STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	1	44

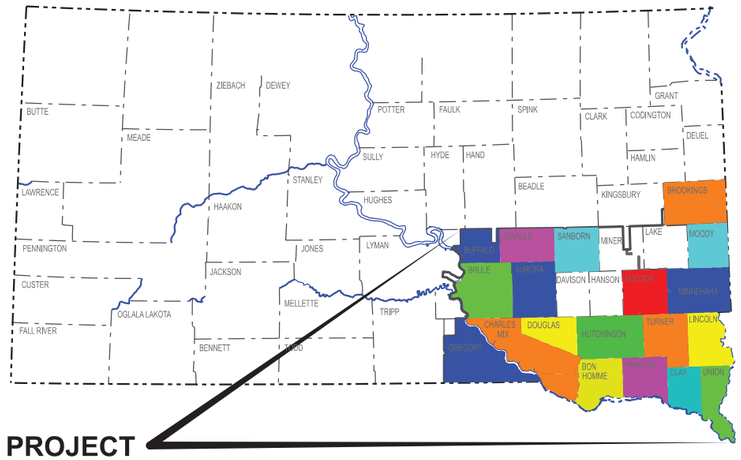
Plotting Date: 3/18/2026

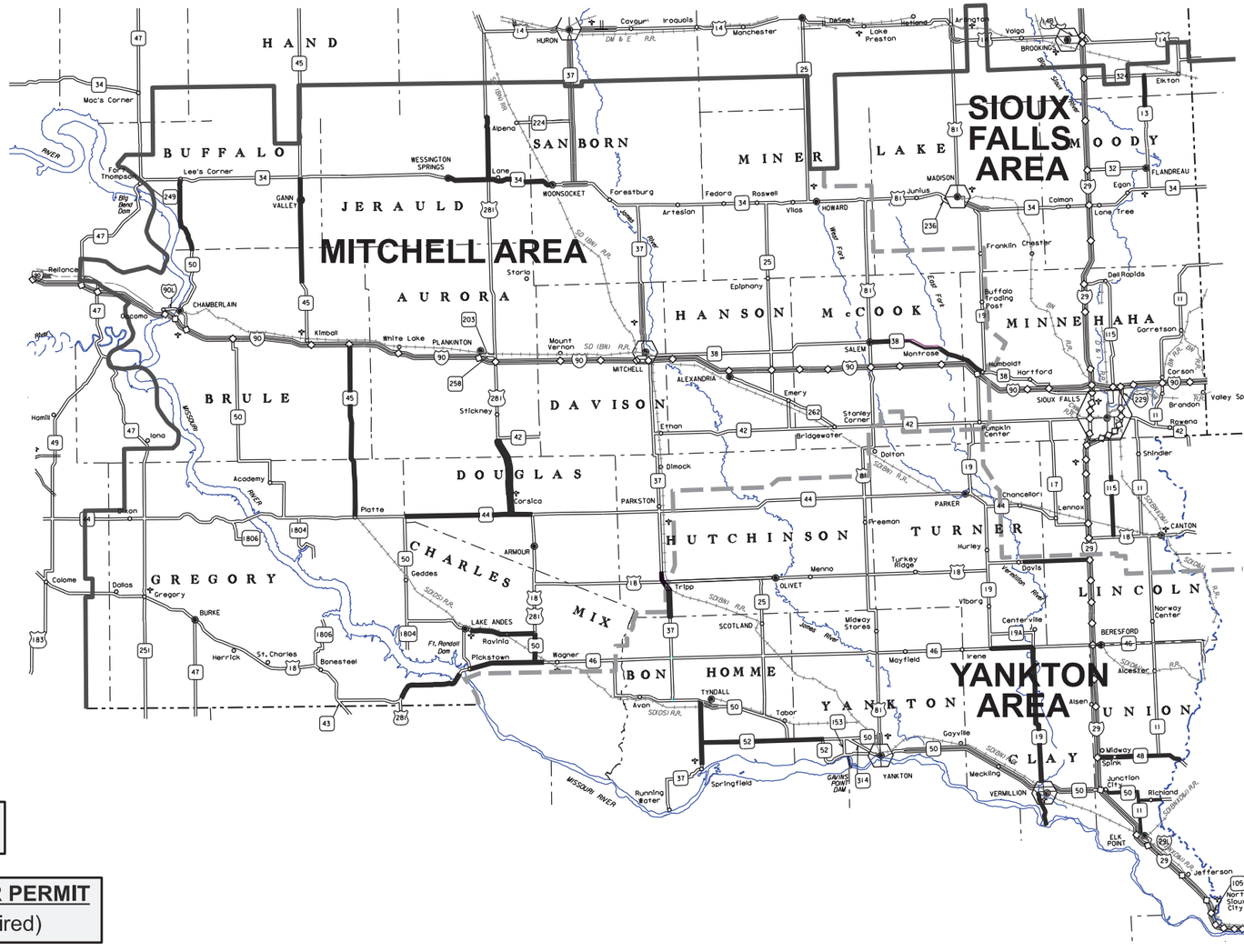
REV. 03-19-26, JMP

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT PH 0020(245)
VARIOUS ROUTES
VARIOUS COUNTIES

CENTERLINE RUMBLE STRIPES,
TRANSVERSE RUMBLE STRIPS,
AND PERMANENT
PAVEMENT MARKING
PCN 09UT





INDEX OF SHEETS

PROJECT LENGTH

Gross Length:	1,388,095'	262.897 Miles
Aurora		
County Length:	16,289'	3.085 Miles
Bon Homme		
County Length:	87,881'	16.644 Miles
Brookings		
County Length:	15,698'	2.961 Miles
Brule		
County Length:	62,300'	11.799 Miles
Buffalo		
County Length:	130,016'	19.485 Miles
Charles Mix		
County Length:	215,030'	40.725 Miles
Clay		
County Length:	191,512'	36.271 Miles
Douglas		
County Length:	129,166	24.463 Miles
Gregory		
County Length:	52,959'	10.030 Miles
Hutchinson		
County Length:	66,821'	6.805 Miles
Jerauld		
County Length:	119,208'	22.577 Miles
Lincoln		
County Length:	66,265'	12.550 Miles
McCook		
County Length:	70,341'	13.322 Miles
Minnehaha		
County Length:	40,007'	2.915 Miles
Moody		
County Length:	15,650'	2.964 Miles
Turner		
County Length:	27,937'	5.291 Miles
Union		
County Length:	109,662'	20.769 Miles
Yankton		
County Length:	21,318'	4.038 Miles
Net Length:	1,438,060'	256.694 Miles

PRINT PLANS IN COLOR

STORM WATER PERMIT
(None required)

2

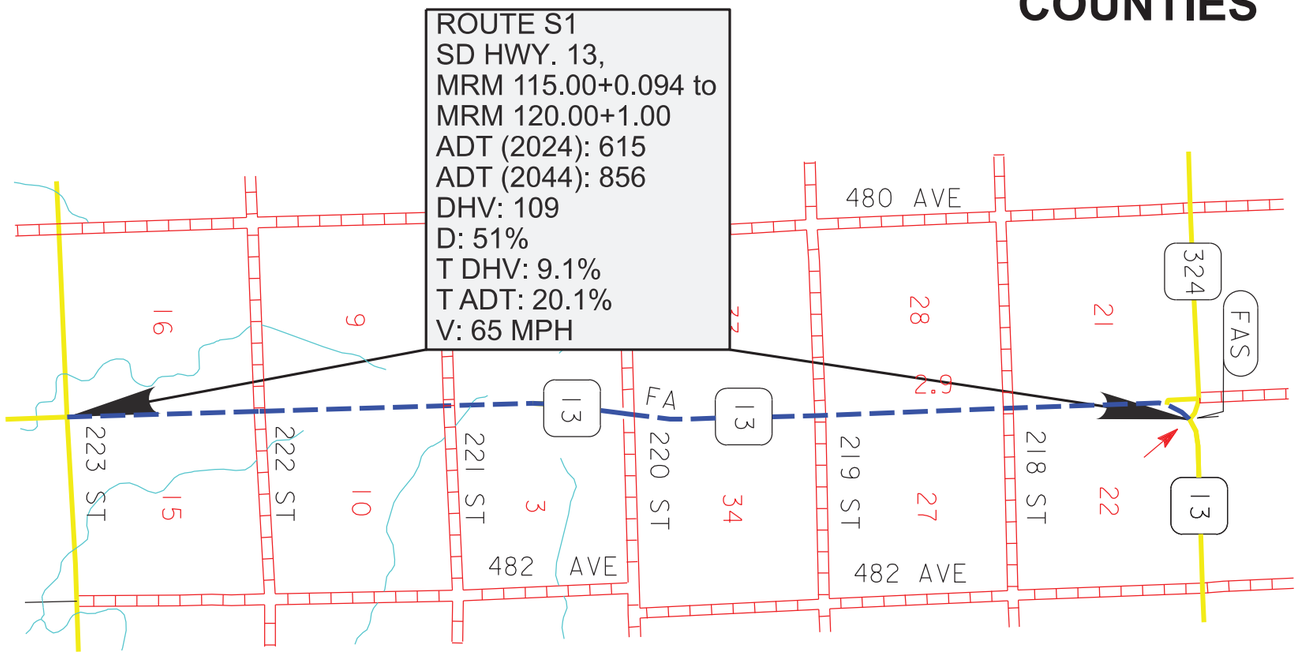
May 6, 2026

LAYOUT MAPS

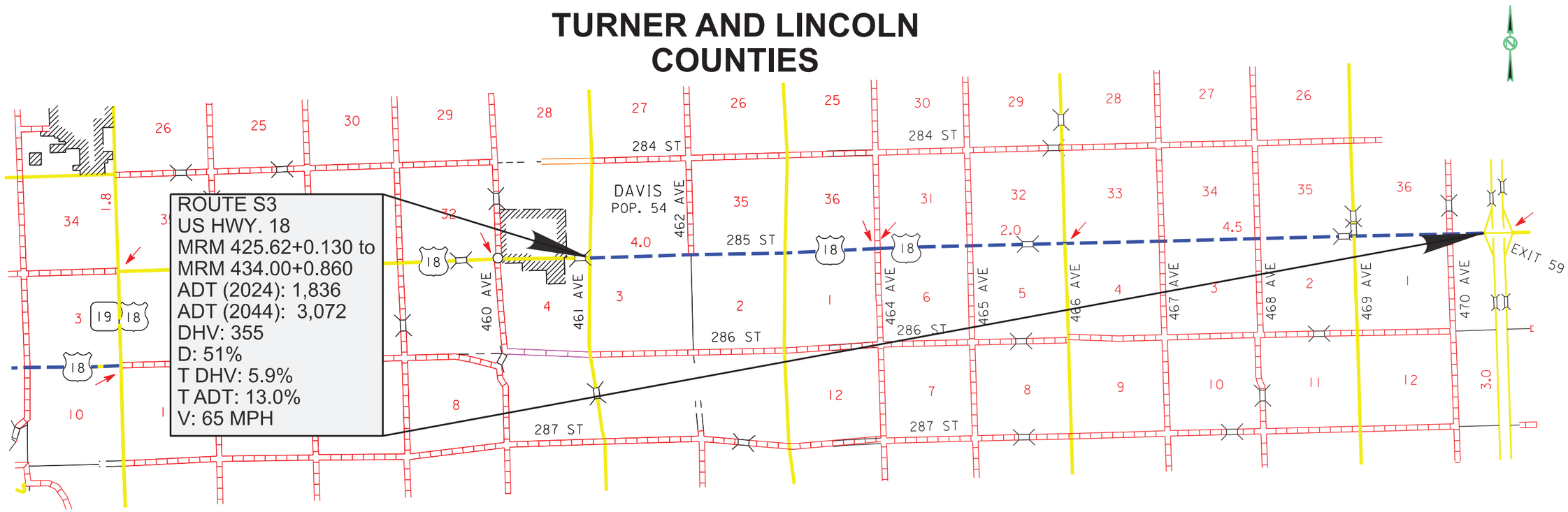
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	2	44

Plotting Date: 3/18/2026

MOODY AND BROOKINGS COUNTIES



TURNER AND LINCOLN COUNTIES

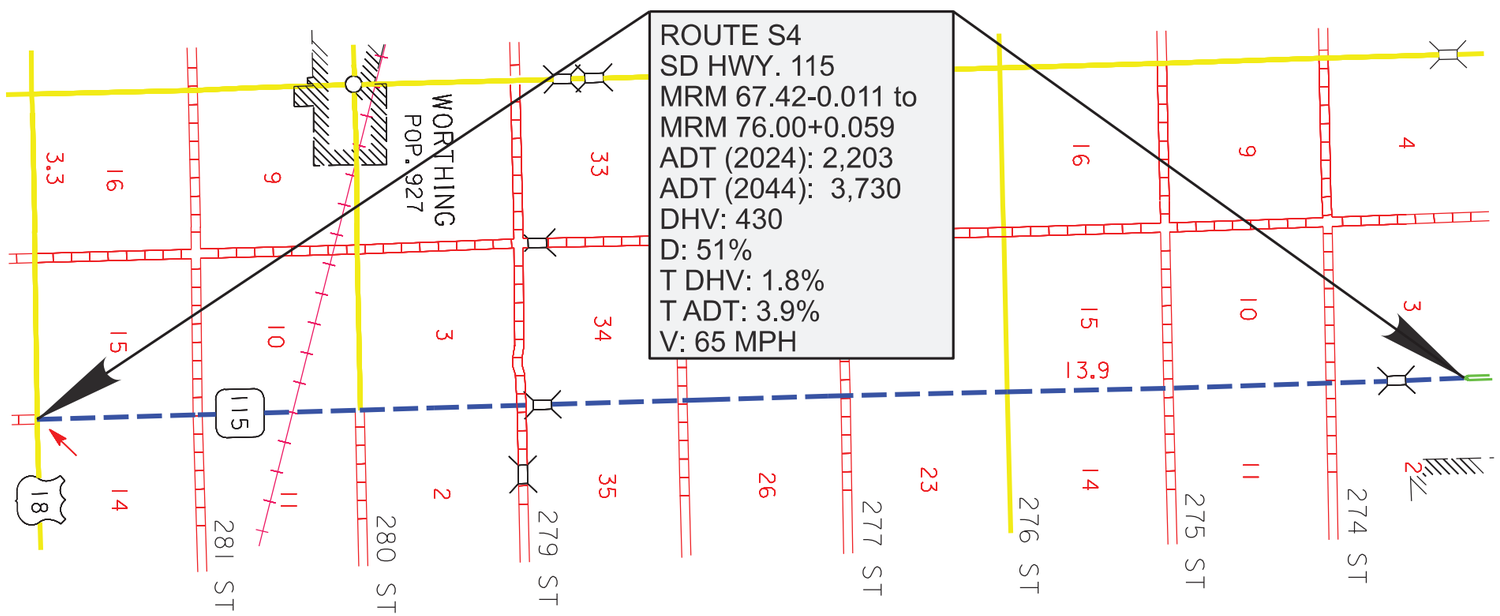


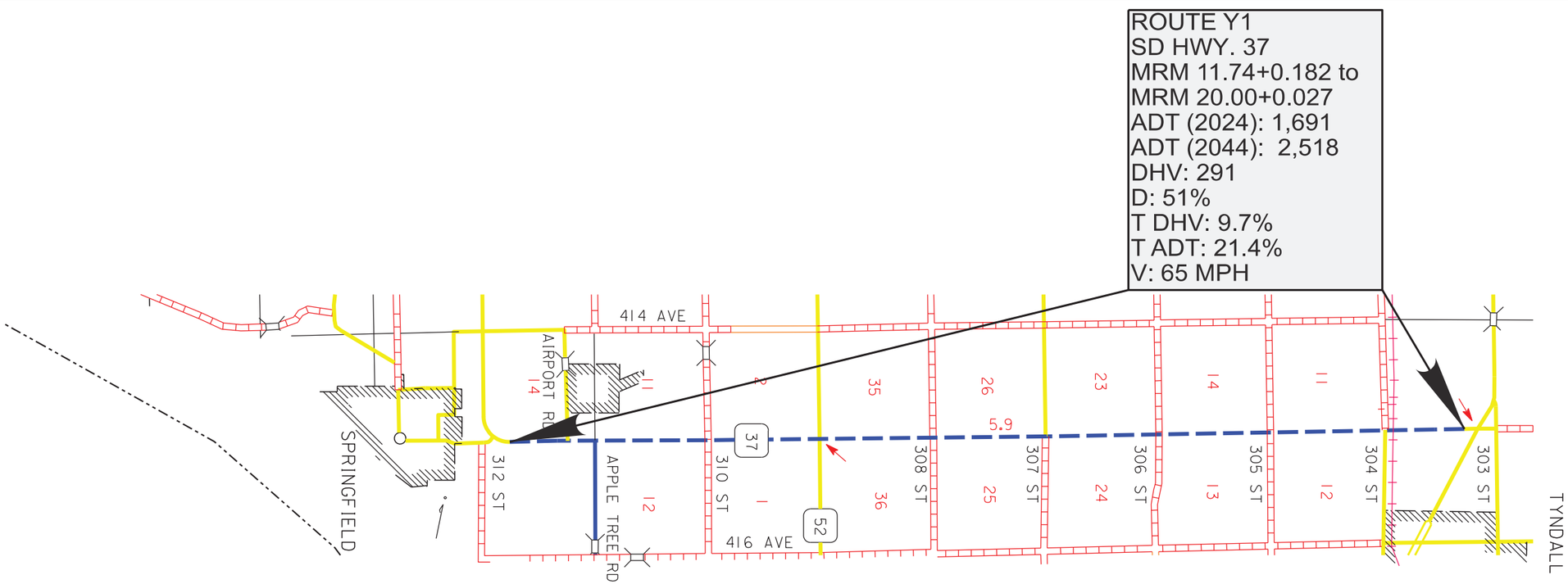
LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	3	44

Plotting Date: 3/18/2026

LINCOLN COUNTY

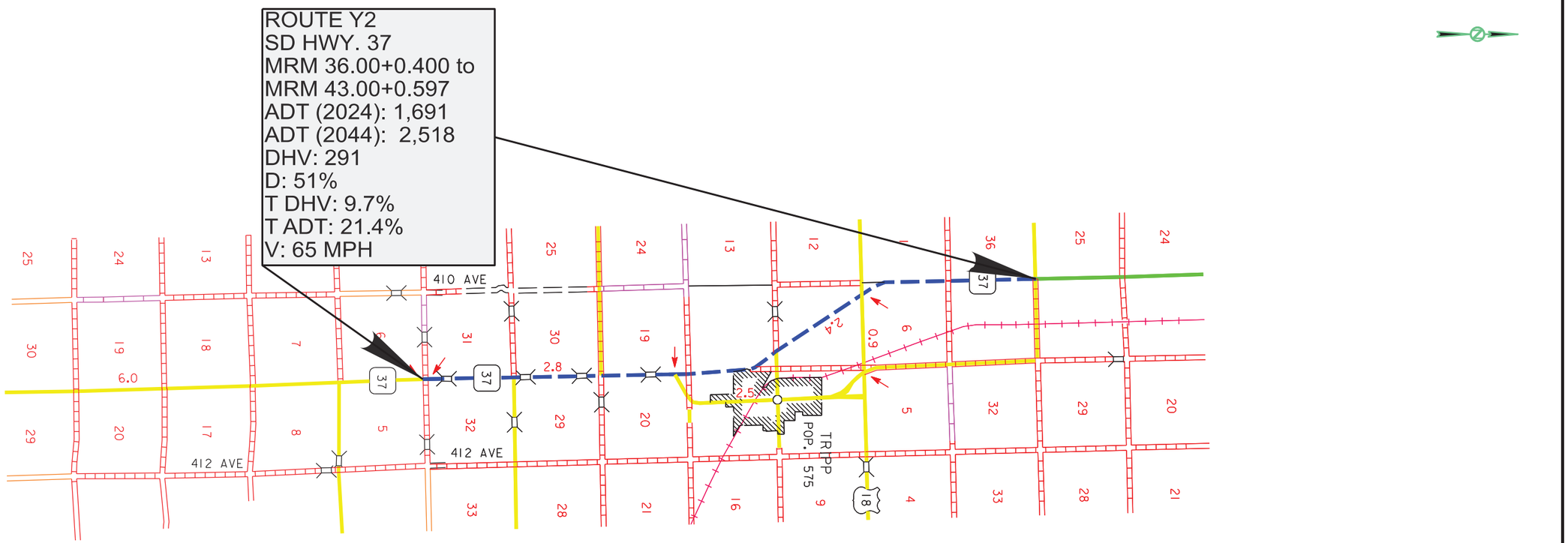




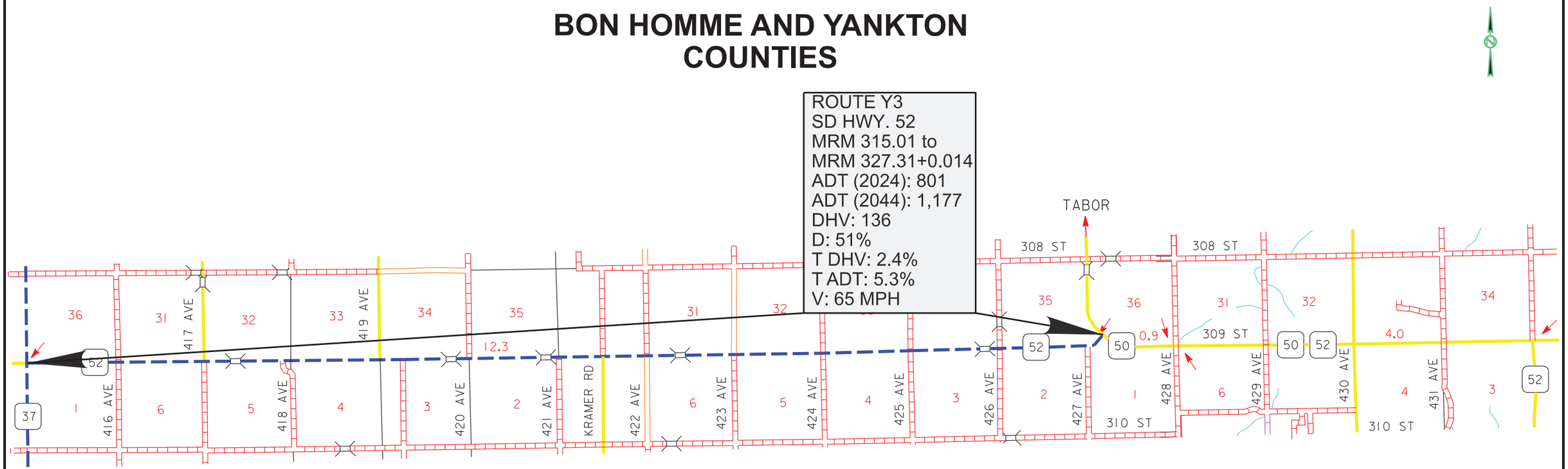
LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	4	44

