

DESIGN DATA			
COUNTY HIGHWAY 10			
TRAFFIC	AVERAGE DAILY		
CURRENT: 2020	PASS: 4,525	TRUCKS: 370	TOTAL: 4,895
PREVENTATIVE MAINTENANCE			

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SC-0836(068)
COUNTY HIGHWAY 10
800' EAST OF 66TH ST NE TO US HWY 83
BURLEIGH COUNTY, NORTH DAKOTA
4" MILLING, 4" HMA OVERLAY, SEAL COAT, AND INCIDENTALS

STATE	PROJECT NO.	PCN	SEC. NO.	SHEET NO.
ND	SC-0836(068)	24165	1	1

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	07/01/2024
Supplemental Specifications	NONE

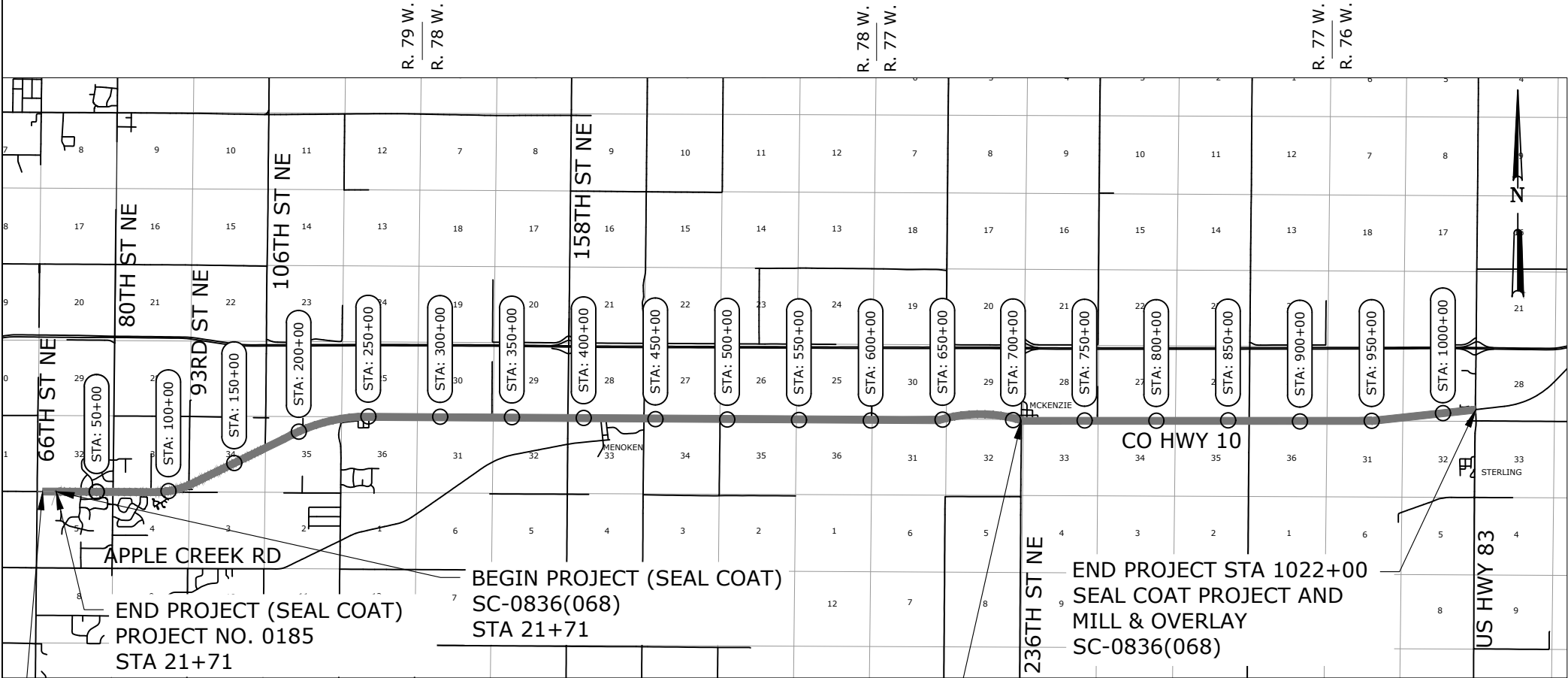
PROJECT NUMBER: NET MILES GROSS MILES

SEAL COAT
PROJECT NO. 0185 0.08 0.08
(NON-PARTICIPATING)

SEAL COAT
PROJECT SC-0836(068) 18.95 18.95

MILL AND OVERLAY
PROJECT SC-0836(068) 5.98 5.98

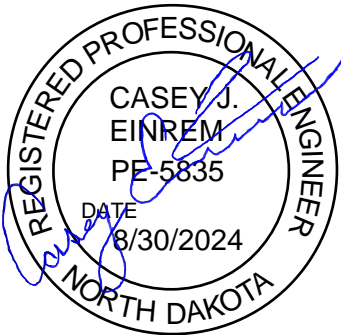
BASIS OF SURVEY:
ALL COORDINATES ARE BURLEIGH COUNTY GROUND COORDINATES DERIVED FROM THE "NORTH DAKOTA COORDINATE SYSTEM OF 1983," NAD83 (CORS96), SOUTH ZONE COMBINATION FACTOR (CF)=0.9998515, INTERNATIONAL FOOT. ALL VERTICAL CONTROL IS NAVD88. ALL UNITS ARE ENGLISH.



TWP. 139 N.

TWP. 138 N.

