

DESIGN DATA			
Traffic	Average Daily		
Current	Pass:	Trucks:	Total:
Preventative Maintenance			

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	PM-3-999(033)	20575	1	1

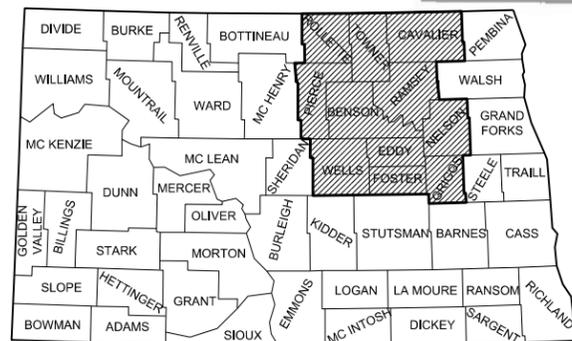
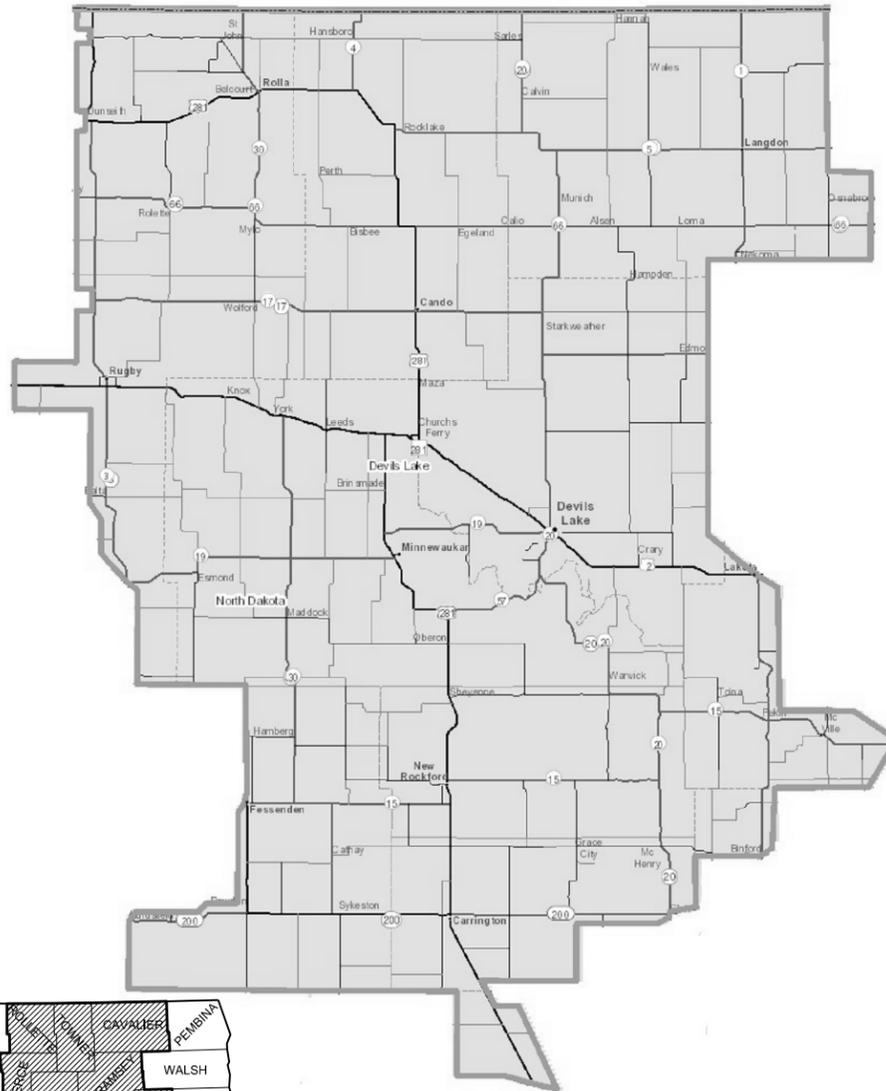
JOB # 10
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PM-3-999(033)
 FHWA Non Involvement
 Devils Lake District
 District Wide Striping

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota Department of Transportation October 2008; Standard Drawings currently in effect; and other Contract Provisions submitted herein.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
PM-3-999(033)	896.791	896.791