Plotting Date: 3/18/2026



BON HOMME AND YANKTON COUNTIES



LAYOUT MAPS

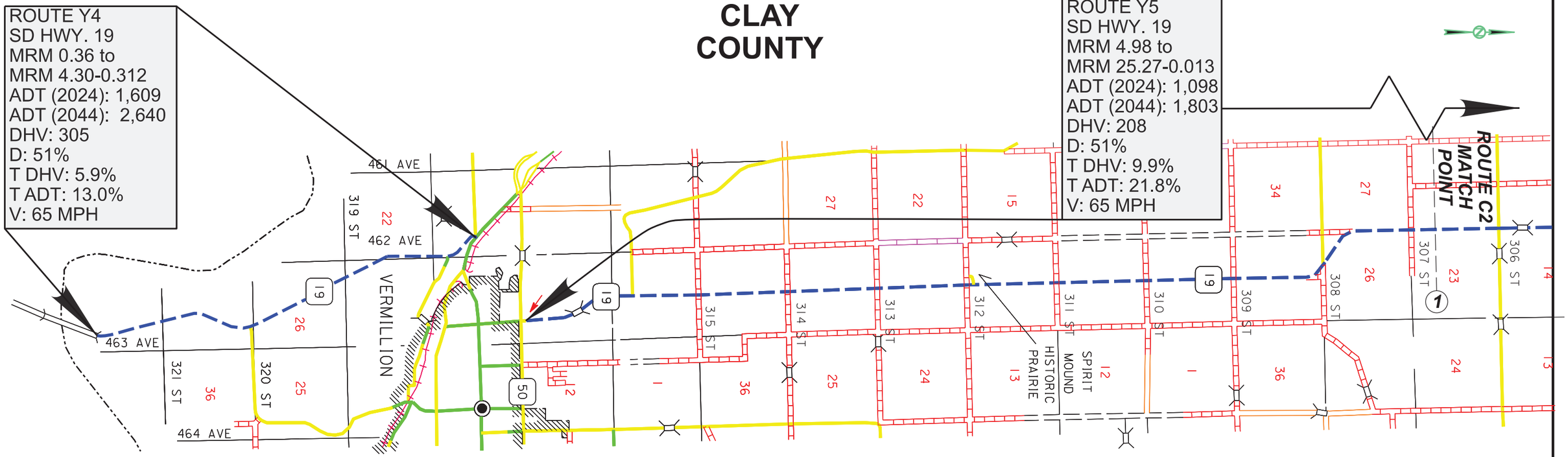
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	5	44

Plotting Date: 3/18/2026

CLAY COUNTY

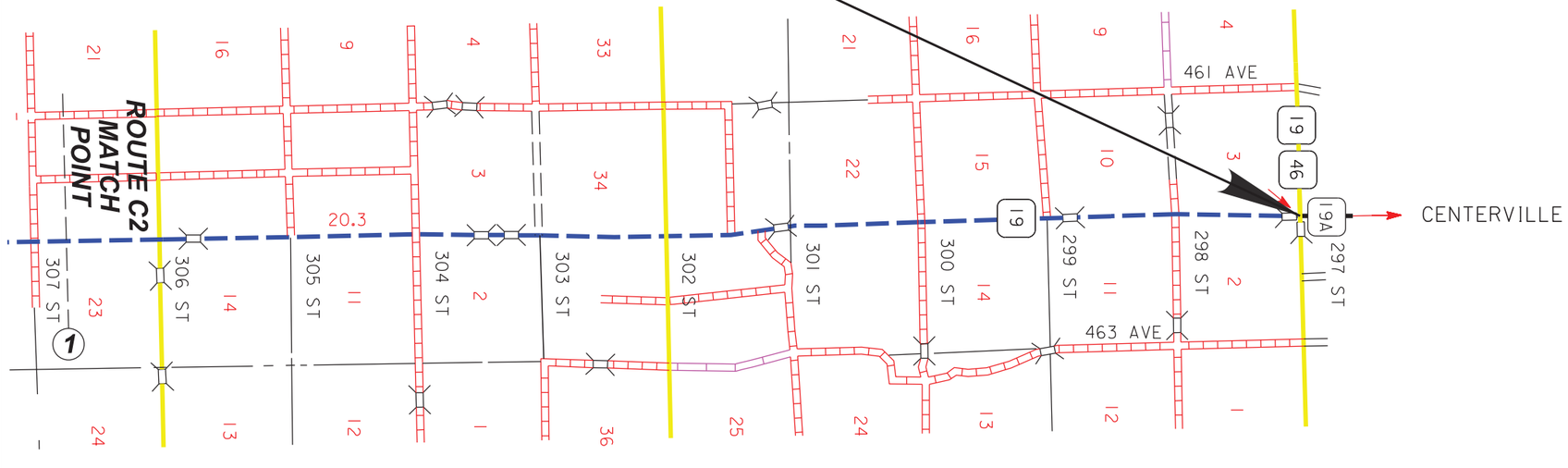
ROUTE Y4
SD HWY. 19
MRM 0.36 to
MRM 4.30-0.312
ADT (2024): 1,609
ADT (2044): 2,640
DHV: 305
D: 51%
T DHV: 5.9%
T ADT: 13.0%
V: 65 MPH

ROUTE Y5
SD HWY. 19
MRM 4.98 to
MRM 25.27-0.013
ADT (2024): 1,098
ADT (2044): 1,803
DHV: 208
D: 51%
T DHV: 9.9%
T ADT: 21.8%
V: 65 MPH



CLAY COUNTY

ROUTE Y5
SD HWY. 19
ENDS



LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	6	44

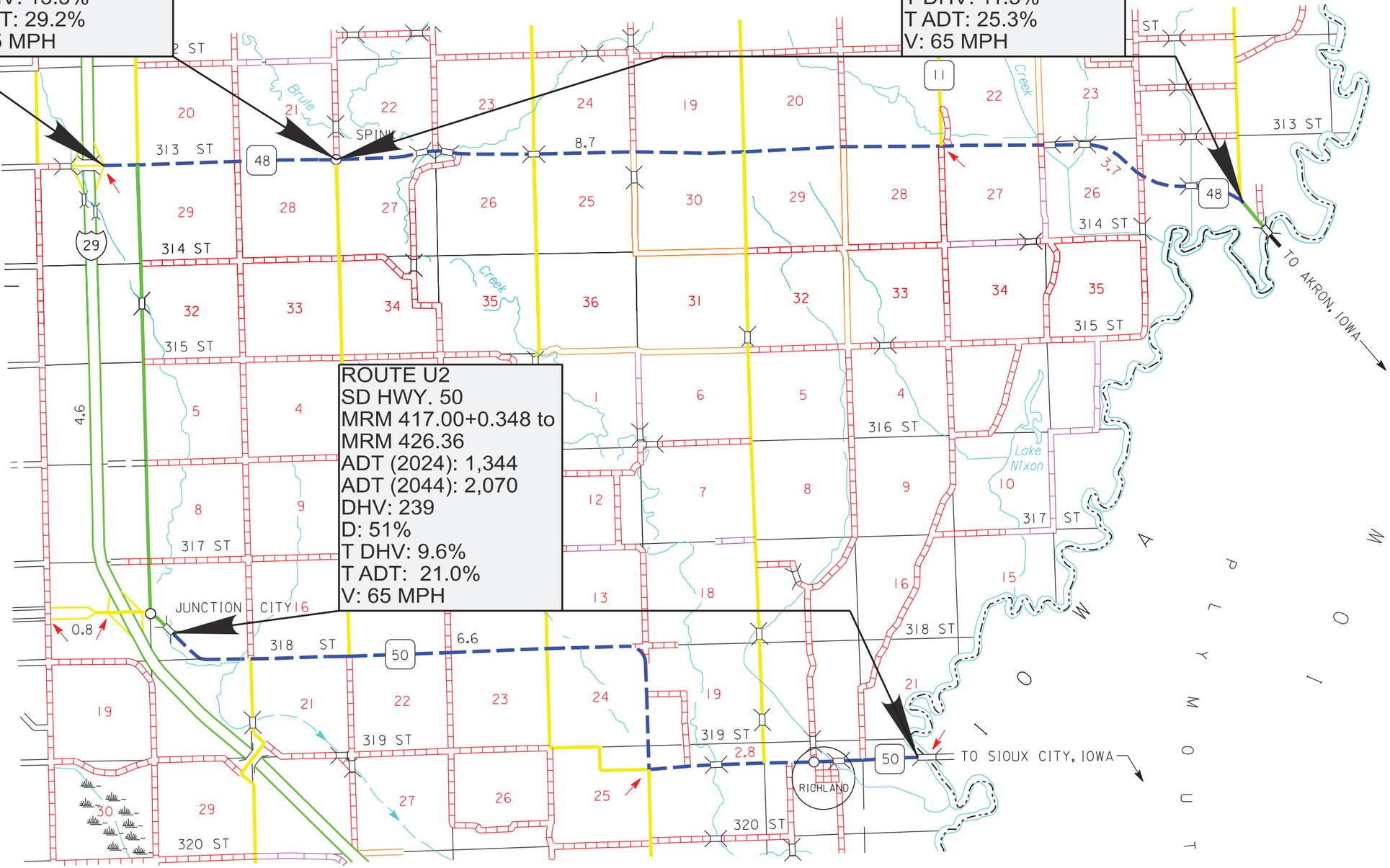
Plotting Date: 3/18/2026

UNION COUNTY

ROUTE Y7
SD HWY. 48
MRM 371.92+0.013 to
MRM 374.00+0.500
ADT (2024): 847
ADT (2044): 1,304
DHV: 150
D: 51%
T DHV: 13.3%
T ADT: 29.2%
V: 65 MPH

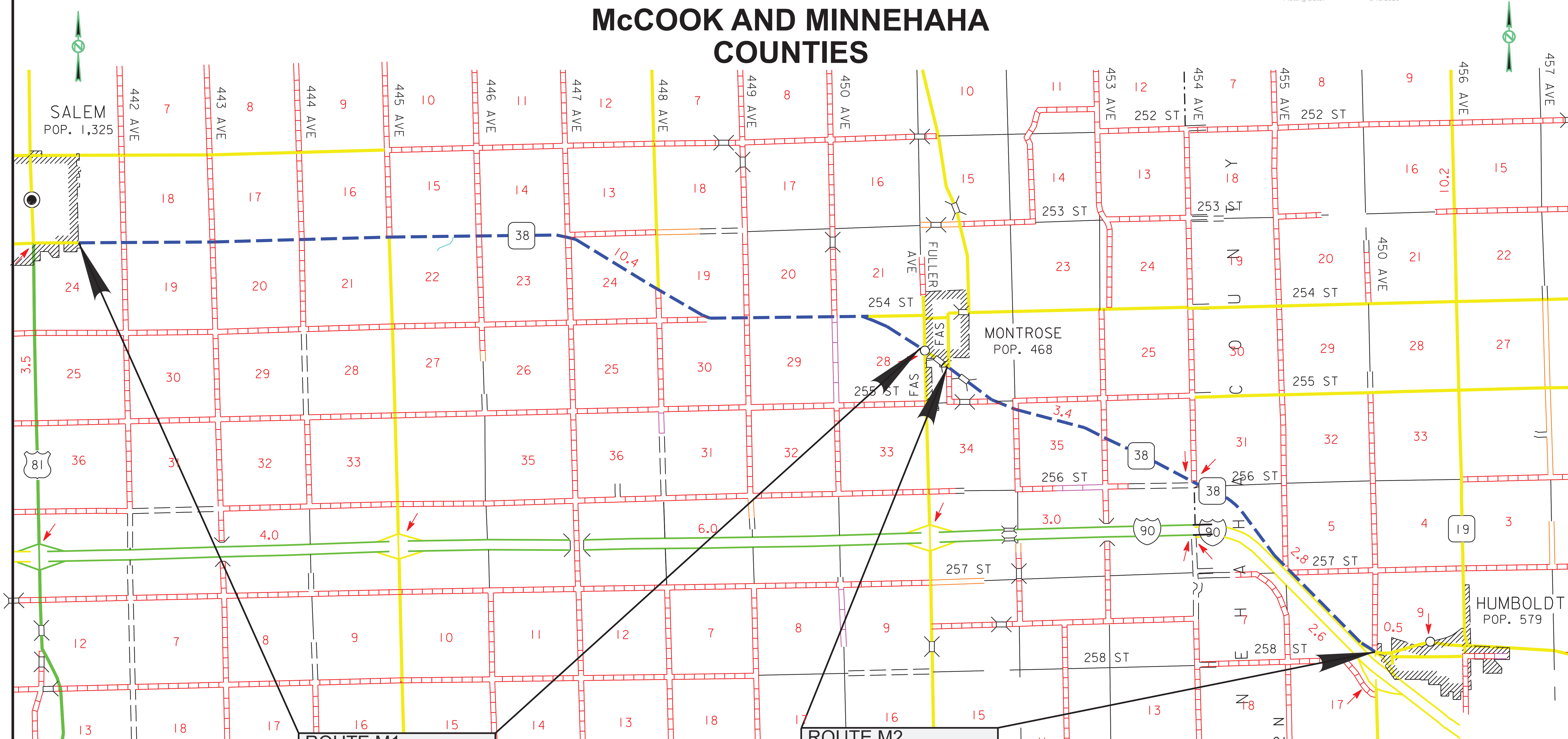
ROUTE U4
SD HWY. 48
MRM 374.00+0.500 to
MRM 383.27+0.548
ADT (2024): 907
ADT (2044): 1,396
DHV: 161
D: 51%
T DHV: 11.5%
T ADT: 25.3%
V: 65 MPH

ROUTE U2
SD HWY. 50
MRM 417.00+0.348 to
MRM 426.36
ADT (2024): 1,344
ADT (2044): 2,070
DHV: 239
D: 51%
T DHV: 9.6%
T ADT: 21.0%
V: 65 MPH



LAYOUT MAPS

McCOOK AND MINNEHAHA COUNTIES



ROUTE M1
SD HWY. 38,
MRM 332.26+0.647 to
MRM 342.00+0.660
ADT (2024): 1,212
ADT (2044): 1,815
DHV: 244
D: 50%
T DHV: 3.0%
T ADT: 6.7%
V: 65 MPH

ROUTE M2
SD HWY. 38,
MRM 343.00+0.016 to
MRM 348.90+0.010
ADT (2024): 1,787
ADT (2044): 2,677
DHV: 360
D: 50%
T DHV: 9.3%
T ADT: 20.3%
V: 65 MPH

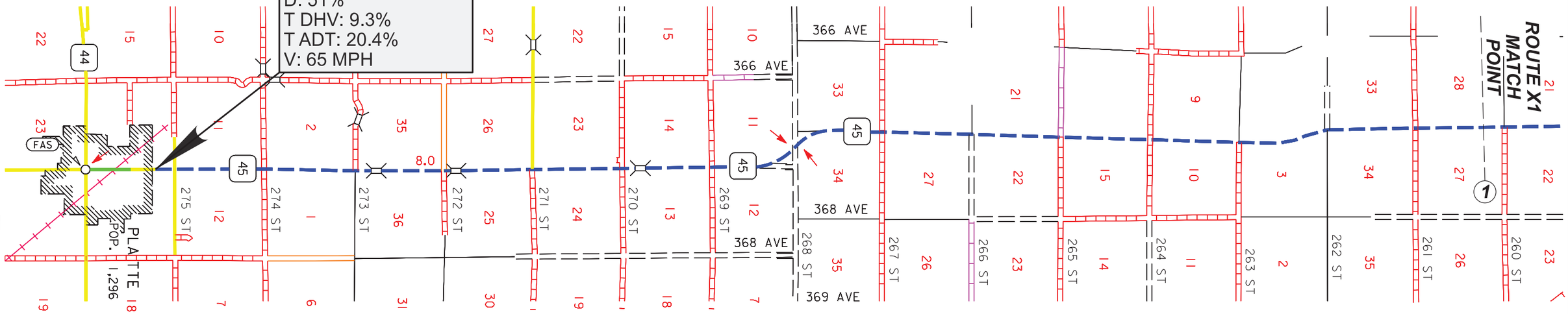
LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	8	44

Plotting Date: 3/18/2026

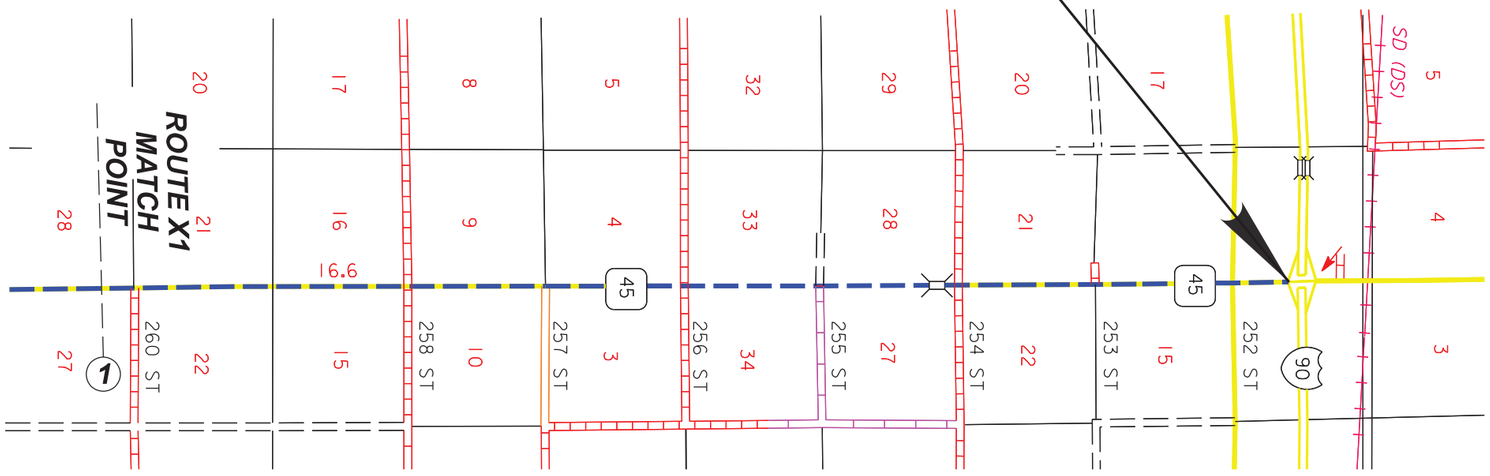
CHARLES MIX AND BRULE COUNTIES

ROUTE M3
SD HWY. 45
MRM 28.00+0.345 to
MRM 51.610
ADT (2024): 907
ADT (2044): 1,309
DHV: 151
D: 51%
T DHV: 9.3%
T ADT: 20.4%
V: 65 MPH



BRULE COUNTY

ROUTE M3
SD HWY. 45
ENDS



LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	9	44

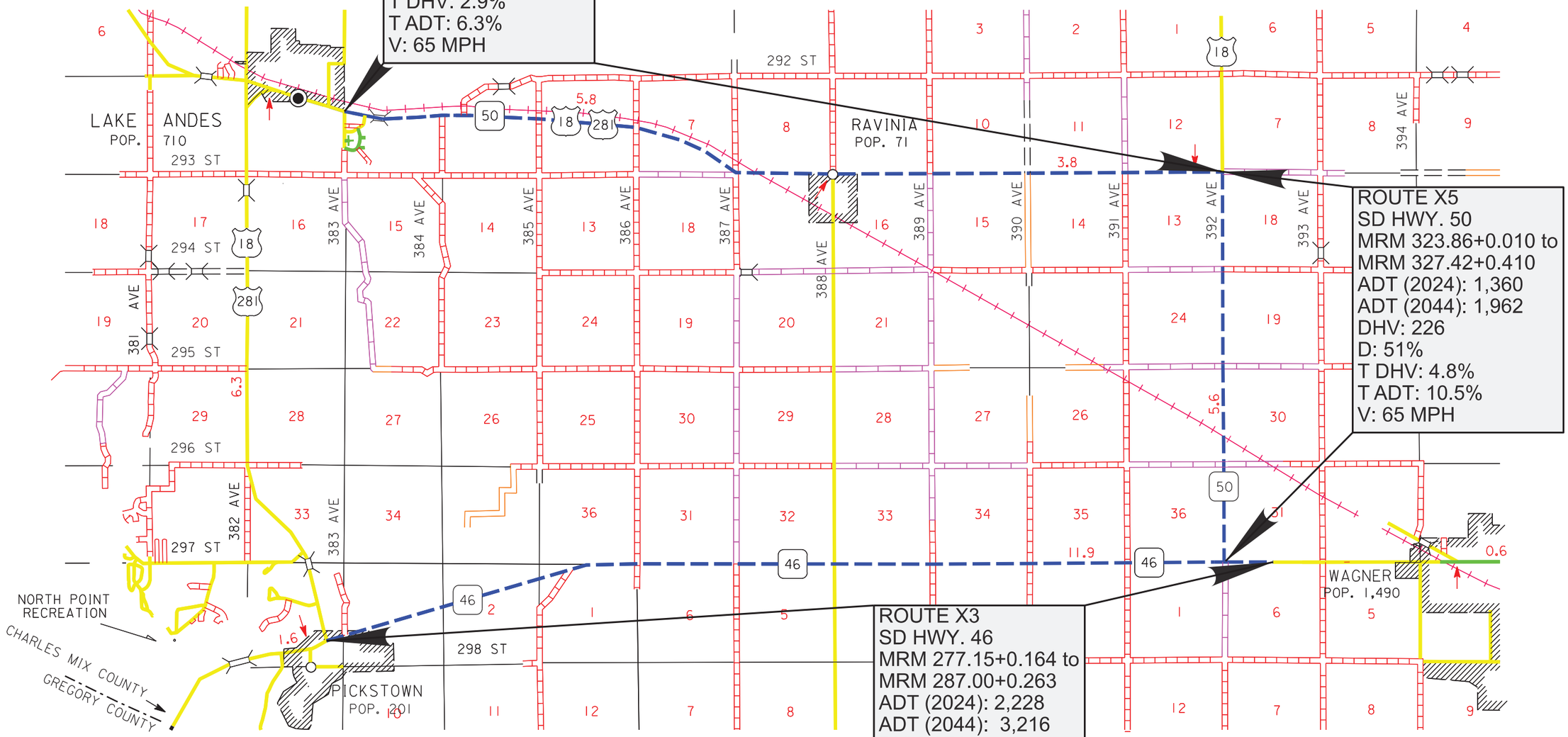
Plotting Date: 3/18/2026

CHARLES MIX COUNTY

ROUTE M4
US HWY. 18
MRM 339.68+0.027 to
MRM 348.89+0.100
ADT (2024): 1,221
ADT (2044): 1,762
DHV: 203
D: 51%
T DHV: 2.9%
T ADT: 6.3%
V: 65 MPH

ROUTE X5
SD HWY. 50
MRM 323.86+0.010 to
MRM 327.42+0.410
ADT (2024): 1,360
ADT (2044): 1,962
DHV: 226
D: 51%
T DHV: 4.8%
T ADT: 10.5%
V: 65 MPH

ROUTE X3
SD HWY. 46
MRM 277.15+0.164 to
MRM 287.00+0.263
ADT (2024): 2,228
ADT (2044): 3,216
DHV: 371
D: 51%
T DHV: 6.4%
T ADT: 14.0%
V: 65 MPH



LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	10	44

Plotting Date: 3/18/2026

DOUGLAS COUNTY

ROUTE M7
SD HWY. 44
MRM 312.00+0.760 to
MRM 327.88
ADT (2024): 1,516
ADT (2044): 2,188
DHV: 252
D: 51%
T DHV: 8.3%
T ADT: 18.3%
V: 65 MPH

ROUTE M8
CONTINUES
ON FROM
SD HWY 44 TO
US HWY 281

T 99 N C H A M B E R L A I N C O U N T Y

275 ST
277 ST
374 AVE
375 AVE
376 AVE
377 AVE
378 AVE
379 AVE
380 AVE
381 AVE
382 AVE
383 AVE
384 AVE
385 AVE
386 AVE
387 AVE
388 AVE
389 AVE
390 AVE

DOUGLAS AND AURORA COUNTIES

ROUTE M8
CONTINUES
ON FROM
SD HWY 44 TO
US HWY 281

CORSICA
POP. 561

273 ST
274 ST
275 ST
271 ST
272 ST
270 ST
269 ST
268 ST
267 ST
266 ST
265 ST
264 ST
263 ST
262 ST
261 ST
260 ST
389 AVE
390 AVE

STICKNEY

ROUTE M8
US HWY. 281
MRM 45.69+0.008 to
MRM 50.00+0.671
ADT (2024): 1,471
ADT (2044): 2,033
DHV: 235
D: 51%
T DHV: 10.3%
T ADT: 22.6%
V: 65 MPH