ENGINEER'S CERTIFICATE:
I, CASEY EINREM, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THE HIGHWAY 10 MILL AND OVERLAY PLAN, BURLEIGH COUNTY, NORTH DAKOTA WERE PREPARED UNDER MY SUPERVISION AND ARE COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



CASEY EINREM /s/ DATE: 8/30/2024

CASEY EINREM, PE
REGISTERED PROFESSIONAL ENGINEER
NORTH DAKOTA REGISTRATION NO. PE-5835

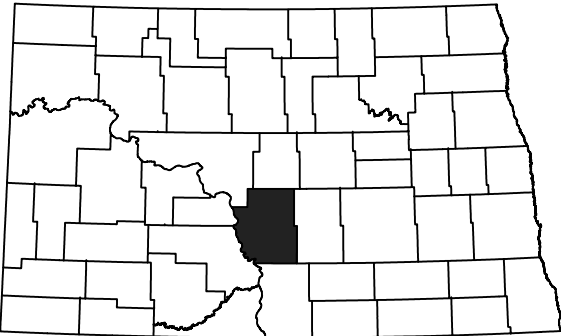
APPROVAL OF COUNTY ENGINEER:
I, MARCUS J. HALL, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT I HAVE REVIEWED THESE PLANS FOR GENERAL CONSISTENCY WITH ESTABLISHED POLICIES AND REQUIREMENTS FOR THIS CONSTRUCTION PROJECT IN BURLEIGH COUNTY, NORTH DAKOTA, AS SHOWN ON THE ACCOMPANYING PLANS.



MARCUS J. HALL /s/ DATE: 8/30/2024

MARCUS J. HALL, PE
REGISTERED PROFESSIONAL ENGINEER
NORTH DAKOTA REGISTRATION NO. PE-5785

DESIGNERS
TIM JACOBS, EI
CASEY EINREM, PE



STATE OF NORTH DAKOTA
BURLEIGH COUNTY



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010	1	BASIS OF ESTIMATE
020	1	GENERAL DETAILS
030	1-2	TYPICAL SECTIONS
100	1-3	WORK ZONE TRAFFIC CONTROL

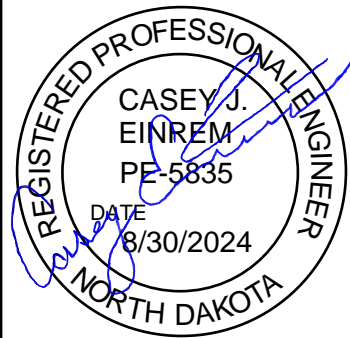
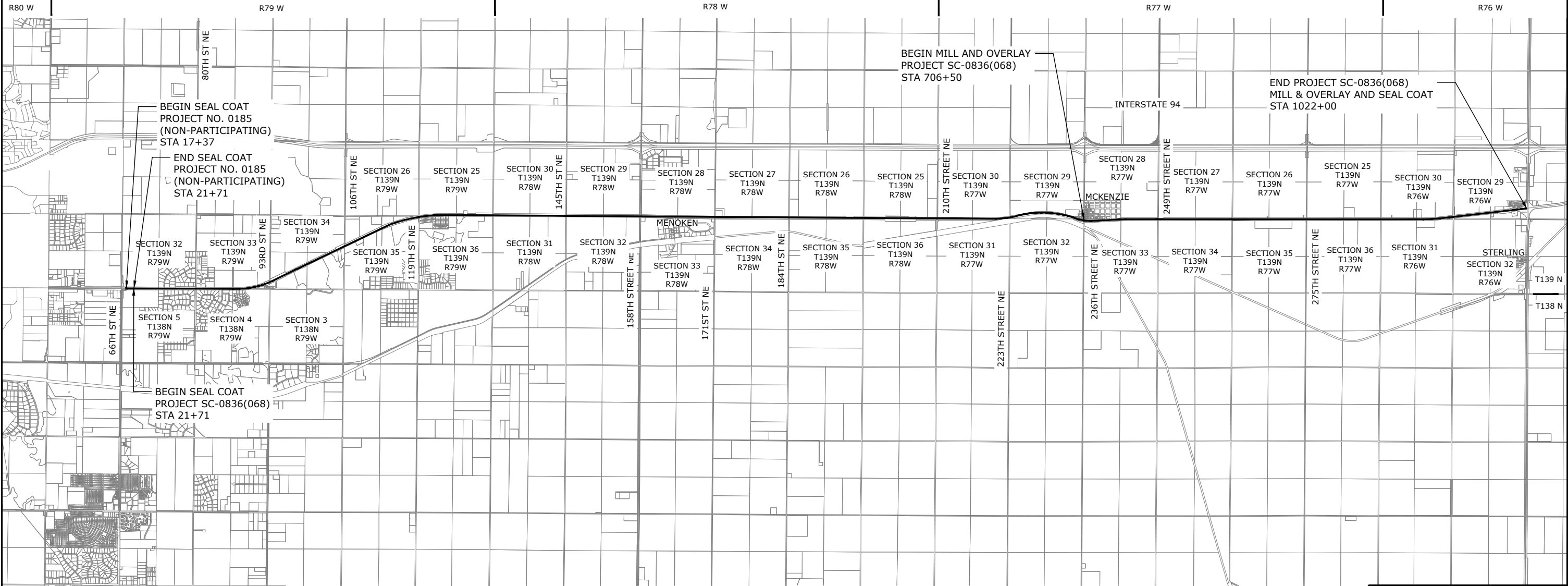
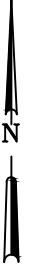
LIST OF STANDARD DRAWINGS

