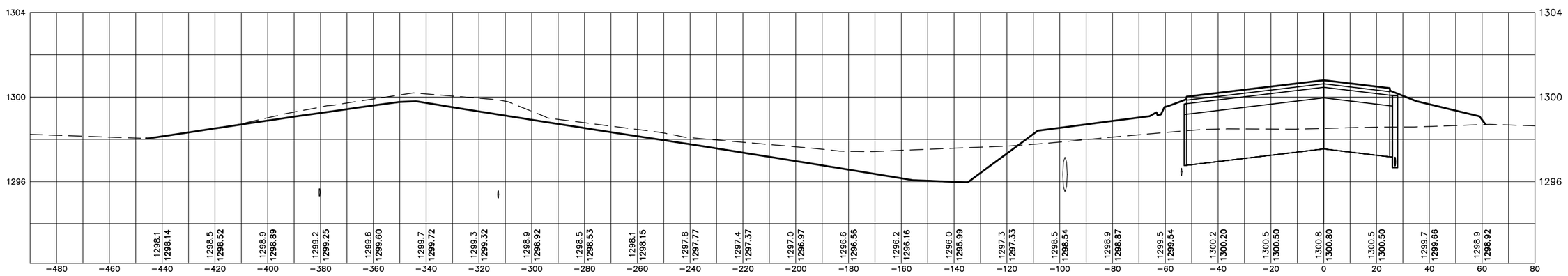
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Chk' By:	BBE
Proj. No:	A-7141
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VP. No:	PAR(5)
Date:	5/28/26

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1"=5' VERT.

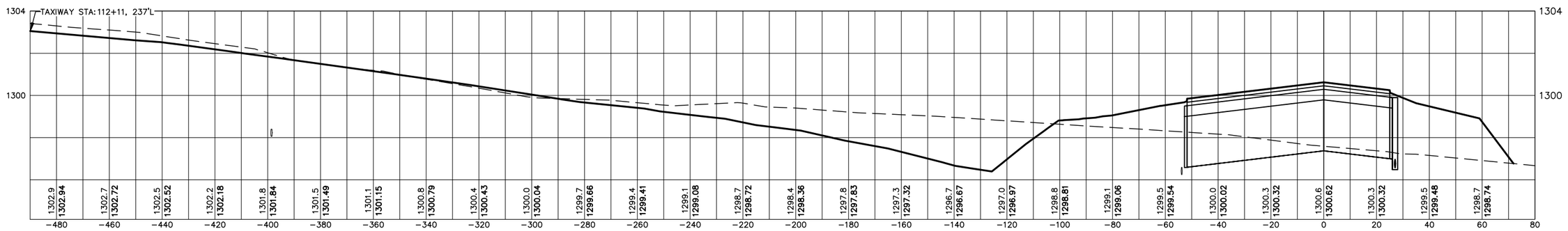
108+50



108+00



107+50



Date

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LICENSED PROFESSIONAL ENGINEER
REG. NO.
13651
BROOKE B.
EDGAR
SOUTH DAKOTA
5/27/2026

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Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

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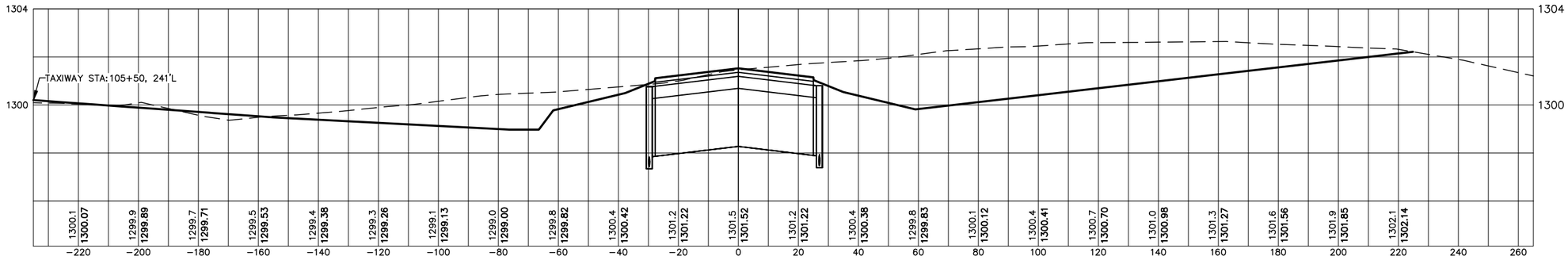
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

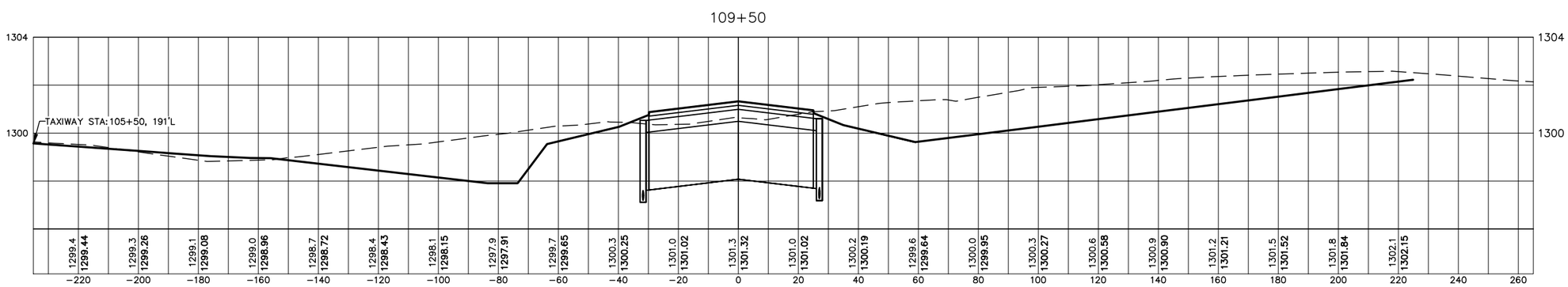
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(6)
Date:	5/28/26

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1"=5' VERT.

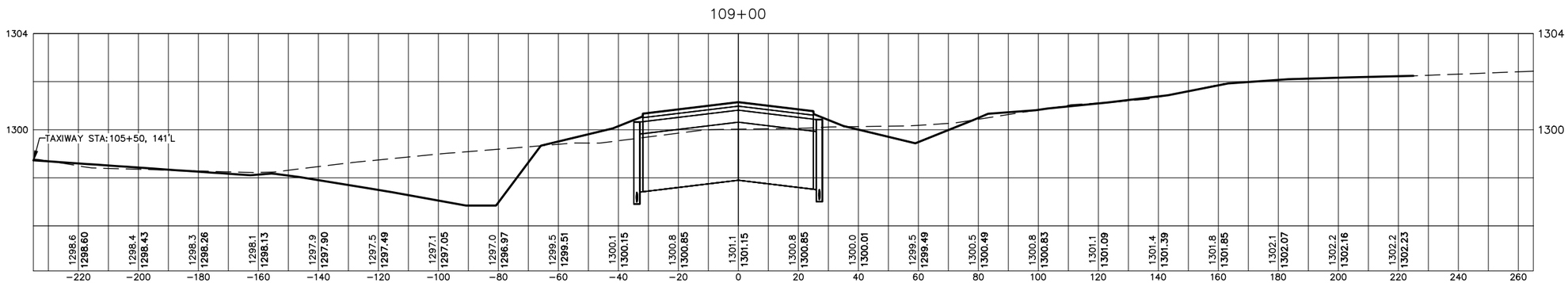
110+00



109+50



109+00



Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13654
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

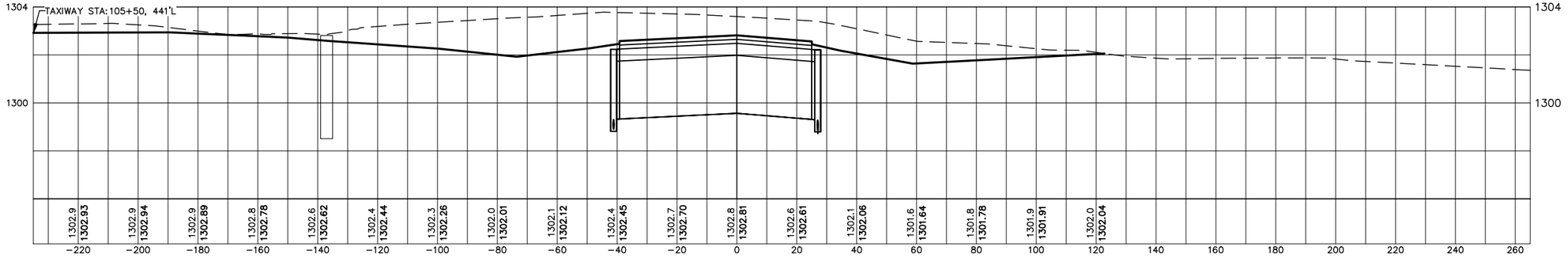
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

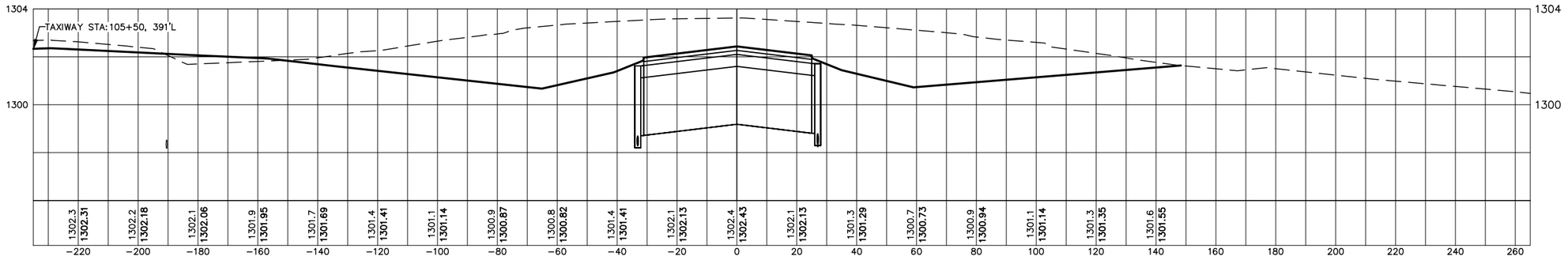
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(7)
Date:	5/28/26

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1"=5' VERT.

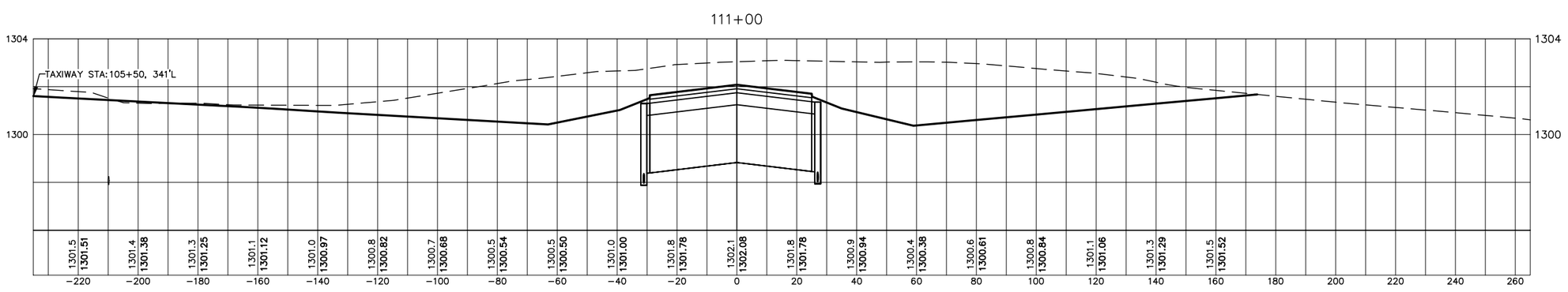
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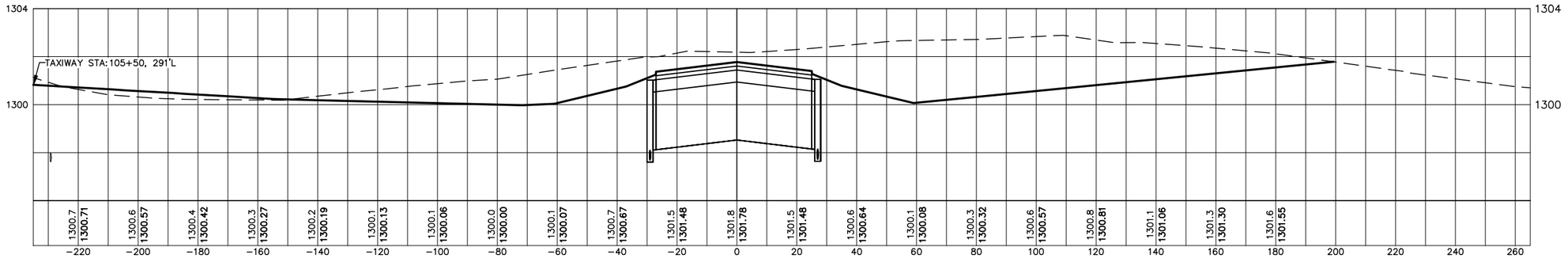
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111+00



110+50



Date

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BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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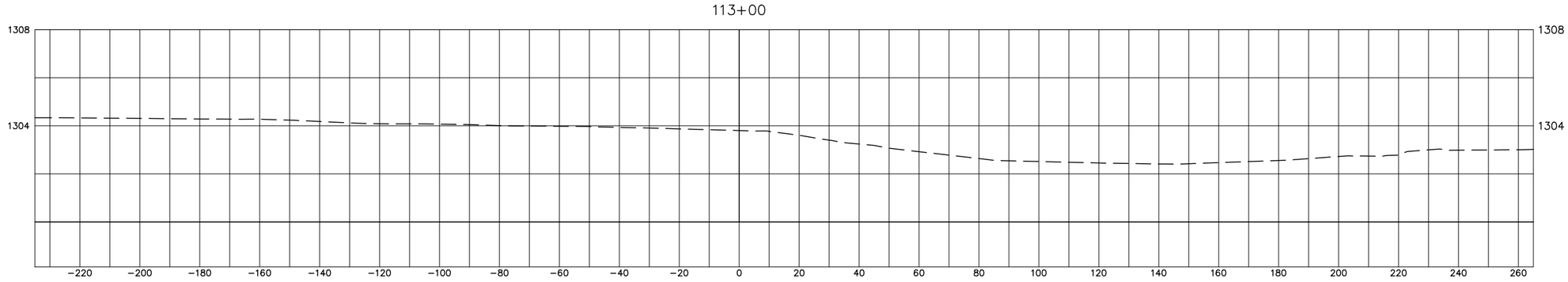
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

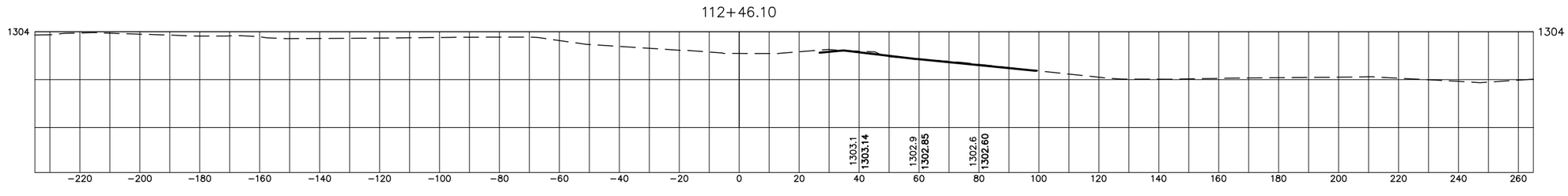
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(8)
Date:	5/28/26

SCALE 11X17
1"=40' HORIZ.
1"=5' VERT.





Date

LICENSED PROFESSIONAL ENGINEER
REG. NO. 13659
BROOKE B. EDGAR
SOUTH DAKOTA
5/27/2026

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License No.

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Phone: 605.225.1212.
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

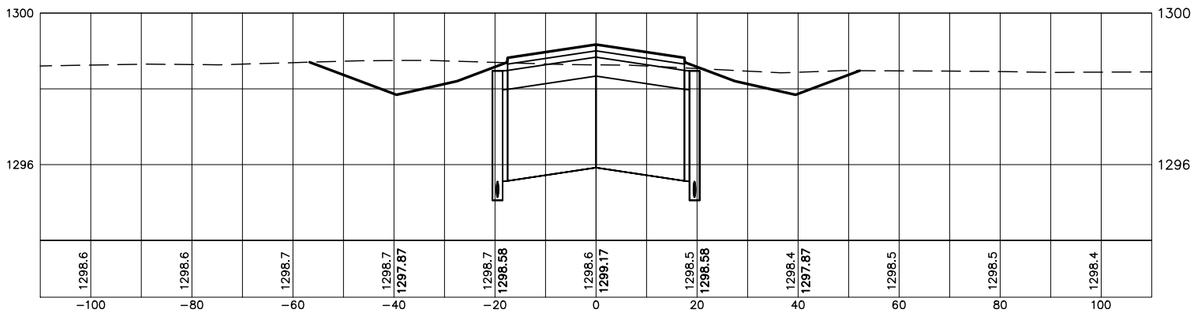
PARALLEL TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

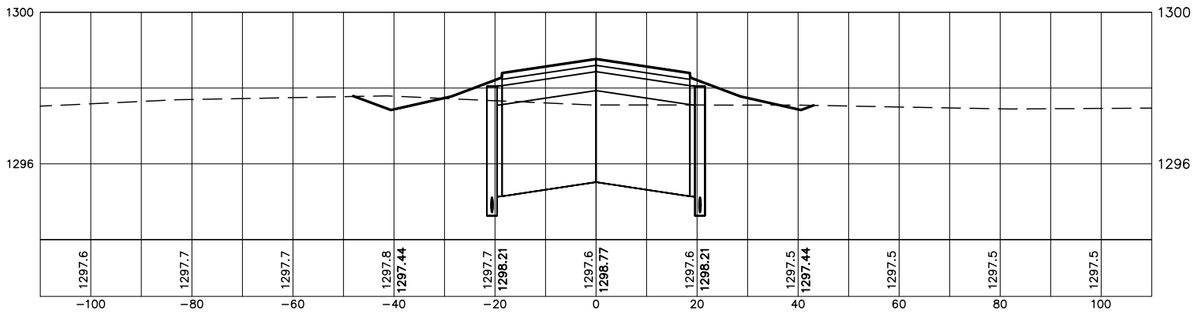
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Chk' By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS
VP. No:	PAR(9)
Date:	5/28/26

SCALE 11X17
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1"=4' VERT.

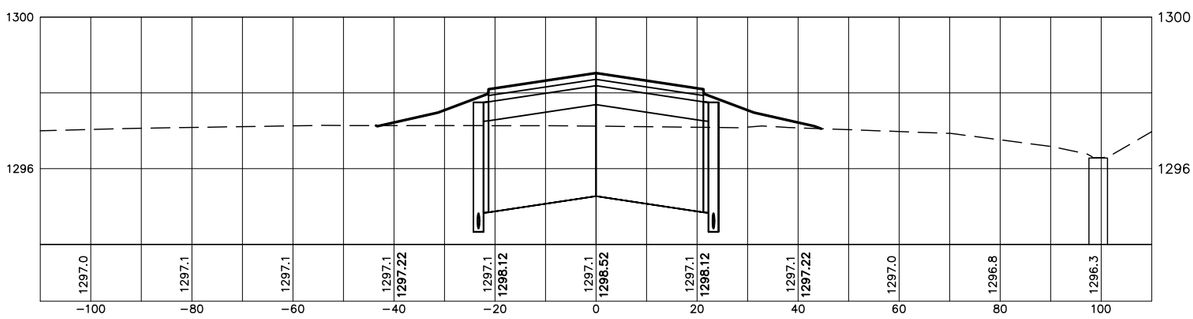
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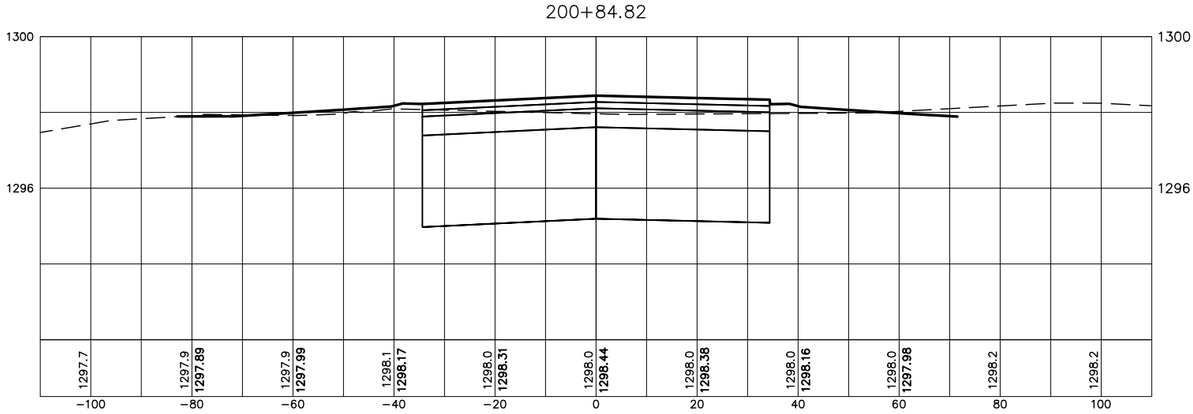
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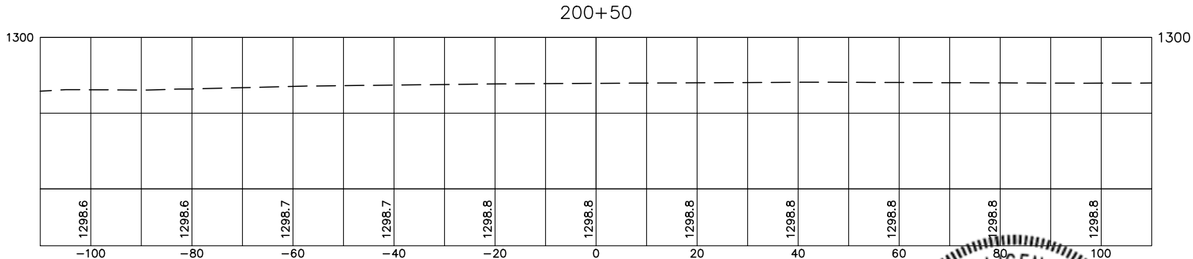
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200+84.82



200+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
5/27/2026

CONNECTOR TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

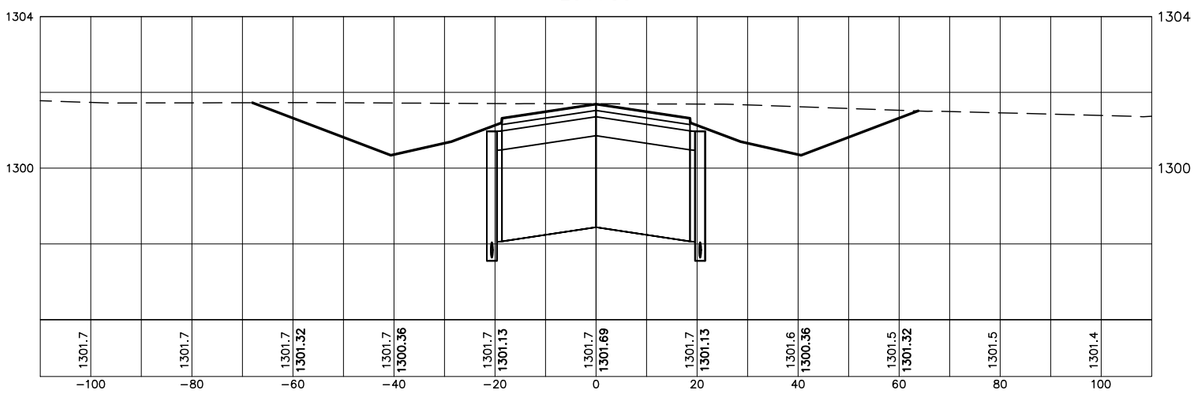
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141.XS02
VP. No:	XS-CTL(1)
Date:	5/28/26

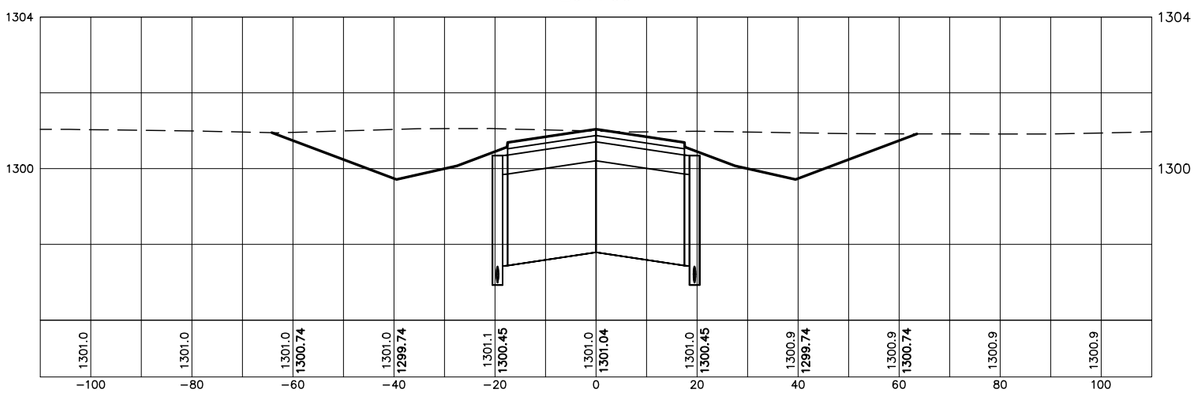
No.	Description	Date

SCALE 11X17
1"=30' HORIZ.
1"=4' VERT.

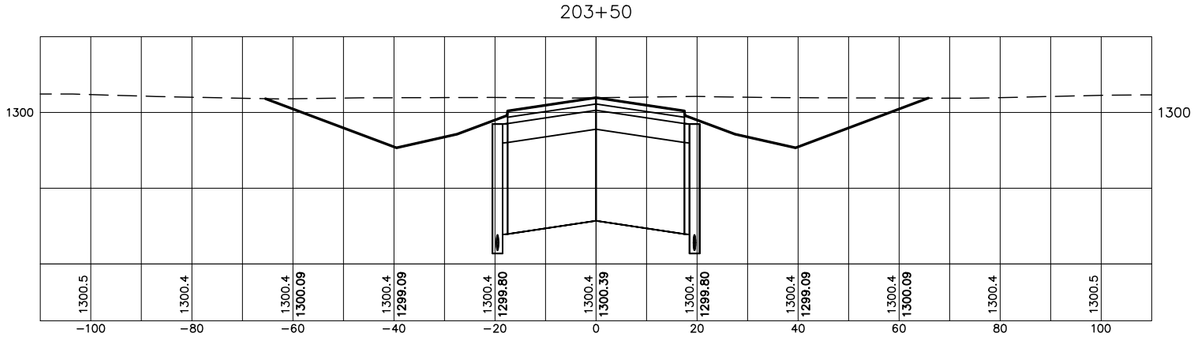
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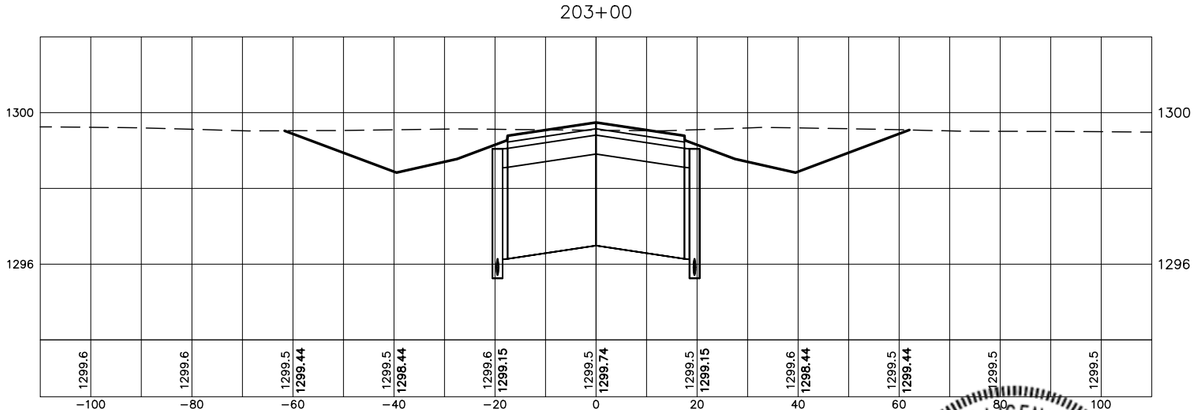
204+00



203+50



203+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDAM
15637
Registered Professional Engineer
5/27/2026

No.	Description	Date

CONNECTOR TAXIWAY CROSS SECTIONS

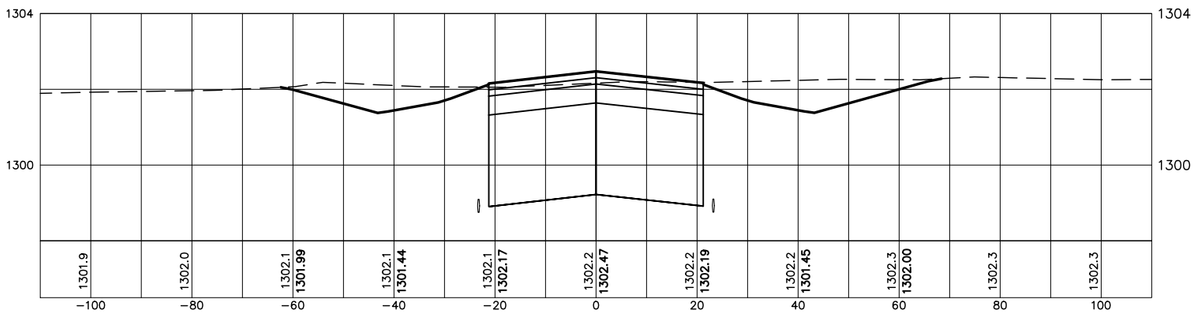
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

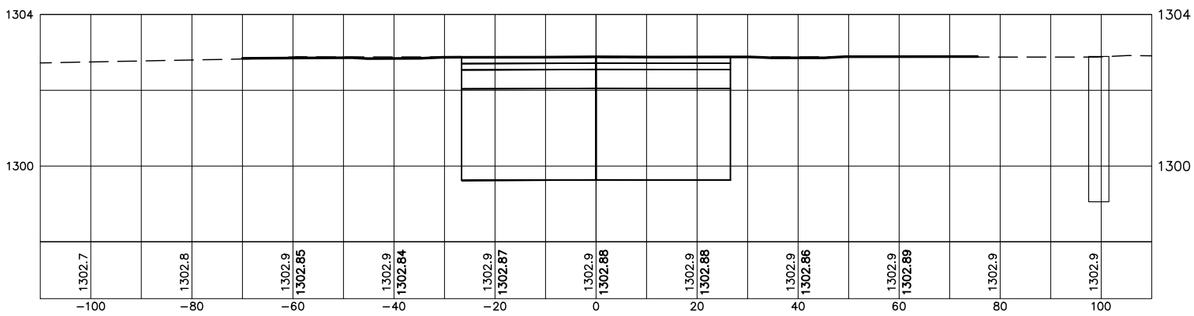
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141-XS02
VP. No:	XS-CT(2)
Date:	5/28/26

SCALE 11X17
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1"=4' VERT.

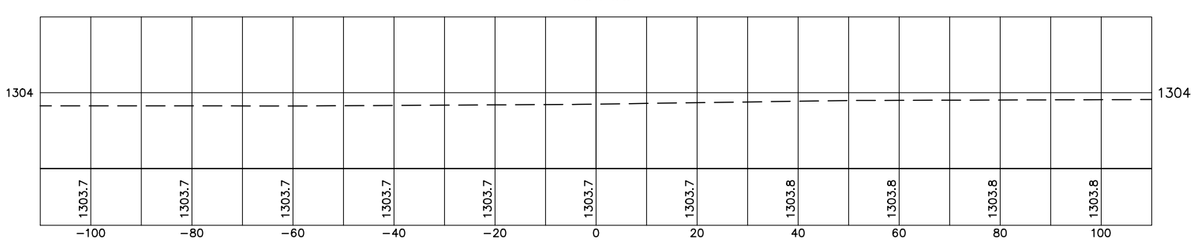
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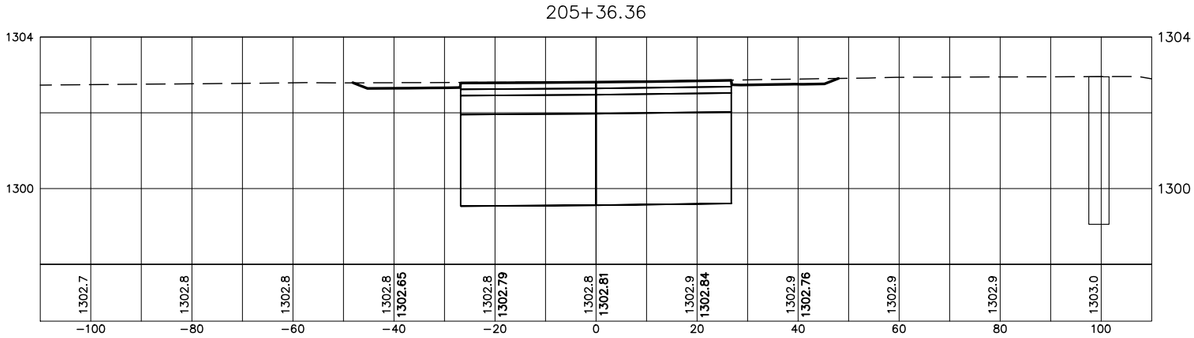
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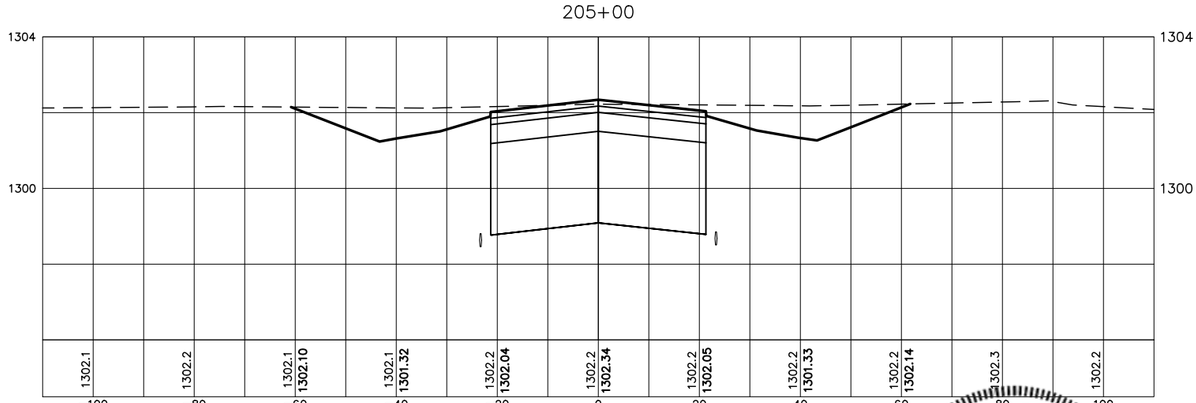
206+00



205+36.36



205+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
13653
Registered Professional Engineer
5/27/2026

Rev	Description	Date

CONNECTOR TAXIWAY CROSS SECTIONS

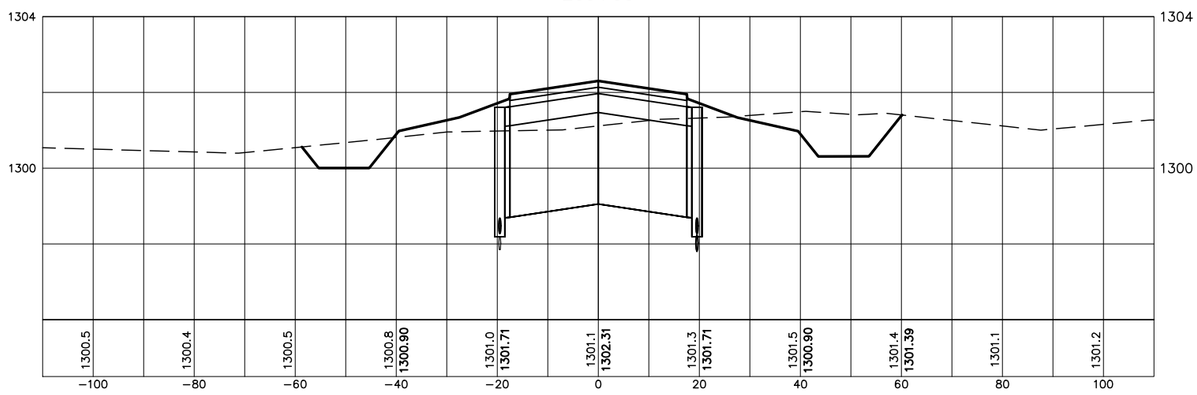
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

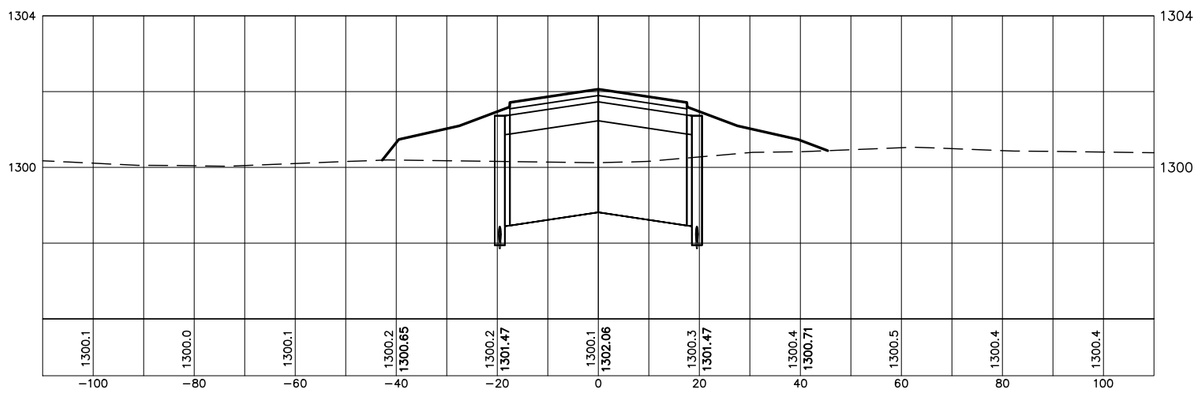
Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141.XS(2)
VP. No:	XS-(2)(5)
Date:	5/28/26

SCALE 11X17
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1"=4' VERT.

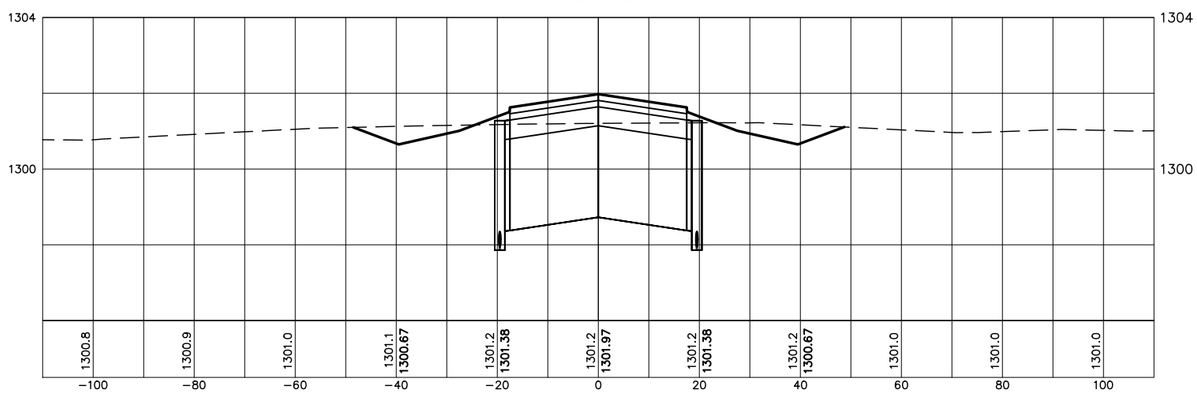
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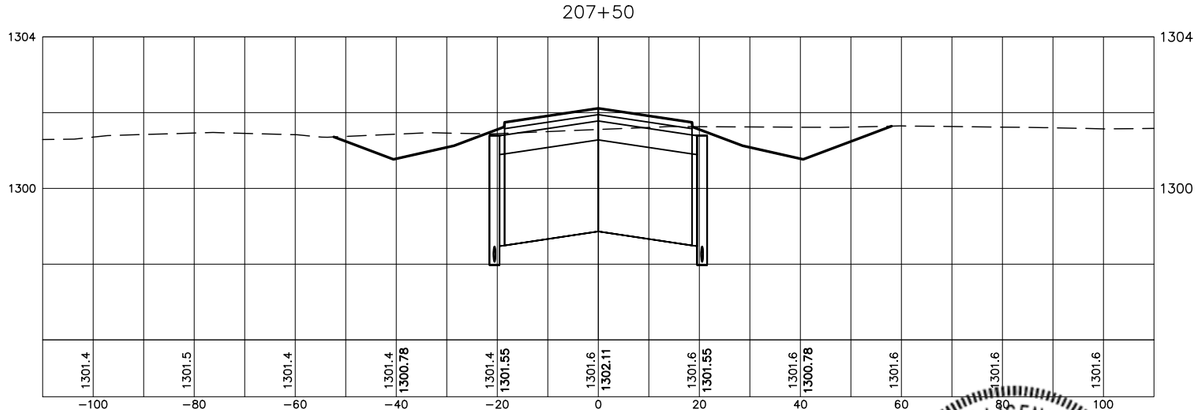
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208+00



207+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
Registered Professional Engineer
5/27/2026

Rev.	Description	Date

CONNECTOR TAXIWAY CROSS SECTIONS

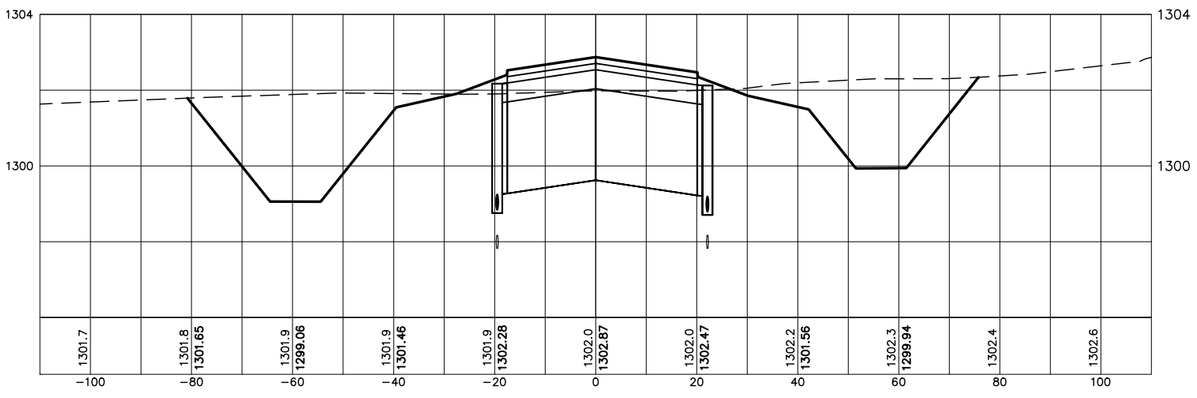
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

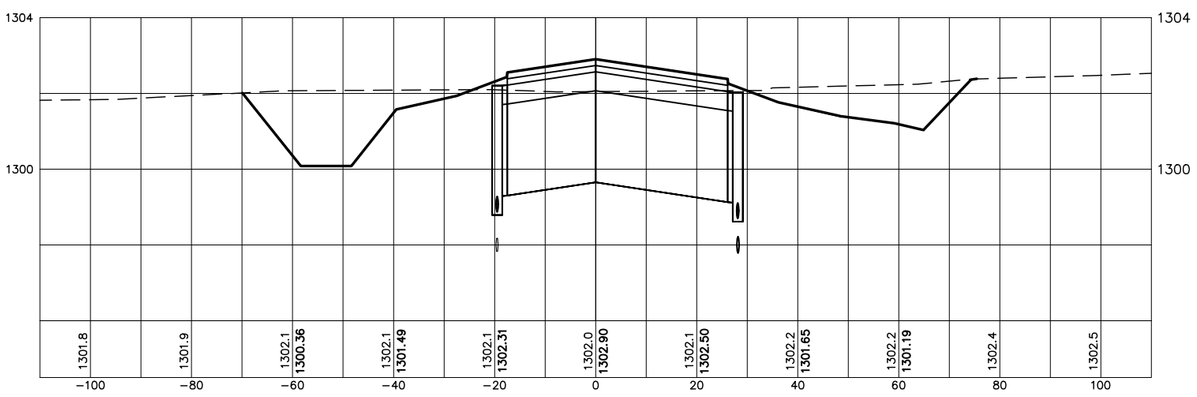
Drawn By: TMO
Chk' By: BBE
Proj. No: A-7141
Dwg. No: 7141-XS2
VP. No: XS-CT(4)
Date: 5/26/26

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1"=4' VERT.

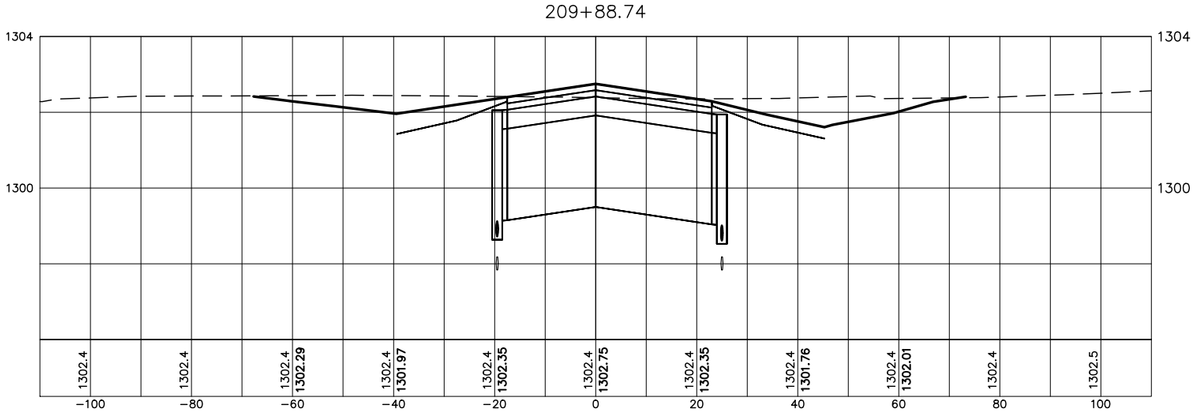
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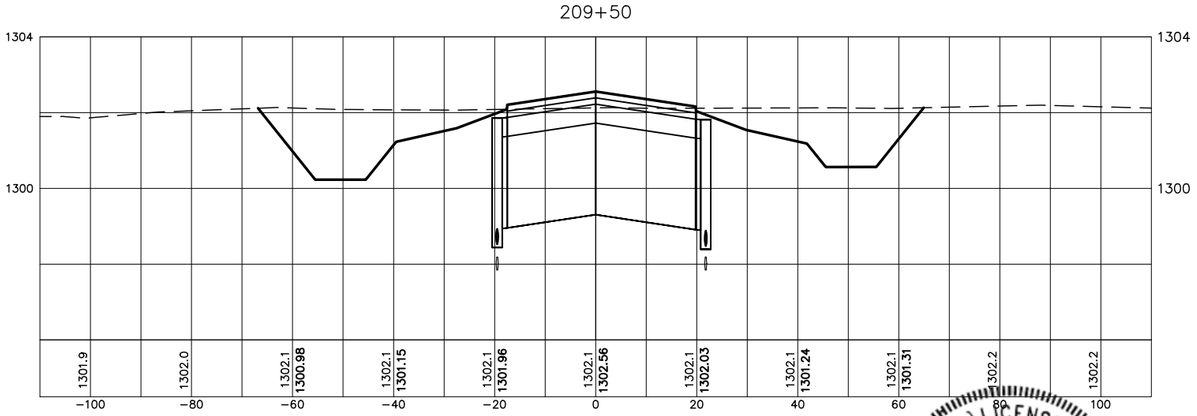
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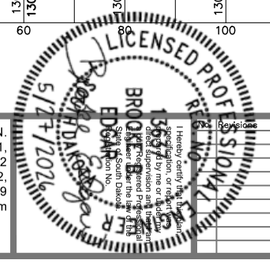


209+88.74



209+50





Date: 5/28/26
Drawing No: XS-CT(5)
Proj. No: 7141.XS(2)
VP. No: A-7141
Chk' By: BBE
Drawn By: TMO

CONNECTOR TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

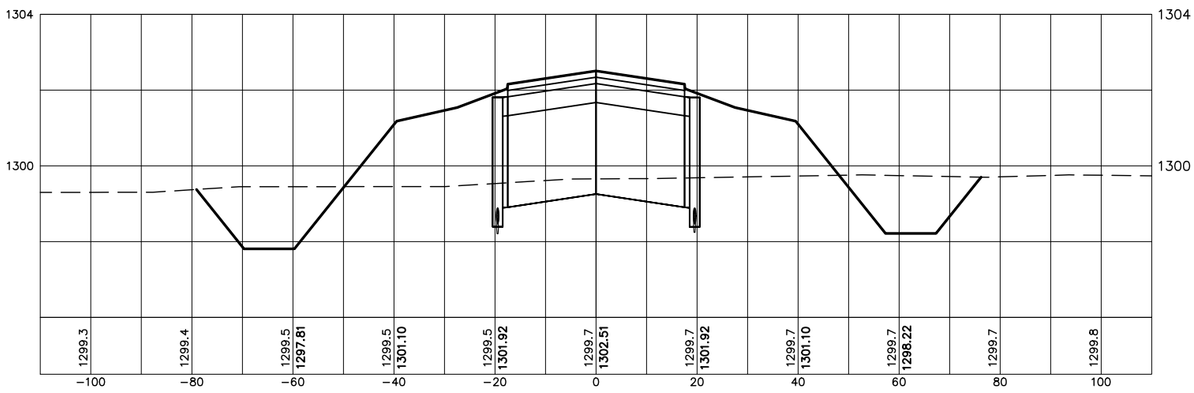
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

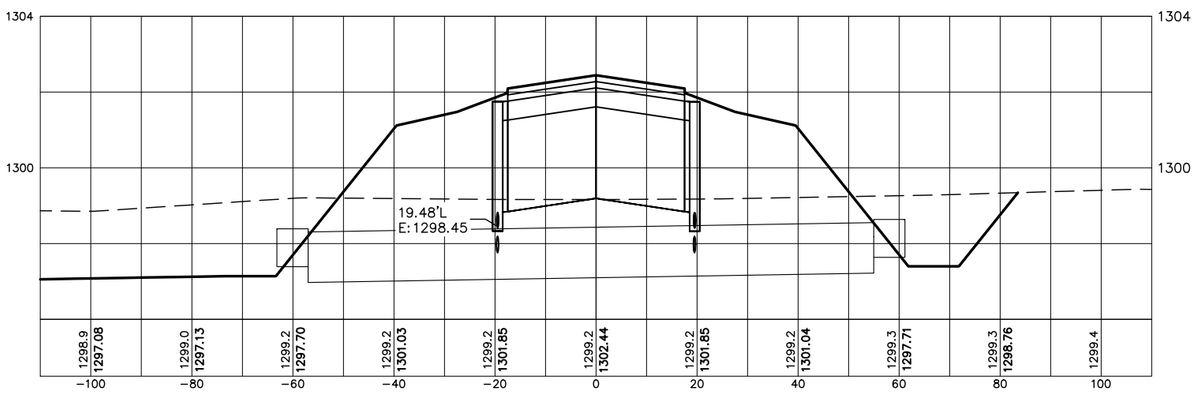
No.	Revisions	Date

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1"=4' VERT.

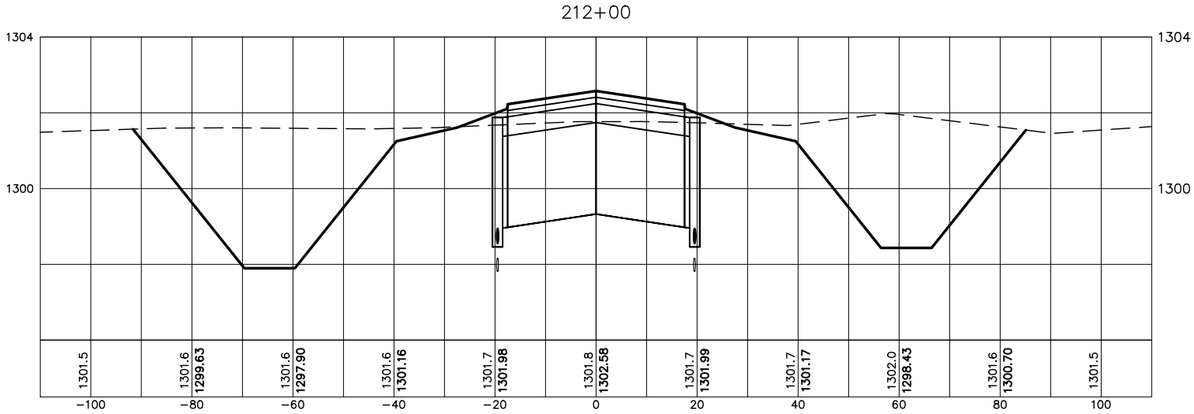
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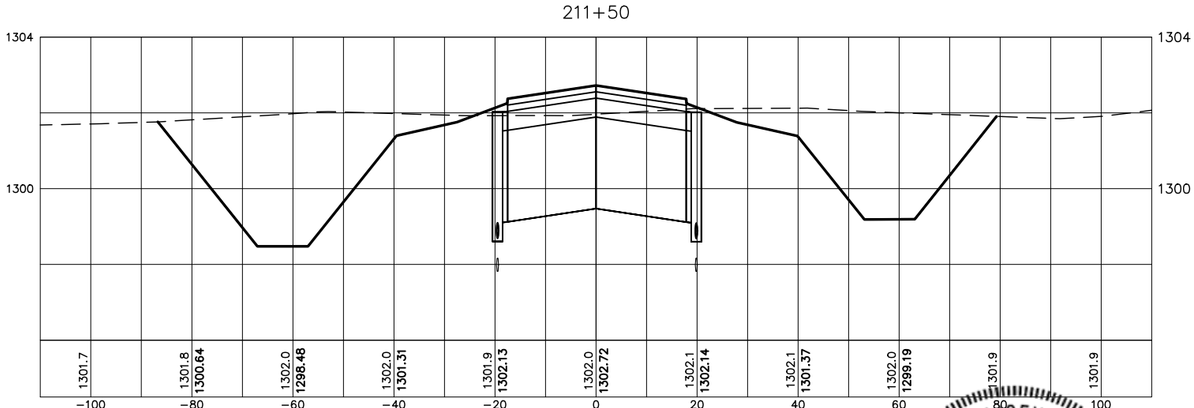
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212+00



211+50



Date: 5/28/26
Drawn By: TMO
Chk' By: BBE
Proj. No: A-7141
Dwg. No: 7141-XS2-CT(6)
VP. No: XS-CT(6)

CONNECTOR TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

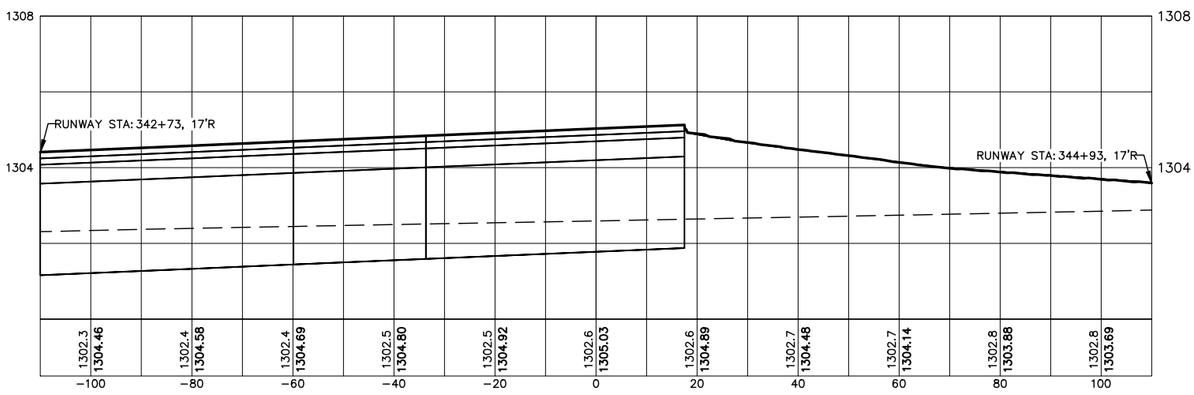
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDAM
13663
REGISTERED
DAKOTA
5/27/2026

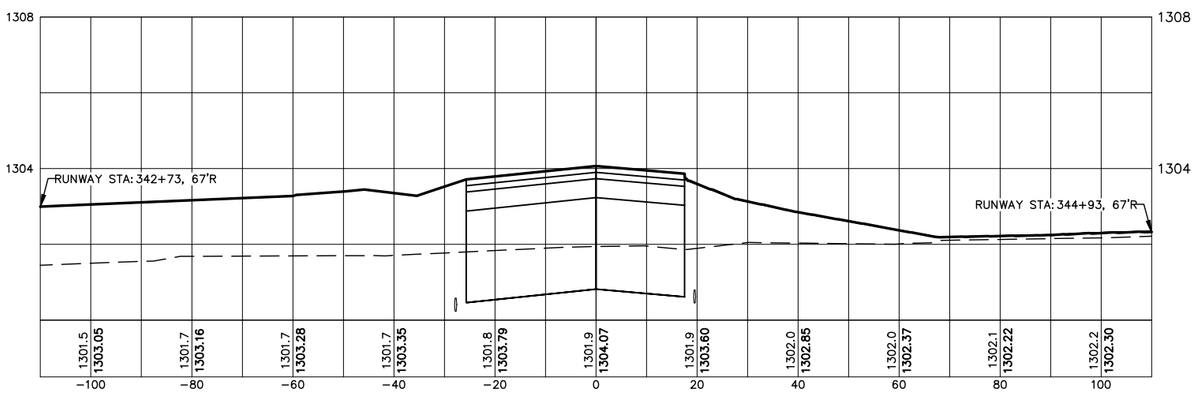
No.	Description	Date

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1"=4' VERT.

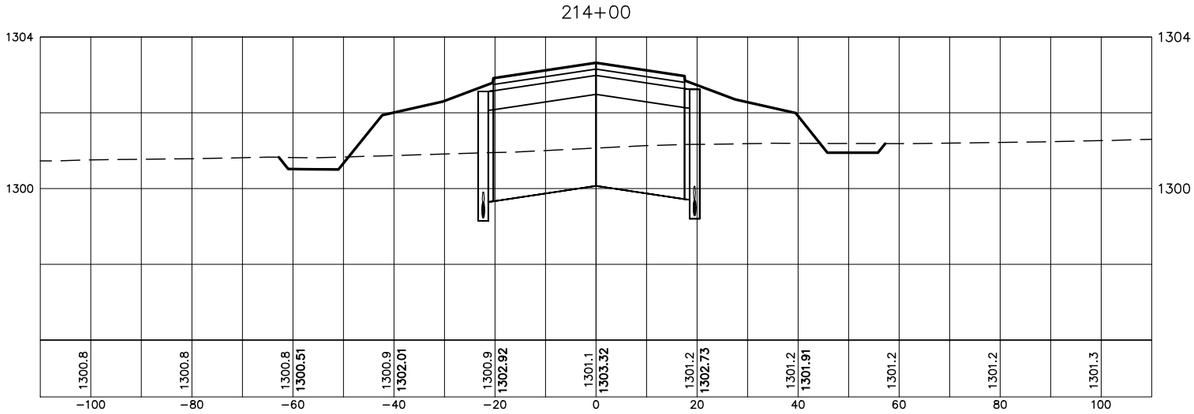
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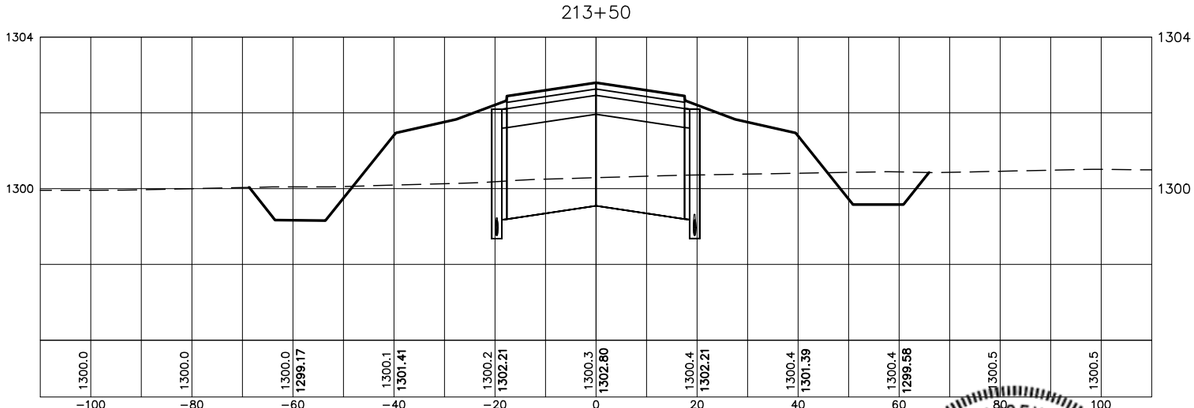
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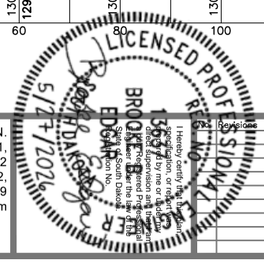


214+00



213+50





100
OF
111

Date: 5/28/26
VP: No:
Dsgn: No: 7141.XS(2)
Proj. No: A-7141
Chk' By: BBE
Drawn By: TMO

CONNECTOR TAXIWAY CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

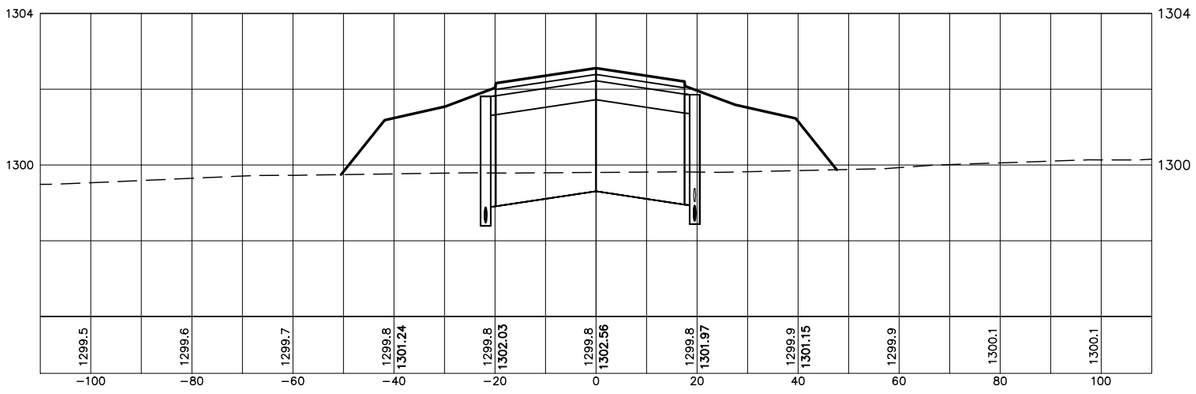
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

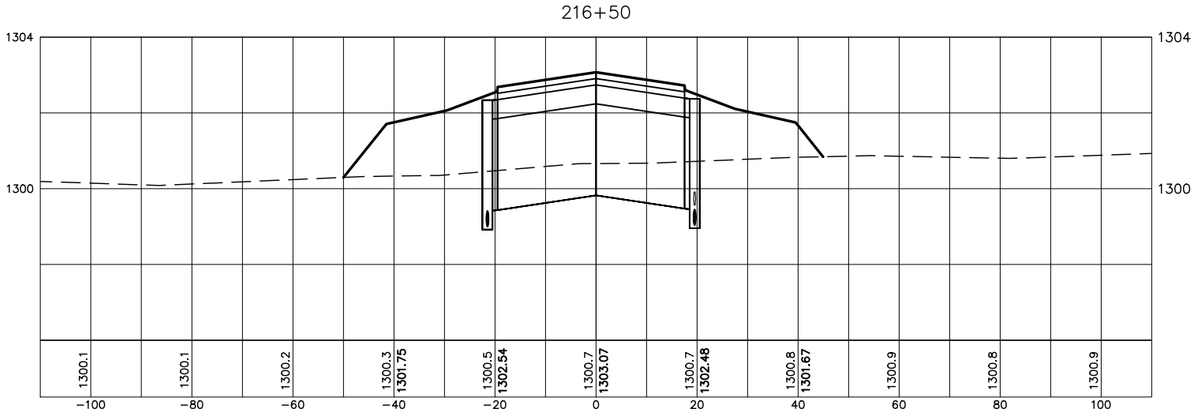
No.	Description	Date

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1"=4' VERT.