STATE COUNTY MAP

DESIGNERS
Steeg Nelson

APPROVED DATE 11/27/13

 Greg Semenکو
 Devils Lake District
 ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.
 APPROVED DATE 11/27/13

 Wyatt Hanson
 Devils Lake District

This document was originally issued and sealed by
 Wyatt Hanson
 Registration Number
 PE- 6867 ,
 on 11/27/13 and the original document is stored at the
 North Dakota Department
 of Transportation

TABLE OF CONTENTS

<u>Section No.</u>	<u>Sheet No.</u>	<u>Description</u>
1	1	Title Sheet
2	1	Table of Contents
6	1	Notes
8	1	Quantities
120	1-2	Pavement Marking Installation
120	3-4	Pavement Marking Message
120	5	Turtle Mountain Reservation

LIST OF STANDARD DRAWINGS

<u>Standard No.</u>	<u>Description</u>
D-20-1, 2, 3	NDDOT Abbreviations
D-20-10	NDDOT Utility Company Abbreviations
D-20-20, 21	Line styles
D-20-30, 31, 32	Symbols
D-704-9, 10, 11	Construction Sign Details
D-704-13	Barricade and Channelizing Device Details
D-704-14	Construction Sign Punching and Mounting Details
D-704-27	Traffic Control Plan Moving Operations
D-762-1	Pavement Marking Message Details
D-762-3	Pavement Marking Standard 90° Flared Intersection
D-762-4	Pavement Marking

LIST OF SPECIAL PROVISIONS

<u>SP #</u>	<u>Description</u>
SP 559(08)	Permanent Pavement Marking Monitoring System
SP 1323(08)	Tribal Employment Rights Ordinance- Turtle Mountain

NOTES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	PM-3-999(033)	6	1

- 100-P01 COORDINATION: Prior to initiating any pavement marking within the district, the contractor shall coordinate directly with the District Engineer or Assistant District Engineer to assure that segments of highways are cleared for work. Segments may be removed or added pending additional projects being bid, or not being bid.

- 762-P01 ESTIMATED QUANTITIES: The total pavement marking quantity shown in the estimated quantities is rounded to the nearest whole mile for bidding purposes.

- 762-P02 PAINT AND BEADS: Pavement marking installation shall include paint and beads. Paint and beads shall conform to Sections 880.01 and 880.02 of the NDDOT Standard Specifications. All paint shall be Type F, Fast drying paint or Water-based traffic marking paint.

- 762-P03 MATERIAL ACCEPTANCE: Preapproval of pavement marking paint is required and will be sampled, tested, and accepted according to Section 880.01 of the NDDOT Standard Specifications.

- 762-P04 PAVEMENT MARKING INSTALLATION: This item will be paid for by the mile of 4IN painted line, complete, in place, and accepted. The pay item, "PVMT MK INSTALLATION" will not be field measured but will be paid for by the miles shown in these plans, unless otherwise noted by changes in the field.

"PVMT MK PAINTED-MESSAGE, PVMT MK PAINTED 8IN LINE, and PVMT MK PAINTED 24IN LINE", will be measured in the field.

- 762-P05 PAVEMENT MARKING EDGE LINES: Edge lines shall be continued through private drives and broken for intersections. All edge lines shall be 4 inches in width. At major intersections the quantities include painting around the radius on each side and providing for turning lanes.

- 762-P06 CROSSWALKS: There are crosswalks in Cando, Rolla, and Rugby. Crosswalks are continental design, and will follow the standard drawing D-762-01. Crosswalks will be paid for by the bid price for "PVMT MK PAINTED 24IN LINE".

- 762-P07 CROSSWALK IN ROLLA: At the intersection of Hwy 281 and Front Street is a crosswalk that will not be re-painted. The crosswalk is on the west side of the intersection.

- 762-P08 RR CROSSING MESSAGE: The railroad crossing, at RP 159.654, on Hwy 20 needs messaging as shown in standard drawing D-762-1.

This document was originally issued and sealed by Darin Lindblom, Registration Number PE-8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation.