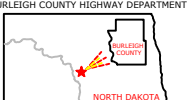
STANDARD NO.	DESCRIPTION
D-704-02	TRAFFIC CONTROL FOR CORING OF HOT BITUMINOUS PAVEMENT
D-704-03	LANE MARKERS (SPOTTING TAB FOR SEAL PROJECTS ONLY)
D-704-07	BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS - PERFORATED TUBE
D-704-08	BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS - U-CHANNEL POST
D-704-09	CONSTRUCTION SIGN DETAILS - TERMINAL AND GUIDE SIGNS
D-704-10	CONSTRUCTION SIGN DETAILS - REGULATORY SIGNS
D-704-11, 11A	CONSTRUCTION SIGN DETAILS - WARNING SIGNS
D-704-13	BARRICADE AND CHANNELIZING DEVICE DETAILS
D-704-14	CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS
D-704-15	ROAD CLOSURE LAYOUTS
D-704-17	SIGN LAYOUT FOR ONE LANE CLOSURE TWO LANE ROADWAY
D-704-20	TERMINAL AND SEAL COAT SIGN LAYOUTS
D-704-22	CONSTRUCTION TRUCK AND TEMPORARY DETOUR LAYOUTS
D-704-26	MISCELLANEOUS SIGN LAYOUTS
D-704-27	MOBILE OPERATION (PAVEMENT MARKING)
D-704-33	TWO-LANE ROADWAY PORTABLE RUMBLE STRIPS
D-704-50	PORTABLE SIGN SUPPORT ASSEMBLY
D-762-01	PAVEMENT MARKING MESSAGE DETAILS
D-762-04	PAVEMENT MARKING
D-762-11	SHORT-TERM PAVEMENT MARKING

SPECIAL PROVISIONS

NUMBER	DESCRIPTION
SP 189(24)	INTELLIGENT COMPACTION FOR HMA
SSP 3	LOCAL AGENCY CONTRACTS
SSP 4	LONGITUDINAL JOINT DENSITY

STATE	PROJECT NO.	SEC. NO.	SHEET NO.
ND	SC-0836(068)	4	1



				GOVERNING SPECIFICATIONS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED BY THE NORTH DAKOTA DEPARTMENT OF TRANSPORTATION JULY 2024; STANDARD DRAWINGS CURRENTLY IN EFFECT; AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.				BURLEIGH COUNTY	DRAWN BY TJ	DATE 8/7/2024	HIGHWAY 10 ROADWAY IMPROVEMENTS BURLEIGH COUNTY HIGHWAY DEPARTMENT 8100 43RD AVE NE, BISMARCK, ND 58503		SCOPE OF WORK PROJECT NO. 185		SECTION NO. 4	SHEET NO. 1
NO.	REVISION	DATE	BY					P: 701.204.7748 F: 701.204.7749	CHECKED BY CE	SCALE AS SHOWN						

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SC-0836(068)	6	1

NOTES

- 100-P01 PAVEMENT PROTECTION:** Exercise care in construction operations to ensure that no damage is done to the existing facilities that remain in place. Costs to repair damage will be at the Contractors expense.
- 105-110 PAVEMENT SWEEPING:** Sweep paved areas that were used by construction traffic before opening these areas to public traffic. Sweep all newly constructed pavement no more than 24 hours before a scheduled final inspection. Use a vacuum or pickup type sweeper to perform this work.
- 108-100 WEEKLY PLANNING & REPORTING MEETING:** A weekly planning and reporting meeting is required.
- 401-P01 TACK COAT:** Place tack coat on vertical edges of asphalt prior to placement of asphalt paving. Include these costs in the price bid for "TACK COAT." 118 Gallons has been calculated for this and included in the quantity.
- 401-P02 FOG SEAL:** Apply the Fog Seal with the following requirements:
1. Apply the Fog Seal after the final sweeping of the Chip Seal.
 2. Apply the Fog Seal at a dilution rate of 50% water and 50% CSS-1H.
- 411-P01 TEMPORARY ASPHALT WEDGES:** Place temporary asphalt wedges at the beginning and ends of this project, ends of milled sections, intersecting driveways, and intersecting routes to allow smooth passage of vehicles at these milled locations. Place wedges at these milled areas prior to the traffic being allowed back on the milled roadway section. Millings may be used instead of asphalt for all wedges. Include all costs associated with labor, materials, and equipment for the installation, maintenance and removal of the wedges in the contract price bid for "MILLING PAVEMENT SURFACE."
- 411-P02 MILLING PAVEMENT SURFACE:** Haul asphalt millings to the Burleigh County Sterling Shop located at 29535 County Road 10, Sterling, ND 58572. Include these costs in the price bid for "MILLING PAVEMENT SURFACE".
- 430-P01 CONTRACTOR CORING:** Before placing bituminous material into core holes, apply a tack coat on all sides of the core holes as specified in Section 401.
- 430-P02 PATCHING:** Includes the removal, loading, hauling, and stockpiling of the existing bituminous material at patch locations to the Burleigh County Highway Department located at 8100 43rd Avenue NE, Bismarck, ND 58503. Include these costs in the price bid for "PATCHING".
- 704-100 TRAFFIC CONTROL SUPERVISOR:** Provide a Traffic Control Supervisor.
- 704-500 PORTABLE RUMBLE STRIPS (PRS):** Use PRS made of rubber or engineered polymers. Install PRS as part of the temporary traffic control when the following signs are also part of the required traffic control set up:

- "Be Prepared to Stop" (W3-4)
- "Flagger" symbol (W20-7)

Install PRS that meet the following criteria:

- Have no adhesives or fasteners required for placement;
- Have a manufacture's speed rating that meets or exceeds the posted speed limit; and
- Each strip in the array must weigh a minimum of 100 pounds.