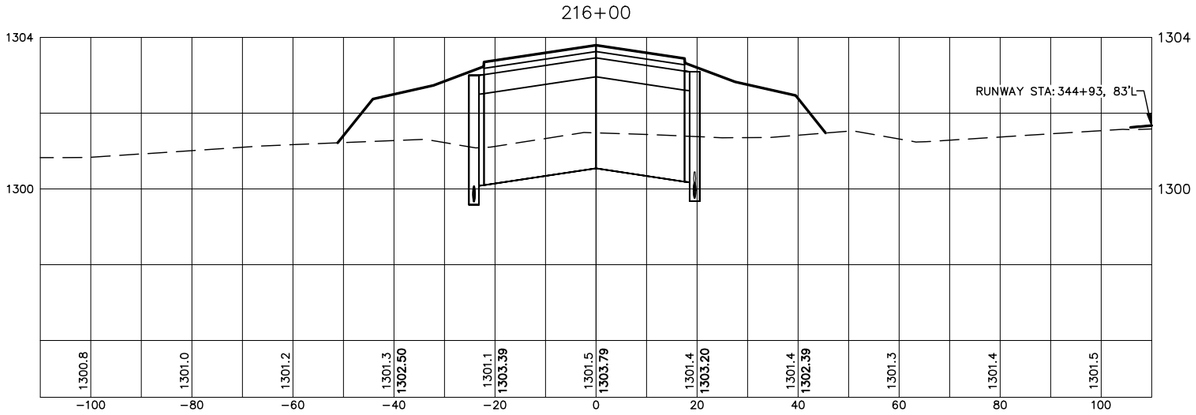
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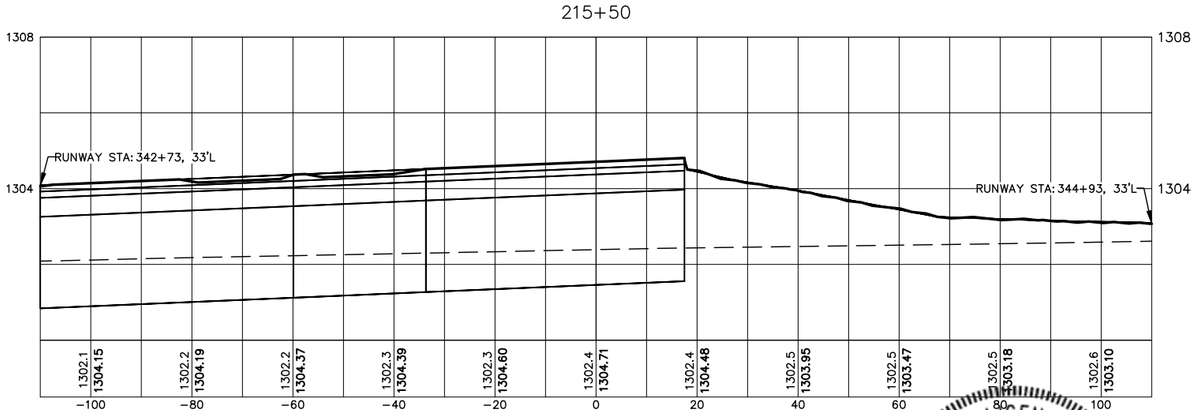
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216+00



215+50



LICENSED PROFESSIONAL ENGINEER
BRODY B. EDGAR
13653
Registered Professional Engineer
5/27/2026

Rev.	Description	Date

101 OF 111

Date: 5/26/26
VP: No: XS-CT(6)
Proj. No: 7141.XX52
Chk' By: A-7141
Drawn By: BBE
TMO

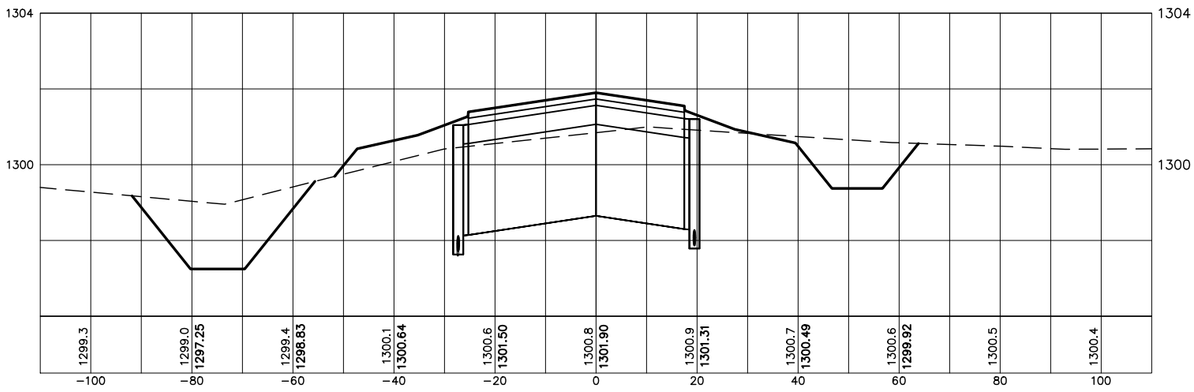
36 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

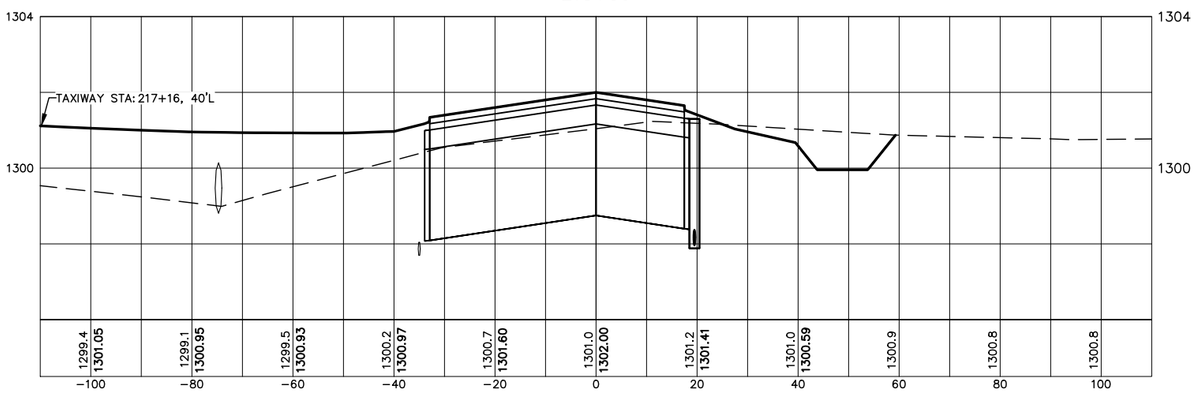
SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

SCALE 11X17
1"=30' HORIZ.
1"=4' VERT.

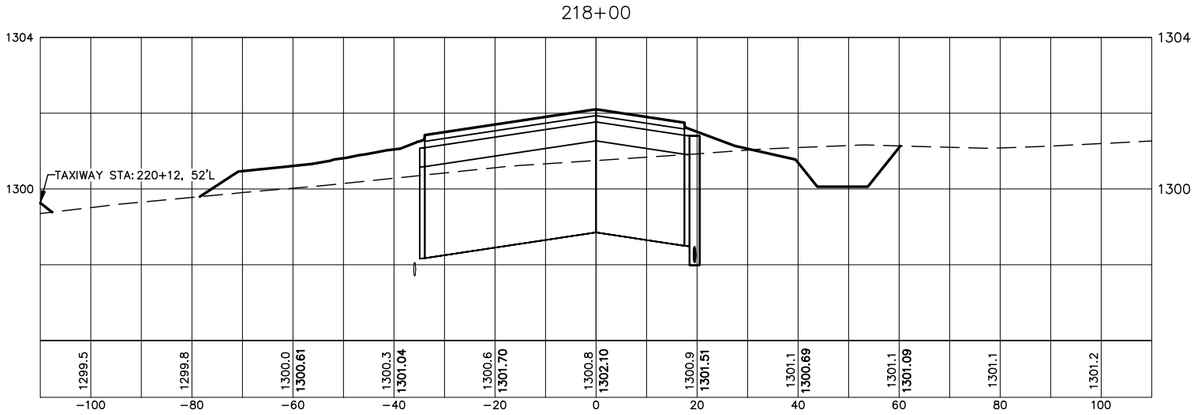
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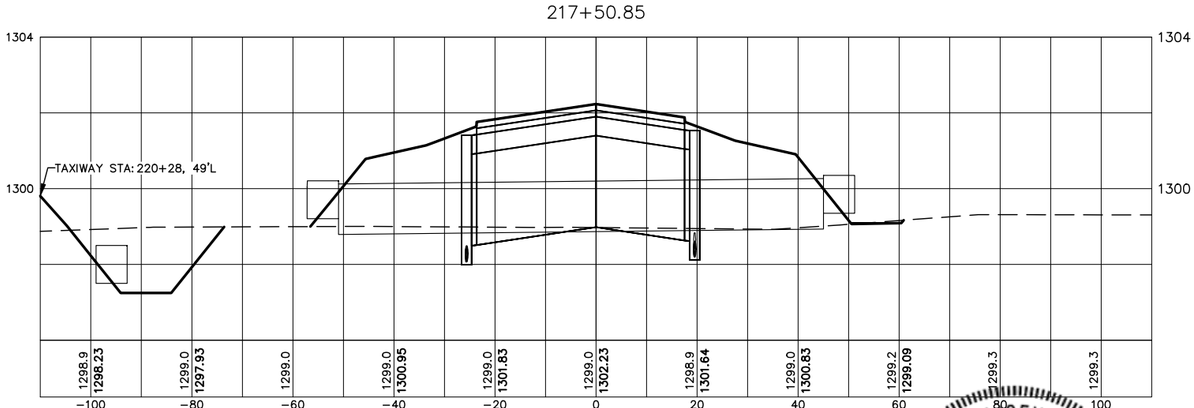
218+50



218+00



217+50.85



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
15677
Registered Professional Engineer
This document originally issued and sealed by me on date shown. Electronic version on file.
5/27/2026

Rev.	Description	Date

36 TURN AROUND CROSS SECTIONS

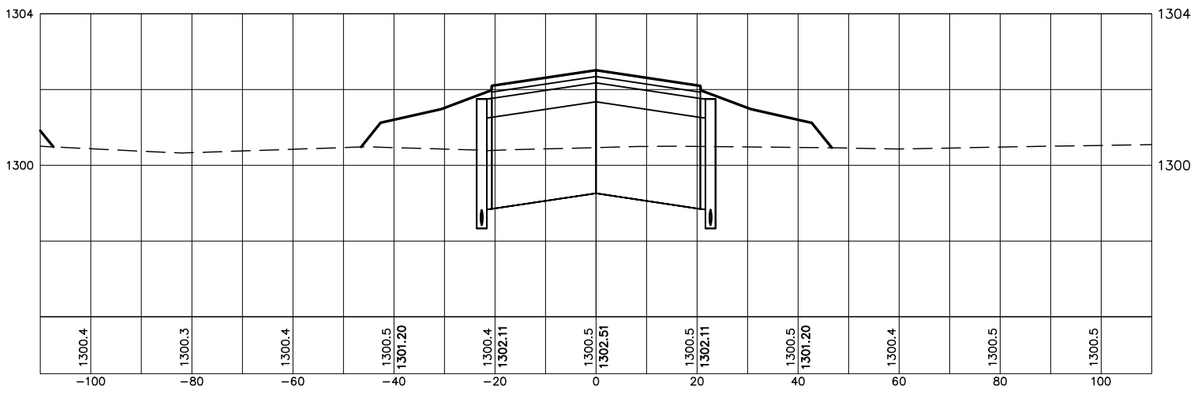
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
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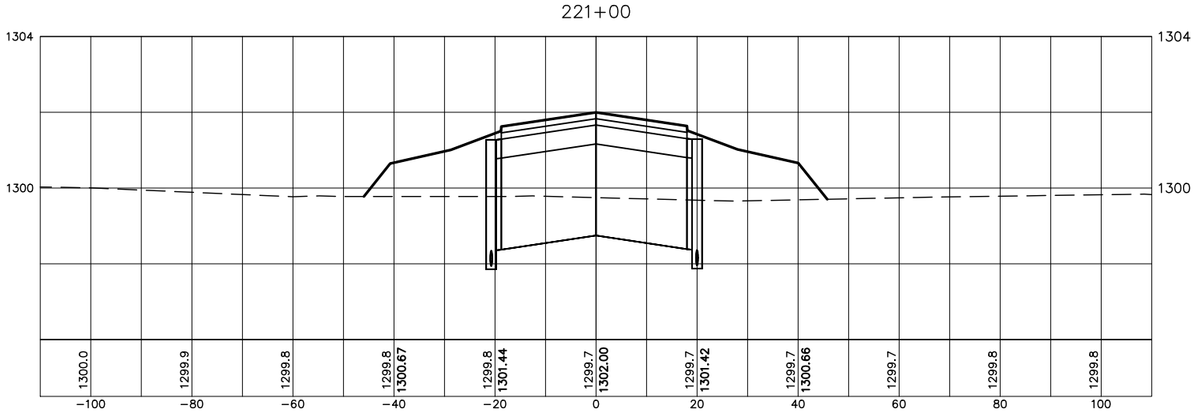
Drawn By: TMO
Chk' By: BBE
Proj. No: A-7141
Dept. No: 7141-XS(2)
VP. No: XS-CT(9)
Date: 5.28.26

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1"=4' VERT.

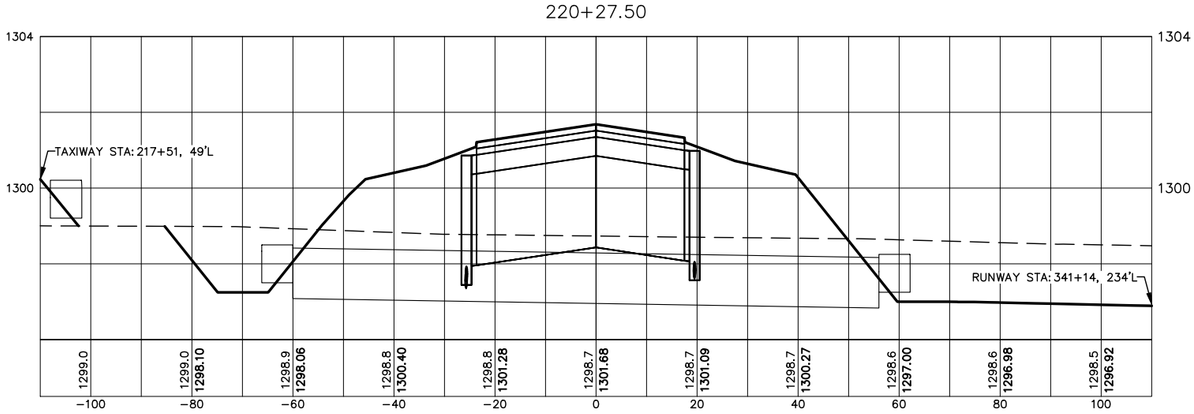
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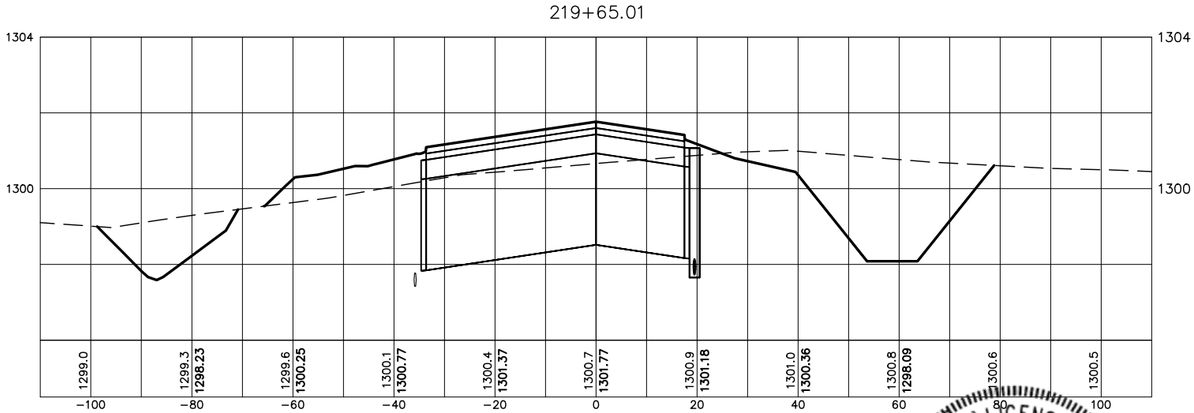
221+00



220+27.50



219+65.01



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
13663
5/27/2026

36 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS

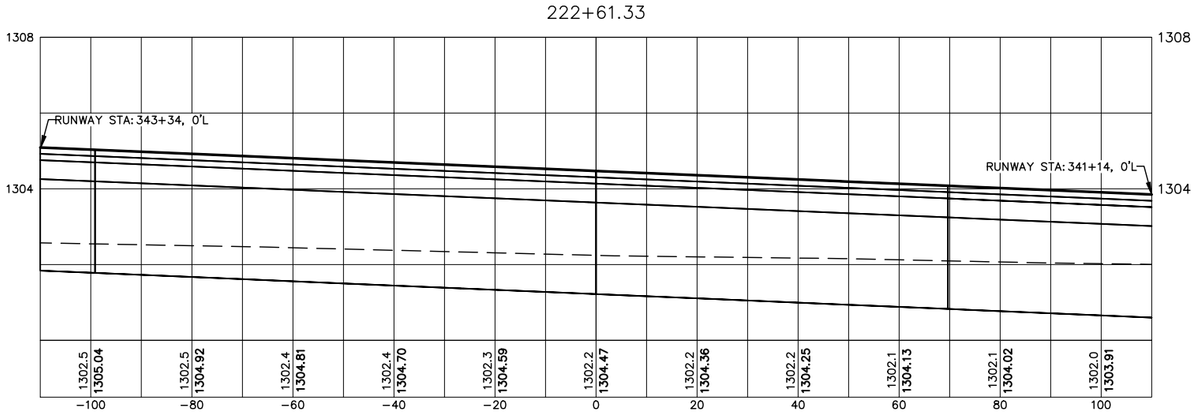
416 Production St N.
P.O. Box 111,
Aberdeen, S.D. 57402
Phone: 605.225.1212,
Fax: 605.225.3189
Email: bobb@helmsengineering.com

Drawn By:	TMO
Chk' By:	BBE
Proj. No:	A-7141
Dsgn. No:	7141-XS(2)
VP. No:	XS-CT(10)
Date:	5/26/26

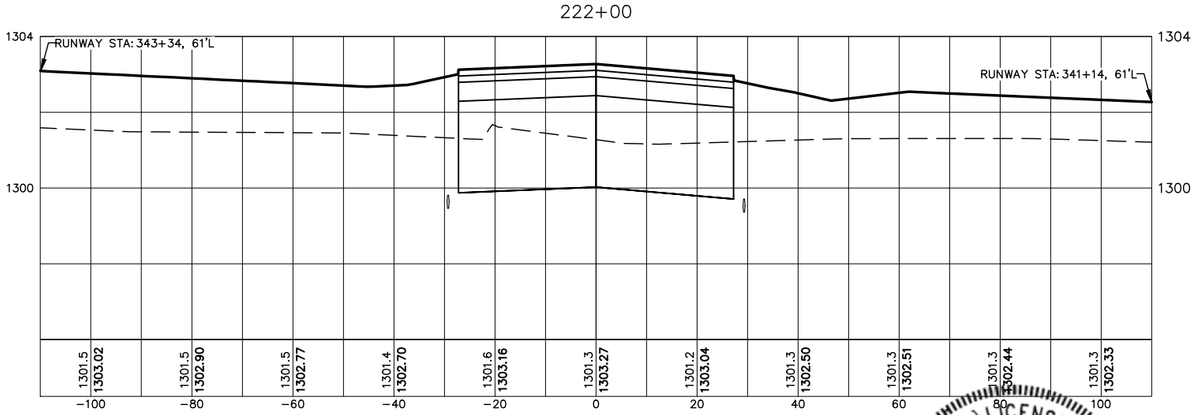
No.	Description	Date

SCALE 11X17
1"=30' HORIZ.
1"=4' VERT.

222+61.33



222+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. ERICKSON
13663
REGISTERED
EDGAR, SD
5/27/2026

104
OF
111

Date: 5/28/26
VP: No:
Dsgn: No: 7141-XS(2)
Proj. No: A-7141
Chk' By: BBE
Drawn By: TMO

36 TURN AROUND CROSS SECTIONS

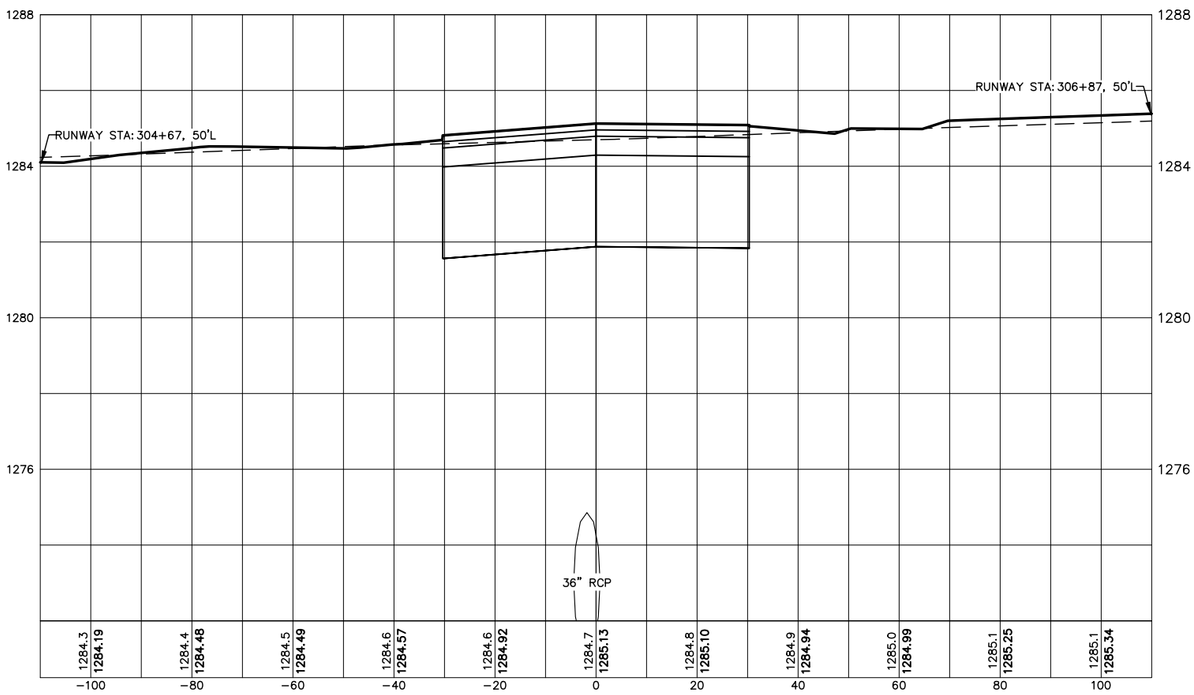
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
CIVIL ENGINEERS & LAND SURVEYORS
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Phone: 605.225.1212,
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Email: bobb@helmsengineering.com

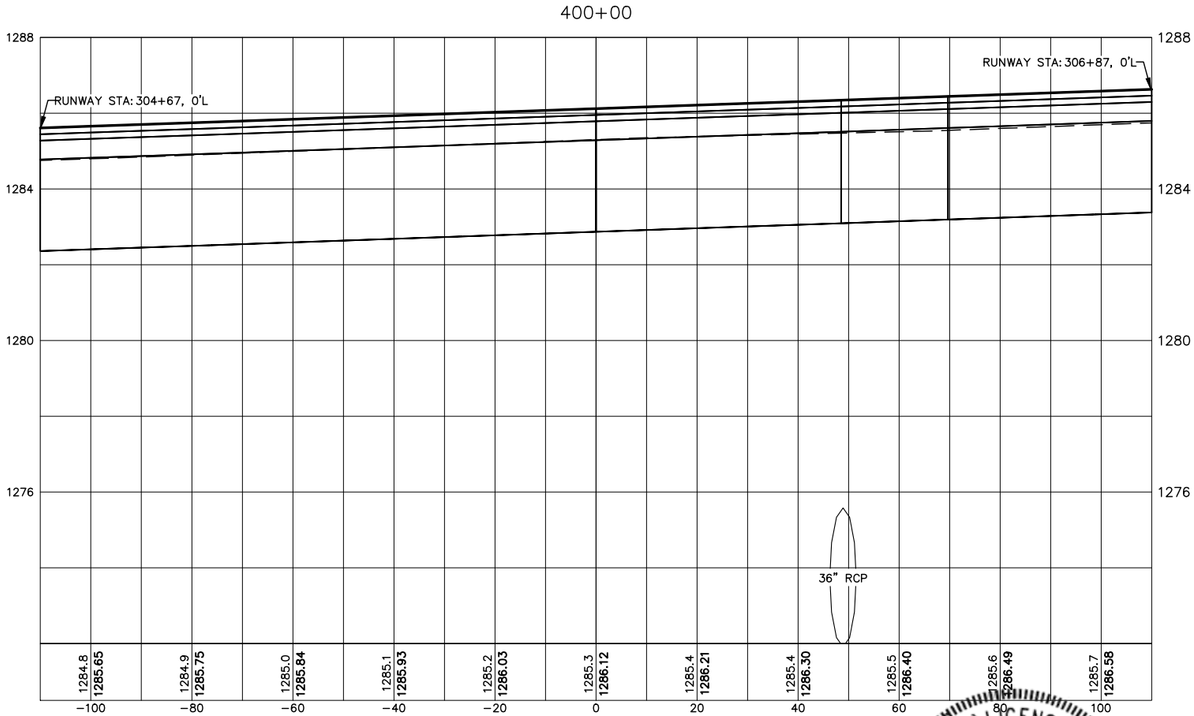
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1"=4' VERT.

400+50



400+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDAM
5/27/2026

105 OF 111

Date: 5/28/26
VP: No: XS-114(1)
Proj. No: 7141(XS2)
Chk' By: A-7141
Drawn By: BBE
TMO

18 TURN AROUND CROSS SECTIONS

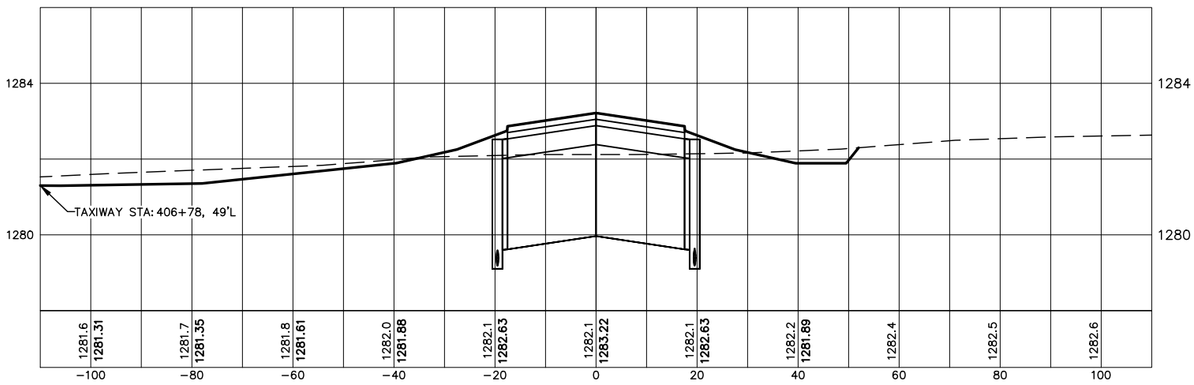
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

SPN Helms
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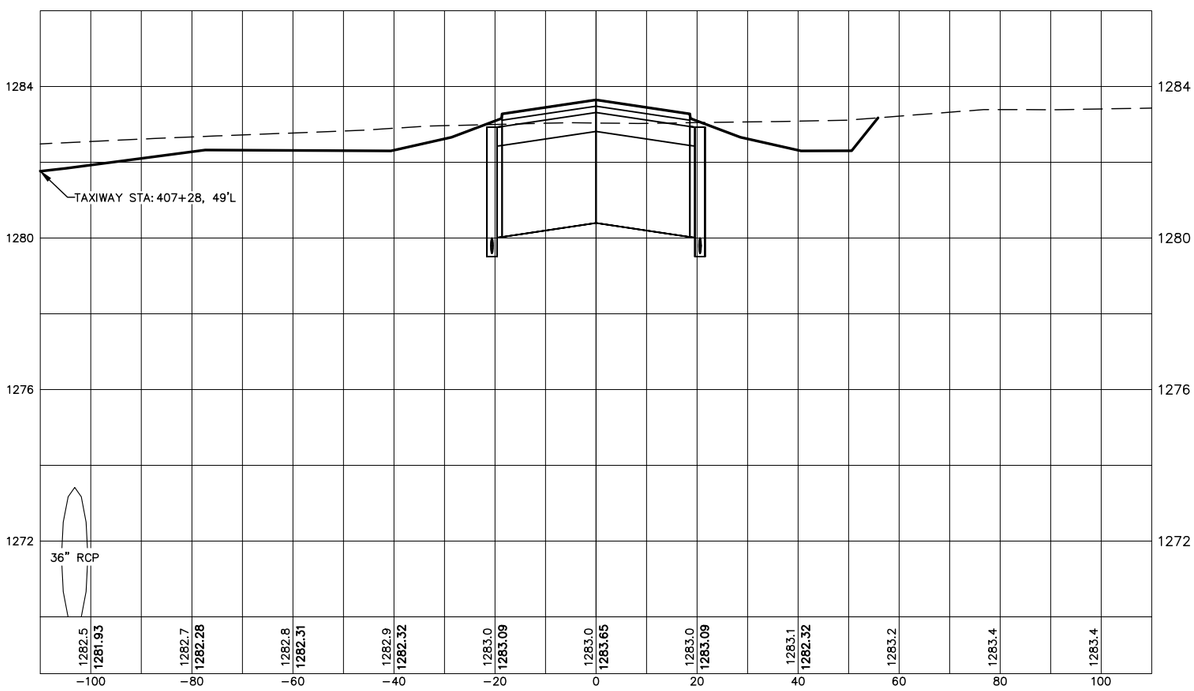
No.	Revision	Date

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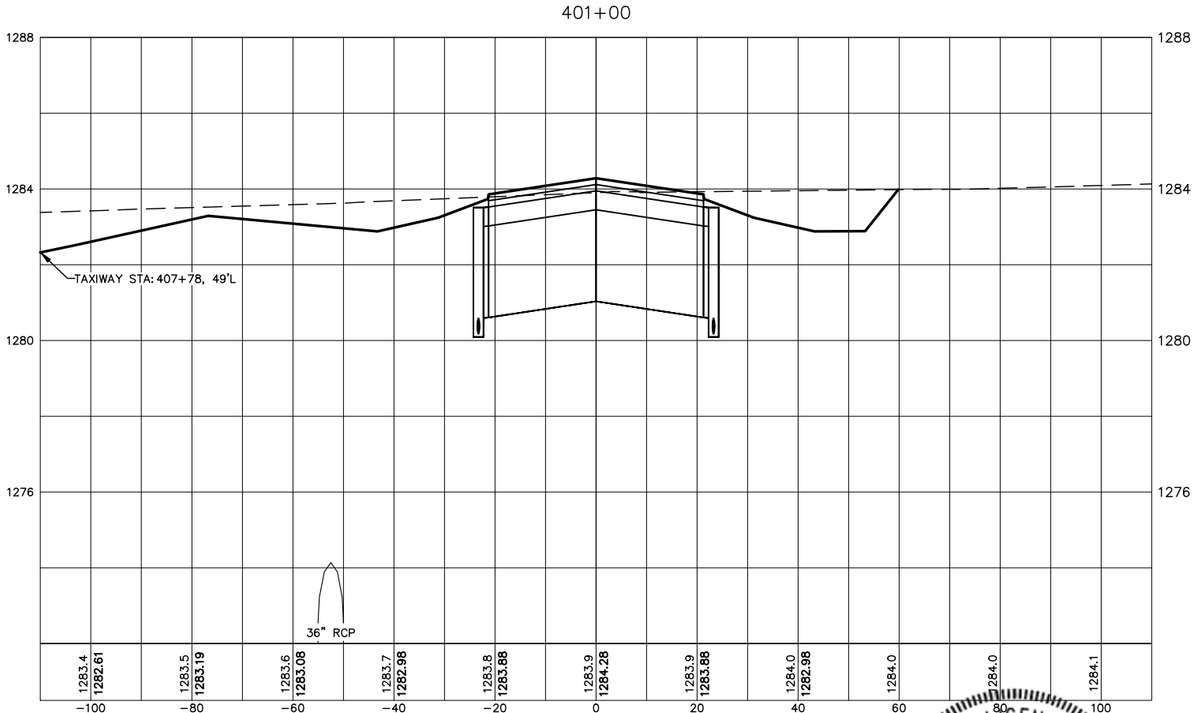
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401+50



401+00



LICENSED PROFESSIONAL ENGINEER
BROOKE B. ERICKSON
15637
Registered Professional Engineer
EDGAR, SD
5/27/2026

106
OF
111

Date: 5/28/26
VP: No: XS-114(3)
Proj. No: 7141(XS2)
Chk' By: A-7141
Drawn By: BBE
TMO

18 TURN AROUND CROSS SECTIONS

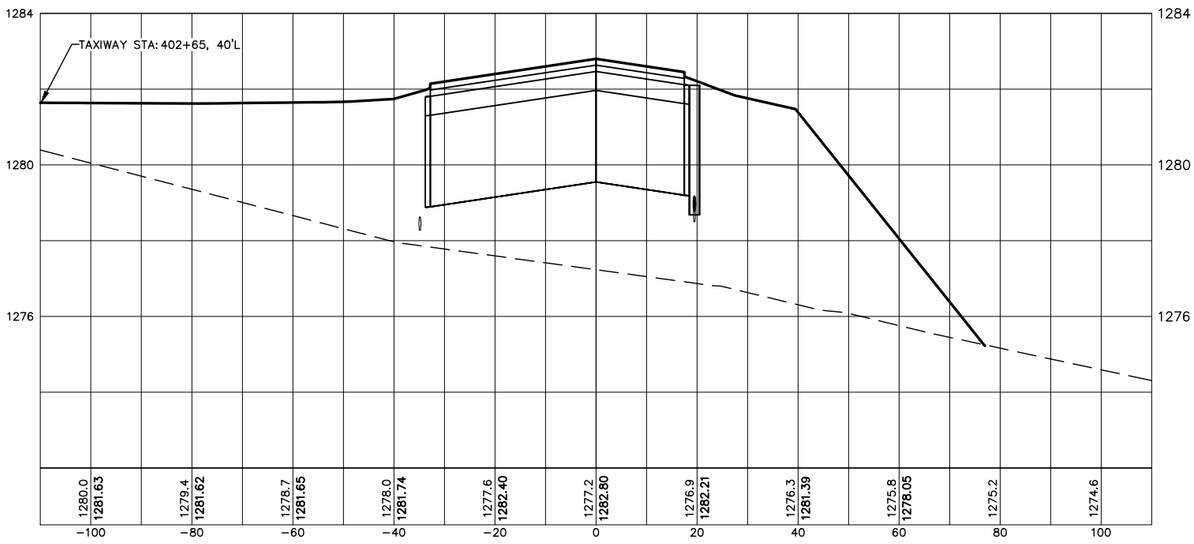
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

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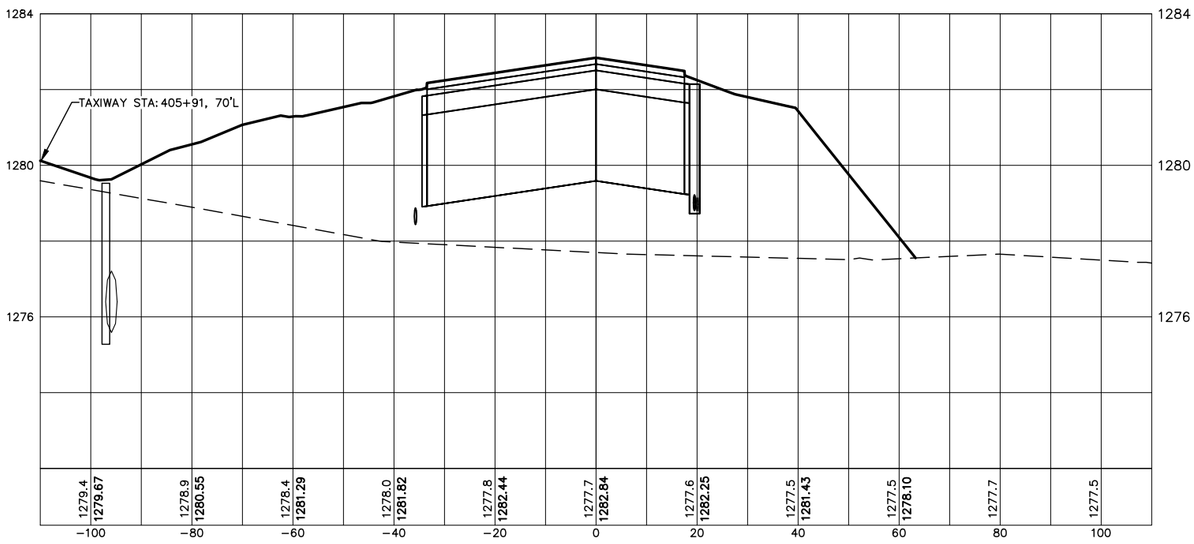
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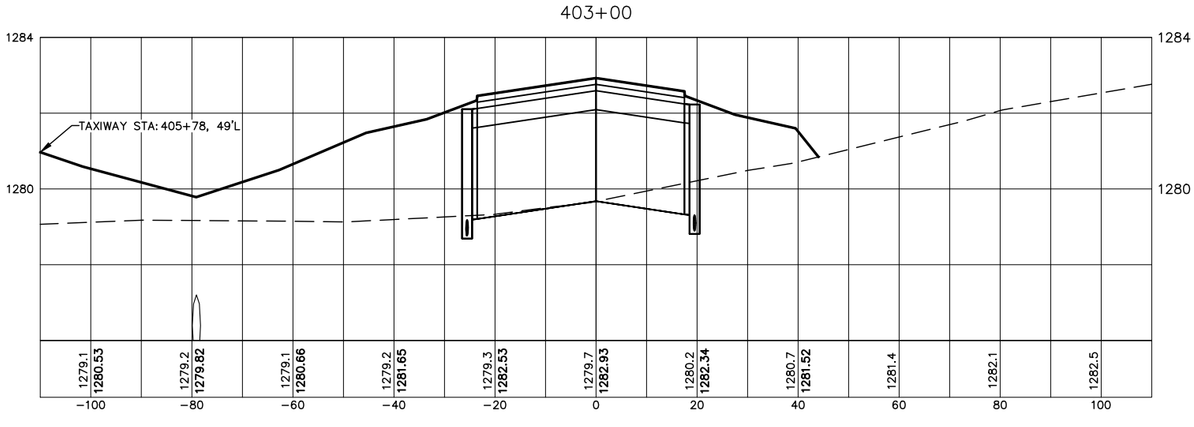
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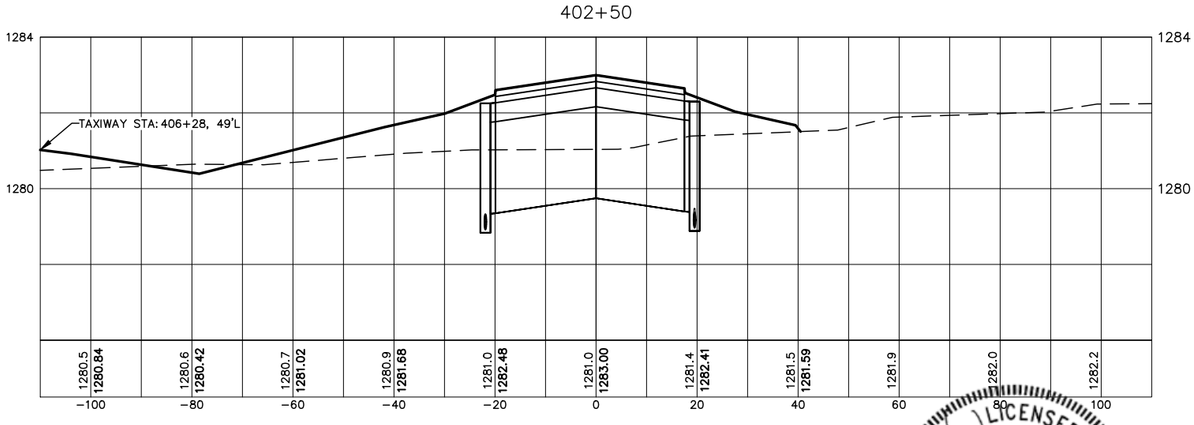
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403+00



402+50



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
15637
Registered Professional Engineer
5/27/2026

107
OF
111

Drawn By:	TMO
Chk By:	BBE
Proj. No:	A-7141
Dwg. No:	7141-XS3 (5)
VP. No:	XS-11A(5)
Date:	5/26/26

18 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

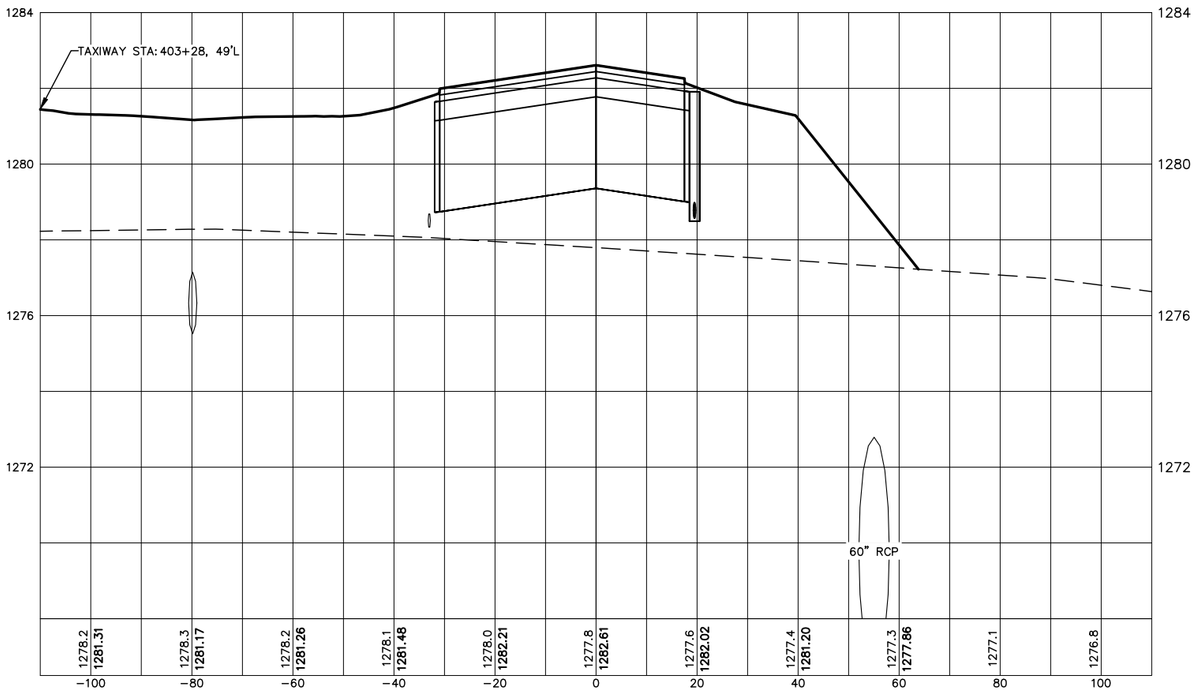
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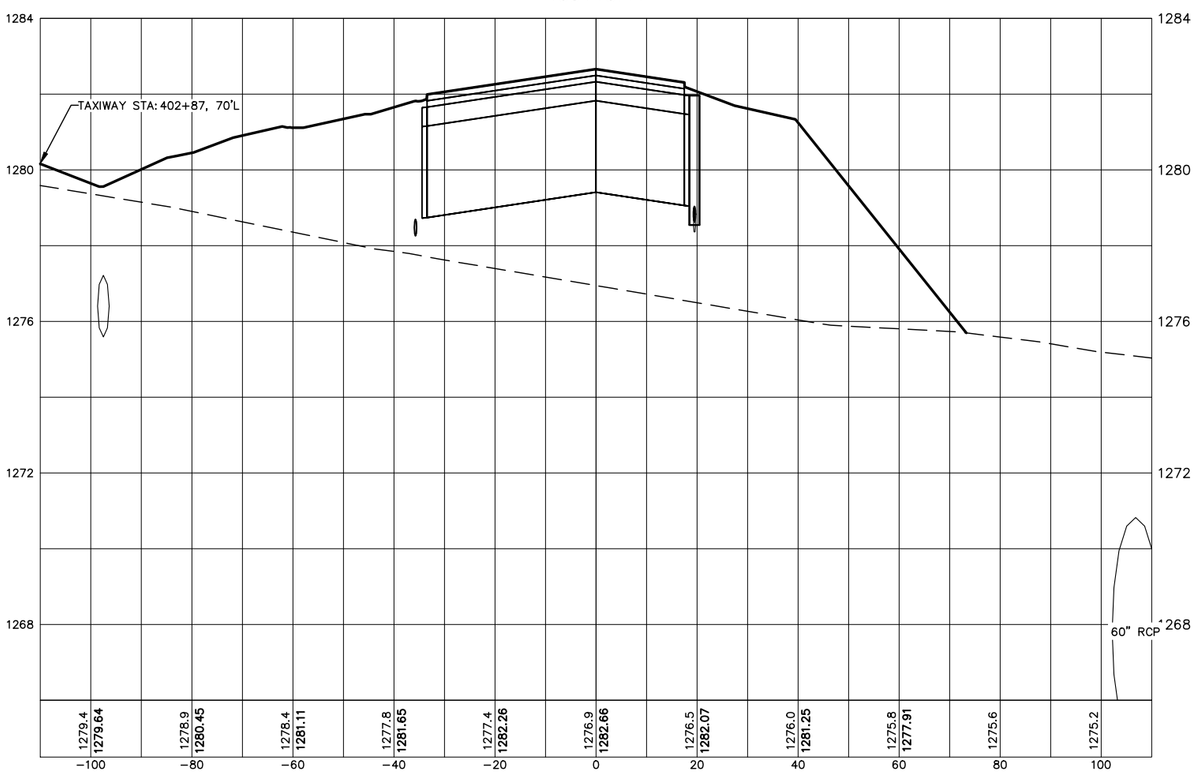
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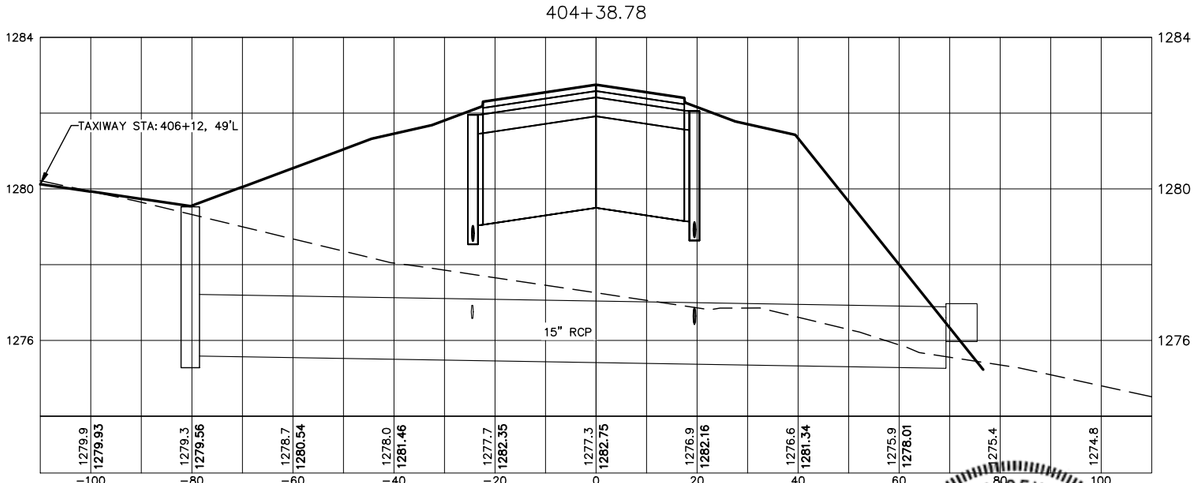
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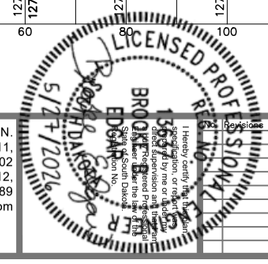


405+10.44



404+38.78





108
OF
111

Date:	Drawn By:
5/26/26	TMO
Proj. No:	Chk' By:
A-7141	BBE
Dsgn. No:	
7141-XS2	
VP. No:	
XS-11A(4)	

18 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

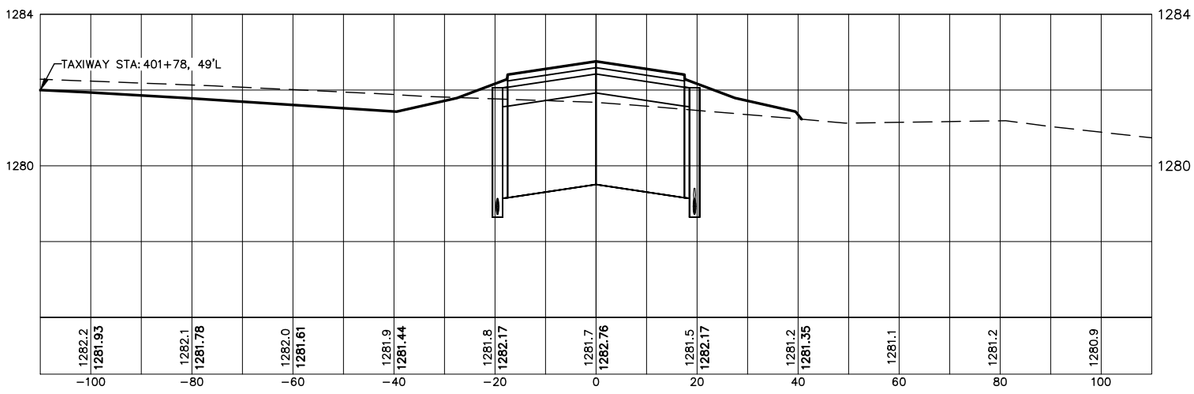
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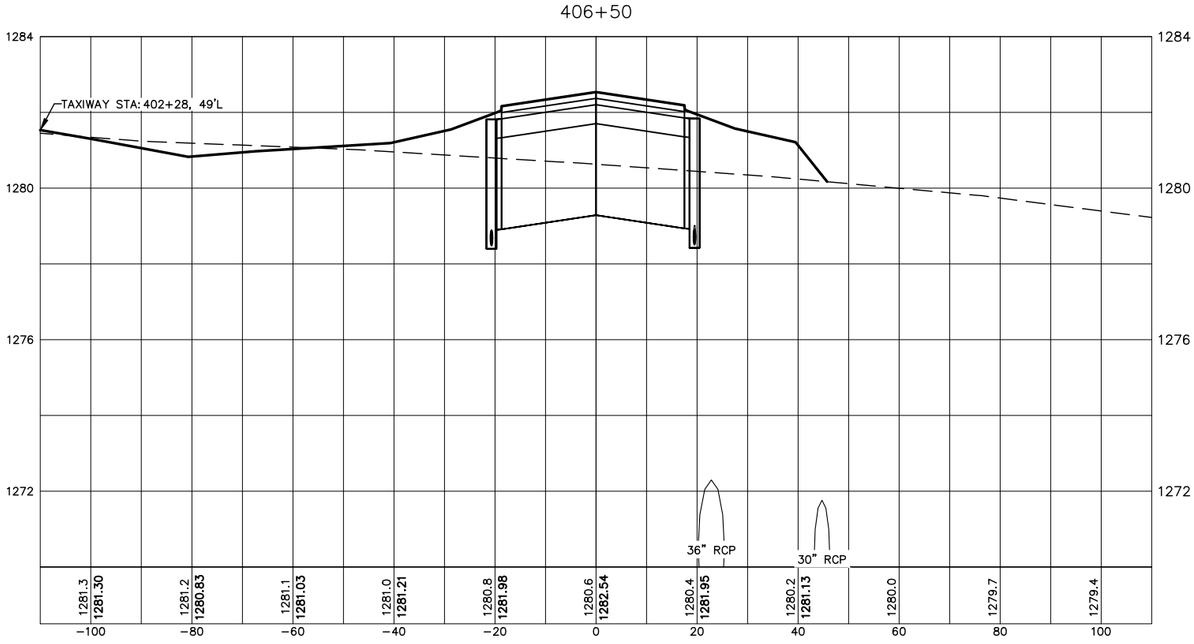
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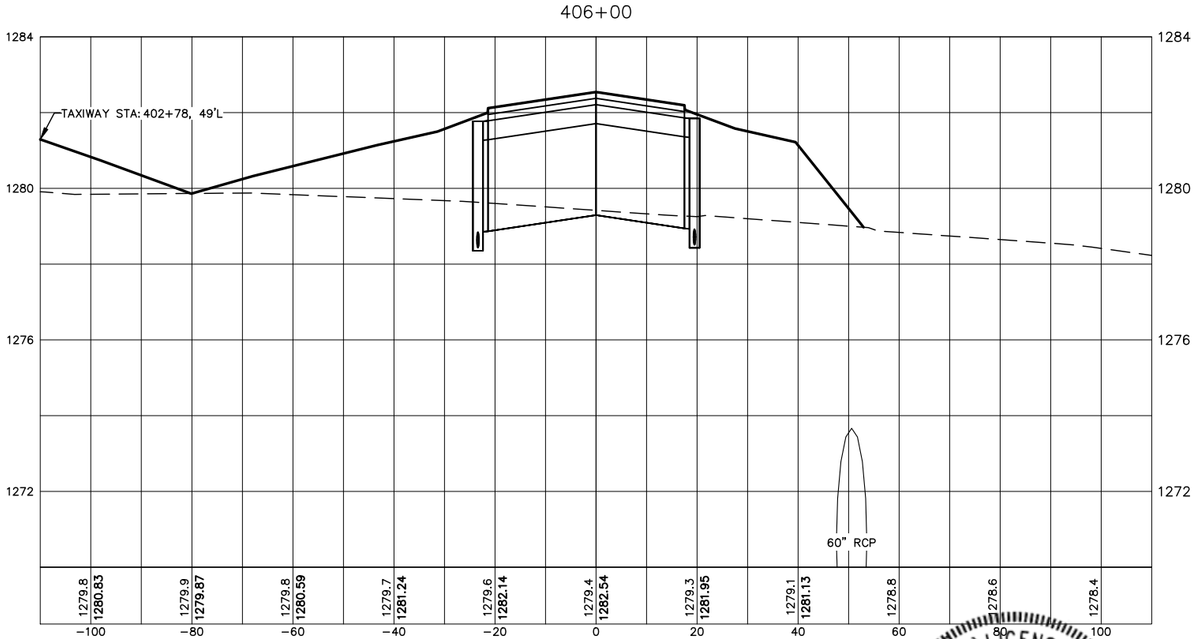
407+00



406+50



406+00



LICENSED PROFESSIONAL ENGINEER
REGISTERED
13663
BROOKE B. EDGAR
5/27/2026

109 OF 111

Date: 5/28/26
Dsgn. No: 7141.XS(2)
VP. No: XS-11A(5)
Proj. No: A-7141
Chk By: BBE
Drawn By: TMO

18 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

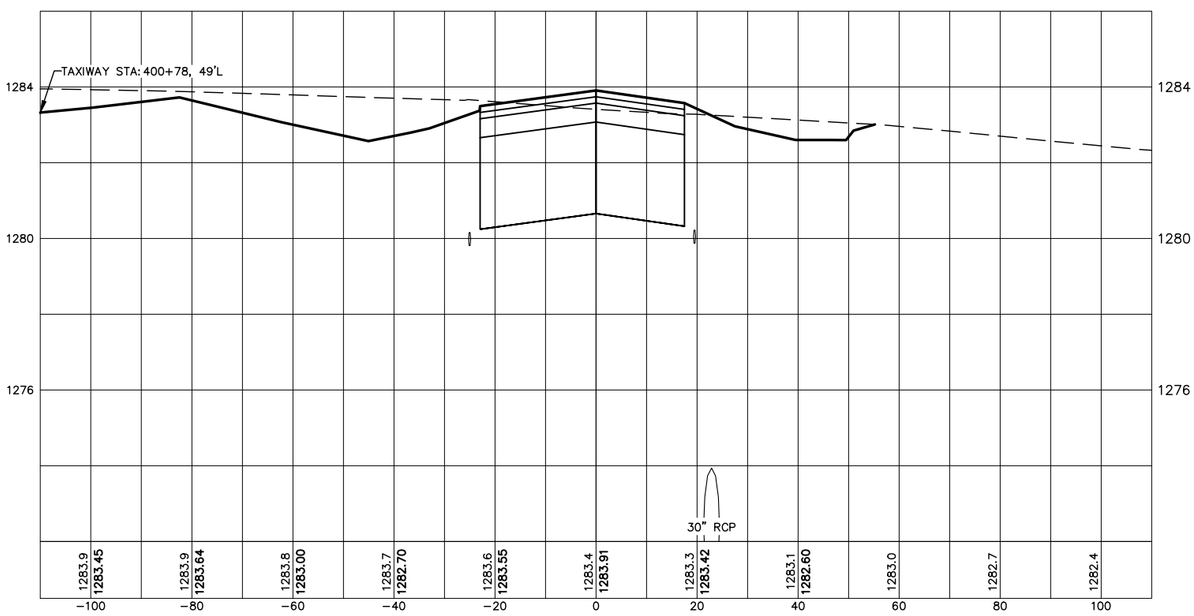
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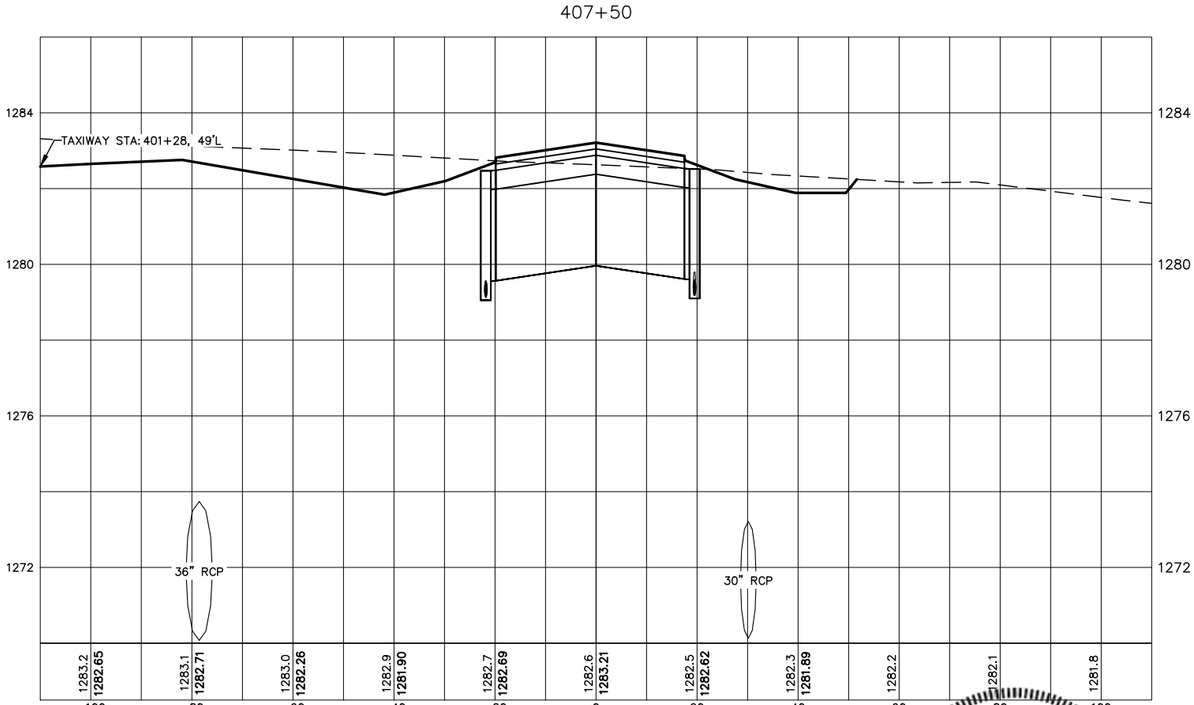
No.	Revision	Date

SCALE 11X17
1"=30' HORIZ.
1"=4' VERT.