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	PM-3-999(033)	8	1

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	-----	-----	-----
103	0100 CONTRACT BOND	L SUM	1	1
702	0100 MOBILIZATION	L SUM	1	1
762	0103 PVMT MK PAINTED-MESSAGE	SF	12,440	12,440
762	0107 PVMT MK INSTALLATION	MILE	2,199	2,199
762	1108 PVMT MK PAINTED 8IN LINE	LF	52,021	52,021
762	1124 PVMT MK PAINTED 24IN LINE	LF	4,410	4,410

PAVEMENT MARKING DEVILS LAKE DISTRICT										
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			INSTALLATION (MILES)				PAINTED LINE (LF)	
		FROM	TO	TOTAL	EDGE	SKIP	BARRIER	TOTAL	8"	24"
ND 1	Jct ND 65 to Griggs County Line	128.493	136.778	8.285	16.570	1.892	5.892	24.354		
ND 1	Griggs County Line/Jct 15 & 1 Pekin	136.778	145.217	8.439	16.878	1.850	5.106	23.834		
ND 1	Jct 15 & 1 @ Pekin to Jct Hwy 1 & 2	145.217	162.802	17.585	35.170	4.396	1.335	40.901		24
ND 1	Nekoma to Jct 5 Langdon	200.526	213.926	13.400	27.400	3.164	3.141	33.705	158	24
US 2 EB	Berwick to West of Rugby	199.902	209.646	9.744	19.488	2.436		21.924	1736	
US 2 EB	West of Rugby to East of Rugby	209.646	212.634	2.988	5.976	0.747	3.108	9.831	7228	
US 2 EB	East Rugby to 2 Miles W of Leeds	212.634	236.673	24.039	48.078	6.010		54.088		
US 2 EB	W of Leeds to W Churchs Ferry	236.673	248.758	12.085	24.170	3.021		27.191		
US 2 EB	West of Churchs Ferry to E. Churchs Ferry	248.758	252.164	3.406	6.812	0.851		7.663	2519	
US 2 EB	E Churchs Ferry to W of Channal A	252.164	261.761	9.597	19.194	2.399		21.593	296	
US 2 EB	W. of Channel A to E. of Channel A	261.761	263.095	1.334	2.668	0.334		3.002		
US 2 EB	E of Channal A to W of Devils Lake	263.095	267.150	4.055	8.110	1.014		9.124	1806	
US 2 EB	West of Devils Lake to Devils Lake	267.150	268.532	1.382	2.764	0.346		3.110	655	
US 2 EB	East Of Devils Lake	270.534	272.292	1.758	3.516			3.516	1552	
US 2 EB	E of Devils Lake to 2 Mi E of Cray	272.292	283.829	11.537	23.074	2.884		25.958	3020	
US 2 EB	2 Mi East of Cray to Lakota	283.829	295.468	11.639	23.278	2.910		26.188	2566	
US 2 WB	Berwick to W Rugby	199.902	209.646	9.744	19.488	2.436		21.924		
US 2 WB	Rugby to Knox	209.646	224.665	15.019	30.038	3.755	3.108	36.901	6537	
US 2 WB	Knox to Leeds	224.665	236.968	12.303	24.606	3.076		27.682	4409	
US 2 WB	East Jct 281 to Mauvais Coulee	248.812	252.121	3.309	6.618	0.827		7.445	2397	
US 2 WB	Mauvais Coulee to West of Devils Lake	252.121	268.593	16.472	32.944	4.118		37.062	2598	
US 2 WB	East Of Devils Lake	270.534	272.036	1.502	3.004			3.004	1536	
US 2 WB	2 Mi. East of Cray to Lakota	284.036	295.468	11.432	22.864	2.858		25.722	2231	
ND 3	Jct 19 North to Jct 2 @ Rugby	177.190	201.391	24.201	48.402	5.963	11.774	66.139	83	36
ND 3	Rugby	201.391	202.829	1.438	2.876	2.878	2.878	8.632	690	400
ND 3	North of Rugby to Jct 66	202.829	224.336	21.507	43.014	5.140	7.268	55.422	532	
ND 3	Jct 66 to Jct 281	224.336	233.548	9.212	18.424	2.275	0.242	20.941		37
ND 5	Jct 281@ Rock Lake to East Jct 20	236.105	256.966	20.861	41.722	5.215	2.783	49.720	510	29
ND 5	Langdon to 10 Mi East of Langdon	278.967	288.966	9.999	19.998	2.479	1.189	23.666		24
ND 15	Jct 15 & 52 @ Fessenden to W Jct 30	0	5.854	5.854	11.708	1.464	1.119	14.291		19
ND 15	E Jct 30 to S Jct 281 @ New Rockford	10.349	24.249	13.9	27.8	3.475	0.824	32.099		12
ND 15	New Rockford to S Jct 20	27.226	52.329	25.103	50.206	6.276	5.020	61.502	100	42
ND 15	McVile East to Jct 32	81.044	89.872	8.828	17.656	2.184	0.092	19.932		23
ND 17	Jct 3 to Jct 281	0.000	38.476	38.476	76.952	9.493	6.571	93.016		31
ND 17	Jct 281 to N. Jct 20	38.476	53.440	14.964	29.928	3.602	2.381	35.911		215
ND 19	Jct. 3 to Jct. 30	99.99	121.361	21.371	42.742	5.079	8.302	56.123		24
ND 19	Jct 30 to New S Jct 281	121.361	133.614	12.253	24.506	3.426	3.138	31.070	40	31
ND 19	N Jct 281 to Jct Hwy 2 (D. Lake)	135.129	155.036	19.907	39.814	4.793	5.553	50.160		24
ND 20	Jct 200 to N. McHenry	44.903	54.371	9.468	18.936	2.308	2.049	23.293		
ND 20	N McHenry to S. Reservation Line	54.371	68.668	14.297	28.594	3.295	6.974	38.863		
ND 20	North Edge of Devils Lake to South Jct 17	104.248	124.464	20.216	40.432	4.893	2.220	47.545		
ND 20	W Jct 5 to Canadian Line	156.034	170.550	14.516	29.032	3.504	3.797	36.333		13