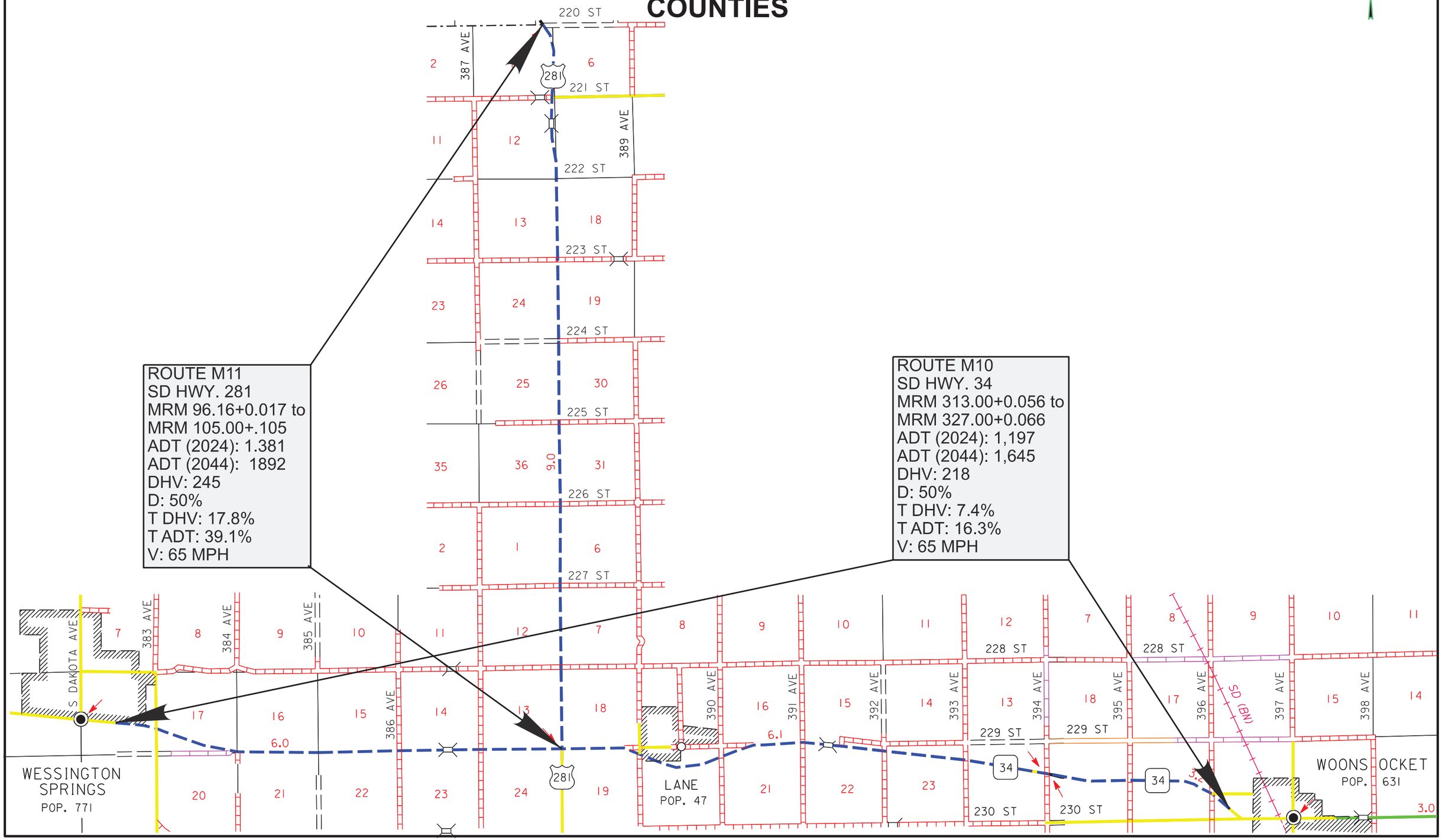
ROUTE M9
US HWY. 281
MRM 52.00-0.154 to
MRM 59.00+0.218
ADT (2024): 1,239
ADT (2044): 1,718
DHV: 198
D: 51%
T DHV: 10.8%
T ADT: 23.7%
V: 65 MPH

LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	11	44

Plotting Date: 3/18/2026

JERAULD AND SANBORN COUNTIES



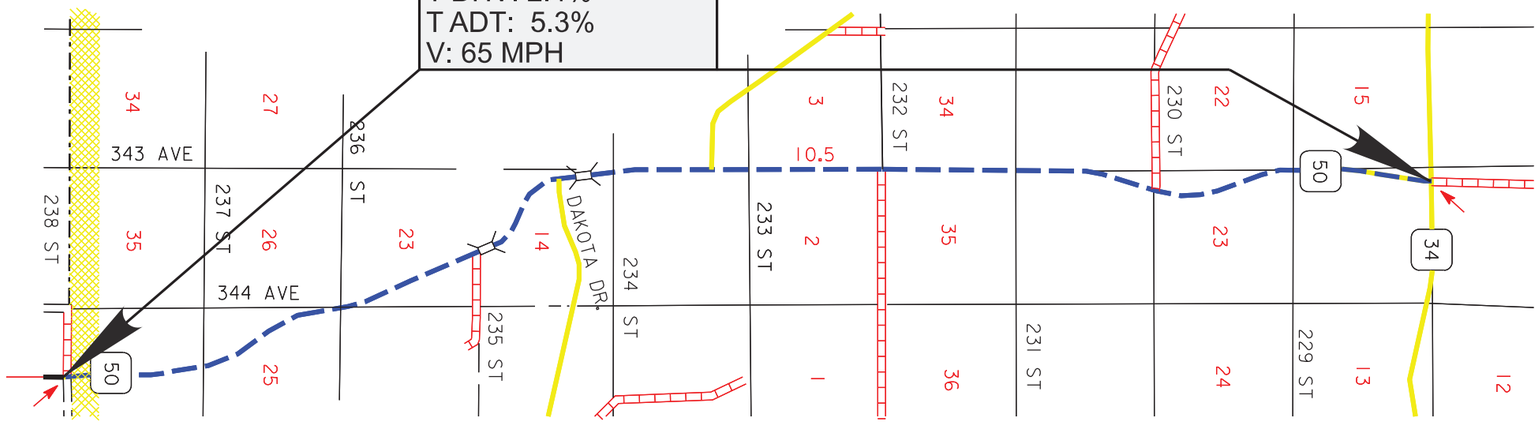
LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	12	44

Plotting Date: 3/18/2026

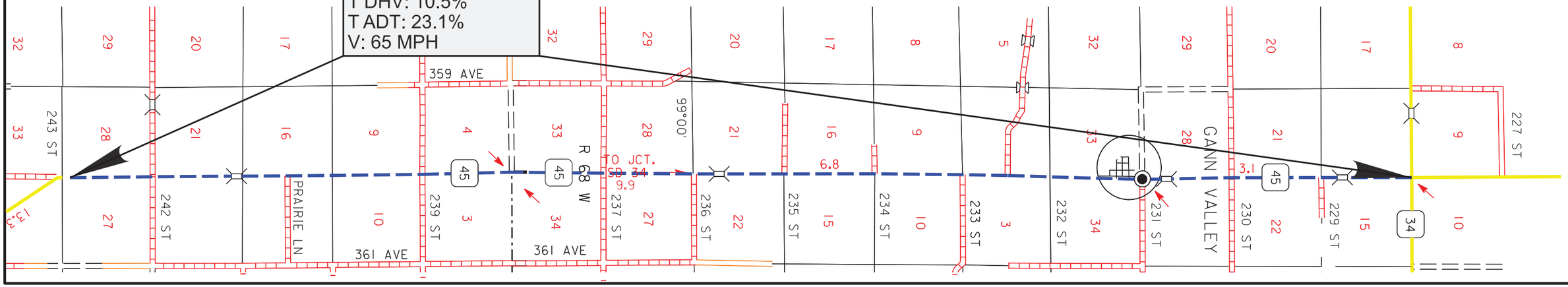
BUFFALO COUNTY

ROUTE M12
SD HWY. 50
MRM 211.78+0.014 to
MRM 222.00+0.260
ADT (2024): 643
ADT (2044): 987
DHV: 128
D: 50%
T DHV: 2.4%
T ADT: 5.3%
V: 65 MPH



BRULE AND BUFFALO COUNTIES

ROUTE M13
SD HWY. 45
MRM 66.00+0.307 to
MRM 81.09+0.010
ADT (2024): 897
ADT (2044): 1,211
DHV: 157
D: 50%
T DHV: 10.5%
T ADT: 23.1%
V: 65 MPH

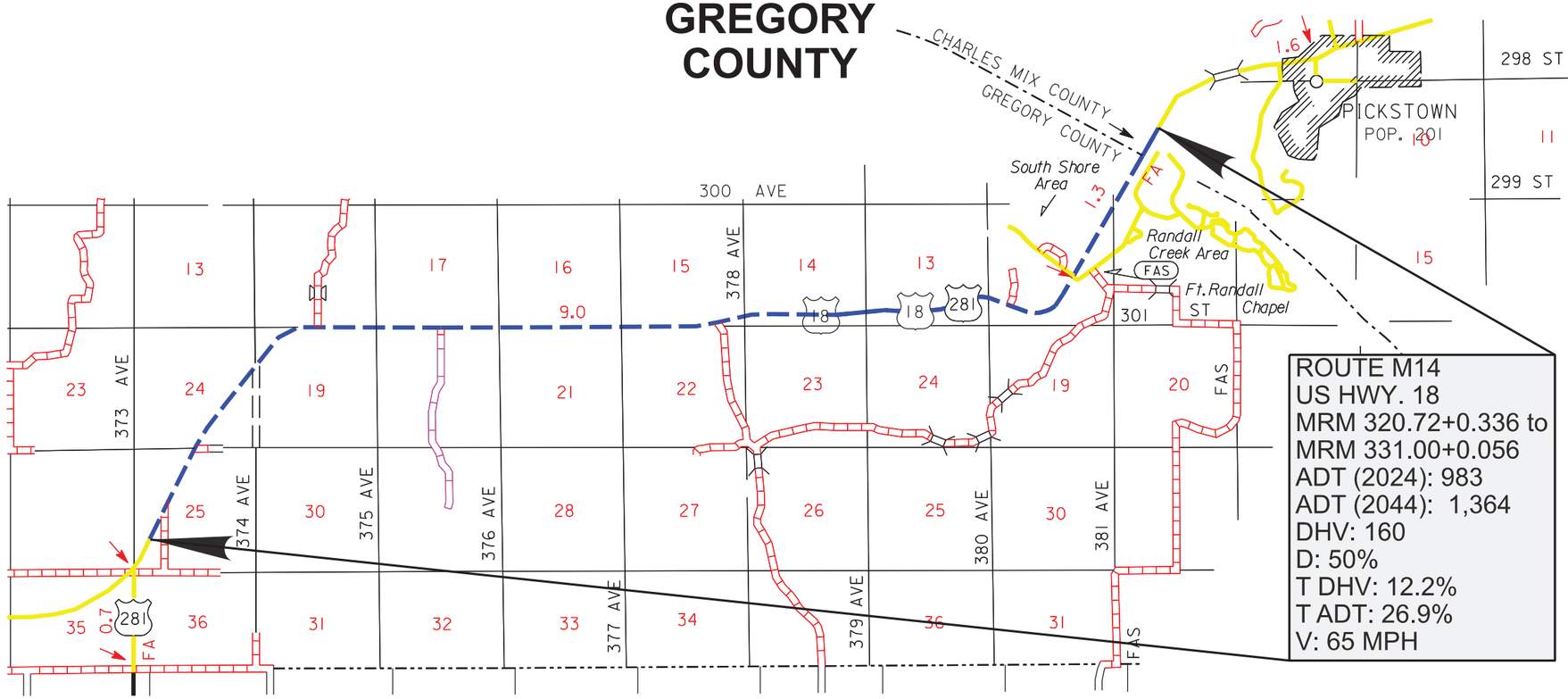


LAYOUT MAPS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	13	44

Plotting Date: 3/18/2026

GREGORY COUNTY



ESTIMATE OF QUANTITIES

PH 0020(275) – PCN 09UT

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
320E7016	Grind 16" Rumble Strip in Asphalt Concrete	18.4	Mile
320E7030	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	238.7	Mile
320E7040	Grind 6" Transverse Rumble Strip in Asphalt Concrete	408.0	Ft
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	113.7	Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	4,775	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	3,370	Gal
633E1206	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	1,096	Gal
634E0010	Flagging	3,850.0	Hour
634E0020	Pilot Car	2,000.0	Hour
634E0110	Traffic Control Signs	433.8	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	257.1	Mile

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/doing-business/environmental/about-environmental/>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight, and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

COMMITMENT B2: WHOOPING CRANE CONTINUED)

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD AND GOLDEN EAGLE

Bald and/or Golden eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
< https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.
Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SCOPE OF WORK

The project consists of centerline rumble stripe and transverse rumble strips.

Centerline rumble stripe locations will also have High Build Pavement Marking Paint, Yellow applied.

SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

SEQUENCE OF OPERATIONS

1. Install traffic control for pilot car and flagger zone.
2. Grind 16", or sinusoidal centerline rumble stripes as listed in Table of Quantities Centerline Rumble Stripes.
3. Repeat 5-mile process until project completion.
4. Place temporary pavement markings (tabs) before the end of the day.
5. Install flush seal over rumble stripes.
6. Install permanent pavement marking paint.

COORDINATION BETWEEN CONTRACTORS

A separate contract for Project NH-PT 0018(222)311– PCN 067V will be awarded to another Contractor for Mill, AC Resurfacing, Pipe Work and Intersection Improvements on US18 adjacent to this project (PCN 09UT) for this set of plans. The Mill, AC Resurfacing, Pipe Work and Intersection Improvements for PCN 067V will begin at US18 MRM 311.00 and end at MRM 321.00+0.071.

A separate contract for Project NH-PH 0050(116)354– PCN 04K7 has been awarded to another Contractor Foothills Contracting, Inc. for Grading, AC Surfacing, Curb & Gutter, Lighting on SD50 and SD37 adjacent to this project (PCN 09UT). The Grading, AC Surfacing, Curb & Gutter, Lighting for PCN 04K7 will begin at SD50 MRM 354.00+0.283 and end at MRM 354.30+0.000, and SD37 MRM 20.00+0.027 and end at MRM 20.42.

A separate contract for NH-P 0021(190)– PCN 09WD will be awarded to another Contractor for Asphalt Concrete Crack Sealing on SD46, SD50, US18, and SD38 adjacent to this project (PCN 09UT). The work description for PCN 09WD will begin at SD46 MRM 287.00+0.264 and end at MRM 288.00+0.347. Begin at SD50 MRM 211.77 and end at MRM 222.26. Begin at US18 MRM 332.90 and end at MRM 339.00+0.008. Begin at SD38 MRM 332.28 and end at MRM 348.91 Installation of the 12" centerline and sinusoidal centerline rumble stripes must be installed before the crack seal on PCN 09WD in 2026.

A separate contract for Project IM-NH-P 0023(72) – PCN 09WK will be awarded to another Contractor for Rout and Seal on US18 adjacent to this project (PCN 09UT). The Rout and Seal for PCN 09WK will begin at US18 MRM 387.70+0.000 and end at MRM 402.77+0.000, and on SD37 will begin at MRM 24.44+0.000 and end at MRM 36.40+0.000.

A separate contract for Project IM-NH 0022(102)– PCN 09WU will be awarded to another Contractor for Asphalt Surface Treatment on US18 near to this project (PCN 09UT) The Asphalt Surface Treatment for PCN 09WU will begin at MRM 438.73+0.000 and end at MRM 446.28+0.134.

A separate contract for Project PT 0019(51)5 – PCN 0822 will be awarded to another Contractor for Berm Repair and Rip Rap on SD19 adjacent to this project (PCN 09UT). The Berm Repair and Rip Rap for PCN 0822 is at MRM 5.64 on Structure 14-107-194.

A separate contract for NH-P 0023(73) – PCN 09WX will be awarded to another Contractor for Chip Sealing on US81 adjacent to this project (PCN 09UT). The Chip Sealing for PCN 09WX will begin at US18 MRM 15.34+0.155 and end at MRM 311.00+0.071. Installation of the 12"centerline and sinusoidal centerline rumble stripes must be installed after the chip seal on PCN 09WX in 2026.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by the other Contractor on PCN 067V, 04K7, 09WD, 09WK, 09WU, 0822, and 09WX. Conflicting traffic control devices may need to be temporarily adjusted or removed as directed by the Engineer and at no additional cost to the contract.

GRIND CENTERLINE AND SINUSOIDAL CENTERLINE RUMBLE STRIPES IN ASPHALT CONCRETE

Centerline and/or Sinusoidal Centerline rumble stripes will be constructed according to:

The detail for 16" Centerline Rumble Stripe in Asphalt Concrete
Standard Plate 320.40

16" Rumble stripes will be paid for at the contract unit price per mile for "Grind 16" Rumble Strip in Asphalt Concrete". It is estimated that 18.4 miles of 16" centerline rumble stripes will be required.

Sinusoidal rumble stripes will be constructed on the centerline, as detailed in the plans. Sinusoidal centerline rumble stripe installation will be completed prior to application of the flush seal and permanent pavement markings. Sinusoidal centerline rumble stripes will be paid for at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete". It is estimated that 238.7 miles of sinusoidal centerline rumble stripes will be required.

CENTERLINE RUMBLE STRIPES - ASPHALT FOR FLUSH SEAL

Asphalt for Flush Seal will be applied after the centerline rumble stripes have been installed and prior to the application of permanent pavement markings. The asphalt for flush seal will be applied at a width of 24" and a rate of 0.10 Gal/SqYd.for 12" Centerline Rumble Stripe, Sinusoidal Centerline Rumble Stripe in AC, and 16" Centerline Rumble Stripe in Asphalt Concrete AC. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

SITE X4: GRIND 6" TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE

Advance intersection warning transverse rumble strips will be constructed on the mainline pavement, as detailed in the plan set. Transverse rumble strips will be paid for at the contract unit price per foot for "Grind 6" Transverse Rumble Strip in Asphalt Concrete". It is estimated that 408.0 feet of transverse rumble strips will be required.

Transverse rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. A flush seal will be applied to the newly installed transverse rumble strips at a width that extends 3" beyond the perimeter of the total area of the transverse rumble strips and at a rate of 0.10 Gal/SqYd. All costs associated with placing the flush seal will be incidental to the contract unit price per ton for "SS-1h or CSS-1h Asphalt for Flush Seal".

RUMBLE STRIPE ROADWAY CLEANING

The contractor will remove all loose materials from the driving surface and shoulders of the roadway on the daily basis. It will be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas and/or waterways.

GENERAL TRAFFIC CONTROL

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

A mobile work operation will be allowed for rumble strip or rumble stripe grinding, flush sealing, and pavement marking as long as it is approved by the Engineer. A mobile work operation will require approval by the Engineer.

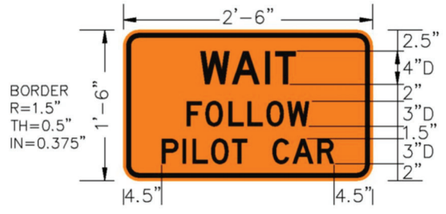
All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

More than one lane closure may be permitted; however, there will be a maximum of three lane closures, excluding the tapers.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.



It is required that the flaggers and pilot car operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for “Flagging”.

LANE CLOSURES

Sufficient traffic control devices have been included in these plans to sign three lane closures. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices will be incidental to the contract unit price per unit for Traffic Control.

TEMPORARY PAVEMENT MARKINGS

The total length of no passing zone on this project is estimated to be 173.1 miles.

It is estimated that 398 DO NOT PASS (R4-1) and 397 PASS WITH CARE (R4-2) signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

The temporary pavement marking is to be flexible vertical markers (tabs) with one cover. Flexible vertical markers (tabs) will placed after grinding prior to nightfall.

The Contractor will remove and dispose of temporary flexible vertical markers (tabs) after Permanent Pavement Marking is applied. Removal will be accomplished within one week completion of the Permanent Pavement Marking.

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

PERMANENT PAVEMENT MARKING PAINT

Cold weather waterborne paint will not be required after October 15th.

The application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the flush seal on top of the centerline rumble stripes and strips.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer’s recommendations.

Reflective media consisting of glass beads as well as wet-reflective optics will be adhered to the paint.

The wet-reflective optics will contain either clear, white, amber, or yellow tinted beads composed of glass or a composite consisting of a core made from ceramic or glass with an outer layer of microcrystalline ceramic or glass beads. The wet-reflective optics will provide a 50/50 blend of dry to wet ratio of optics. All beads bonded to wet-reflective optics will have a minimum index of refraction of 1.8 for dry retroreflectivity and 2.4 for wet retroreflectivity when tested using the liquid oil immersion method.

Reflective media will require a Certificate of Compliance for Certification for each type, source, and lot. Acceptance sampling will not be required.

Pavement markings not conforming to the retroreflectivity requirements will be removed and replaced. If replacement of markings cannot be applied within the same year in 2026, the Contractor will schedule subject work to be completed no later than June 15th in the following year in 2027. Upon replacement, the retroreflectivity testing process will be done again requiring new readings.

The Department will take retroreflectivity readings on the pavement marking lines no sooner than 14 days and no later than 42 days after the completion of all line applications required for an individual highway route using a portable retroreflectometer conforming to 30-meter geometry. Retroreflectivity readings will be taken on a test location with cleaning being limited to light hand brooming.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT (CONTINUED)

The Department will randomly select one test location per mile of each edge line including ramps and one test location per mile of centerline (solid and/or skip line will be considered as one centerline). Three retroreflectivity readings will be taken at each test location. The three readings will be averaged and become the reading for that test location.

All materials will be applied as per manufacturer’s recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

For centerline markings on routes under 2,500 AADT and all edge lines, reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

For centerline markings on routes greater than or equal to 2,500 AADT reflective media consisting of glass beads as well as wet-reflective optics will be adhered to the paint.

The wet-reflective optics will contain either clear, white, amber, or yellow tinted beads composed of glass or a composite consisting of a core made from ceramic or glass with an outer layer of microcrystalline ceramic or glass beads. The wet-reflective optics will provide a 50/50 blend of dry to wet ratio of optics. All beads bonded to wet-reflective optics will have a minimum index of refraction of 1.8 for dry retroreflectivity and 2.4 for wet retroreflectivity when tested using the liquid oil immersion method.

Reflective media will require a Certificate of Compliance for Certification for each type, source, and lot. Acceptance sampling will not be required.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location. Delete these two sentences as they are repeated below.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.
In the previous paragraph, it is stated that a mobile retroreflectometer can be used. The description given in this paragraph is only for a portable retroreflectometer. You need to state the requirements for the mobile reflectometer too.

Retroreflectivity readings will not be taken on sinusoidal rumbles.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m2/lux for white and 170 mc/m2/lux for yellow.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT (CONTINUED)

Initial readings:

Pavement Marking Color	Minimum Value
White	350 mc/m^2/lux
Yellow	275 mc/m^2/lux

All pavement markings not conforming to the requirements provided in these plans will be considered deficient and will be removed and replaced. Additional retroreflectivity readings will be taken by the Department to determine the limits of removal. The removal will be accomplished using suitable sand blasting or grinding equipment unless the Engineer authorizes other means. The removal process will remove at least 90% of the deficient line, with no excessive scarring of the existing pavement. The removal width will be one inch wider all around the nominal width of the pavement marking to be removed. Removal and replacement of the pavement markings will be at the Contractor's expense, with no cost incurred by the State.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

High Build Waterborne Pavement Marking Paint, White:
Solid 4" line = 22.5 Gals/Mile
Glass Beads = 8 Lbs/Gal.

High Build Waterborne Pavement Marking Paint, Yellow:
Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gal/Mile
Glass Beads = 8 Lbs/Gal.