408+00



407+50



LICENSED PROFESSIONAL ENGINEER
BRODY B. EDWARDS
13653
Registered Professional Engineer
5/27/2026

110 OF 111

Date: 5.26.26
Dsgn. No: XS-11A(6)
Proj. No: A-7141
Chk By: BBE
Drawn By: TMO

18 TURN AROUND CROSS SECTIONS

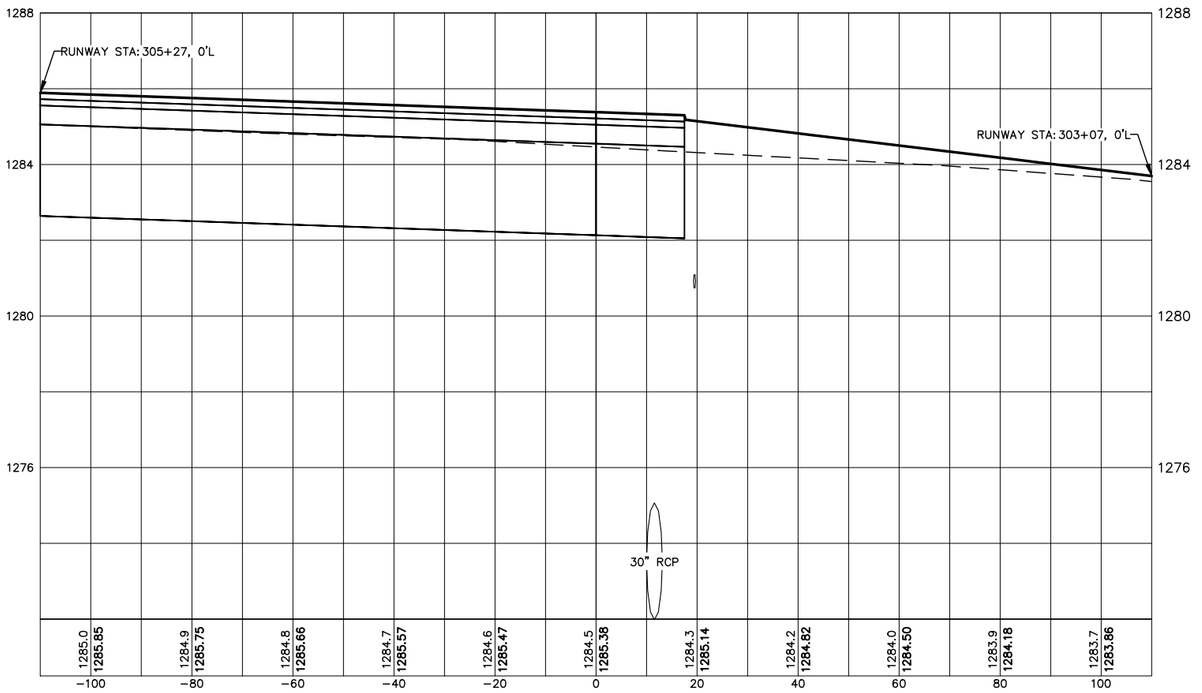
RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

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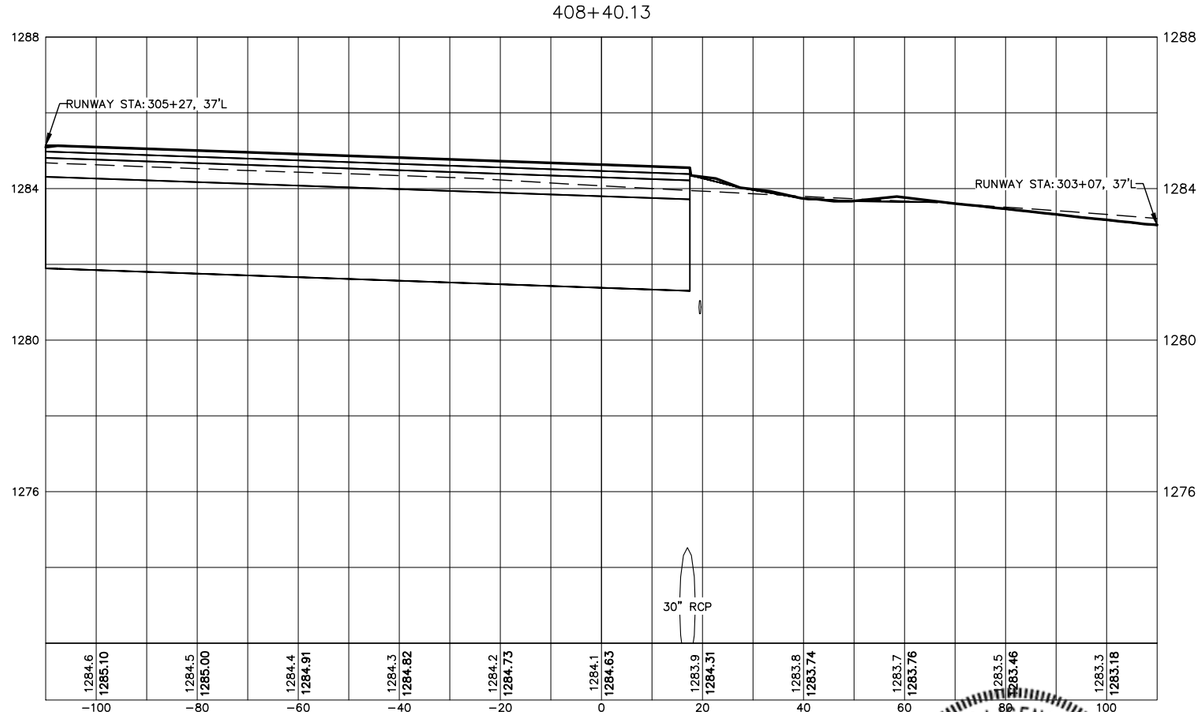
No.	Description	Date

SCALE 11X17
1"=30' HORIZ.
1"=4' VERT.

408+77.57



408+40.13



LICENSED PROFESSIONAL ENGINEER
BROOKE B. EDGAR
15637
Registered Professional Engineer
5/27/2026

111 OF 111

Date: 5/28/26
VP: No:
Dept. No: 7141.3(S2) (JG-11A(J))
Proj. No: A-7141
Chk' By: BBE
Drawn By: TMO

18 TURN AROUND CROSS SECTIONS

RUNWAY 18/36 RECONSTRUCTION
AND TAXIWAY IMPROVEMENTS
MITCHELL, SOUTH DAKOTA

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No.	Revisions	Date

Plot Date: 5/20/2026 11:45:33 AM

INDEX OF SHEETS

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E2	NOTES
E3	ABBREVIATIONS
E4	SHEET LAYOUT–LIGHTING REMOVALS
E5–E25	LIGHTING REMOVALS
E26	SHEET LAYOUT–LIGHTING PLAN
E27–E51	LIGHTING PLAN*
E52	LIGHTING PLAN & BID ALTERNATE 3*
E53	LIGHTING PLAN – BID ALTERNATE 1*
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E201–E214	LIGHTING DETAILS*
V1	AIRFIELD VAULT–POWER & LIGHTING DETAILS
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V3	AIRFIELD VAULT–EXISTING EQUIPMENT IMAGES*
V4	AIRFIELD VAULT–AIRFIELD LIGHTING*
V5	AIRFIELD VAULT–L–821 LIGHTING CONTROL PANEL
19 PAGES	EXISTING AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM, AS MADE DRAWINGS BY COPPER CROUSE–HINDS

* COLOR PLAN SHEETS

EXISTING

– EDGE LIGHT

PROPOSED LIGHTING LEGEND

- – INDICATES IN–PAVEMENT
- – LIGHT BASE CAN W/ STEEL COVER
- – LIGHT INSTALLED ON EXISTING LIGHT BASE CAN (COLOR PER PLAN)
- – BLUE
- – RED/GREEN
- – YELLOW/WHITE
- – JUNCTION CAN
- – MANHOLE
- – CABLE MARKER
- – ROTATING BEACON
- – PAPI
- – REIL
- – WINDCONE
- – AIRFIELD SIGN
- – AIRCRAFT TIE–DOWN
- – REMOVE & DISPOSE
- – REMOVE & SALVAGE
- – VERIFY UNDERGROUND UTILITY (POTHOLE)

EXISTING

SCH 40 SCH 80

SCH 40 SCH 80

RSA RSA

ROFA ROFA

TSA TSA

TOFA TOFA

PROPOSED LINETYPE LEGEND

- SCH 40 SCH 80 – HIGH VOLTAGE (HV)
- SCH 40 SCH 80 – LOW VOLTAGE (LV)
- – SAND ENCASED DUCT BANK
- – COUNTERPOISE
- – ABANDON
- – REMOVE & DISPOSE CABLE; CONDUIT TO BE ABANDONED
- RSA RSA – RUNWAY SAFETY AREA
- ROFA ROFA – RUNWAY OBJECT FREE AREA
- TSA TSA – TAXIWAY SAFETY AREA
- TOFA TOFA – TAXIWAY OBJECT FREE AREA

CIRCUIT LEGEND

OF CABLES
OF CONDUCTORS PER CABLE
CONDUCTOR SIZE (AWG)
CONDUCTOR TYPE
INSULATION TYPE
OF CONDUITS
CONDUIT SIZE (ø)

(1) 1/C #8 5kV XLPE IN (1) 2"

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LEGEND & INDEX OF SHEETS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

DGR ENGINEERING

Sheet
E1

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LEGEND, ABBREVIATIONS & SHEET INDEX.DWG

Plot Date: 5/20/2026 11:45:33 AM

GENERAL NOTES

1. COORDINATE CONSTRUCTION ACTIVITIES WITH THE PLANS AND THE CSPP.
2. COORDINATE VAULT ACTIVITIES WITH OWNER TO DE-ENERGIZE PANELS AND/OR CIRCUITS AS NECESSARY TO PERFORM WORK SAFELY.
3. COORDINATE REMOVAL AND SALVAGING OF ITEMS WITH THE ENGINEER AND OWNER.
4. COORDINATE THE INSTALLATION OF ALL BELOW-GRADE AND CAST-IN-PLACE CIRCUITRY WITH OTHER TRADES.
5. CONTRACTOR SHALL RETURN ALL DISTURBED SURFACES AND SOILS TO ORIGINAL OR PRE-CONSTRUCTION CONDITIONS UNLESS SPECIFICALLY INDICATED OTHERWISE.
6. EXISTING AND/OR NEW UNDERGROUND CONDUITS, DUCT BANKS, AND OTHER CIRCUITRY SHOWN ON THE PLANS ARE INTENDED TO BE DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL CIRCUITRY AND ROUTING IN THE FIELD.
7. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR COORDINATING THE WORK WITH OTHER TRADES TO AVOID CONFLICTS IN SPACE REQUIREMENTS, CLEARANCE, ETC. PROBLEMS ARISING DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE.
8. PROVIDE PANEL SCHEDULES FOR ALL NEW AND/OR MODIFIED PANELS. SCHEDULES SHALL BE TYPED.
9. FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
10. ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A PULLWIRE OR APPROVED EQUIVALENT AND SHALL BE IDENTIFIED AT ALL JUNCTION, PULL, AND TERMINATION POINTS, USING PERMANENT METALLIC TAGS. TAG SHALL INDICATE THE INTENDED USE OF THE CONDUIT, ORIGINATION, AND TERMINATION POINTS OF EACH INDIVIDUAL CONDUIT.
11. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES.
12. VERIFY THAT EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
13. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.
14. SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION.
15. THE CONTRACTOR SHALL PERFORM ALL WORK AND FURNISH ALL MATERIALS AS INDICATED IN THE PLANS AND SPECIFICATIONS AS NECESSARY FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT.
16. ALL WORK SHALL BE TESTED, AS REQUIRED BY CODE.
17. WORK SHALL BE PERFORMED ONLY BY INDIVIDUALS LICENSED AND TRAINED TO DO THE TYPE OF WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPLICABLE PERMITS AND FEES. ANY PROBLEMS OR ISSUES ARISING FROM CONTRACTOR'S FAILURE TO OBTAIN PERMITS AND/OR FEES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE.
19. EQUIPMENT, WHICH IS REQUIRED BY CODE OR IS SPECIFIED TO HAVE SIMILAR LISTING, SHALL BE INSTALLED AS REQUIRED TO MEET THAT LISTING.
20. FINAL LOCATIONS OF EQUIPMENT MAY DIFFER SLIGHTLY FROM THOSE SHOWN ON THE PLANS. COORDINATE EXACT LOCATION OF EQUIPMENT WITH EQUIPMENT SUPPLIER, STRUCTURAL MEMBERS, AND OTHER TRADES BEFORE ROUGH-IN AND ADJUST ACCORDINGLY.
21. COORDINATE UTILITY WORK WITH LOCAL UTILITY, OWNER, AND OTHER CONTRACTORS TO MINIMIZE DISRUPTION AND DOWNTIME. ANY AND ALL CHARGES ASSESSED BY THE UTILITY TO ACCOMMODATE THE REQUIREMENTS OF THIS PROJECT ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. VERIFY ALL CHARGES WITH UTILITY BEFORE SUBMITTING BID.
22. PROVIDE LABELING OF ALL ITEMS TO IDENTIFY THEM BY NAME AND/OR FUNCTION. THESE LABELS SHALL BE ENGRAVED, PLASTIC-LAMINATED LABELS AS FOLLOWS: ENGRAVING STOCK, MELAMINE PLASTIC LAMINATE 1/16" MINIMUM THICKNESS, WITH ENGRAVED LEGEND IN BLACK LETTERS ON WHITE FACE. LABELS SHALL BE PROPERLY SECURED TO ENCLOSURES UTILIZING GLUE OR SCREWS.
23. MANUFACTURERS WHOSE PRODUCT IS NOT SPECIFIED OR SPECIFICALLY LISTED ON THE PLANS OR IN THE SPECIFICATIONS ARE ALLOWED TO SUBMIT INFORMATION ON A PRODUCT THAT THEY WOULD LIKE TO BE CONSIDERED AS AN EQUAL TO THOSE SPECIFIED OR LISTED. BY SUBMITTING THIS INFORMATION FOR CONSIDERATION, THE PRODUCT REPRESENTATIVE IS INDICATING THAT THE PRODUCT BEING PRESENTED FOR CONSIDERATION EQUALS OR EXCEEDS THE SPECIFIED PRODUCT IN QUALITY, PERFORMANCE, AND OPERATING PARAMETERS. THE PROCEDURE FOR THIS SUBMITTAL IS LISTED BELOW.
24. MARKUP PROCEDURE: DURING CONSTRUCTION, MAINTAIN A SET OF RED-LINED PRINTS OF CONTRACT DRAWINGS AND SHOP DRAWINGS FOR PROJECT RECORD DOCUMENT PURPOSES. MARK THESE DRAWINGS TO SHOW THE ACTUAL INSTALLATION WHERE THE INSTALLATION VARIES FROM THE INSTALLATION SHOWN ORIGINALLY. GIVE PARTICULAR ATTENTION TO INFORMATION ON CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO IDENTIFY OR MEASURE AND RECORD LATER.
25. AT COMPLETION OF PROJECT, PROVIDE TWO (2) OPERATION AND MAINTENANCE MANUALS. EACH MANUAL SHALL CONSIST OF ONE (1) 3-RING BINDER AND ONE (1) USB DRIVE CONTAINING PDF FILES WITH COPIES OF CUT SHEETS OF ALL EQUIPMENT INSTALLED AS PART OF THIS PROJECT. PROVIDE A TYPED LABEL ON FRONT OF MANUAL IDENTIFYING PROJECT NAME, DATE OF PROJECT, ENGINEER'S NAME, CONTRACTOR'S NAME, PHONE NUMBER, AND ADDRESS. PROVIDE AN INDEX SHEET AT FRONT OF MANUAL AND INDEX TABS.
26. SEE ARCHITECTURAL PLANS FOR ADDITIONAL BUILDING DIMENSIONS AND STOOP DETAILS.
27. A 1/2" PREFORMED EXPANSION MATERIAL SHALL BE PLACED BETWEEN THE PROPOSED CONCRETE PAVEMENT WHEN INSTALLED ADJACENT TO EXISTING CONCRETE PAVEMENT AND BUILDINGS.
28. PAVEMENT SURFACE SLOPES SHALL NOT EXCEED 2% MAXIMUM IN ANY ACCESSIBLE PARKING STALL OR ACCESSIBLE ISLE.
29. CONCRETE SIDEWALK JOINT PATTERNS SHALL NOT EXCEED WIDTH OF SIDEWALK.
30. CONCRETE JOINT SEALANT SHALL BE USED FOR ALL CONCRETE PAVEMENT. SEALANT SHALL BE HOT POURED ELASTIC JOINT SEALANT OR LOW MODULUS SILICONE SEALANT AS SPECIFIED IN THE SUDAS STANDARD SPECIFICATION, DIVISION 7.
31. ALL EXTERIOR CONCRETE SHALL BE SEALED WITH W.R. MEADOWS INTRAGUARD OR OWNER APPROVED EQUAL. APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

INSTALLATION NOTES

1. FIELD VERIFY CIRCUIT LOCATIONS AND EXISTING STRUCTURES.
2. REFER TO ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION.
3. LOW VOLTAGE CABLES SHALL NOT BE INSTALLED IN HIGH VOLTAGE MANHOLES, JUNCTION BOXES, CANS, CONDUITS, ETC.
4. ALL CONDUIT UNDER PAVEMENT SHALL BE SCH. 80 PVC OR SDR 11 HDPE.
5. ALL SPLICES SHALL BE LOCATED IN A JUNCTION STRUCTURE, EXCEPT COUNTERPOISE.
6. ALL SPLICES, CONDUIT CONNECTIONS, AND CONDUIT FITTINGS SHALL BE CONSIDERED INCIDENTAL TO CORRESPONDING EQUIPMENT.
7. PROVIDE MINIMUM 3 FEET OF CABLE SLACK IN EACH JUNCTION STRUCTURE. SLACK SHALL BE INCIDENTAL TO ITS RESPECTIVE WIRE BID ITEM.
8. MARK PROPOSED CONDUIT AND CABLE WITH CABLE MARKERS.
9. ALL CONCRETE SHALL BE SDDOT 462 CLASS M CONCRETE, OR FAA P-610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
10. ALL CONSTRUCTION METHODS, PROCEDURES, AND MATERIALS PROPOSED FOR THE PROJECT SHALL COMPLY WITH THE PLANS AND SPECIFICATIONS. THE ENGINEER, PRIOR TO CONSTRUCTION, SHALL APPROVE ANY ALTERNATE CONSTRUCTION METHOD PROPOSED BY THE CONTRACTOR.

REMOVE AND DISPOSE

1. ITEMS IDENTIFIED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PROPERLY PER LOCAL, STATE, AND FEDERAL REQUIREMENTS OFF AIRPORT PROPERTY.

REMOVE AND SALVAGE

1. ITEMS IDENTIFIED SHALL BE REMOVED AND SALVAGED TO THE OWNER IN AN ORGANIZED AND CLEAN MANNER. THE CONTRACTOR SHALL PLACE THE MATERIALS ON AIRPORT PROPERTY AT A LOCATION DETERMINED BY THE OWNER.

CONTRACTOR SAFETY REQUIREMENTS

1. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS REGARDING SITE SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY FROM THE ISSUANCE OF THE NOTICE TO PROCEED UNTIL FINAL ACCEPTANCE. THE OWNER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO FOLLOW ALL APPLICABLE RULES AND REGULATIONS.
2. CONDUIT TO REMAIN IS CONDUIT THAT WILL BE REUTILIZED WITH THIS PROJECT. CONDUIT TO BE ABANDONED IS NOT INTENDED TO BE REUTILIZED WITH THIS PROJECT.

CONSTRUCTION METHODS

1. ALL CONSTRUCTION METHODS, PROCEDURES, AND MATERIALS PROPOSED FOR THE PROJECT SHALL COMPLY WITH THE PLANS AND SPECIFICATIONS. THE ENGINEER, PRIOR TO CONSTRUCTION, SHALL APPROVE ANY ALTERNATE CONSTRUCTION METHOD PROPOSED BY THE CONTRACTOR.

ELECTRICAL VAULT WORK, COMPLETE

1. ALSO REFER TO ITEM L-109 AIRPORT TRANSFORMER VAULT AND VAULT EQUIPMENT.
2. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL NECESSARY INSPECTIONS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
3. EMT CONDUIT AND STAMPED STEEL CONDUITS MAY BE USED IN VAULT INTERIOR. ALL EXTERIOR ABOVE-GROUND CONDUITS SHALL BE RIGID METALLIC CONDUIT, GALVANIZED WITH CAST BOXES AND LONG BENDS (LB).
4. CONDUIT ENTERING THROUGH AN INSIDE WALL OF THE VAULT BUILDING SHALL TERMINATE IN A NEMA ENCLOSURE, A PULLBOX, OR WIREWAY. SIZE PER PLAN.
5. ALL INSTALLED EQUIPMENT SHALL BE CLEARLY MARKED AND LABELED ON THE OUTSIDE OF THE CASINGS.
6. ITEMS IDENTIFIED AS "FUTURE CKTs" SHALL BE PROVIDED WITH THE APPROPRIATE SIZE CONDUIT/STUBOUT THROUGH THE VAULT WALL AND CONNECTED TO THE WIREWAY ON THE INTERIOR OF THE VAULT. ALL CONDUIT/STUBOUTS IDENTIFIED AS "FUTURE CKTs" SHALL BE TERMINATED, CAPPED, AND WATERTIGHT SEALED ON THE EXTERIOR OF THE VAULT TO ACCOMMODATE FUTURE CONDUIT CONNECTIONS. ALL STUBOUTS SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE VAULT BUILDING GROUNDING WIRE (COUNTERPOISE) OR 5 FEET BEYOND THE BUILDING FOOTPRINT, WHICHEVER IS GREATER.
7. ALL CONDUITS SHALL BE INSTALLED TO BELOW FINISHED GRADE AND FRICTION-FIT CAPPED (DO NOT GLUE).
8. ALL EQUIPMENT SHALL BE INSTALLED PER NEC, NFPA, AND FAA REQUIREMENTS.
9. LAYOUT IS DIAGRAMMATIC IN NATURE AND DOES NOT SHOW ALL ITEMS REQUIRED.
10. PROVIDE SEPARATE WIREWAY FOR COMMUNICATION, LV, AND HV CONDUCTORS.

BUY AMERICAN BUILD AMERICAN ACT (BABA)

1. THE PLANS AND SPECIFICATIONS CALL FOR EQUIPMENT MODELS IN SEVERAL PLACES, BUT THEY ARE CONSIDERED AS A "PERFORMANCE STANDARD", ALTHOUGH IT IS NOT BABA/BUY AMERICAN COMPLIANT. IF THE BIDDER CANNOT FIND A BABA/BUY AMERICAN COMPLIANT SUBSTITUTE, THE BIDDER CAN CHECK THE "THE BIDDER OR OFFEROR HEREBY CERTIFIES IT CANNOT COMPLY WITH THE 100 PERCENT BUY AMERICAN PREFERENCES OF 49 U.S.C § 50101(A) BUT MAY QUALIFY FOR A TYPE 3 WAIVER UNDER 49 U.S.C § 50101(B)" BOX ON THE BUY AMERICAN FORMS AND SUBMIT A WAIVER REQUEST.

LOCATING UNDERGROUND UTILITY WORK

1. CONTRACTOR SHALL LOCATE OR SHALL HAVE THE SERVING UTILITIES LOCATE ALL UNDERGROUND CABLE, CONDUITS, PIPING, UTILITIES, ETC., PRIOR TO COMMENCING CONSTRUCTION (UNDERGROUND EXCAVATION). CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES DUE TO CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL FIELD LOCATE AND MARK ON THE GROUND WITH PAINT AND FLAGS ALL EXISTING AIRFIELD LIGHTING CIRCUITS. THE ENGINEER SHALL SURVEY THE LOCATIONS.
3. LOCATING UNDERGROUND UTILITY WORK SHALL BE MEASURED AND PAID ON A LUMP SUM BASIS.

VERIFY UNDERGROUND UTILITY WORK (POTHOLE)

1. ALSO REFER TO ITEM 02 01 00 MAINTENANCE OF EXISTING CONDITIONS.
2. VERIFYING UTILITY WORK SHALL CONSIST OF EXCAVATING MATERIAL (POTHOLING) TO VERIFY THE DEPTH OF AN EXISTING UTILITY LINE (PRIVATE OR PUBLIC), TO AVOID POSSIBLE CONFLICTS, WHEN DIRECTED BY THE ENGINEER. VERIFYING UNDERGROUND UTILITY WORK IS INCIDENTAL TO THE VERIFY UNDERGROUND UTILITY WORK (POTHOLE) BID ITEM.

CORE DRILLING OF EXISTING LIGHT BASE CANS

1. CORE DRILL AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE (RPR), INTO THE SIDES OF EXISTING CONCRETE ENCASED LIGHT BASE CANS FOR THE PURPOSE OF INSTALLING ADDITIONAL CONDUIT ENTRANCES. THE CONTRACTOR SHALL ACCURATELY LOCATE AND EXPOSE THE LIGHT BASE AND SURROUNDING CONCRETE AS NECESSARY TO PERFORM THE WORK. CORE DRILL OPENINGS OF SUFFICIENT SIZE AND ALIGNMENT TO ACCOMMODATE THE PROPOSED CONDUIT(S) WITHOUT DAMAGING THE LIGHT BASE, EXISTING CONDUITS, CONDUCTORS, OR APPURTENANCES. EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING AIRFIELD LIGHTING SYSTEMS AND MAINTAIN OPERATIONAL INTEGRITY. PROVIDE WATERTIGHT AND SECURE CONDUIT ENTRIES (FLEXIBLE GROMMETS) INTO THE LIGHT BASE, INCLUDING SEALING OF ANNULAR SPACES WITH APPROVED NON-SHRINK GROUT OR DUCT SEAL. COMPLETE ALL REQUIRED CONDUIT INSTALLATION, CABLE ROUTING, SPLICING, GROUNDING, AND SYSTEM RESTORATION IN ACCORDANCE WITH THE PLANS. RESTORE DISTURBED CONCRETE, BACKFILL, AND SURFACE CONDITIONS TO EQUAL OR BETTER CONDITION THAN EXISTING. CORE DRILLING OPERATIONS THAT DAMAGE PROTECTIVE COATINGS, STRUCTURAL INTEGRITY, OR FUNCTIONALITY OF THE LIGHT BASE SHALL BE REJECTED AND REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER. CORE DRILLING OF LIGHT BASE CANS WILL BE MEASURED ON A PER EACH BASIS FOR EACH COMPLETED CORE DRILL, INCLUDING ALL ASSOCIATED AND INCIDENTAL WORK. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PER PRICE EACH CORE DRILL, WHICH SHALL INCLUDE FULL COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT, EXCAVATION, CONCRETE REMOVAL AND RESTORATION, SEALING, AND ALL INCIDENTAL AND RELATED WORK NECESSARY TO COMPLETE THE INSTALLATION AS ACCEPTED BY THE RPR.

LOWERING EXISTING CONDUIT

1. EXISTING UNDERGROUND ELECTRICAL CONDUITS AND ASSOCIATED CONDUCTORS THAT CONFLICT WITH PROPOSED SUBGRADE ELEVATIONS SHALL BE LOWERED TO PROVIDE THE REQUIRED MINIMUM COVER, AS DETAILED IN THE PLANS OR AS DIRECTED BY THE RPR. THE CONTRACTOR SHALL VERIFY EXISTING DEPTHS (POTHOLE) PRIOR TO ANY EXCAVATIONS. THE CONTRACTOR SHALL EXCAVATE AND EXPOSE THE CONDUIT PER ITEM 02 01 00, PROTECT, LOWER, AND RESTORE THE CIRCUITRY SYSTEM TO FULL OPERATIONAL CONDITION WITH DAMAGE TO EXISTING FACILITIES. ALL EXCAVATION, BACKFILLING, COMPACTION, TESTING, COORDINATION OF OUTAGES, AND RESTORATION SHALL BE INCLUDED. LOWERING EXISTING CONDUIT SHALL BE MEASURED PER LINEAR FOOT OF LOWERED CONDUIT, IN-PLACE, COMPLETED, AND ACCEPTED BY THE RPR. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH SHALL INCLUDE FULL COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT, EXCAVATION, BACKFILLING AND ALL INCIDENTAL AND RELATED WORK.

REGISTERED PROFESSIONAL ENGINEER
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BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

NOTES

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DGR ENGINEERING

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ABBREVIATIONS

AAA	AIRPORT AIRSPACE ANALYSIS
AAC	AIRCRAFT APPROACH CATEGORY
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABND	ABANDON
AC	ADVISORY CIRCULAR
ADG	AIRPLANE DESIGN GROUP
ADO	AIRPORTS DISTRICT OFFICE
AG	AGRICULTURAL
AGL	ABOVE GROUND LEVEL
AHJ	AUTHORITY HAVING JURISDICTION
AIP	AIRPORT IMPROVEMENT PROGRAM
AL	ALIGNED ACROSS
ALP	AIRPORT LAYOUT PLAN
ALS	APPROACH LIGHTING SYSTEM
ALSF	APPROACH LIGHTING SYSTEM WITH SEQUENCED FLASHING LIGHTS
ALSF-1	ALS WITH SEQUENCED FLASHERS I
ALSF-2	ALS WITH SEQUENCED FLASHERS II
AOA	AIRCRAFT OPERATIONS AREA
APRC	APPROACH REFERENCE CODE
APV	APPROACH PROCEDURE WITH VERTICAL GUIDANCE
ARC	AIRPORT REFERENCE CODE
ARFF	AIRCRAFT RESCUE AND FIRE FIGHTING
ARP	AIRPORT REFERENCE POINT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ATC	AIR TRAFFIC CONTROL
ATC-F	AIR TRAFFIC CONTROL FACILITIES
ATCT	AIRPORT TRAFFIC CONTROL TOWER
ATO	AIR TRAFFIC ORGANIZATION
AWG	AMERICAN WIRE GAUGE
AWOS	AUTOMATED WEATHER OBSERVING SYSTEMS
AWSS	AUTOMATED WEATHER SENSOR SYSTEM
BBE	BEVEL BOTH ENDS
BLE	BEVEL LARGE END
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICE
BC	BOLT CIRCLE
BOE	BEVEL ONE END
BRL	BUILDING RESTRICTION LINE
BSE	BEVEL SMALL END
BW	BEVELLED END OR BUTTWELD END
CAD	COMPUTER AIDED DESIGN
CAT	CATEGORY
CCT	CIRCUIT
CDP	CENTRAL DATA PLATFORM
CFR	CODE OF FEDERAL REGULATIONS
CL	CENTERLINE
CMG	COCKPIT TO MAIN GEAR DISTANCE
CO	CLEANOUT
COMM	COMMUNICATIONS
CSPP	CONSTRUCTION SAFETY & PHASING PLAN
CU	COPPER
CWY	CLEARWAY
DA	DECISION ALTITUDE
DCP	DATA COLLECTION PLATFORM
DEB	DIRECT EARTH BURIED
DEF	DIESEL EXHAUST FLUID
DER	DEPARTURE END OF RUNWAY
DIA OR ø	DIAMETER
DME	DISTANCE MEASURING EQUIPMENT
DNR	DEPARTMENT OF NATURAL RESOURCES
DOT	DEPARTMENT OF TRANSPORTATION
E	EASTING OR EAST
EL OR ELEV	ELEVATION
EFSO	EMERGENCY FUEL SHUTOFF
EMT	ELECTRICAL METALLIC TUBING
EQ	EQUAL
EX OR EXIST	EXISTING
FAA	FEDERAL AVIATION ADMINISTRATION
FAR	FEDERAL AVIATION REGULATIONS
FBO	FIXED BASE OPERATOR
FCC	FEDERAL COMMUNICATIONS COMMISSION
FF	FLAT FACE
FOD	FOREIGN OBJECT DEBRIS
FL	FLANGE
FMC	FLEXIBLE METAL CONDUIT
FNPT	FINE NATIONAL PIPE THREAD
FSII	FUEL SYSTEM ICING INHIBITOR
GA	GENERAL AVIATION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GIS	GEOGRAPHIC INFORMATION SYSTEM
GND	GROUND
GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM
GPA	GLIDE PATH ANGLE
GPS	GLOBAL POSITIONING SYSTEM
GS	GLIDESLOPE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HIRL	HIGH INTENSITY RUNWAY LIGHTS
HOT	HAND-ON TRAINING
HV	HIGH VOLTAGE
IAP	INSTRUMENT APPROACH PROCEDURES
IATA	INTERNATIONAL AIR TRANSPORT ASSOCIATION
ID	INSIDE DIAMETER
IES	ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA
IFR	INSTRUMENT FLIGHTS RULES
ILS	INSTRUMENT LANDING SYSTEM
IM	INNER MARKER
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX OR JUNCTION CAN
KV	KILOVOLT
L OR LT	LEFT
LDIN	LEAD-IN LIGHTING SYSTEM
LF	LINEAR FOOT
LFMC	LIQUID TIGHT FLEXIBLE CONDUIT
LIR	LOW IMPACT RESISTANT
LIRL	LOW INTENSITY RUNWAY LIGHTS
LNAV	LATERAL NAVIGATION
LOC	LOCALIZER
LOM	COMPASS LOCATOR AT OUTER MARK
LOS	LINE OF SIGHT
LP	LOCALIZER PERFORMANCE OR LIGHT POLE
LPV	LOCALIZER PERFORMANCE WITH VERTICAL GUIDANCE
LSUM	LUMP SUM
LV	LOW VOLTAGE
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSF	MALS WITH SEQUENCED FLASHERS
MALSR	MALS WITH RUNWAY ALIGNMENT INDICATOR LIGHTS
MAX	MAXIMUM
M&F	MALE & FEMALE
MGW	MAIN GEAR WIDTH
MH	MANHOLE
MIN	MINIMUM
MIRL	MEDIUM INTENSITY RUNWAY LIGHTS
MITL	MEDIUM INTENSITY TAXIWAY LIGHTS
MN	MAGNETIC NORTH
MP	MID POINT
MPH	MILES PER HOUR
MSL	MEAN SEA LEVEL
MTOW	MAXIMUM TAKEOFF WEIGHT
N	NORTHING OR NORTH
NAS	NATIONAL AIRSPACE SYSTEM
NAVAID	NAVIGATION AID
NDB	NON-DIRECTIONAL BEACON
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NEPA	NATIONAL ENVIRONMENTAL POLICY ACT
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NGS	NATIONAL GEODETIC SURVEY
NO. OR #	NUMBER
NOM	NOMINAL
NPA	NON-PRECISION APPROACH
NPDES	NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
NPIAS	NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
NWS	NATIONAL WEATHER SERVICE
OC	ON CENTER
OCS	OBSTACLE CLEARANCE SURFACE
OD	OUTSIDE DIAMETER
ODALS	OMNIDIRECTIONAL AIRPORT LIGHTING SYSTEM
OE/AAA	OBSTRUCTION EVALUATION/AIRPORT AIRSPACE ANALYSIS
OFA	OBJECT FREE AREA
OFZ	OBSTACLE FREE ZONE
OM	OUTER MARKER
PA	PRECISION APPROACH
PAPI	PRECISION APPROACH PATH INDICATOR
PAR	PRECISION APPROACH RADAR
PBE	PLAIN BOTH ENDS
PCC	PORTLAND CEMENT CONCRETE
PCN	PAVEMENT CONDITION NUMBER
PE	POLYETHYLENE OR PLAIN END
PFC	PASSENGER FACILITY CHARGE
PIR	PRECISION INSTRUMENT RUNWAYS
PNL	PANEL
POE	PLAN ONE END
POFZ	PRECISION OBSTACLE FREE ZONE
PPE	PERSONAL PROTECTIVE EQUIPMENT
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PWR	POWER
QTY	QUANTITY
R OR RT	RIGHT
RAIL	RUNWAY ALIGNMENT INDICATOR LIGHTS
RCO	REMOTE COMMUNICATIONS OUTLET
RDC	RUNWAY DESIGN CODE
REIL	RUNWAY END IDENTIFIER LIGHTING
REQD	REQUIRED
RF	RAISED FACE
RNAV	AREA NAVIGATION
ROFA	RUNWAY OBJECT FREE AREA
ROFZ	RUNWAY OBSTACLE FREE ZONE
RPR	RESIDENT PROJECT REPRESENTATIVE
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RTJ	RING JOINT FACE
RTR	REMOTE TRANSMITTER/RECEIVER
RVR	RUNWAY VISUAL RANGE
RWSL	RUNWAY STATUS LIGHTS
RWY	RUNWAY
S	SOUTH
SAE	SOCIETY OF AUTOMOTIVE ENGINEERS
SCH	SCHEDULE
SDANR	SOUTH DAKOTA DEPARTMENT OF AGRICULTURE & NATURAL RESOURCES
SDDOT	SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
SOP	STANDARD OPERATING PROCEDURES
SPCD	SAFETY PLAN COMPLIANCE DOCUMENT
SPEC	SPECIFICATION
SRE	SNOW REMOVAL EQUIPMENT
SRM	SAFETY RISK MANAGEMENT
SSALR	SIMPLIFIED SHORT APPROACH LIGHT SYSTEM WITH RUNWAY ALIGNMENT
SSALS	SIMPLIFIED SHORT APPROACH LIGHT SYSTEM
SSALF	SIMPLIFIED SHORT APPROACH LIGHT SYSTEM WITH SEQUENCED FLASHING LIGHTS
STA	STATION
STD	STANDARD
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TBE	THREAD BOTH ENDS
TCH	THRESHOLD CROSSING HEIGHT
TDG	TAXIWAY DESIGN GROUP
T&G	TONGUE & GROOVE
THHN	THERMOPLASTIC HIGH HEAT-RESISTANT NYLON-COATED
THWN	THERMOPLASTIC HEAT & WATER-RESISTANT NYLON-COATED
TE	THREADED END
TEMP	TEMPORARY
TERPS	TERMINAL INSTRUMENT PROCEDURES
TESM	TAXIWAY EDGE SAFETY MARGIN
TH	THRESHOLD
TLE	THREAD LARGE END
TI	TAPER INTERSECTION
TOE	THREAD ONE END
TSE	THREAD SMALL END
TXLN	TAXILANE
TODA	TAKEOFF DISTANCE AVAILABLE
TOFA	TAXIWAY AND TAXILANE OBJECT FREE AREA
TORA	TAKEOFF RUN AVAILABLE
TP	TAPER POINT
TSA	TAXIWAY/TAXILANE SAFETY AREA
TSR	TRANSPORTATION SECURITY REGULATION
TSS	THRESHOLD SITING SURFACE
TXY	TAXIWAY
TYP	TYPICAL
UAC	USE AS CONSTRUCTED
UAS	UNMANNED AIRCRAFT SYSTEMS
UF	UNDERGROUND FEEDER
UFC	UNIFIED FACILITIES CRITERIA
UHF	ULTRA-HIGH FREQUENCY
UL	UNDERWRITERS LABORATORIES
ULT	ULTIMATE
UNO	UNLESS NOTED OTHERWISE
USDA	UNITED STATES DEPARTMENT OF AGRICULTURE
USGS	U.S. GEOLOGICAL SURVEY
V	VISUAL
VA	VOLTAMPS
VASI	VISUAL APPROACH SLOPE INDICATOR
VFR	VISUAL FLIGHT RULES
VGS	VERTICALLY GUIDED SURVEY
VGSI	VISUAL GLIDE SLOPE INDICATOR
VHF	VERY HIGH FREQUENCY
VNAV	VERTICAL NAVIGATION
VOR	VHF OMNI-DIRECTIONAL RANGE
VORTAC	VHF OMNI-DIRECTIONAL COLLOCATED TACTICAL AIR
VOT	VHF OMNI-DIRECTIONAL RANGE TEST FACILITY
ATY	WATERTOWN REGIONAL AIRPORT
W	WEST OR WATER
WAAS	WIDE AREA AUGMENTATION SYSTEM
WME	WIND MEASURING EQUIPMENT
WRS	WAAS REFERENCE SYSTEM
WWF	WELDED WIRE FABRIC OR WELDED WIRE MESH
XFMR	TRANSFORMER

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

ABBREVIATIONS

REVISIONS

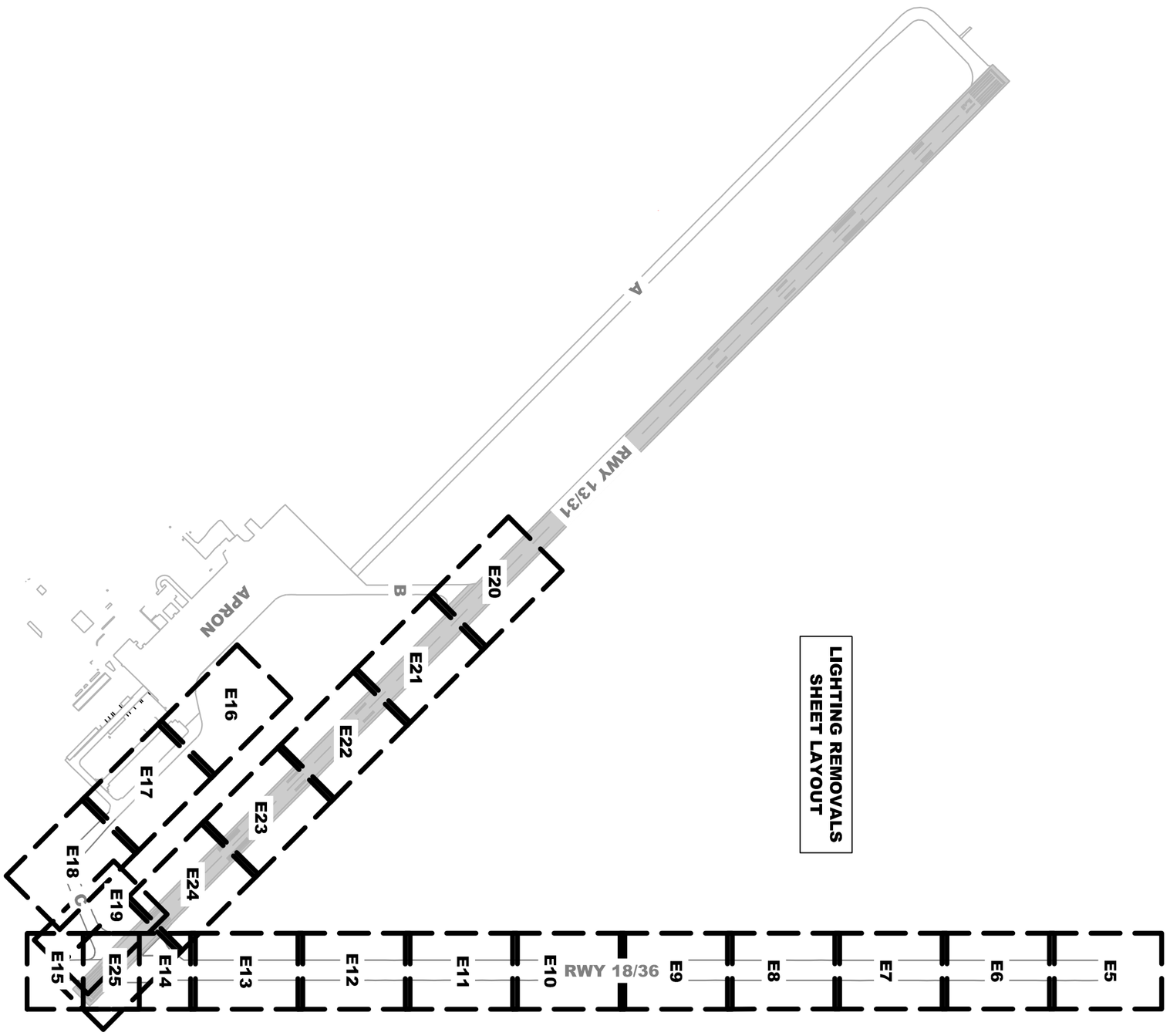
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LIGHTING REMOVALS
SHEET LAYOUT

NOT TO SCALE

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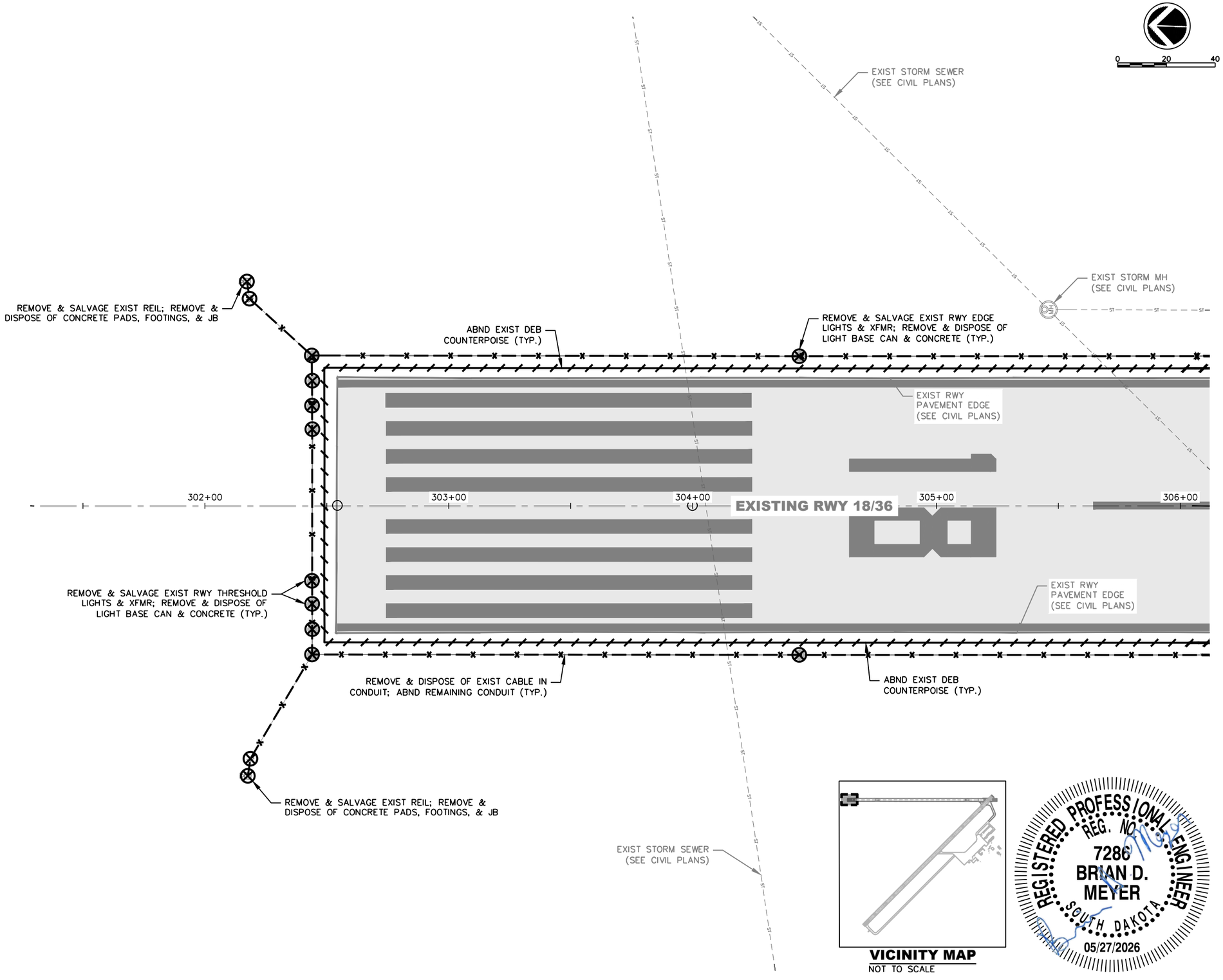
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SHEET LAYOUT - LIGHTING REMOVALS

REVISIONS

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

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VICINITY MAP
NOT TO SCALE

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

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REMOVE & SALVAGE EXIST SUPPLEMENTAL WINDCONE; REMOVE & DISPOSE OF CONCRETE FOOTING

REMOVE & DISPOSE OF JB & CONCRETE

0 20 40

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MH (SEE CIVIL PLANS)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

ABND EXIST DEB COUNTERPOISE (TYP.)

EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

306+00 307+00 308+00 309+00 **EXISTING RWY 18/36** 310+00 311+00

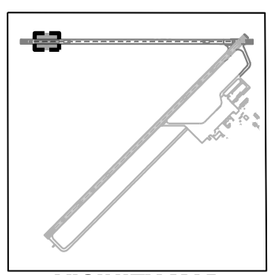
EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST STORM SEWER (SEE CIVIL PLANS)



VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
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05/27/2026

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

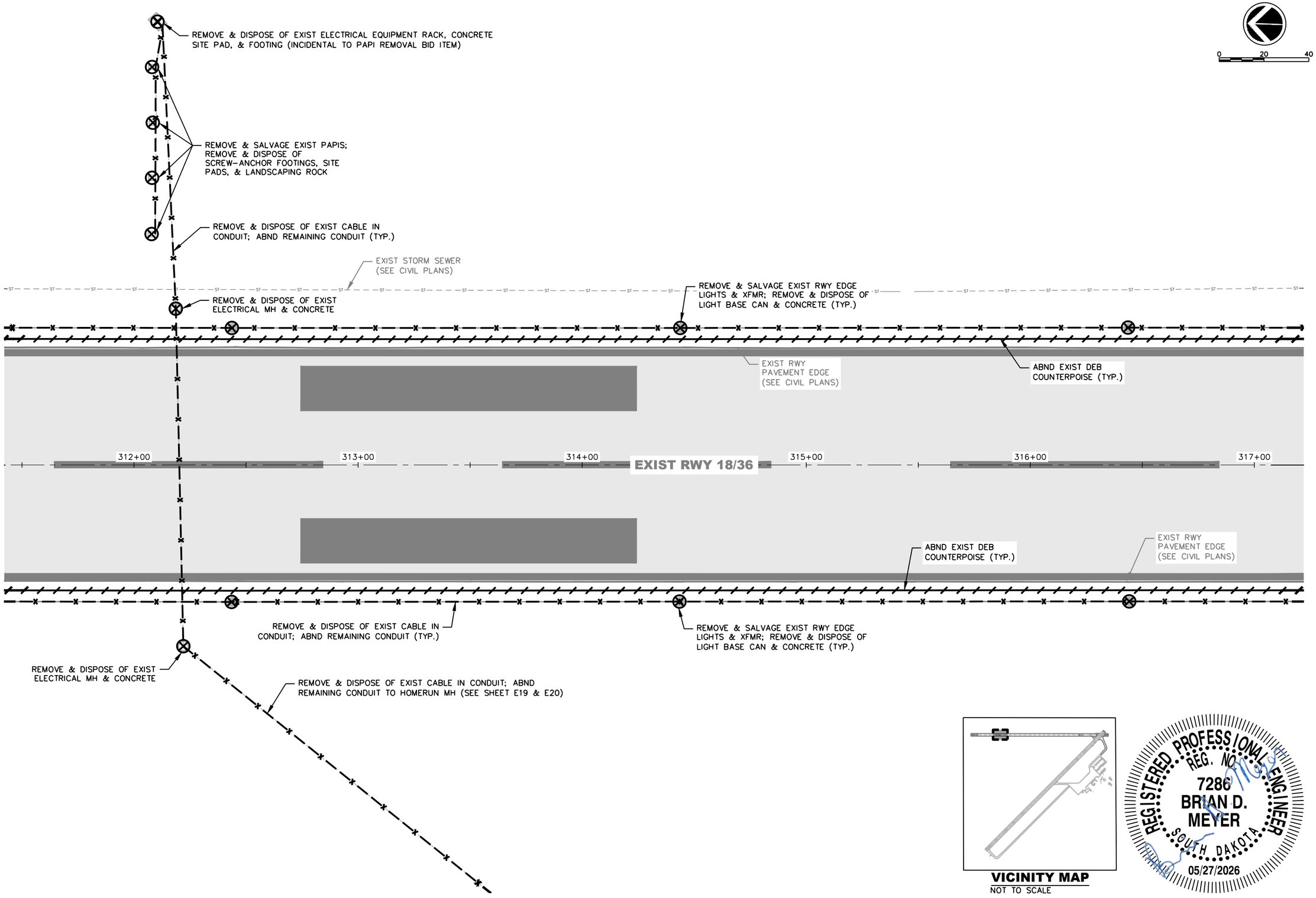
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E6

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VICINITY MAP
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REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

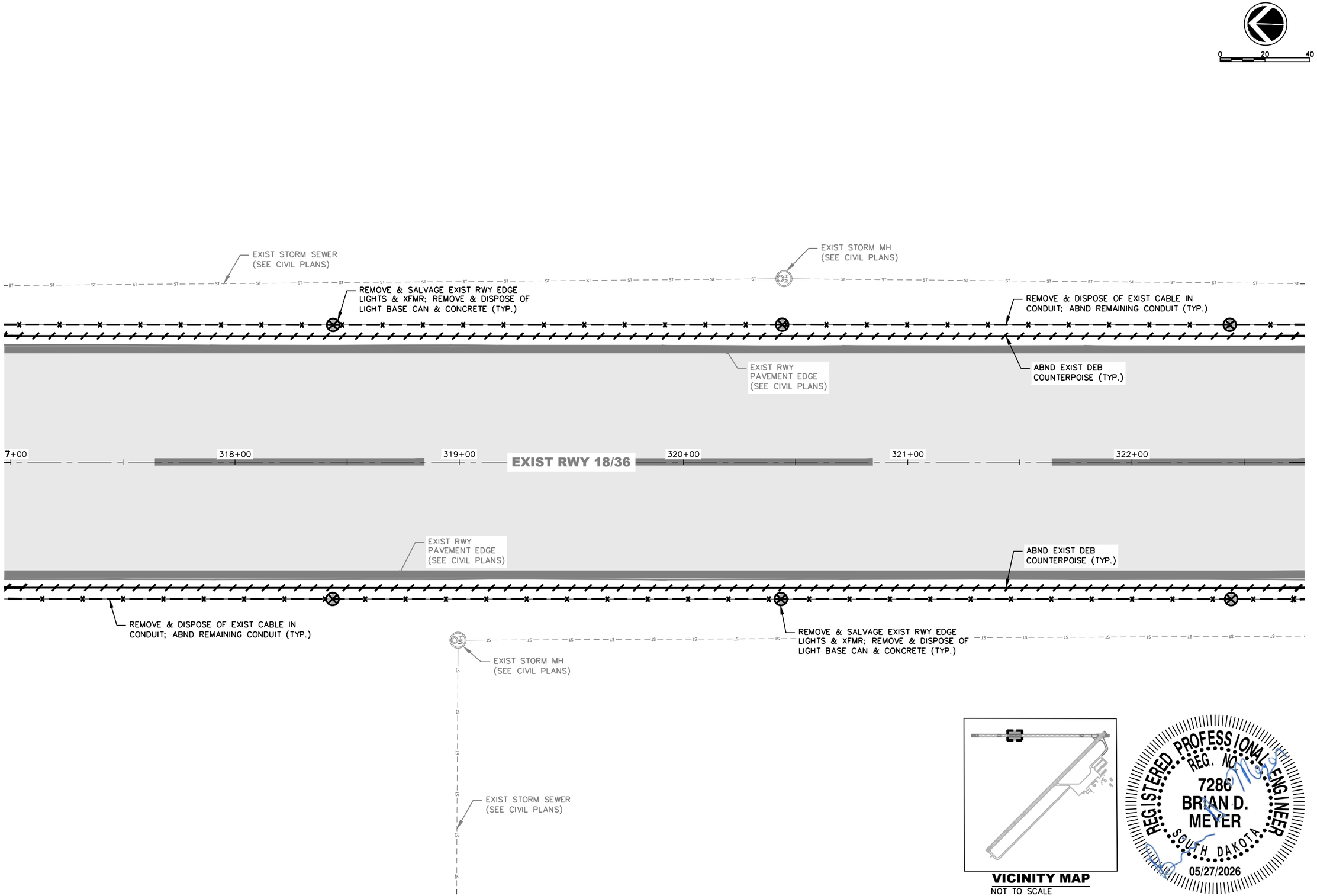
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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E7

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-3664 - DESIGN\PLANS\731501 - LIGHTING REMOVALS.DWG

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VICINITY MAP
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BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

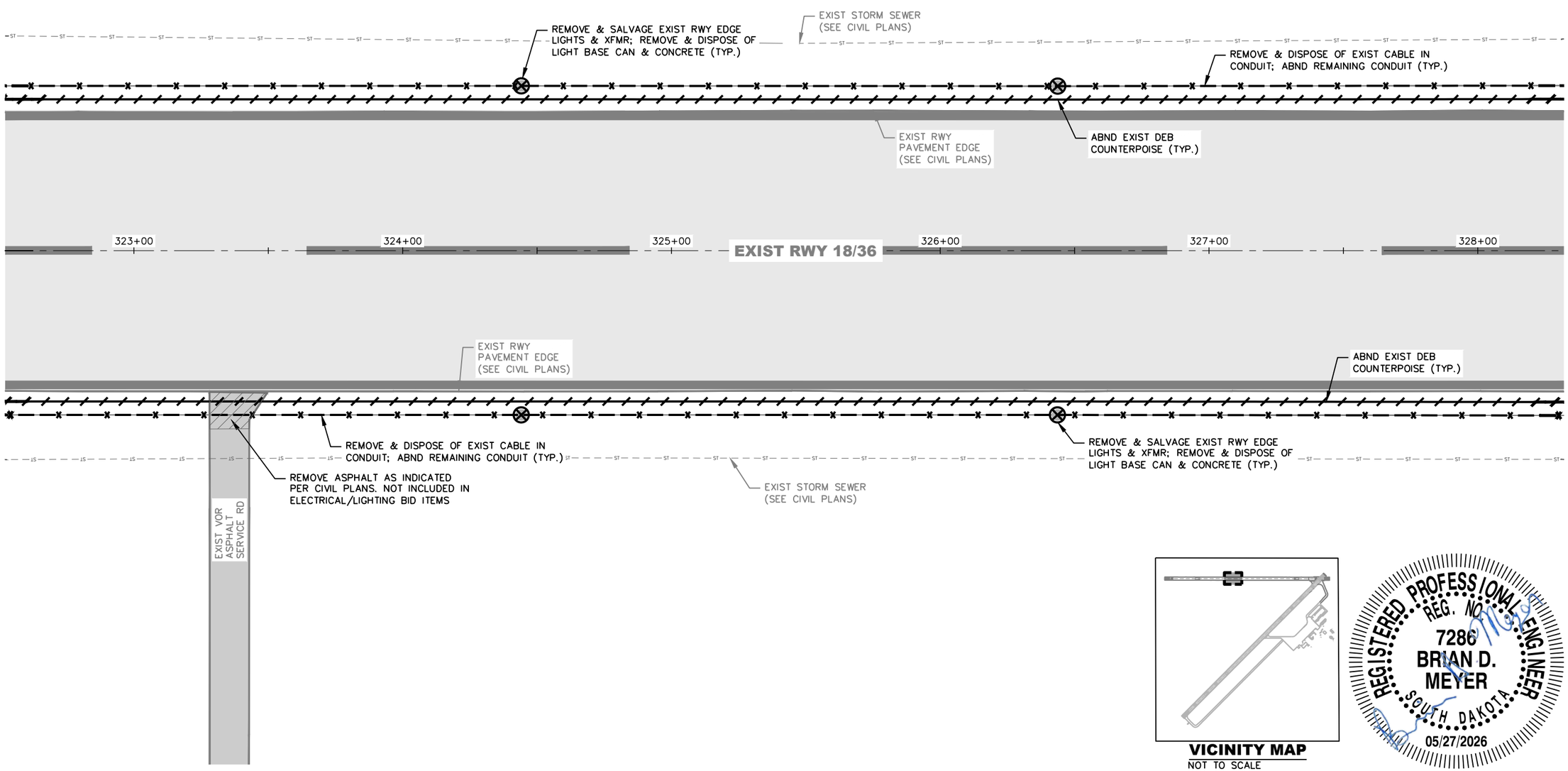
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

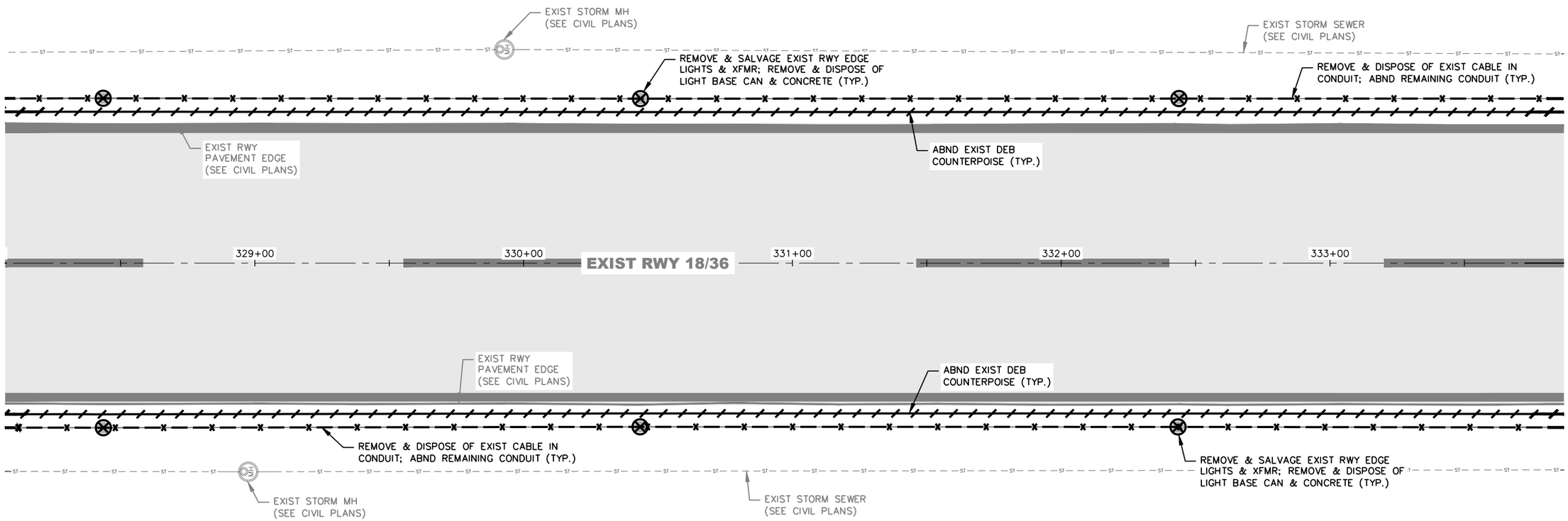
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

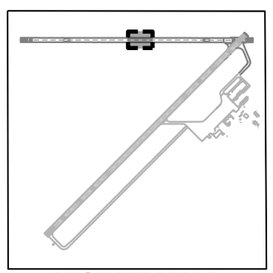
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BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
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Project Manager: BDM
Designer: BGS
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Phone: (605) 339-4157

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0 20 40

EXIST STORM SEWER
(SEE CIVIL PLANS)

REMOVE & SALVAGE EXIST RWY EDGE
LIGHTS & XFMR; REMOVE & DISPOSE OF
LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN
CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST RWY
PAVEMENT EDGE
(UAC)

ABND EXIST DEB
COUNTERPOISE (TYP.)