This document was originally issued and sealed by Darin Lindblom Registration Number PE- 8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Installation Table One

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	PM-3-999(033)	120	2

PAVEMENT MARKING DEVILS LAKE DISTRICT										
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			INSTALLATION (MILES)				PAINTED LINE (LF)	
		FROM	TO	TOTAL	EDGE	SKIP	BARRIER	TOTAL	8"	24"
ND 30	Jct 52 to W. Jct 15	88.284	105.773	17.489	34.978	4.372	2.368	41.718		12
ND 30	W Jct 15 & 30 to Maddock North	105.773	128.573	22.800	45.600	5.127	11.500	62.227		12
ND 30	Maddock North to Jct 19	128.573	135.822	7.249	14.498	1.718	2.444	18.660		19
ND 30	Jct 19 to Hwy 2	135.822	153.084	17.262	34.524	4.157	7.107	45.788		
ND 30	Jct 66 to Jct 281	181.274	195.080	13.806	27.612	3.367	1.211	32.190	325	24
ND 30	Jct 281 to Canadian Line	195.080	205.475	10.395	20.790	2.451	1.755	24.996		24
US 52	Jct 15 To Jct 200	185.548	198.717	13.169	26.338	3.234	1.920	31.492		28
US 52	Jct 200 to Carrington	198.717	222.719	24.002	48.004	5.763	4.268	58.035	268	48
US 52	Carrington to Jct 9	223.736	232.410	8.674	17.348	2.169	0.785	20.302	171	
US 52	Jct. ND 9 to Jct ND 36 at Pingree	232.410	244.865	12.455	24.910	3.074	2.743	30.727		
ND 66	West of Bisbee to West 281	31.965	37.997	6.032	12.064	1.450	2.632	16.146	221	
ND 66	East Jct 281 to Jct 20	40.007	56.996	16.989	33.978	4.630	3.405	42.013		24
ND 66	Jct 20 to Jct 1	56.996	78.981	21.985	43.970	5.496	1.038	50.504		36
ND 66	Jct 1 to Milton	78.981	93.830	14.849	29.698	3.712	0.713	34.123		25
ND 200	E Jct 3 (Hurdfield) to W Jct US 52	254.202	268.577	14.375	28.750	3.564	3.974	36.288		
ND 200	E Jct Carrington to Jct ND 20 @ Glenfield	293.491	319.423	25.932	51.864	6.271	8.280	66.415	333	48
US 281	East Jct US 52 to North Jct ND 15	112.539	128.504	15.965	31.930	3.987	2.642	38.559	963	40
US 281	North Jct ND 15 to S Reservation Line	128.504	139.633	11.129	22.258	2.541	4.247	29.046	535	
US 281	N. Reservation Line to Jct 2	156.345	175.185	18.840	37.680	4.688	4.604	46.972	2930	
US 281	E. Jct. US 2 to Jct ND 17 @ Cando	175.185	190.219	15.034	30.068	3.252	2.363	35.683	470	27
US 281	Jct ND 17@ Cando to E Jct 66	190.219	200.226	10.007	20.014	2.339	1.751	24.104	269	80
US 281	E Jct 66 to W Jct 66	200.226	202.235	2.009	4.018	0.468	0.487	4.973	646	
US 281	Jct. ND 66 to Jct 5 @ Rock Lake	202.235	213.693	11.458	22.916	2.865	0.317	26.098		20
US 281	Jct ND 5 @ Rock Lake to East of Rolla	213.693	231.622	17.929	35.858	4.453	5.053	45.364		40
US 281	East of Rolla to East Reservation Line	231.622	234.422	2.800	5.600	0.458	0.254	6.312		2850
US 281	West Reservation Line to Dunseith	247.177	253.208	6.031	12.062	1.508	0.190	13.760	633	
US 281	Dunseith to Candian Line	253.208	267.190	13.982	27.964	3.413	6.183	37.560	774	33
US 281	Churchs Ferry Spur	900.000	900.947	0.947	1.894		1.894	3.788		12

