

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(242)	1	12

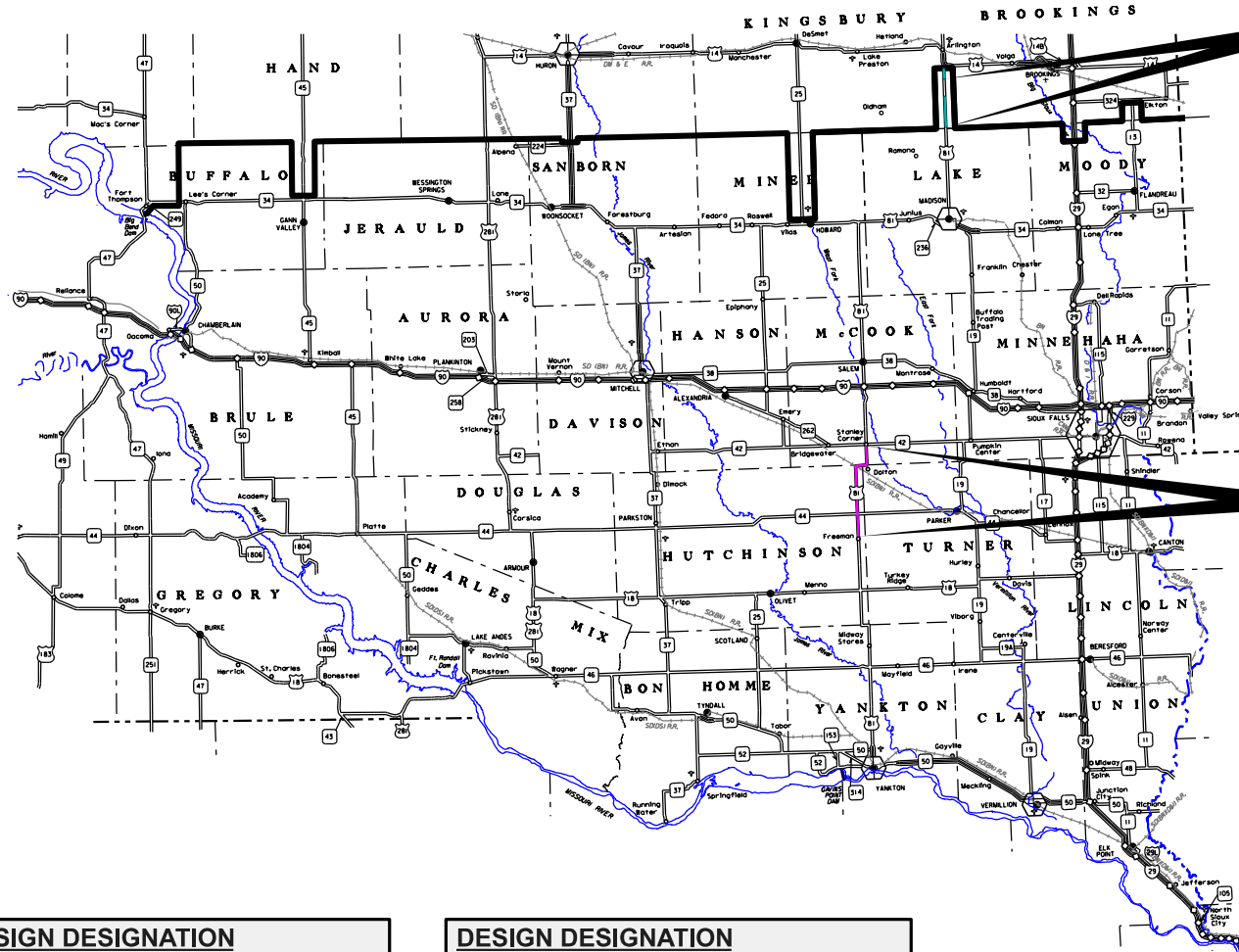
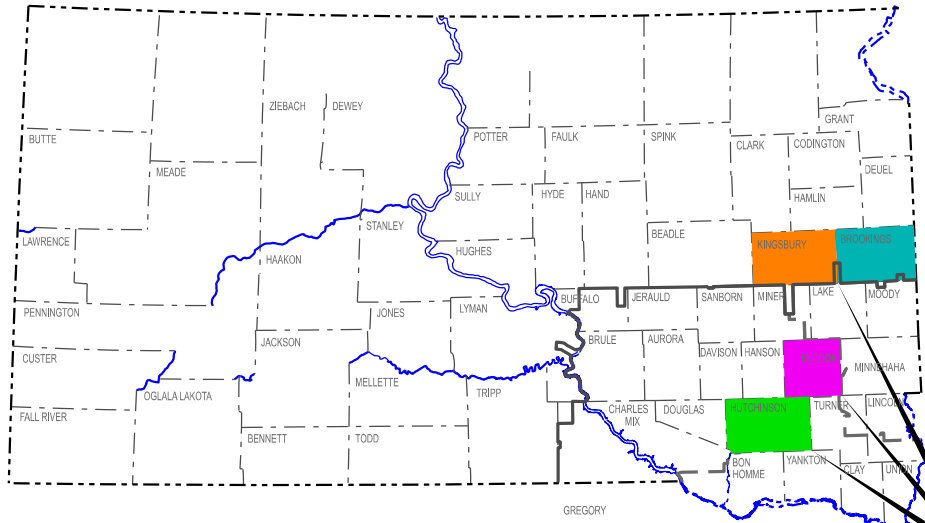
Plotting Date: 04/25/2024

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PLANS FOR PROPOSED  
**PROJECT PH 0020(242)**  
**US HIGHWAY 81**  
**HUTCHINSON, MCCOOK,**  
**KINGSBURY & BROOKINGS**  
**COUNTIES**

PROJECT  
CENTERLINE RUMBLE STRIPES  
DURABLE PAVEMENT MARKING  
PCN 09FL



**BROOKINGS & KINGSBURY**  
US81  
MRM 107.73+0.00 TO  
112.00+0.281  
MRM 114.00+0.888 TO  
115.91+0.00  
MRM 116.14+0.00 TO  
116.64+0.00

**HUTCHINSON & MCCOOK**  
US81  
MRM 35.00+0.272 TO  
49.00+0.290

**PROJECT LENGTH**

Gross Length:	105,595'	20.00 Miles
Brookings & Kingsbury Counties Length:	32,565'	6.17 Miles
McCook County Length:	20,373'	3.86 Miles
Hutchinson County Length:	53,887'	10.21 Miles
Net Length:	106,825'	20.23 Miles

**STORM WATER PERMIT**  
(None required)

**DESIGN DESIGNATION**  
ROUTE 1, HUTCHINSON AND MCCOOK COUNTIES

ADT(2023)	1831
ADT(2043)	2879
DHV	332
D	51%
T DHV	6.5%
T ADT	14.3%
V	65 MPH

**DESIGN DESIGNATION**  
ROUTES 2 & 3, BROOKINGS & KINGSBURY COUNTIES

ADT(2023)	1388
ADT(2043)	1999
DHV	414
D	50%
T DHV	5.2%
T ADT	11.5%
V	65 MPH

PLOT SCALE = 1:200,052

PLOTTED FROM: IRML13314

PLOT NAME: \\PRJ\REG\09FL\REG\09FL.DGN

**ESTIMATE OF QUANTITIES**

PH 0020(242) – PCN 09FL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
380E6302	Reseal PCC Pavement Joint - Hot Pour	105,595	Ft
380E6548	Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement	20.0	Mile
633E3000	Durable Pavement Marking, 4" White	211,190	Ft
633E3005	Durable Pavement Marking, 4" Yellow	44,724	Ft
634E0010	Flagging	200.0	Hour
634E0020	Pilot Car	100.0	Hour
634E0110	Traffic Control Signs	253.8	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	20.2	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/media/documents/EnvironmentalProceduresManual.pdf>

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 C: WATER SOURCE**

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.

**COMMITMENT C: WATER SOURCE (CONTINUED)**

**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 (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:

< <https://sdeastwanted.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](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04) >

**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.

**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 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:

**COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)**

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.

**COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES (CONTINUED)**

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 100 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.

**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.

**SCOPE OF WORK**

The project consists of centerline rumble strips.

Centerline rumble strip locations will also have Epoxy Pavement Marking Paint, Yellow applied.

**SCOPE OF WORK**

1. Install traffic control for 3-mile closure.
2. Grind sinusoidal centerline rumble stripes.
3. Repeat 3-mile process until project completion.
4. Place temporary pavement markings before the end of the day.
5. Sawcut and seal centerline longitudinal joint.
6. Install permanent pavement marking paint.