Use individual PRS constructed in one of the following manners:

- A single piece;
- Interlocking segments; or
- Two pieces hinged at the midpoint.

An installed array of PRS consists of a minimum of 3 individual strips. Move rumble strips with the flagging operation. Do not place rumble strips on horizontal curves. The Engineer will count and measure each array as one unit. Include the cost of providing, installing, maintaining, and relocating PRS in the unit price bid for "PORTABLE RUMBLE STRIPS."

704-P01 TRAFFIC CONTROL PHASING: Complete the construction for County Highway 10 Mill and Overlay and Seal Coat as detailed in the following phases.

Phase 1:

Construct mill and overlay for County Highway 10 from Station 706+50 to Station 1022+00. Use Sheet 100-2 for layout of traffic control.

Phase 2:

Construct seal coat for County Highway 10 from Station 17+37 to Station 1022+00. Use Sheet 100-3 for layout of seal coat traffic control.

704-P02 TRAFFIC CONTROL FOR MILLING & HMA: Provide traffic control consisting of a temporary lane closure, flagging, and a pilot car.

Traffic control device quantities are based on a 6-mile limitation and the list below. Provide additional devices at no additional cost.

1. Standard D-704-15; Layout A
2. Standard D-704-20; Layout G (See Section 100 Sheet 2 for project layout)
3. Standard D-704-22; Layouts K & L
4. Standard D-704-26; Layouts Type EE and Type GG
5. Standard D-704-33

Place flaggers and traffic control as shown on Standard D-704-15, layout A at all intersections as needed.



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SC-0836(068)	6	2

NOTES

Quantities are based on the Standard Drawings listed above. The required traffic control signs and devices are included in the "Traffic Control Devices List" and will be measured and paid at the Contract Unit price for each device.

704-P03 TRAFFIC CONTROL FOR SEAL COATS: Provide traffic control consisting of a temporary lane closure, flagging, and a pilot car.

Traffic control device quantities are based on a 6-mile limitation and the list below. Provide additional devices at no additional cost.

- 1. Standard D-704-20; Layouts G, and H. See Sheet 100-3 for locations.
- 2. Standard D-704-22; Layouts K & L
- 3. Standard D-704-33

Place flaggers and traffic control as shown on Standard D-704-15, layout A at all intersections as needed.

Quantities are based on the Standard Drawings listed above. The required traffic control signs and devices are included in the "Traffic Control Devices List" and will be measured and paid at the Contract Unit price for each device.

704-P04 TRAFFIC CONTROL FOR SEAL COAT: Install a 45 mph Speed Limit during and after the chip seal application. Re-establish the speed limit to pre-construction condition after the fog seal.

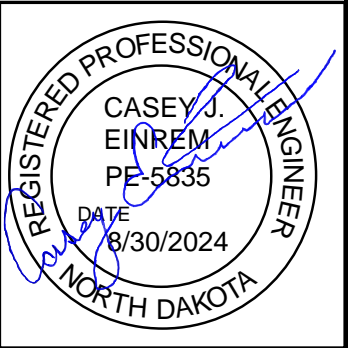
762-050 PAVEMENT MARKING: If the Engineer and Contractor agree, plan quantity will be used as the measurement for pavement marking items.



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SC-0836(068)	6	3

ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES (EN): No additional permits or environmental commitments have been identified beyond what is required by the NDDOT's Standard Specifications for Road and Bridge Construction.



PROJECT SC-0836(068), PCN 24165						
BURLEIGH COUNTY PROJECT #0185						
TOTAL ESTIMATED QUANTITIES						
SPEC	CODE	DESCRIPTION	UNIT	PROJECT NO. 0185 (NON-PARTICIPATING)	SC-0836(068)	TOTAL ESTIMATED QUANTITY
103	0100	CONTRACT BOND	L SUM	0.004	0.996	1
401	0050	TACK COAT	GAL	0	8,868	8,868
411	0105	MILLING PAVEMENT SURFACE	SY	0	87,514	87,514
420	0405	SEAL COAT	SY	1,808	420,949	422,757
430	0045	SUPERPAVE FAA 45	TON	0	19,448	19,448
430	0400	HMA INTELLIGENT COMPACTION	L SUM	0	1	1
430	1000	CORED SAMPLE	EA	0	202	202
430	2000	PATCHING	TON	0	148	148
430	5818	PG 58H-34 ASPHALT CEMENT	TON	0	1,166	1,166
702	0100	MOBILIZATION	L SUM	0.004	0.996	1
704	0100	FLAGGING	MHR	2	558	560
704	1000	TRAFFIC CONTROL SIGNS	UNIT	20	5,568	5,588
704	1048	PORTABLE RUMBLE STRIPS	EA	0	4	4
704	1060	DELINEATOR DRUMS	EA	0	50	50
704	1067	TUBULAR MARKERS	EA	10	140	150
704	1080	STACKABLE VERTICAL PANELS	EA	5	95	100
704	1185	PILOT CAR	HR	2	278	280
762	0103	PVMT MK PAINTED-MESSAGE	SF	0	182	182
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	109	19,721	19,830
762	0434	SHORT TERM 8IN LINE-TYPE NR	LF	0	1,773	1,773
762	1104	PVMT MK PAINTED 4IN LINE	LF	977	259,523	260,500
762	1108	PVMT MK PAINTED 8IN LINE	LF	0	1,773	1,773