PAVEMENT MARKING DEVILS LAKE DISTRICT										
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			INSTALLATION (MILES)				PAINTED LINE (LF)	
		FROM	TO	TOTAL	EDGE	SKIP	BARRIER	TOTAL	8"	24"
1 - 281	District Total Miles			891.019	1782.638	219.588	181.992	2184	51737	4410

This document was originally issued and sealed by Darin Lindblom Registration Number PE- 8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Installation Table Two

PAVEMENT MARKING								
DEVILS LAKE DISTRICT								
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			MESSAGE (SF)			
		FROM	TO	TOTAL	ONLY 22 EA	ARROW 16 EA	RAILROAD 137 EA	TOTAL
ND 1	Jct ND 65 to Griggs County Line	128.493	136.778	8.285				
ND 1	Griggs County Line/Jct 15 & 1 Pekin	136.778	145.217	8.439			2	274
ND 1	Jct 15 & 1 @ Pekin to Jct Hwy 1 & 2	145.217	162.802	17.585				
ND 1	Nekoma to Jct 5 Langdon	200.526	213.926	13.400	2	2	2	350
US 2 EB	Berwick to West of Rugby	199.902	209.646	9.744				
US 2 EB	West of Rugby to East of Rugby	209.646	212.634	2.988	30	30		1140
US 2 EB	East Ruby to 2 Miles W of Leeds	212.634	236.673	24.039				
US 2 EB	W of Leeds to W Churchs Ferry	236.673	248.758	12.085				
US 2 EB	West of Churchs Ferry to E. Churchs Ferry	248.758	252.164	3.406				
US 2 EB	E of Churchs Ferry to W of Channel A	252.164	261.761	9.597	2	2		76
US 2 EB	W. of Channel A to E. of Channel A	261.761	263.095	1.334				
US 2 EB	E of Channal A to W of Devils Lake	263.095	267.150	4.055	12	12		456
US 2 EB	West of Devils Lake to Devils Lake	267.150	268.532	1.382	8	8		304
US 2 EB	East of Devils Lake	270.534	272.292	1.758	13	13		494
US 2 EB	E of Devils Lake to 2 Mi E of Crary	272.292	283.829	11.537	15	15		570
US 2 EB	2 Mi. East of Crary to Lakota	283.829	295.468	11.639		2		32
US 2 WB	Berwick to West of Rugby	199.902	209.646	9.744				
US 2 WB	Rugby to Knox	209.646	224.665	15.019	40	40		1520
US 2 WB	Knox to Leeds	224.665	236.968	12.303	26	26		988
US 2 WB	East Jct 281 to Mauvais Coulee	248.812	252.121	3.309	6	6		228
US 2 WB	Mauvais Coulee to West of Devils Lake	252.121	268.593	16.472	12	11		440
US 2 WB	East of Devils Lake	270.534	272.036	1.502	14	14		532
US 2 WB	2 Mi. East of Crary to Lakota	284.036	295.468	11.432	5	5		190
ND 3	Jct 19 North to Jct 2 @ Rugby	177.190	201.391	24.201	4	3		136
ND 3	Rugby	201.391	202.829	1.438				
ND 3	Rugby to Jct 66	202.829	224.336	21.507	2	2		76
ND 3	Jct 66 to Jct 281	224.336	233.548	9.212				
ND 5	Jct 281@ Rock Lake to East Jct 20	236.105	256.966	20.861			2	274
ND 5	Langdon to 10 Mi East of Langdon	278.967	288.966	9.999				
ND 15	Jct 15 & 52 @ Fessenden to W Jct 30	0	5.854	5.854				
ND 15	E Jct 30 to S Jct 281 @ New Rockford	10.349	24.249	13.9				
ND 15	New Rockford to S Jct 20	27.226	52.329	25.103	2	2		76
ND 15	McVille East to Jct 32	81.044	89.872	8.828				
ND 17	Jct 3 to Jct 281	0.000	38.476	38.476				
ND 17	Jct 281 to N. Jct 20	38.476	53.440	14.964			2	274
ND 19	Jct. 3 to Jct. 30	99.99	121.361	21.371				
ND 19	Jct 30 to New S Jct 281	121.361	133.614	12.253				
ND 19	N Jct 281 to Jct Hwy 2 (D. Lake)	135.129	155.036	19.907				
ND 20	Jct 200 to N. Mchenry	44.903	54.371	9.468				
ND 20	N McHenry to N Jct 15 N	54.371	68.668	14.297				
ND 20	North Edge of Devils Lake to South Jct 17	104.248	124.464	20.216				
ND 20	W Jct 5 to Canadian Line	156.034	170.550	14.516			2	274