**CENTERLINE RUMBLE STRIPS IN PCC**

**INSTALLATION**

Rumble Strips will be constructed according to Standard Plate 380.56.

Rumble strips will be completed prior to the application of the permanent pavement marking.

Sinusoidal centerline rumble stripes will be installed in rural areas with posted speeds greater than 60 mph. The Engineer will provide the exact start and stop locations.

**ROADWAY CLEANING**

The Contractor will be required to remove loose material from the driving surface and asphalt shoulders of the roadway. Loose material may be broomed to the edge of the shoulders. It will be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas or waterways.

The cost for this work will be incidental to the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement".

**RESEAL PCC PAVEMENT CENTERLINE LONGITUDINAL JOINT**

Existing longitudinal joints will be cleaned and resealed with Hot Poured Elastic Joint Sealer on all sections of highway except the asphalt overlay on US81 south of the junction of US81 and US14.

Joints will not be sealed unless they are thoroughly clean and dry. Cleaning will be accomplished by sand blasting and other tools as necessary. Sand blasting of both sides the vessel will be accomplished simultaneously with a mechanical device approved by the Engineer. Just prior to sealing, each joint will be blown out using a jet compressed air to remove all traces of dust.

Final joint width is to be kept as narrow as possible and may only be widened to provide a clean surface. Each joint will not be widened more than 1/8 inch if sawing is utilized to prepare the joint for sealant. If sawing is used this may require two passes with the saw, one pass for each side of the joint.

In certain areas to be sealed with a Hot Pour Elastic Joint Sealer the joint may be wider than the original construction. Any additional cost to perform this work will be at no additional cost to the State. The Contractor will be responsible to verify joint widths prior to establishing the contract unit price.

It is not essential that all of the sealant be removed. Remaining sealant adhering to the sides may remain in place if the Engineer determines that it is not detrimental to the joint.

Cost for cleaning and resealing longitudinal joints with Hot Pour Elastic Joint Sealer will be included in the contract unit price per foot for Reseal PCC Pavement Joint – Hot Pour.

Joint sealing will conform to Section 380.3 P.

**MARKINGS WITHIN SINUSOIDAL CENTERLINE RUMBLE STRIPES**

The sinusoidal centerline rumble stripes are recessed below the pavement surface, so pavement marking grooving will not be required at these locations.

Sinusoidal rumble stripes will receive an asphalt surface treatment to seal the centerline joint and minimize the depth of water held on centerline.

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.

**PAVEMENT MARKING PAINT**

The resealing of the longitudinal centerline joint will be done prior to the placement of the permanent pavement markings.

Application of the centerline permanent pavement markings will be completed withing 14 calendar days of the placement of the center line rumble stripes.

**COORDINATION BETWEEN CONTRACTORS**

A separate contract for Project NH 0081(112)95 – PCN 06P9 will be to another Contractor Mill, Full Depth Reclamation, AC Surfacing, Pipe Work, Modify Intersection on US81 adjacent to this project (PCN pcn# for this set of plans). The Mill, Full Depth Reclamation, AC Surfacing, Pipe Work, Modify Intersection for PCN 06P9 will begin at MRM 95.21+0.208 and end at MRM 107.00+0.719.

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 06P9. 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.

**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".

**TEMPORARY PAVEMENT MARKING**

Temporary flexible vertical markers (tabs) will be installed on one side of the centerline rumble for the temporary pavement marking. No passing zones will be marked in accordance with Specifications. DO NOT PASS (R4-1) and PASS WITH CARE (R4-2) signs will also be used in addition to the temporary flexible vertical markers (tabs) placed per Specifications to mark no passing zones.

The total length of no passing zone on this project is estimated to be 4.5 miles.

It is estimated that 22 DO NOT PASS and 19 PASS WITH CARE signs will be required.

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, a WORKER (W21-1) symbol 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.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

**PAVEMENT MARKING**

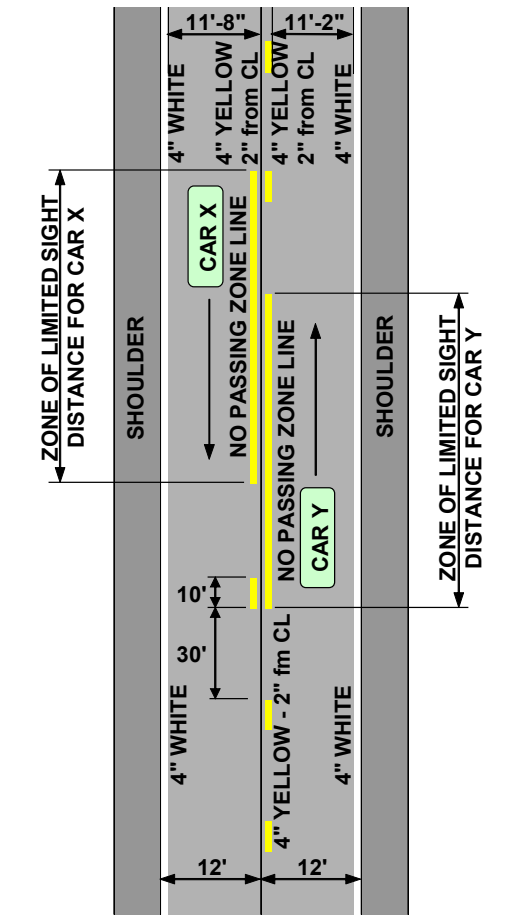
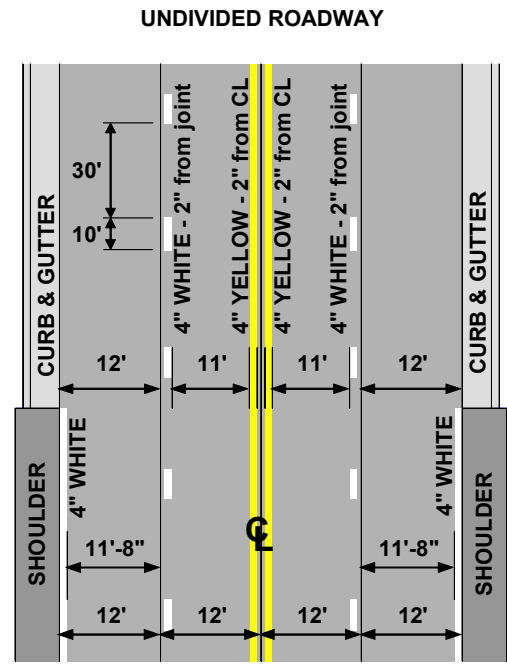
Typical pavement marking as shown on this sheet will be applied throughout the entire length of undivided roadway.

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.

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 Lane Line 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)					
DURABLE	4"	8"	12"	24"	SOLID AREAS
WHITE	211190'	-	-	-	-
YELLOW	44724'	-	-	-	-

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:	-
<b>Arrows</b>			
Left Arrows	-	Additional Quantities	
Right Arrows	-	<u>Rates of Coverage:</u> SqFt/Gal	
Straight Arrows	-	4", 8" & 12" Lines	50
Combo Arrows	-	24" Lines & Hatches	30
Lane Drop Arrows	-	Arrows, Messages and Solid Areas	20
<b>Messages</b>			
STOP	-	All pavement marking dimensions are based on 12' driving lanes.	
STOP AHEAD	-		
R X R w/ Stop Lines	-		
SCHOOL X-ING	-		
Additional White:	-		

ESTIMATED QUANTITIES (BASED ON ONE APPLICATION)				
DURABLE	Project No. 1 GALLONS	Project No. 2 GALLONS	Project No. 3 GALLONS	TOTALS GALLONS
WHITE	1113	-	-	1113
YELLOW	248	-	-	248

**ESTIMATE OF QUANTITIES (For Information Only)**

Route No.	County	Route	Begin	End	Bid Item		380E6548		380E6302		633E1005	
					Length (Total)	Mile	Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement (Total)	Mile (Net)	Reseal PCC Pavement Joint - Hot Pour (Ft. (Net))	Durable Pavement Marking Paint, Yellow (Ft.)		
1	HUTCHINSON & MCCOOK	US81	715 ft. north of 278th St.	SD42	74,260'	14.0	74,260'	14.1	74,260'	22,909'		
2	BROOKINGS & KINGSBURY	US81	220th St.	8015 ft. north of 217th St.	23,788'	4.5	23,788'	4.5	23,788'	12,437'		
3	BROOKINGS & KINGSBURY	US81	560 ft. north of 213th St.	1,140 ft. north of 212th St.	8,777'	1.7	7,547'	1.4	7,547'	9,378'		
<b>Total</b>						<b>20.2</b>		<b>20.0</b>	<b>105,595'</b>	<b>44,724'</b>		