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BASIS OF ESTIMATE

STATE	PROJECT NO.	SEC. NO.	SHEET NO.
ND	SC-0836(068)	10	1

MAINLINE				
STA 706+50 TO STA 1022+00				
MATERIAL	UNIT	WIDTH (FT)	QUANTITY PER MILE	TOTAL QUANTITY
MAINLINE TACK COAT @ 0.05 GAL/SY (2 LIFTS)	GAL	24	1,408.0	8,419
TACK COAT (SIDES OF EXISTING ASPHALT) @0.05 GAL/SY	GAL	0.33 FT (DEPTH)	19.6	118
TACK COAT @ 0.05 GAL/SY (2 LIFTS) FOR MENARDS TURN LANES	GAL			331
MAINLINE MILLING PAVEMENT SURFACE @ 4IN DEPTH	SY	24	14,080.0	84,198
MILLING PAVEMENT SURFACE @ 4IN DEPTH FOR MENARDS TURN LANES	SY			3,316
MAINLINE SUPERPAVE FAA 45 @ 2 TON/CY	TON	24	3,128.9	18,711
SUPERPAVE FAA 45 @ 2 TON/CY FOR MENARDS TURN LANES	TON			737
MAINLINE PG 58H-34 ASPHALT CEMENT @ 6%	TON	24	187.7	1122
PG 58H-34 ASPHALT CEMENT @ 6% FOR MENARDS TURN LANES	TON			44.2

HBP CORED SAMPLES							
	A	B	C	D			
SPECIFICATION SECTION	DISTANCE (FT) / 2000	LANES	LIFTS	SUBLOTS (A x B x C)	QUANTITY PAID (D x2)	QUANTITY (1 PER MILE)	UNIT
430.04 I.2.b(1), "General"	16	2	2	64	128	NA	EA
LONGITUDINAL JOINT DENSITY	16	NA	2	32	64	NA	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"					NA	10	EA
Total					192	10	EA
Project Total					202		EA

TEMPORARY PAVEMENT MARKING STA 706+50 TO STA 1022+00

SHORT TERM 4IN LINE TYPE NR		
LOCATION	BASIS	QUANTITY
CENTERLINE (YELLOW)	CENTERLINE SKIP: 1,320 LF/MILE BARRIER STRIPE: 12,850 LF	19,830 LF

PERMANENT PAVEMENT MARKING

PERMANENT PAVEMENT MARKING		
LOCATION-TYPE	BASIS	QUANTITY
CENTERLINE- PVMT MK PAINTED 4IN LINE (YELLOW)	CENTERLINE SKIP: 1,320 LF/MILE BARRIER STRIPE: 36,175 LF	59,674 LF
TURN LANE LINE-PVMT MK PAINTED 8IN LINE (WHITE)	STA 92+63 TO 97+28 STA 406+21 TO STA 412+30 STA 728+70 TO 753+70	1,773 LF
EDGE LINE-PVMT MK PAINTED 4IN LINE (WHITE)	10,560 LF/MILE	200,826 LF
RIGHT TURN ARROW-LEFT TURN & STRAIGHT-PVMT MK PAINTED MESSAGE	STA 92+63 TO 97+28 STA 406+21 TO STA 412+30 STA 728+70 TO 753+70	182 SF

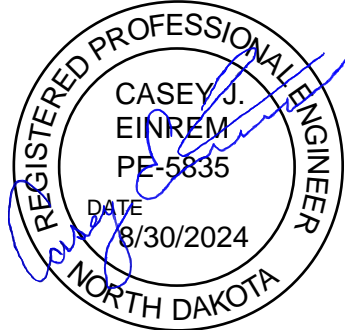
FULL DEPTH ASPHALT PATCH REPAIRS


LOCATION	MATERIAL	AREA (SY)	THICKNESS (IN)	VOLUME (CY)	RATE (TON/CY)	TONNAGE
COUNTY HIGHWAY 10 DRIVING LANE	SUPERPAVE FAA 45	886	3	74	2	148
	REMOVAL OF BITUMINOUS SURFACING		3	74	-	-