High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow:
Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gal/Mile
Glass Beads = 5.3 Lbs/Gal.
Wet-Reflective Optics = 2.1 Lbs/Gal.

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

MARKINGS WITHIN SINUSOIDAL CENTERLINE RUMBLE STRIPES

Retroreflectivity readings will not be taken for pavement markings within the sinusoidal rumble stripe. Restriping of pavement markings to meet the specified application rate requirements and to provide a quality retroreflective line will be at the expense of the Contractor with no additional cost to the Department. Sections to be restriped will be determined by the Engineer.

DATA LOGGING SYSTEM

The Contractor will provide striper computerized data logging system files as described below. The pavement marking device will have an onboard monitoring system for the purpose of managing the amount of pavement marking materials being applied to the pavement surface.

DATA LOGGING SYSTEM (CONTINUED)

The following will be included in the documentation from the data logging system:

- State project number and PCN
- Highway number
- Beginning and end MRMs of the section marked rounded to the nearest hundredth of a mile, including direction of travel
- Beginning and ending coordinates determined by a Global Positioning System receiver with 3-meter accuracy, including direction of travel
- Date and beginning and ending time of application
- Product applied
- Lot number(s) of product (binder and reflective material) applied
- Striping Contractor (striper code)
- Designation of the marking being applied (LEL – Left Edgeline, REL – Right Edgeline, CL – Centerline, LL – Lane Line Broken or Dotted, 1LL – leftmost LL in multilane, 2LL – second to leftmost LL in multilane, etc.)
- Width of marking being applied
- Presence of recess or rumble strip
- Presence of contrast
- Average material application rate and film thickness calculated for the section striped

The following data will be included in the documentation from the data logging system reported as an average for each drive mile (or other segment approved by the Engineer) installed:

- Application vehicle speed rounded to the nearest tenth of a mile per hour
- Weight (Lbs) and/or volume (Gal) as measured through a positive displacement pump (mechanism or flow meter) of liquid material used by color
- Weight (Lbs) of reflective material used
- Ratio of reflective material used (weight) per liquid material used (volume) reported as Lbs/Gal
- Ambient air temperature (in degrees Fahrenheit)
- Road surface temperature (in degrees Fahrenheit)
- Humidity (percent)
- Dew point (in degrees Fahrenheit)

Provide the measurement report in the form of an electronic database file, or delimited text file, containing raw data collected. Provide the Engineer with a printed summary and submit the electronic data to the Region Traffic Engineer at the e-mail below and copy the Engineer.

Corey.Pinkley@state.sd.us

The data logging system equipment will be operational, calibrated, and in use during pavement marking operations. Pavement marking installation without the use of a data logging system may not be accepted.

Upon request, provide to the Engineer the data logging system manufacturer's recommendations for equipment calibration frequency and provide certification that the equipment meets manufacturer's recommended calibration.

Verify that the physical and electronic measurement of distance travelled is consistent by travelling a 100-foot distance prior to the start of pavement marking operations.

All cost for materials, labor, and equipment necessary to provide the pavement marking data as described will be incidental to the contract unit price for the respective pavement marking items.

TRAFFIC CONTROL SIGNS

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	6	48" x 48"	16.0	96.0
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-4	ONE LANE ROAD AHEAD	6	48" x 48"	16.0	96.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
SPECIAL	WAIT FOLLOW PILOT CAR	6	30" x 18"	3.8	22.8
G20-2	END ROAD WORK	6	36" x 18"	4.5	27.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			433.8

Breakdown of Segments (For Information Only)

Route	Hwy. [Overlapping Hwy.]	Begin MRM	Begin Disp.	Begin Mileage	End MRM	End Disp.	End Mileage	Exceptions (Mile)	Gross Length (Mile)	Net Miles
S1	SD13	115.00	0.106	9.981	120.00	1.000	15.012	0.000	5.925	5.925
S2	US18	425.62	0.130	402.698	434.00	0.860	411.122	0.000	9.154	9.154
S3	SD115	67.42	-0.011	0.027	76.00	0.059	8.644	0.000	8.687	8.687
Y1	SD37	11.74	0.182	11.572	20.00	0.027	20.140	0.000	8.413	8.413
Y2	SD37	36.00	0.400	32.498	43.00	0.597	39.106	0.000	6.805	6.805
Y3	SD52	315.01	0.000	0.000	327.31	0.014	12.255	0.000	12.269	12.269
Y4	SD19	0.36	0.000	0.359	4.30	-0.312	5.487	0.000	4.816	4.816
Y5	SD19	4.98	0.010	6.668	25.27	-0.013	38.113	0.000	31.455	31.455
Y6	SD50	417.00	0.348	132.039	426.36	0.000	141.346	0.000	8.959	8.959
Y7	SD48	371.92	0.013	0.119	374.00	0.500	2.131	0.000	2.499	2.499
Y8	SD48	374.00	0.500	2.131	383.27	0.548	11.394	0.000	9.311	9.311
M1	SD38	332.26	0.128	31.945	342.00	0.660	41.732	0.000	10.319	10.319
M2	SD38	343.00	0.016	42.640	348.90	0.010	48.564	0.000	5.918	5.918
M3	SD45	28.00	0.345	1.012	51.61	0.000	24.611	0.000	23.254	23.254
M4	US18	339.68	0.027	316.620	348.89	0.100	325.841	0.000	9.294	9.294
M5	SD46	277.15	0.164	0.120	287.00	0.263	9.857	0.000	9.836	9.836
M6	SD50	324.00	-0.161	79.164	327.42	0.410	83.593	0.000	5.000	5.000
M7	SD44	312.00	0.760	257.949	327.88	0.000	273.801	0.000	15.092	15.092
M8	US281	45.69	0.008	10.597	50.00	0.671	15.018	0.000	5.084	5.084
M9	US281	52.00	-0.154	17.018	59.00	0.218	24.018	0.000	7.372	7.372
M10	SD34	313.00	0.056	263.025	327.00	0.066	277.073	0.000	14.058	14.058
M11	US281	96.16	0.017	61.165	105.00	0.105	70.019	0.423	8.942	8.519
M12	SD50	211.78	0.012	0.230	222.00	0.260	10.198	0.425	10.216	9.791
M13	SD45	66.00	0.307	33.888	81.09	0.010	49.019	0.000	14.834	14.834
M14	US18	320.72	0.336	297.644	331.00	0.056	307.954	0.000	10.030	10.030
								Total Project Less Exceptions:		256.694

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	19	44

PAVEMENT MARKING

Typical pavement marking as shown on this sheet will be applied throughout the entire length of applicable sections of roadway.

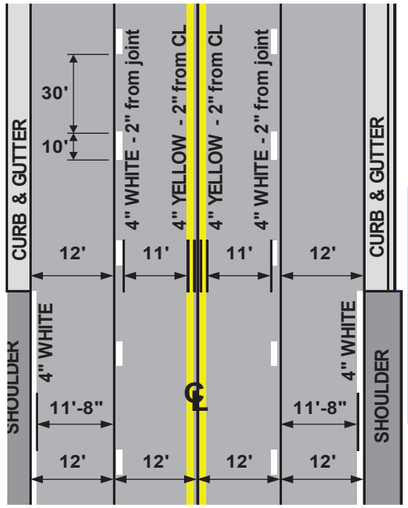
Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board. The trailing vehicle will also be equipped with a truck mounted attenuator. The mobile The mobile work operation will be as per Standard Plates 634.06 and 634.08

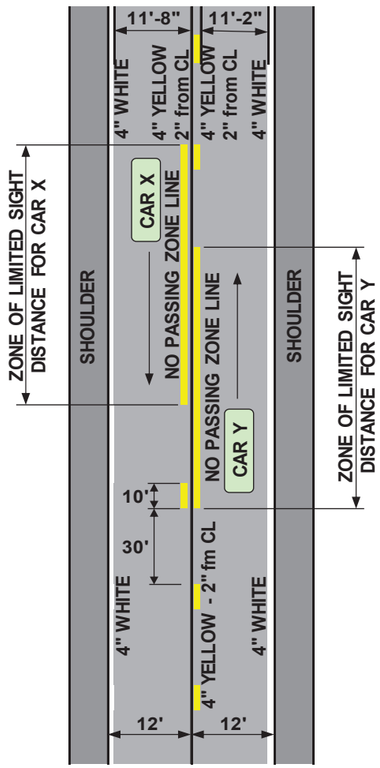
High Build Application rates will be as follows:

Four Lane Roadway (Rates for one line)	Two Lane Roadway (Rates for one line)
Solid Yellow Centerline Rate = 22.5 Gals./Pass-Mile	Dashed Yellow Centerline Rate = 6.2 Gals./Pass-Mile
Dashed White Laneline Rate = 6.2 Gals./Pass-Mile	Solid Yellow Centerline Rate = 22.5 Gals./Pass-Mile
Solid White Edgeline (Not applicable in curb and gutter) Rate = 22.5 Gals./Pass-Mile	Solid White Edgeline Rate = 22.5 Gals./Pass-Mile

4" Yellow Skip Centerline (when not adjacent to a 4" Yellow No Passing Zone) will be placed consistently to the south or east side of centerline.

UNDIVIDED ROADWAY





ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)	
HIGH BUILD	QUANTITY
WHITE	4775 GALLONS
YELLOW	3370 GALLONS

Included in the above quantities are:

Additional White (1 Application)			Additional Yellow (1 Application)		
Description		Gallons	Description		Gallons
4" Lines	-	-	Transitions	-	-
8" Lines	-	-	4" Skip Lines	-	-
12" Gore Lines	-	-	8" Lines	-	-
Crosswalks	-	-	12" Lines	-	-
24" Stop Lines	-	-	24" Hatches	-	-
24" Hatches	-	-	Solid Areas	-	-
Solid Areas	-	-	Additional Yellow:		-
Arrows					
Left Arrows	-	-			
Right Arrows	-	-			
Straight Arrows	-	-			
Combo Arrows	-	-			
Lane Drop Arrows	-	-			
Messages					
STOP	-	-			
STOP AHEAD	-	-			
R X R w/ Stop Lines	-	-			
SCHOOL X-ING	-	-			
Additional White:		-			

Additional Quantities

Rates of Coverage:	SqFt/Gal
4", 8" & 12" Lines -	60
24" Lines & Hatches -	40
Arrows, Messages and Solid Areas -	25

All pavement marking dimensions are based on 12' driving lanes.

High Build with Elements Application rates will be as follows:

Four Lane Roadway (Rates for one line)	Two Lane Roadway (Rates for one line)
Solid Yellow Centerline Rate = 27.8 Gals./Pass-Mile	Dashed Yellow Centerline Rate = 7.6 Gals./Pass-Mile
Dashed White Laneline Rate = 7.6 Gals./Pass-Mile	Solid Yellow Centerline Rate = 27.8 Gals./Pass-Mile
Solid White Edgeline (Not applicable in curb and gutter) Rate = 27.8 Gals./Pass-Mile	Solid White Edgeline Rate = 27.8 Gals./Pass-Mile

4" Yellow Skip Centerline (when not adjacent to a 4" Yellow No Passing Zone) will be placed consistently to the south or east side of centerline.

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)	
HIGH BUILD WITH REFLECTIVE ELEMENTS	QUANTITY
WHITE	0 GALLONS
YELLOW	1096 GALLONS

Included in the above quantities are:

Additional White (1 Application)			Additional Yellow (1 Application)			
Description		Gallons	Description			Gallons
4" Lines	-	-	Transitions	2 Ea	1194'	0
8" Lines	-	-	4" Skip Lines	-		-
12" Gore Lines	-	-	8" Lines	-		-
Crosswalks	-	-	12" Lines	-		-
24" Stop Lines	-	-	24" Hatches	-		-
24" Hatches	-	-	Solid Areas	-		-
Solid Areas	-	-	Additional Yellow:			0
Arrows						
Left Arrows	-	-				
Right Arrows	-	-				
Straight Arrows	-	-				
Combo Arrows	-	-				
Lane Drop Arrows	-	-				
Messages						
STOP	-	-				
STOP AHEAD	-	-				
R X R w/ Stop Lines	-	-				
SCHOOL X-ING	-	-				
Additional White:		-				

Additional Quantities

Rates of Coverage:	SqFt/Gal
4", 8" & 12" Lines -	50
24" Lines & Hatches -	30
Arrows, Messages and Solid Areas -	20

All pavement marking dimensions are based on 12' driving lanes.

TWO LANE ROADWAY WITH CLIMBING LANE

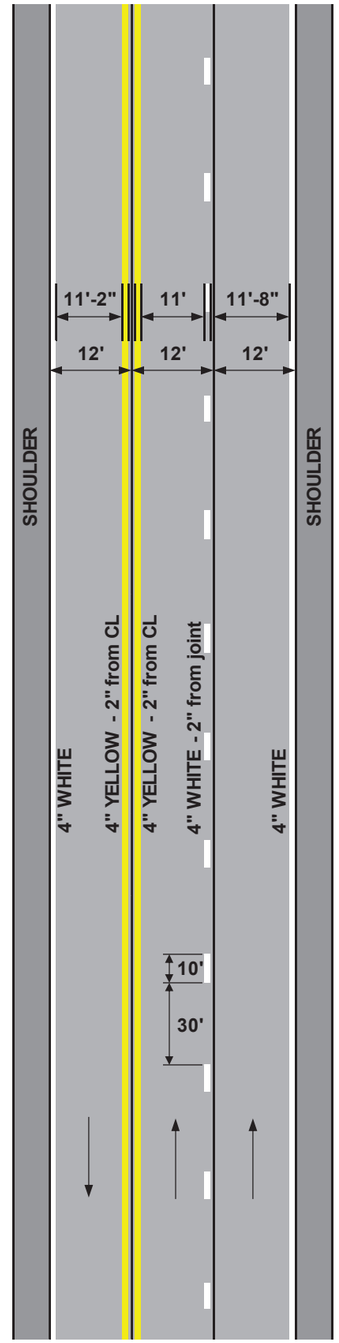


TABLE OF QUANTITIES
CENTERLINE RUMBLE STRIPES

Bid Items								320E7016	320E7030	330E0210	633E1206	633E1205	633E1200
Route	Hwy.	Begin (MRM + Displacement)	End (MRM + Displacement)	Location Comments	Pavement Type	Length		Grind (Split) 16" Centerline Rumble Stripe in Asphalt Concrete	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	SS-1h or CSS-1h Asphalt for Flush Seal	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	High Build Waterborne Pavement Marking Paint, Yellow	High Build Waterborne Pavement Marking Paint, White
						Mile	(Total, Ft.)	Mile	Mile	Tons	Gal	Gal	Gal
Moody & Brookings Counties													
S1	SD Hwy. 13	115.00+0.106	120.00+1.00	Beginning 75 ft. north of 223rd St. and SD Hwy. 13 to the junction of SD13 and SD324.	Asphalt	5.937 mi	31,348 ft.		5.937 mi	2.8		85	267
Turner & Lincoln Counties													
S2	US Hwy. 18	425.62+0.130	434.00+0.860	Begin at the intersection of 461st Avenue and US18 to 410' west of the MRM 435.21 on I29 Exit 59 Overpass Bridge.	Asphalt	9.154 mi	48,334 ft.		9.154 mi	4.1		103	
Lincoln County													
S3	SD Hwy. 115	67.42+0.009	76.00+0.059	Beginning at the west junction of SD Hwy. 11 and US Hwy.18 to 1430 ft. south of the intersection of SD Hwy. 11 and 273rd St.	Asphalt	8.687 mi	45,868 ft.		8.687 mi	3.9	131		391
Bon Homme & Hutchinson Counties													
Y1	SD Hwy. 37	11.74+0.182	20.00+0.027	Begin 855 ft. north of the junction of SD37 and SD37P (near Springfield) to west junction of SD37 and SD50.	Asphalt	8.413 mi	66,821 ft.		8.413 mi	3.8		52	379
Y2	SD Hwy. 37	36.00+0.400	43.00+0.597	Beginning at the junction of SD37 and SD50 (near Avon) to the intersection of SD37 and SD44 (near Tripp)	Asphalt	6.805 mi	35,931 ft.		6.805 mi	3.2	162		262
Y3	SD Hwy. 52	315.01	327.31+0.014	Beginning at junction of SD37 and SD52 to east junction of SD50 and SD52	Asphalt	12.269 mi	64,781 ft.		12.269 mi	5.6		292	553
Clay County													
Y4	SD Hwy. 19	0.36	4.30-0.0312	Beginning 1900 ft. from the north end of Newcastle-Vermillion Bridge to the west junction of SD19 and SD50 Business Loop.	Asphalt	4.816 mi	25,429 ft.		4.816 mi	2.3		77	
Y5	SD Hwy. 19	4.98+0.010	25.27-0.013	Beginning from junction of SD19 and SD50 (near Vermillion) to west junction of SD19 and SD46.	Asphalt	31.455 mi	166,083 ft.		31.455 mi	14.3		506	

TABLE OF QUANTITIES
CENTERLINE RUMBLE STRIPES

Bid Items								320E7016	320E7030	330E0210	633E1206	633E1205	633E1200
		Begin (MRM + Displacement)	End (MRM + Displacement)		Pavement	Length		Grind (Split) 16" Centerline Rumble Stripe in Asphalt Concrete	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	SS-1h or CSS-1h Asphalt for Flush Seal	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	High Build Waterborne Pavement Marking Paint, Yellow	High Build Waterborne Pavement Marking Paint, White
Union County													
						Mile	(Total, Ft.)	Mile	Mile	Tons	Gal	Gal	Gal
Y6	SD Hwy. 50	417.00+0.155	426.36	1765 ft from east end of the I29 Exit 26 to the west end of the South Dakota/Iowa Border bridge.	Asphalt	8.959 mi	47,304 ft.		8.959 mi	4.0	219		412
Y7	SD Hwy. 48	371.92-0.120	374.00+0.500	Begin 690'west of the east end of the I29 Exit 31 (MRM 371.92) bridge to 670 ft. west of 476th Avenue in Spink.	Asphalt	2.499 mi	13,195 ft.		2.499 mi	1.2	26		108
Y8	SD Hwy. 48	374.00+0.500	383.27+0.548	Begin 750 ft. east of 476th Avenue to 1670 ft. west of the South Dakota/Iowa Bridge.	Asphalt	9.311 mi	49,163 ft.		9.311 mi	4.2	343		419
McCook & Minnehaha Counties													
M1	SD Hwy. 38	332.26+0.128	342.00+0.660	Begins 1710' east of the intersection of S Hill St. and SD38 to 125 ft northwest of 451st Avenue (Fuller Ave.)	Asphalt	10.580 mi	55,863 ft.		10.580 mi	4.8		155	476
M2	SD Hwy. 38	343.00+0.016	348.90+0.010	Begin 320 ft. east of MRM 343.00 to 58 ft. west of the west junction of SD19 and SD38.	Asphalt	5.918 mi	31,248 ft.		5.918 mi	2.8		87	266
Charles Mix and Brule Counties													
M3	SD Hwy. 45	28.00+0.0.345	51.61	Begin 1820 ft. north of the intersection of 275th St. and SD45 to the south end of the I90 Exit 289 bridge.	Asphalt	23.254 mi	122,782 ft.		*23.254 mi*	10.6		274	
M4	US Hwy. 18	339.68+0.027	348.89+0.100	Begin 95 ft. west of the intersection of 383rd Ave. and US18 to 25 ft. west of the east junction of US18 and SD50.	Asphalt	9.294 mi	49,073 ft.		9.294 mi	4.3		85	
M5	SD Hwy. 46	277.15+0.164	287.00+0.263	Begin 870 ft. east of MRM 277.15 near the junction of SD46 and US18 to 1298' west of the intersection of SD46 and 393rd Ave.	Asphalt	9.836 mi	51,935 ft.		9.836 mi	4.5	178		
M6	SD Hwy. 50	323.86+0.010	327.42+0.410	Begin 60 ft. south of MRM 323.87 [SD50] to 30 ft. north of the west junction of SD50 and SD46.	Asphalt	4.990 mi	26,348 ft.		4.990 mi	2.3		82	

TABLE OF QUANTITIES
CENTERLINE RUMBLE STRIPES

Bid Items								320E7016	320E7030	330E0210	633E1206	633E1205	633E1200
		Begin (MRM + Displacement)	End (MRM + Displacement)		Pavement	Length		Grind (Split) 16" Centerline Rumble Stripe in Asphalt Concrete	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	SS-1h or CSS-1h Asphalt for Flush Seal	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	High Build Waterborne Pavement Marking Paint, Yellow	High Build Waterborne Pavement Marking Paint, White
Douglas and Aurora Counties													
						Mile	(Total, Ft.)	Mile	Mile	Tons	Gal	Gal	Gal
M7	SD Hwy. 44	312.00+0.760	327.88	Begins 40 ft. east of the east junction of SD50 and SD44 to the west junction of SD44 and US281	Asphalt	15.092 mi	79,686 ft.		15.092 mi	6.8		728	
M8	US Hwy. 281	45.69+0.008	50.00+0.671	Begins 45' west of the east junction of SD44 and US281 to 990 ft. north of US281 and 274th St..	Asphalt	5.084 mi	26,844 ft.		5.084 mi	2.3		36	229
M9	US Hwy. 281	52.00-0.154	59.00+0.218	Begin 1670 ft. north of the intersection of US281 and E 1st St./273rd St. to 2645 ft south of US281 and 265th St..	Asphalt	7.372 mi	38,925 ft.		7.372 mi	3.4		51	332
Jerauld & Sanborn Counties													
M10	SD Hwy. 34	313.00+0.056	327.00+0.066	Begin 2,125 ft. east of the intersection of SD34 and S. Dakota Ave. to 1465 ft. southeast of the intersection of SD34 and 396th Avenue.	Asphalt	14.058 mi	74,227 ft.		14.058 mi	6.5		153	
M11	US Hwy. 281	96.16+0.017	105.00+0.105	Begin 30 ft. north of the intersection of US281 and SD34 to the Jerauld and Beadle County Line.	Asphalt	8.942 mi	47,214 ft.	8.519 mi				97	
				Centerline Rumble Stripe Gaps for Residential Houses.	Asphalt	0.423 mi	2,235 ft.						
Brule and Buffalo Counties													
M12	SD Hwy. 50	211.78+0.014	222.00+0.260	Begin 80 ft. south of MRM 211.78 near the junction of SD34 and SD50 to 40 ft. north of the intersection of SD50 and 238th St..	Asphalt	10.214 mi	53,930 ft.	9.789 mi		4.5		109	
				Centerline Rumble Stripe Gaps for Residential Houses.	Asphalt	0.425 mi	2,245 ft.						
M13	SD Hwy. 45	66.00+0.307	81.09+0.010	Begin 4,770 ft. south of the intersection of SD45 and 242nd St. to 45 ft. south of the intersection of SD34 and SD45.	Asphalt	14.834 mi	78,324 ft.		14.834 mi	6.7		166	230
Gregory County													
M14	US Hwy. 18	320.72+0.336	331.00+0.056	Begin 1635 ft. northeast of the west junction of US18 and US281 to 295 ft. northeast of MRM 331.00.	Asphalt	10.030 mi	52,959 ft.		10.030 mi	4.6		232	451
							Total	18.4 mi	238.7 mi	113.6 tons	1,059 Gal.	3,370 Gal.	4,775 Gal.