334+00 335+00 336+00 **EXIST RWY 18/36** 337+00 338+00 339+00

EXIST RWY
PAVEMENT EDGE
(UAC)

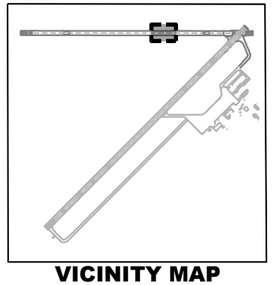
ABND EXIST DEB
COUNTERPOISE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN
CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE
LIGHTS & XFMR; REMOVE & DISPOSE OF
LIGHT BASE CAN & CONCRETE (TYP.)

EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM MH
(SEE CIVIL PLANS)



VICINITY MAP
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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

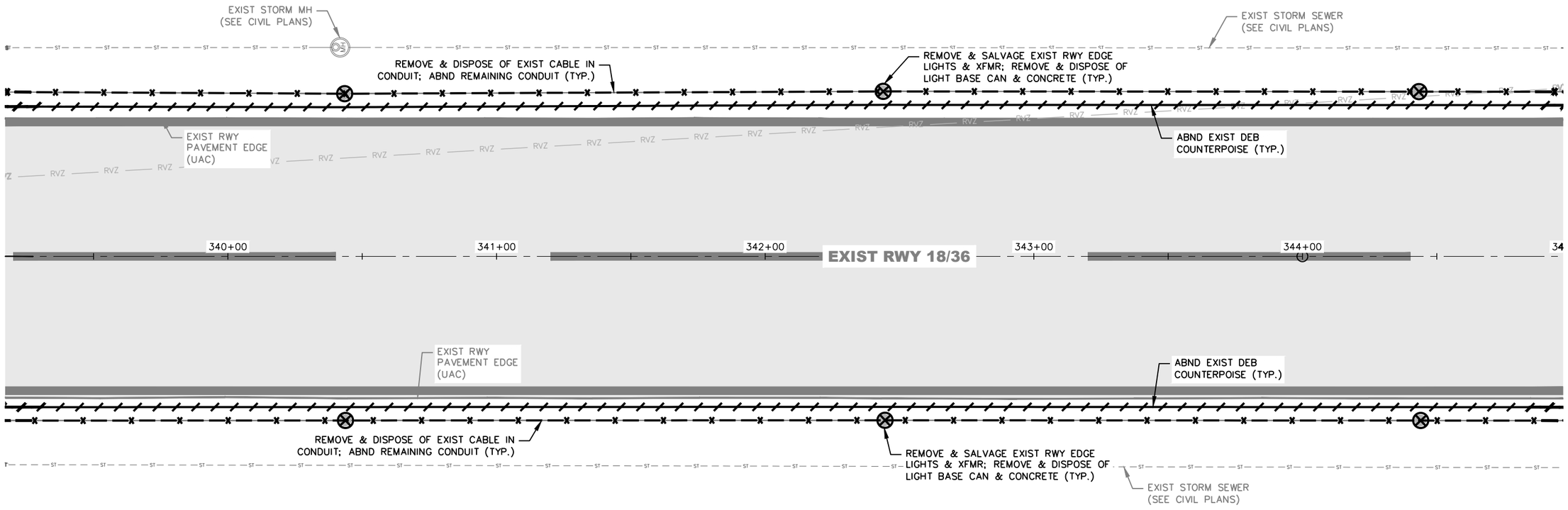
Project Manager: BDM
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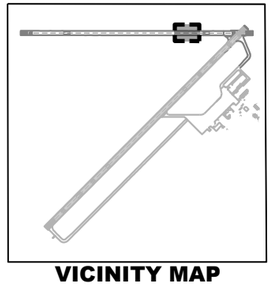
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7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-3604 - DESIGN\PLANS\731501 - LIGHTING REMOVALS.DWG

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
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E12

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0 20 40

EXIST STORM SEWER
(SEE CIVIL PLANS)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

EXIST STORM MH
(SEE CIVIL PLANS)

EXIST RWY
PAVEMENT EDGE
(UAC)

ABND EXIST DEB
COUNTERPOISE (TYP.)

345+00 346+00 347+00 **EXIST RWY 18/36** 348+00 349+00 350+00

ROFA

EXIST RWY
PAVEMENT EDGE
(UAC)

ABND EXIST DEB
COUNTERPOISE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & DISPOSE OF EXIST ELECTRICAL MH & CONCRETE

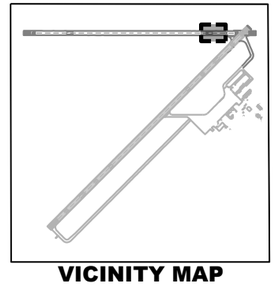
EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM MH
(SEE CIVIL PLANS)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & SALVAGE EXIST PAPIS; REMOVE & DISPOSE OF SCREW-ANCHOR FOOTINGS, SITE PADS, & LANDSCAPING ROCK

REMOVE & DISPOSE OF EXIST ELECTRICAL EQUIPMENT RACK & CONCRETE



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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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E13

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0 20 40

ROFA

RSA

REMOVE & SALVAGE EXIST SIGN & XFMR; REMOVE & DISPOSE OF JB & CONCRETE SIGN PAD

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MH (SEE CIVIL PLANS)

EXIST RWY PAVEMENT EDGE (UAC)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABANDON REMAINING CONDUIT

351+00 352+00 353+00 354+00 355+00

EXIST RWY 18/36

113+50 113+00 586+00 585+00 584+00 583+00

EXIST RWY 13/31

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & SALVAGE EXIST SIGN & XFMR; REMOVE & DISPOSE OF JB & CONCRETE SIGN PAD

EXIST ABND CONDUIT (UAC)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MH (SEE CIVIL PLANS)

EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

EXIST STORM SEWER (SEE CIVIL PLANS)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABANDON REMAINING CONDUIT (TYP.)

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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E14

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0 20 40

KEYNOTES

(1) FIELD VERIFY ELECTRIC MH FUNCTION WITH RPR. IF FUNCTIONALLY UNUSABLE, REMOVE & DISPOSE OF EXISTING MH & CONCRETE SITE PAD. IF FUNCTIONALLY USABLE, ADJUST MH TO FINAL GRADE & PROVIDE NEW 48"x48" CONCRETE SITE PAD. REMOVE & DISPOSE OF EXISTING CONCRETE SITE PAD.

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MH (SEE CIVIL PLANS)

EXIST RWY PAVEMENT EDGE (UAC)

EXIST ABND CONDUIT (UAC)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & SALVAGE EXIST RWY THRESHOLD LIGHTS & XFMR; REMOVE & DISPOSE OF BASE CAN & CONCRETE (TYP.)

EXIST RWY 18/36

EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & SALVAGE EXIST RWY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT

REMOVE & DISPOSE OF EXIST ELECTRICAL MH & CONCRETE

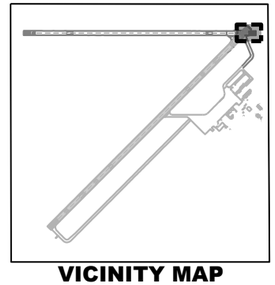
REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST RWY 13/31

EXIST TXY C

RSA

583+00 584+00 585+00 586+00 587+00 354+00 355+00



VICINITY MAP
NOT TO SCALE

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REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

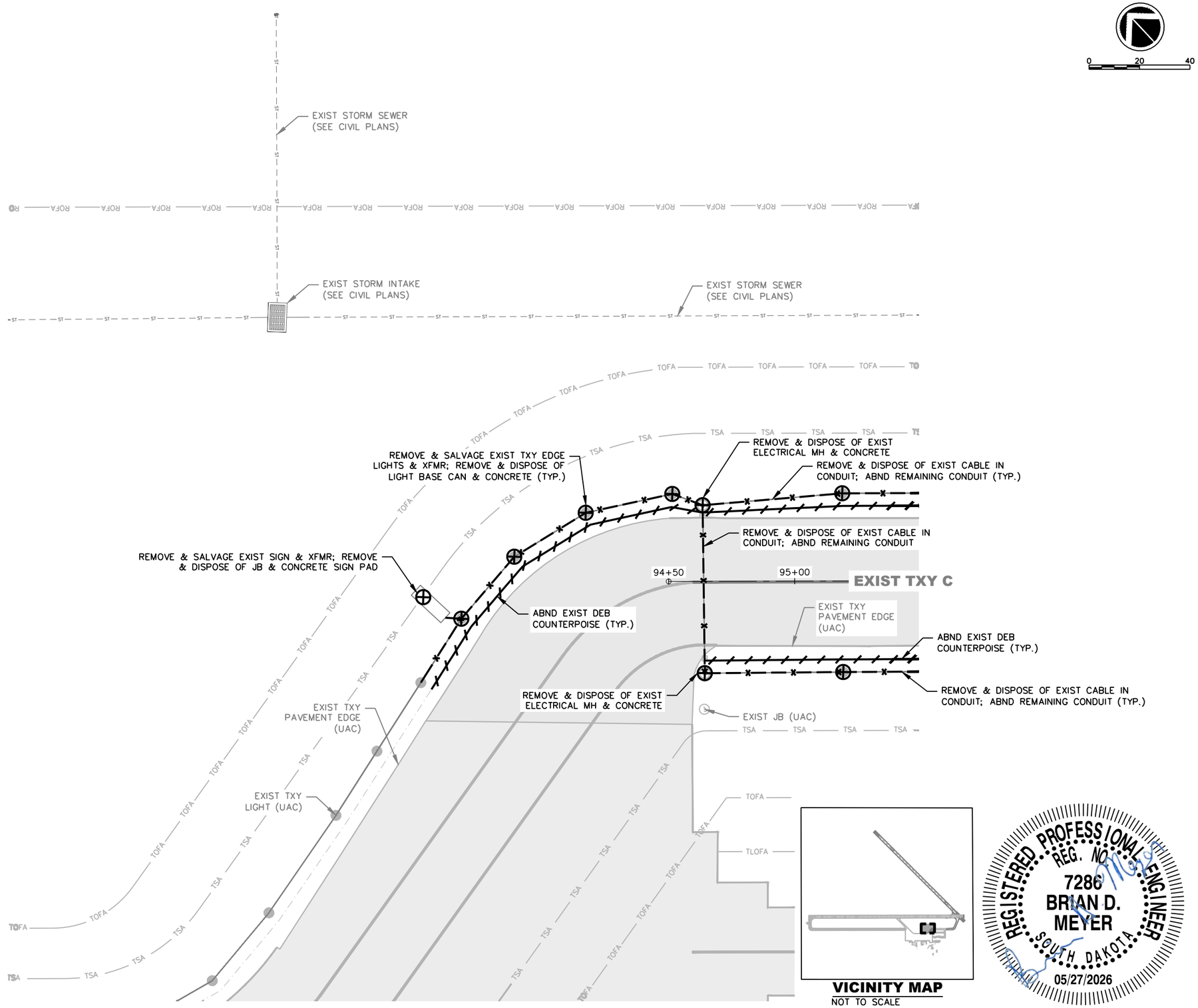
Helms & ASSOCIATES
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MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

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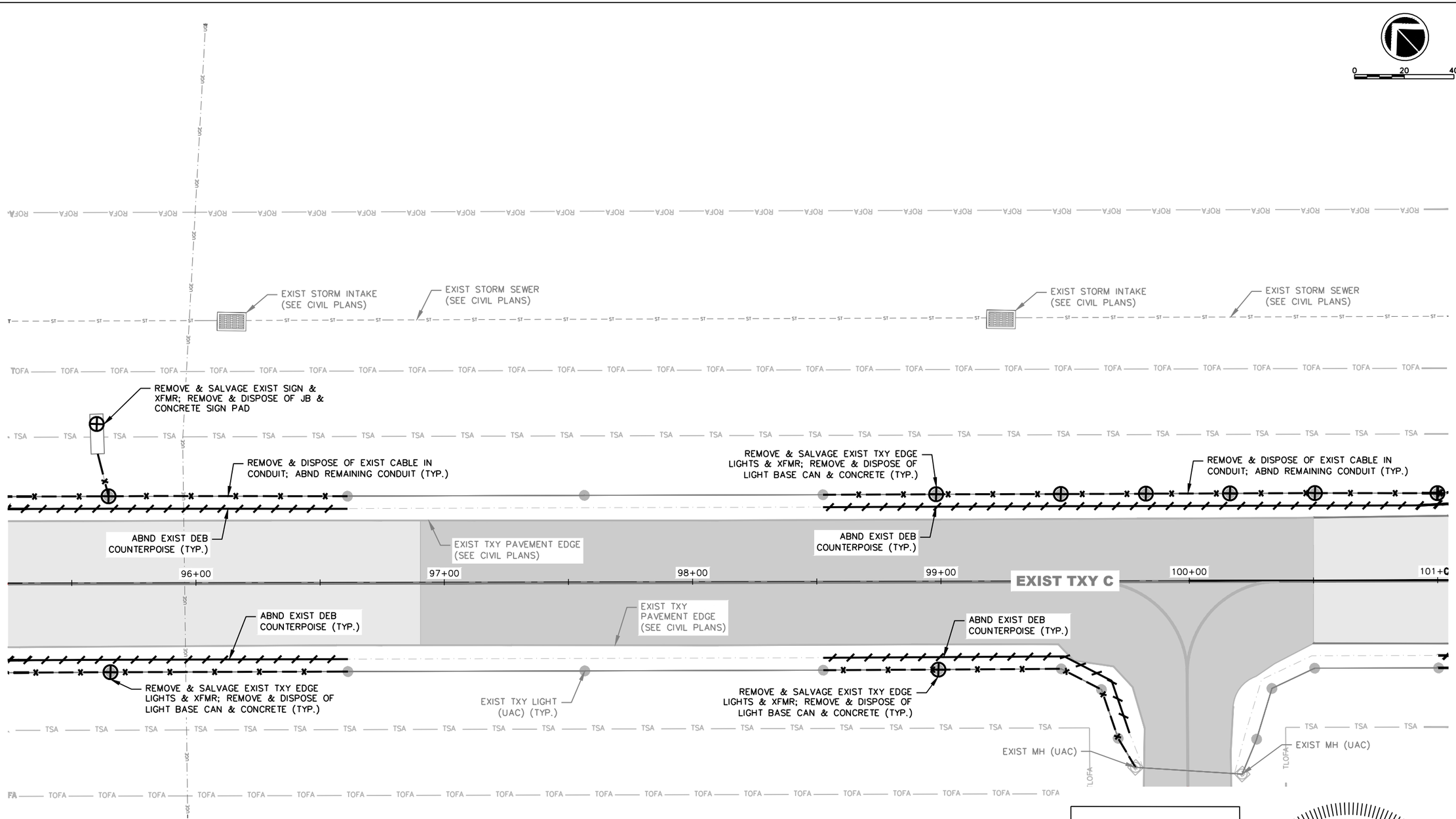
Project Manager: BDM
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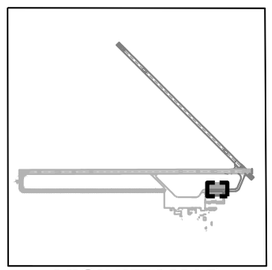
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REG. NO.
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BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

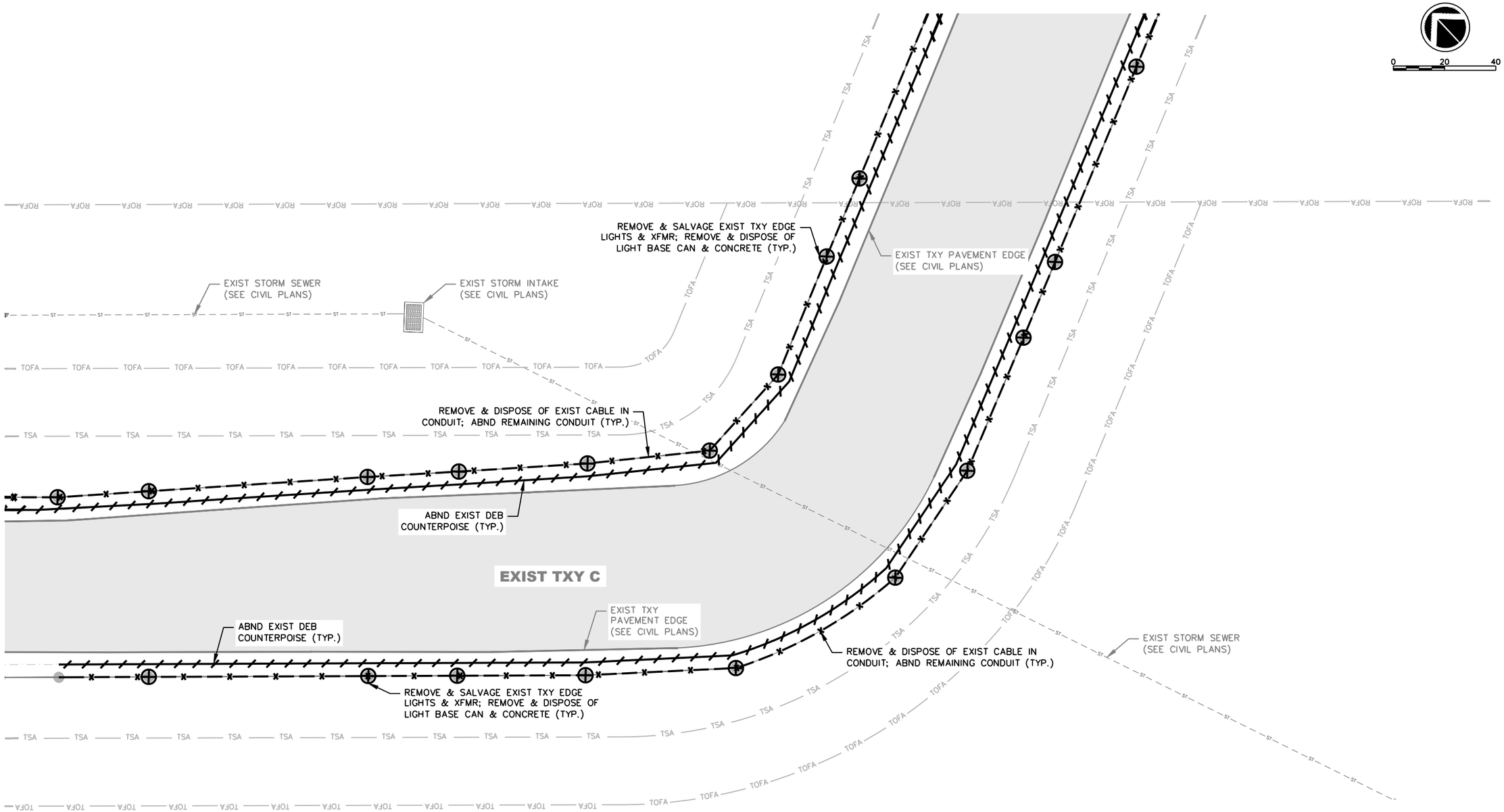
Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

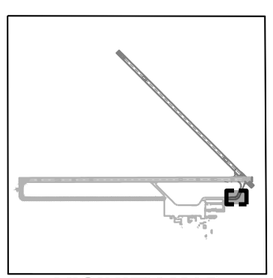
Project Manager: BDM
Designer: BGS
Project Number: 731501
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SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

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Project Manager: BDM
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Project Number: 731501
Phone: (605) 339-4157

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581+00 582+00 583+00 **EXIST RWY 13/31** 584+00 585+00 355+00 586+00

0 20 40

EXIST RWY 18/36

REMOVE & DISPOSE OF EXIST ELECTRICAL MH & CONCRETE

EXIST STORM SEWER (SEE CIVIL PLANS)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

ABND EXIST DEB COUNTERPOISE (TYP.)

EXIST TXY PAVEMENT EDGE (SEE CIVIL PLANS)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST TXY PAVEMENT EDGE (SEE CIVIL PLANS)

EXIST ABND CONDUIT (UAC)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

ABND EXIST DEB COUNTERPOISE (TYP.)

REMOVE & SALVAGE EXIST TXY LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & SALVAGE EXIST SIGN & XFMR; REMOVE & DISPOSE OF JB & CONCRETE SIGN PAD

REMOVE & DISPOSE OF EXIST ELECTRICAL MH & CONCRETE

REMOVE & SALVAGE EXIST SUPPLEMENTAL WINDCONE; REMOVE & DISPOSE OF CONCRETE SITE PAD, FOOTING, & JB

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & DISPOSE OF CABLE MARKER (INCIDENTAL)

REMOVE & SALVAGE EXIST TXY EDGE LIGHTS & XFMR; REMOVE & DISPOSE OF LIGHT BASE CAN & CONCRETE (TYP.)

REMOVE & DISPOSE OF EXIST ELECTRICAL MH & CONCRETE

EXIST TXY C

VICINITY MAP
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05/27/2026

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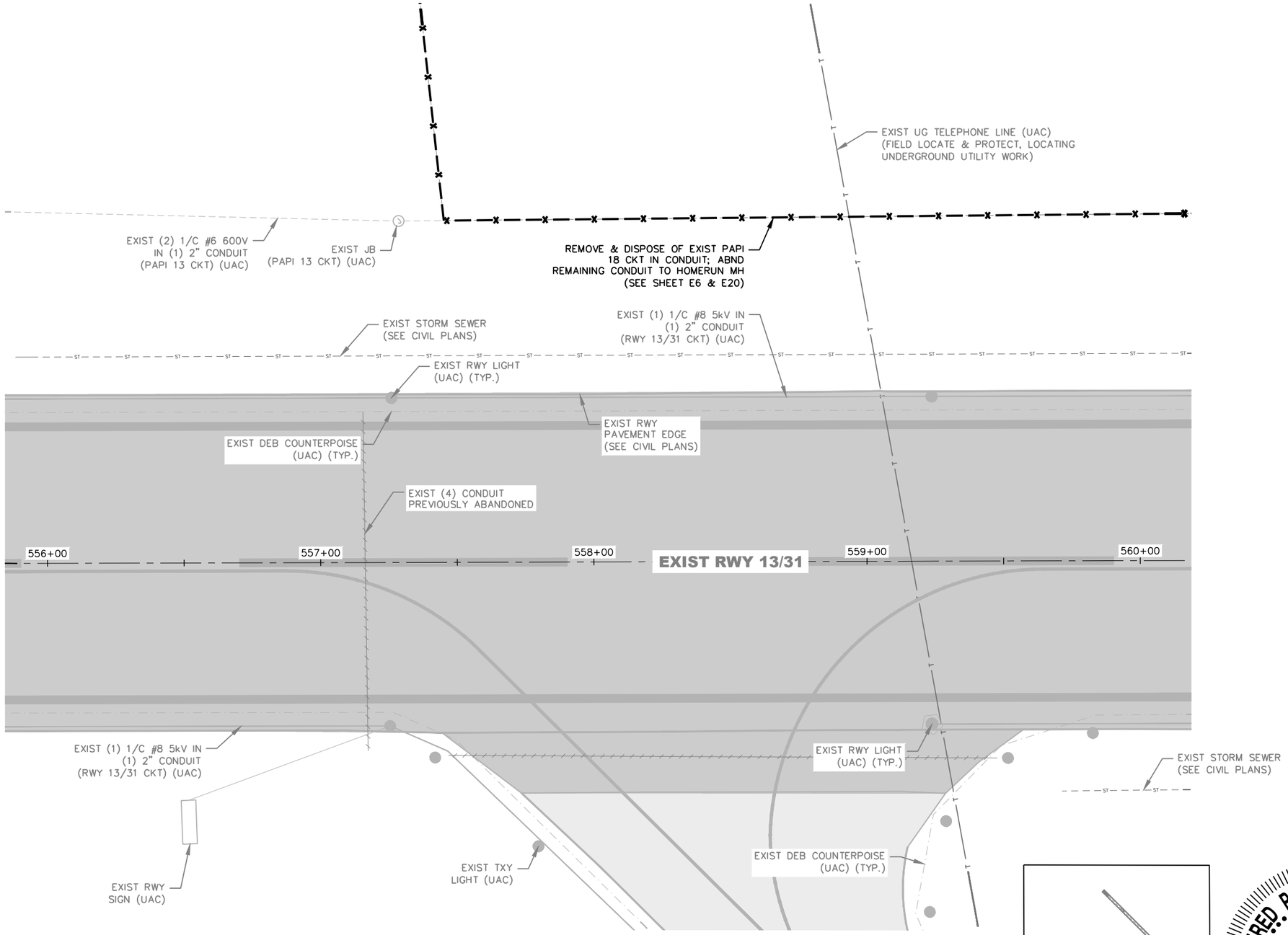
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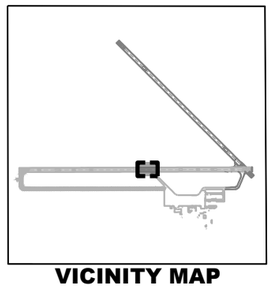
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E19

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LIGHTING REMOVALS.DWG

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VICINITY MAP
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05/27/2026

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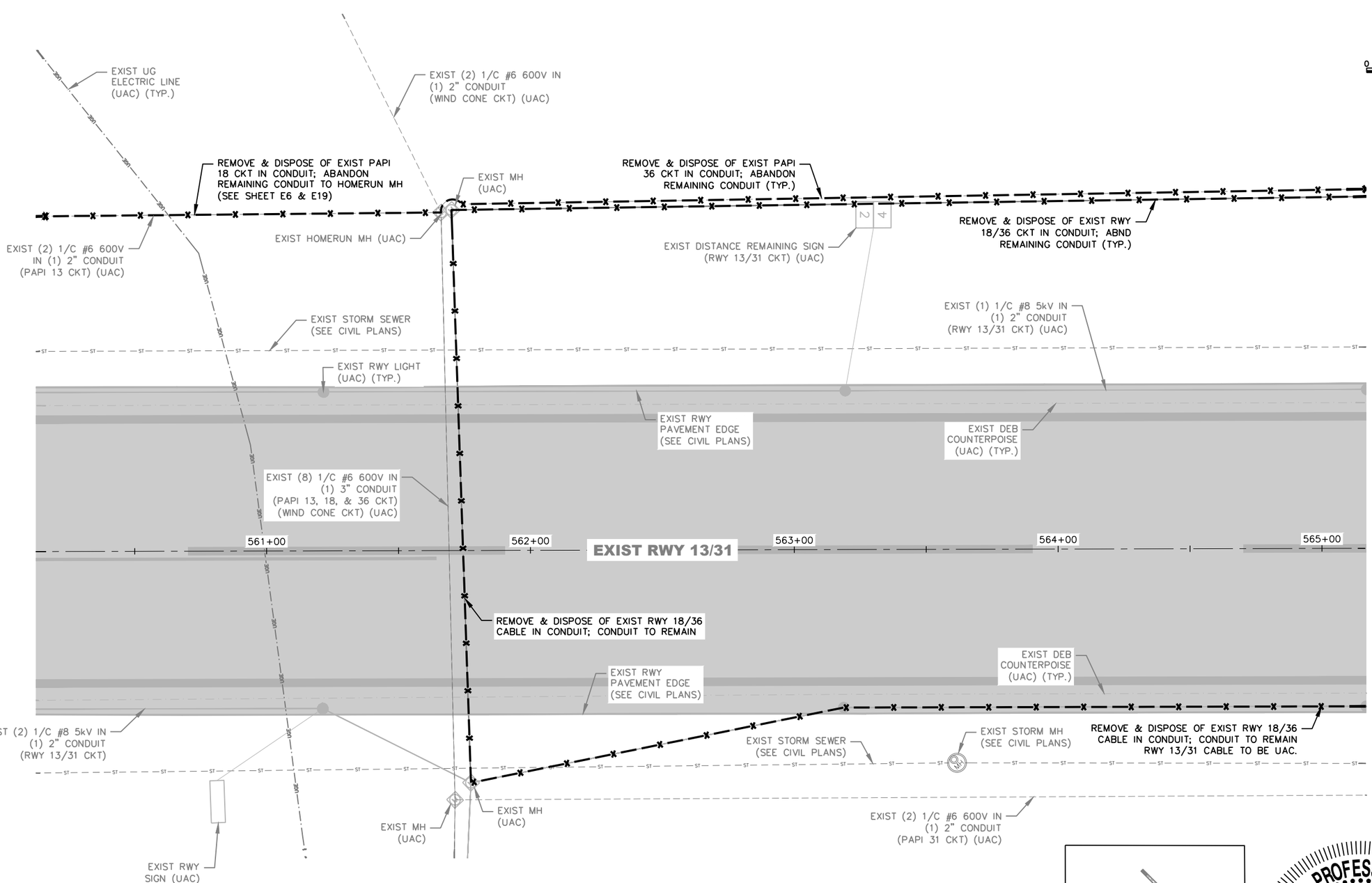
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

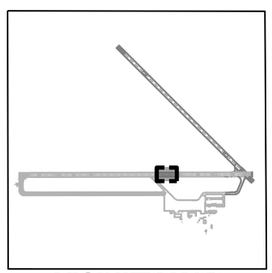
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REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

Helms & ASSOCIATES
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0 20 40

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

REMOVE & DISPOSE OF EXIST CABLE IN CONDUIT; ABND REMAINING CONDUIT (TYP.)

EXIST STORM MH (SEE CIVIL PLANS)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST (1) 1/C #8 5kV IN (1) 2" CONDUIT (RWY 13/31 CKT)

EXIST RWY LIGHT (UAC) (TYP.)

EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

EXIST DEB COUNTERPOISE (UAC) (TYP.)

565+00 566+00 567+00 **EXIST RWY 13/31** 568+00 569+00 570+00

EXIST RWY PAVEMENT EDGE (SEE CIVIL PLANS)

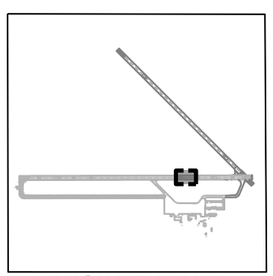
EXIST DEB COUNTERPOISE (UAC) (TYP.)

REMOVE & DISPOSE OF EXIST RWY 18/36 CABLE IN CONDUIT; CONDUIT TO REMAIN. RWY 13/31 CABLE TO BE UAC.

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST JB (UAC)

EXIST (2) 1/C #6 600V IN (1) 2" CONDUIT (PAPI 31 CKT) (UAC)



VICINITY MAP
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P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LIGHTING REMOVALS.DWG

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

REVISIONS

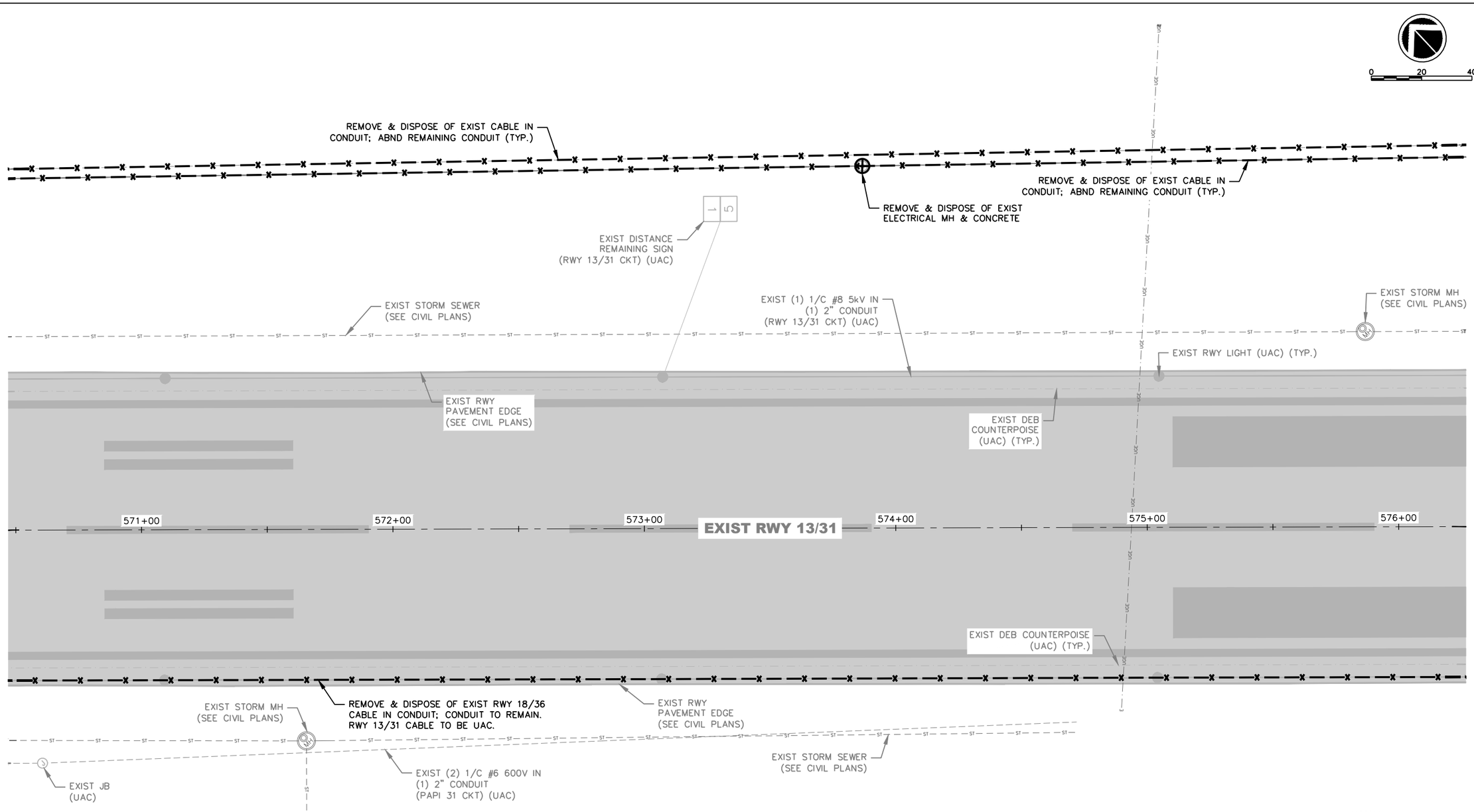
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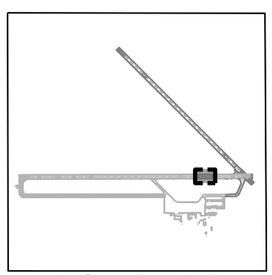
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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

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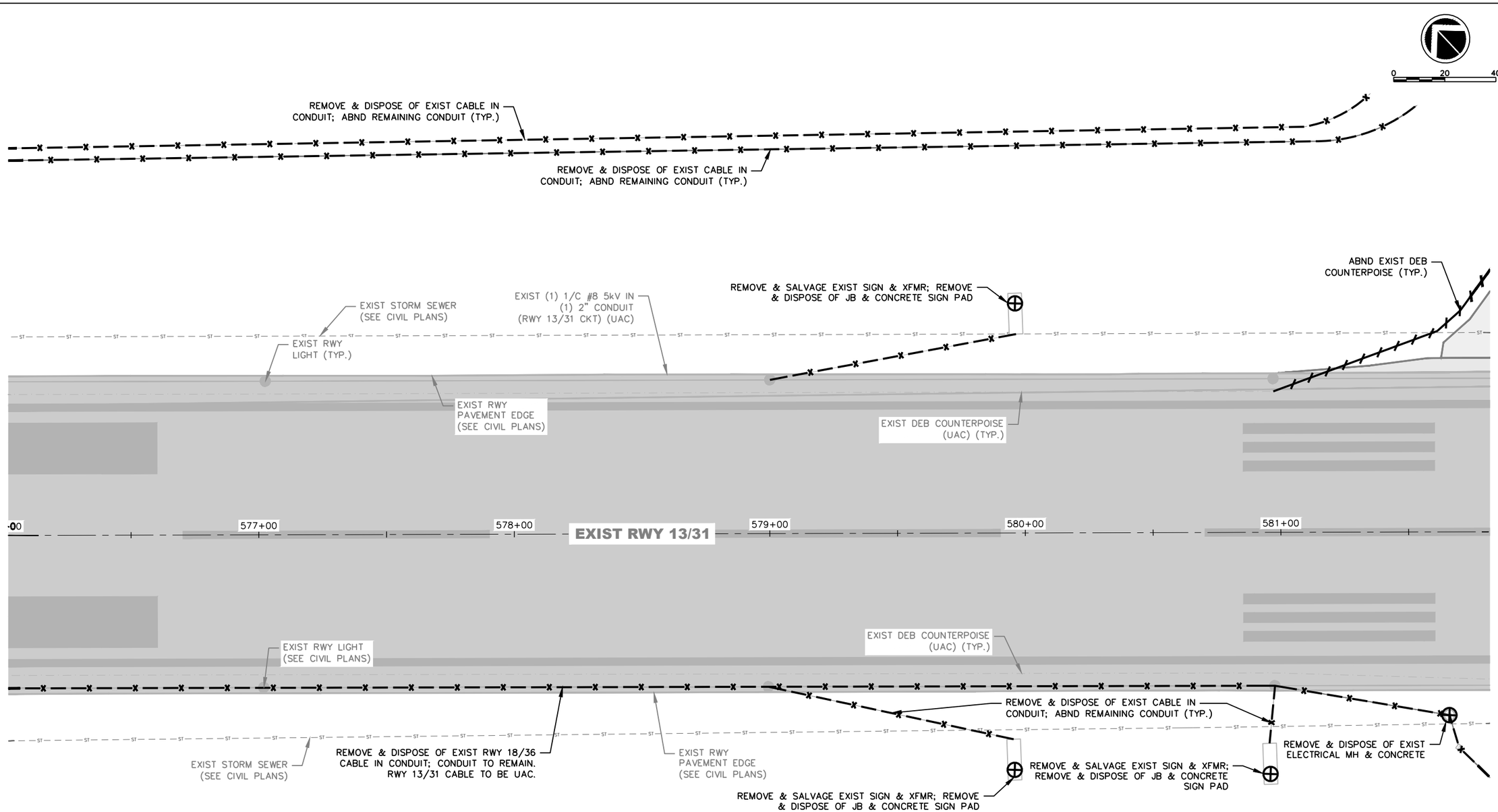
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Designer: BGS
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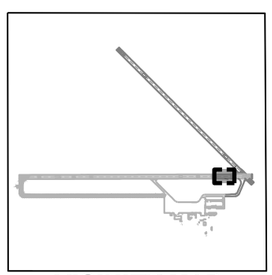
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MITCHELL MUNICIPAL AIRPORT
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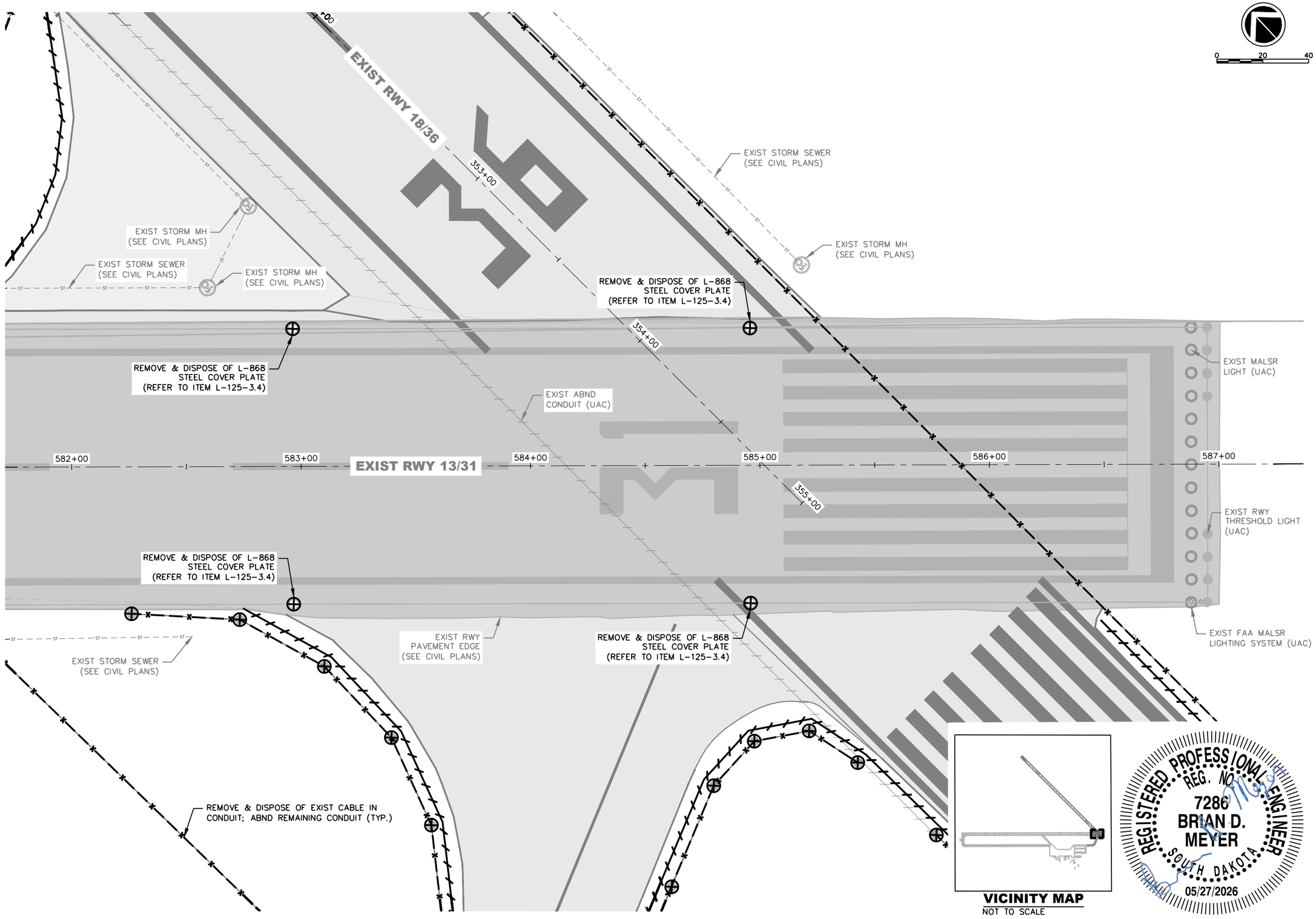
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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING REMOVALS

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LIGHTING PLAN SHEET LAYOUT

NOT TO SCALE

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

SHEET LAYOUT - LIGHTING PLAN

REVISIONS

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SOUTH DAKOTA
05/27/2026

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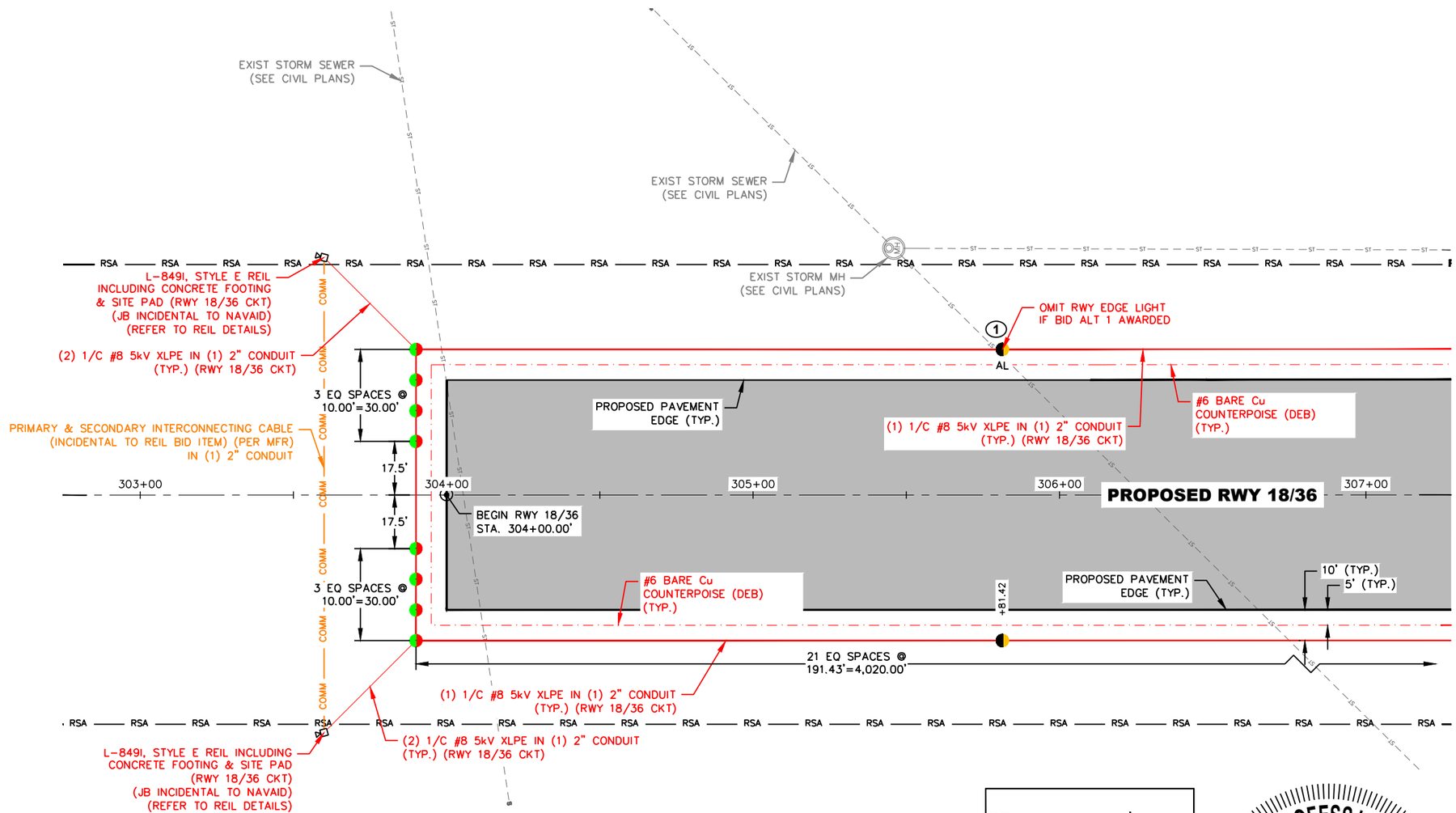
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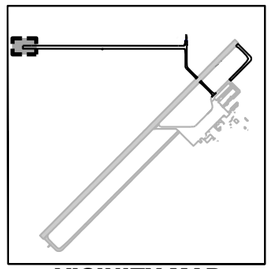
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0 20 40

KEYNOTES

(1) BOTTOM OF LIGHT BASE CAN IS ESTIMATED AT LEAST 12 INCHES ABOVE TOP OF PIPE. VERIFY IN FIELD.





VICINITY MAP
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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

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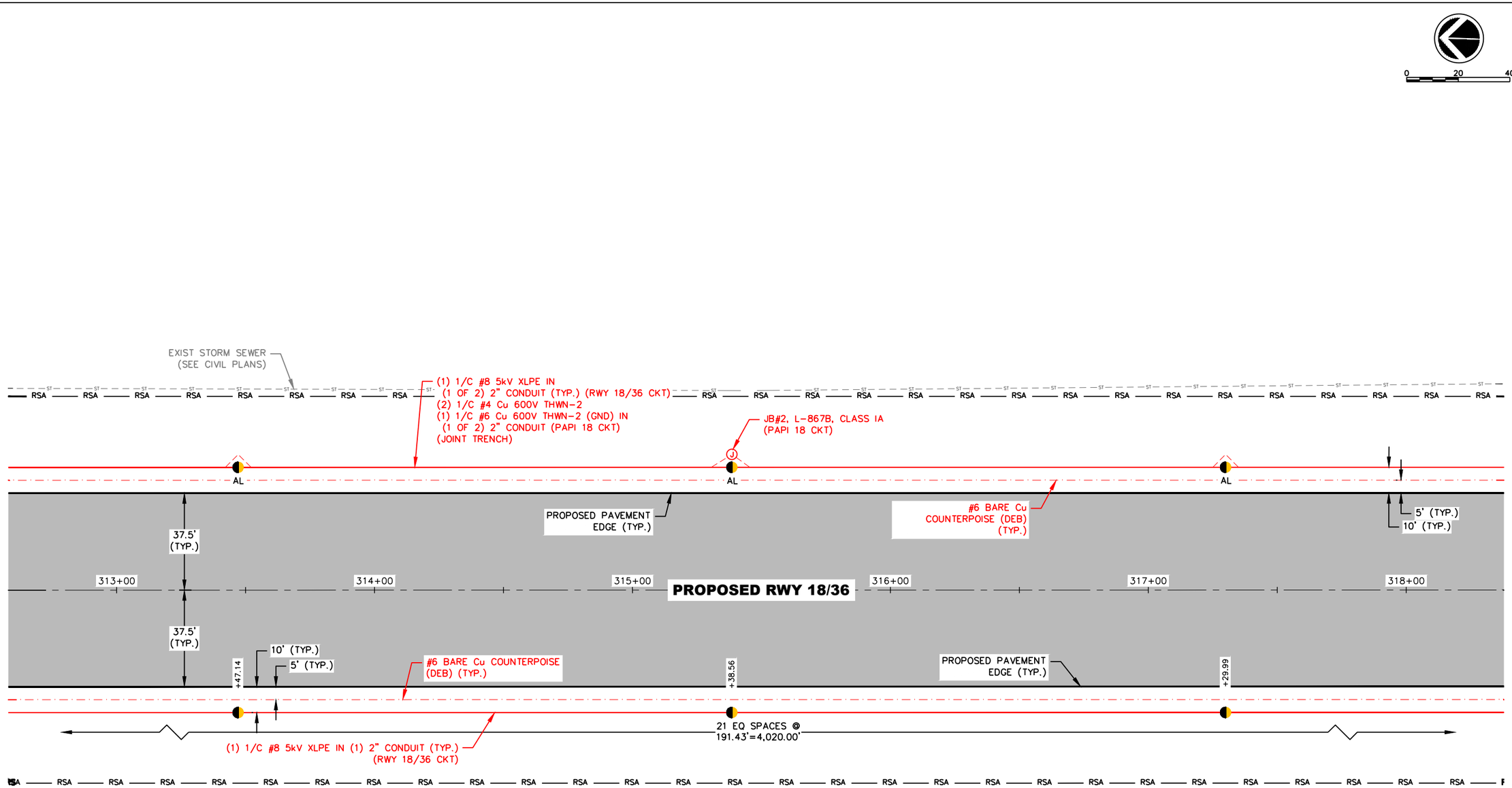
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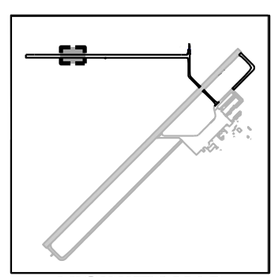
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ROFA ROFA ROFA

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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

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0 20 40

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MANHOLE (SEE CIVIL PLANS)

(1) 1/C #8 5kV XLPE IN (1 OF 2) 2" CONDUIT (TYP.) (RWY 18/36 CKT)
(2) 1/C #4 Cu 600V THWN-2
(1) 1/C #6 Cu 600V THWN-2 (GND) IN (1 OF 2) 2" CONDUIT (PAPI 18 CKT)
(JOINT TRENCH)

JB#3, L-867B, CLASS IA (PAPI 18 CKT)

RSA — ST — AL

PROPOSED PAVEMENT EDGE (TYP.)

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

37.5' (TYP.)

10' (TYP.)

5' (TYP.)

319+00 320+00 321+00 322+00 323+00

PROPOSED RWY 18/36

REMOVE ASPHALT AS INDICATED PER CIVIL PLANS. NOT INCLUDED ELECTRICAL/LIGHTING BID ITEMS

+21.42 +12.85 +04.28

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (RWY 18/36 CKT)

21 EQ SPACES @ 191.43'=4,020.00'

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (SCH 80) (RWY 18/36 CKT)

(1) 2"

EXIST VOR ASPHALT SERVICE RD

EXIST PAVEMENT EDGE (SEE CIVIL PLANS)

EXIST STORM MANHOLE (SEE CIVIL PLANS)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM SEWER (SEE CIVIL PLANS)

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

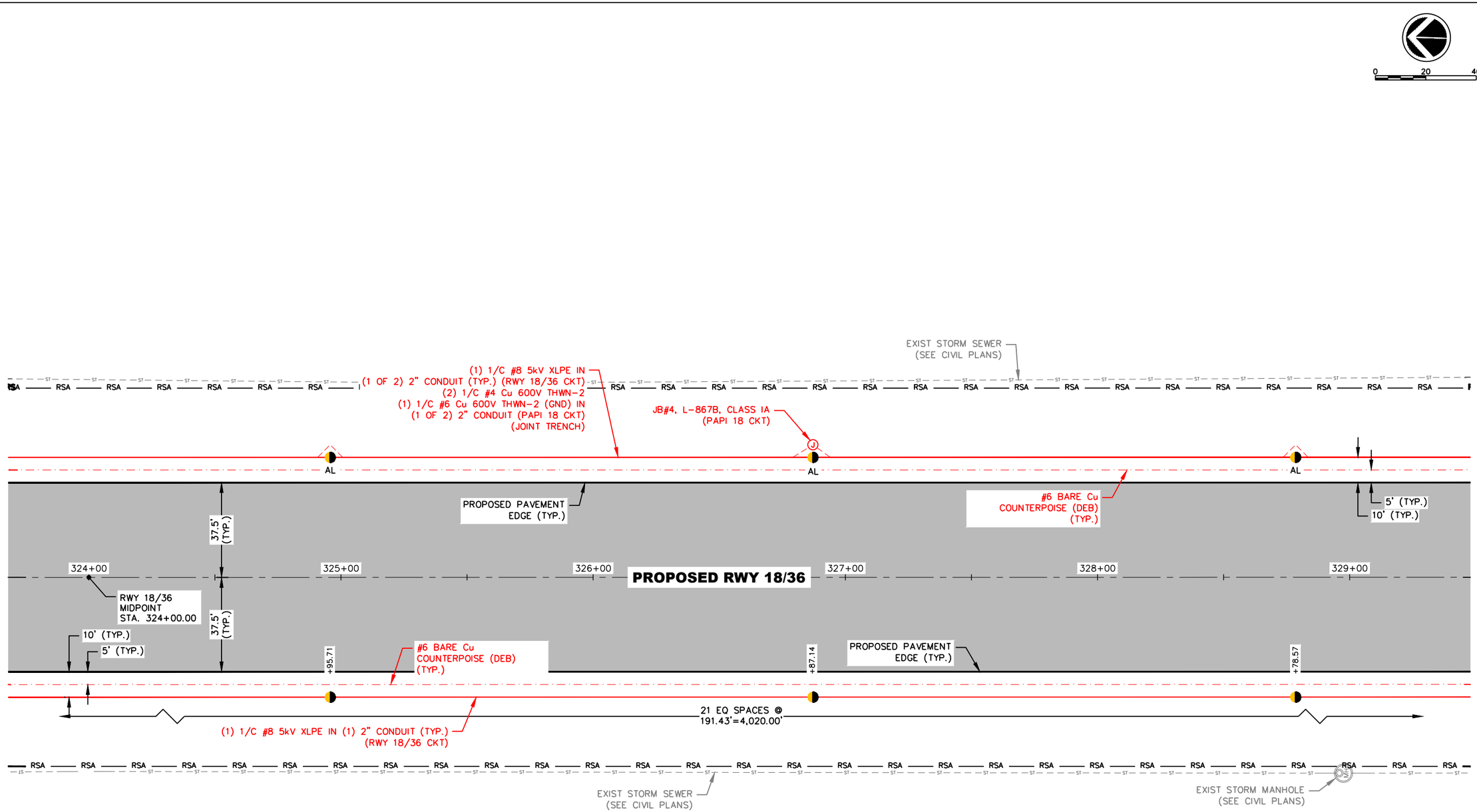
Project Manager: BDM
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Project Number: 731501
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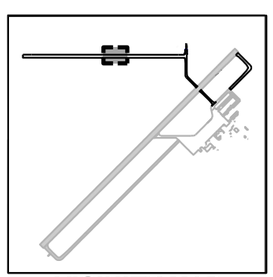
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VICINITY MAP
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BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

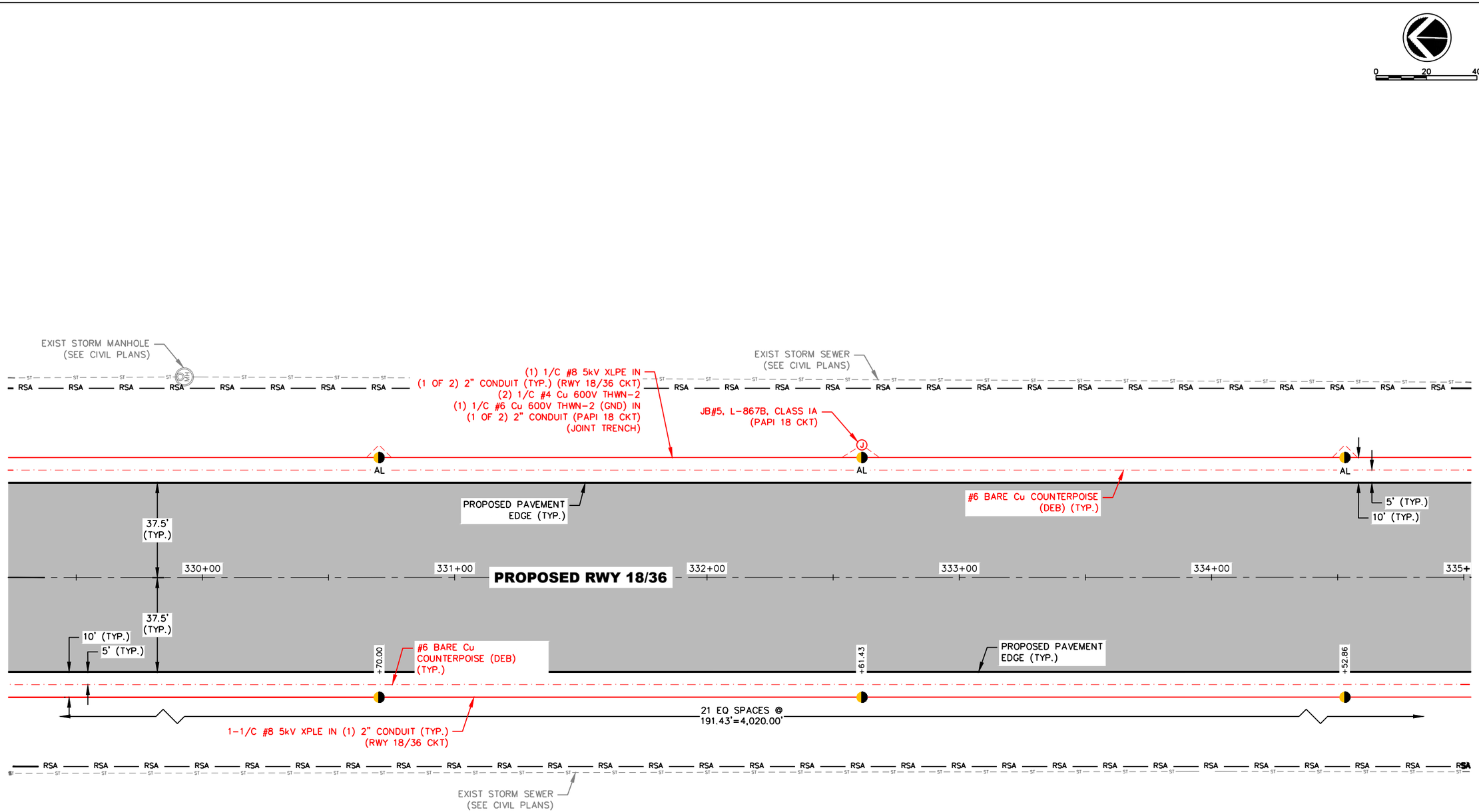
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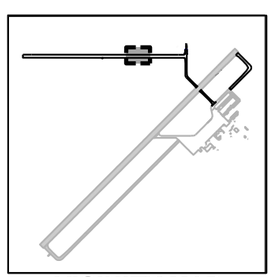
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BRIAN D.
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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

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Designer: BGS
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0 20 40

(1) 1/C #8 5kV XLPE IN
(1 OF 2) 2" CONDUIT (TYP.) (RWY 18/36 CKT)
(2) 1/C #4 Cu 600V THWN-2
(1) 1/C #6 Cu 600V THWN-2 (GND) IN
(1 OF 2) 2" CONDUIT (PAPI 18 CKT)
(JOINT TRENCH)

EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM MANHOLE
(SEE CIVIL PLANS)

RSA

JB#6, L-867B, CLASS IA
(PAPI 18 CKT)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(RWY 18/36 CKT)

AL

(2) 1/C #4 Cu 600V THWN-2
(1) 1/C #6 Cu 600V THWN-2 (GND) IN
(1 OF 2) 2" SAND-ENCASED CONDUIT (SCH 80)
(PAPI 18 CKT)
(1 OF 2) 2" SAND-ENCASED CONDUIT (SCH 80)
(SPARE) (JOINT TRENCH)

PROPOSED PAVEMENT
EDGE (TYP.)