**Locations that Centerline Rumble Stripes will not be installed (For Information Only)**

Route No.	Hwy.	Beginning Location	End Location	County	Location Comments	Length
4	US81	1130 ft. North of 212th St.	651 ft. South of 211th St.	Kingsbury and Brookings	An existing asphalt patch is at this location has centerline rumble stripes.	1230'

**ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS**

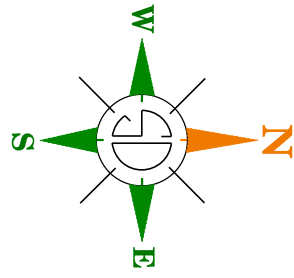
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	1	48" x 48"	16.0	16.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
W21-1	WORKERS (symbol)	1	48" x 48"	16.0	16.0
G20-1	'ROAD WORK NEXT 2 MILES	1	36" x 18"	4.5	4.5
G20-1	'ROAD WORK NEXT 3 MILES	3	36" x 18"	4.5	13.5
G20-1	'ROAD WORK NEXT 5 MILES	2	36" x 18"	4.5	9.0
G20-1	'ROAD WORK NEXT 6 MILES	1	36" x 18"	4.5	4.5
SPECIAL	WAIT FOLLOW PILOT CAR	1	30" x 18"	3.8	3.8
G20-1	ROAD WORK NEXT 7 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 8 MILES	2	36" x 18"	4.5	9.0
G20-1	ROAD WORK NEXT 9 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 11 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	6	36" x 18"	4.5	27.0
G20-1	ROAD WORK NEXT 13 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 14 MILES	1	36" x 18"	4.5	4.5
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>				<b>253.8</b>	

# CENTERLINE RUMBLE STRIPE (SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(242)	5	12

Plotting Date: 04/25/2024

## HUTCHINSON & McCOOK COUNTIES



### Legend

- Centerline Rumble Stripes

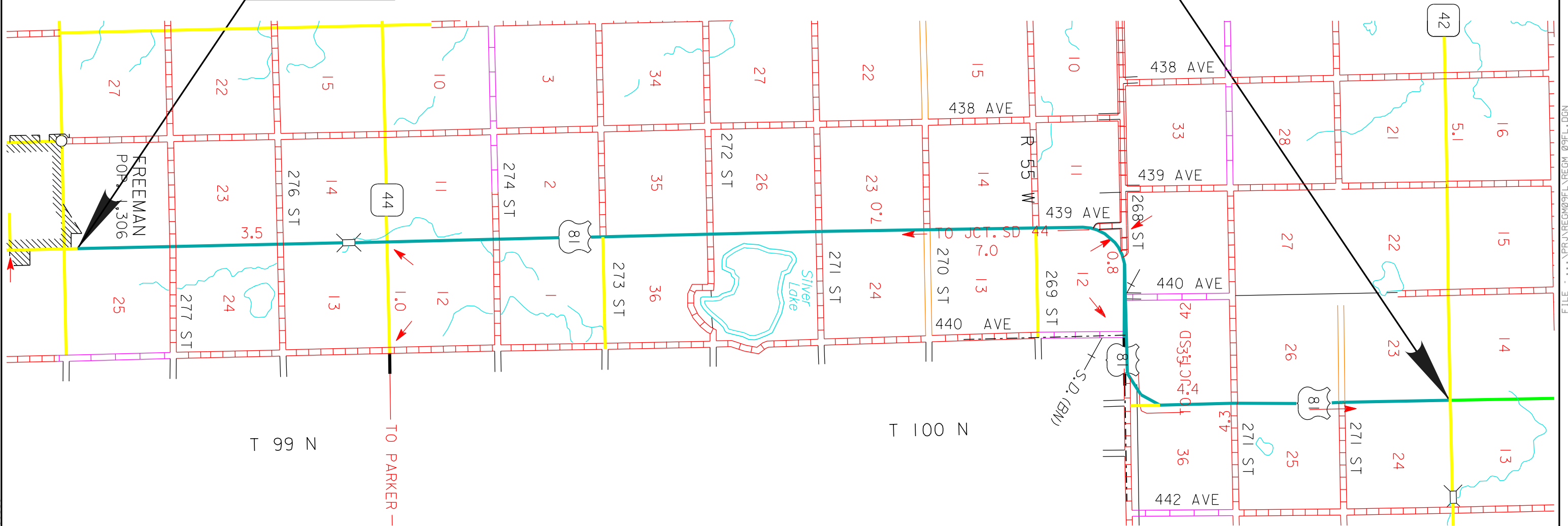
Route 2 - Begin  
Centerline Rumble  
Strips 715 ft.  
north of the  
intersection of  
278th St. & US81.

Route 2 - End  
Centerline Rumble  
Strips at the  
intersection of  
SD42 & US81.