TABLE OF QUANTITIES
TRANSVERSE RUMBLE STRIPS

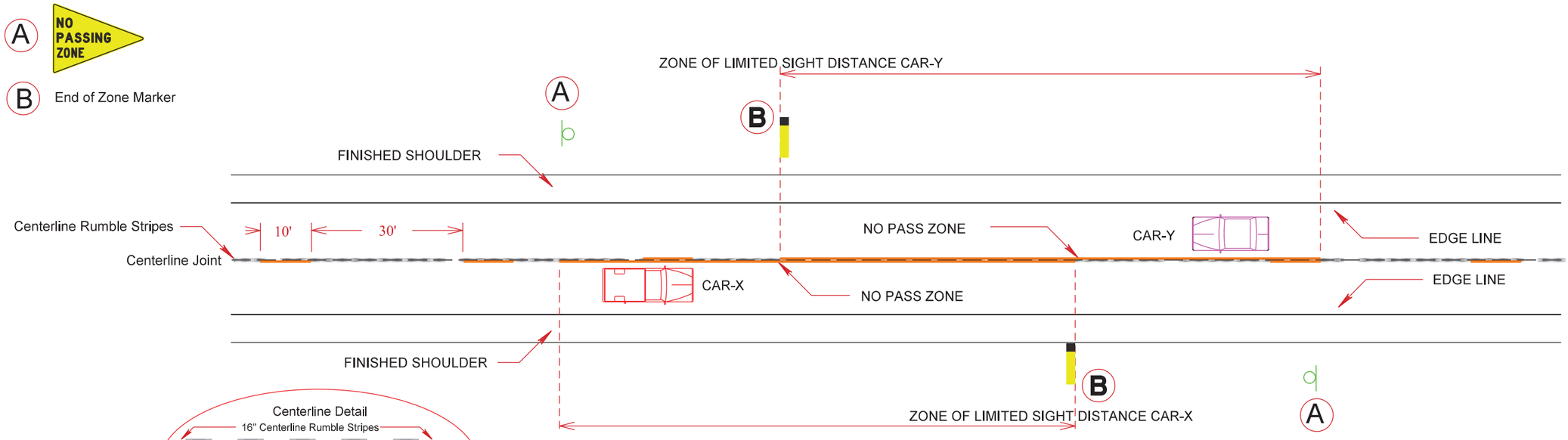
Site No.	Route	Cross Road	Direction of Traffic	County	Location Comments	Pavement Type	Standard Transverse Segment Length per Standard Plate 320.45	Grind 6" Transverse Rumble Strip in Asphalt Concrete (Ft.)	SS-1h or CSS-1h Asphalt for Flush Seal (lbs.)
Charles Mix County							**Bid Item**	**320E7040**	**330E0210**
X4	US18	SD46	SB	Charles Mix	Southbound Lane to the Intersection of US18 & SD46 in Pickstown	Asphalt	1,000 ft.	408.0	19.3
						Total	**1,000 ft.**	**408.0 ft.**	**19.3 lbs.**
									0.1 Ton

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	24	44

Plotting Date: 3/18/2026

TYPICAL PAVEMENT MARKING LAYOUT

Pavement Marking on Asphalt Centerline Rumble Stripes

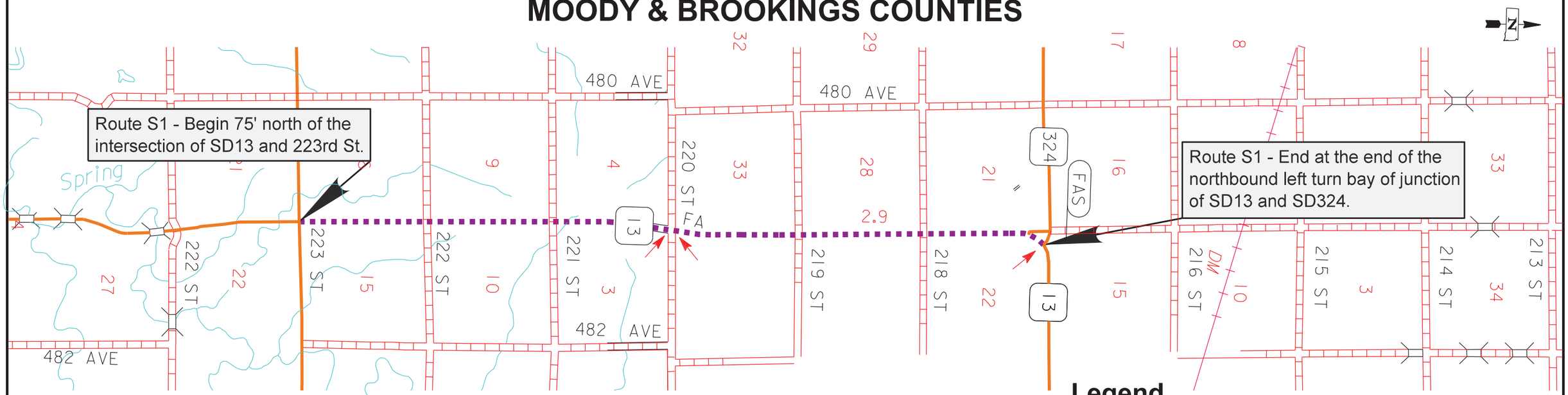


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	25	44

Plotting Date: 3/9/2026

CENTERLINE RUMBLE STRIPES (SPECIAL DETAIL)

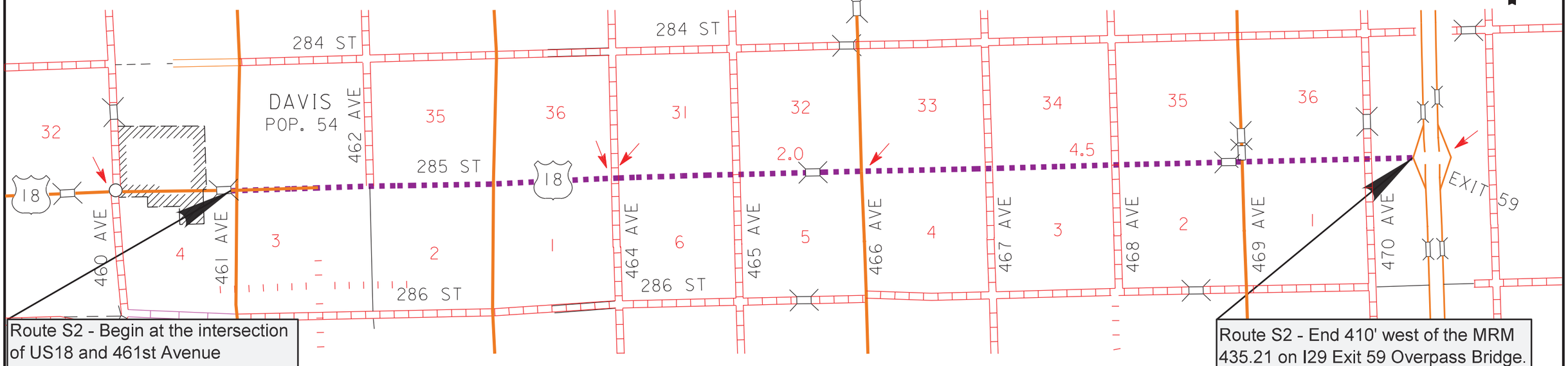
MOODY & BROOKINGS COUNTIES



Legend

- Sinusoidal Centerline Rumble Stripes

TURNER & LINCOLN COUNTIES

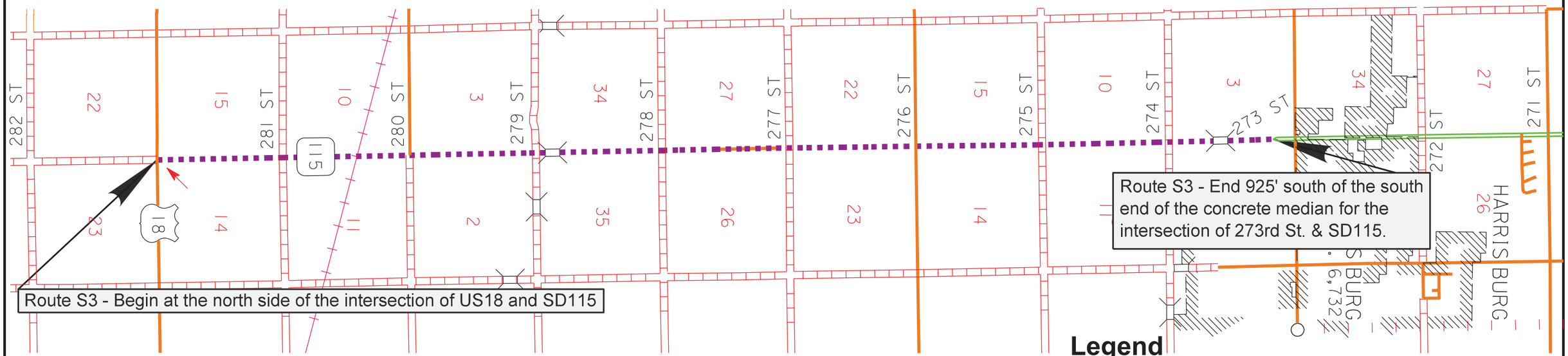


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	26	44

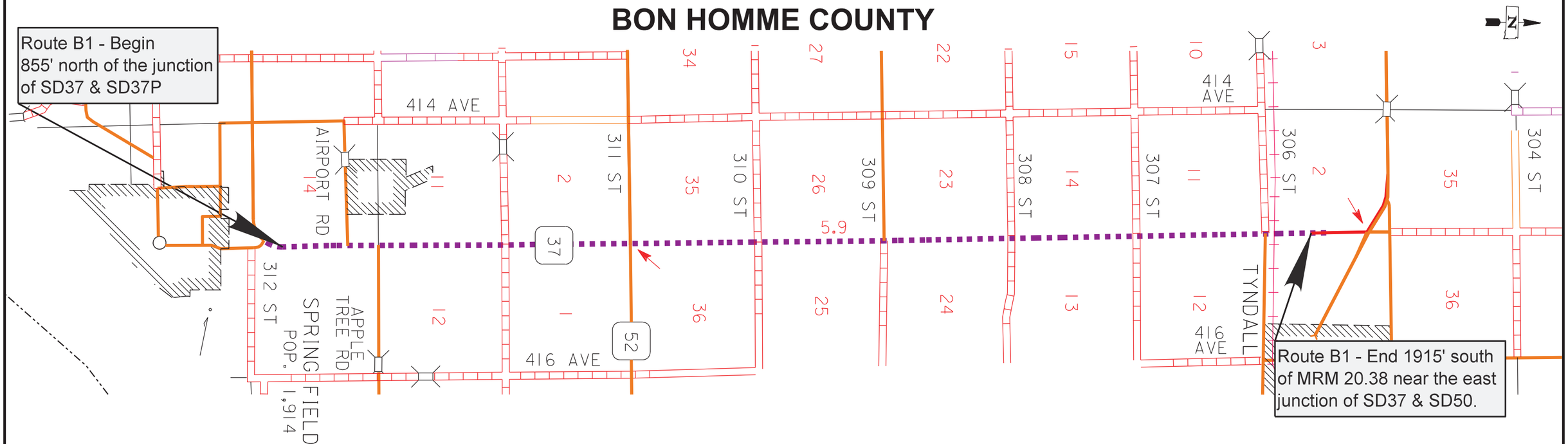
Plotting Date: 3/9/2026

CENTERLINE RUMBLE STRIPES (SPECIAL DETAIL)

LINCOLN COUNTY



BON HOMME COUNTY

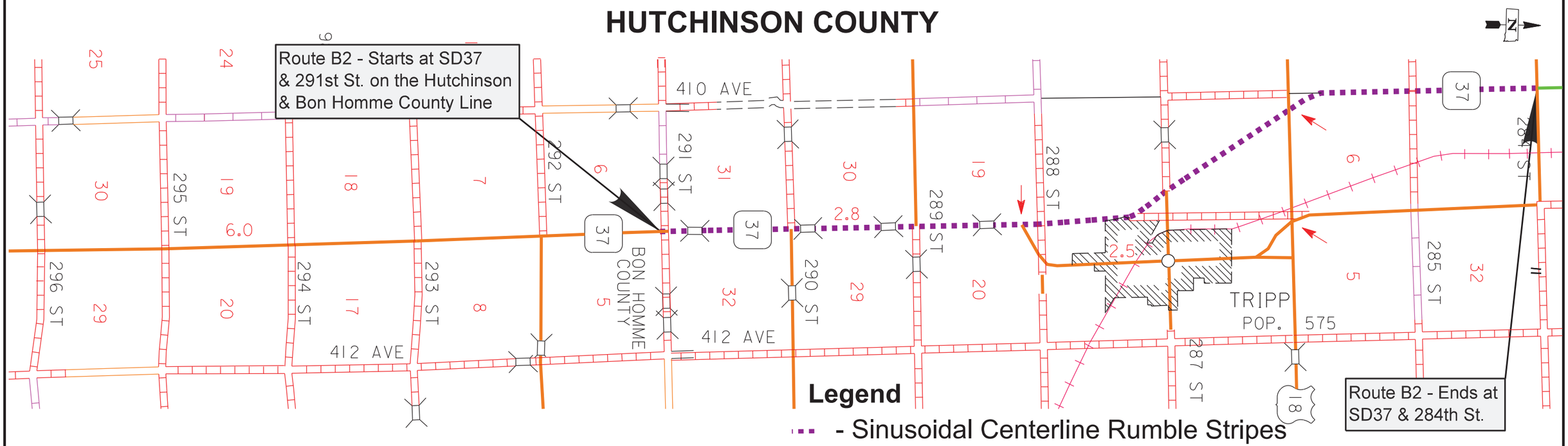


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

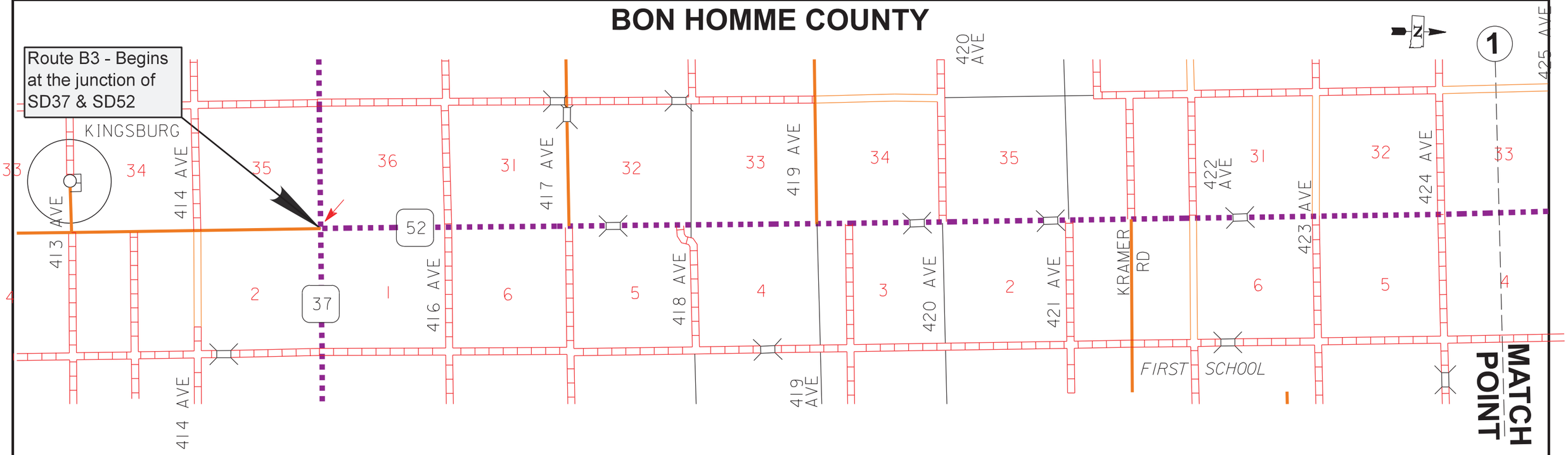
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	27	44

Plotting Date: 3/9/2026

HUTCHINSON COUNTY



BON HOMME COUNTY

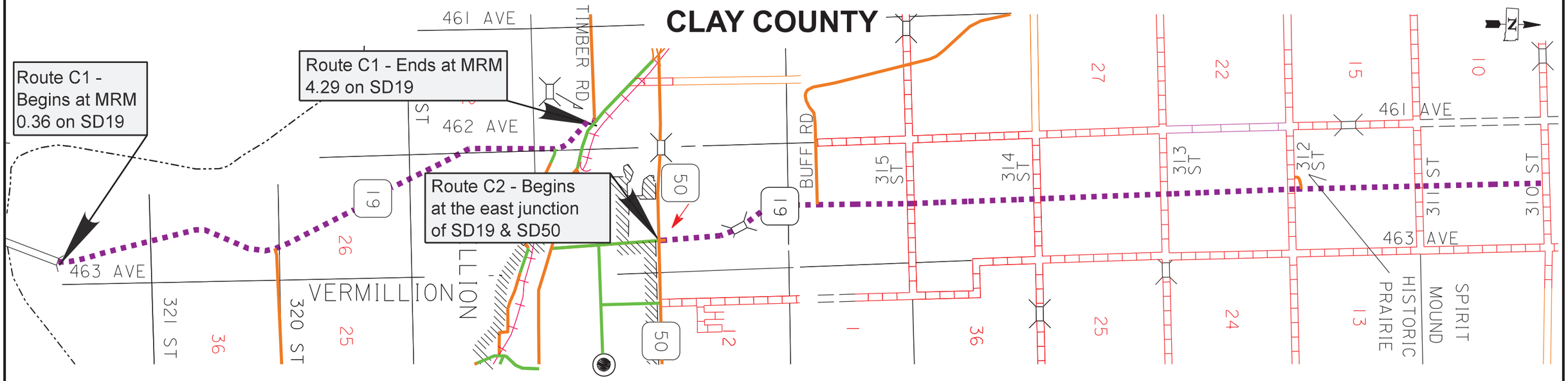


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	28	44

Plotting Date: 3/9/2026

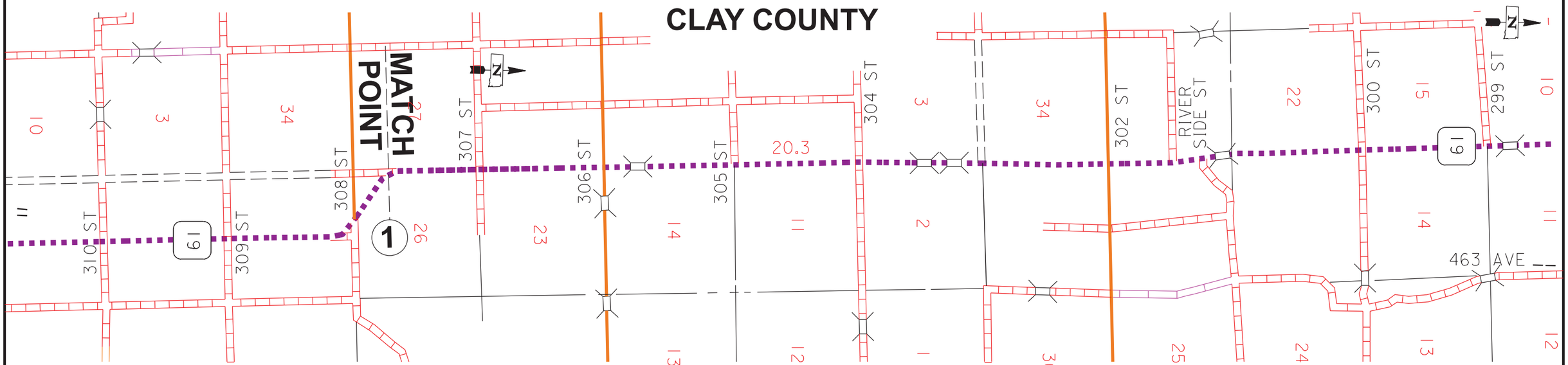
CLAY COUNTY



Legend

- Sinusoidal Centerline Rumble Stripes

CLAY COUNTY

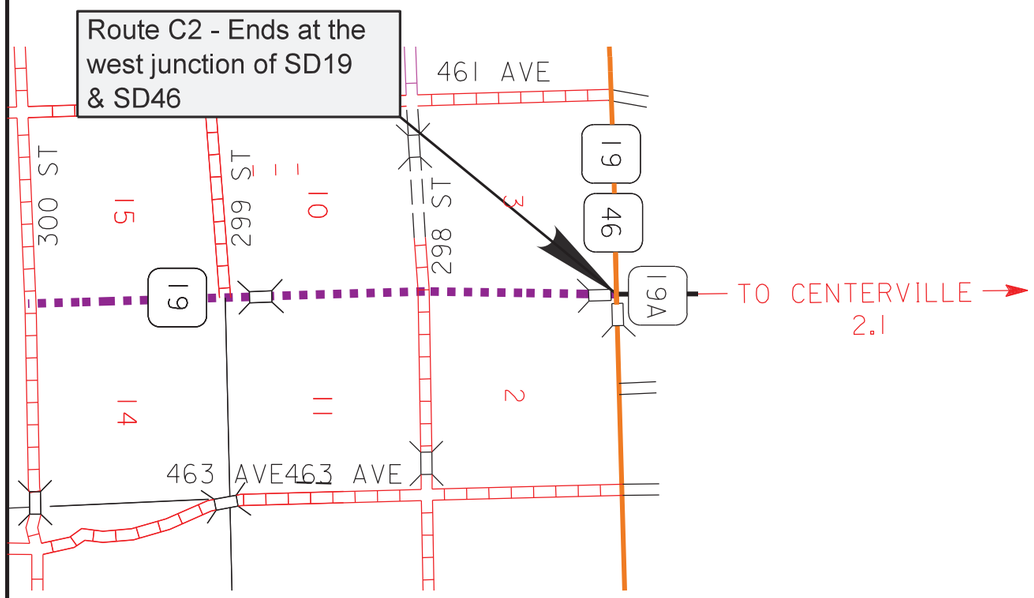


CENTERLINE RUMBLE STRIPES (SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	29	44