#6 BARE Cu
COUNTERPOISE (DEB)
(TYP.)

37.5'
(TYP.)

5' (TYP.)
10' (TYP.)

335+00 336+00 337+00 338+00 339+00 340+00

PROPOSED RWY 18/36

(2) 2"

37.5'
(TYP.)

10' (TYP.)
5' (TYP.)

#6 BARE Cu COUNTERPOISE
(DEB) (TYP.)

+44.29 +35.71 +27.14

PROPOSED PAVEMENT
EDGE (TYP.)

21 EQ SPACES @
191.43'=4,020.00'

JB#7, L-867B, CLASS IA
(PAPI 18 & 36 CKT)

EXIST STORM MANHOLE
(SEE CIVIL PLANS)

EXIST STORM SEWER
(SEE CIVIL PLANS)

(1) 1/C #8 5kV XLPE IN (1 OF 2) 2" CONDUIT
(RWY 18/36 CKT)
(2) 1/C #4 Cu 600V THWN-2
(1) 1/C #6 Cu 600V THWN-2 (GND)
(PAPI 18 CKT)
(2) 1/C #6 Cu 600V THWN-2
(1) 1/C #8 Cu 600V THWN-2 (GND)
IN (1 OF 2) 2" CONDUIT
(PAPI 36 CKT) (JOINT TRENCH)

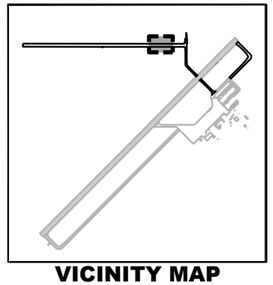
(2) 1/C #6 Cu 600V THWN-2
(1) 1/C #8 Cu 600V THWN-2 (GND) IN
(1) 2" CONDUIT (PAPI 36 CKT)

L-880 LED W/ BAFFLES, STYLE A (VOLTAGE), CLASS II,
PAPI INCLUDING CONCRETE FOOTING & SITE PAD
(REFER TO PAPI DETAILS)
(PAPI 36 CKT) (JB INCIDENTAL TO NAVAID)

(2) 1/C #6 Cu 600V THWN-2
(1) 1/C #8 Cu 600V THWN-2 (GND) IN
(1) 2" CONDUIT (PAPI 36 CKT)
(JOINT TRENCH)

PAPI 36 ELECTRICAL EQUIPMENT RACK
(SEE ELECTRICAL EQUIPMENT RACK DETAIL)

ROFA



VICINITY MAP
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REGISTERED PROFESSIONAL ENGINEER
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MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

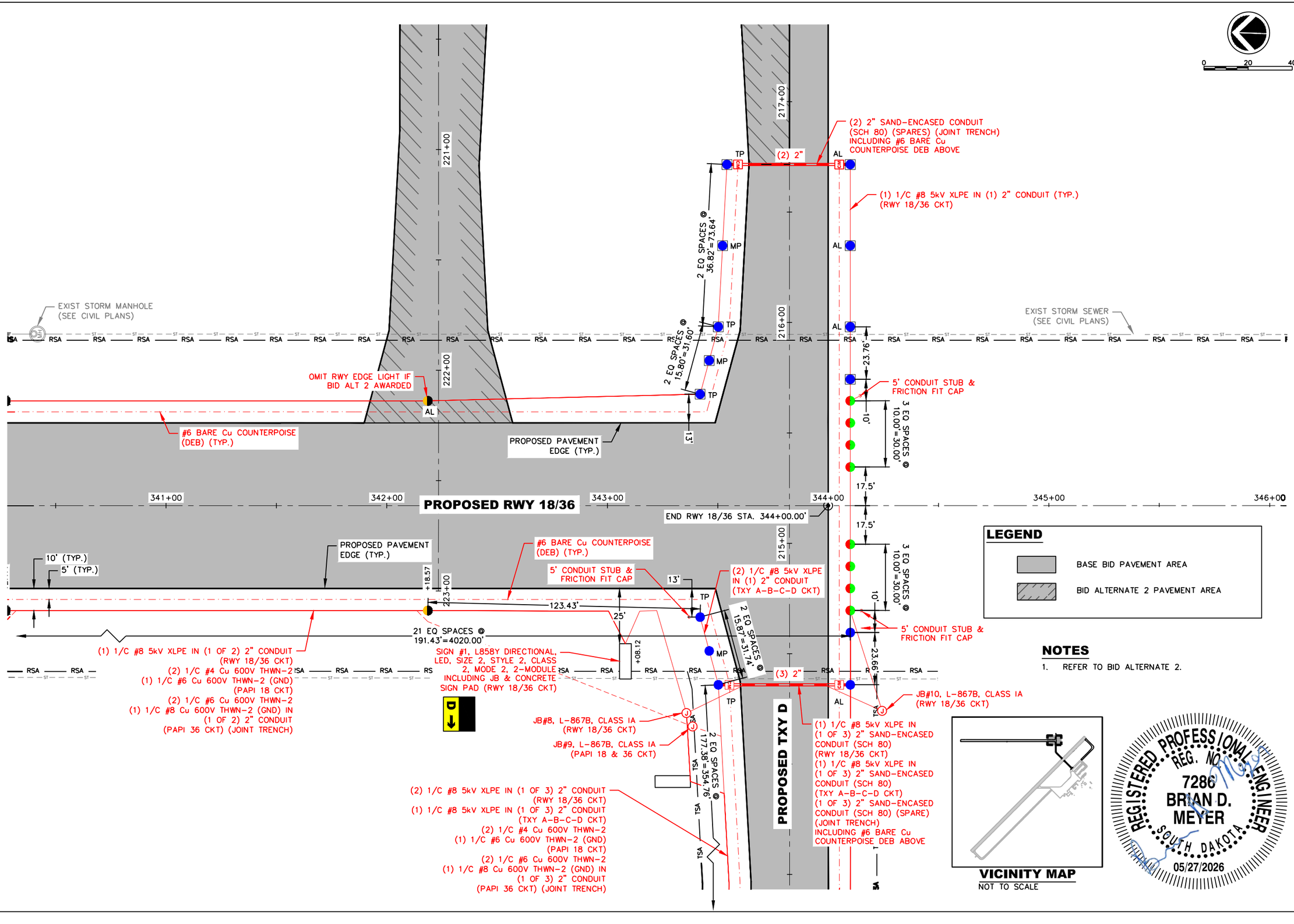
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Phone: (605) 339-4157

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SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
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MITCHELL MUNICIPAL AIRPORT
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LIGHTING PLAN

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Phone: (605) 339-4157

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P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-3604 - DESIGN\PLANS\731501 - LIGHTING PLAN.DWG

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KEYNOTES

(1) VERIFY DEPTH VIA POTHOLE PER ITEM 02 01 00. MACHINE EXCAVATING PERMITTED AFTER VERIFICATION TO WITHIN 12" OF CONDUIT. REMAINING 12" OF EXCAVATION SHALL BE VIA VACUUM EXCAVATION OR COMPARABLE NON-DESTRUCTIVE METHOD APPROVED BY ENGINEER.

0 20 40

EXIST (2) 1/C #6 600V IN (1) 2" CONDUIT (PAPI 31 CKT) (UAC)

VERIFY UTILITY (POTHOLE) (FIELD LOCATE & PROTECT)

(1) LOWER EXIST CONDUIT & CONDUCTORS (PAPI 13 CKT)

SIGN #3, L858L/Y LOCATION/DESTINATION, LED, SIZE 2, STYLE 2, CLASS 2, MODE 2, 3-MODULE INCLUDING JB & CONCRETE SIGN PAD (TXY A-B-C-D CKT)

SIGN #2, L858R/L MANDATORY/LOCATION, LED, SIZE 2, STYLE 3, CLASS 2, MODE 2, 3-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 13/31 CKT)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (TXY A-B-C-D CKT)

(2) 2" SAND-ENCASED CONDUIT (SCH 80) (SPARE) (JOINT TRENCH) INCLUDING #6 BARE Cu COUNTERPOISE DEB ABOVE

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (RWY 13/31 CKT)

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

PROPOSED PAVEMENT EDGE (TYP.)

PROPOSED TXY D

BEGIN TXY D STA. 200+50.29'

2 EQ SPACES @ 39.75'=79.50'

2 EQ SPACES @ 193.74'=387.48'

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM INTAKE (SEE CIVIL PLANS)

EXIST UG ELECTRIC LINE (SEE CIVIL PLANS)

VERIFY UTILITY (POTHOLE) (FIELD LOCATE & PROTECT)

EXIST TXY C

APRON

13-31

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

DGR ENGINEERING

Sheet
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P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\04 - DESIGN\PLANS\731501 - LIGHTING PLAN.DWG

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EXIST (2) 1/C #6 600V IN (1) 2" CONDUIT (PAPI 31 CKT) (UAC)

EXIST RWY 13/31

572+00

573+00

574+00

575+00

EXIST RWY 13/31 CKT

EXIST RWY 13/31 CKT

CORE DRILL EXIST LIGHT BASE CAN FOR CONDUIT CONNECTION (RWY 13/31 CKT)

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (RWY 13/31 CKT)

SIGN #6, L858Y DIRECTIONAL, LED, SIZE 2, STYLE 3, CLASS 2, MODE 2, 2-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 13/31 CKT)

+22.87

25'

5' CONDUIT STUB & FRICTION FIT CAP

JB#11, L-867B, CLASS IA (TXY A-B-C-D CKT)

(1) 2"

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (SCH 80) (BORED) (TXY A-B-C-D CKT)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (RWY 13/31 CKT)

+34.88

+18.30

205+00

206+00

207+00

208+00

209+00

PROPOSED PAVEMENT EDGE (TYP.)

1-1/C #8 5kV XLPE IN (1) 2" CONDUIT (SCH 80) (BORED) (TXY A-B-C-D CKT)

(1) 2"

5' CONDUIT STUB & FRICTION FIT CAP

JB#13, L-867B, CLASS IA (TXY A-B-C-D CKT)

25'

+22.89

SIGN #5, L858Y DIRECTIONAL, LED, SIZE 2, STYLE 3, CLASS 2, MODE 2, 2-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 13/31 CKT)

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (RWY 13/31 CKT)

CORE DRILL EXIST LIGHT BASE CAN FOR CONDUIT CONNECTION (RWY 13/31 CKT)

EXIST RWY 13/31 PAPI

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST RWY 13/31 CKT

EXIST RWY 13/31 CKT

EXIST STORM SEWER (SEE CIVIL PLANS)

5' CONDUIT STUB & FRICTION FIT CAP

JB#12, L-867B, CLASS IA (TXY A-B-C-D CKT)

+63.88

+80.46

TP

TP

18.72'

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (RWY 13/31 CKT)

+63.89

+80.46

TP

TP

18.72'

JB#14, L-867B, CLASS IA (TXY A-B-C-D CKT)

5' CONDUIT STUB & FRICTION FIT CAP

CORE DRILL EXIST LIGHT BASE CAN FOR CONDUIT CONNECTION (RWY 13/31 CKT)

EXIST DISTANCE REMAINING SIGN (UAC)

L 5

(2) 1/C #8 5kV XLPE IN (1 OF 2) 2" CONDUIT (RWY 18/36 CKT) (2) 1/C #4 Cu 600V THWN-2 (1) 1/C #6 Cu 600V THWN-2 (GND) (PAPI 18 CKT) (2) 1/C #6 Cu 600V THWN-2 (1) 1/C #8 Cu 600V THWN-2 (GND) (PAPI 36 CKT) IN (1 OF 2) 2" CONDUIT (JOINT TRENCH) INCLUDING #6 BARE Cu COUNTERPOISE DEB ABOVE

JB#15, L-867B, CLASS IA (RWY 18/36 CKT)

JB#16, L-867B, CLASS IA (PAPI 18 & 36 CKT)

5' (TYP.)

10' (TYP.)

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

+28.30

MP

25'

39.36'

2 EQ SPACES @ 147.94'=295.88'

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (TXY A-B-C-D CKT)

D 31-13

SIGN #4, L858R/L MANDATORY/LOCATION, LED, SIZE 2, STYLE 3, CLASS 2, MODE 2, 3-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 13/31 CKT)

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (RWY 13/31 CKT)

EXIST ILS CRITICAL AREA

(2) 2" SAND-ENCASED CONDUIT (SCH 80) (SPARE) (JOINT TRENCH) INCLUDING #6 BARE Cu COUNTERPOISE DEB ABOVE

(2) 1/C #8 5kV XLPE IN (1 OF 3) 2" CONDUIT (RWY 18/36 CKT) (1) 1/C #8 5kV XLPE IN (1 OF 3) 2" CONDUIT (TXY A-B-C-D CKT) (2) 1/C #4 Cu 600V THWN-2 (1) 1/C #6 Cu 600V THWN-2 (GND) (PAPI 18 CKT) (2) 1/C #6 Cu 600V THWN-2 (1) 1/C #8 Cu 600V THWN-2 (GND) (PAPI 36 CKT) IN (1 OF 3) 2" CONDUIT (JOINT TRENCH)

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

AL

AL

PT

+08.93

+28.63

+76.14

+28.63

TP

TP

TP

TSA TSA TSA TSA TSA TSA TSA TSA

RSA RSA RSA RSA RSA RSA RSA RSA

ROFA ROFA ROFA ROFA

TOFA

TOFA

PROPOSED TXY D

PROPOSED PAVEMENT EDGE (TYP.)

0 20 40

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

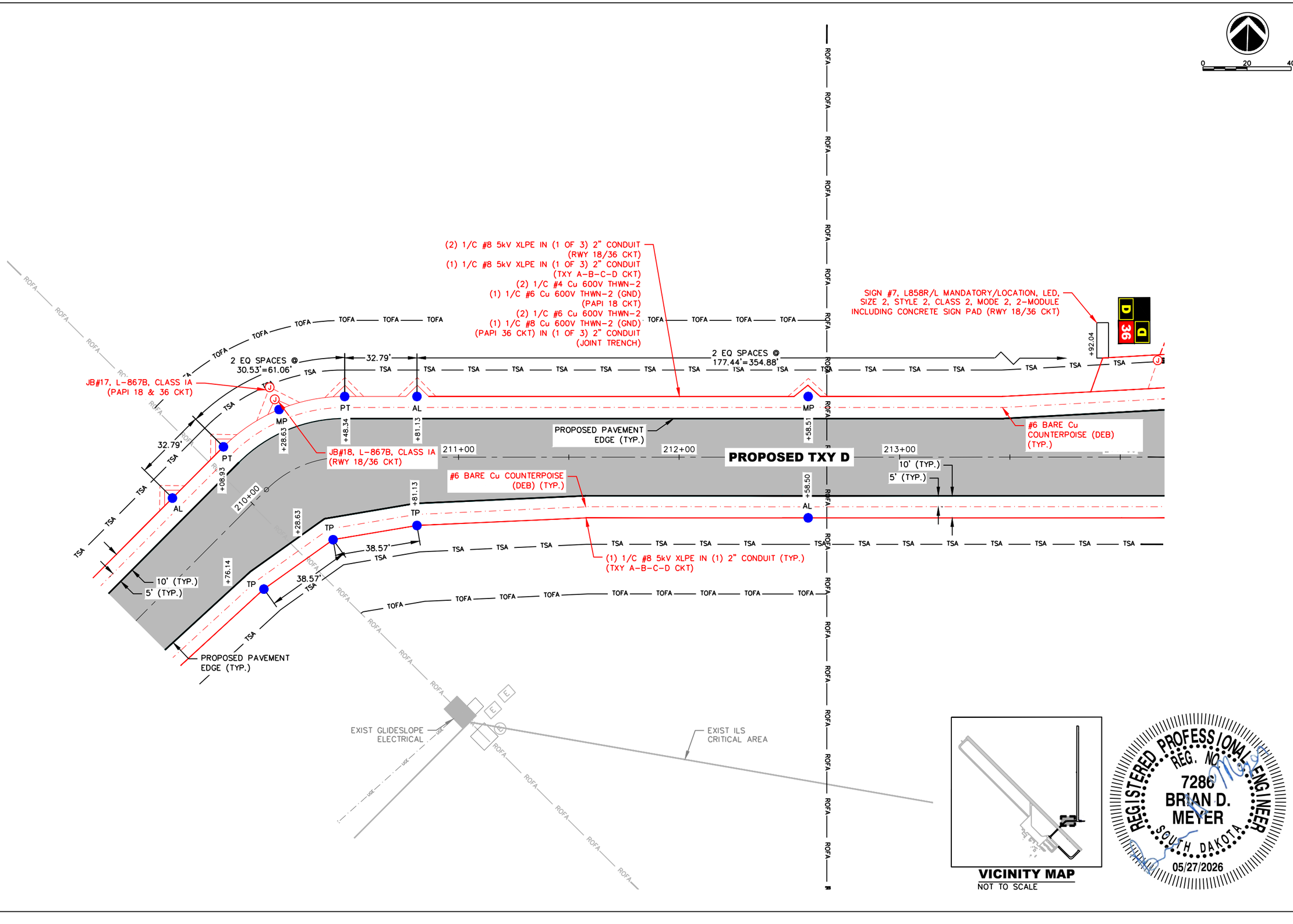
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Designer: BGS
Project Number: 731501
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E36

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

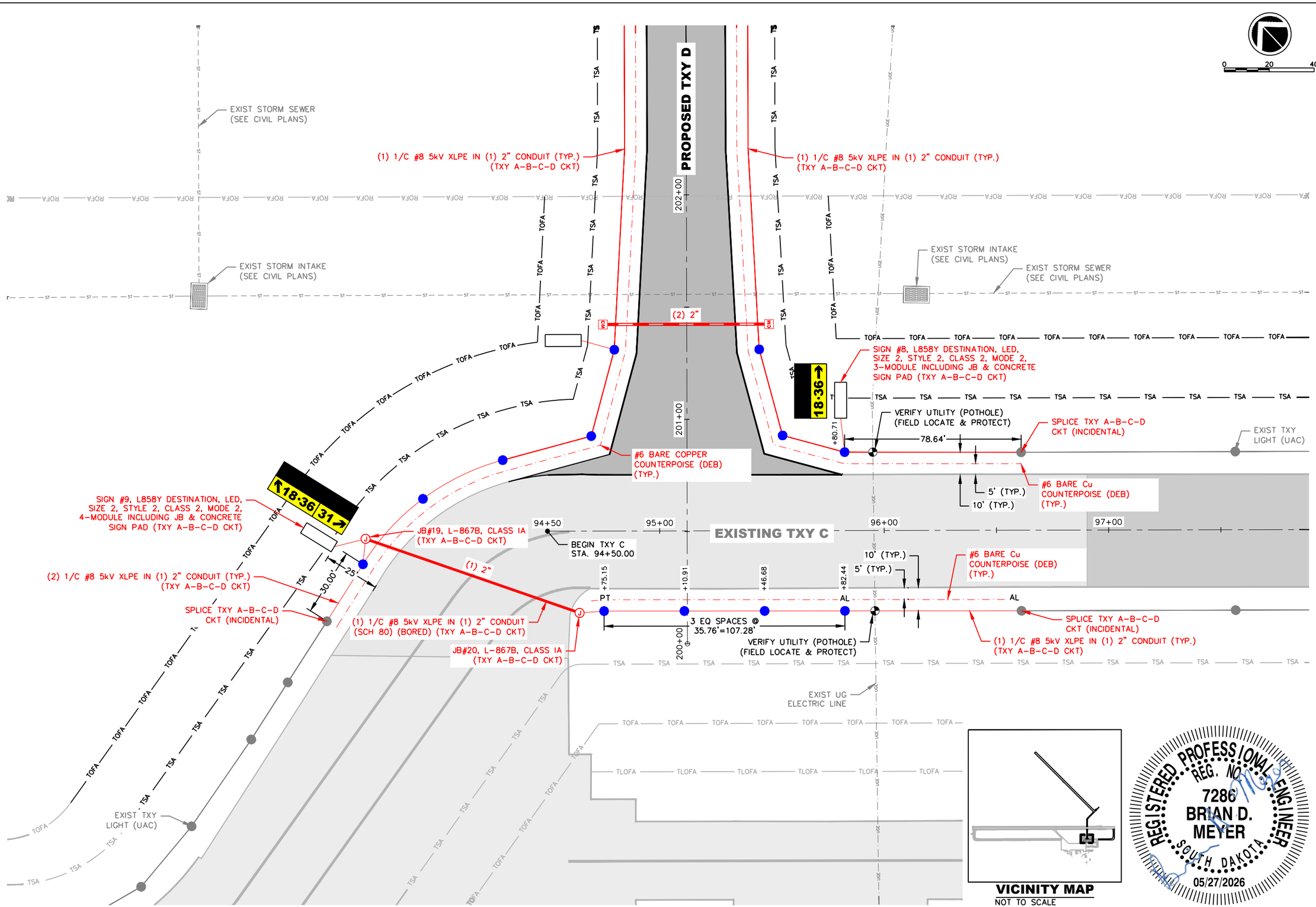
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E37

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VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

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0 20 40

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT
(RWY 13/31 CKT)

L-806, LED STYLE IB (INTERNALLY LIT), SIZE 1
(8 FT) SUPPLEMENTAL WIND CONE INCLUDING
CONCRETE FOOTING, SITE PAD, & SINGLE
L-810 LED STEADY BURN RED OBSTRUCTION
LIGHT (REFER TO WINDCONE DETAILS)
(RWY 13/31 CKT)
(JB INCIDENTAL TO NAVAID)

+09.51

EXIST STORM INTAKE
(SEE CIVIL PLANS)

EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM INTAKE
(SEE CIVIL PLANS)

SPLICE TXY A-B-C-D
CKT (INCIDENTAL)

45.81'

50'

3 EQ SPACES @
34.68'=104.04'

50'

3 EQ SPACES @
198.18'=594.54'

AL

5' (TYP.)

10' (TYP.)

+98.36

+48.36

+83.05

+17.73

+52.41

+02.41

+50.59

#6 BARE Cu COUNTERPOISE
(DEB) (TYP.)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(TXY A-B-C-D CKT)

PROPOSED PAVEMENT
EDGE (TYP.)

98+00

99+00

100+00

101+00

102+00

103+00

EXISTING TXY C

PROPOSED TXY C

(2) 2"

10' (TYP.)

5' (TYP.)

#6 BARE Cu COUNTERPOISE
(DEB) (TYP.)

SPLICE TXY A-B-C-D
CKT (INCIDENTAL)

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(TXY A-B-C-D CKT)

SPLICE TXY A-B-C-D
CKT (INCIDENTAL)

(2) 2" SAND-ENCASED CONDUIT (SCH 80)
(SPARES) (JOINT TRENCH) INCLUDING #6
BARE Cu COUNTERPOISE DEB ABOVE

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT
(TXY A-B-C-D CKT)

EXIST TXY
LIGHT

EXISTING MH (UAC)

SPLICE TXY A-B-C-D
CKT (INCIDENTAL)

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
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0 20 40

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(TXY A-B-C-D CKT)

PROPOSED PAVEMENT EDGE (TYP.)

TP +96.46

109+00

+96.46 AL

27.64'

+68.82

2 EQ SPACES @
39.28'=78.56'

MP +58.43

50'

+18.82 PT

2 EQ SPACES @
39.27'=78.54'

TP +22.99

3 EQ SPACES @
198.18'=594.54'

MP +84.96

TP +46.94

108+00

+95.26

PROPOSED PAVEMENT EDGE (TYP.)

+48.76

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

5' (TYP.)

10' (TYP.)

104+00 105+00 106+00 **PROPOSED TXY C** 107+00

+71.70

MP

4 EQ SPACES @
37.31'=149.24'

+48.14

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

10' (TYP.)

5' (TYP.)

+74.58

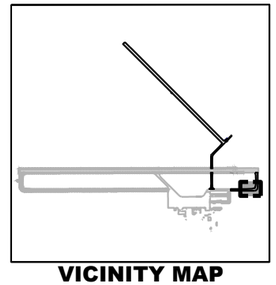
+24.58

AL AL PT

27.66' 50'

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(TXY A-B-C-D CKT)

EXIST STORM SEWER
(SEE CIVIL PLANS)



VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LIGHTING PLAN.DWG

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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E40

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0 20 40

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.)
(TXY A-B-C-D CKT)

(2) 1/C #8 5kV XLPE IN (1) 2" CONDUIT
(TXY A-B-C-D CKT)

5' CONDUIT STUB &
FRICTION FIT CAP

2 EQ SPACES @
68.63'=137.26'

2 EQ SPACES @
68.63'=137.26'

2 EQ SPACES @
37.80'=75.60'

25'

25'

TOFA TOFA

TSA TSA TSA TSA TSA TSA TSA TSA

ROFA ROFA ROFA

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0 20 40

RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA RSA

EXIST (2) 1/C #6 600V IN
(1) 2" CONDUIT
(WINDCONE CKT) (UAC)

SPLICE PAPI 18 &
PAPI 36 CKT
(INCIDENTAL)

EXIST (2) 1/C #6 600V IN
(1) 2" CONDUIT
(PAPI 13 CKT) (UAC)

(2) 1/C #8 5kV XLPE IN (1 OF 2) 2" CONDUIT
(RWY 18/36 CKT)
(2) 1/C #4 Cu 600V THWN-2
(1) 1/C #6 Cu 600V THWN-2 (GND)
(PAPI 18 CKT)
(2) 1/C #6 Cu 600V THWN-2
(1) 1/C #8 Cu 600V THWN-2 (GND)
(PAPI 36 CKT) IN (1 OF 2) 2" CONDUIT
(JOINT TRENCH)

JB#21, L-867B, CLASS IA
(PAPI 18 & 36 CKT)

JB#22, L-867B, CLASS IA
(RWY 18/36 CKT)

EXIST DISTANCE
REMAINING SIGN
(RWY 13/31 CKT) (UAC)

EXIST (1) 1/C #8 5kV IN
(1) 2" CONDUIT
(RWY 13/31 CKT) (UAC)

EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM MH
(SEE CIVIL PLANS)

EXIST RWY LIGHT (UAC) (TYP.)

12' (TYP.)

EXIST (8) 1/C #6 600V IN
(1) 3" CONDUIT
(PAPI 13, 18, & 36 CKT)
(WIND CONE CKT) (UAC)

(2) 1/C #8 5kV XLPE IN EXIST
CONDUIT (RWY 18/36 CKT)

562+00 563+00 564+00 565+00 566+00

100' (TYP.)

EXIST RWY 13/31

12' (TYP.)

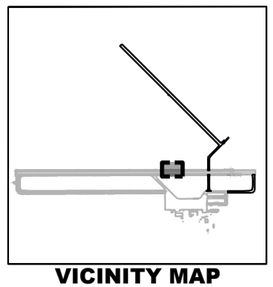
SPLICE RWY 18/36
CKT (INCIDENTAL)

EXIST STORM SEWER
(SEE CIVIL PLANS)

EXIST STORM MH
(SEE CIVIL PLANS)

EXIST (1) 1/C #8 5kV IN
(1) 2" CONDUIT
(RWY 13/31 CKT) (UAC)

EXIST (2) 1/C #6 600V IN
(1) 2" CONDUIT
(PAPI 31 CKT) (UAC)



VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

DGR ENGINEERING

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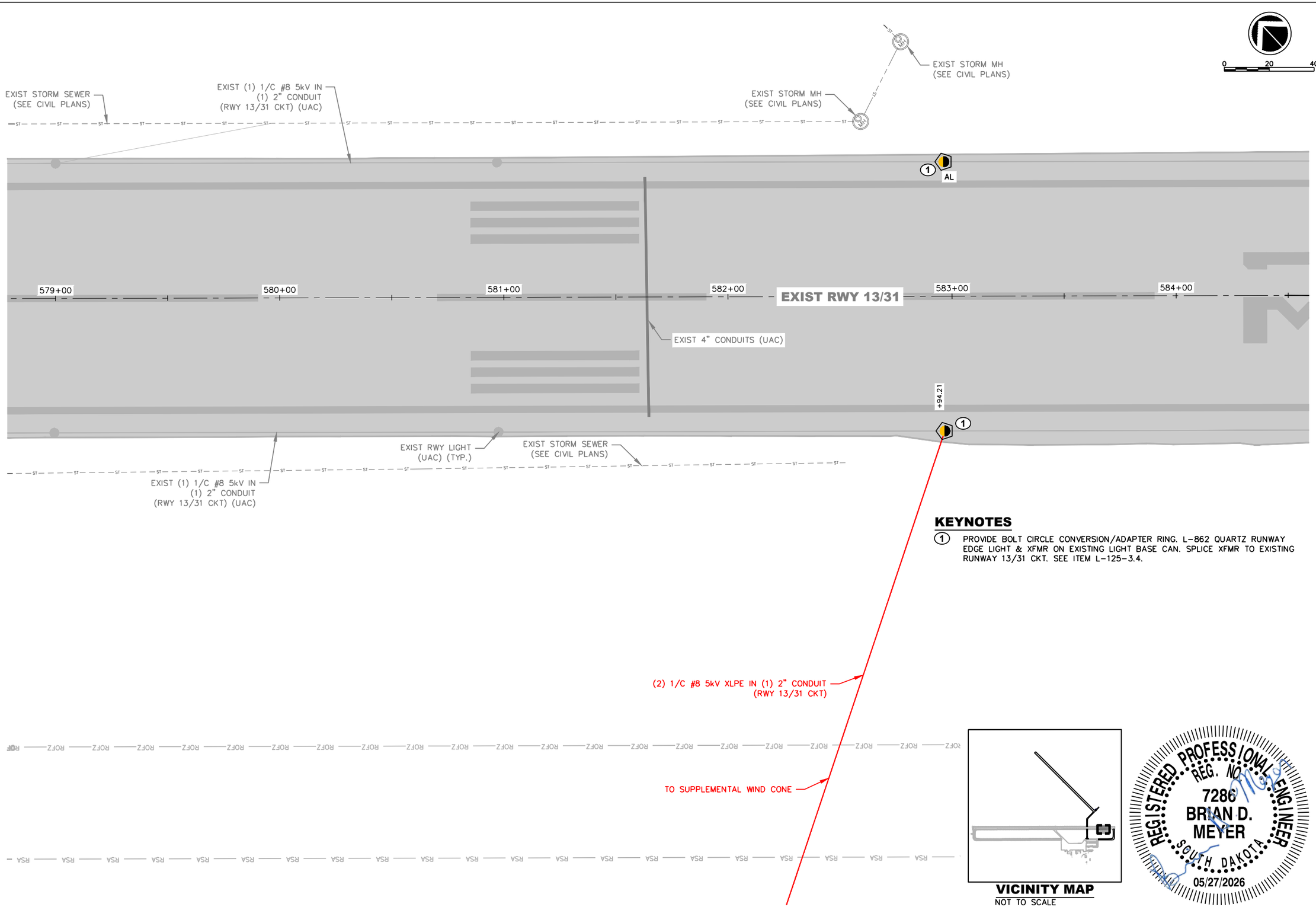
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Plot Date: 5/21/2026 3:52:04 PM

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RSA RSA RSA

Plot Date: 5/21/2026 3:52:09 PM



KEYNOTES

(1) PROVIDE BOLT CIRCLE CONVERSION/ADAPTER RING. L-862 QUARTZ RUNWAY EDGE LIGHT & XFMR ON EXISTING LIGHT BASE CAN. SPLICE XFMR TO EXISTING RUNWAY 13/31 CKT. SEE ITEM L-125-3.4.

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

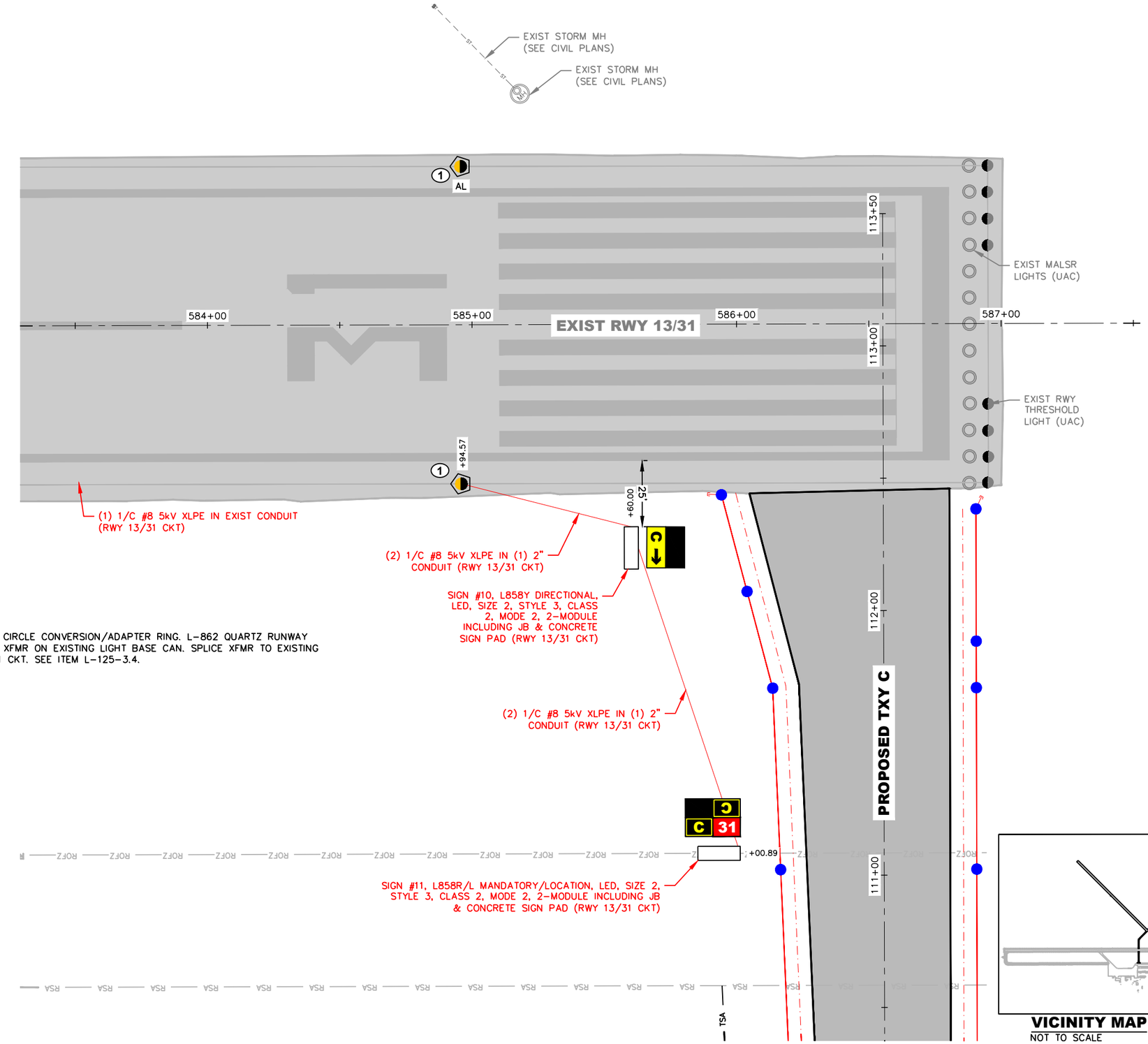
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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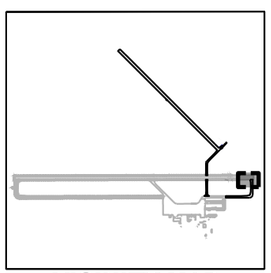
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Plot Date: 5/21/2026 3:52:15 PM



KEYNOTES

(1) PROVIDE BOLT CIRCLE CONVERSION/ADAPTER RING. L-862 QUARTZ RUNWAY EDGE LIGHT & XFMR ON EXISTING LIGHT BASE CAN. SPLICE XFMR TO EXISTING RUNWAY 13/31 CKT. SEE ITEM L-125-3.4.



VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
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BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

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EXIST UG TELEPHONE LINE (UAC)

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN EXISTING (1) 3" EMPTY CONDUIT
(BEACON CKT) (BASE BID)

EXIST (10) 1/C #6 600V IN (1) 3" CONDUIT (UAC)
(WIND CONE CKT)
(PAPI 13 CKT)
(PAPI 31 CKT)
(PAPI 18 CKT)
(PAPI 36 CKT)

EXIST (6) 1/C #8 5kV IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)
(TXY A-B-C-D CKT)
(1) 3" EMPTY CONDUIT (UAC)

EXIST TXY EDGE LIGHT
(UAC)

EXIST (2) 1/C #8 5kV IN (1) 2" CONDUIT (UAC)
(TXY A-B-C-D CKT)

EXIST AIRCRAFT
TIE-DOWN

EXISTING APRON

EXIST COUNTERPOISE (UAC)

EXIST (6) 1/C #8 5kV IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)
(TXY A-B-C-D CKT)
(1) 3" EMPTY CONDUIT (UAC)

EXIST UG TELEPHONE
LINE (UAC)

EXIST HV MANHOLE

EXIST LV MANHOLE

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN EXISTING (1) 3" EMPTY CONDUIT
(BEACON CKT) (BASE BID)

EXIST (10) 1/C #6 600V IN (1) 3" CONDUIT (UAC)
(WIND CONE CKT)
(PAPI 13 CKT)
(PAPI 31 CKT)
(PAPI 18 CKT)
(PAPI 36 CKT)

EXIST LV MANHOLE

EXIST HV MANHOLE

EXIST VAULT
(SEE V SHEETS)

EXIST HANGAR

EXIST FENCE

EXIST AIRFIELD ELECTRICAL, LIGHTING,
& CONTROL VAULT BUILDING UG
ELECTRICAL SERVICE (UAC)

EXIST FENCE

EXIST GATE

EXIST PARKING LOT

0 20 40

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

DGR ENGINEERING

Sheet
E46

P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-3064 - DESIGN\PLANS\731501 - LIGHTING PLAN.DWG

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EXISTING TXY

EXISTING TXY

EXIST APRON

EXIST COUNTERPOISE (UAC)

EXIST UG TELEPHONE LINE (UAC)

EXIST (10) 1/C #6 600V IN (1) 3" CONDUIT (UAC)
(WIND CONE CKT)
(PAPI 13 CKT)
(PAPI 31 CKT)
(PAPI 18 CKT)
(PAPI 36 CKT)

EXIST LV MANHOLE

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN EXISTING (1) 3" EMPTY CONDUIT
(BEACON CKT) (BASE BID)

EXIST HV MANHOLE

EXIST LV MANHOLE

EXIST HV MANHOLE

EXIST (6) 1/C #8 5kV IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)
(TXY A-B-C-D CKT)
(1) 3" EMPTY CONDUIT (UAC)

EXIST TXY EDGE LIGHT (UAC)

EXIST (2) 1/C #8 5kV IN (1) 2" CONDUIT (UAC)
(TXY A-B-C-D CKT)

EXIST COUNTERPOISE (UAC)

EXIST PAVEMENT MARKINGS (UAC)

EXIST STORM SEWER (SEE CIVIL PLANS)

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN (1) 2" CONDUIT
(BEACON CKT) (BASE BID)

EXIST (10) 1/C #6 600V IN
(1) 3" CONDUIT (UAC)
(WIND CONE CKT)
(PAPI 13 CKT)
(PAPI 31 CKT)
(PAPI 18 CKT)
(PAPI 36 CKT)

EXIST TXY EDGE LIGHT (UAC)

EXIST LV MANHOLE

EXIST HV MANHOLE

EXIST STORM SEWER INLET (PER CIVIL PLANS)

EXIST (6) 1/C #8 5kVA IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)
(TXY A-B-C-D CKT)
(1) 3' EMPTY CONDUIT

EXIST COUNTERPOISE (UAC)

EXIST (2) 1/C #8 5kV IN
(1) 2" CONDUIT (UAC)
(TXY A-B-C-D CKT)

EXIST TXY EDGE LIGHT (UAC)

EXIST STORM SEWER INLET (PER CIVIL PLANS)

EXIST COUNTERPOISE (UAC)

EXIST STORM SEWER (PER CIVIL PLANS)

TSA

ROFA

ST

0 20 40

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7286
BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
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DGR ENGINEERING

Sheet
E47

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0 20 40

EXIST STORM SEWER (SEE CIVIL PLANS)

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN (1) 2" CONDUIT
(BEACON CKT) (BASE BID)

JB#25, L-867B, CLASS IA
(BEACON CKT) (BASE BID)

EXIST SIGN (UAC)

EXIST (2) 1/C #8 5kVA IN (1) 2" CONDUIT (UAC)
(RWY 13/31 CKT)

EXIST HV MANHOLE (UAC)

EXIST LV MANHOLE (UAC)

EXIST TXY EDGE LIGHT (UAC)

EXIST TXY

EXIST (2) 1/C #8 5kVA IN (1) 2" CONDUIT (UAC)
(TXY A-B-C-D CKT)

EXIST COUNTERPOISE (UAC)

EXIST (5) 1/C #8 5kVA
IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)
(TXY A-B-C-D CKT)

EXIST TXY EDGE LIGHT (UAC)

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN (1) 2" CONDUIT (SCH 80) (BORED)
(BEACON CKT) (BASE BID)

EXIST (4) 4" CONDUIT (UAC)
PREVIOUSLY ABANDONED

EXIST HV MANHOLE (UAC)

EXIST LV MANHOLE (UAC)

EXIST UG TELEPHONE LINE (UAC)

EXIST COUNTERPOISE (UAC)

EXIST PAVEMENT MARKINGS (UAC)

EXIST (10) 1/C #6 600V IN (1) 3" CONDUIT (UAC)
(WIND CONE CKT)
(PAPI 13 CKT)
(PAPI 31 CKT)
(PAPI 18 CKT)
(PAPI 36 CKT)

EXIST RWY EDGE LIGHT IN-PAVEMENT (UAC)

EXIST RWY 13/31

558+00

559

EXIST (3) 1/C #8 5kVA IN (1) 3" CONDUIT (UAC)
(RWY 18/36 CKT)
(RWY 13/31 CKT)

EXIST (2) 1/C #8 5kVA IN (1) 2" CONDUIT (UAC)
(RWY 13/31 CKT)

EXIST (2) 1/C #8 5kVA IN (1) 2" CONDUIT (UAC)
(TXY A-B-C-D CKT)

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM SEWER (SEE CIVIL PLANS)

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

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DGR ENGINEERING

Sheet
E48

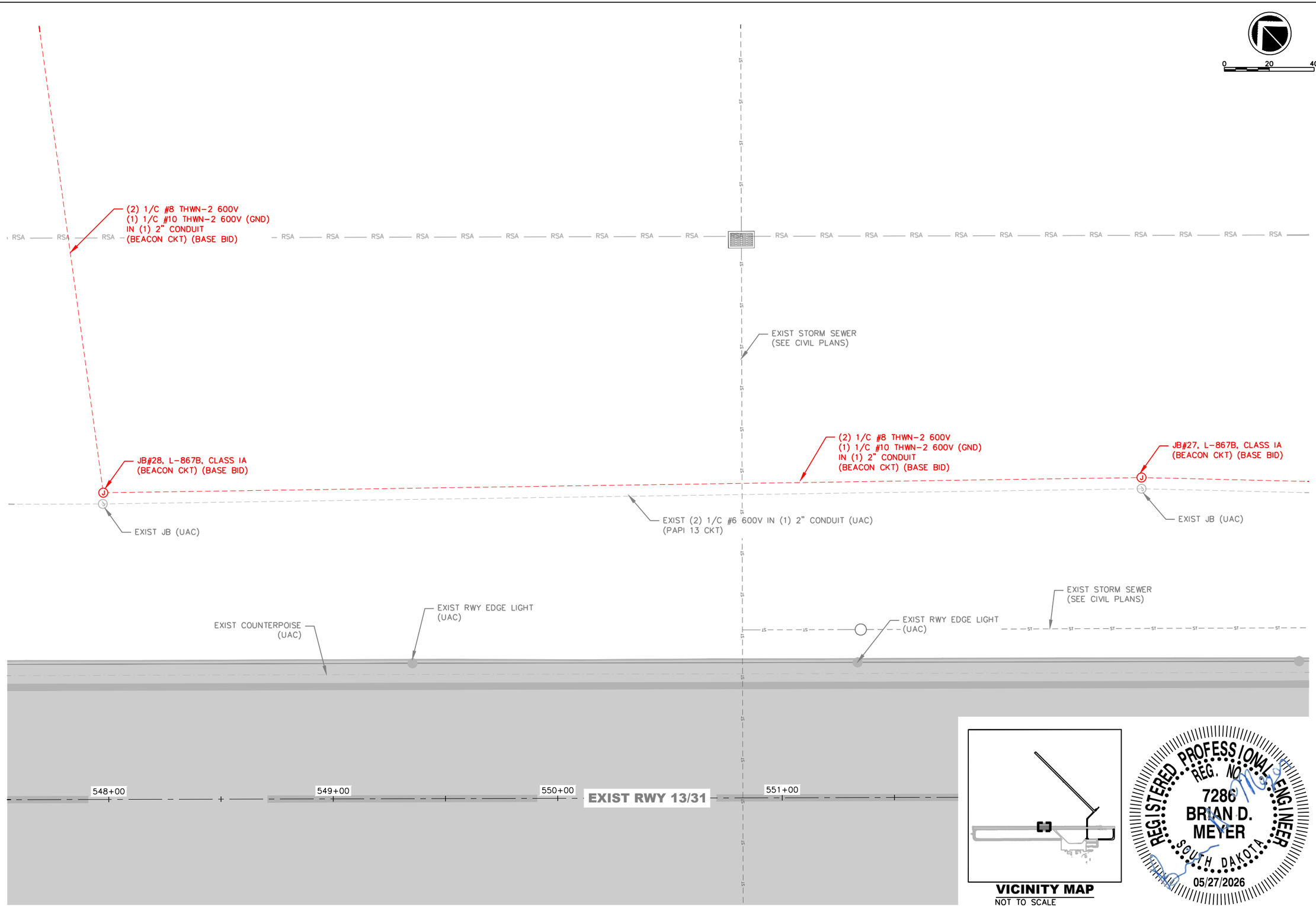
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0 20 40

RSA RSA RSA

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VICINITY MAP
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REGISTERED PROFESSIONAL ENGINEER
REG. NO.
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BRIAN D.
MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS &
CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN

REVISIONS

Helms & Associates
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RSA

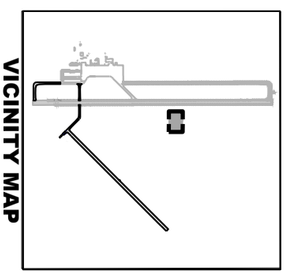
ROFA

(2) 1/C #8 THWN-2 600V
(1) 1/C #10 THWN-2 600V (GND)
IN (1) 2" CONDUIT
(BEACON CKT) (BASE BID)

JB#29, L-867B, CLASS 1A
(BEACON CKT) (BASE BID)

MP

VICINITY MAP
NOT TO SCALE

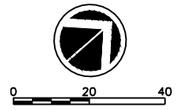


REGISTERED PROFESSIONAL ENGINEER
BRIAN D. MEYER
7286
REG. NO.
05/27/2026
S. DAKOTA

0
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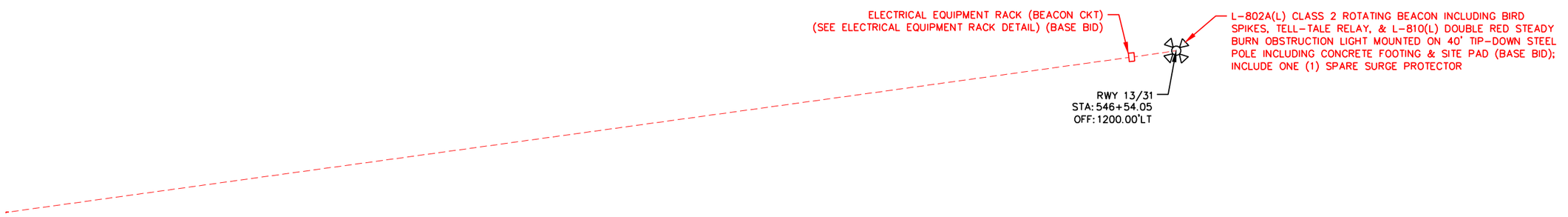
Sheet E51	DGR ENGINEERING	Project Manager: BDM Designer: BGS Project Number: 731501 Phone: (605) 339-4157	Helms & ASSOCIATES CIVIL ENGINEERS & LAND SURVEYORS	LIGHTING PLAN REVISIONS	RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS MITCHELL MUNICIPAL AIRPORT MITCHELL, SOUTH DAKOTA

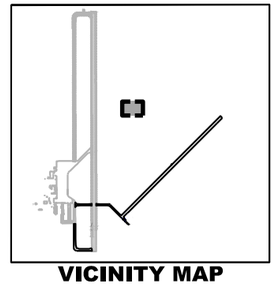
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BID ALTERNATE 3

1. BID ALTERNATE 3 REPLACES THE BASE BID L-802A(L) BEACON WITH A SOLAR MODEL.
2. PROVIDE L-802A(L) CLASS 2 (SOLAR) ROTATING BEACON INCLUDING BIRD SPIKES, TELL-TALE RELAY, L-810(L) DOUBLE RED STEADY BURN OBSTRUCTION LIGHT MOUNTED ON 40' TIP-DOWN STEEL POLE.
3. PROVIDE AN OUTDOOR GROUND MOUNTED SOLAR POWER SUPPLY (SPS), ETL CERTIFIED, SELF-CONTAINED PHOTOVOLTAIC (PV) POWER SOURCE. HALI-BRITE OR EQUAL. PROVIDE ONE (1) SPARE BATTERY, ONE (1) FUSE PER EACH FUSE SIZE, & ONE (1) SPARE SURGE PROTECTOR. SYSTEM SHALL BE SIZED AND DESIGNED AS REQUIRED TO PROVIDE A 7-DAY FULL AUTONOMOUS OPERATION.
4. REFER TO ADDITIONAL DETAILS ON PLAN SHEET E214.





VICINITY MAP
NOT TO SCALE



RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN & BID ALTERNATE 3

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: BGS
Project Number: 731501
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DGR ENGINEERING

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KEYNOTES

(1) BOTTOM OF LIGHT BASE CAN IS ESTIMATED AT LEAST 12 INCHES ABOVE TOP OF PIPE. VERIFY IN FIELD.

0 20 40

EXIST STORM SEWER (SEE CIVIL PLANS)

EXIST STORM MH (SEE CIVIL PLANS)

(2) 1/C #8 5kV XLPE IN (1 OF 2) 2" SAND-ENCASED CONDUIT (SCH 80) (RWY 18/36 CKT) (1 OF 2) 2" SAND-ENCASED CONDUIT (SCH 80) (SPARE) (JOINT TRENCH) INCLUDING #6 BARE Cu COUNTERPOISE DEB ABOVE

409+00 END TXY F STA. 408+77.57

304+00

407+00

406+00

PROPOSED PAVEMENT EDGE (TYP.)

3 EQ SPACES @ 33.77'=101.31'

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

1-1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (RWY 18/36 CKT)

2 EQ SPACES @ 44.71'=89.42'

2 EQ SPACES @ 33.94'

2 EQ SPACES @ 44.70'=89.40'

44.09'

2 EQ SPACES @ 44.77'=89.54'

2 EQ SPACES @ 44.76'=89.52'

39.82'

10' (TYP.)

5' (TYP.)

38.18'

+81.28 PC

(1) 1/C #8 5kV XLPE IN (1) 2" CONDUIT (TYP.) (RWY 18/36 CKT)

SIGN #12, L858R/L MANDATORY/LOCATION, LED, SIZE 2, STYLE 2, CLASS 2, MODE 2, 2-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 18/36 CKT)

305+00

PROPOSED STORM INTAKE (SEE CIVIL PLANS)

PROPOSED STORM SEWER (SEE CIVIL PLANS)

2 EQ SPACES @ 43.19'=86.38'

EXIST STORM SEWER (SEE CIVIL PLANS)

STORM MH SYMBOL SHOWN DIAGRAMMATICALLY. FOR VISUAL REFERENCE ONLY. NO CONFLICT EXISTS

2 EQ SPACES @ 16.06'=32.12'

2 EQ SPACES @ 44.77'=89.54'

34.47'

2 EQ SPACES @ 44.50'=89.00'

+95.48 PT

OMITTED RUNWAY EDGE LIGHT (SEE BASE BID)

(2) 2" SAND-ENCASED CONDUIT (SCH 80) (SPARES) (JOINT TRENCH) INCLUDING #6 BARE Cu COUNTERPOISE DEB ABOVE

#6 BARE Cu COUNTERPOISE (DEB) (TYP.)

400+00 BEGIN TXY F STA. 400+00.00

401+00

402+00

PROPOSED TXY F

403+00

5' (TYP.)

10' (TYP.)

3 EQ SPACES @ 33.30'=99.90'

2 EQ SPACES @ 44.43'=88.86'

44.09'

2 EQ SPACES @ 15.94'=31.88'

306+00

PROPOSED RWY 18/36

SIGN #13, L858R/L MANDATORY/LOCATION, LED, SIZE 2, STYLE 2, CLASS 2, MODE 2, 3-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 18/36 CKT)

SIGN #14, L858Y DIRECTIONAL, LED, SIZE 2, STYLE 2, CLASS 2, MODE 2, 2-MODULE INCLUDING JB & CONCRETE SIGN PAD (RWY 18/36 CKT)

307+00

155.89'

BID ALTERNATE 1

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN - BID ALTERNATE 1

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

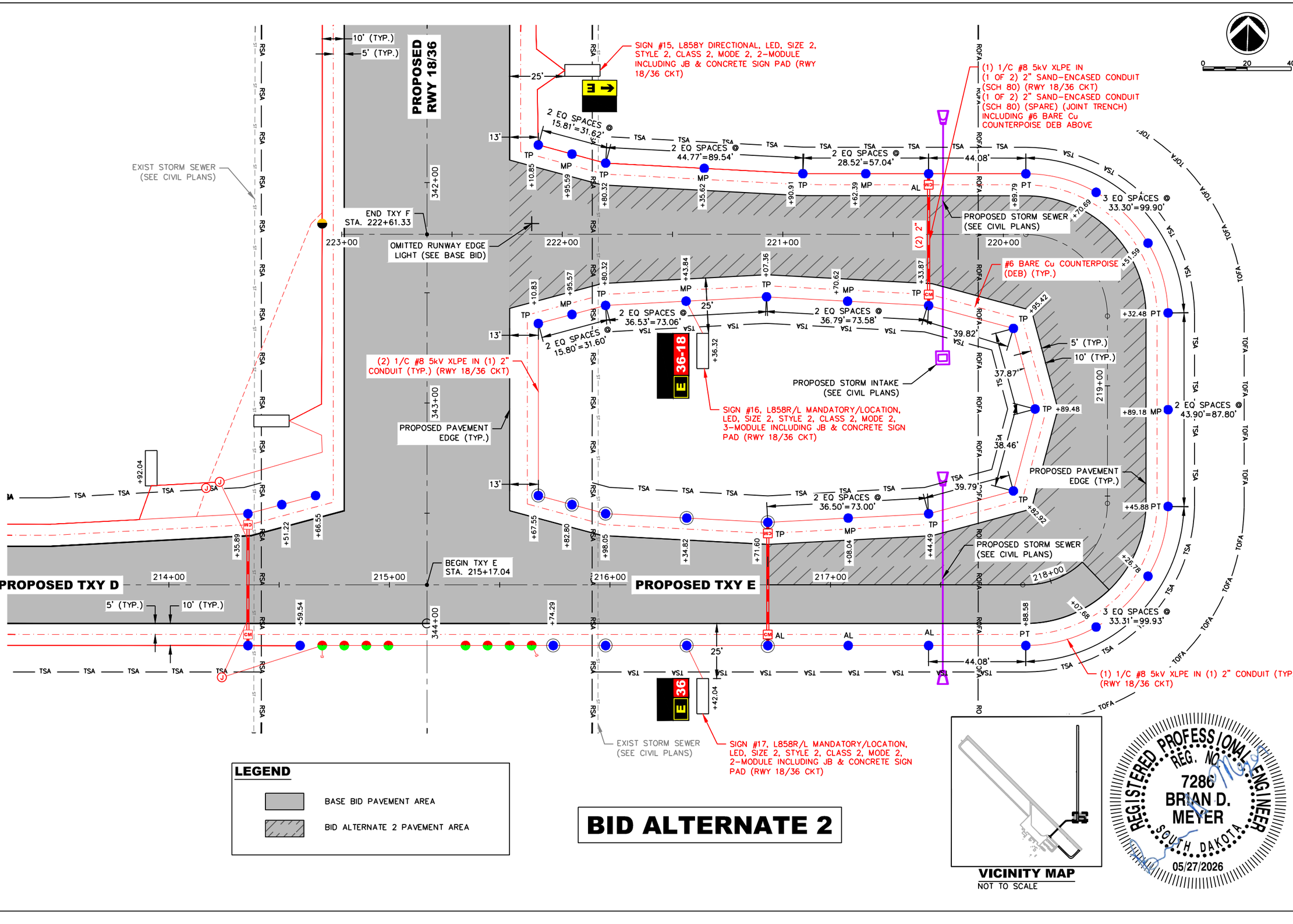
Project Manager: BDM
Designer: BGS
Project Number: 731501
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DGR ENGINEERING

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E53

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LEGEND

- BASE BID PAVEMENT AREA
- BID ALTERNATE 2 PAVEMENT AREA

BID ALTERNATE 2

VICINITY MAP
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7286
BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING PLAN - BID ALTERNATE 2

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

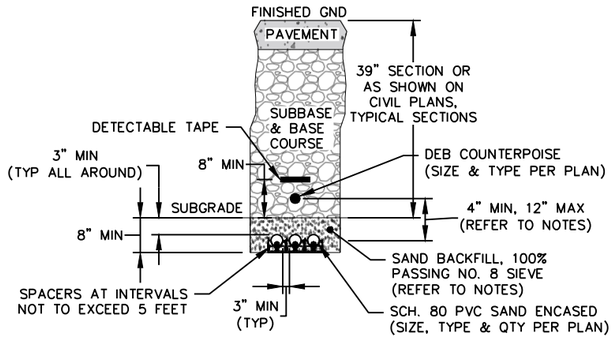
Project Manager: BDM
Designer: BGS
Project Number: 731501
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E54

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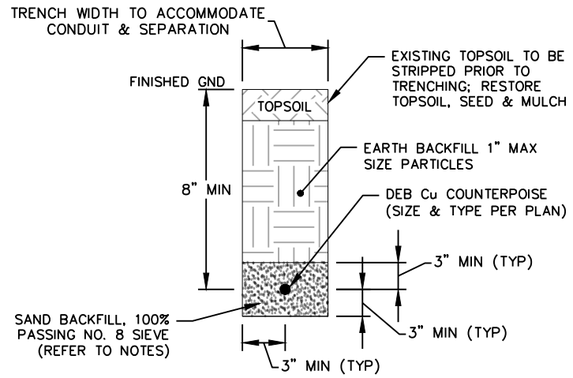
UNDER PAVEMENT

NOTES

1. CONDUIT/DUCT BANK SHALL BE INSTALLED IN THE TOP 12" OF SUBGRADE. CONDUIT FITTINGS & BENDS ONLY. HEATING & BENDING OF THE CONDUIT NOT PERMITTED.
2. EXTEND ALL DUCT BANKS A MINIMUM OF 10' BEYOND THE EDGE OF PAVEMENT & 13' BEYOND THE EDGE OF PAVEMENT WHEN CROSSING ADJACENT CKTs.
3. SAND BACKFILL NOT WAIVED FOR THIS APPLICATION.

L-110 SAND ENCASED CONDUIT/DUCT BANK IN TRENCH

NOT TO SCALE



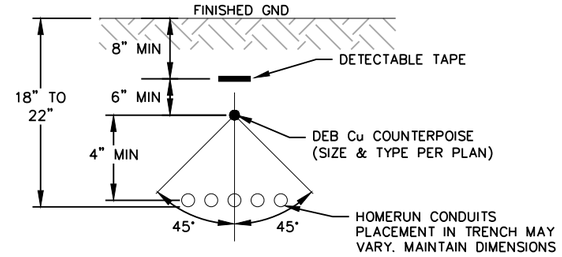
UNDER TURF (COUNTERPOISE ONLY)

NOTES

1. DEPTH OF TRENCHES AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. SAND BACKFILL MAY BE WAIVED BY THE ENGINEER IF THE EXISTING SOIL MEETS THE BACKFILL REQUIREMENTS. PRIOR APPROVAL FROM ENGINEER REQUIRED.
3. RESTORE ALL DISTURBED SURFACES TO THEIR ORIGINAL CONDITION, OR AS SHOWN ON THE CIVIL PLANS.

L-108 COUNTERPOISE IN TRENCH

NOT TO SCALE

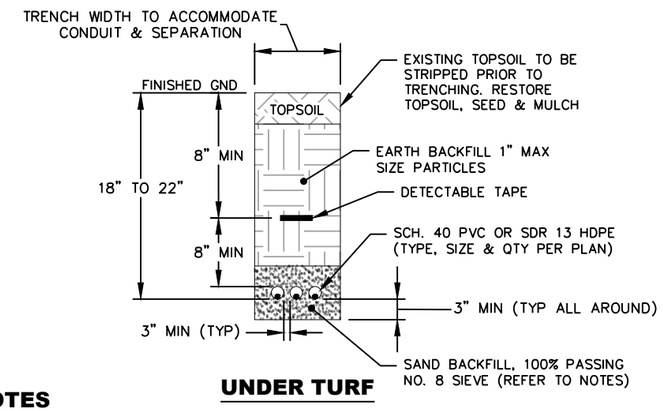


NOTES

1. MULTIPLE COUNTERPOISE CABLES MAY BE REQUIRED TO OBTAIN THE REQUIRED DIMENSIONS SHOWN. ADDITIONAL COUNTERPOISE SHALL BE CONSIDERED INCIDENTAL.