*PATCHING QUANTITY BASED 1.0% OF MAINLINE ROADWAY. LOCATIONS TO BE DETERMINED IN THE FIELD

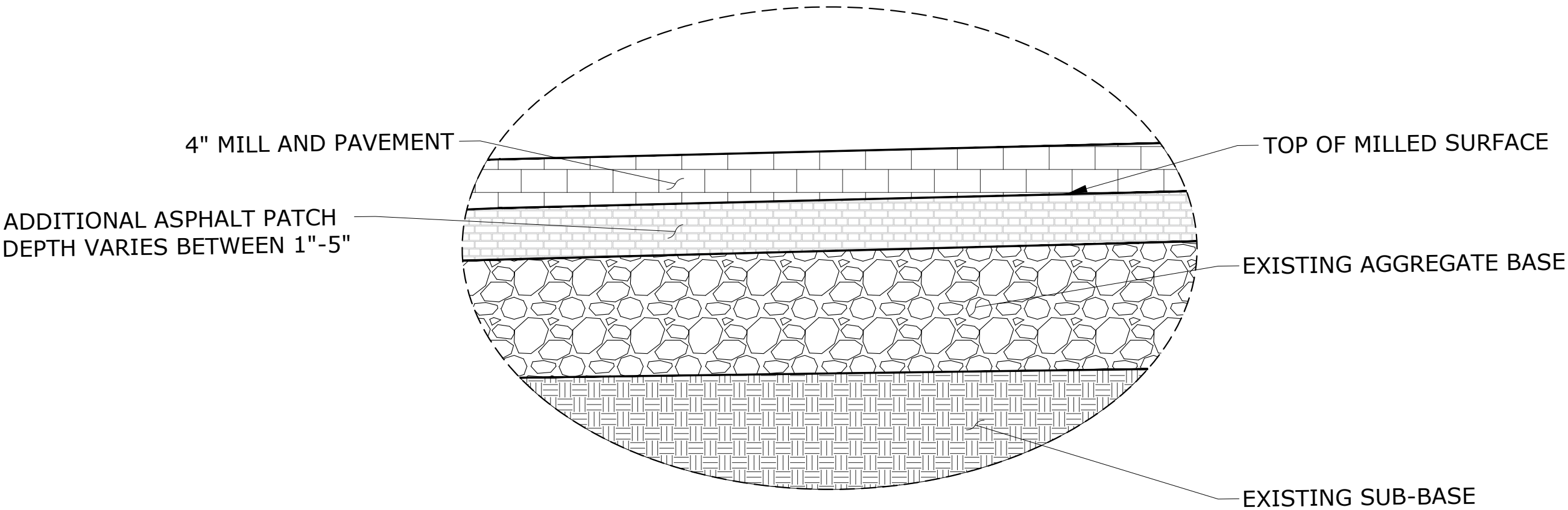
**ASSUME AN AVERAGE OF 3.0" PATCH DEPTH (SEE SECTION 20 SHEET 1)

BASIS OF ESTIMATE - SEAL COAT				
LOCATION	APPLICATION RATE	LENGTH (FT)	AVERAGE WIDTH (FT)	TOTAL AREA (SY)
COUNTY HIGHWAY 10 MAINLINE: STA 17+37 TO STA 548+00				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY	53,063	37.5	221,096
COUNTY HIGHWAY 10 MAINLINE: STA 548+00 TO STA 706+50				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY	15,850	36.5	64,281
COUNTY HIGHWAY 10 MAINLINE: STA 706+50 TO STA 1022+00				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY	31,550	37.5	131,458
APPLE CREEK GOLF COURSE TURN LANE: STA 93+75 TO STA 97+00				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY			619
MENOKEN SCHOOL TURN LANE: STA 406+50 TO STA 411+50				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY			804
MENARDS NORTH BYPASS LANE: STA 737+50 TO STA 749+00				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY			2,053
MENARDS RIGHT TURN LANE: STA 733+75 TO STA 749+00				
CRS2P CL 41 Fog Seal	0.38-0.43 Gal/SY 20-25 lb/SY 0.12 Gal/SY			2,446
PROJECT TOTAL				422,757



				GOVERNING SPECIFICATIONS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED BY THE NORTH DAKOTA DEPARTMENT OF TRANSPORTATION JULY 2024; STANDARD DRAWINGS CURRENTLY IN EFFECT; AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.		BURLEIGH COUNTY	DRAWN BY TJ	DATE 8/8/2024	HIGHWAY 10 ROADWAY IMPROVEMENTS BURLEIGH COUNTY HIGHWAY DEPARTMENT 8100 43RD AVE NE, BISMARCK, ND 58503	BASIS OF ESTIMATE PROJECT NO. 0185	SECTION NO.	SHEET NO.
						P: 701.204.7748 F: 701.204.7749	CHECKED BY CE	SCALE NONE			10	1
NO.	REVISION	DATE	BY									


STATE	PROJECT NO.	SEC. NO.	SHEET NO.
ND	SC-0836(068)	20	1



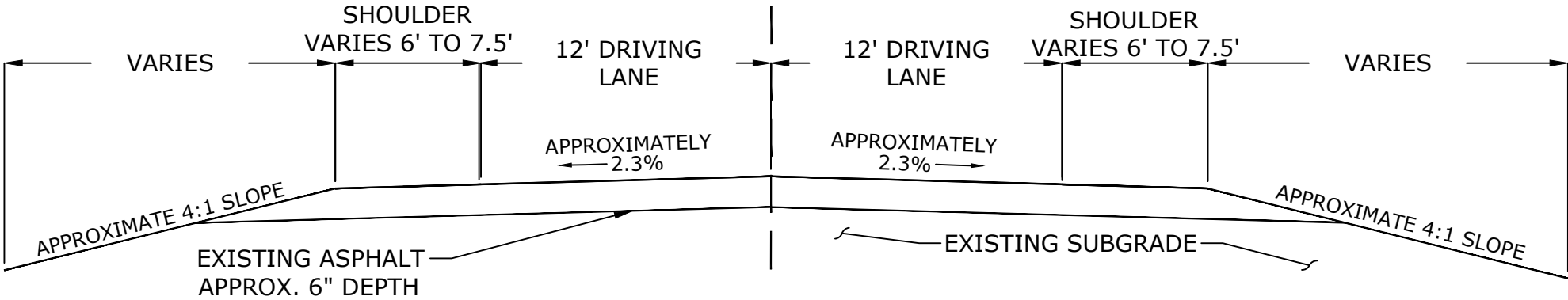
FULL DEPTH ASPHALT PATCH DETAIL
NO SCALE