Plotting Date: 3/9/2026

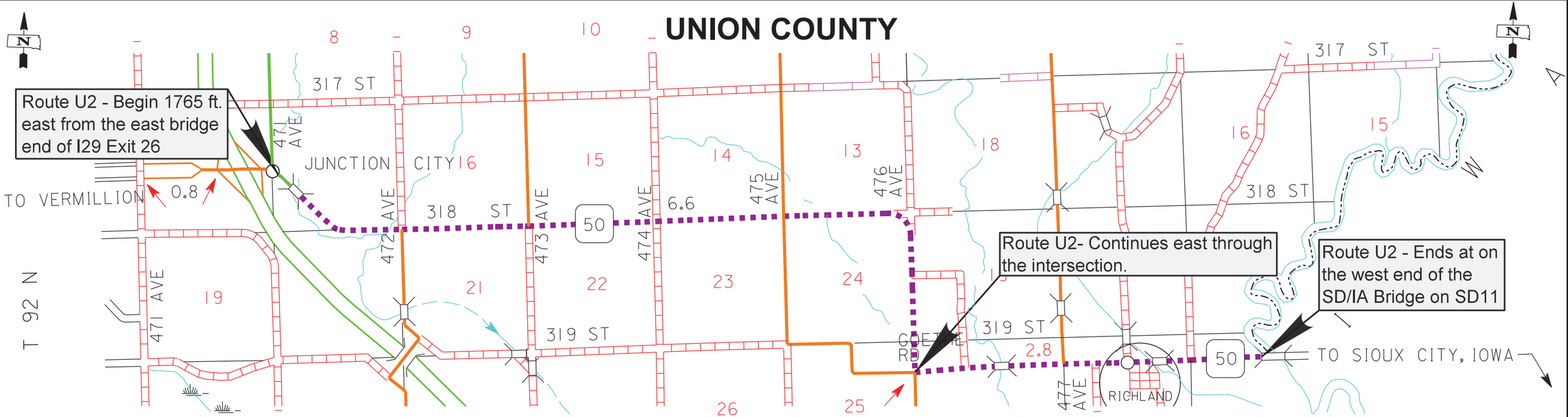
CLAY COUNTY



Legend

- Sinusoidal Centerline Rumble Stripes

UNION COUNTY

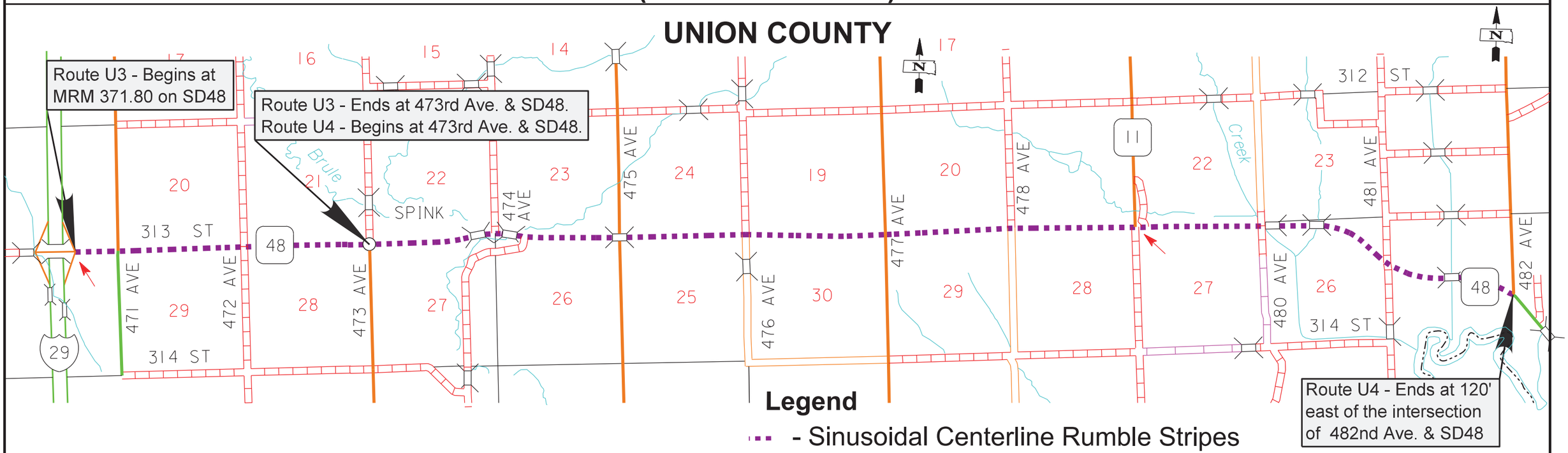


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

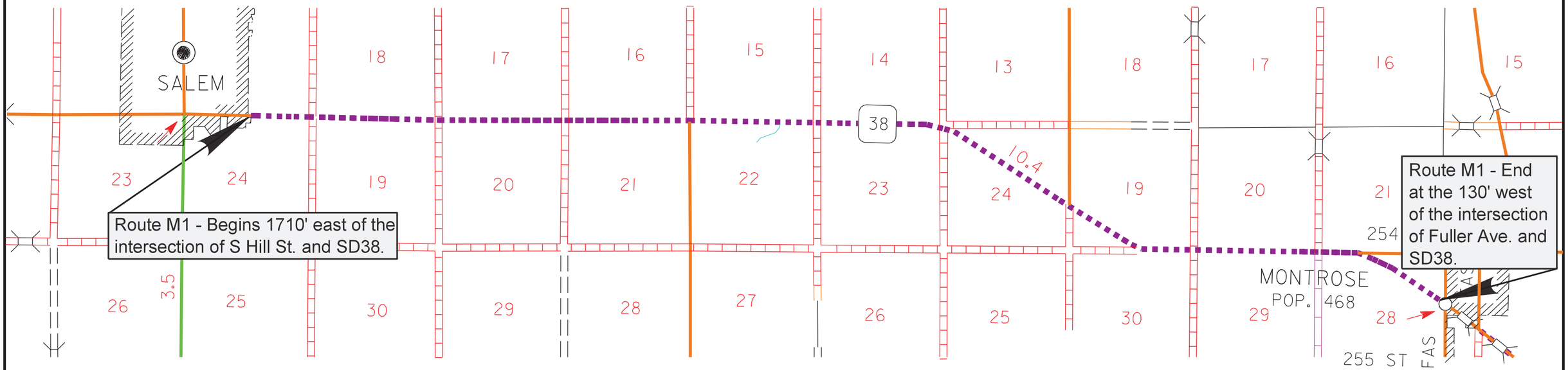
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	30	44

Plotting Date: 3/9/2026

UNION COUNTY



McCOOK COUNTY

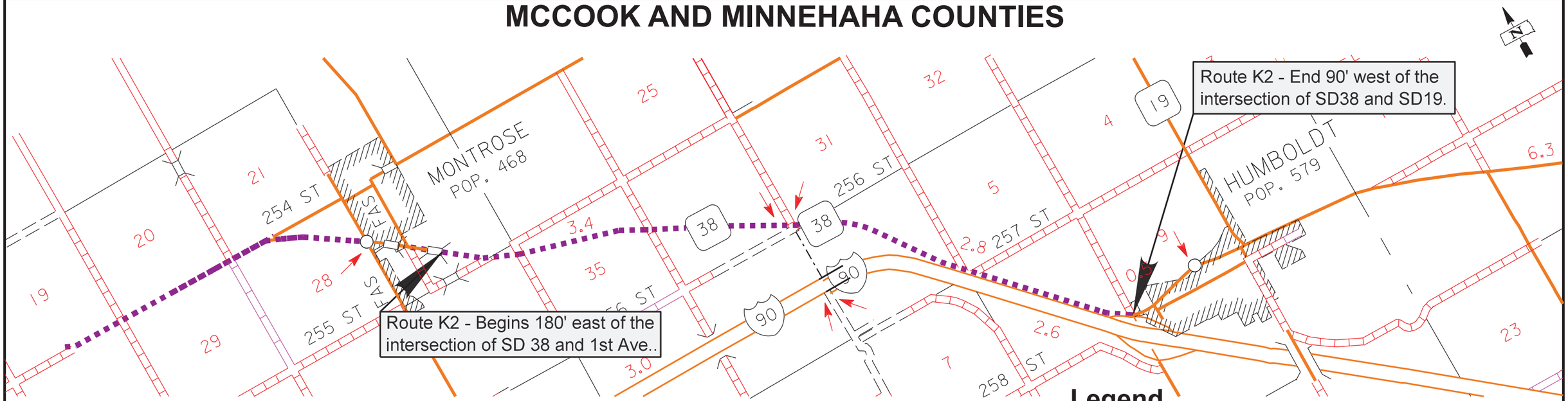


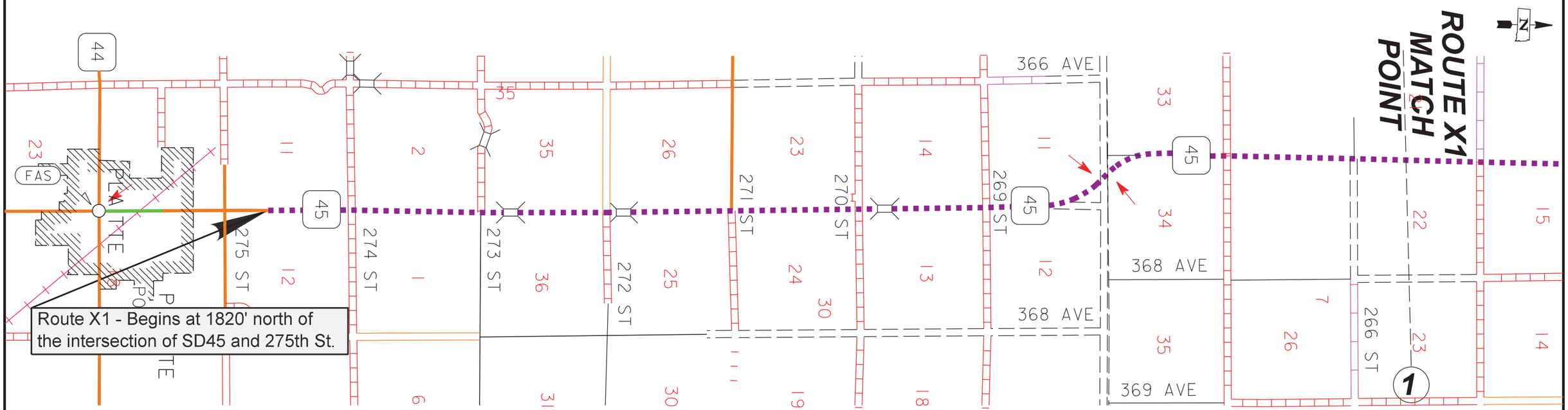
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	31	44

Plotting Date: 3/9/2026

CENTERLINE RUMBLE STRIPES (SPECIAL DETAIL)

MCCOOK AND MINNEHAHA COUNTIES

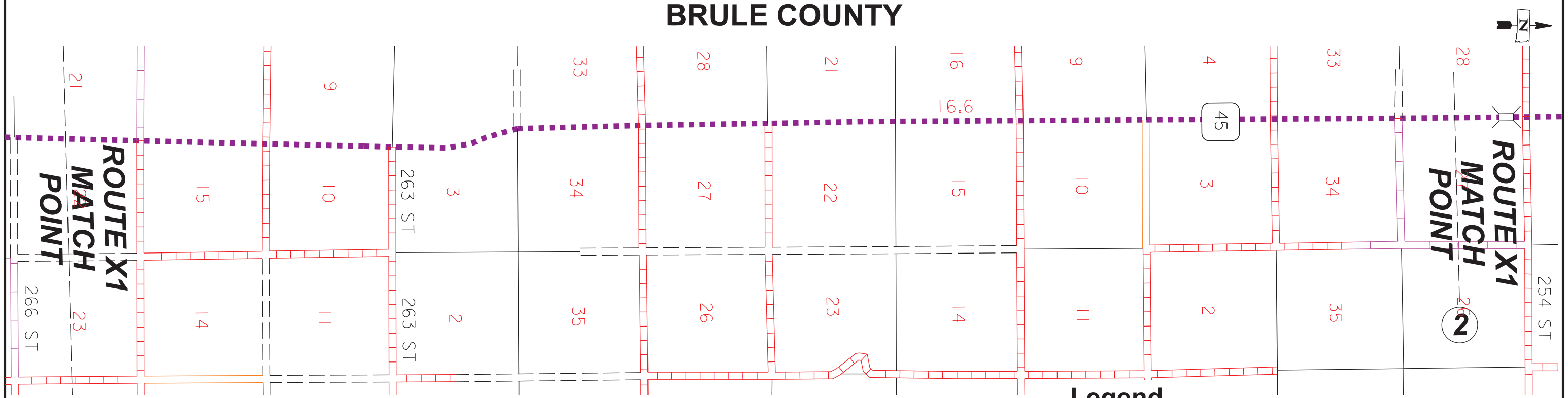




CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)
BRULE COUNTY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	32	44

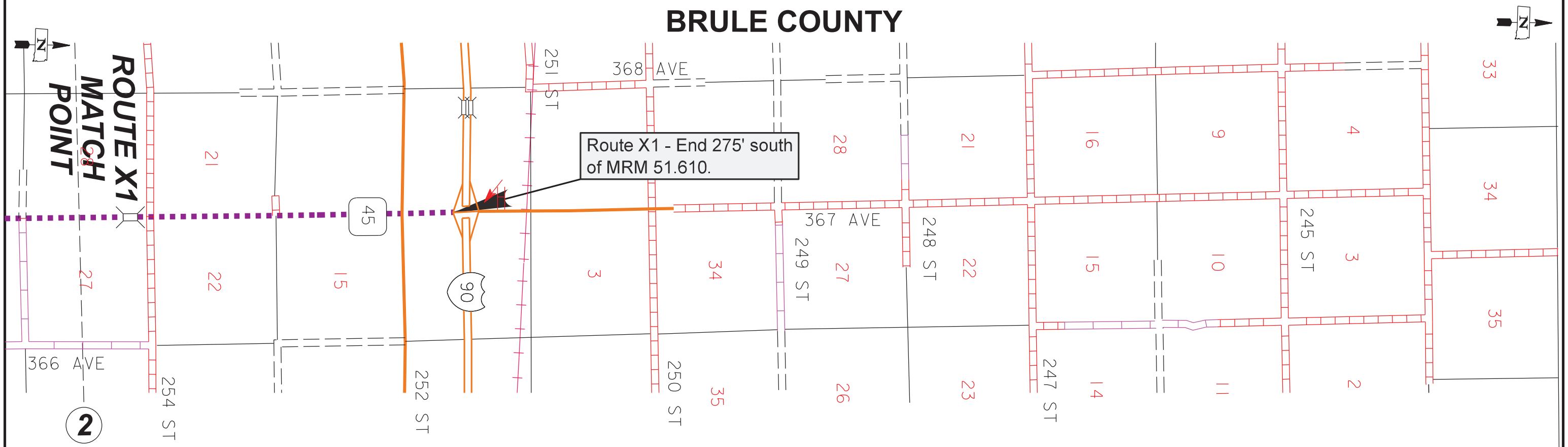
Plotting Date: 3/9/2026



Legend

- Sinusoidal Centerline Rumble Stripes

BRULE COUNTY

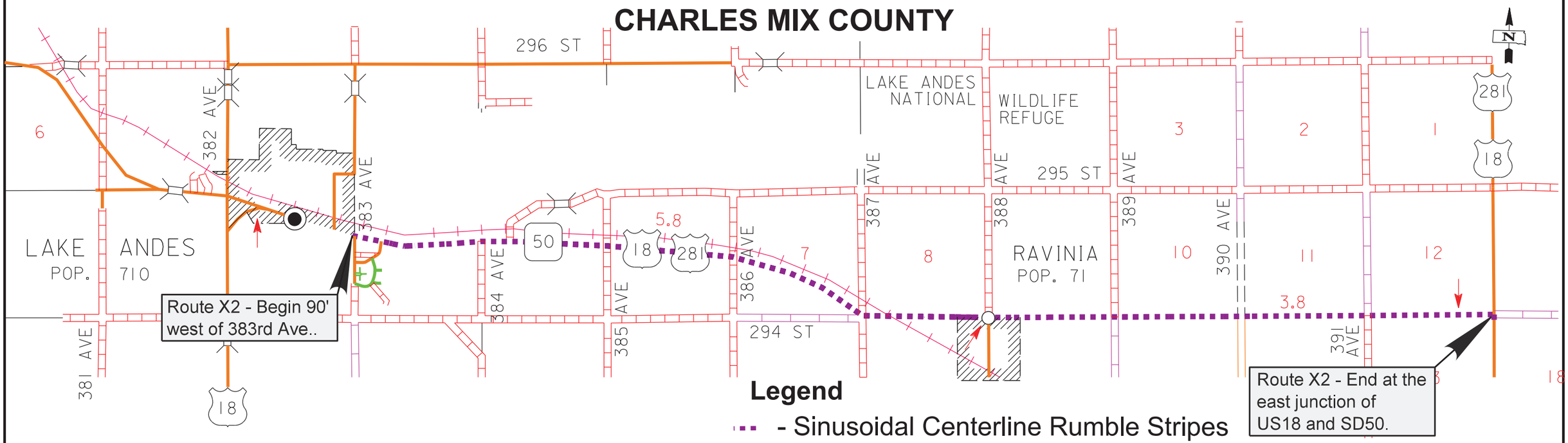


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

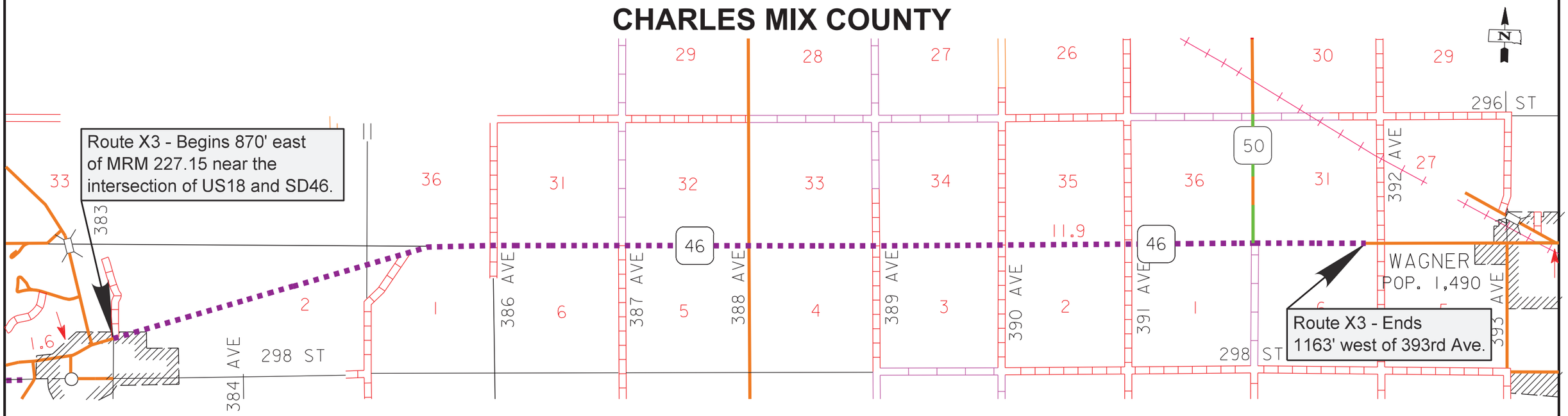
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	33	44

Plotting Date: 3/9/2026

CHARLES MIX COUNTY



CHARLES MIX COUNTY

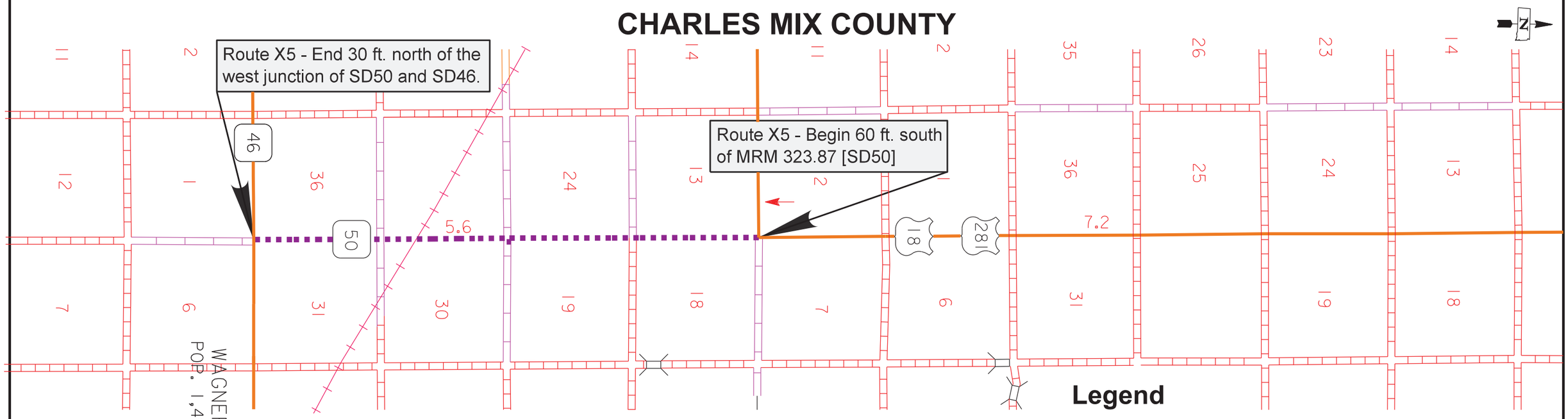


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

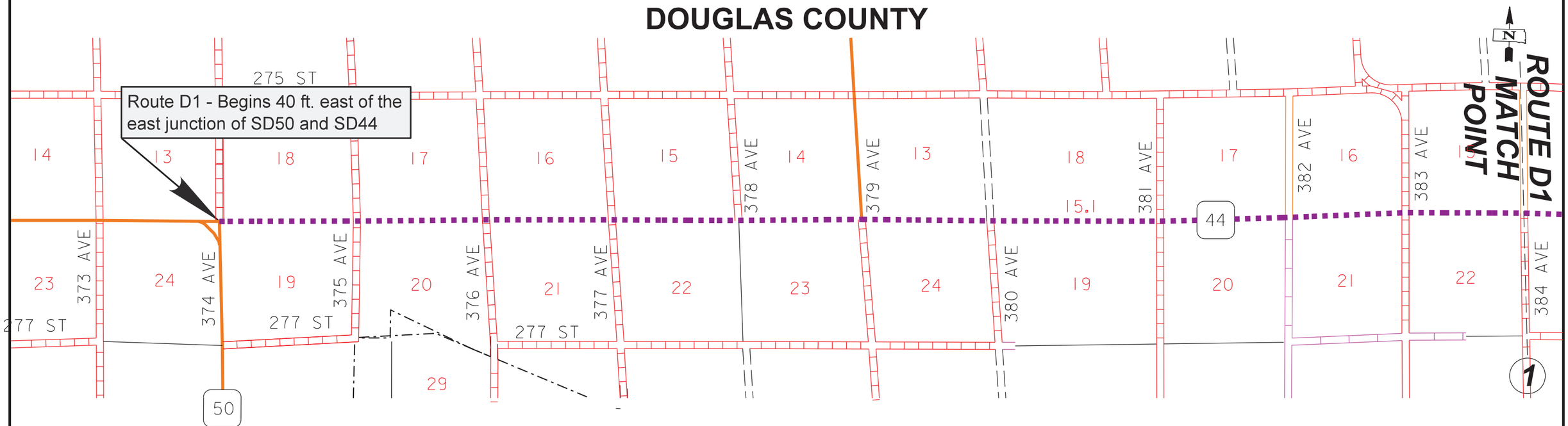
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	34	44