L-108 COUNTERPOISE ABOVE CONDUIT (HOMERUN) OR WHEN UNDER PAVEMENT

NOT TO SCALE



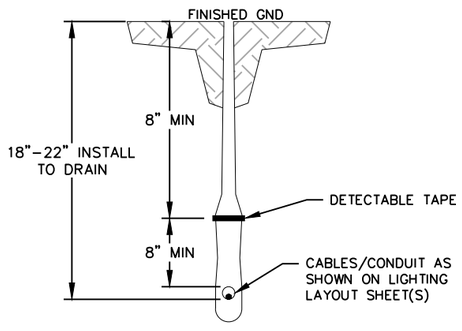
UNDER TURF

NOTES

1. INCREASE TRENCHES W/ MORE THAN 4 CABLES 3" IN WIDTH FOR EACH ADDITIONAL CABLE. IF SPECIFIED ON PLANS, TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
2. DEPTH OF TRENCHES AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. SAND BACKFILL MAY BE WAIVED BY THE ENGINEER IF THE EXISTING SOIL MEETS THE BACKFILL REQUIREMENTS. PRIOR APPROVAL FROM ENGINEER REQUIRED.
4. RESTORE ALL DISTURBED SURFACES TO THEIR ORIGINAL CONDITION, OR AS SHOWN ON THE CIVIL PLANS.
5. WHEN 5kV AND 600V CABLES ARE PRESENT IN SAME TRENCH, PROVIDE MIN 12" HORIZONTAL SEPARATION.
6. ALL SPARE & EMPTY CONDUIT SHALL BE PROVIDED W/ A 200 LB. TEST POLYPROPYLENE PULL ROPE.

L-110 CONDUIT IN TRENCH

NOT TO SCALE

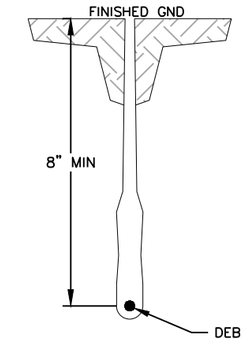


NOTES

1. CONDUIT PLOWING IS ALLOWED WHERE SUITABLE SOIL CONDITIONS EXIST AS DIRECTED & APPROVED BY THE RPR & ENGINEER.
2. REMOVE ROCK & STONES AS INDICATED IN SPECIFICATION L-110.
3. WHEN PLOWING MULTIPLE CONDUIT/CABLES, MAINTAIN DIMENSIONS AS SHOWN IN THE TYPICAL CONDUIT IN TRENCH DETAILS.

L-110 PLOWED PVC OR HDPE CONDUIT

NOT TO SCALE



NOTES

1. COUNTERPOISE PLOWING IS ALLOWED WHERE SUITABLE SOIL CONDITIONS EXIST AS DIRECTED & APPROVED BY THE RPR & ENGINEER.
2. REMOVE ROCK & STONES AS INDICATED IN SPECIFICATION L-110.

L-108 PLOWED COUNTERPOISE

NOT TO SCALE

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BRIAN D. MEYER
SOUTH DAKOTA
05/27/2026

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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

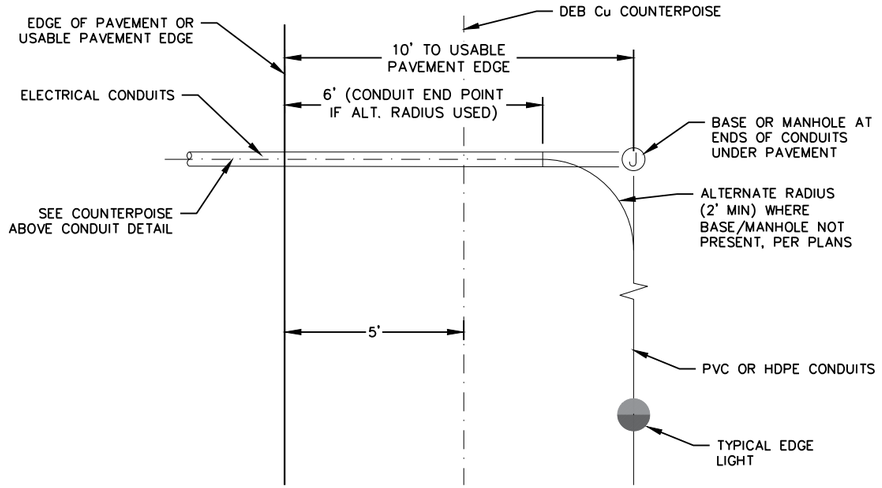
Project Manager: BDM
Designer: BGS
Project Number: 731501
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DGR ENGINEERING

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P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LIGHTING DETAILS.DWG

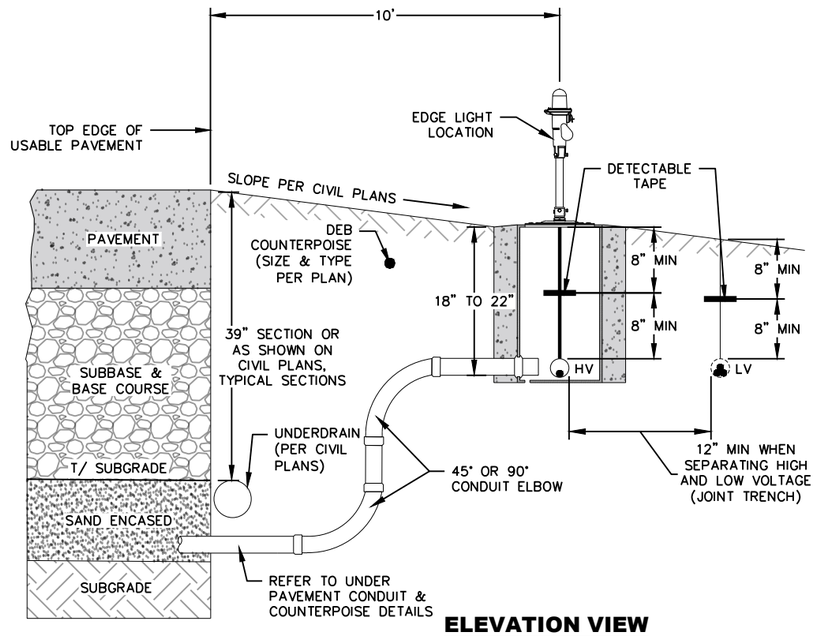
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NOTES

1. GND RODS AT 500 FOOT MAX SPACING (INCIDENTAL).
2. TERMINATE, SPLICE OR CONNECT COUNTERPOISE W/ EXOTHERMIC WELD TO GND ROD.

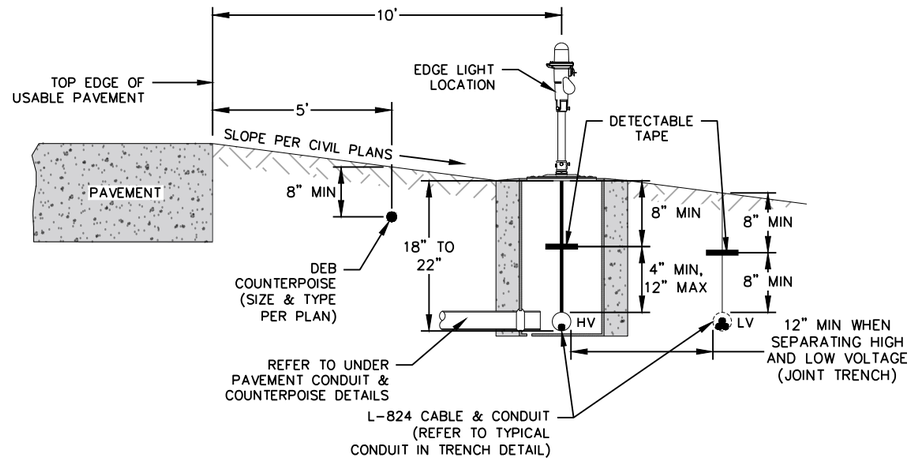
PLAN VIEW



ELEVATION VIEW

L-110 CONDUIT CROSSING

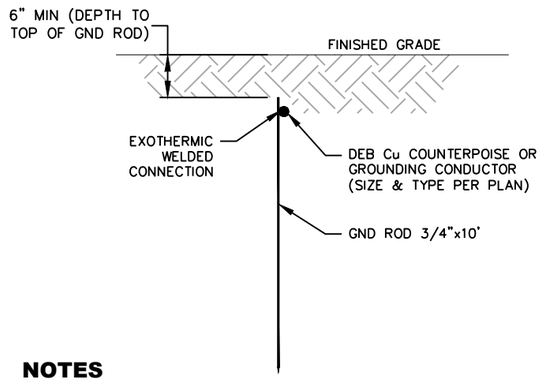
NOT TO SCALE



ELEVATION VIEW

L-108 EDGE LIGHT CABLE/COUNTERPOISE - ELEVATION VIEW

NOT TO SCALE



NOTES

1. DETAIL REFLECTS ALL GND ROD INSTALLATIONS, GND ROD CONNECTIONS & COUNTERPOISE CONNECTIONS.
2. INSTALL GND ROD AT MAXIMUM 500 FOOT SPACING CONNECTED TO COUNTERPOISE. USE GND ROD TO TERMINATE THE COUNTERPOISE AT BOTH ENDS OF CONDUIT.
3. COST OF GND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
4. THE NUMBER OF GND RODS IS SITE SPECIFIC AND MAY DEPEND ON SOIL RESISTIVITY.

L-108 GROUND ROD & COUNTERPOISE

NOT TO SCALE

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

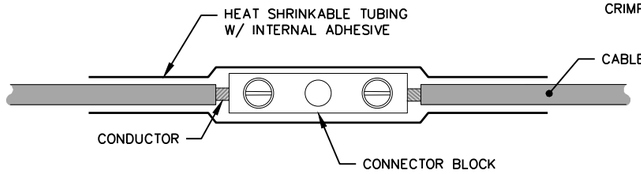
Project Manager: BDM
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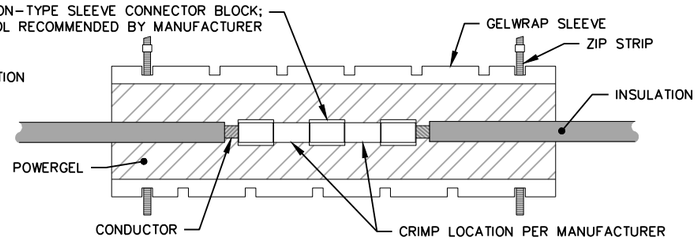
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MECHANICAL



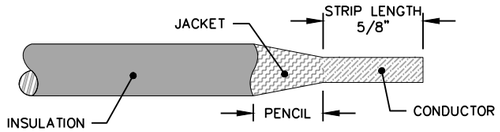
COMPRESSION

SPLICING NOTES

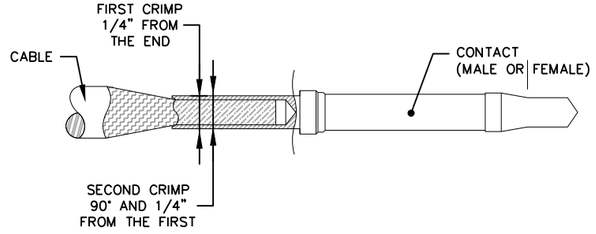
1. PROPERLY MATCH THE INSIDE DIAMETER OF CONNECTOR TO THE OUTSIDE DIAMETER OF CABLE.
2. COMPRESSION CONNECTIONS OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE COMPRESSION–TYPE SLEEVE CONNECTOR BLOCK MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. THE CRIMPING TOOL USED MUST BE LISTED BY THE L–823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.
3. ALL SPLICES SHALL BE INCIDENTAL TO THE ASSOCIATED WIRE.
4. ALL SPLICES, EXCEPT COUNTERPOISE, SHALL BE LOCATED IN A JUNCTION STRUCTURE.
5. VINYL TAPE NOT PERMITTED FOR USE.
6. HEAT SHRINK REQUIRED AT CABLE & CONNECTOR JOINT. TAPE & HEAT SHRINK NOT REQUIRED OVER GELWRAP SLEEVE.
7. USE OF INSULATION PENCILING TOOL REQUIRED WHEN APPLICABLE TO WIRE BEING USED.

L-108 FIELD-ATTACHED 600V CONDUCTOR SPLICE CONNECTION

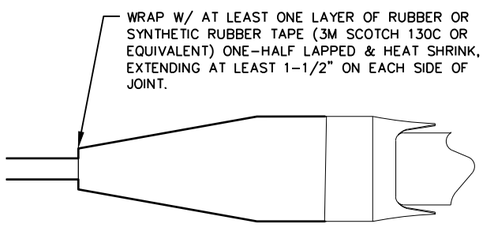
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STEP 1

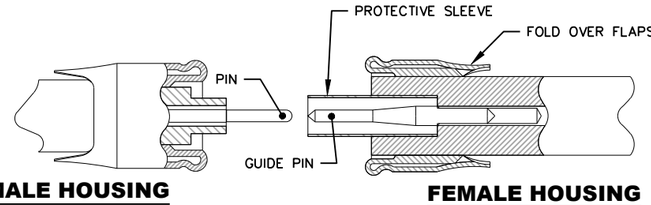


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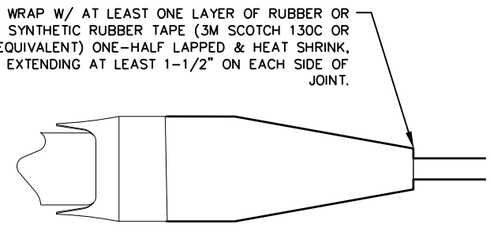


MALE HOUSING

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STEP 3



FEMALE HOUSING

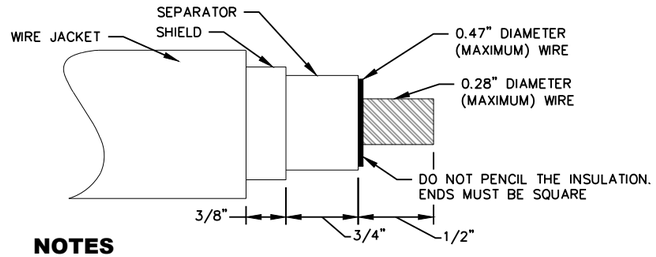
NOT TO SCALE

SPLICING NOTES

1. PROPERLY MATCH THE INSIDE DIAMETER OF CONNECTOR TO THE OUTSIDE DIAMETER OF CABLE.
2. CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. THE CRIMPING TOOL USED MUST BE LISTED BY THE L–823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.
3. ALL SPLICES SHALL BE INCIDENTAL TO THE ASSOCIATED WIRE.
4. ALL SPLICES, EXCEPT COUNTERPOISE, SHALL BE LOCATED IN A JUNCTION STRUCTURE.
5. VINYL TAPE NOT PERMITTED FOR USE.
6. HEAT SHRINK REQUIRED AT CABLE & CONNECTOR JOINT. TAPE & HEAT SHRINK NOT REQUIRED OVER ROLL OVER FLAP.
7. USE OF INSULATION PENCILING TOOL REQUIRED.

L-108 FIELD-ATTACHED 5kVA CONDUCTOR PLUG-IN SPLICE

NOT TO SCALE



NOTES

1. IF USING SHIELDED L–824 WIRE TO CONNECT OUTPUT WIRES FROM THE SCO CUTOUT, PERFORMING THE FOLLOWING PROCEDURE:
2. STRIP THE INPUT AND OUTPUT CABLE WIRES TO 1/2" FROM THE END OF THE WIRE. MAKE SURE THAT ANY PLASTIC COATING ON THE WIRE IS CUT OFF.

L-108 STRIPPING SHIELDED L-824 WIRE - SERIES CUTOUT (SCO)

NOT TO SCALE

REG.ISTERED PROFESSIONAL ENGINEER
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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

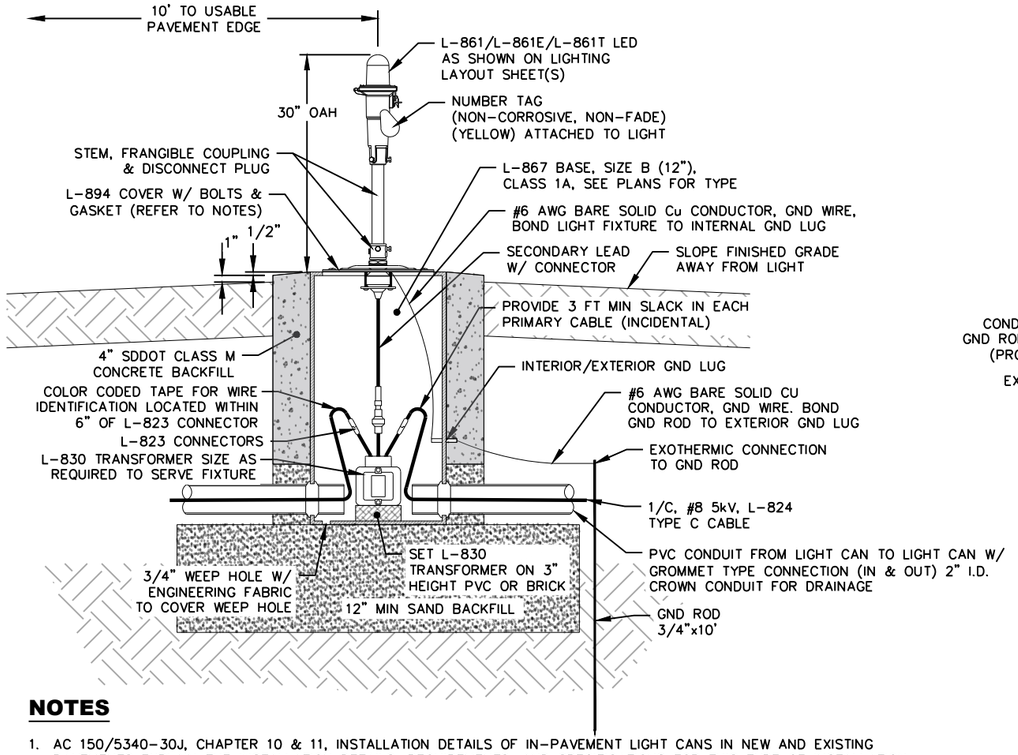
Project Manager: BDM
Designer: BGS
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E203

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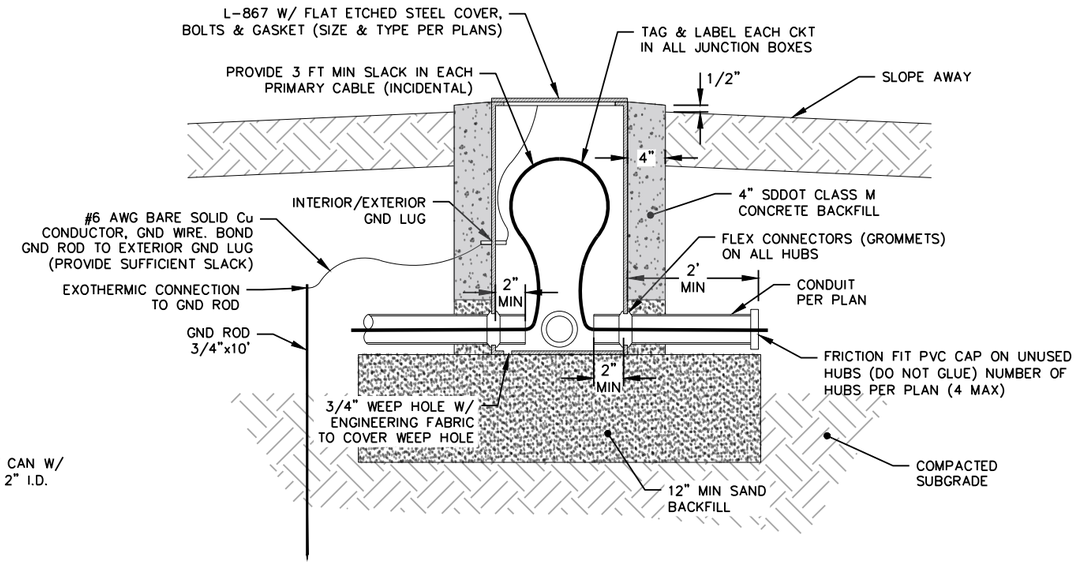


NOTES

1. AC 150/5340-30J, CHAPTER 10 & 11, INSTALLATION DETAILS OF IN-PAVEMENT LIGHT CANS IN NEW AND EXISTING PAVEMENTS EXPLAIN THE INSTALLATION DETAILS, REQUIREMENTS, AND SPECIFICATIONS FOR THIS TYPE OF INSTALLATION AND SHALL BE UTILIZED BY THE CONTRACTOR DURING INSTALLATION. OTHER OPTIONS OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. MINIMUM 1/2" BOLT PROTRUSION, BOLTS SHALL HAVE SUFFICIENT THREAD LENGTH SO BOLTS DO NOT SHOULDER OUT BEFORE THE FIXTURE IS SECURELY TIGHTENED.
3. APPLY A CORROSION INHIBITING, "NEVER-SEIZE" COMPOUND TO ALL SCREWS, NUTS, & FRANGIBLE COUPLING THREADS. IF COATED BOLTS ARE USED PER EB #83A, DO NOT APPLY "NEVER-SEIZE" COMPOUND.
4. COLOR-CODED WIRE IDENTIFICATION TAPE AS FOLLOWS: WHEN FACING LIGHT W/ BACK TO PAVEMENT, CABLE TO LEFT IS CODED RED AND CABLE TO THE RIGHT IS CODED BLUE.
5. 4" CONCRETE BACKFILL SHALL BE SDDOT 462 CLASS M CONCRETE & SHALL BE FORMED VIA SONOTUBE OR APPROVED EQUIVALENT. EARTH FORMING NOT PERMITTED.

L-861 IN-TURF (ELEVATED) EDGE LIGHT (LED) BASE MOUNTED

NOT TO SCALE

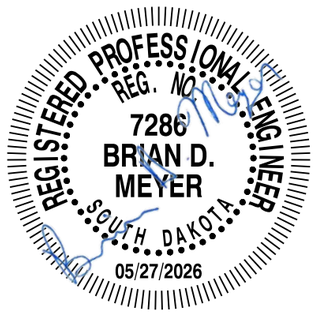


NOTES

1. AC 150/5340-30J, CHAPTER 10 & 11, INSTALLATION DETAILS OF IN-PAVEMENT LIGHT CANS IN NEW AND EXISTING PAVEMENTS EXPLAIN THE INSTALLATION DETAILS, REQUIREMENTS, AND SPECIFICATIONS FOR THIS TYPE OF INSTALLATION AND SHALL BE UTILIZED BY THE CONTRACTOR DURING INSTALLATION. OTHER OPTIONS OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
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L-867 IN-TURF ELECTRICAL JUNCTION BOX

NOT TO SCALE



RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

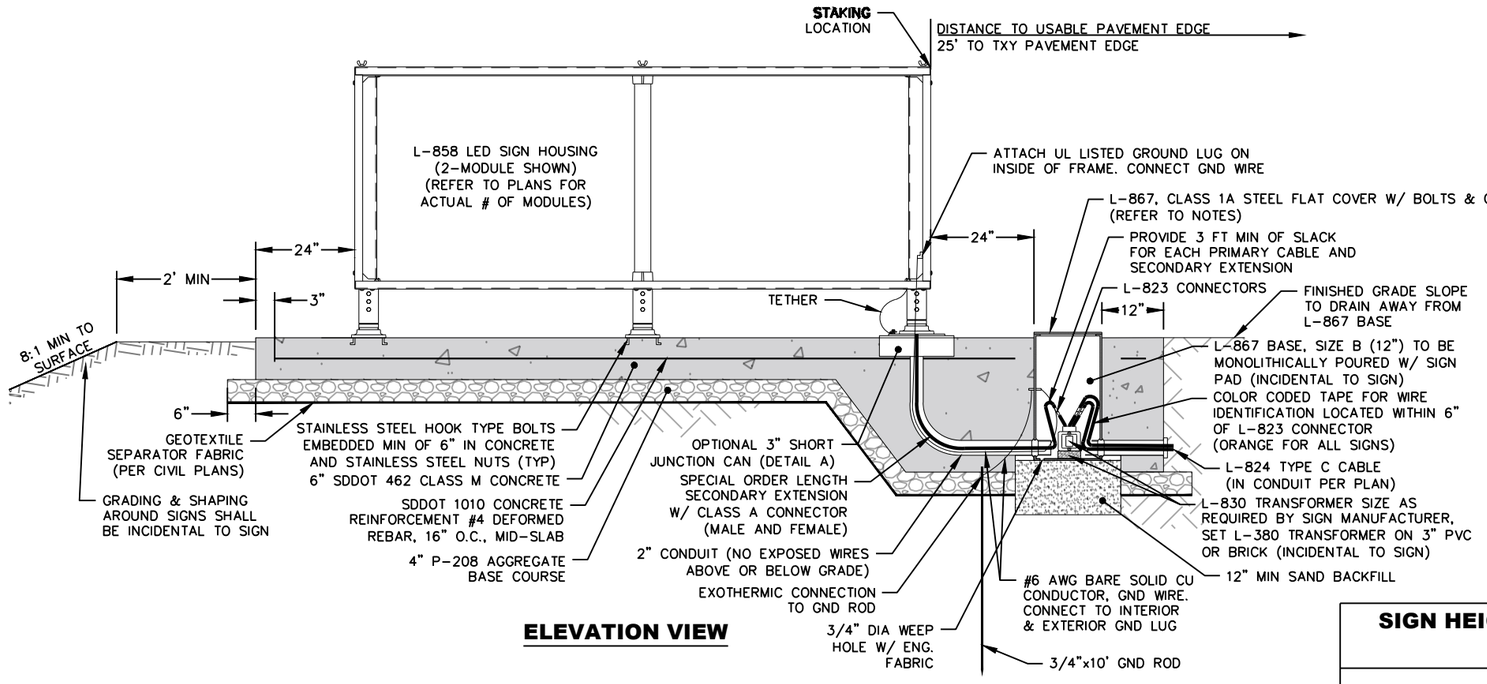
Project Manager: BDM
Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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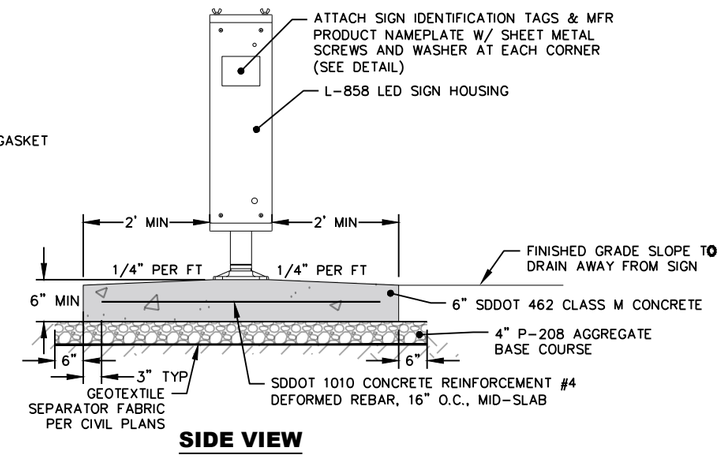
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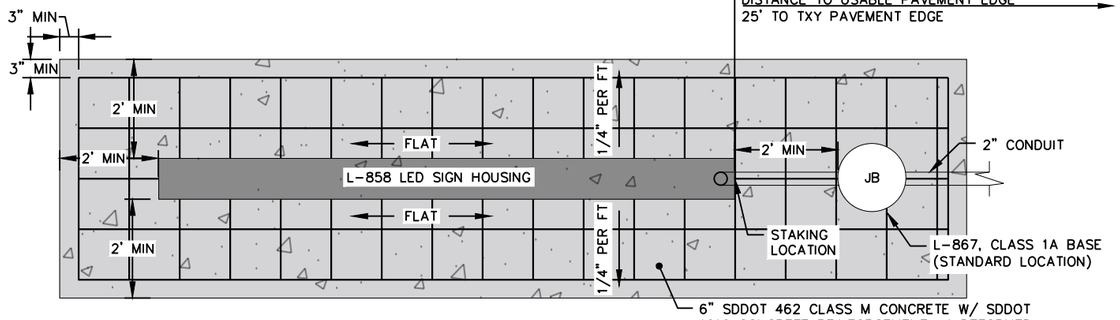
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ELEVATION VIEW



SIDE VIEW



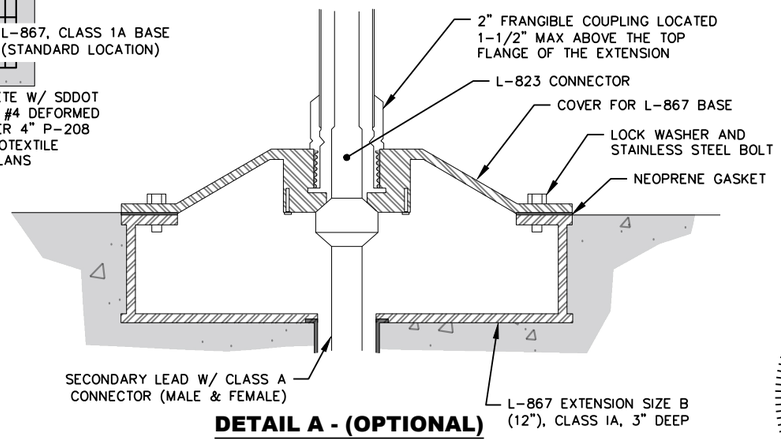
PLAN VIEW

SIGN HEIGHTS & LOCATION DISTANCE FROM USABLE PAVEMENT EDGE (PER AC 150/5345-44 & AC 150/5340-18)

SIGN SIZE	INSTALLED MAX HEIGHT* (INCHES)	PERPENDICULAR DISTANCE TO USABLE PAVEMENT EDGE (INCHES)
2	30-36	25'

NOTES

1. DISTANCE FROM TOP OF THE SIGN TO GRADE MEASURED AT THE SIDE OF THE SIGN THAT IS NEAREST TO THE APPLICABLE RUNWAY, TAXIWAY, OR APRON. THIS HEIGHT SHOULD BE REDUCED, IF NECESSARY, TO PROVIDE THE REQUIRED 12-INCH CLEARANCE BETWEEN THE TOP OF THE SIGN & THE CRITICAL AIRCRAFT.



DETAIL A - (OPTIONAL)

NOTES

1. NUMBER AND SPACING OF LEGS AS PER MANUFACTURER REQUIREMENTS.
2. L-867 JUNCTION CAN & ACCESSORIES FOR A COMPLETE INSTALLATION SHALL BE INCIDENTAL TO THE SIGN.
3. WHEN INSTALLING MULTIPLE SIGN HOUSINGS, THE HORIZONTAL SPACING/SEPARATION DISTANCE BETWEEN MESSAGE ELEMENTS IN A SIGN ARRAY WITHIN A COMMON CONTINUOUS HOUSING MUST BE BETWEEN AT LEAST THE APPLICABLE MINIMUM IN TABLE 10 OF FAA AC 150/5345-44 (CURRENT VERSION) AND MUST NOT EXCEED 12 INCHES FOR A SIZE 1, 14 INCHES FOR A SIZE 2, AND 16 INCHES FOR A SIZE 3 SIGN.
   - 3.1.1. THE SPACING/SEPARATION DISTANCE IS DEFINED AS THE MESSAGE ELEMENT CHARACTER'S CLOSEST HORIZONTAL POINT TO THE ADJACENT MESSAGE ELEMENT CHARACTER'S CLOSEST HORIZONTAL POINT.
   - 3.1.2. IF AN L-858Y MESSAGE ELEMENT IS ADJACENT TO AN L-858L MESSAGE, THEN THE HORIZONTAL SPACING/SEPARATION DISTANCE IS MEASURED FROM L-858Y CHARACTER'S ADJACENT EDGE TO THE L-858L'S ADJACENT MARGIN.
4. SIGN PAD & SIGN HOUSING SHALL BE LEVEL. EARTHWORK & GRADING SHALL BE INCIDENTAL TO THE SIGN.
5. L-867 BASE CAN TO BE MONOLITHICALLY POURED W/ SIGN PAD.
6. HILTI QUICK BOLTS (WEDGE-BOLT) OR RED HEAD TRUBOLT WEDGE ANCHORS OR EQUIVALENT. CHECK WITH THE ANCHOR-BOLT MANUFACTURERS FOR THEIR RECOMMENDATIONS AS APPLIED TO THE AIRPORT. MINIMUM 1/2" BOLT PROTRUSION, BOLTS SHALL HAVE SUFFICIENT THREAD LENGTH SO BOLTS DO NOT SHOULDER OUT BEFORE THE FIXTURE IS SECURELY TIGHTENED.
8. APPLY A CORROSION INHIBITING, "NEVER-SEIZE" COMPOUND TO ALL SCREWS, NUTS, & FRANGIBLE COUPLING THREADS. IF COATED BOLTS ARE USED PER EB #83A, DO NOT APPLY "NEVER-SEIZE" COMPOUND.

L-858 AIRFIELD LIGHTED SIGN

NOT TO SCALE

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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

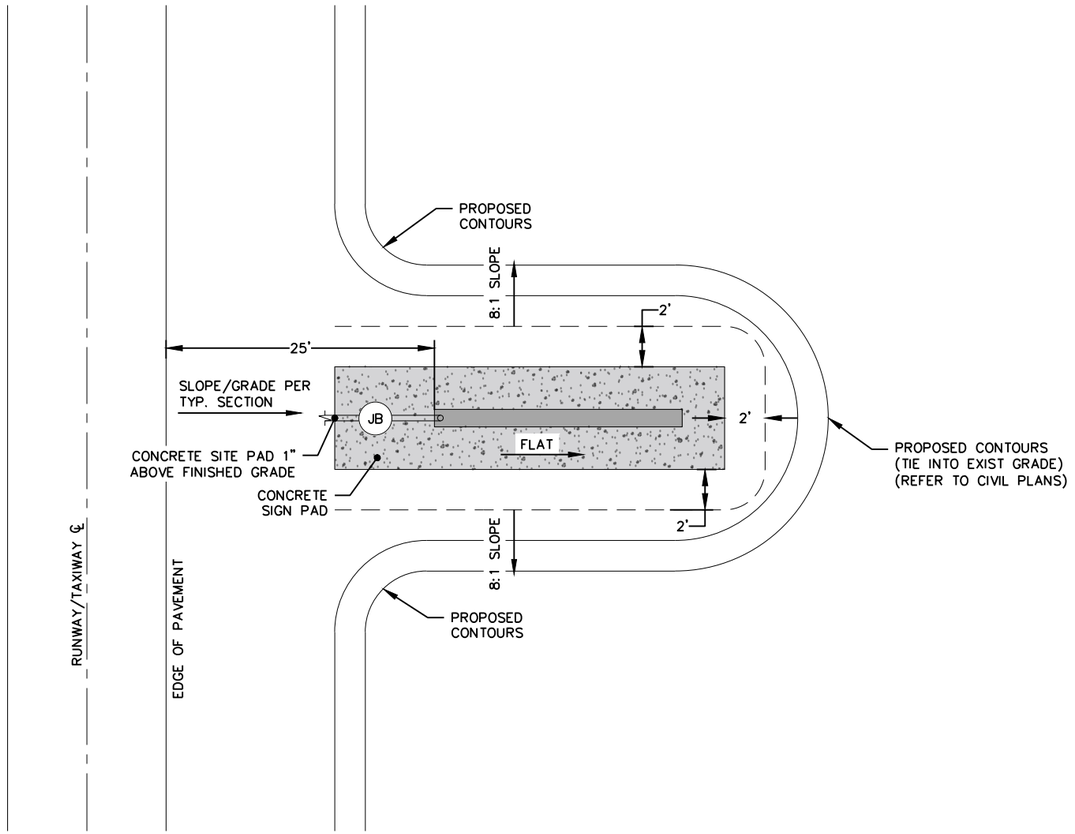
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NOTES

1. EARTHWORK SHALL BE CONSIDERED INCIDENTAL TO THE SIGN BID ITEM AND SEPARATE MEASUREMENT AND PAYMENT SHALL NOT BE MADE. EARTHWORK SHALL BE PER P-152 REQUIREMENTS.
2. COORDINATE SIGN GRADING W/ P-152 OPERATIONS.

L-858 SIGN HOUSING LAYOUT & GRADING

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

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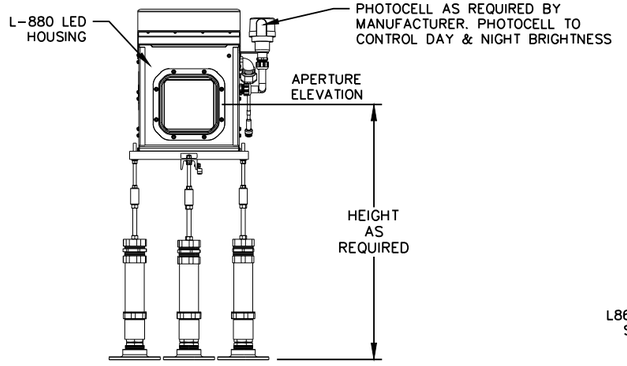
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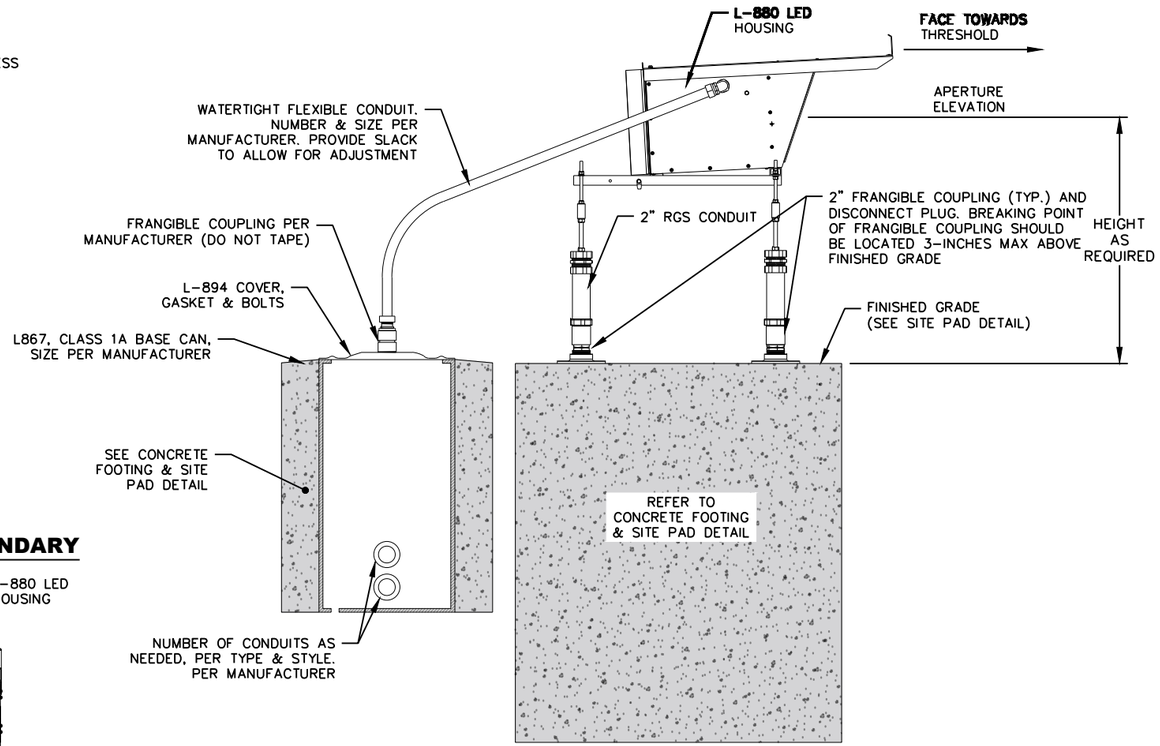
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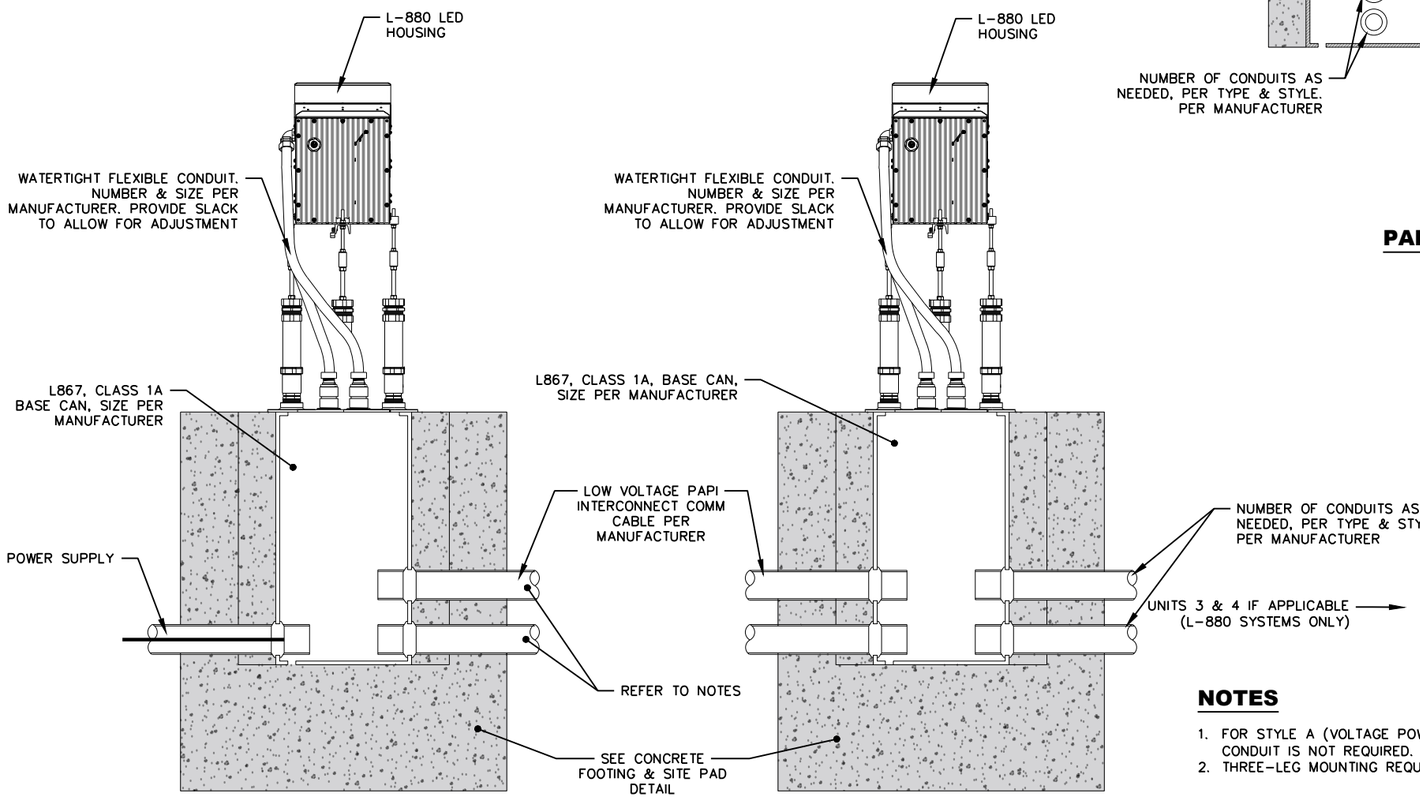
PAPI DETAIL - FRONT ELEVATION



PAPI DETAIL - SIDE ELEVATION

UNIT 1 - PRIMARY

UNIT 2 - SECONDARY



PAPI DETAIL - BACK ELEVATION

NOTES

1. FOR STYLE A (VOLTAGE POWERED) SYSTEMS, A SEPARATE HIGH VOLTAGE CONDUIT IS NOT REQUIRED.
2. THREE-LEG MOUNTING REQUIRED.

L-880 LED PAPI LIGHTING UNITS

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

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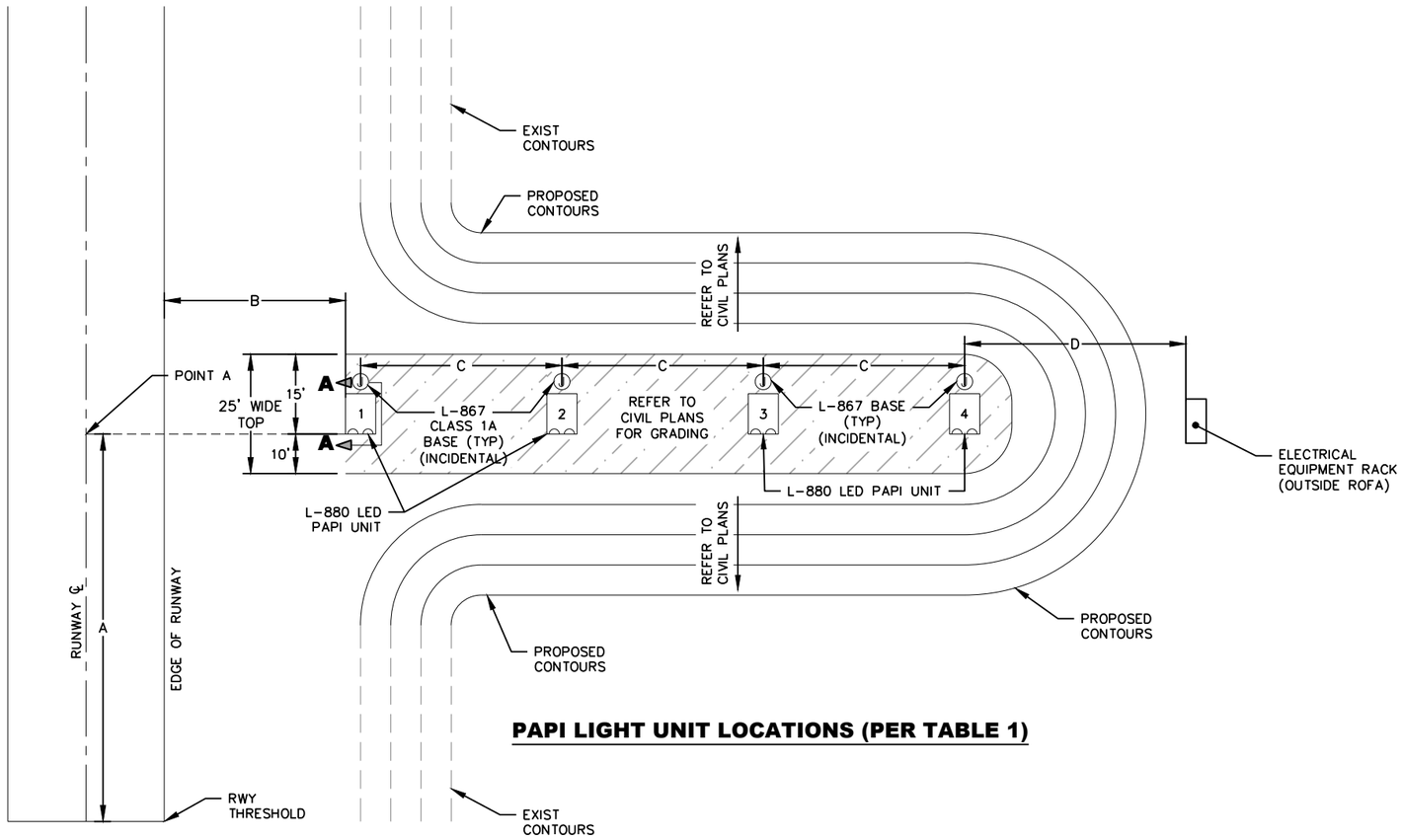
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Designer: BGS
Project Number: 731501
Phone: (605) 339-4157

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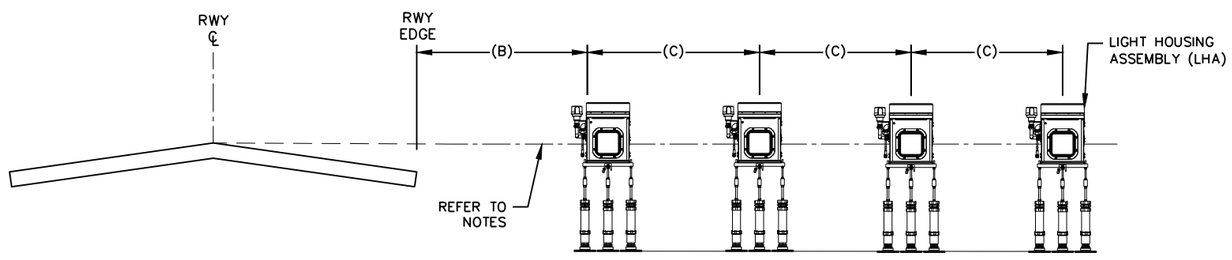
PAPI LIGHT UNIT LOCATIONS (PER TABLE 1)

NOTES

1. APPLY A CORROSION INHIBITING, "NEVER-SEIZE" COMPOUND TO ALL SCREWS, NUTS, & FRANGIBLE COUPLING THREADS. IF COATED BOLTS ARE USED PER EB #83A, DO NOT APPLY "NEVER-SEIZE" COMPOUND.
2. AZIMUTHAL AIMING: EACH LIGHT UNIT SHALL BE AIMED OUTWARD INTO APPROACH ZONE ON A LINE PARALLEL TO THE RUNWAY CENTERLINE WITHIN A TOLERANCE OF ±1/2 DEGREE.
3. MOUNTING HEIGHT TOLERANCES: THE BEAM CENTERS OF ALL LIGHT UNITS SHALL BE WITHIN 1 INCH OF A HORIZONTAL PLANE. THIS HORIZONTAL PLANE SHALL BE WITHIN ±1 FOOT OF THE ELEVATION OF THE RUNWAY CENTERLINE AT THE INTERCEPT POINT OF THE VISUAL GLIDE PATH W/ THE RUNWAY, EXCEPT AT LOCATIONS WHERE THE LIGHT UNITS ARE RAISED TO CLEAR SNOW.
4. TOLERANCE ALONG LINE PERPENDICULAR TO THE RUNWAY: THE FRONT FACE OF EACH LIGHT UNIT IN A BAR SHALL BE LOCATED ON A LINE PERPENDICULAR TO THE RUNWAY CENTERLINE WITH ±6 INCHES.
5. RUNWAY EDGE TO NEAREST EDGE OF PAPI LIGHT HOUSING ASSEMBLY SHALL BE 50'.

L-880 LED PAPI LIGHTING UNIT LAYOUT & GRADING DETAIL

NOT TO SCALE



PAPI POSITIONING GUIDANCE

NOT TO SCALE

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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

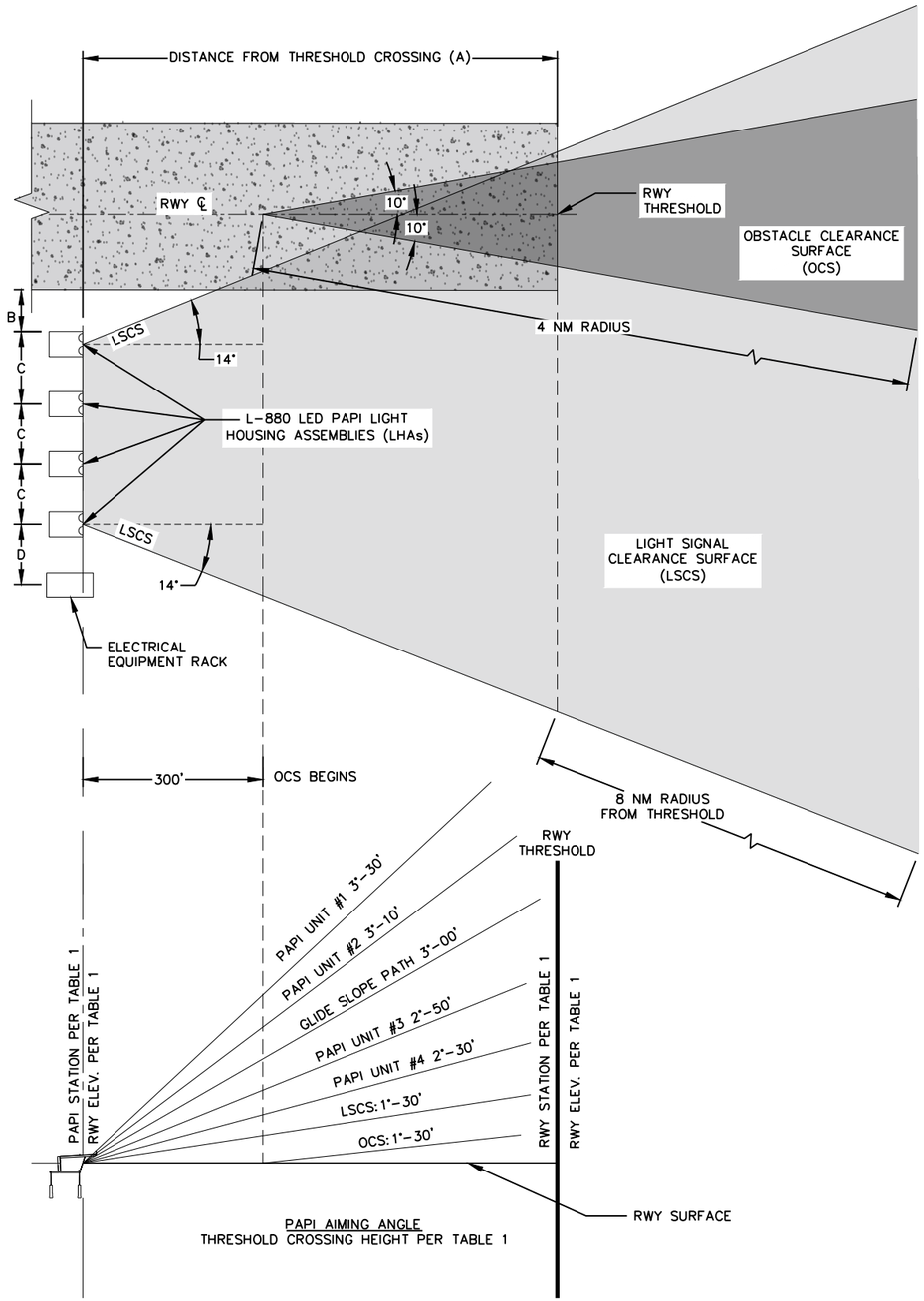
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L-880 PAPI OBSTACLE CLEARANCE SURFACE SURFACE (OCS) AND LIGHT SIGNAL CLEARANCE SURFACE (LSCS)

NOT TO SCALE

TABLE 1

DESCRIPTION	RUNWAY 18	RUNWAY 36
TYPE	L-880 LED	L-880 LED
STYLE	A (VOLTAGE)	A (VOLTAGE)
CLASS	II	II
DIMENSION A	701.66	854.56
DIMENSION B	50'	50'
DIMENSION C	20'	20'
DIMENSION D (OUTSIDE ROFA)	104'	104'
GRADE ELEV. UNIT #1	1286.30	1298.30
GRADE ELEV. UNIT #2	1286.10	1298.01
GRADE ELEV. UNIT #3	1285.77	1297.69
GRADE ELEV. UNIT #4	1285.44	1297.38
RWY THRESHOLD ELEVATION	1285.18	1305.47
THRESHOLD CROSSING HEIGHT	40'	40'
RUNWAY STA. @ POINT A	311+01.66	335+45.44
RUNWAY ℄ ELEV. @ POINT A	1288.56	1300.65
APERTURE ELEV. UNIT #1	1288.56	1300.65
APERTURE ELEV. UNIT #2	1288.56	1300.65
APERTURE ELEV. UNIT #3	1288.56	1300.65
APERTURE ELEV. UNIT #4	1288.56	1300.65
VISUAL GLIDE PATH ANGLE	3°	3°
AIMING ANGLE UNIT #1	3°30'	3°30'
AIMING ANGLE UNIT #2	3°10'	3°10'
AIMING ANGLE UNIT #3	2°50'	2°50'
AIMING ANGLE UNIT #4	2°30'	2°30'

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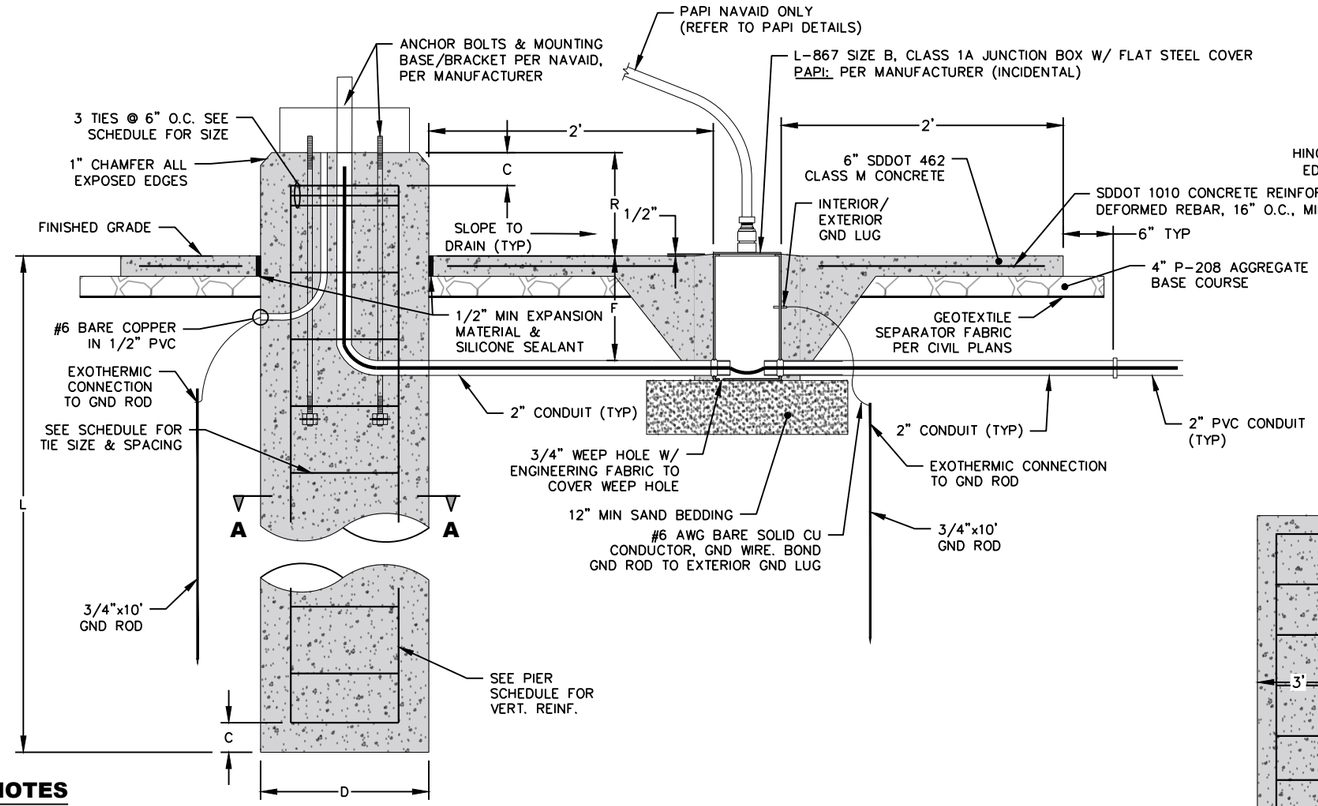
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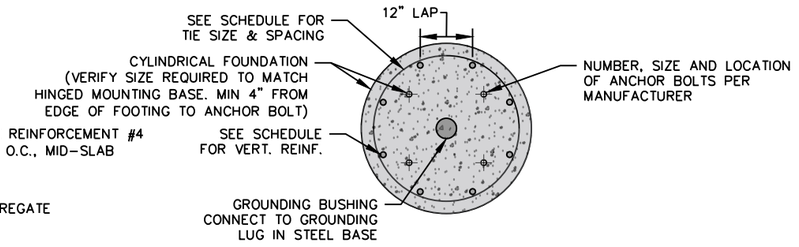
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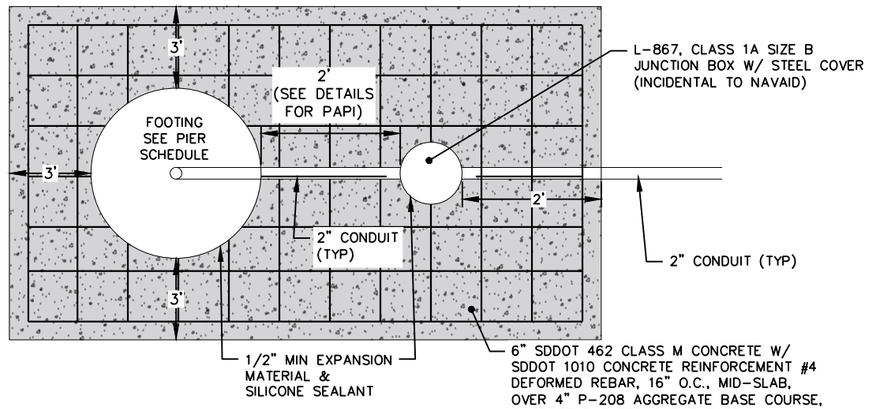




SECTION A-A

BID ALTERNATE 3

1. OMIT L-867B CLASS 1A JUNCTION BOX
2. ENLARGE CONCRETE CONCRETE SITE PAD TO ACCOMODATE SOLAR POWER SUPPLY (SPS) & RELATED EQUIPMENT.



NOTES

1. CONCRETE SHALL CONFORM TO SDDOT 462 CLASS M CONCRETE.
2. STEEL REINFORCEMENT SHALL CONFORM TO SDDOT 1010.
3. COORDINATE ANCHOR BOLT SIZE, QUANTITY, & PATTERN W/ MANUFACTURER/SUPPLIER.
4. WHERE GRADE IS NOT LEVEL @ PIER, PLACE 6" REVEAL ON THE HIGH SIDE OF THE PIER.
5. L-867 JUNCTION CAN, CONCRETE, AGGREGATE BASE, ENGINEERING FABRIC, AND ACCESSORIES FOR A COMPLETE INSTALLATION SHALL BE INCIDENTAL.

CONCRETE FOOTING DETAIL

NOT TO SCALE

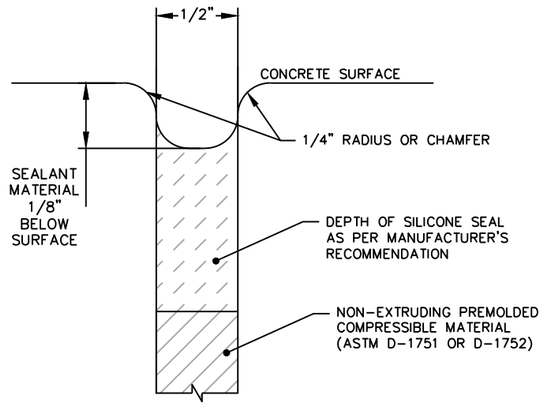
PIER SCHEDULE

STRUCTURE	PIER DIAMETER (D) (MIN) (1) (2)	PIER EMBEDMENT (L) (MIN) (1)	PIER REVEAL (R)	FORM DEPTH (F)	CLEAR DISTANCE (C)	VERTICAL REINFORCING		HORIZONTAL REINFORCING (3)		
						SIZE	QTY	SIZE	QTY	SPACING
SUPPLEMENTAL WINDCONE FOOTING	2'-0" MIN	7'-0"	0'-0"	2'-0" MIN	0'-3"	#4	8	#3	10	EQUAL
PAPI FOOTING	4'-0" MIN	7'-0"	0'-0"	2'-0" MIN	0'-3"	#4	12	#3	10	EQUAL
REIL FOOTING	2'-0" MIN	7'-0"	0'-0"	2'-0" MIN	0'-3"	#4	8	#3	10	EQUAL
BEACON FOOTING	2'-0" MIN	9'-0"	2'-0"	2'-0" MIN	0'-3"	#6	8	#4	10	EQUAL
EQUIPMENT RACK	1'-0" MIN	5'-0"	0'-0"	2'-0" MIN	0'-3"	–	–	–	–	–

(1) PER MANUFACTURER RECOMMENDATIONS
(2) ANCHOR BOLTS SHALL BE MINIMUM 4" FROM ANY CONCRETE EDGE
(3) CIRCULAR TIES MAY BE USED IN LIEU OF SPIRAL TIES. THE #3 TIES SHALL BE SPACED 12" APART EXCEPT FOR THE TOP TWO, WHICH SHALL BE SPACED 6" APART. THE TIES SHALL BE LAPPED 18" AND LAPS SHALL BE STAGGERED AROUND THE CAGE. SPIRAL TIES SHALL HAVE 1-1/2 EXTRA TURNS AT EACH END.