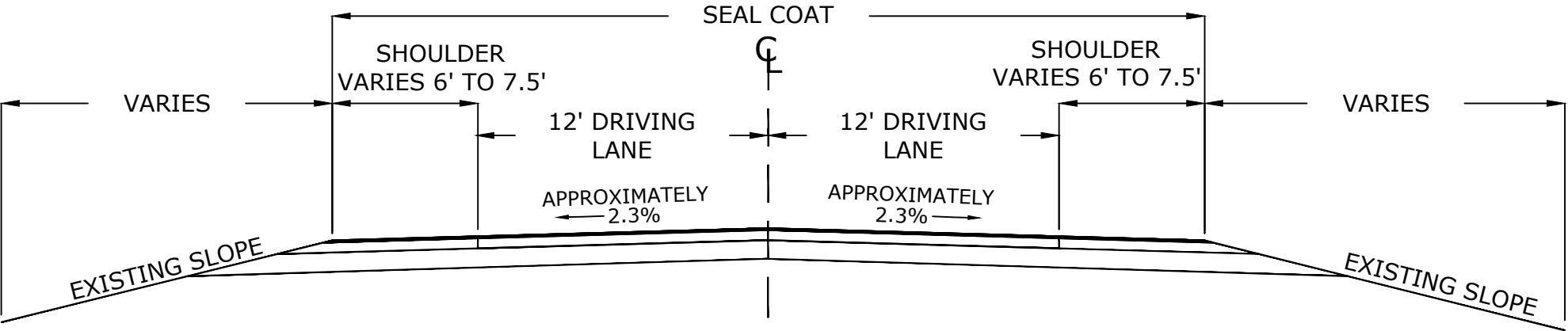
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				<div>GOVERNING SPECIFICATIONS</div> <div>STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION</div> <div>ADOPTED BY THE NORTH DAKOTA DEPARTMENT OF TRANSPORTATION</div> <div>JULY 2024; STANDARD DRAWINGS CURRENTLY IN EFFECT;</div> <div>AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.</div>	<div>BURLEIGH COUNTY HIGHWAY DEPARTMENT</div> <div></div> <div>NORTH DAKOTA</div>	BURLEIGH COUNTY		DRAWN BY	DATE	HIGHWAY 10 ROADWAY IMPROVEMENTS	GENERAL DETAILS	SECTION NO.	SHEET NO.					
															BURLEIGH COUNTY HIGHWAY DEPARTMENT	PROJECT NO. 0185	20	1
NO.	REVISION	DATE	BY					P: 701.204.7748 F: 701.204.7749	CHECKED BY					SCALE				
							TJ	8/8/2024										
							CE	NONE										

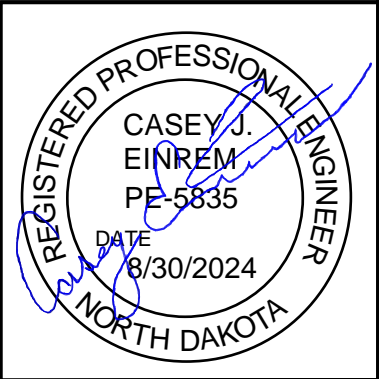
STATE	PROJECT NO.	SEC. NO.	SHEET NO.
ND	SC-0836(068)	30	1



EXISTING TYPICAL SECTION HIGHWAY 10
NOT TO SCALE



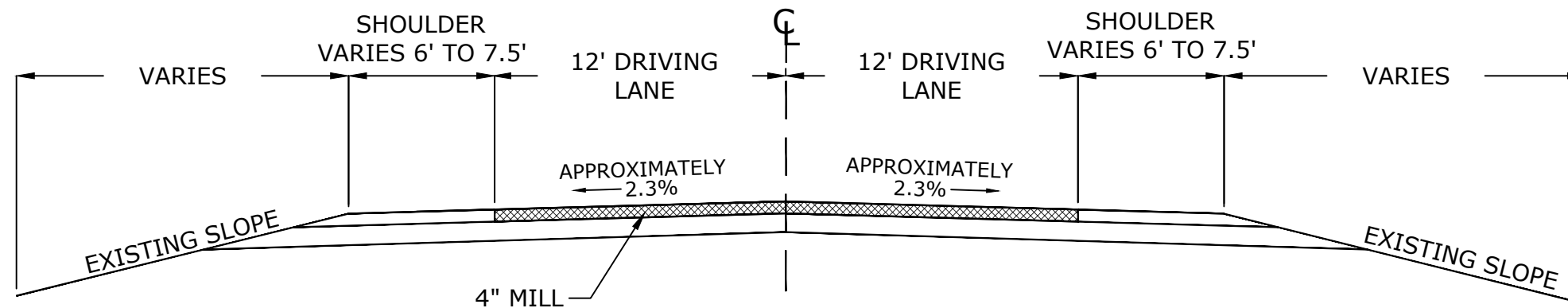
TYPICAL SECTION FOR SEAL COAT HIGHWAY 10 STA 17+37 TO 1022+00
NOT TO SCALE
*COMPLETE SEAL COAT FROM 706+50 TO 1022+00 AFTER COMPLETION OF MILL AND OVERLAY