PLOT SCALE - 1:4707.21

PLOTTED FROM - TRM113314

PLOT NAME - \$\$\$PLOTNAME\$\$\$ FILE - \\PRJ\REG\96\TRM\13314.DGN

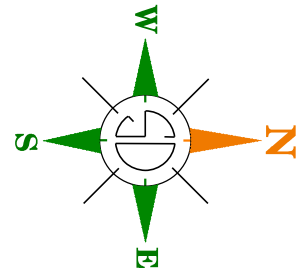


# CENTERLINE RUMBLE STRIPE (SPECIAL DETAIL)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date: 04/25/2024

## BROOKINGS & KINGSBURY COUNTIES

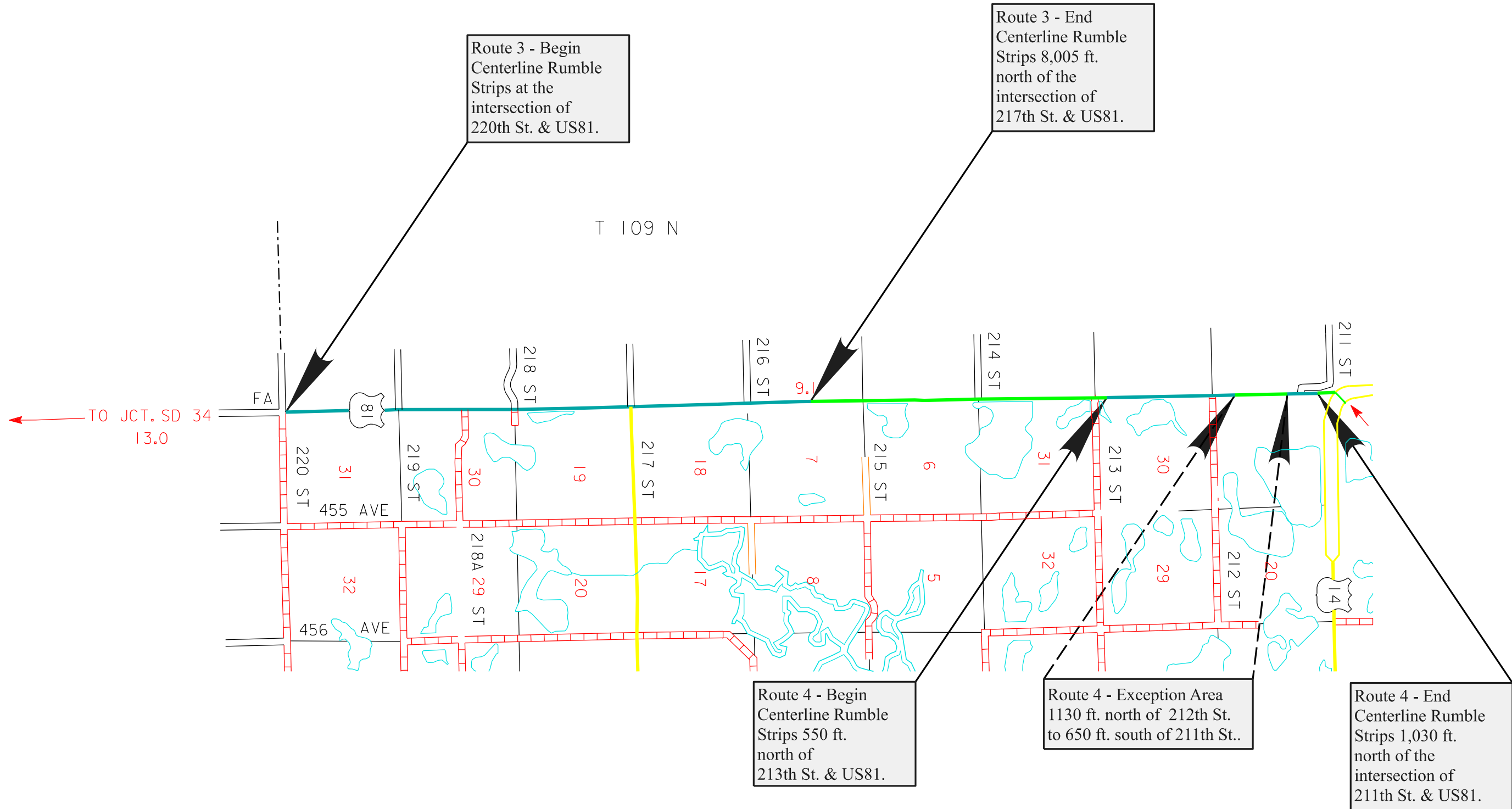


### Legend

- Centerline Rumble Stripes

PLOT SCALE - 1:4705.83

PLOT NAME - \$PLOTNAME\$\$

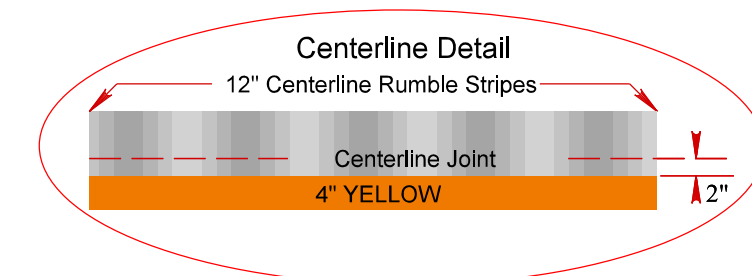
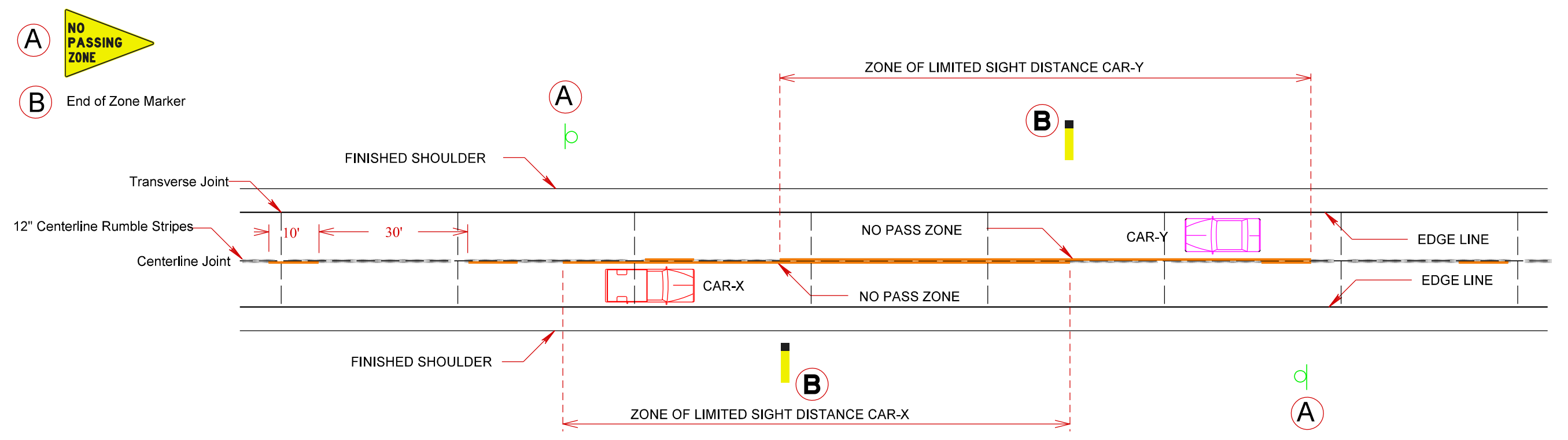


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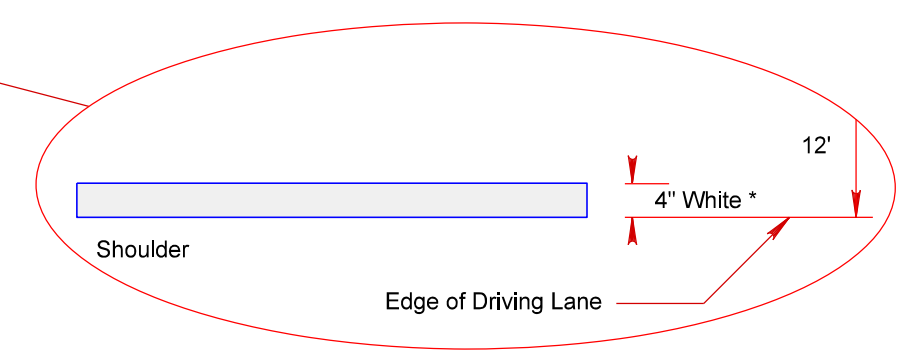
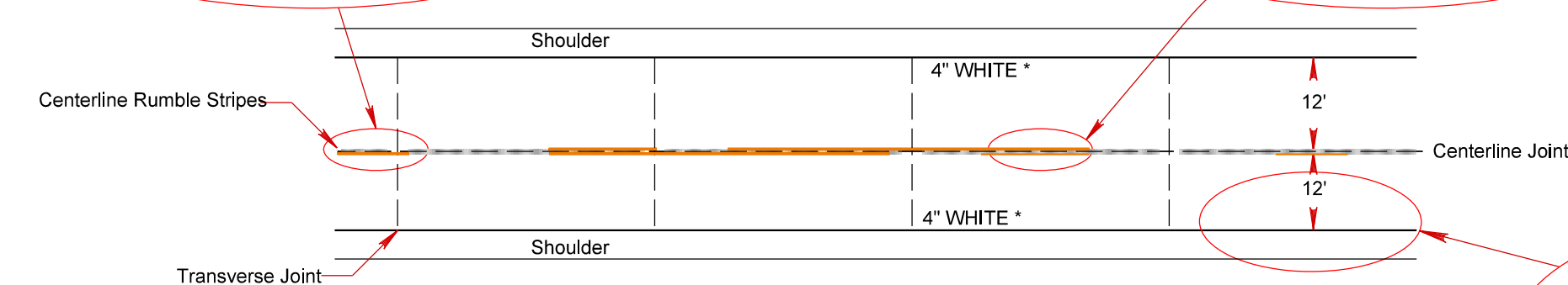
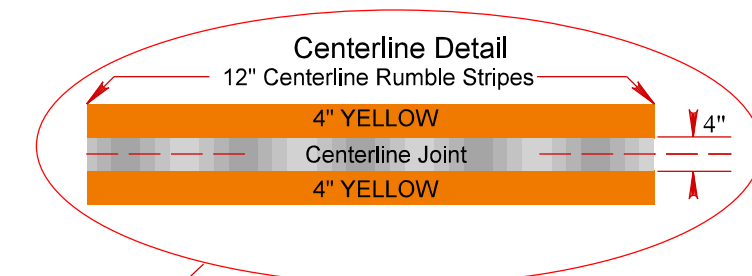
# TYPICAL PAVEMENT MARKING LAYOUT

## Pavement Marking on PCC Centerline Rumble Stripes



NOTE: A TWO "GUN" SYSTEM SHALL BE USED TO OBTAIN THIS PATTERN.

WHEN A SINGLE SKIP LINE EXISTS, THE SKIP WILL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.