SITE PAD DETAIL

NOT TO SCALE



SILICONE SEAL DETAIL

NOT TO SCALE



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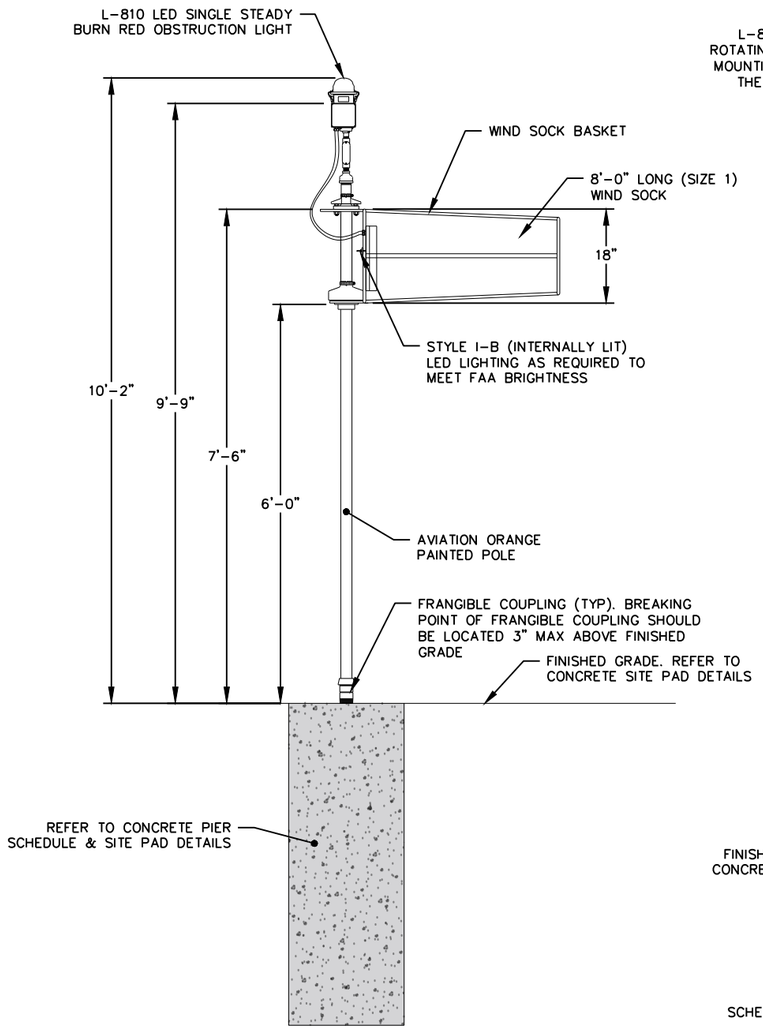
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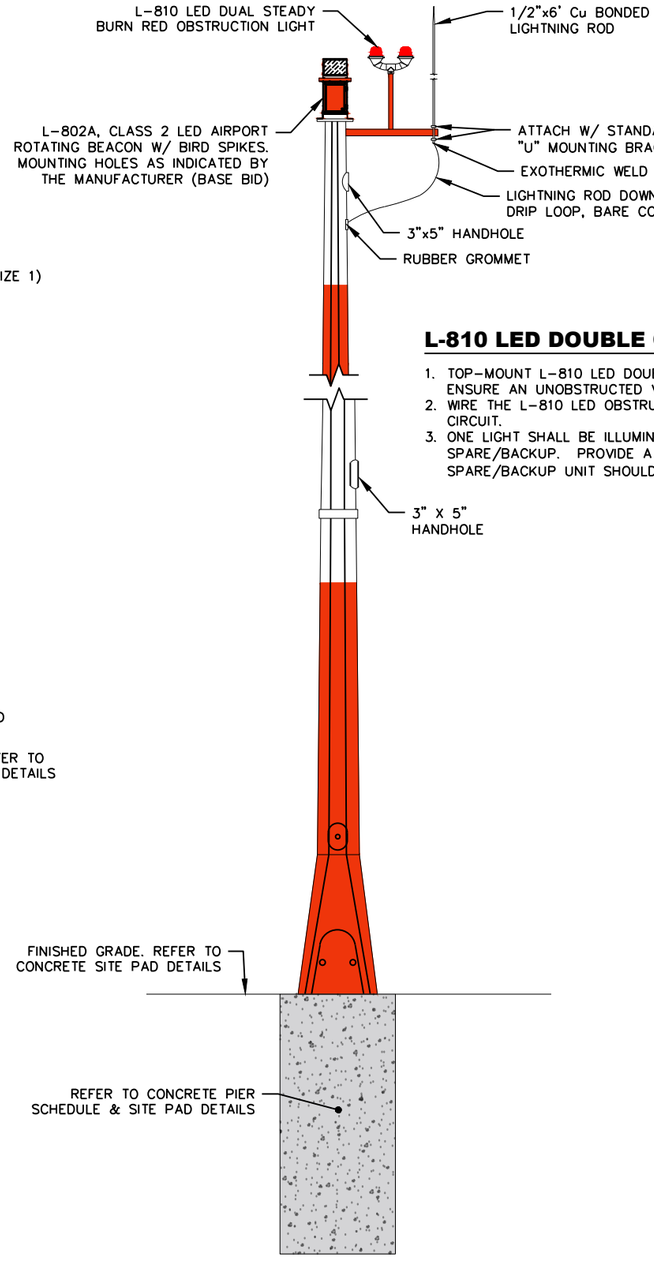


NOTES

1. ENCLOSE ALL CONDUCTORS WITHIN SUPPORT MAST.

L-806 SUPPLEMENTAL WINDCONE

NOT TO SCALE



40' TIP DOWN BEACON POLE

NOTES

1. PROVIDE LED BEACON ON NEW TIP-DOWN 40' POLE.
2. ENCLOSE ALL CONDUCTORS WITHIN SUPPORT MAST.
3. PAINT ALTERNATING AVIATION ORANGE AND WHITE.
4. PROVIDE POWER DRILL & ATTACHMENT FOR LOWERING & ERECTING TIP-DOWN POLE.

L-802A LED ROTATING BEACON

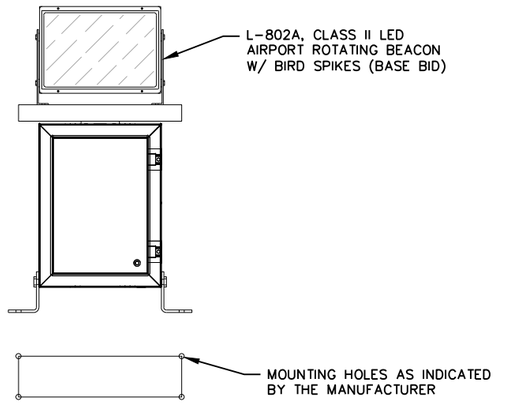
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BID ALTERNATE 3

1. REFER TO LIGHTING PLAN & BID ALTERNATE 3 FOR REQUIREMENTS.

L-810 LED DOUBLE OBSTRUCTION LIGHT NOTES

1. TOP-MOUNT L-810 LED DOUBLE STEADY BURN OBSTRUCTION LIGHT TO ENSURE AN UNOBSTRUCTED VIEW.
2. WIRE THE L-810 LED OBSTRUCTION LIGHTS IN PARALLEL WITH THE BEACON CIRCUIT.
3. ONE LIGHT SHALL BE ILLUMINATED & THE OTHER USED AS A SPARE/BACKUP. PROVIDE A TELL-TALE RELAY TO SWITCH TO THE SPARE/BACKUP UNIT SHOULD THE ONE LIGHT FAIL OR MALFUNCTION.



BEACON (LED)

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REVISIONS

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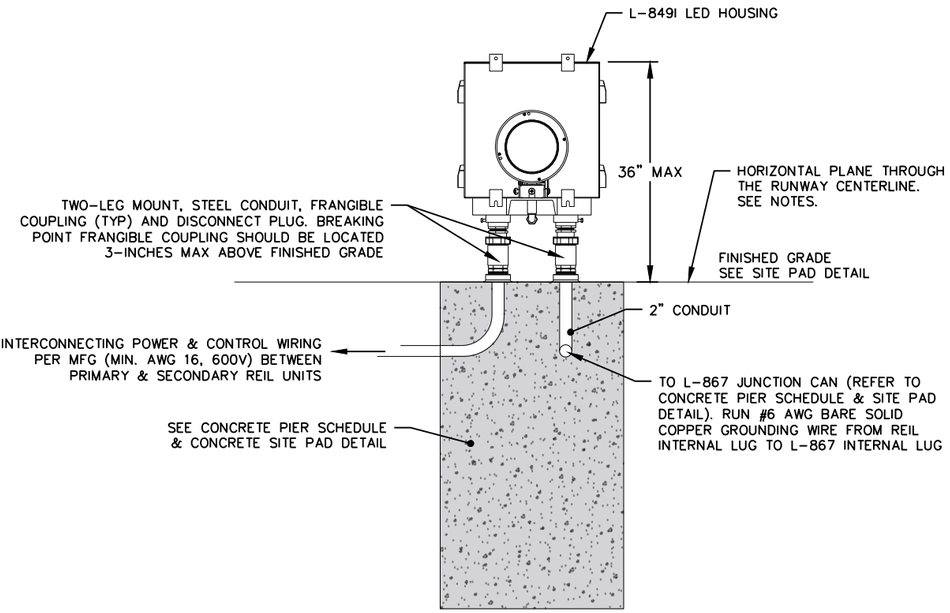
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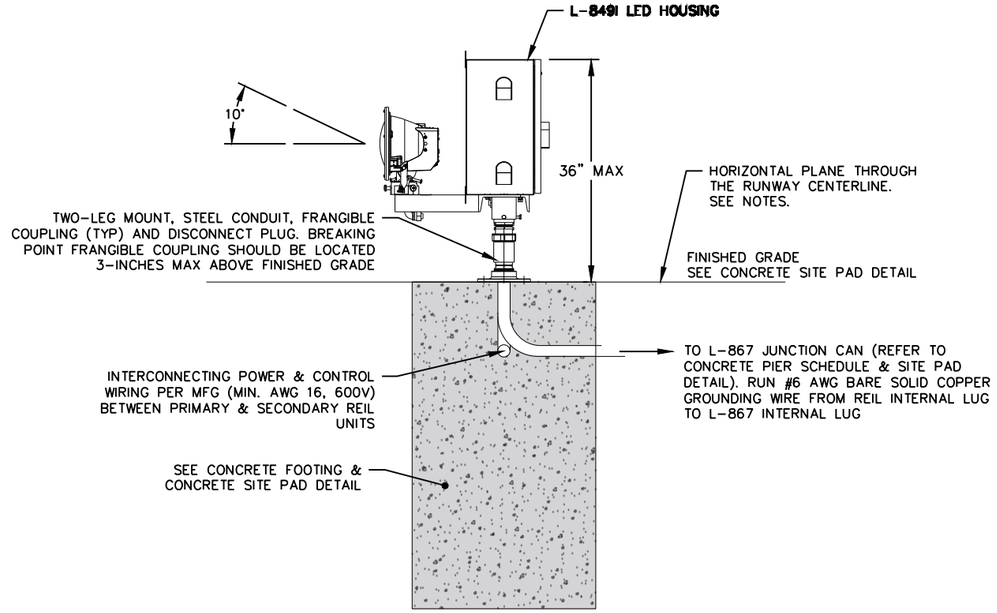
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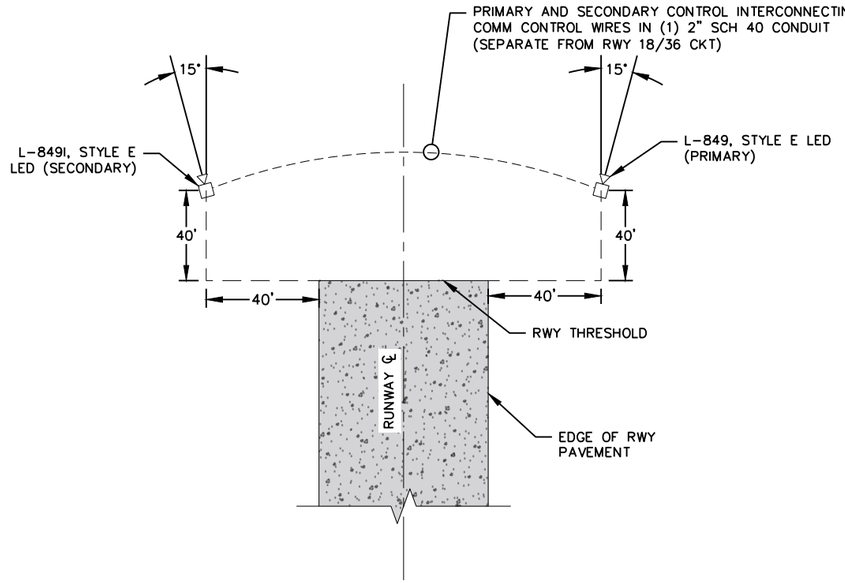
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L-849 LED REIL AIMING & LAYOUT
NOT TO SCALE

NOTES

1. THE BEAM CENTERLINE (AIMING ANGLE) OF EACH LIGHT UNIT SHALL BE AIMED 15° OUTWARD FROM A LINE PARALLEL TO THE RUNWAY CENTERLINE AND INCLINED AT AN ANGLE 10° ABOVE HORIZONTAL.
2. THE CENTER OF BOTH REIL LIGHT UNITS SHALL BE AT THE SAME ELEVATION AND WITHIN THREE (3) FEET OF THE HORIZONTAL PLANE THROUGH THE RUNWAY CENTERLINE.
3. REIL SETUP SHALL BE OFF DURING LOW AND MEDIUM INTENSITIES AND ON DURING HIGH INTENSITY. THE REIL LIGHTS SHALL BE CURRENT DRIVEN VIA A 3-STEP CCR.
4. THE REIL SHALL HAVE THREE BRIGHTNESS STEP CAPABILITY.
5. PROVIDE TWO (2) UNITS WITH INTERCONNECTING CONTROL WIRES. NUMBER, SIZE, AND TYPE OF CONDUCTORS BETWEEN THE POWER SUPPLY/CONTROL TRANSFORMER AND THE PRIMARY POWER AND CONTROL UNIT PER MANUFACTURER. SAME APPLIES TO WIRING BETWEEN THE PRIMARY AND THE SECONDARY UNITS, EXCEPT THAT THE CABLE SHALL BE L-824, TYPE C.
6. THE REIL SHALL BE REMOTE CONTROLLED THROUGH ACTIVATION OF THE RUNWAY EDGE LIGHTING CIRCUIT.
7. NUMBER OF MOUNTS PER MANUFACTURER.
8. CONTROL UNITS SHALL BE INTEGRATED INTO THE POWER SUPPLY ENCLOSURE.
9. COLOR-CODED WIRE IDENTIFICATION TAPE AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE.
10. WIRE SHALL HAVE I.D. TAG WITH APPROPRIATE CIRCUIT IDENTIFICATION ON TAG.

REIL OPERATION (STYLE E)	
CCR STEP	DISCHARGE LIGHTING EQUIPMENT INTENSITY
6.6A	HIGH INTENSITY (ON)
5.5A	MEDIUM INTENSITY (OFF)
4.8A	LOW INTENSITY (OFF)
NON-USE PERIOD	OFF

L-849 LED RUNWAY END IDENTIFICATION LIGHTS (REIL) DETAILS

NOT TO SCALE

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
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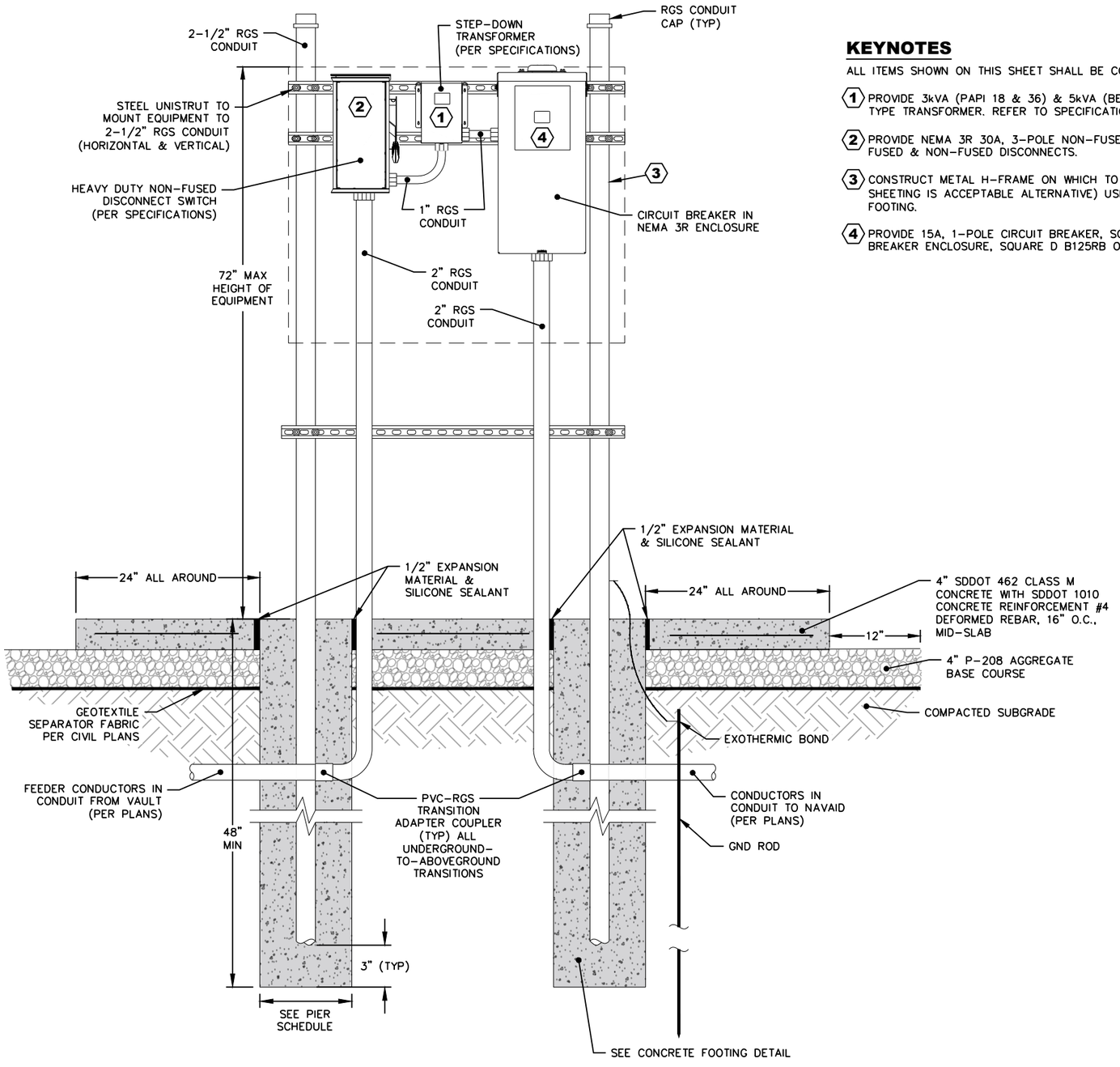
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KEYNOTES

ALL ITEMS SHOWN ON THIS SHEET SHALL BE CONSIDERED INCIDENTAL TO RESPECTIVE NAVAID BID ITEM.

(1) PROVIDE 3kVA (PAPI 18 & 36) & 5kVA (BEACON)(BASE BID), 480-120/240V NEMA 3R STEP-DOWN DRY TYPE TRANSFORMER. REFER TO SPECIFICATION SECTION 26 12 16, DRY-TYPE, LOW VOLTAGE TRANSFORMER.

(2) PROVIDE NEMA 3R 30A, 3-POLE NON-FUSED DISCONNECT. REFER TO SPECIFICATION SECTION 26 18 00, FUSED & NON-FUSED DISCONNECTS.

(3) CONSTRUCT METAL H-FRAME ON WHICH TO MOUNT EQUIPMENT WITH UNISTRUT CROSS MEMBERS (ALUMINUM SHEETING IS ACCEPTABLE ALTERNATIVE) USING 2-1/2" RGS CONDUIT EMBEDDED IN 48" x 12"ø CONCRETE FOOTING.

(4) PROVIDE 15A, 1-POLE CIRCUIT BREAKER, SQUARE D MODEL BDL16015 OR EQUAL IN NEMA 3R CIRCUIT BREAKER ENCLOSURE, SQUARE D B125RB OR EQUAL.

NOTES

1. EQUIPMENT RACK TO BE INSTALLED OUTDOORS.
2. OUTDOOR EQUIPMENT & ENCLOSURES SHALL BE RATED NEMA 3R AT A MINIMUM.
3. ALL BOLTS, WASHERS, NUTS, FASTENERS, & RELATED HARDWARE SHALL BE 304 STAINLESS STEEL.
4. CONDUIT SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITER'S LABORATORIES & SHALL BEAR THE MANUFACTURER'S TRADEMARK & U.L. LABEL.
5. FLEXIBLE CONDUIT SHALL BE FLEXIBLE, STEEL, GALVANIZED, SPIRAL STRIP WITH OUTER LIQUID-TIGHT, NON-METALLIC, SUNLIGHT RESISTANT JACKET. PROVIDE GROUNDING CONDUCTOR.
6. PVC CONDUIT SHALL BE SCH. 40 OR 80, U.L. LISTED, SUNLIGHT RESISTANT, RATED FOR 90°C CONDUCTORS.
7. CONDUIT INSTALLATIONS:
   A. UNDERGROUND: SCH. 40 OR SCH. 80 PVC FOR ALL HORIZONTAL CONDUIT INSTALLATIONS.
   B. UNDERGROUND TO ABOVE GROUND CONNECTIONS SHALL BE MADE WITH A PVC-TO-RGS ADAPTER BELOW GRADE AND PRIOR TO ELBOW..
   C. EXPOSED OUTDOOR: RGS CONDUIT OR LFMC (WHERE APPLICABLE). LFMC SHALL BE THE SEALTITE-TYPE W/ LIQUID-TIGHT CONNECTORS.
   D. EXPOSED OUTDOOR: SHALL BE VERTICALLY PLUMB WITH GROUND AND RESPECTIVE TERMINATION POINT ABOVE GROUND. RIGID GALVANIZED STEEL OR PVC CONDUIT SHALL NOT TRAVERSE AWOS SITE AT OR ABOVE GROUND LEVEL EXCEPT WHERE SHOWN.
8. PROVIDE LIQUID-TIGHT & CONCRETE-TIGHT COMPRESSION FITTINGS AT CONDUIT & ENCLOSURE CONNECTIONS.
9. GROUND RODS SHALL BE 3/4" x 10', ONE PIECE, POINTED, Cu BONDED WITH MINIMUM 10 MIL PLATED THICKNESS.
10. GROUNDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO GROUND RODS. CLAMPS NOT PERMITTED.

ELECTRICAL EQUIPMENT RACK - PAPI 18, PAPI 36, & BEACON (BASE BID)

NOT TO SCALE

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RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS

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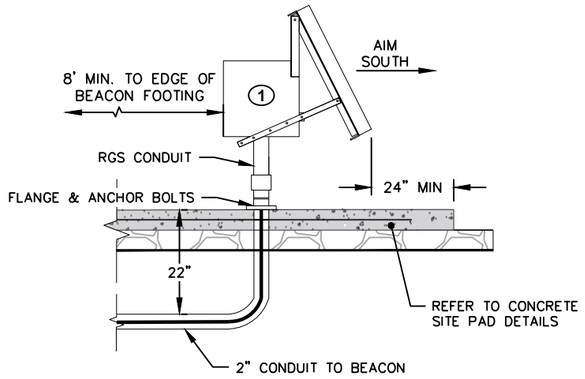
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BID ALTERNATE 3



NOTES

1. CONCRETE SHALL CONFORM TO SDDOT 462 CLASS M CONCRETE.
2. STEEL REINFORCEMENT SHALL CONFORM TO SDDOT 1010.
3. COORDINATE ANCHOR BOLT SIZE, QUANTITY, & PATTERN W/ MANUFACTURER/SUPPLIER.
4. WHERE GRADE IS NOT LEVEL @ PIER, PLACE 6" REVEAL ON THE HIGH SIDE OF THE PIER.
5. CONTRACTOR SHALL SUBMIT PROPOSED SPS LAYOUT TO ENGINEER FOR APPROVAL.

SOLAR PANEL SUPPLY (SPS)

NOT TO SCALE

KEYNOTES

(1) PROVIDE BATTERY ENCLOSURE. BATTERIES SHALL BE TYPE ABSORBED GLASS MAT (AGM) WITH A MINIMUM 4,000 CHARGE/DISCHARGE CYCLES, CHARGE CONTROLLER, STATUS INDICATORS, AND WITH AUTONOMY OF AT LEAST 7 DAYS.

NOTES

1. ALL ITEMS SHOWN ON THIS SHEET SHALL BE CONSIDERED INCIDENTAL TO L-103 40' TIP-DOWN POLE BID ITEM.
2. OUTDOOR EQUIPMENT & ENCLOSURES SHALL BE RATED NEMA 3R AT A MINIMUM.
3. ALL BOLTS, WASHERS, NUTS, FASTENERS, & RELATED HARDWARE SHALL BE 304 STAINLESS STEEL.
4. CONDUIT SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITER'S LABORATORIES & SHALL BEAR THE MANUFACTURER'S TRADEMARK & U.L. LABEL.
5. FLEXIBLE CONDUIT SHALL BE FLEXIBLE, STEEL, GALVANIZED, SPIRAL STRIP WITH OUTER LIQUID-TIGHT, NON-METALLIC, SUNLIGHT RESISTANT JACKET. PROVIDE GROUNDING CONDUCTOR.
6. PVC CONDUIT SHALL BE SCH. 40 OR 80, U.L. LISTED, SUNLIGHT RESISTANT, RATED FOR 90°C CONDUCTORS.
7. CONDUIT INSTALLATIONS:
   A. UNDERGROUND: SCH. 40 OR SCH. 80 PVC FOR ALL HORIZONTAL CONDUIT INSTALLATIONS.
   B. UNDERGROUND TO ABOVE GROUND CONNECTIONS SHALL BE MADE WITH A PVC-TO-RGS ADAPTER BELOW GRADE AND PRIOR TO ELBOW..
   C. EXPOSED OUTDOOR: RGS CONDUIT OR LFMC (WHERE APPLICABLE). LFMC SHALL BE THE SEALTITE-TYPE W/ LIQUID-TIGHT CONNECTORS.
   D. EXPOSED OUTDOOR: SHALL BE VERTICALLY PLUMB WITH GROUND AND RESPECTIVE TERMINATION POINT ABOVE GROUND. RIGID GALVANIZED STEEL OR PVC CONDUIT SHALL NOT TRAVERSE AWOS SITE AT OR ABOVE GROUND LEVEL EXCEPT WHERE SHOWN.
8. PROVIDE LIQUID-TIGHT & CONCRETE-TIGHT COMPRESSION FITTINGS AT CONDUIT & ENCLOSURE CONNECTIONS.
9. GROUND RODS SHALL BE 3/4" x 10', ONE PIECE, POINTED, Cu BONDED WITH MINIMUM 10 MIL PLATED THICKNESS.
10. GROUNDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO GROUND RODS. CLAMPS NOT PERMITTED.
11. SPS PANEL TO BE AIMED TO THE SOUTH.
12. SPS SHALL BE EQUIPPED WITH TALL LEGS (30")
13. SPS SHALL BE HALI-BRITE OR ENGINEER APPROVED EQUAL.
14. SPS PHOTOCELL CONTROL NOT PERMITTED. CONTROLS SHALL ENERGIZE THE BEACON WHEN THE SPS HAULTS ENERGY COLLECTION AND SHALL DE-ENERGIZE THE BEACON WHEN THE SPS RESUMES ENERGY COLLECTION.
15. REFER TO ADDITIONAL NOTES ON PLAN SHEET E52.

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MITCHELL, SOUTH DAKOTA

LIGHTING DETAILS - BID ALTERNATE 3

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DGR ENGINEERING

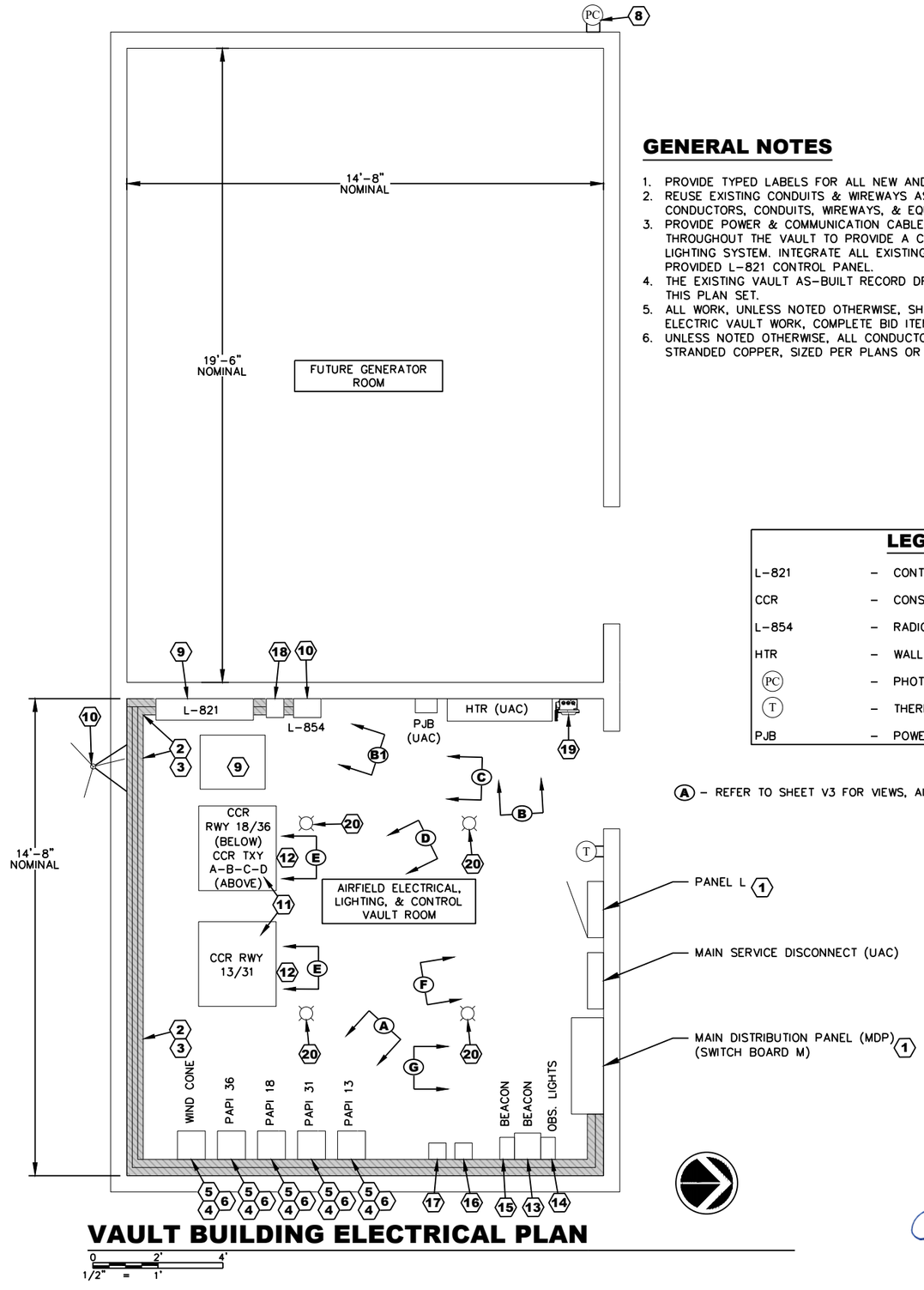
Sheet
E214

P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - LIGHTING DETAILS.DWG

Plot Date: 5/26/2026 2:56:00 PM

EQUIPMENT NOTES - VAULT BUILDING

1. MODIFY EXISTING MAIN DISTRIBUTION PANEL (MDP/SWITCHBOARD M) & EXISTING PANEL L. SEE SHEET V2 FOR DETAILS.
2. THREE EXISTING CONTINUOUS WIREWAYS WITH REMOVABLE FRONT COVER, TO REMAIN.
3. EXISTING CONTINUOUS COPPER GROUND BUS BARS AROUND PERIMETER OF ROOM, TO REMAIN.
4. REMOVE & DISPOSE OF EXISTING 20A – 240V – 2–POLE ELECTRICALLY HELD CONTACTOR IN NEMA 1 ENCLOSURE WITH COVER MOUNTED HOA (HAND–OFF–AUTO).
5. EXISTING 3 kVA – 240/480V – 1 PHASE STEP–UP TRANSFORMER, INDOOR ENCLOSURE, WALL–MOUNTED, TO REMAIN.
6. EXISTING 20A/2P, 480V, CIRCUIT BREAKER IN NEMA ENCLOSURE, WALL MOUNTED, TO REMAIN.
7. RESERVED. SPACE NOT USED
8. REMOVE & DISPOSE OF EXISTING PHOTOCELL ON NORTHWEST EXTERIOR OF BUILDING FOR INTERFACE WITH CONTROLS. PROVIDE INTERMATIC MODEL EK43365 OR EQUAL PHOTO CONTROL DEVICE.
9. REMOVE & DISPOSE OF EXISTING COOPER CROUSE–HINDS FREE–STANDING FLOOR–MOUNTED EQUIPMENT RACK FOR L–890 AIRPORT LIGHTING AND CONTROL MONITORING SYSTEM (ALCMS), RACK, & CONTROL WIRING THROUGHOUT THE AIRFIELD ELECTRICAL, LIGHTING, & CONTROL VAULT ROOM. PROVIDE L–821 AIRFIELD LIGHTING CONTROL PANEL, TYPE I CONVENTIONAL, CLASS W WALL–MOUNTED, STYLE 1 UNLIGHTED, MODE 1 GENERIC PER SPECIFICATION 34 43 26. 13.
10. REMOVE & DISPOSE OF EXISTING L–854 RADIO RECEIVER & ANTENNA,, WALL–MOUNTED, FOR INTERFACE WITH LIGHTING CONTROLS. PROVIDE L–854, TYPE I AIR–TO–GROUND RADIO CONTROL EQUIPMENT W/ HEAVY DUTY ANTENNA & MOUNTING BRACKETS PER SPECIFICATION 34 43 26. 16.
11. EXISTING CONSTANT CURRENT REGULATOR FOR SERIES RUNWAY & TAXIWAY LIGHTING CIRCUITS, SIZED AS FOLLOWS:
    CCR–RWY (13/31): 5–STEP, 30kW, 240V, L–828 – 138A. COOPER CROUSE–HINDS PART #82860F1–240–30–5–D–M; SERIAL #09L390. INTERNAL SERIES CUTOUT TO REMAIN.
    REMOVE & SALVAGE CCR–RWY (18/36): 3–STEP, 15kW, 240V, L–828 – 69A. PROVIDE CCR RWY 18/36: L–829 REGULATOR W/ MONITORING, CLASS 1 (6.6A), STYLE 1 (3–STEP) 7.5kW SIZE, 240V INPUT WITH INTERNAL SERIES CIRCUIT CUTOUT PER SPECIFICATION 34 43 26.19.
    CCR–TXY A–B–C–D; 3–STEP, 15 kW, 240V, L–828 – 69A COOPER CROUSE–HINDS PART #82860F1–240–15–3–D–M; SERIAL #09M513, INTERNAL SERIES CUTOUT TO REMAIN.
12. REMOVE & DISPOSE OF EXISTING CONTROL INTERFACE MODULE (CIM) & WIRING FOR EACH CONSTANT CURRENT REGULATOR.
13. EXISTING 5 kVA 240/480V – 1 PHASE STEP–UP TRANSFORMER, WALL–MOUNTED (BEACON), TO REMAIN.
14. EXISTING 20A/2P/240V ELECTRICALLY HELD CONTACTOR (OBSTRUCTION LIGHTS), TO REMAIN.
15. REMOVE & DISPOSE OF EXISTING 20A/2P/240V ELECTRICALLY HELD CONTACTOR (BEACON).
16. EXISTING 6 kVA – 3 PHASE STEP–UP TRANSFORMER, WALL MOUNTED (TR–1 WATER PUMP), TO REMAIN.
17. EXISTING 2.5 kVA – 240V – 3 PHASE POWER FACTOR CAPACITOR, TO REMAIN.
18. REMOVE & DISPOSE OF PILOT CONTROL USER INTERFACE.
19. EXISTING 30A/240V HEAVY DUTY SAFETY DISCONNECT SWITCH, TO REMAIN.
20. REMOVE & DISPOSE OF EXISTING LIGHT BULB & SOCKET/LAMP HOLDER. PROVIDE 25W, 5000K, VAPOR TIGHT LED LIGHT FIXTURE & LAMP HOLDER MOUNTED TO THE CEILING.



VAULT BUILDING ELECTRICAL PLAN

GENERAL NOTES

1. PROVIDE TYPED LABELS FOR ALL NEW AND MODIFIED EQUIPMENT.
2. REUSE EXISTING CONDUITS & WIREWAYS AS APPROPRIATE. REMOVE ALL UNUSED CONDUCTORS, CONDUITS, WIREWAYS, & EQUIPMENT.
3. PROVIDE POWER & COMMUNICATION CABLES IN EXISTING & NEW RACEWAYS THROUGHOUT THE VAULT TO PROVIDE A COMPLETE & OPERATIONAL AIRFIELD LIGHTING SYSTEM. INTEGRATE ALL EXISTING & PROVIDED EQUIPMENT WITH THE PROVIDED L–821 CONTROL PANEL.
4. THE EXISTING VAULT AS–BUILT RECORD DRAWINGS ARE INCLUDED AT THE END OF THIS PLAN SET.
5. ALL WORK, UNLESS NOTED OTHERWISE, SHALL BE CONSIDERED INCIDENTAL TO THE ELECTRIC VAULT WORK, COMPLETE BID ITEM.
6. UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE RATED FOR 600V, STRANDED COPPER, SIZED PER PLANS OR AS REQUIRED BY NEC.

LEGEND

L–821	–	CONTROL PANEL
CCR	–	CONSTANT CURRENT REGULATOR
L–854	–	RADIO RECEIVER & ANTENNA
HTR	–	WALL HEATER
(PC)	–	PHOTOCELL
(T)	–	THERMOSTAT
PJB	–	POWER JUNCTION BOX

(A) – REFER TO SHEET V3 FOR VIEWS, AIRFIELD VAULT – EXISTING EQUIPMENT IMAGES

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SOUTH DAKOTA
05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD VAULT - POWER & LIGHTING DETAILS

REVISIONS

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

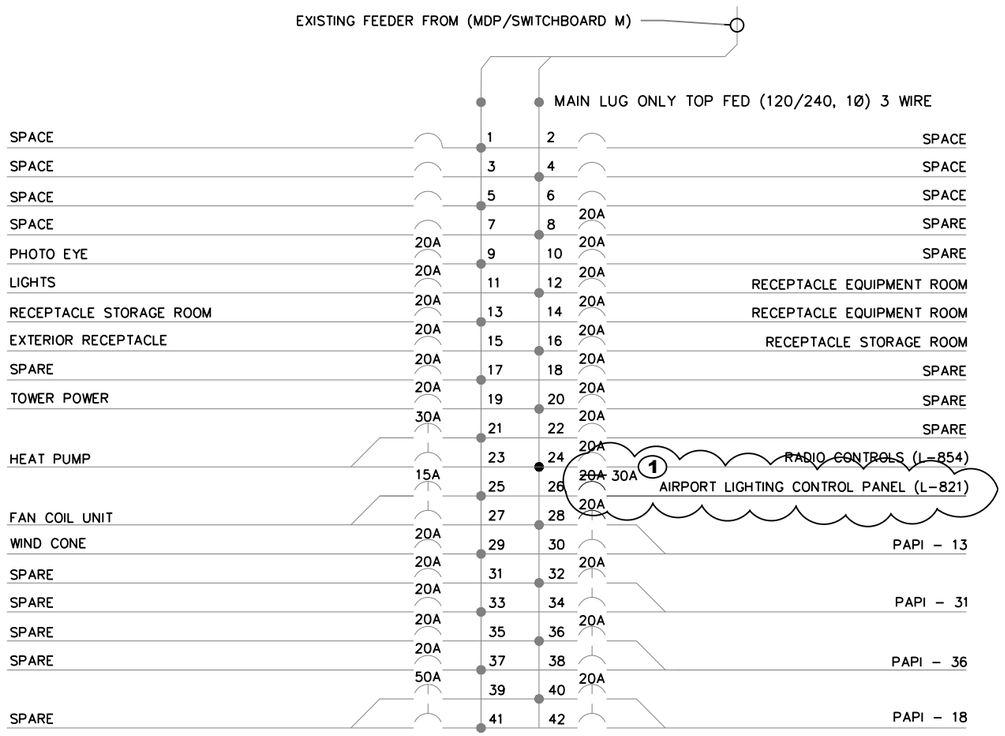
Project Manager: BDM
Designer: DAF
Project Number: 731501
Phone: (605) 339-4157

DGR ENGINEERING

Sheet
V1

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GENERAL NOTES

1. PANEL L LAYOUT IS EXISTING. MODIFY AS REQUIRED TO SUPPLY ALL EQUIPMENT.
2. SIZE BREAKER & CIRCUIT PER SUPPLIED EQUIPMENT.
3. WORK SHALL BE CONSIDERED INCIDENTAL TO THE ELECTRICAL VAULT WORK, COMPLETE BID ITEM.
4. PROVIDE UPDATED TYPED DIRECTORY.

EXISTING PANEL L DETAILS - 120/240 V

NOT TO SCALE

GENERAL NOTES

(1) REPLACE ONE (1) EXISTING SINGLE POLE, 20A BREAKER IN SLOT 26 WITH A PANEL-COMPATIBLE SINGLE POLE, 30A BREAKER.

EXISTING MAIN DISTRIBUTION PANEL (MDP)/SWITCHBOARD M (GE FUSIBLE PANEL)

MOUNTING: SURFACE	VOLTS: 120/240	PHASE: 3	WIRE: 4	MAIN CAPACITY: 600 AMPERES
FEEDER SIZE: (TOP FED) EXISTING			MAIN CONNECTION:	SEE NOTE 1

CKT NO	ITEM FED	FUSIBLE SWITCH				LOAD DISTRIBUTION			REMARKS
		AMPS	POLES	FUSE SIZE	WIRE SIZE	PHASE A kW	PHASE B kW	PHASE C kW	
1	PANEL L	200	3	–			–	–	
2	REGULATOR RWY 13/31	200	3		#000	15	15	–	
3	BEACON	100	3	–			–	–	
4	REGULATOR RWY 18/36	100	3	SEE NOTE 2	#3	–	7.5	7.5	
5	OBSTRUCTION LIGHTS	100	3	–			–	–	
6	REGULATOR TXY LIGHTING	100	3		#3	7.5	–	7.5	
7	ELECTRIC HEATER	60	3	–			–	–	
8	RWY CAPACITORS 18/36	60	3	–			–	–	
9	TXY CAPACITORS	30	3	–			–	–	
10	TR-1 WATER PUMP XFMR	30	3	–			–	–	
11	RWY CAPACITORS 13/31	60	3	–			–	–	
12	WATER PUMP CAPACITORS	60	3	–			–	–	

GENERAL NOTES

1. SEPARATE 600A/3ϕ MAIN SERVICE DISCONNECT
2. PROVIDE NEW FUSES TO ACCOMMODATE NEW RWY 18/36 CCR LOADS.
3. UPDATE NAME PLATES FOR CAPACITORS AND VAULT EQUIPMENT.
4. WORK SHALL BE CONSIDERED INCIDENTAL TO THE ELECTRICAL VAULT WORK, COMPLETE BID ITEM.

EXISTING MAIN DISTRIBUTION PANEL (MDP/SWITCHBOARD M) DETAILS

NOT TO SCALE

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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD VAULT - PANEL L & MDP DETAILS

REVISIONS

Helms & ASSOCIATES CIVIL ENGINEERS & LAND SURVEYORS

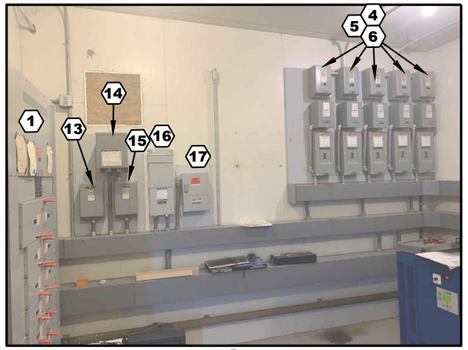
Project Manager: BDM
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Sheet
V2

P:\07300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - VAULT.DWG

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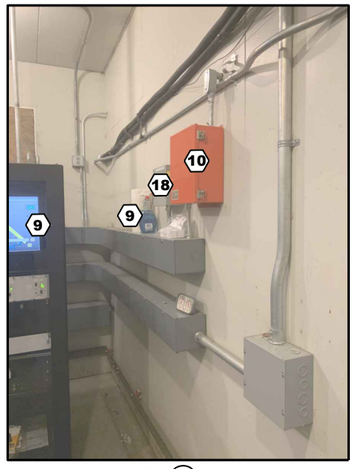


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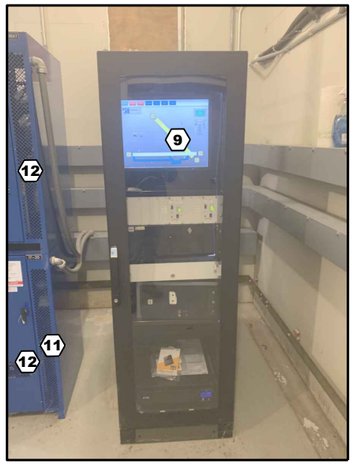
KEYNOTES

(#) REFER TO KEYNOTES ON SHEET V1 AIRFIELD VAULT – POWER & LIGHTING DETAILS

(A) REFER TO VIEWS ON SHEET V1 AIRFIELD VAULT – POWER & LIGHTING DETAILS



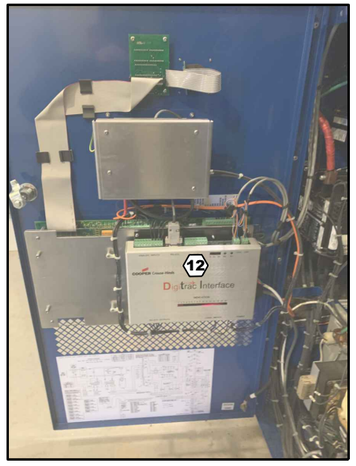
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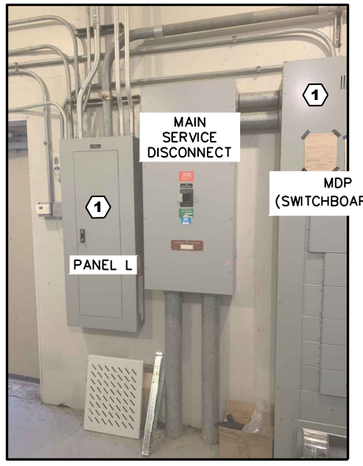
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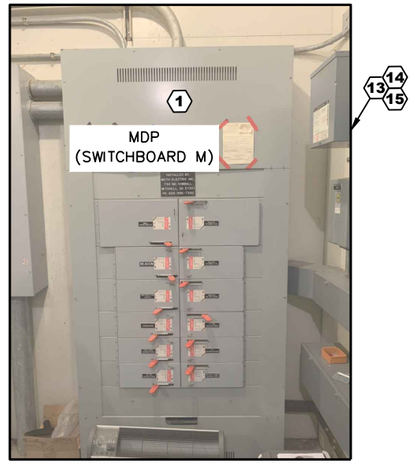
VIEW (D)



VIEW (E)



VIEW (F)



VIEW (G)

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CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD VAULT - EXISTING EQUIPMENT IMAGES

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

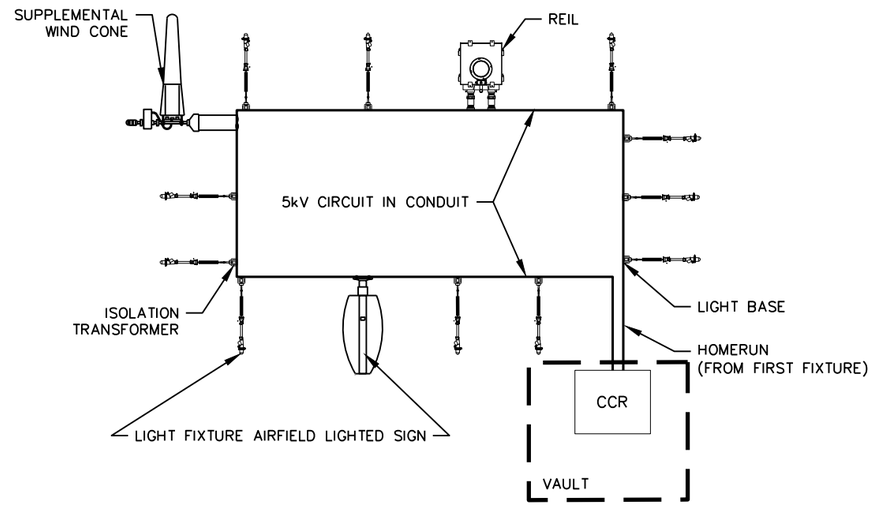
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DGR ENGINEERING

Sheet
V3

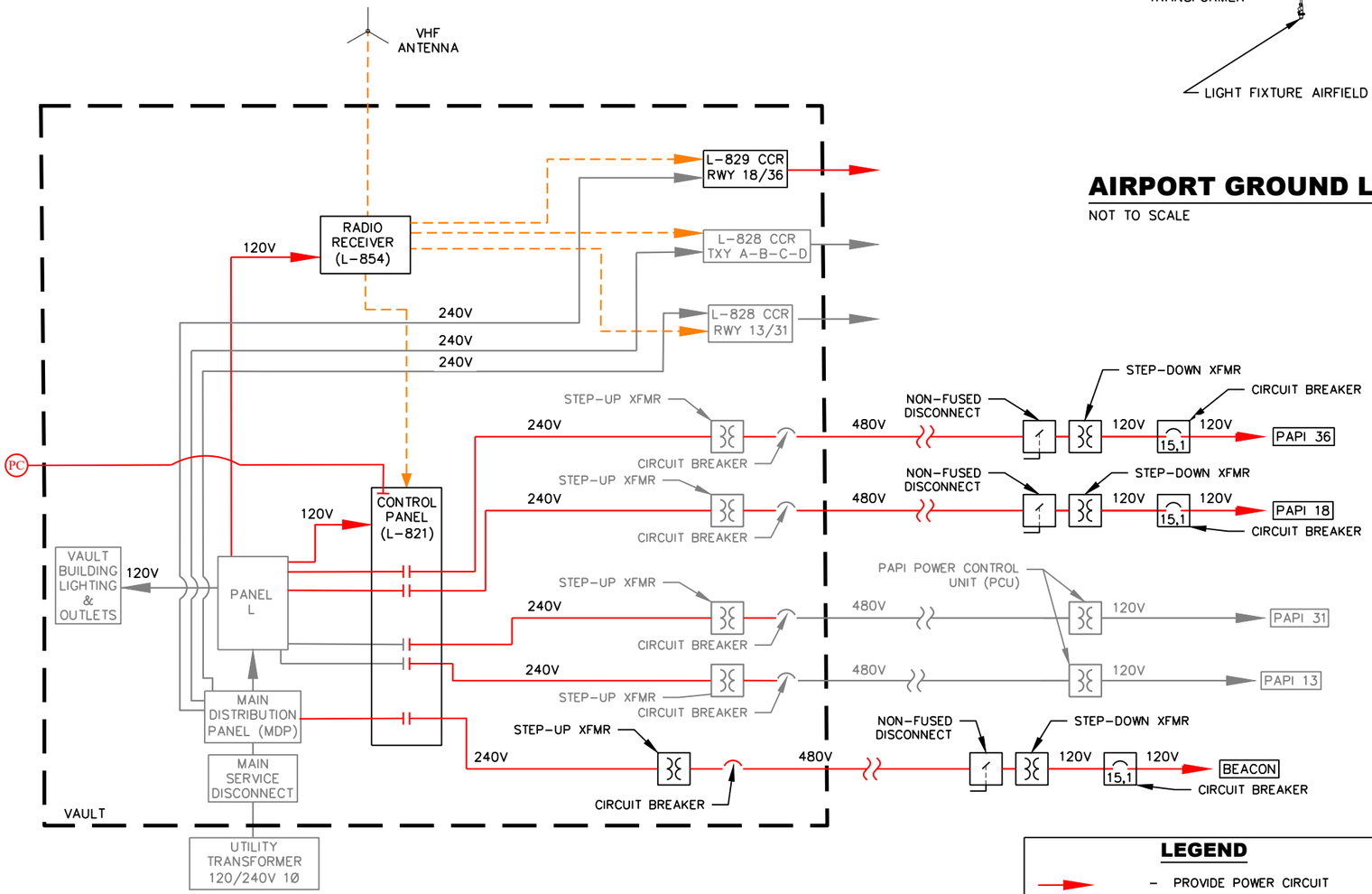
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AIRPORT GROUND LIGHTING SERIES CIRCUIT

NOT TO SCALE



AIRFIELD LIGHTING AND ELECTRICAL VAULT BLOCK DIAGRAM

NOT TO SCALE

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05/27/2026

RUNWAY 18/36 RECONSTRUCTION W/ TURNAROUNDS & CONNECTOR TAXILANES W/ LIGHTING IMPROVEMENTS
MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD VAULT - AIRFIELD LIGHTING

REVISIONS

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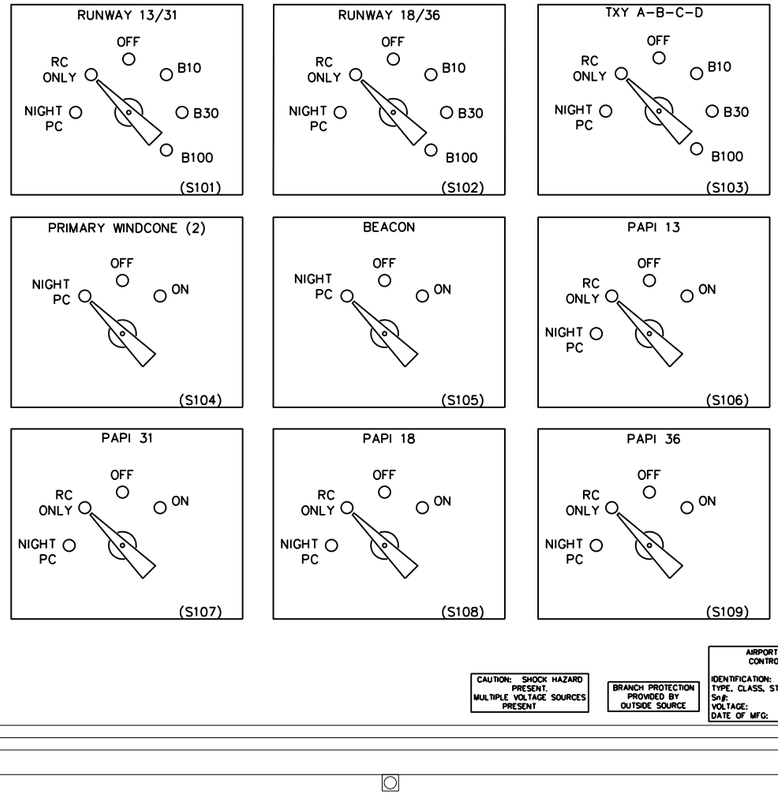
DGR ENGINEERING

Sheet
V4

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - VAULT.DWG

Plot Date: 5/26/2026 2:56:06 PM

AIRFIELD LIGHTING SWITCH PANEL



CONTROL PANEL GENERAL NOTES

1. CONTRACTOR SHALL MOUNT L-821 PANEL TO THE WALL IN THE VAULT. DESIGN ASSUMES A 24" x 24" x 8" NEMA 4 ENCLOSURE. SIZE MAY VARY DEPENDANT ON MANUFACTURER.
2. WIRE THE L-821 CONTROL PANEL TO TERMINAL BLOCKS AND THEN TO THE DEVICE.
3. SET THE L-854 RADIO RECEIVER TO 122.8 MHz.
4. PROVIDE CONTROL SCHEMATIC BASED ON CONTROL PANEL CHART OF OPERATION.

LEGEND

PC =	PHOTOCELL. ENERGIZES CIRCUIT FROM DUSK TO DAWN. PC LOCATED AT THE VAULT.
RC =	RADIO CONTROL
N/O =	NORMALLY OPEN
N/C =	NORMALLY CLOSED
B100 =	100% BRIGHTNESS
B30 =	30% BRIGHTNESS
B10 =	10% BRIGHTNESS

CHART OF OPERATION (122.8 MHz)

SYSTEM	DAYTIME (DAWN TO DUSK)				NIGHTTIME (DUSK TO DAWN)			
	PHOTO CELL	3 CLICKS	5 CLICKS	7 CLICKS	PHOTO CELL	3 CLICKS	5 CLICKS	7 CLICKS
HIRL RWY 13/31 (S101)	OFF	LOW	MED	HIGH	LOW	LOW	MED	HIGH
MIRL RWY 18/36 (S102)	OFF	LOW	MED	HIGH	LOW	LOW	MED	HIGH
TXY A-B-C-D (S103)	OFF	LOW	MED	HIGH	LOW	LOW	MED	HIGH
WIND CONE (S104)	OFF	ON	ON	ON	ON	ON	ON	ON
BEACON (S105)	OFF	ON	ON	ON	ON	ON	ON	ON
PAPI 13 (1) (S106)	N/A	ON	ON	ON	ON	ON	ON	ON
PAPI 31 (1) (S107)	N/A	ON	ON	ON	ON	ON	ON	ON
PAPI 18 (1) (S108)	N/A	ON	ON	ON	ON	ON	ON	ON
PAPI 36 (1) (S109)	N/A	ON	ON	ON	ON	ON	ON	ON
REIL 13 (NO SWITCH)	ENERGIZED FROM RWY CIRCUIT							
REIL 31 (NO SWITCH)	ENERGIZED FROM RWY CIRCUIT							
REIL 18 (NO SWITCH)	OFF	OFF	OFF	HIGH	OFF	OFF	OFF	HIGH

(1) PHOTOCELL ON PAPI PRIMARY UNIT CONTROLS DAY/NIGHT BRIGHTNESS, NOT THE CCR STEP (MIC-CLICKS).