Plotting Date: 3/9/2026

CHARLES MIX COUNTY



DOUGLAS COUNTY

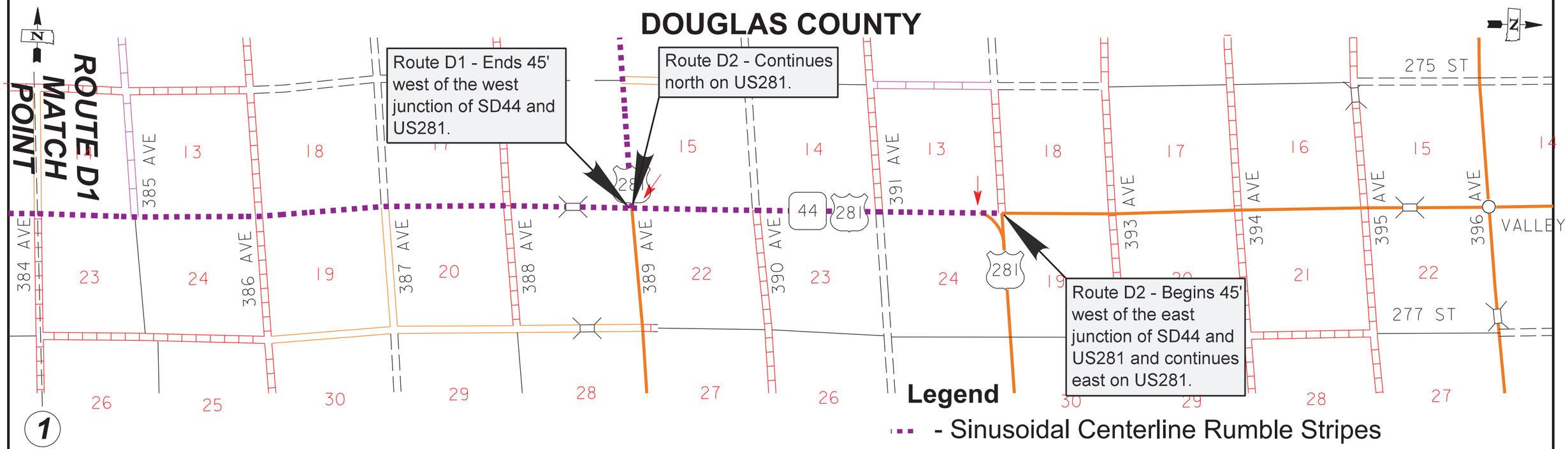


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	35	44

Plotting Date: 3/9/2026

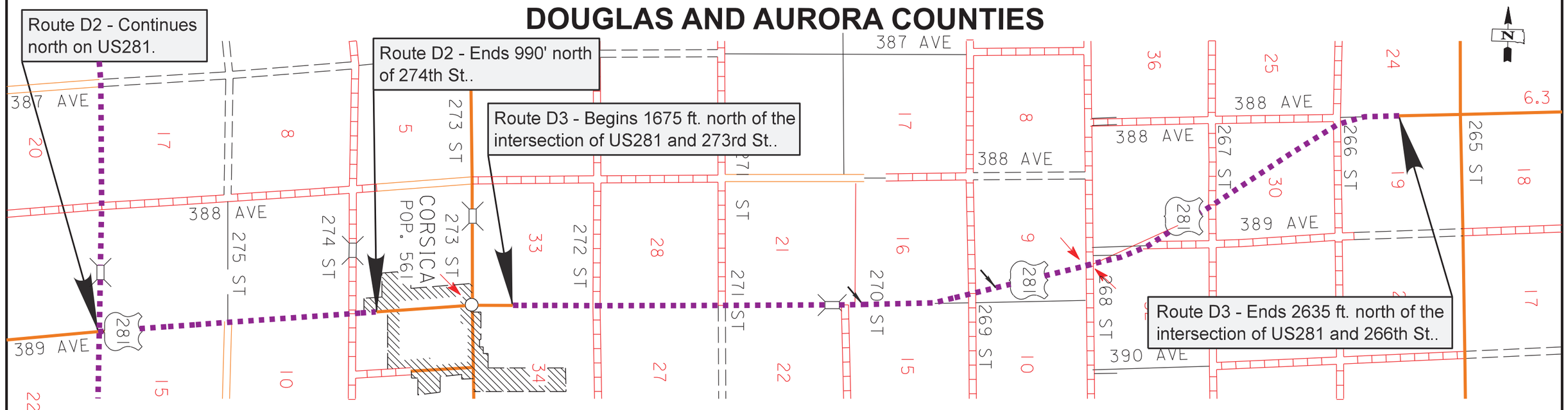
DOUGLAS COUNTY



Legend

- Sinusoidal Centerline Rumble Stripes

DOUGLAS AND AURORA COUNTIES



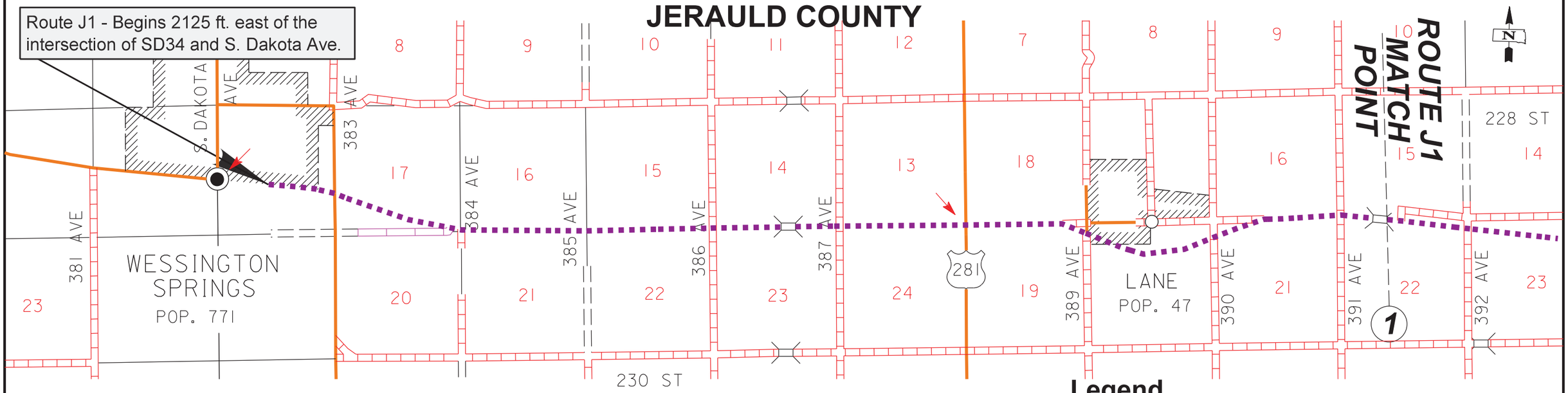
CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	36	44

Plotting Date: 3/9/2026

JERAULD COUNTY

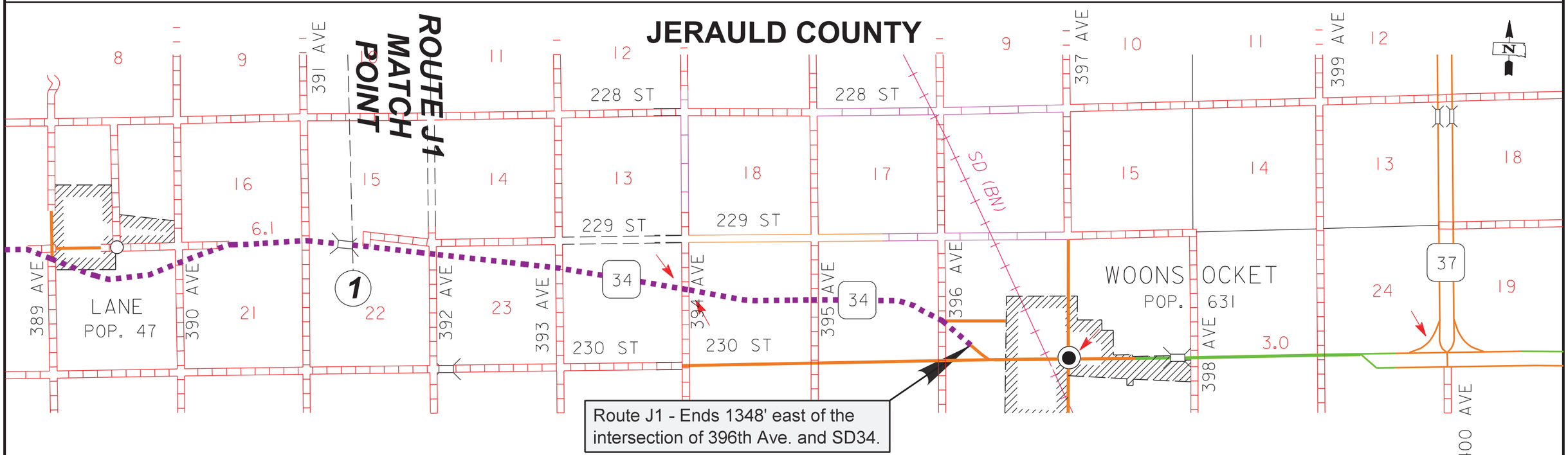
Route J1 - Begins 2125 ft. east of the intersection of SD34 and S. Dakota Ave.



Legend

- Sinusoidal Centerline Rumble Stripes

JERAULD COUNTY



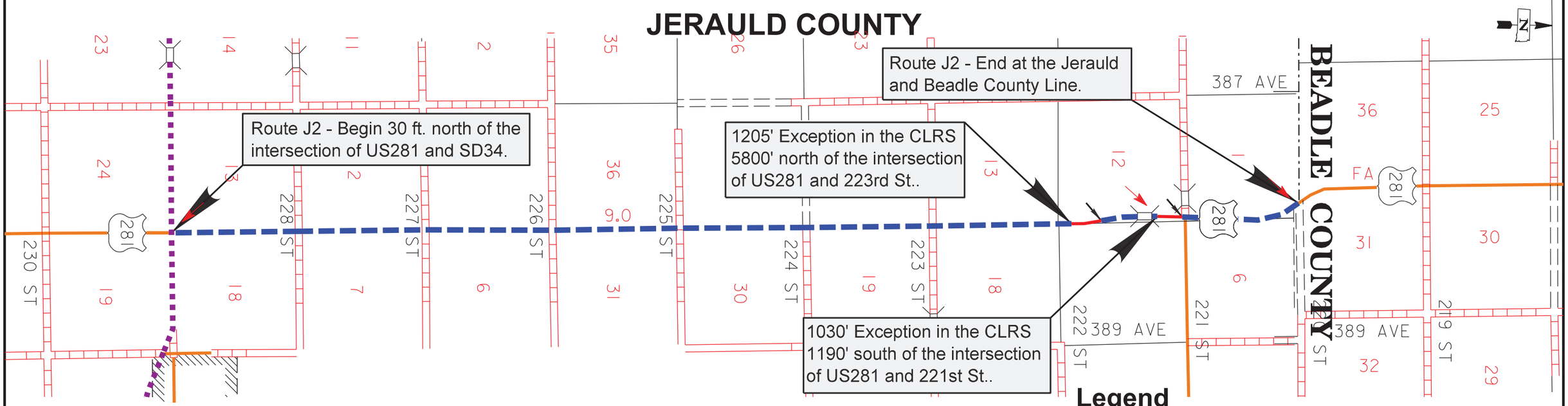
Route J1 - Ends 1348' east of the intersection of 396th Ave. and SD34.

CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	37	44

Plotting Date: 3/9/2026

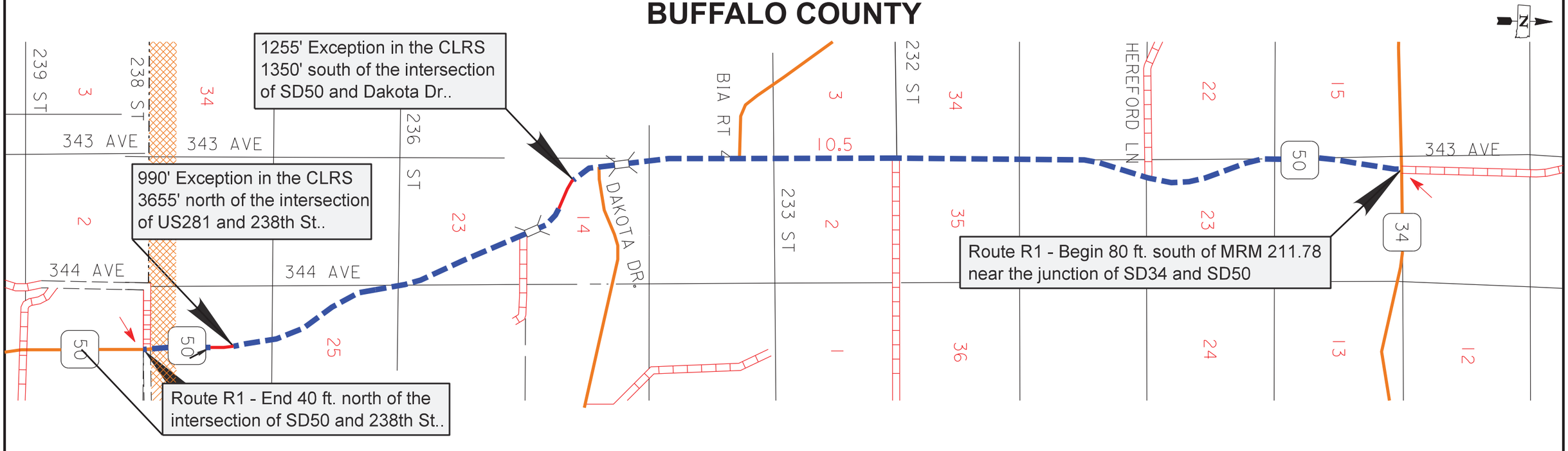
JERAULD COUNTY



Legend

- Split Centerline Rumble Stripes

BUFFALO COUNTY

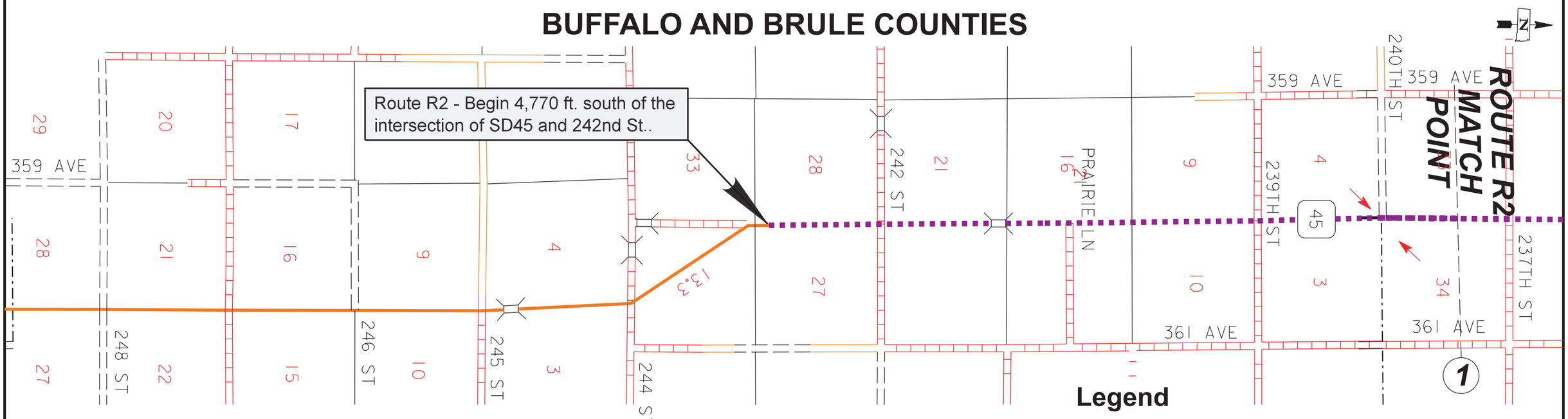


CENTERLINE RUMBLE STRIPES
(SPECIAL DETAIL)

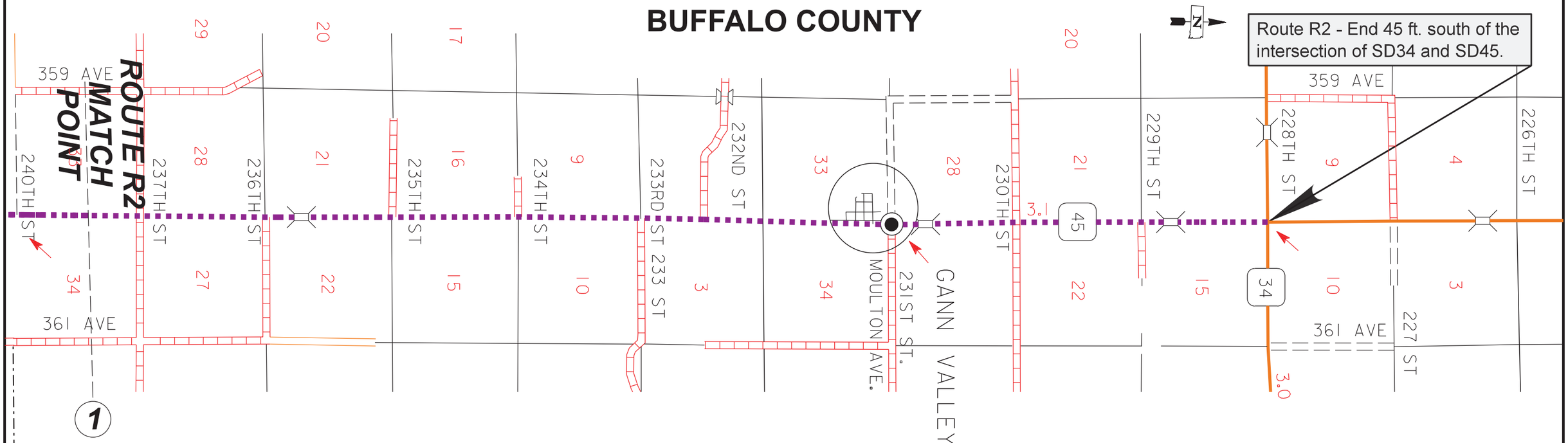
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	38	44

Plotting Date: 3/9/2026

BUFFALO AND BRULE COUNTIES



BUFFALO COUNTY



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	39	44

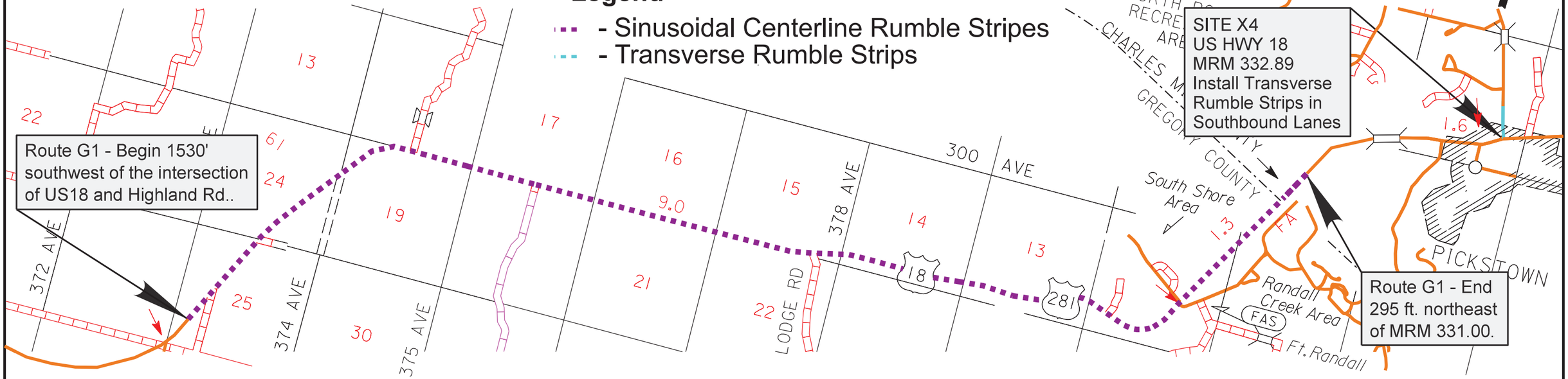
Plotting Date: 3/9/2026

CENTERLINE RUMBLE STRIPES (SPECIAL DETAIL)

GREGORY COUNTY

Legend

- Sinusoidal Centerline Rumble Stripes
- Transverse Rumble Strips



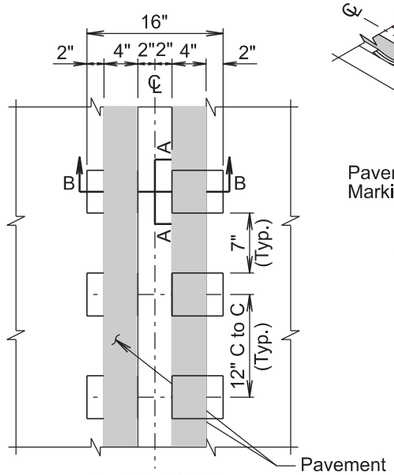
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	40	44

Plotting Date: 3/18/2026

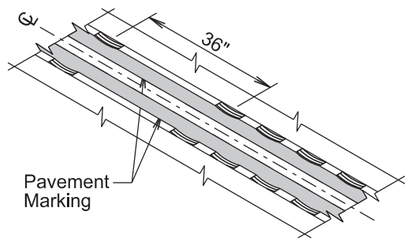
16" CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Sheet 1 of 1

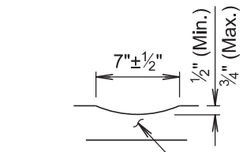
* Four sets of rumbles at 12" on center spacing followed by a 36" on center gap and continue as needed.



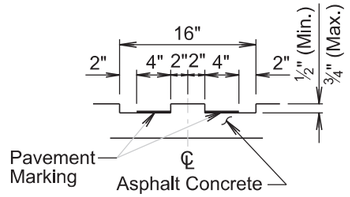
PLAN VIEW
(Typical Rumble Stripe in Asphalt Concrete)



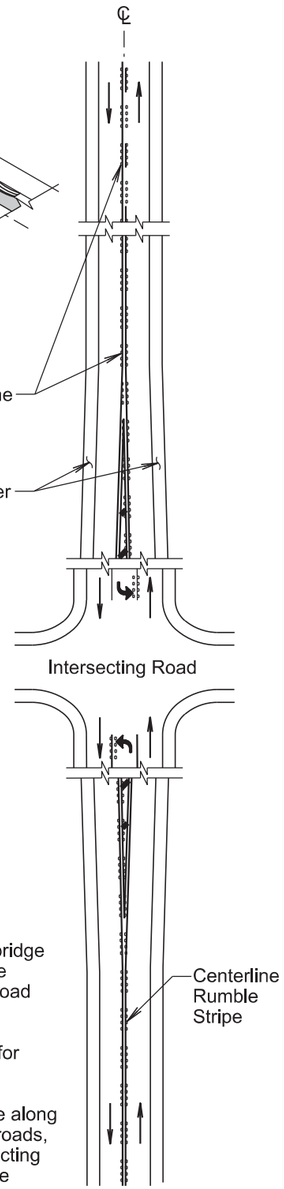
***PERSPECTIVE VIEW**
(Typical Rumble Stripe in Asphalt Concrete)



SECTION A-A



SECTION B-B



PLAN VIEW

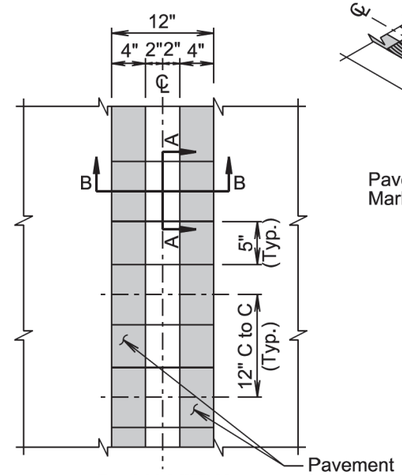
GENERAL NOTES:

A rumble stripe will be constructed on the centerline of the roadway by grinding indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

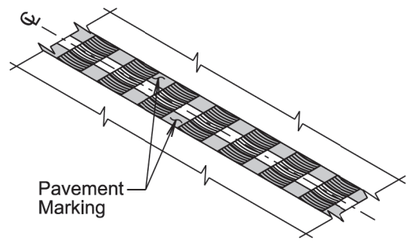
A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

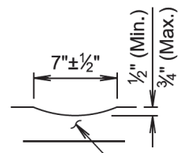
Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind 16" Centerline Rumble Stripe in Asphalt Concrete".



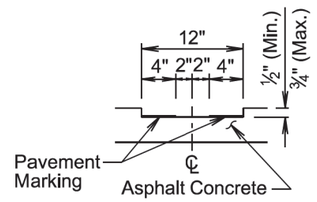
PLAN VIEW
(Typical Rumble Stripe in Asphalt Concrete)



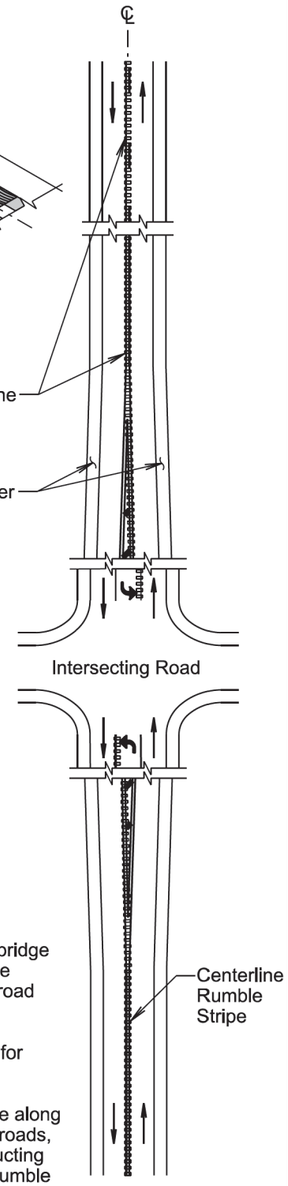
PERSPECTIVE VIEW
(Typical Rumble Stripe in Asphalt Concrete)



SECTION A-A



SECTION B-B



PLAN VIEW

GENERAL NOTES:

A rumble stripe will be constructed on the centerline of the roadway by grinding continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

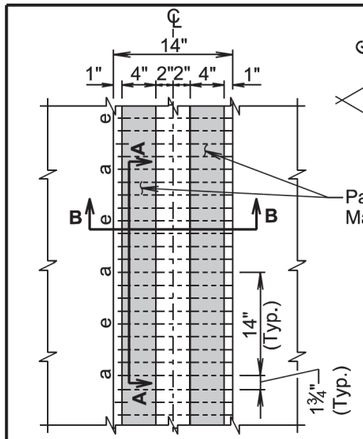
Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Centerline Rumble Stripe in Asphalt Concrete".