PLOT SCALE - 1:1228.752

PLOTTED FROM - TRM113314

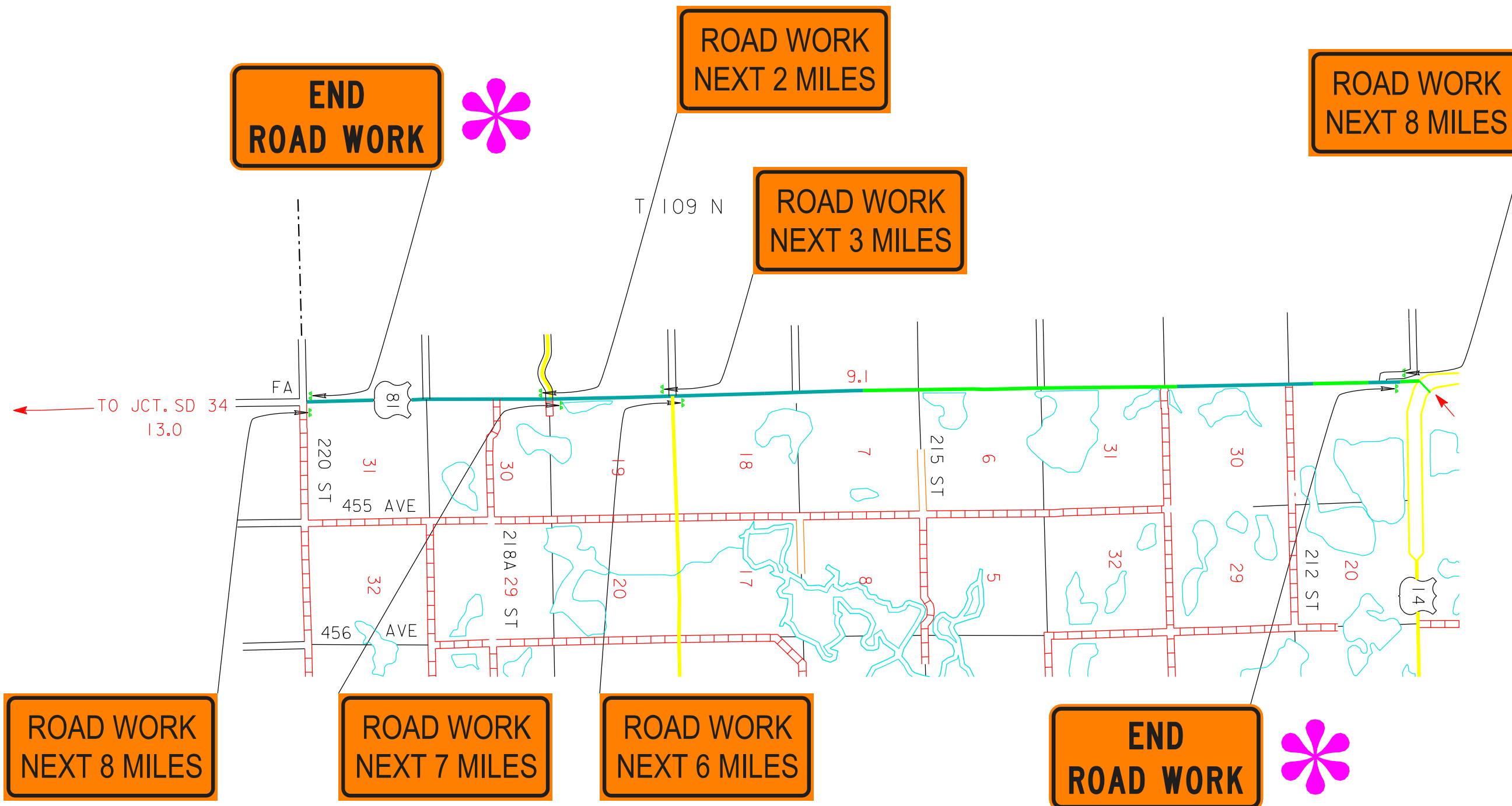
PLOT NAME - \$\$PLOTNAME\$\$ FILE - ... \PRJ\REGM09FL\REGM\_09FL.DGN

# FIXED LOCATION SIGNING

## US81, BROOKINGS & KINGSBURY COUNTIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(242)	8	12

Plotting Date: 04/25/2024



All Fixed Location signs will remain in place until permanent pavement marking is complete.

Signs will be placed 200' to 300' from intersections. Exact location to be determined by the Engineer.

Construction signs cannot obscure existing signs and must be installed a minimum of 200' from existing sign.

Construction signs will not be installed on the same post as an existing highway sign or light pole.

 - 200' FROM INTERSECTIONS

PLOT SCALE - 1:4715.13

PLOTTED FROM - TRM113314

PLOT NAME - \$\$PLOTNAME\$\$ FILE - ... \NPRJ\REG\09FL\REGM 09FL.DGN



# FIXED LOCATION SIGNING

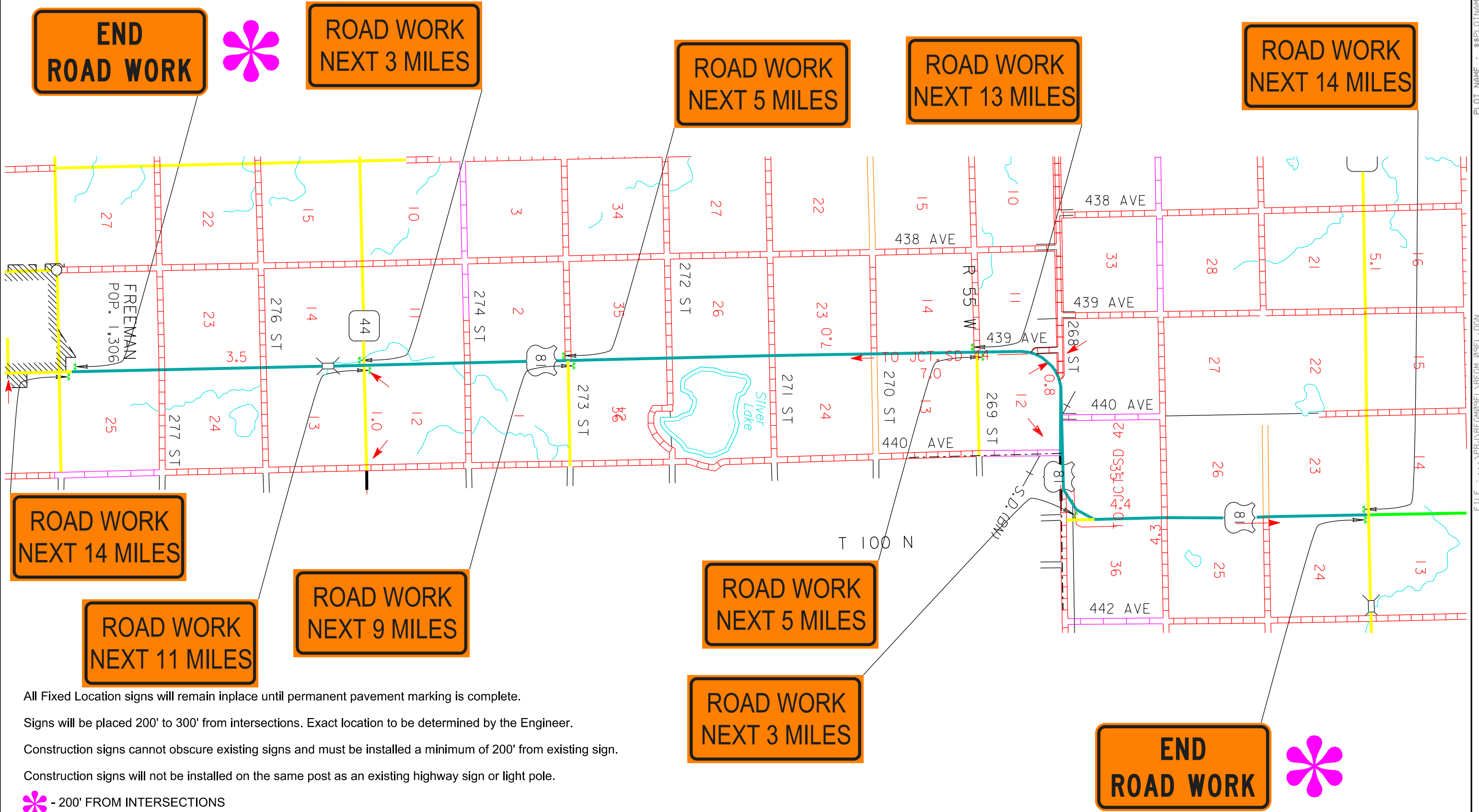
## US81, HUTCHINSON & McCOOK COUNTIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0020(242)	9	12