This document was originally issued and sealed by Darin Lindblom Registration Number PE- 8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Message Table Three

PAVEMENT MARKING								
DEVILS LAKE DISTRICT								
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			MESSAGE (SF)			
		FROM	TO	TOTAL	ONLY 22 EA	ARROW 16 EA	RAILROAD 137 EA	TOTAL
ND 30	Jct 52 to W. Jct 15	88.284	105.773	17.489			2	274
ND 30	W Jct 15 & 30 to Maddock North	105.773	128.573	22.800			2	274
ND 30	Maddock North to Jct 19	128.573	135.822	7.249			2	274
ND 30	Jct 19 to Hwy 2	135.822	153.084	17.262				
ND 30	Jct 66 to Jct 281	181.274	195.080	13.806				
ND 30	Jct 281 to Canadian Line	195.080	205.475	10.395				
US 52	Jct 15 To Jct 200	185.548	198.717	13.169				
US 52	Jct 200 to Carrington	198.717	222.719	24.002			2	274
US 52	Carrington to Jct 9	223.736	232.410	8.674				
US 52	Jct. ND 9 to Jct ND 36 at Pingree	232.410	244.865	12.455				
ND 66	West of Bisbee to West 281	31.965	37.997	6.032	1	1	2	312
ND 66	East Jct 281 to Jct 20	40.007	56.996	16.989				
ND 66	Jct 20 to Jct 1	56.996	78.981	21.985			2	274
ND 66	Jct 1 to Milton	78.981	93.830	14.849			2	274
ND 200	E Jct 3 (Hurdsfield) to W Jct US 52	254.202	268.577	14.375				
ND 200	E Jct Carrington to Jct ND 20 @ Glenfield	293.491	319.423	25.932				
US 281	East Jct US 52 to North Jct ND 15	112.539	128.504	15.965				
US 281	North Jct ND 15 to S Reservation Line	128.504	139.633	11.129				
US 281	N. Reservation Line to Jct 2	156.345	175.185	18.840	4	4		152
US 281	E. Jct. US 2 to Jct ND 17 @ Cando	175.185	190.219	15.034	1	1		38
US 281	Jct ND 17 @ Cando to E Jct 66	190.219	200.226	10.007	2	2	4	624
US 281	E Jct 66 to W Jct 66	200.226	202.235	2.009	4	4		152
US 281	Jct. ND 66 to Jct 5 @ Rock Lake	202.235	213.693	11.458				
US 281	Jct ND 5 @ Rock Lake to East of Rolla	213.693	231.622	17.929				
US 281	East of Rolla to East Reservation Line	231.622	234.422	2.800				
US 281	West Reservation Line to Dunseith	247.177	253.208	6.031	2	2		76
US 281	Dunseith to Candian Line	253.208	267.190	13.982				
US 281	Churchs Ferry Spur	900.000	900.947	0.947			4	548