November 19, 2020

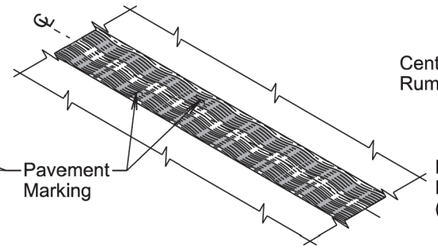
Published Date: 2026	SDDOT	12" CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.18
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	41	44

Plotting Date: 3/18/2026

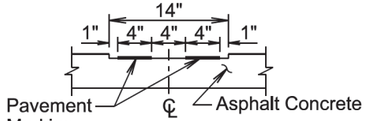


PLAN VIEW
(Typical Rumble Strip in Asphalt Concrete)

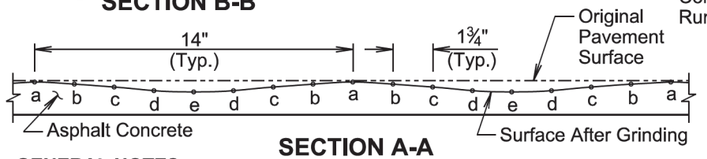


PERSPECTIVE VIEW
(Typical Rumble Strip in Asphalt Concrete)

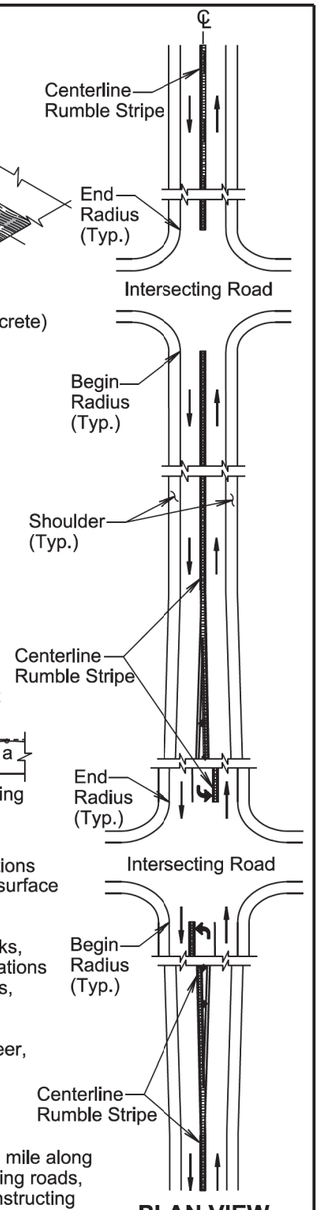
SINUSOIDAL GRINDING	
Location	* Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	1/2



SECTION B-B



SECTION A-A



PLAN VIEW

GENERAL NOTES:

A rumble stripe will be constructed by grinding continuous sinusoidal indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

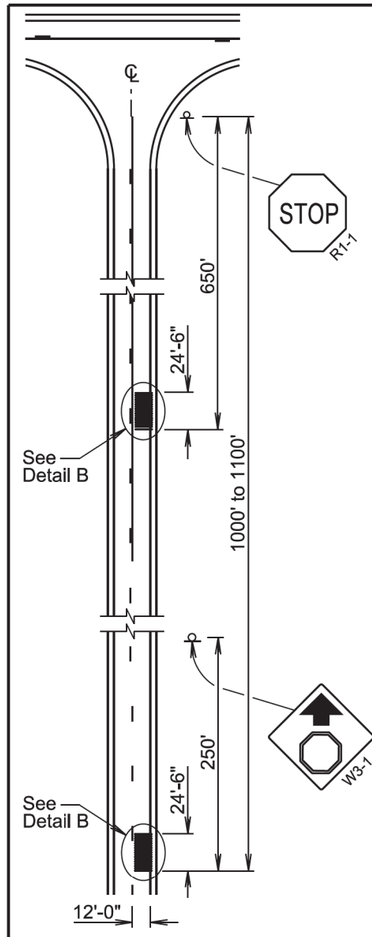
Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

* The sinusoidal rumble stripe construction grinding tolerance will be ± 1/16 inch.

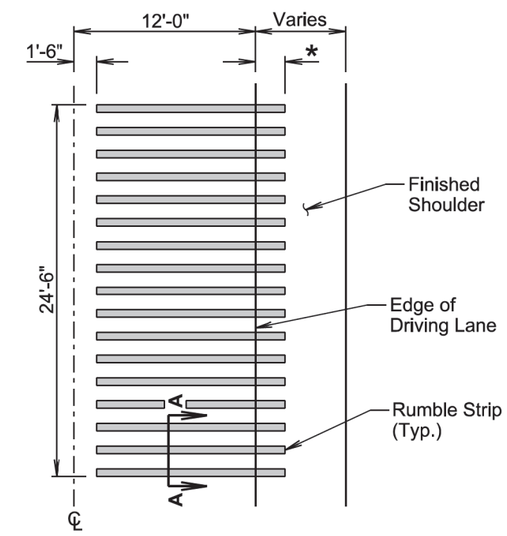
Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete".

September 14, 2019

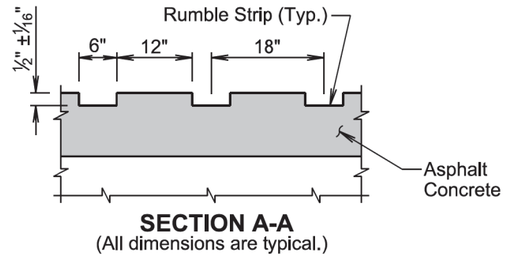
Published Date: 2026	SDDOT	SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.40
			Sheet 1 of 1



PLAN VIEW



DETAIL B
PLAN VIEW



SECTION A-A
(All dimensions are typical.)

GENERAL NOTES:

Transverse rumble strips will be constructed by grinding, routing, or cutting recessed indentations into the asphalt concrete as approved by the Engineer. The transverse rumble strips will receive a flush seal or fog seal as specified in the plans.

* The transverse rumble strips will extend into the finished shoulder as approved by the Engineer.

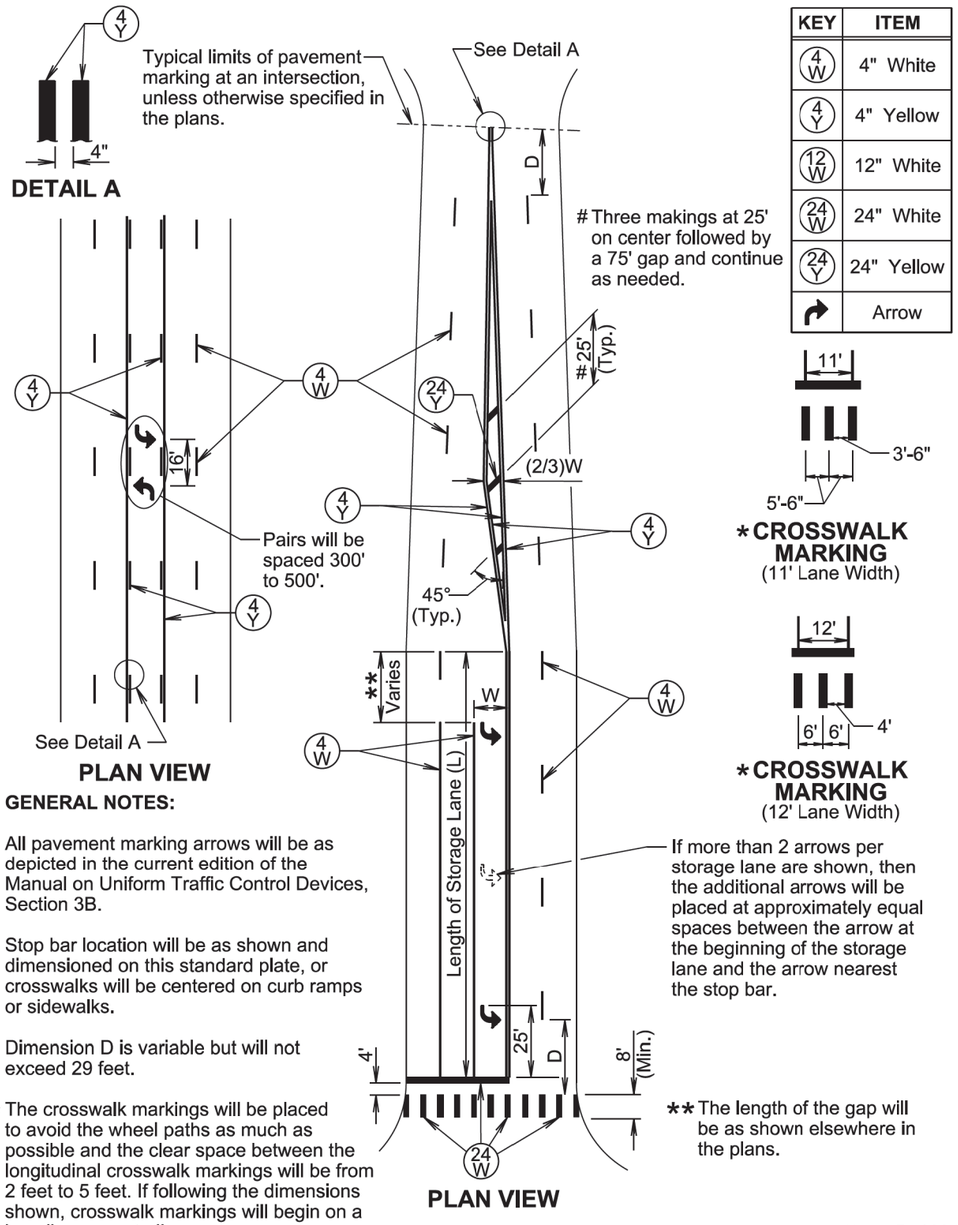
Measurement of the recessed transverse rumble strips will be to the nearest foot. Payment for constructing the recessed transverse rumble strips will be at the contract unit price per foot for "Grind 6" Transverse Rumble Strip in Asphalt Concrete".

January 22, 2021

Published Date: 2026	SDDOT	TRANSVERSE RUMBLE STRIP IN ASPHALT CONCRETE HIGHWAY ADJACENT TO STOP CONTROLLED INTERSECTION	PLATE NUMBER 320.45
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	42	44

Plotting Date: 3/18/2026



GENERAL NOTES:

All pavement marking arrows will be as depicted in the current edition of the Manual on Uniform Traffic Control Devices, Section 3B.

Stop bar location will be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but will not exceed 29 feet.

* The crosswalk markings will be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings will be from 2 feet to 5 feet. If following the dimensions shown, crosswalk markings will begin on a lane line or centerline.

If more than 2 arrows per storage lane are shown, then the additional arrows will be placed at approximately equal spaces between the arrow at the beginning of the storage lane and the arrow nearest the stop bar.

** The length of the gap will be as shown elsewhere in the plans.

March 31, 2024

Published Date: 2026	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01
			Sheet 1 of 1

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

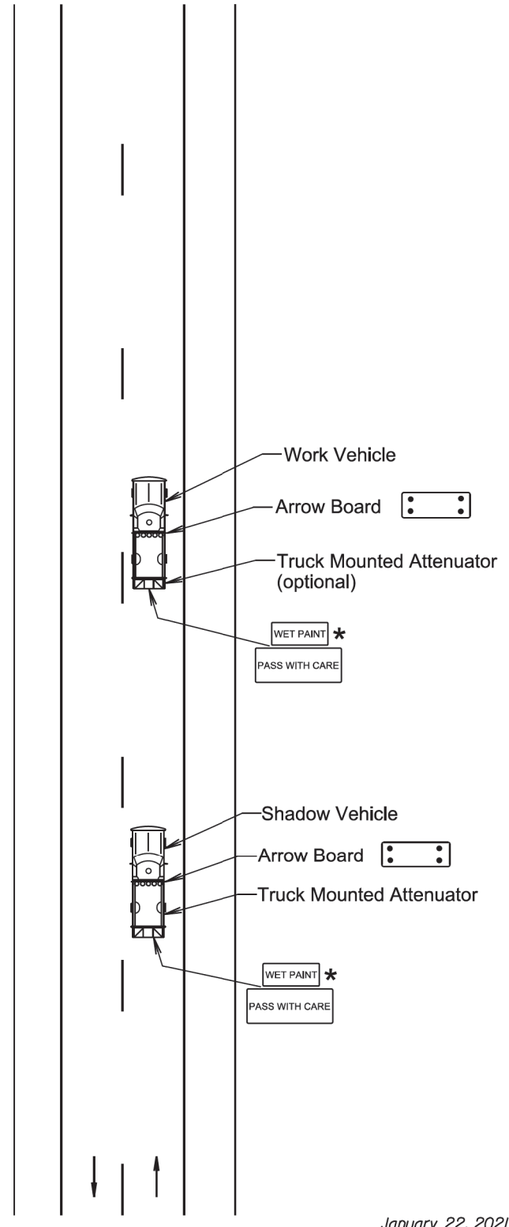
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.



January 22, 2021

Published Date: 2026	SDDOT	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1

* Messages on signs will vary depending on the operation being conducted.

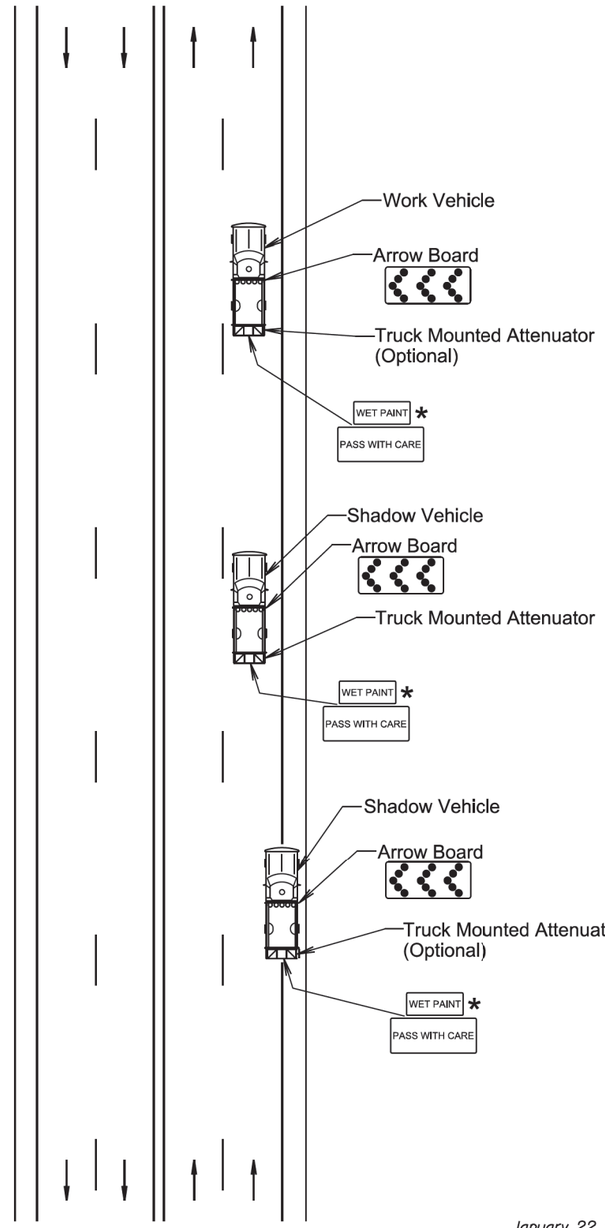
Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.



January 22, 2021

Published Date: 2026	SDDOT	MOBILE OPERATIONS ON MULTI-LANE HIGHWAYS	PLATE NUMBER 634.08
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

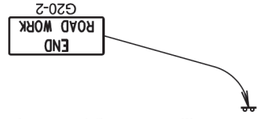
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices will be drums or 42" cones.

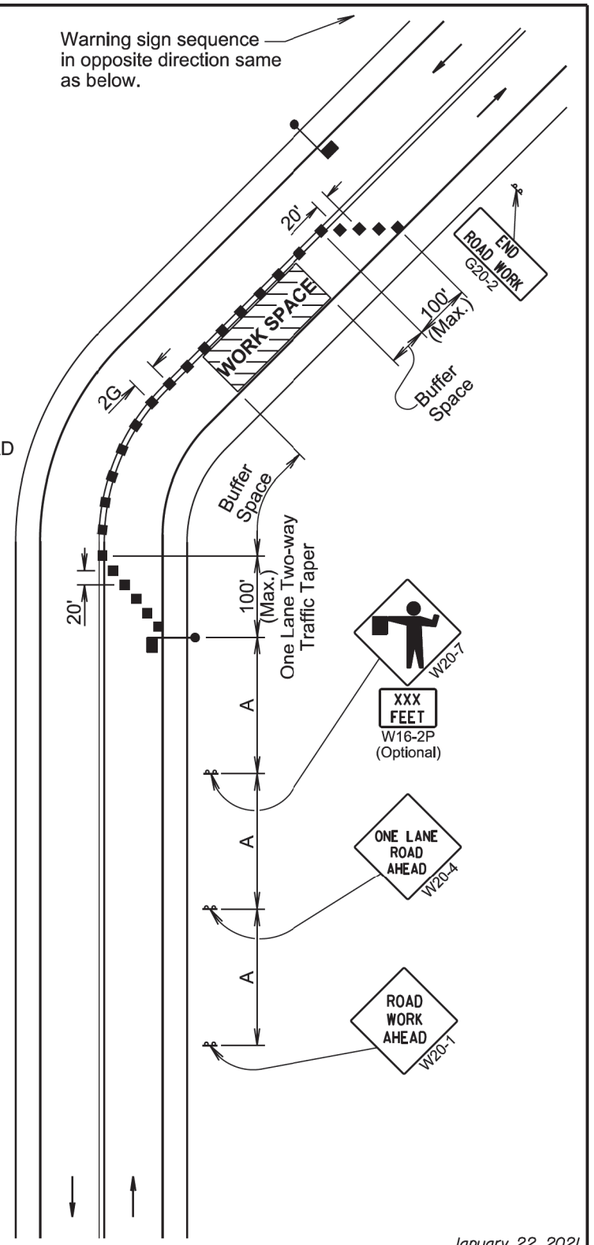
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



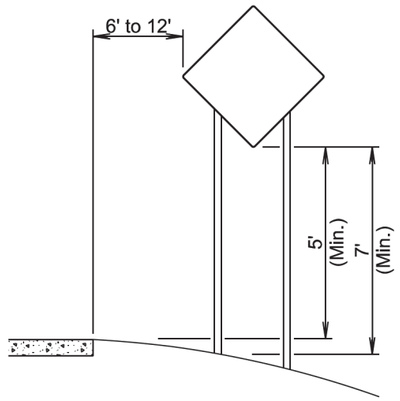
January 22, 2021

Published Date: 2026	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

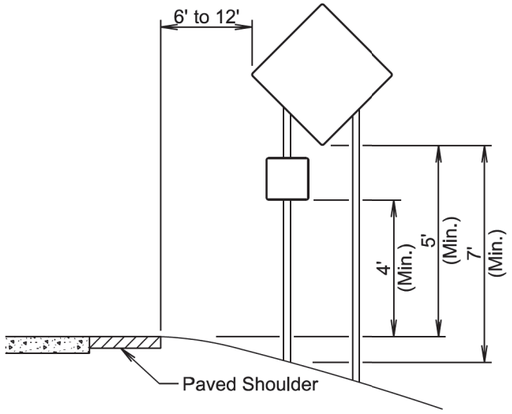
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(245)	44	44

Plotting Date: 3/18/2026

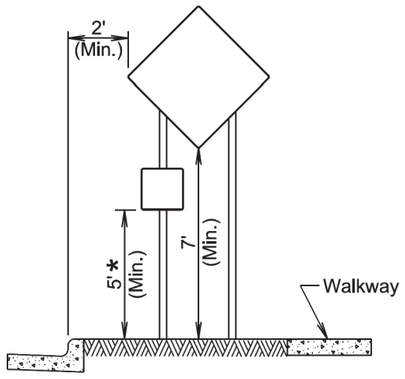
REV. 03-19-26, JMP



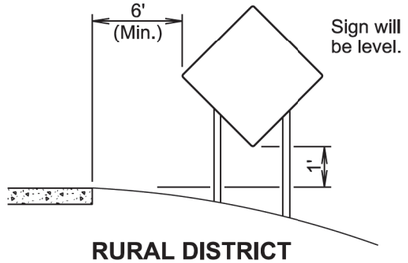
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

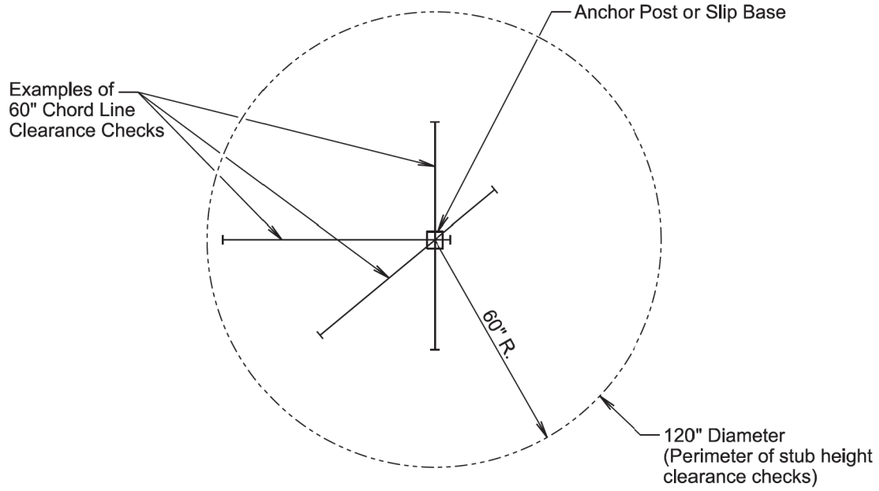


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

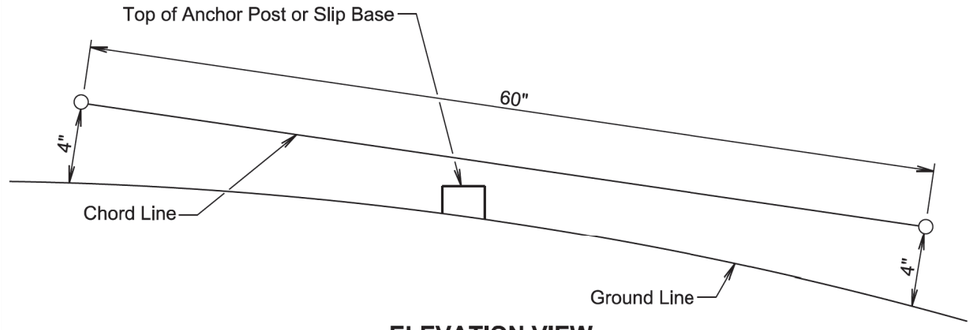
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2026	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

Published Date: 2026	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1