Plotting Date: 04/25/2024

PLOT SCALE - 1:4705.42

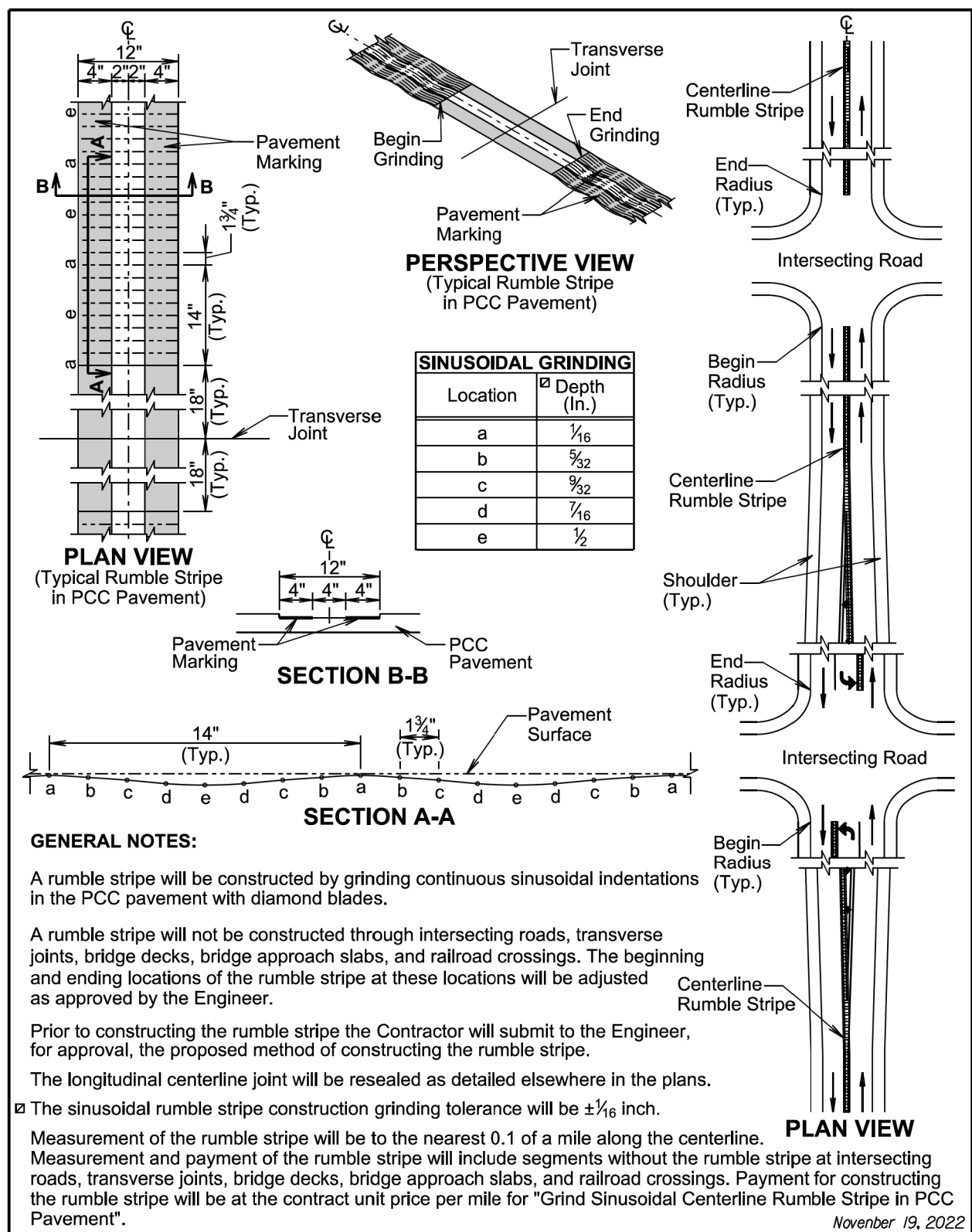
PLOT NAME - \$\$\$PLOTNAME\$\$\$ FILE - PRUNREGM\FR\REGM 09FL.DGN



All Fixed Location signs will remain in place until permanent pavement marking is complete.  
 Signs will be placed 200' to 300' from intersections. Exact location to be determined by the Engineer.  
 Construction signs cannot obscure existing signs and must be installed a minimum of 200' from existing sign.  
 Construction signs will not be installed on the same post as an existing highway sign or light pole.

 - 200' FROM INTERSECTIONS

PLOT SCALE - 1:200.014



**GENERAL NOTES:**

A rumble stripe will be constructed by grinding continuous sinusoidal indentations in the PCC pavement with diamond blades.

A rumble stripe will not be constructed through intersecting roads, transverse joints, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at these locations 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 longitudinal centerline joint will be resealed as detailed elsewhere in the plans.

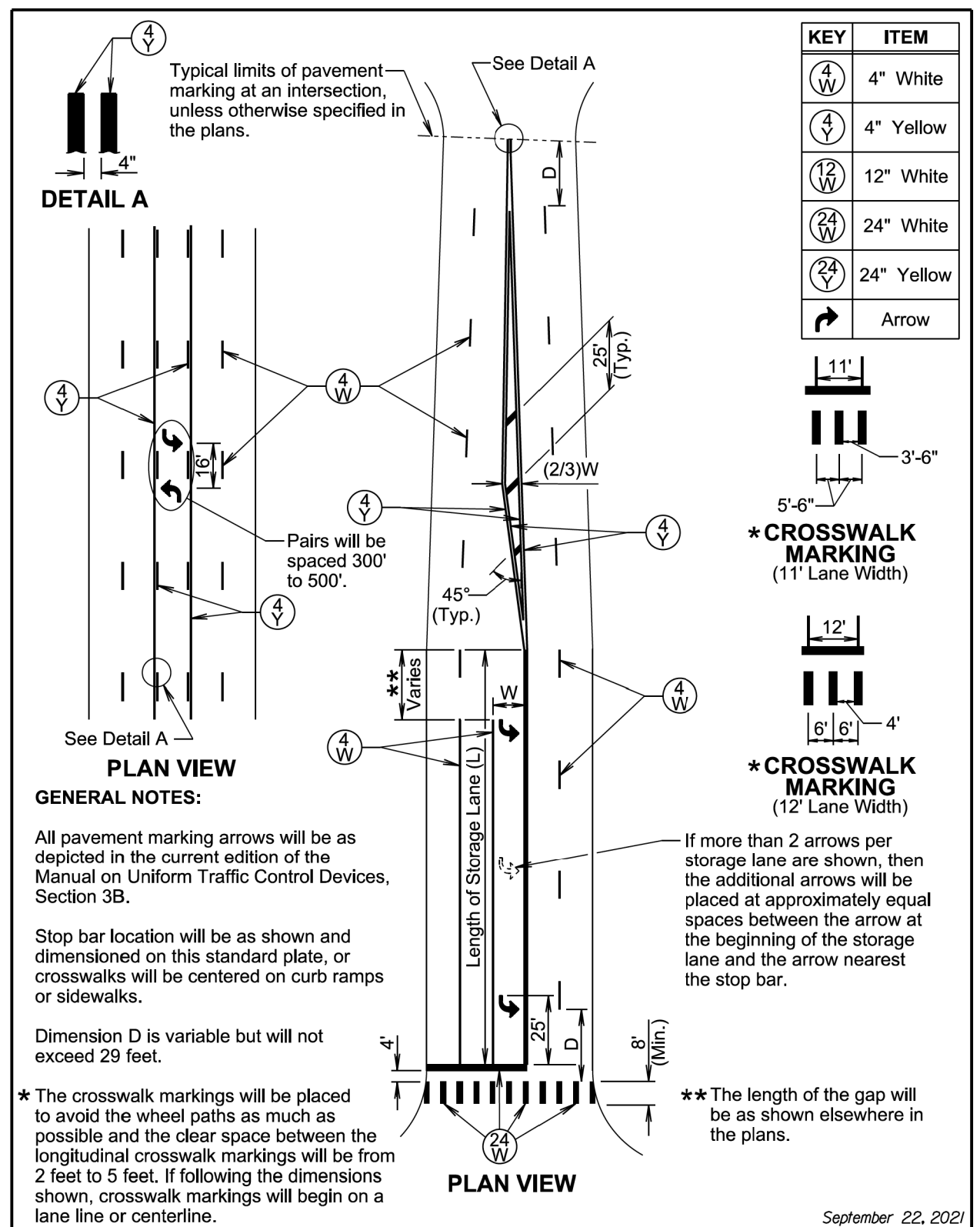
▫ The sinusoidal rumble stripe construction grinding tolerance will be  $\pm 1/16$  inch.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile along the centerline. Measurement and payment of the rumble stripe will include segments without the rumble stripe at intersecting roads, transverse joints, 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 PCC Pavement".