PAVEMENT MARKING								
DEVILS LAKE DISTRICT								
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			MESSAGE (SF)			
		FROM	TO	TOTAL	ONLY 22 EA	ARROW 16 EA	RAILROAD 137 EA	TOTAL
1 - 281	District Total Miles			891.019	207	207	32	12250

This document was originally issued and sealed by Darin Lindblom Registration Number PE- 8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Message Table Four

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	PM-3-999(033)	120	5

PAVEMENT MARKING										
TURTLE LAKE RESERVATION										
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			INSTALLATION (MILES)				PAINTED LINE (LF)	
		FROM	TO	TOTAL	EDGE	SKIP	BARRIER	TOTAL	8"	24"
US 281	East Reservation Line to W Belcourt	234.422	237.179	2.757	5.514	0.689		6.203		
US 281	E Belcourt to West Reservation Line	244.162	247.177	3.015	6.030	0.721	0.876	7.626	284	
US 281	Turtle Mountain Total Miles			5.772	11.544	1.410	0.876	14	284	0

PAVEMENT MARKING										
TURTLE MOUNTAIN RESERVATION										
HWY	HIGHWAY DESCRIPTION	REFERENCE POINT (MILES)			MESSAGE (SF)					
		FROM	TO	TOTAL	ONLY 22 EA	ARROW 16 EA	RAILROAD 137 EA	TOTAL		
US 281	East Reservation Line to W Belcourt	234.422	237.179	2.757	2	2		76		
US 281	E Belcourt to West Reservation Line	244.162	247.177	3.015	3	3		114		
281	Turtle Mountain Total Miles			5.772	5	5	0	190		

This document was originally issued and sealed by Darin Lindblom Registration Number PE- 8780, on 11/27/13 and the original document is stored at the North Dakota Department of Transportation