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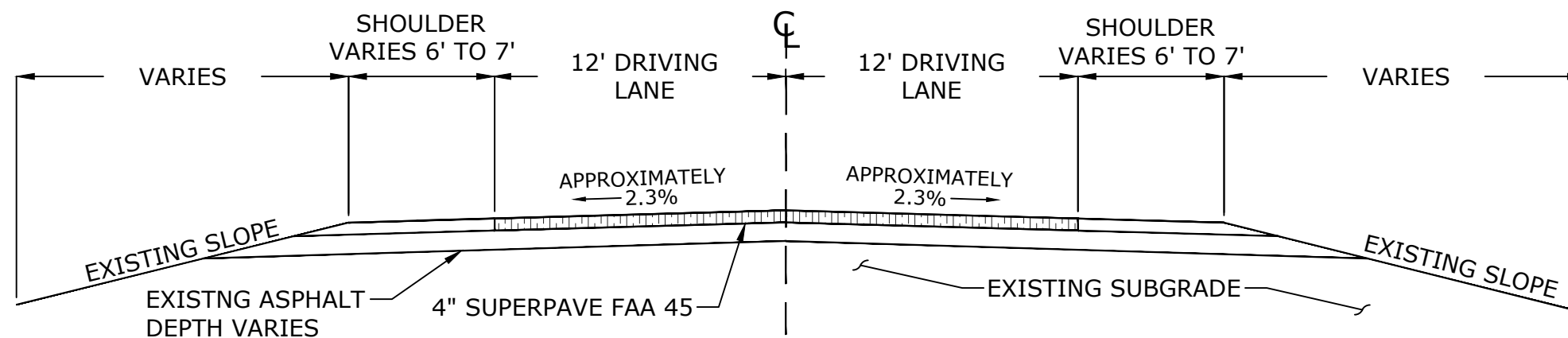
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STATE	PROJECT NO.	SEC. NO.	SHEET NO.
ND	SC-0836(068)	30	2



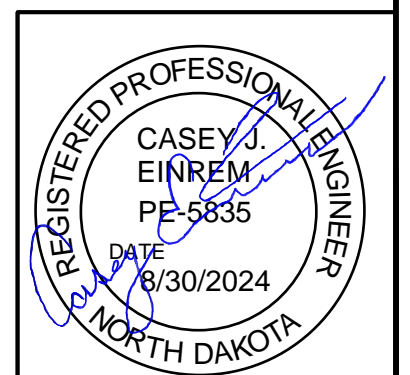
REMOVAL TYPICAL SECTION FOR MILL AND OVERLAY HIGHWAY 10 STA 706+50 TO 1022+00

NOT TO SCALE



PROPOSED TYPICAL SECTION FOR MILL AND OVERLAY HIGHWAY 10 STA 706+50 TO 1022+00

NOT TO SCALE

[illegible]

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SC-0836(068)	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
E5-1-48	48"x48"	EXIT GORE				35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES	2	2	2	28	56
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)				18	
G20-2-48	48"x24"	END ROAD WORK	2	2	2	26	52
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)	2		2	18	36
G20-4b-36	36"x30"	WAIT FOR PILOT CAR				18	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS	8	27	27	43	1161
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW				36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	2	2	2	59	118
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)				11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)				10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)				10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)				7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)				7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)				7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)				7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)				7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT				15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)				7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)				7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)				9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)				7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)				9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)				7	
R1-1-48	48"x48"	STOP				32	
R1-2-60	60"x60"	YIELD				29	
R2-1-36	36"x48"	SPEED LIMIT __ (Portable only)	6		6	30	180
R2-1-48	48"x60"	SPEED LIMIT __		12	12	39	468
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	6	12	12	10	120
R3-2-48	48"x48"	NO LEFT TURN				35	
R4-1-48	48"x60"	DO NOT PASS		12	12	39	468
R4-7-48	48"x60"	KEEP RIGHT				39	
R5-1-48	48"x48"	DO NOT ENTER				35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)				14	
R7-1-12	12"x18"	NO PARKING ANY TIME				11	
R10-6-24	24"x36"	STOP HERE ON RED				16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)				12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)				12	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)				15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)				15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)				15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT				35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT				35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT				35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW				26	
W3-1-48	48"x48"	STOP AHEAD				35	
W3-3-48	48"x48"	SIGNAL AHEAD				35	
W3-4-48	48"x48"	BE PREPARED TO STOP	6		6	35	210
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	6	2	6	35	210
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT				35	
W5-1-48	48"x48"	ROAD NARROWS				35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE				35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW				35	
W6-3-48	48"x48"	TWO WAY TRAFFIC				35	
W8-1-48	48"x48"	BUMP	8		8	35	280
W8-3-48	48"x48"	PAVEMENT ENDS				35	
W8-7-48	48"x48"	LOOSE GRAVEL				35	
W8-11-48	48"x48"	UNEVEN LANES	8		8	35	280
W8-12-48	48"x48"	NO CENTER LINE		12	12	35	420
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL				35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY				35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or __ MILE	4		4	35	140
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or __ MILE	4		4	35	140
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY				35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL				35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)				14	
W14-3-64	64"x48"	NO PASSING ZONE				28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)				10	
W20-1-48	48"x48"	ROAD WORK AHEAD or __ FT or __ MILE	6	11	11	35	385
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or __ MILE				35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or __ MILE				35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT or __ MILE				35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or __ MILE				35	
W20-7-48	48"x48"	FLAGGER	4		4	35	140
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	4		4	5	20
W20-52P-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)		12	12	12	144
W21-1-48	48"x48"	WORKERS				35	
W21-2-48	48"x48"	FRESH OIL				35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or __ MILE				35	
W21-5-48	48"x48"	SHOULDER WORK				35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED				35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or __ MILE				35	

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SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	5588

[illegible]

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List