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MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD L-821 LIGHTING CONTROL PANEL

REVISIONS

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

Project Manager: BDM
Designer: DAF
Project Number: 731501
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DGR ENGINEERING

Sheet
V5

P:\07\300 SOUTH DAKOTA\315 MITCHELL (MHE)\731501 RUNWAY 18-36\4 - DESIGN\PLANS\731501 - VAULT.DWG

COOPER Crouse–Hinds

MITCHELL MUNICIPAL AIRPORT
MITCHELL, SOUTH DAKOTA

AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM

AS–MADE DRAWINGS

FEBRUARY 2010

1200 KENNEDY ROAD
WINDSOR, CONNECTICUT 06095
TEL: (860)683–4300
FAX: (860) 683–4354

CHMHE–000–1–61

DRAWING NO.	SHEET NO.	TITLE	MODIFICATION NO. AND DATE OF ISSUE							
			A	B	C	D	E	F	G	H
MHE–IND	1	INDEX	09.23.09	12.01.09	02.09.10					
MHE–CMS	1	CHANGE MANAGEMENT SHEET	09.23.09	12.01.09						
MHE–REV	1	REVISION DESCRIPTION	09.23.09	12.01.09						
MHE–ABV	1	ABBREVIATIONS								
MHE–001	1	SYSTEM BLOCK DIAGRAM	09.23.09	12.01.09						
MHE–010	1	ELECTRICAL VAULT – CCR TYPICAL CABLE LAYOUT								
MHE–011	1	ELECTRICAL VAULT – CCR TO DIGITRAC INTERFACE (DI) – INTERNAL CONNECTIONS								
MHE–031	1	DIGITRAC INTERFACE UNIT (DI) – FOR CCR – WIRING DIAGRAM								
MHE–100	1	ELECTRICAL VAULT – COMMUNICATION CABLES LAYOUT	09.23.09	12.01.09						
MHE–105	1	DIGITRAC INTERFACE ASSIGNMENTS	09.23.09							
MHE–110	1	ELECTRICAL VAULT – DCCMS COMPUTER CABINET – 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW	09.23.09	12.01.09						
	2	ELECTRICAL VAULT – DCCMS COMPUTER CABINET – 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW								
	3	ELECTRICAL VAULT – DCCMS COMPUTER CABINET – 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW	09.23.09	12.01.09						
	4	ELECTRICAL VAULT – DCCMS COMPUTER CABINET – 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW	09.23.09	12.01.09						
	5	ELECTRICAL VAULT – DCCMS COMPUTER CABINET – 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW	09.23.09							
MHE–111	1	DIGITRAC INTERFACE UNIT (DI) – FOR GENERAL ELEMENTS – WIRING DIAGRAM		12.01.09						
	2	DIGITRAC INTERFACE UNIT (DI) – FOR GENERAL ELEMENTS – WIRING DIAGRAM	09.23.09	12.01.09						
MHE–400	1	MAINTENANCE SHOP – EQUIPMENT LIST								

MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse–Hinds

Project MITCHELL MUNICIPAL AIRPORT

Title INDEX

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–IND

VERSION NO.	DESCRIPTION	CHANGED DRAWINGS	MODIFICATION
1.0	ORIGINAL DESIGN DRAWINGS	NEW SET	
1.1	CHANGES ACCORDING TO COMMENTS FROM WEST PLAINS ENGINEERING INC.	MHE–001, –100, –105, MHE–110, SH.1,3,4,&5, MHE–111, SH.2	A
AS MADE	REVISED WIRING ON FIELD CONNECTION PANELS TO MATCH FIELD DRAWNGS	MHE–001, –100, –110, –111	B
AS MADE	ADDED POWER CIRCUIT TO –001	MHE–001	C

MODIF.			MODIF.				
	A	09.23.09		E		DATE	09.23.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C	02.09.10		G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse–Hinds

Project MITCHELL MUNICIPAL AIRPORT

Title CHANGE MANAGEMENT SHEET

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–CMS

DRAWING No.	MODIFICATION	MODIFICATION DATE	APPROVED BY	MODIFICATION DESCRIPTION
MHE–001	A	09.23.09	NEAL	UPDATED SYSTEM BLOCK DIAGRAM TO SHOW (4) PAPIS. CHANGED 12" MONITOR TO 20.1".
MHE–100	A	09.23.09	NEAL	MODIFIED DRAWING TO BETTER DEPICT VAULT LAYOUT. ADDED NOTE TO COORIDINATE CCR LAYOUT WITH CONSTRUCTION DOCUMENTS.
MHE–105	A	09.23.09	NEAL	UPDATED DIGITRAC INTERFACE SCHEDULE TO REFLECT MODIFICATION TO VAULT LAYOUT AND (4) PAPIS.
MHE–110, SH.1	A	09.23.09	NEAL	UPDATED GENERAL OVERVIEW TO REFLECT THE ADDITONAL RELAYS NEEDED FOR PAPIS. CHANGED 12" MONITOR TO 20.1".
MHE–110, SH.3	A	09.23.09	NEAL	UPDATED TERMINAL BLOCK NUMBERS.
MHE–110, SH.4	A	09.23.09	NEAL	UPDATED TERMINAL BLOCK NUMBERS. ADDED (2) MORE RELAYS FOR PAPIS.
MHE–110, SH.5	A	09.23.09	NEAL	CHANGED 12" MONITOR TO 20.1".
MHE–111, SH.2	A	09.23.09	NEAL	ADDED (2) MORE RELAYS FOR PAPIS AND MODIFIED WIRING TO ACCOMODATE ALL PAPIS..
MHE–001	B	12.01.09	N.G.	REMOVED PRINTER FROM UPS
MHE–100	B	12.01.09	N.G.	ADDED CONTACTOR ENCLOSURES
MHE–110	B	12.01.09	N.G.	RE–ORGANIZED LOCATIONS OF ENCLOSURE EQUIPMENT, ADDED RELAYS AND TERMINALS TO FIELD CONNECTION PANELS
MHE–111	B	12.01.09	N.G.	ADDED RELAYS AND TERMINALS TO FIELD CONNECTION PANELS. RE–WIRED FIELD CONNECTION PANELS.
MHE–001	C	02.09.10	WLB	ADDED POWER CIRCUIT TO –001

MODIF.			MODIF.			
A	09.23.09		E		DATE	09.23.09
B	12.01.09		F		DIBUJADO POR	K.N.T.
C			G		REVISADO	D.G.
D			H		APROBADO	N.G.

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Project MITCHELL MUNICIPAL AIRPORT

Title REVISION DESCRIPTION

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–REV

ABBREVIATIONS

A	ANALOG INPUT
ALCMS	AIRPORT LIGHTING CONTROL & MONITORING SYSTEM
AMU	ADVANCED MEGATRAC UNIT
AP	ACCESS POINT
CB	CIRCUIT BREAKER
CCR	CONSTANT CURRENT REGULATOR
CH	CHANNEL
CKT	CIRCUIT
DCCMS	DISTRIBUTED COMPUTER CONTROL & MONITORING SYSTEM
DI	DIGITRAC INTERFACE
ECB	ELECTRONIC CONTROL BOARD (FOR AMU)
GND	GROUND
H.V	HIGH VOLTAGE
I	INDICATION
IC	INDUSTRIAL COMPUTER
KB	KEYBOARD
LAr	LIGHTING ARRESTOR
MNTR	MONITOR
PC	PERSONAL COMPUTER
PCU	POWER & CONTROL UNIT (FOR FAA–STYLE A PAPI)
PRNT	PRINTER
PS	POWER SUPPLY
POS	POWER STRIP
R	RELAY
R/W	RUNWAY
RCV	RECEIVER
S	SWITCH
SA	STATION ADAPTER
SPKR	SPEAKER
TB	TERMINAL BLOCK
TS	TOUCH SCREEN
T/W	TAXI WAY
UPS	UNINTERRUPTED POWER SUPPLY
WB	BUILDING TO BUILDING WIRELESS BRIDGE

COLOR LEGEND

BK	BLACK
BL	BLUE
BR	BROWN
GR	GREEN
OR	ORANGE
R	RED
V	VIOLET
W	WHITE

MODIF.			MODIF.				
A			E		DATE	08.04.09	
B			F		DRAWN BY	K.N.T.	
C			G		CHECKED	D.G.	
D			H		APPROVED	N.G.	

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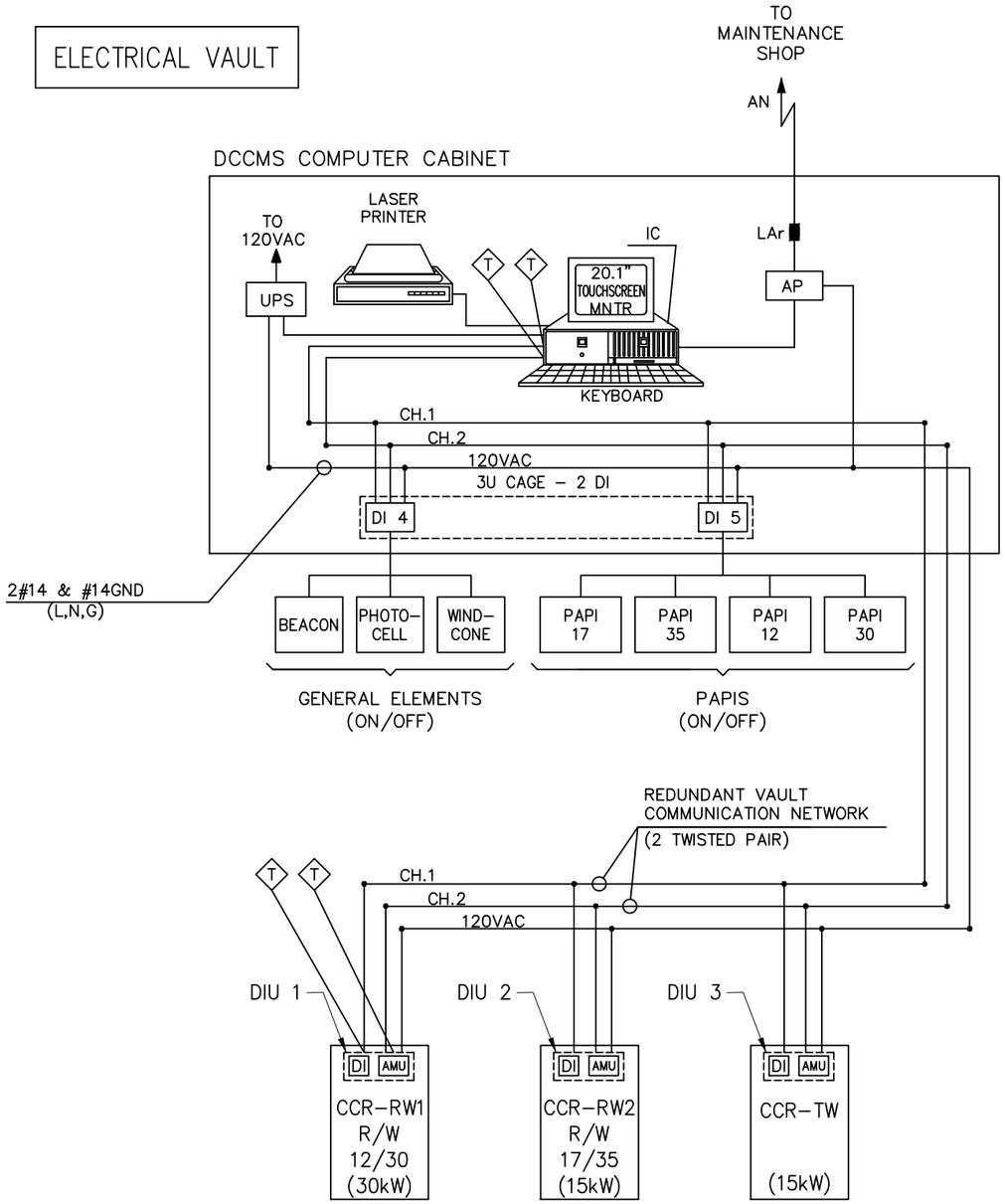
Project MITCHELL MUNICIPAL AIRPORT

Title ABBREVIATIONS

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–ABV

ELECTRICAL VAULT



REMARKS:

1. REF. DWG. MHE–010 – CCR CABLE LAYOUT
2. REF. DWG. MHE–031 – DIU (DI&AMU) FOR CCR – WIRING DIAGRAM
3. REF. DWG. MHE–050 – DI FOR GENERAL ELEMENTS – GENERAL OVERVIEW
4. REF. DWG. MHE–100 – ELECTRICAL VAULT – COMMUNICATION CABLES LAYOUT
5. REF. DWG. MHE–110 – ELECTRICAL VAULT – DCCMS COMPUTER CABINET – GENERAL OVERVIEW
6. REF. DWG. MHE–400 – MAINTENANCE SHOP – EQUIPMENT LIST

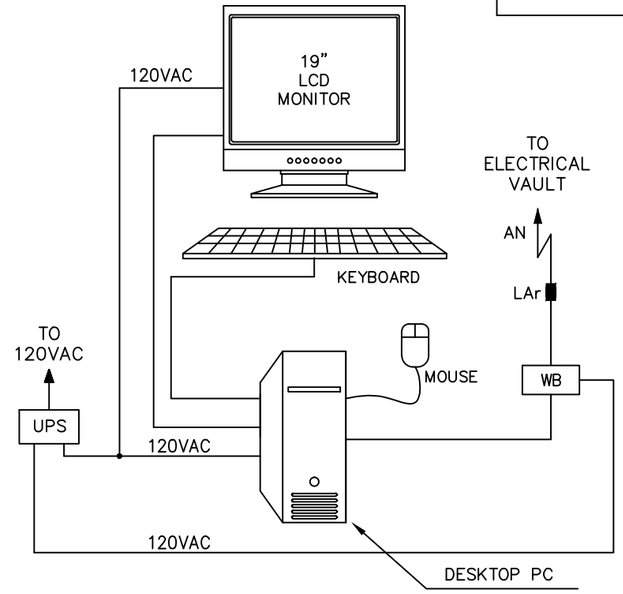
COMMUNICATION EQUIPMENT

AN – ANTENNA – 24Dbi
AP – WIRELESS ACCESS POINT
LAr – LIGHTENING ARRESTOR – D.C – 2.5GHz
WB – BUILDING TO BUILDING WIRELESS BRIDGE

LEGEND

AMU – ADVANCED MEGATRAC UNIT
CCR – CONSTANT CURRENT REGULATOR
DI – DIGITRAC INTERFACE
DIU – DIGITRAC INTERFACE UNIT
T – TERMINATOR FOR ECHELON NETWORK ASSY

MAINTENANCE



MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C	02.09.10		G		CHECKED	D.G.
	D			H		APPROVED	N.G.

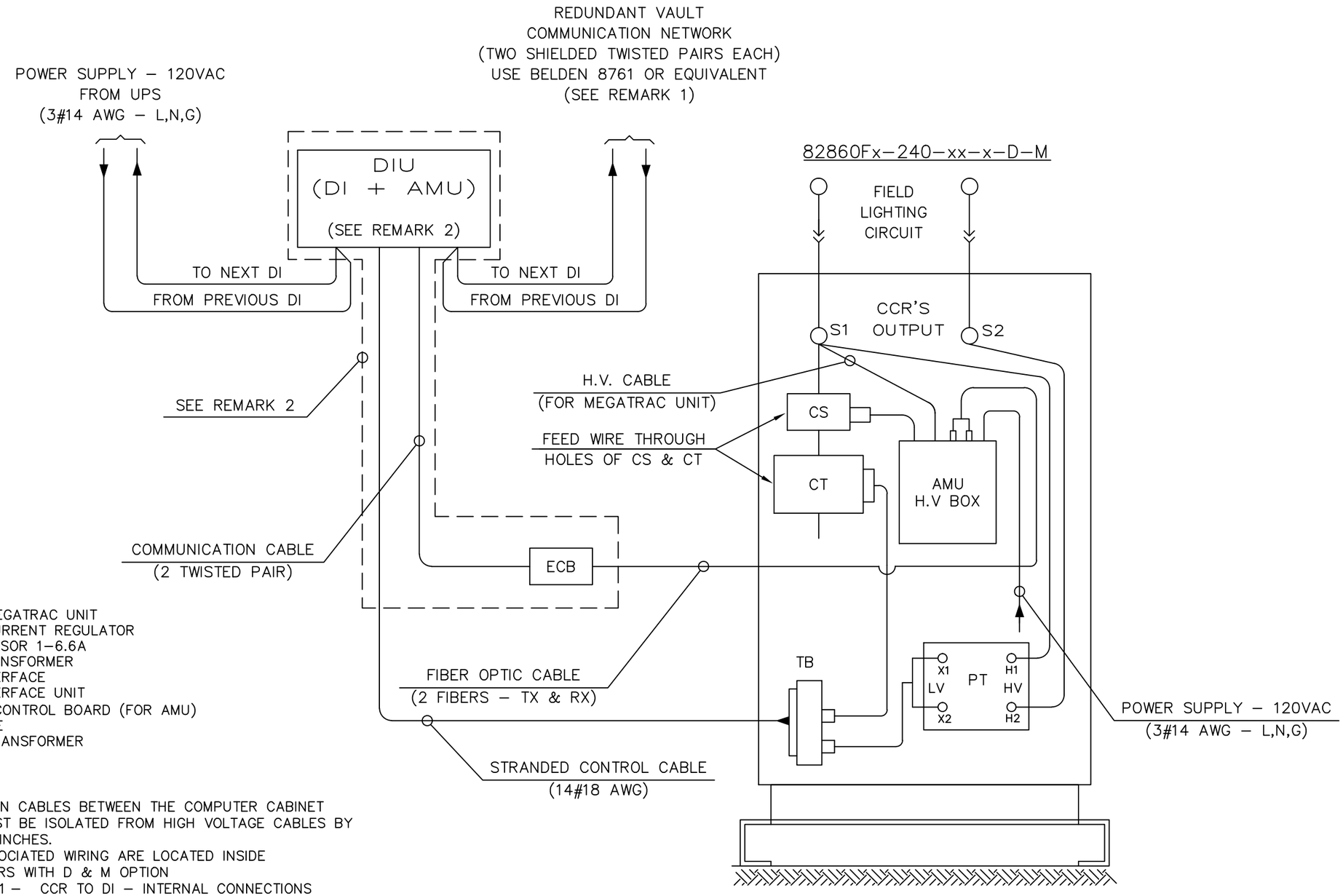
COOPER Crouse–Hinds

Project MITCHELL MUNICIPAL AIRPORT

Title SYSTEM BLOCK DIAGRAM

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–001



EQUIPMENT LEGEND

AMU – ADVANCED MEGATRAC UNIT
CCR – CONSTANT CURRENT REGULATOR
CS – CURRENT SENSOR 1–6.6A
CT – CURRENT TRANSFORMER
DI – DIGITRAC INTERFACE
DIU – DIGITRAC INTERFACE UNIT
ECB – ELECTRONIC CONTROL BOARD (FOR AMU)
H.V. – HIGH VOLTAGE
PT – POTENTIAL TRANSFORMER

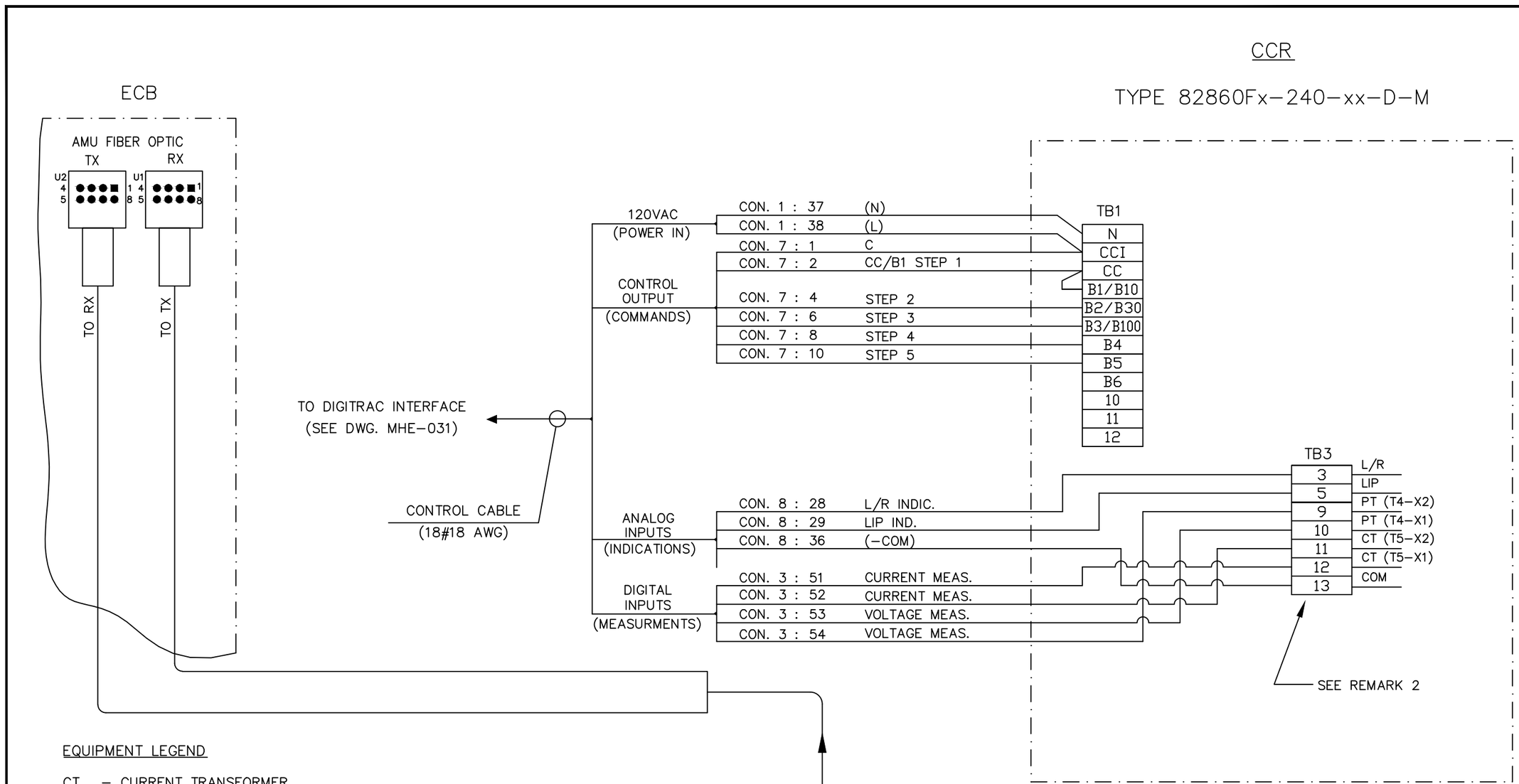
REMARKS:

1. THE COMMUNICATION CABLES BETWEEN THE COMPUTER CABINET AND THE DIUS MUST BE ISOLATED FROM HIGH VOLTAGE CABLES BY A MINIMUM OF 40 INCHES.
2. DIU, ECB AND ASSOCIATED WIRING ARE LOCATED INSIDE CROUSE–HINDS CCRS WITH D & M OPTION
3. REF. DWG. MHE–011 – CCR TO DI – INTERNAL CONNECTIONS
4. REF. DWG. MHE–031 – DI FOR CCR – WIRING DIAGRAM

MODIF.			MODIF.				
	A			E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse–Hinds

Project	MITCHELL MUNICIPAL AIRPORT		
Title	ELECTRICAL VAULT CCR TYPICAL CABLE LAYOUT	Scale	—
		Format	A3
		Sheet No.	1 OF 1
Drawing No	MHE–010		



EQUIPMENT LEGEND

CT – CURRENT TRANSFORMER
ECB – ELECTRONIC CONTROL BOARD
L/R – LOCAL/REMOTE
LIP – LOSS OF INPUT POWER
PT – POTENTIAL TRANSFORMER

REMARKS:

1. WIRING OF B4 & B5 IS NOT REQUIRED FOR A THREE STEP CCR.
2. ONLY TERMINAL CONNECTIONS ON TB3 THAT ARE BIENG USED FOR THIS CONFIGURATION ARE SHOWN.
3. REF. DWG. MHE-031 – DI FOR CCR – WIRING DIAGRAM

MODIF.			MODIF.				
	A			E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

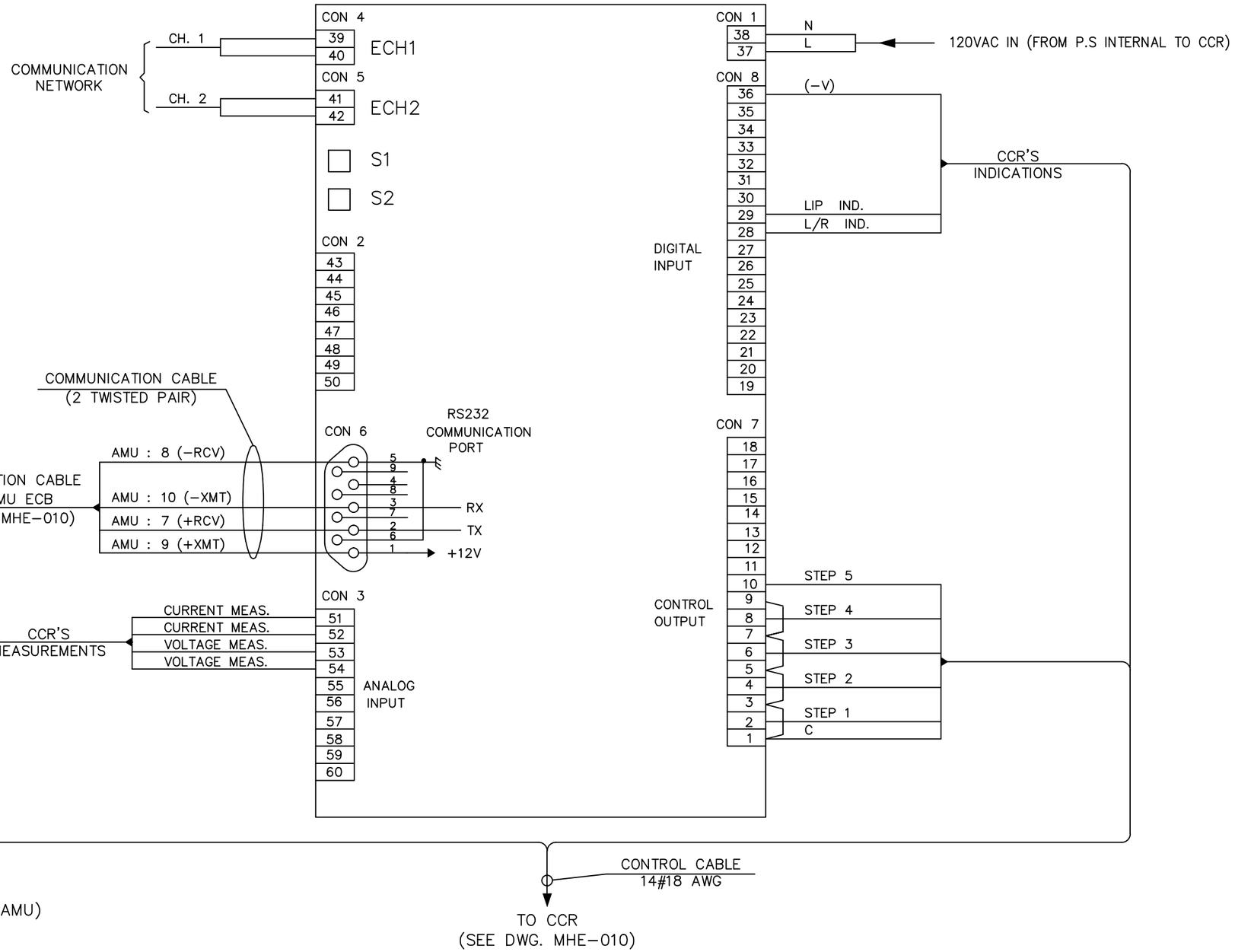
COOPER Crouse-Hinds

Project MITCHELL MUNICIPAL AIRPORT
Title ELECTRICAL VAULT
CCR TO DIGITRAC INTERFACE (DI & AMU)
INTERNAL CONNECTIONS

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE-011

DI
FOR CCR



LEGEND

L/R – LOCAL REMOTE
LIP – LOSS OF INPUT POWER
DI – DIGITRAC INTERFACE
ECB – ELECTRONIC CONTROL BOARD (FOR AMU)
P.S. – POWER SUPPLY

MODIF.			MODIF.				
	A			E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

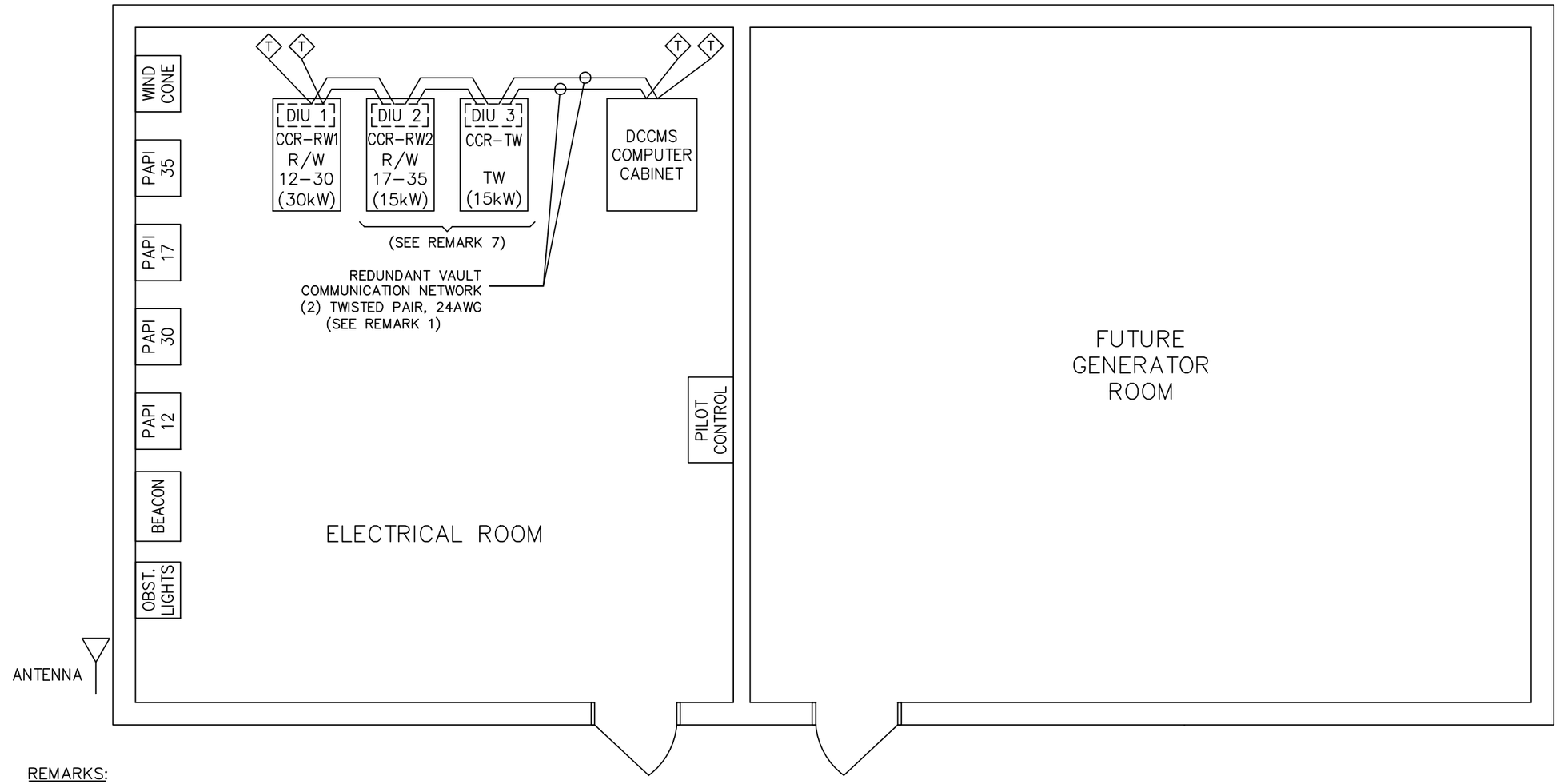
COOPER Crouse–Hinds

Project MITCHELL MUNICIPAL AIRPORT

Title DIGITRAC INTERFACE UNIT (DI) FOR CCR WIRING DIAGRAM

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–031



REMARKS:

1. CABLES BETWEEN DIU'S AND COMPUTER CABINET MUST BE ISOLATED FROM HIGH VOLTAGE CABLES MINIMUM DISTANCE OF 40 INCHES.
2. REF. DWG. MHE-010 – CCR CABLE LAYOUT
3. REF. DWG. MHE-011 – CCR EXTERNAL CONNECTION
4. REF. DWG. MHE-105 – DIGITRAC INTERFACE ASSIGNMENTS
5. REF. DWG. MHE-110 – DCCMS COMPUTER CABINET – GENERAL OVERVIEW.
6. REF. DWG. MHE-111 – DCCMS COMPUTER CABINET – DIU FOR GENERAL ELEMENTS WIRING DIAGRAM
7. CCR-TW IS TO BE MOUNTED ON RACK FROM FLOOR ABOVE CCR-RW-2. COORDINATE CCR LAYOUT WITH EQUIPMENT ON WALL. REFER TO CONSTRUCTION DOCUMENTS FOR SPECIFIC LAYOUT DETAILS.
8. . DIU 1 – DIU 3 ARE INTEGRAL TO THEIR RESPECTIVE CCR. THE COMMUNICATION NETWORK DAISY-CHAINS DIU 1 – DIU-3 WITH DI 4 & DI 5 THAT ARE LOCATED IN THE DCCMS COMPUTER CABINET

LEGEND

T – TERMINATOR ECHELON NETWORK ASSY

MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse-Hinds

Project	MITCHELL MUNICIPAL AIRPORT		
Title	ELECTRICAL VAULT COMMUNICATION CABLES TYPICAL LAYOUT	Scale —	Format A3
		Sheet No.	1 OF 1
		Drawing No	MHE-100

ELECTRICAL VAULT DIGITRAC INTERFACE SCHEDULE

DIGITRAC UNIT NO.	ITEM TYPE	CCR NAME	CONTROLLED ITEM ID	BRIGHTNESS STEP	POWER (kW)	OUTPUT CURRENT (A)	AMU	NOTES
DIU 1	CCR	CCR-RW1	R/W 12-30	5	30	6.6	YES	NEW CROUSE-HINDS CCR: 82860F2-240-30-5-D-M P/N
DIU 2	CCR	CCR-RW2	R/W 17-35	3	15	6.6	YES	NEW CROUSE-HINDS CCR: 82860F1-240-15-3-D-M P/N
DIU 3	CCR	CCR-TW	TAXIWAY	3	15	6.6	YES	NEW CROUSE-HINDS CCR: 82860F1-240-15-3-D-M P/N
DI 4	GENERAL ELEMENT		WINDCONE	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 4	GENERAL ELEMENT		BEACON	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 4	GENERAL ELEMENT		PHOTOCELL	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 5	GENERAL ELEMENT		PAP1 17	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 5	GENERAL ELEMENT		PAP1 35	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 5	GENERAL ELEMENT		PAP1 12	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.
DI 5	GENERAL ELEMENT		PAP1 30	ON/OFF	--	--	--	DI4 IS LOCATED IN DCCMS COMPUTER CABINET. SEE REMARK 1.

REMARKS:

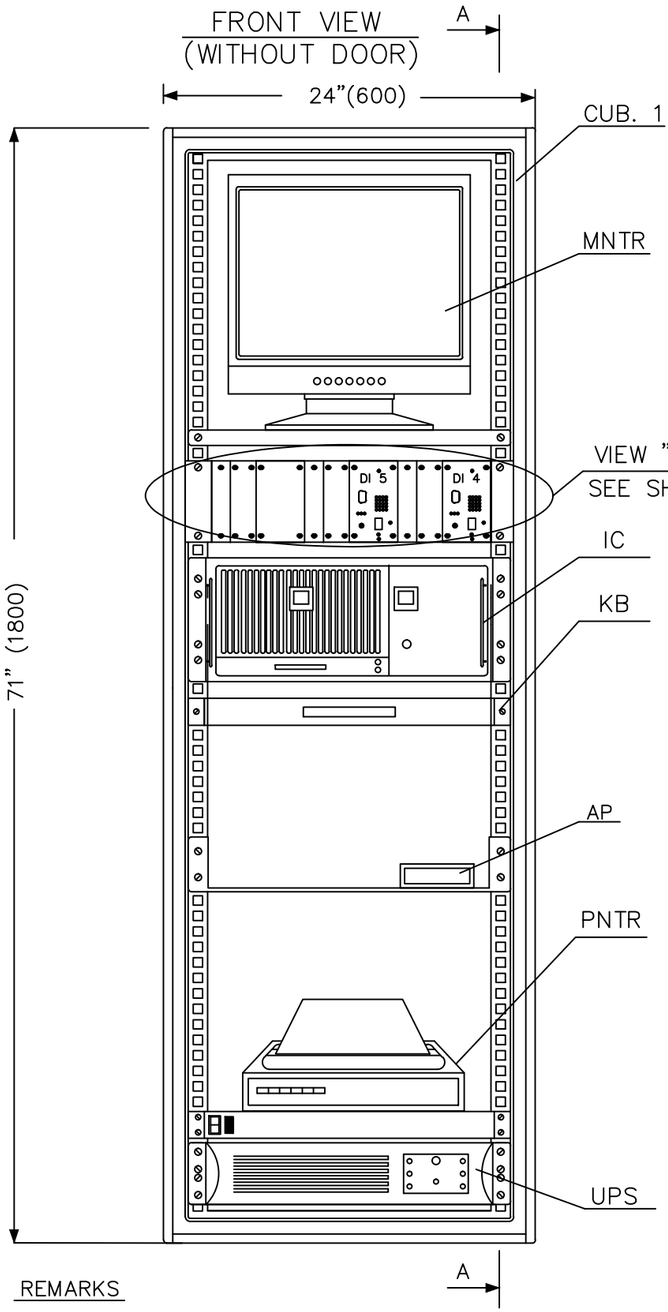
1. DI 4 & DI 5 ARE DAISY-CHAINED WITH DIU 1 – DIU 3 FOR NETWORK COMMUNICATION.

MODIF.			MODIF.			MODIF.				
	A	09.23.09		E			I		DATE	08.04.09
	B			F			J		DRAWN BY	K.N.T.
	C			G			K		CHECKED	D.G.
	D			H			L		APPROVED	N.G.

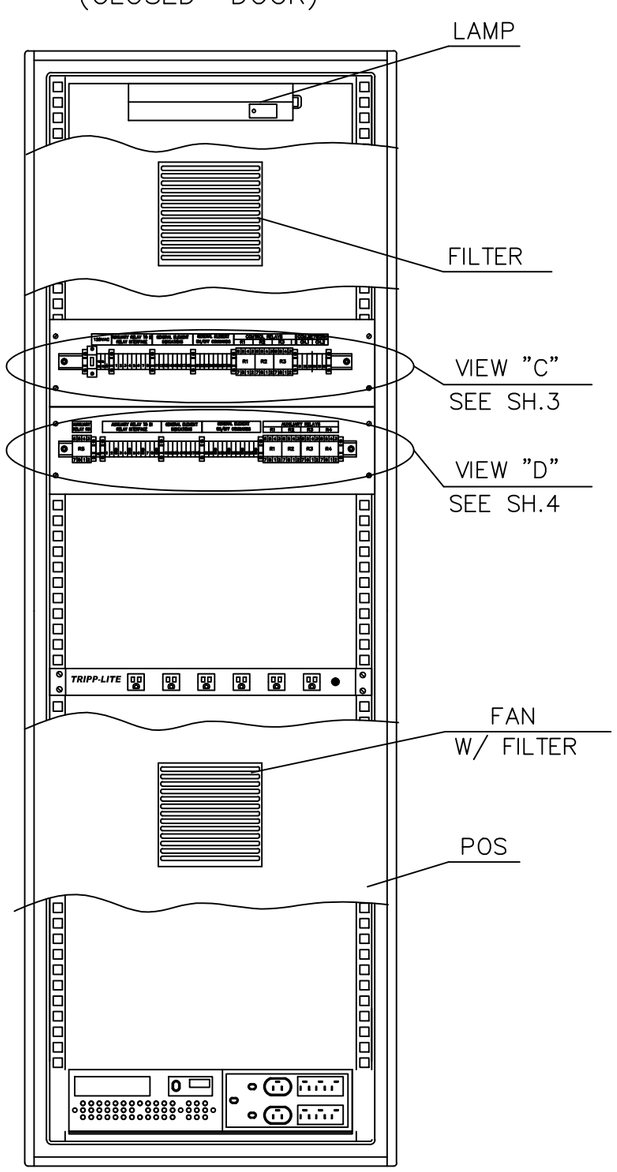
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Project	MITCHELL MUNICIPAL AIRPORT		
Title	ELECTRICAL VAULT DIGITRAC INTERFACE ASSIGNMENTS		
Scale	Format	Sheet No.	
—	A3	1 OF 1	
Drawing No	MHE-105		

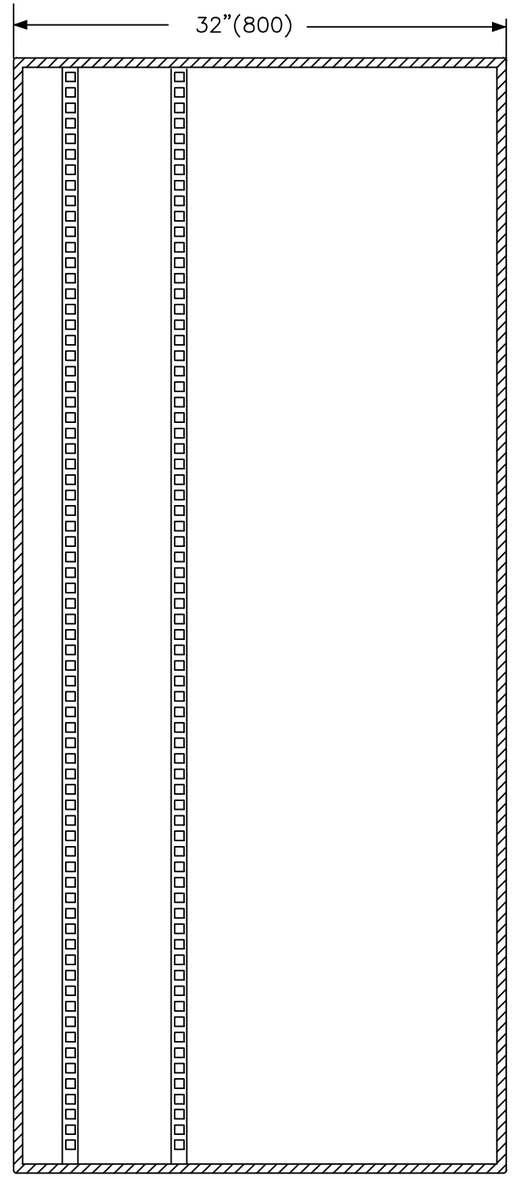
FRONT VIEW
(WITHOUT DOOR)



REAR VIEW
(CLOSED DOOR)



SECTION A–A



REMARKS

1. DIMENSIONS ARE IN INCHES (mm)

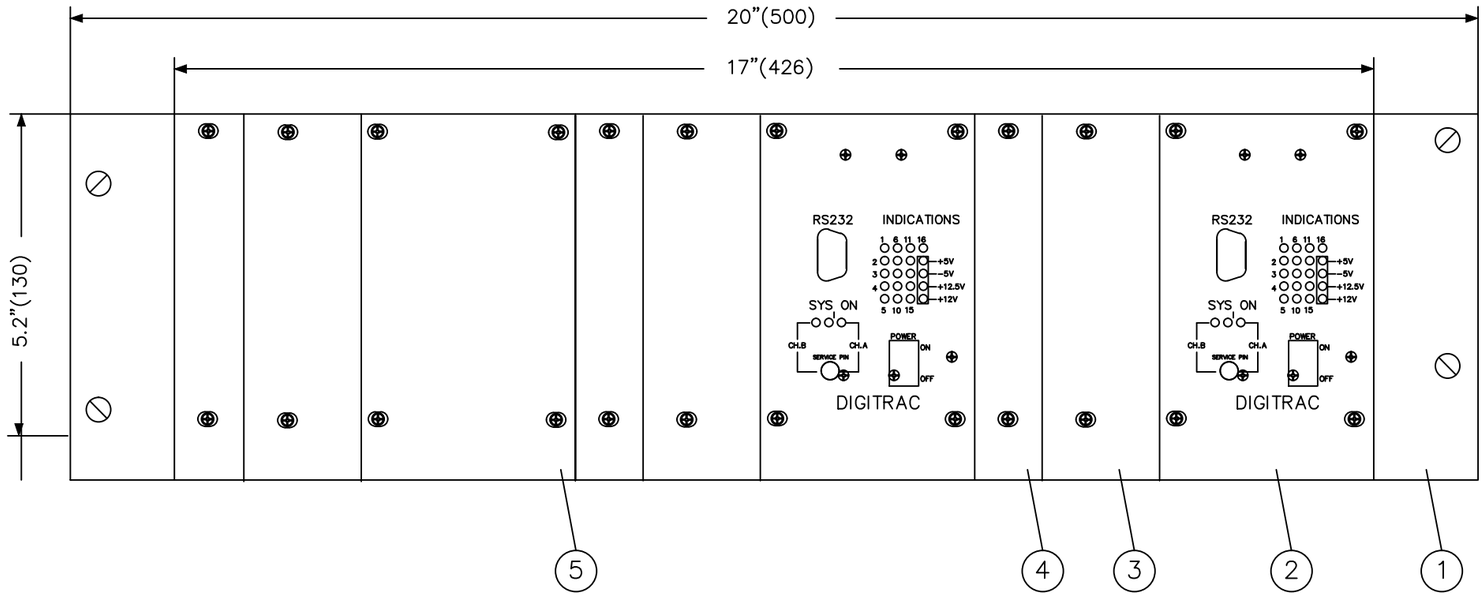
MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

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Project MITCHELL MUNICIPAL AIRPORT		Scale	Format	Sheet No.
Title ELECTRICAL VAULT DCCMS COMPUTER CABINET 1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW		—	A3	1 OF 5
	Drawing No MHE–110		

CAGE 3DIU (DI) VIEW "B"

SEE SH. 1



EQUIPMENT LIST

ITEM	EQUIPMENT CODE	DESCRIPTION	QUANTITY
1		3U CAGE 2 DIU (DI) INCLUDING:	1
2		DIGITRAC INTERFACE	2
3		AMU BLANK PANEL	3
4		BLANK PANEL	3
5		DI BLANK PANEL	1

MODIF.			MODIF.				
	A			E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse-Hinds

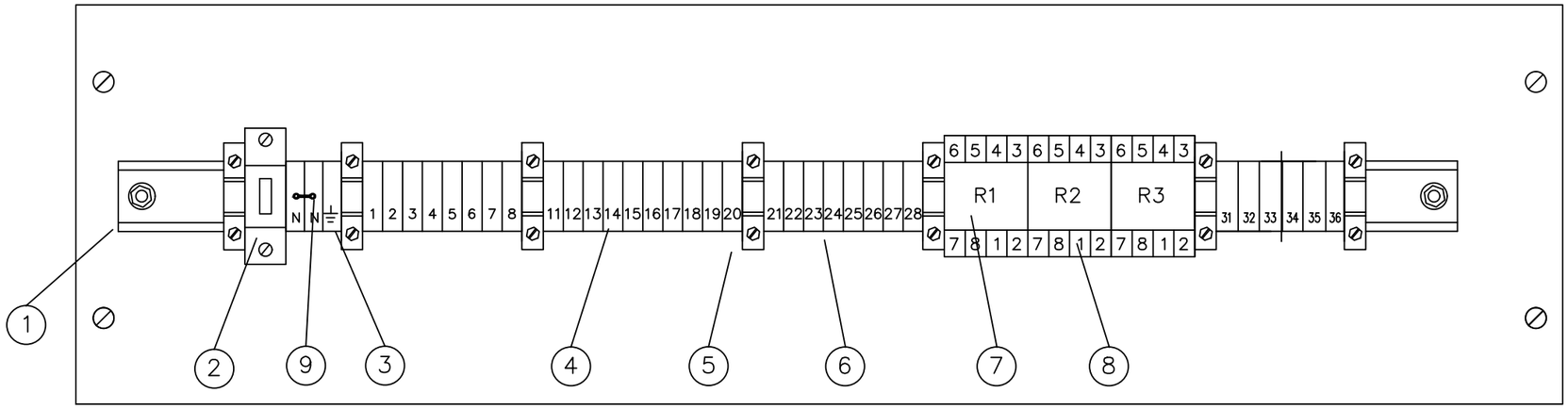
Project MITCHELL MUNICIPAL AIRPORT

Title ELECTRICAL VAULT
DCCMS COMPUTER CABINET
1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW

Scale	Format	Sheet No.
—	A3	2 OF 5

Drawing No MHE-110

FIELD CONNECTION PANEL FOR 3U CAGE – VIEW "C" (SEE SH. 1)



EQUIPMENT LIST

ITEM	EQUIPMENT CODE	DESCRIPTION	QUANTITY
1		FIELD CONNECTION PANEL FOR 3U CAGE INCLUDING:	1
		TERMINAL BLOCK	1
2		MINIATURE CIRCUIT BREAKER C6, 1X6A	1
3		⏚ – TYPE UK2.5G	1
4		TERMINALS – TYPE UK2.5N	34
5		END BRACKET E/NS 35N	7
6		END COVER D–UK2.5	6
7		AUXILIARY RELAY, 110VAC, 50/60 Hz	3
8		SOCKET (SR2P) FOR AUXILIARY RELAY	3
9		FIXED BRIDGE, JUMPER	1

MODIF.			MODIF.			
A	09.23.09		E		DATE	08.04.09
B	12.01.09		F		DRAWN BY	K.N.T.
C			G		CHECKED	D.G.
D			H		APPROVED	N.G.

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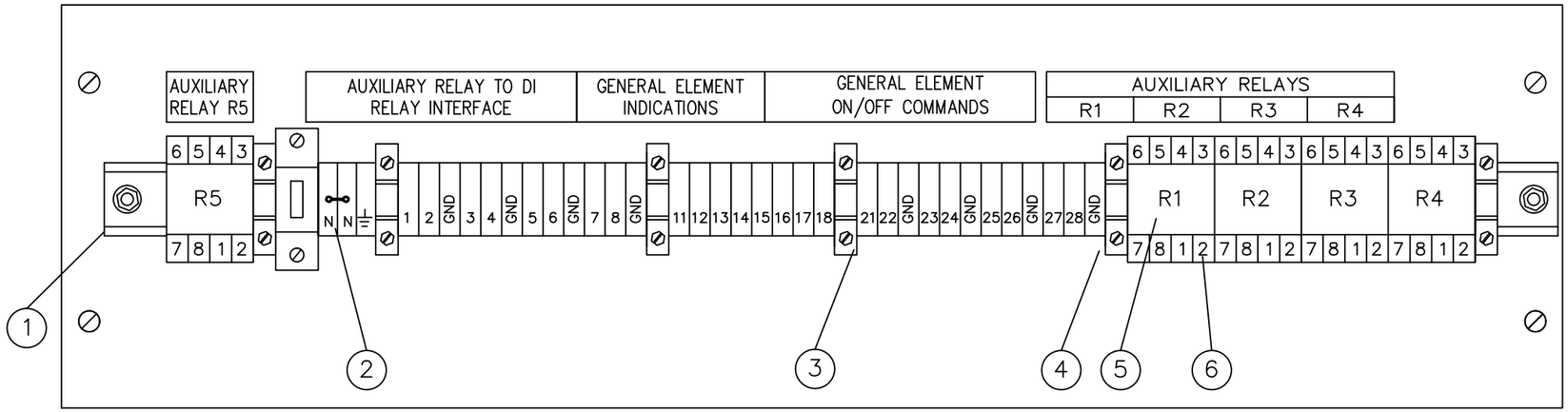
Project MITCHELL MUNICIPAL AIRPORT

Title ELECTRICAL VAULT
DCCMS COMPUTER CABINET
1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW

Scale	Format	Sheet No.
—	A3	3 OF 5

Drawing No MHE–110

FIELD CONNECTION PANEL FOR 3U CAGE – VIEW "D" (SEE SH. 1)



EQUIPMENT LIST

ITEM	EQUIPMENT CODE	DESCRIPTION	QUANTITY
1		FIELD CONNECTION PANEL FOR 3U CAGE INCLUDING:	1
		TERMINAL BLOCK	1
2		TYPE UK2.5N (PHOENIX OR EQUIVALENT)	1
3		END BRACKET E/NS 35N (PHOENIX OR EQUIVALENT)	1
4		END COVER D–UK2.5 (PHOENIX OR EQUIVALENT)	25
5		AUXILIARY RELAY, 110VAC, 50/60 Hz	4
6		SOCKET (SR2P) FOR AUXILIARY RELAY	4

MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

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Project MITCHELL MUNICIPAL AIRPORT

Title ELECTRICAL VAULT
DCCMS COMPUTER CABINET
1 CAGE, 2 DIU (DI) – GENERAL OVERVIEW

Scale	Format	Sheet No.
—	A3	4 OF 5

Drawing No MHE–110

EQUIPMENT LIST

EQUIPMENT CODE	ITEM NUMBER	DESCRIPTION	QUANTITY
CUB. 1	C191–7820–1–00	NETWORK CABINET, NEMA 12 (INCLUDES FAN, LIGHTS, & FILTERS – SEE BELOW)	1
MNTR	C320–2010–1–00	MONITOR, SERIAL 20.1" LCD TOUCHSCREEN	1
IC	C301–2007–1–00	INDUSTRIAL COMPUTER WITH REQUIRED INTERFACES	1
KB	C191–6500–2–00	KEYBOARD & MOUSE DRAWER	1
AP	C312–0002–1–00	WIRELESS ACCESS POINT	1
UPS	C109–2000–2–00	UPS 2U 2000VA 120VAC REMOTE/STANDALONE TRUE ONLINE	1
LAMP	SEE CUB.1 ABOVE	LIGHT. 120VAC 60W.MNL SW W/TERM	1
FAN	SEE CUB.1 ABOVE	FAN, 115V, NEMA 12, (RITTAL 3323.115 OR EQUIVALENT)	1
POS	C191–1215–1–00	OUTLET STRIP, 12 OUTLET, 15FT CORD, 15A, 125VAC, 60HZ	1
FILTER	SEE CUB.1 ABOVE	FILTER, OUTLET, NEMA 12 FOR FAN; (RITTAL 3323.200 OR EQUIVALENT)	1
PNTR	C320–3005–1–00	PRINTER, LASER	1

MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

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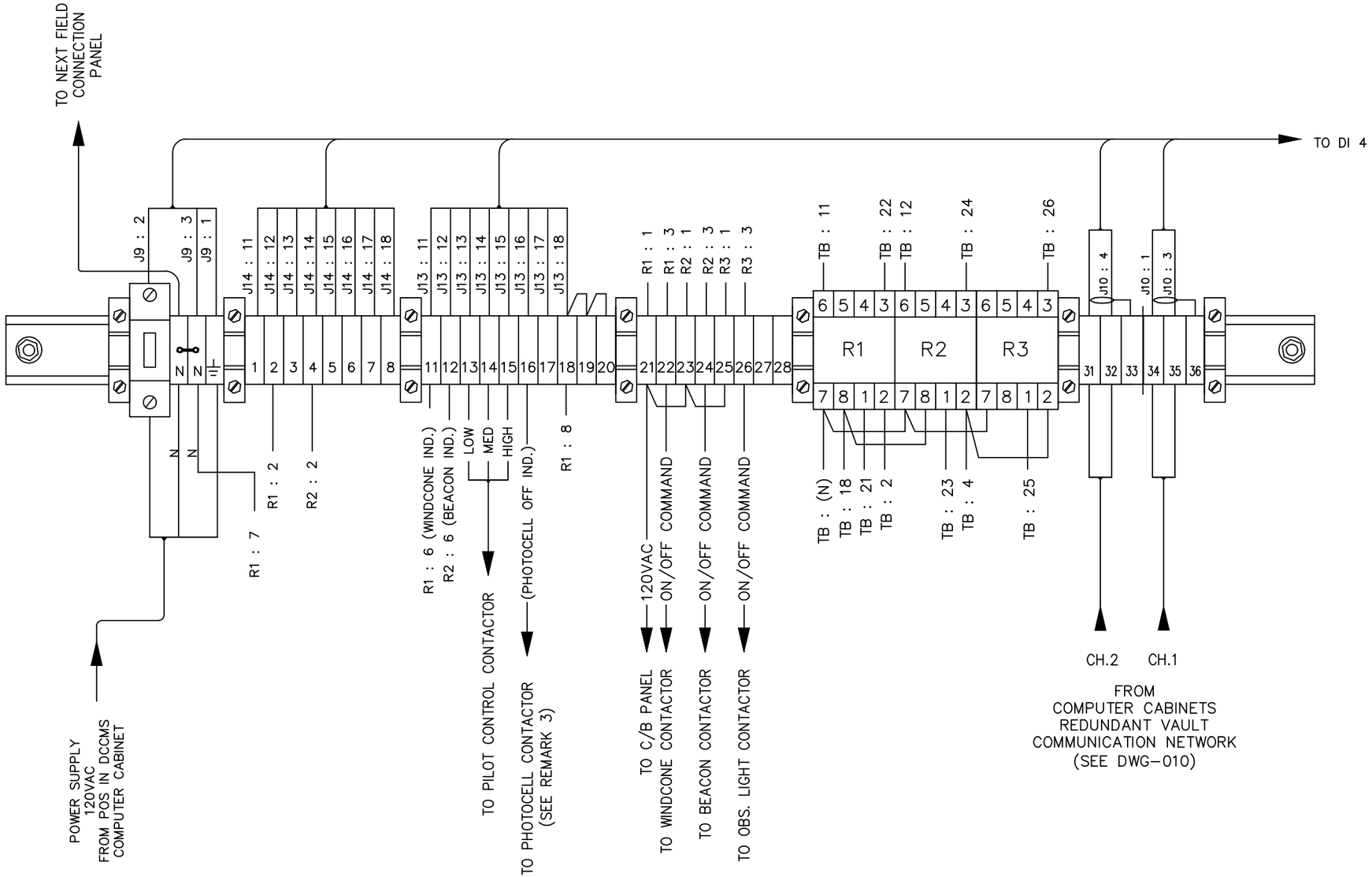
Project MITCHELL MUNICIPAL AIRPORT

Title DIGITRAC INTERFACE ASSIGNMENTS

Scale	Format	Sheet No.
—	A3	5 OF 5

Drawing No MHE–110

FIELD CONNECTION PANEL FOR GENERAL ELEMENTS (WINDCONE, BEACON, & PHOTOCELL)



REMARKS:

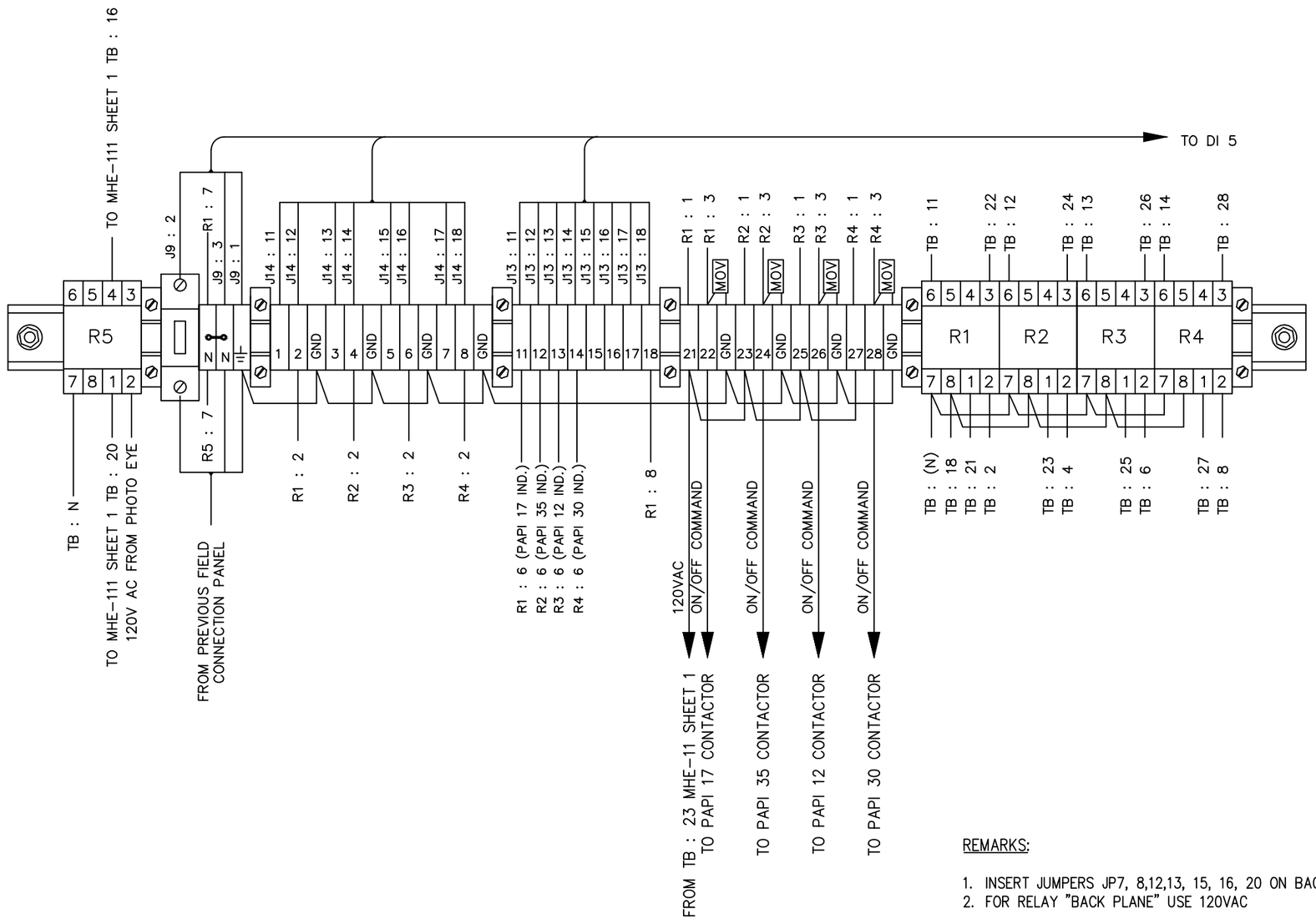
1. INSERT JUMPERS JP7, 8,12,13, 15, 16, 20 ON BACK PLANE BOARD
2. FOR RELAY "BACK PLANE" USE 120VAC
3. PHOTOCELL INDICATION IS FOR INTERFACE WITH LIGHTING CONTROL ONLY. PHOTOCELL "TURNS ON" AND CLOSES A DRY CONTACT AT DUSK.

MODIF.			MODIF.			
A		E		DATE	08.04.09
B	12.01.09	F		DRAWN BY	K.N.T.
C		G		CHECKED	D.G.
D		H		APPROVED	N.G.

COOPER Crouse–Hinds

Project	MITCHELL MUNICIPAL AIRPORT	Scale	Format / Sheet No.
Title	DIGITRAC INTERFACE UNIT (DI) FOR GENERAL ELEMENTS WIRING DIAGRAM	—	A3 / 1 OF 2
		Drawing No	MHE–111

FIELD CONNECTION PANEL FOR GENERAL ELEMENTS (PAPI 17, PAPI 35, PAPI 12, & PAPI 30)



REMARKS:

1. INSERT JUMPERS JP7, 8,12,13, 15, 16, 20 ON BACK PLANE BOARD
2. FOR RELAY "BACK PLANE" USE 120VAC

MODIF.			MODIF.				
	A	09.23.09		E		DATE	08.04.09
	B	12.01.09		F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse-Hinds

Project	MITCHELL MUNICIPAL AIRPORT		
Title	DIGITRAC INTERFACE UNIT FOR GENERAL ELEMENTS WIRING DIAGRAM	Scale —	Format A3
		Sheet No.	2 OF 2
		Drawing No	MHE-111

EQUIPMENT LIST

EQUIPMENT CODE	ITEM NUMBER	DESCRIPTION	QUANTITY
MNTR	C320–0019–7–00	MONITOR, 19" LCD	1
PC	C301–2207–1–00	DESKTOP COMPUTER (INCLUDES KEYBOARD AND MOUSE)	1
UPS	C109–1000–4–00	UPS 2U 1000VA 120VAC REMOTE/STANDALONE PS MODEL	1
AN	C320–2400–1–00	ANTENNA, 24DBi	1
LAr	C312–2500–1–00	LIGHTNING ARRESTOR, D.C–2.5GHz, 500Ω, N–TYPE FEMALE	1
WB	C312–1011–1–00	WIRELESS BRIDGE, 2.4GHz, 0.5VDC	1

MODIF.			MODIF.				
	A			E		DATE	08.04.09
	B			F		DRAWN BY	K.N.T.
	C			G		CHECKED	D.G.
	D			H		APPROVED	N.G.

COOPER Crouse–Hinds

Project MITCHELL MUNICIPAL AIRPORT

Title MAINTENANCE SHOP EQUIPMENT LIST

Scale	Format	Sheet No.
—	A3	1 OF 1

Drawing No MHE–400