November 19, 2022

<b>S D D O T</b>	<b>SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT</b>	PLATE NUMBER <b>380.56</b>
	Published Date: 2024	Sheet 1 of 1

FILE ... \PRJ\REG\9FL\REGM 09FL.DGN PLOT NAME - \$\$PLOTNAME\$\$



**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.

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

September 22, 2021

<b>S D D O T</b>	<b>PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE</b>	PLATE NUMBER <b>633.01</b>
	Published Date: 2024	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.

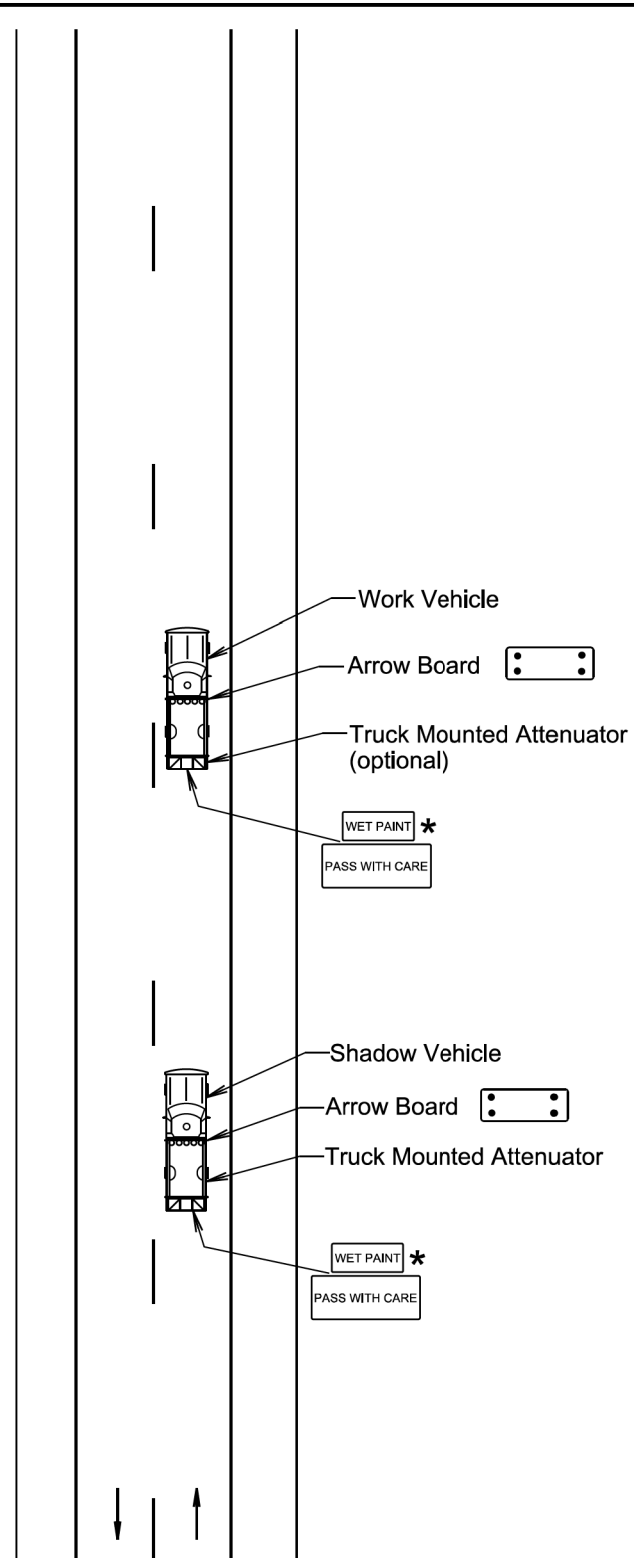
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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: 2024	S D D O T	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			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.

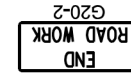
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.



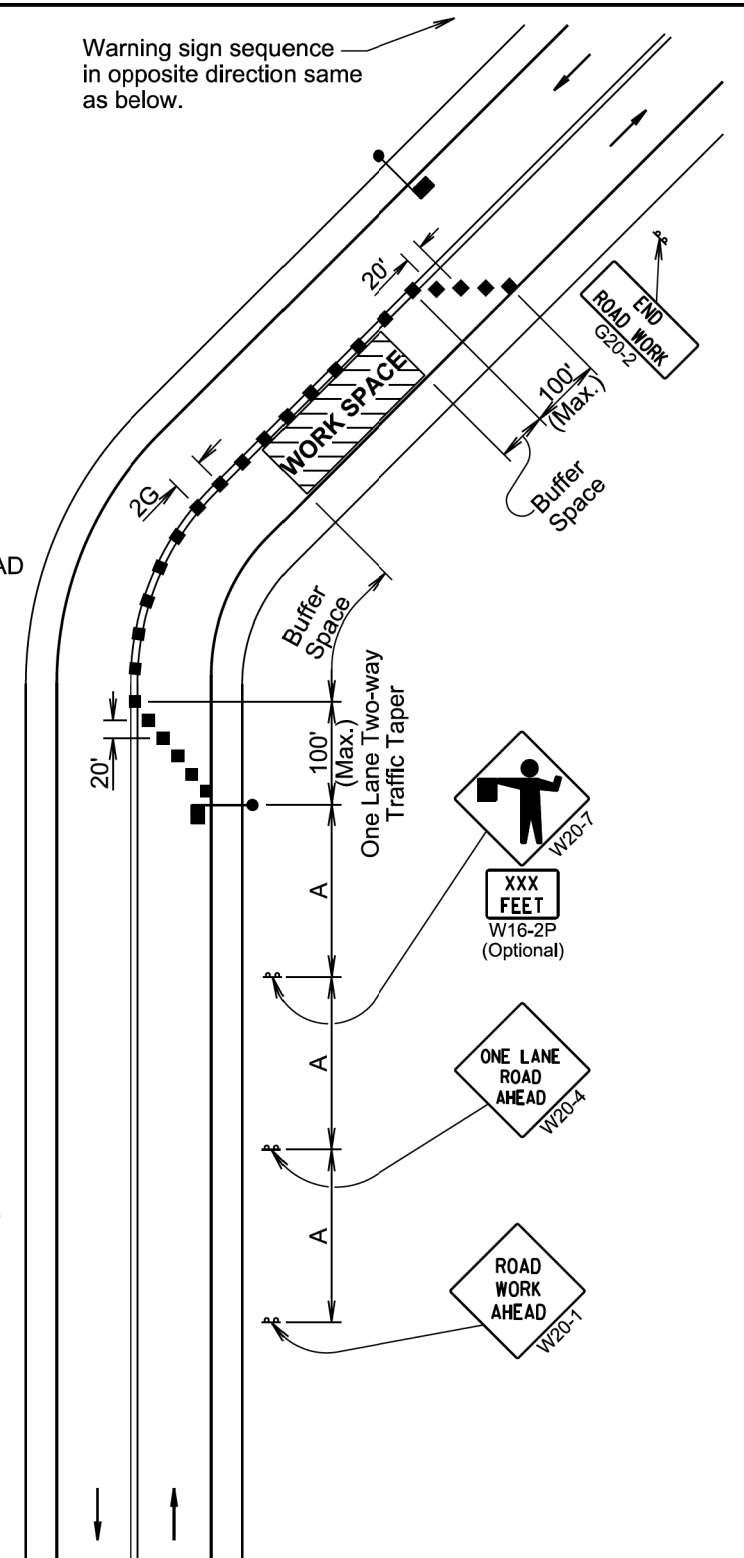
Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

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.

Published Date: 2024	S D D O T	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

Warning sign sequence in opposite direction same as below.

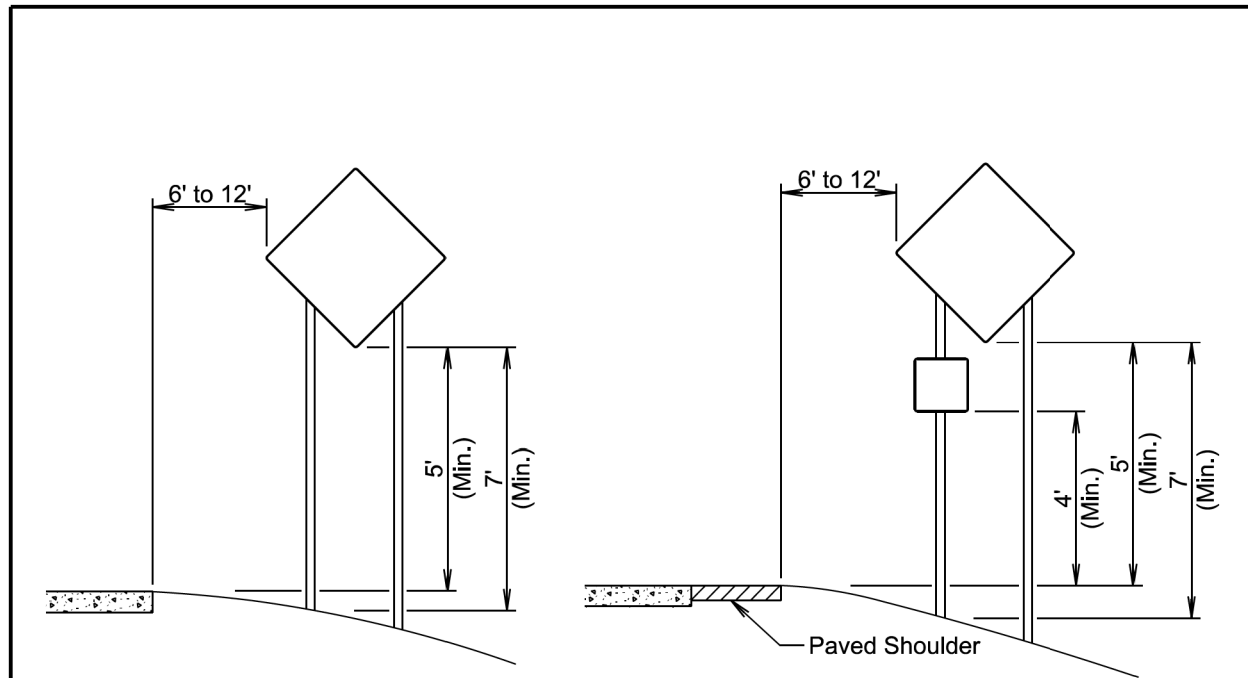


January 22, 2021

PLOT SCALE - 1:200.065

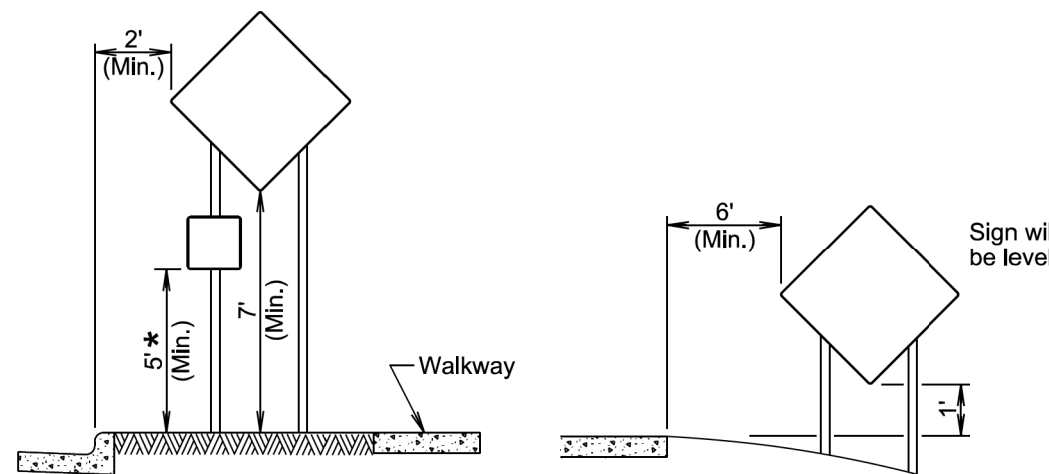
PLOT NAME - \$PLOTNAME\$\$

FILE - ... \PRJ\REG\09FL\REGM 09FL.DGN



**RURAL DISTRICT**

**RURAL DISTRICT WITH SUPPLEMENTAL PLATE**



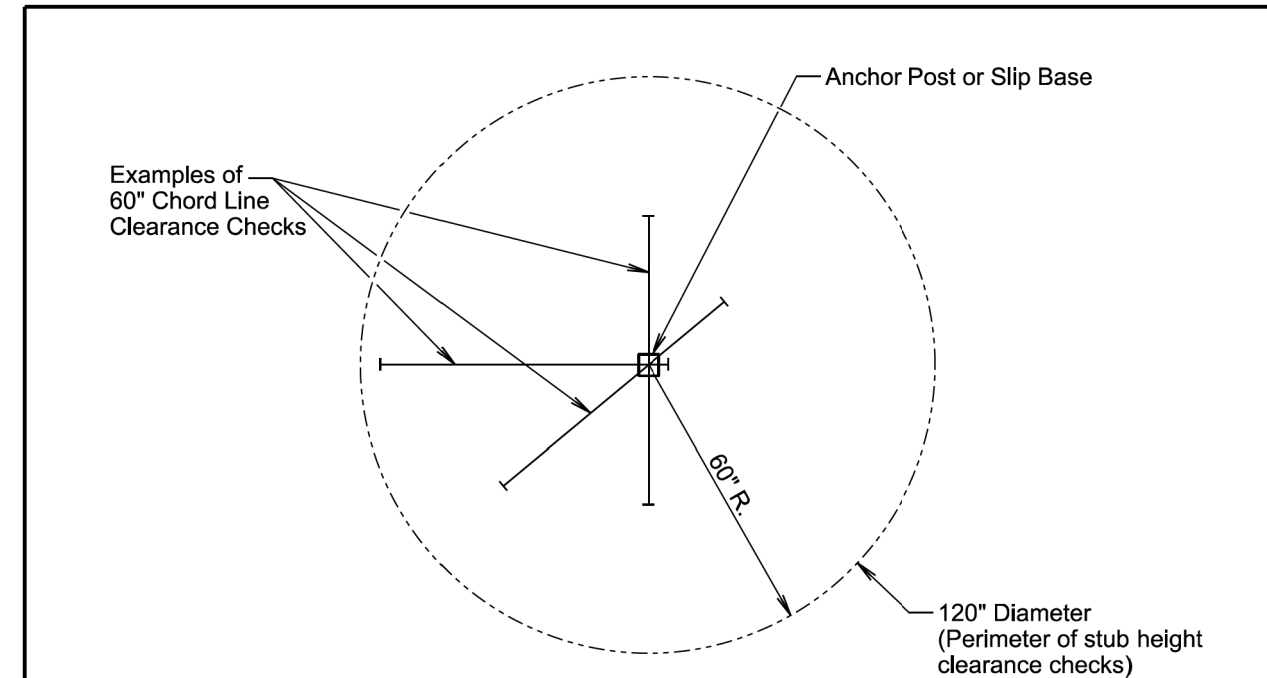
**URBAN DISTRICT**

**RURAL DISTRICT 3 DAY MAXIMUM**

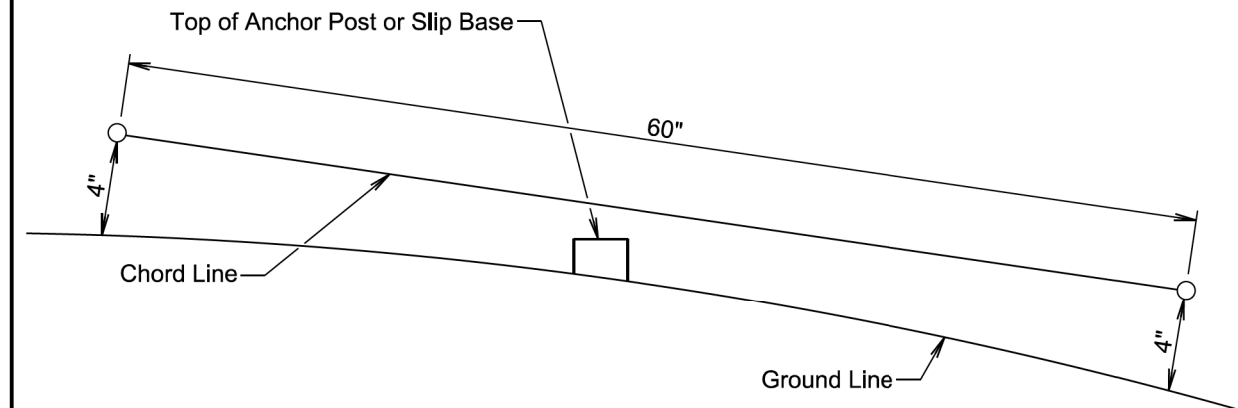
\* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	S D D O T	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: 2024	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1