Turtle Mountain Reservation Table Five

NDDOT ABBREVIATIONS

Abn	abandoned	Calc	calculate	Xsec	cross sections	Eq	equal
Abut	abutment	Cd	candela	Xing	crossing	Eq	equation
Ac	acres	CIP	cast iron pipe	Xrd	Crossroad	Evgr	evergreen
Adj	adjusted	CB	catch basin	Crn	crown	Exc	excavation
Aggr	aggregate	CRS	cationic rapid setting	CF	cubic feet	Exst	existing
Ahd	ahead	C Gd	cattle guard	M3	cubic meter	Exp	expansion
ARV	air release valve	C To C	center to center	M3/s	cubic meters per second	Expy	Expressway
Align	alignment	Cl or C	centerline	CY	cubic yard	E	external of curve
Al	alley	Cm	centimeter	Cy/mi	cubic yards per mile	Extru	extruded
Alt	alternate	Ch	chain	Culv	culvert	FOS	factor of safety
Alum	aluminum	Chnlk	chain-link	C&G	curb & gutter	F	Fahrenheit
ADA	Americans with Disabilities Act	Ch Blk	channel block	CI	curb inlet	FS	far side
A	ampere	Ch Ch	channel change	CR	curb ramp	F	farad
&	and	Chk	check	CS	curve to spiral	Fed	Federal
Appr	approach	Chsld	chiseled	C	cut	FP	feed point
Approx	approximate	Cir	circle	Dd Ld	dead load	Ft	feet/foot
ACP	asbestos cement pipe	Cl	class	Defl	deflection	Fn	fence
Asph	asphalt	Cl	clay	Defm	deformed	Fn P	fence post
AC	asphalt cement	Cl F	clay fill	Deg or D	degree	FO	fiber optic
Assmd	assumed	Cl Hvy	clay heavy	Dint	delineate	FB	field book
@	at	Cl Lm	clay loam	Dintr	delineator	FD	field drive
Atten	attenuation	Clnt	clean-out	Depr	depression	F	fill
ATR	automatic traffic recorder	Clr	clear	Desc	description	FAA	fine aggregate angularity
Ave	Avenue	Cl&gr	clearing & grubbing	Det	detail	FS	fine sand
Avg	average	Co S	coal slack	DWP	detectable warning panel	FH	fire hydrant
ADT	average daily traffic	Comb.	combination	Dtr	detour	FI	flange
Az	azimuth	Coml	commercial	Dia	diameter	FIRD	flared
Bk	back	Compr	compression	Dir	direction	FES	flared end section
BF	back face	CADD	computer aided drafting & design	Dist	distance	F Bcn	flashing beacon
Bs	backsight	Conc	concrete	DM	disturbed material	FA	flight auger sample
Balc	balcony	Cond	conductor	DB	ditch block	FL	flow line
B Wire	barbed wire	Const	construction	DG	ditch grade	Ftg	footing
Barr	barricade	Cont	continuous	Dbl	double	FM	force main
Btry	battery	CSB	continuous split barrel sample	Dn	down	Fs	foresight
Brg	bearing	Contr	contraction	Dwg	drawing	Fnd	found
BI	beehive inlet	Contr	contractor	Dr	drive	Fdn	foundation
Beg	begin	CP	control point	Drwy	driveway	Frac	fractional
BM	bench mark	Coord	coordinate	DI	drop inlet	Frwy	freeway
Bkwy	bikeway	Cor	corner	D	dry density	Frt	front
Bit	bituminous	Corr	corrected	Ea	each	FF	front face
Blk	block	CAES	corrugated aluminum end section	Esmt	easement	F Disp	fuel dispenser
Bd Ft	board feet	CAP	corrugated aluminum pipe	E	East	FFP	fuel filler pipes
BH	bore hole	CMES	corrugated metal end section	EB	Eastbound	FLS	fuel leak sensor
BS	both sides	CMP	corrugated metal pipe	Elast	elastomeric	Furn	furnished
Bot	bottom	CPVCP	corrugated poly-vinyl chloride pipe	EL	electric locker		
Blvd	Boulevard	CSES	corrugated steel end section	E Mtr	electric meter		
Bndry	boundary	CSP	corrugated steel pipe	Elec	electric/al		
BC	brass cap	C	coulomb	EDM	electronic distance meter		
Brkwy	breakaway	Co	County	Elev or El	elevation		
Br	bridge	Crse	course	Ellipt	elliptical		
Bldg	building	C Gr	course gravel	Emb	embankment		
BV	butterfly valve	CS	course sand	Emuls	emulsion/emulsified		
Byp	bypass	Ct	Court	ES	end section		
C Gdrl	cable guardrail	Xarm	cross arm	Engr	engineer		
		Xbuck	cross buck	ESS	environmental sensor station		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
06-15-10	
REVISIONS	
DATE	CHANGE
04-20-11	Added Items
03-15-13	Added Items
11-01-13	Added Items

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/01/13 and the original document is stored at the North Dakota Department of Transportation

NDDOT ABBREVIATIONS

Gal	gallon	J	joule	M	meter	Pen.	penetration
Galv	galvanized	Jct	junction	M/s	meters per second	Perf	perforated
Gar	garage	K	kelvin	M	mid ordinate of curve	Per.	perimeter
Gs L	gas line	Kn	kilo newton	Mi	mile	PL	pipeline
G Reg	gas line regulator	Kpa	kilo pascal	MM	mile marker	PI	place
GMV	gas main valve	Kg	kilogram	MP	mile post	P&P	plan & profile
G Mtr	gas meter	Kg/m3	kilogram per cubic meter	MI	milliliter	PL	plastic limit
GSV	gas service valve	Km	kilometer	Mm	millimeter	PI	plate
GVP	gas vent pipe	K	Kip(s)	Mm/hr	millimeters per hour	Pt	point
GV	gate valve	LS	Land Surveyor (licensed)	Min	minimum	PCC	point of compound curve
Ga	gauge	LSIT	Land Surveyor In Training	Misc	miscellaneous	PC	point of curve
Geod	geodetic	Ln	lane	Mon	monument	PI	point of intersection
GIS	Geographical Information System	Lg	large	Mnd	mound	PRC	point of reverse curvature
G	giga	Lat	latitude	Mtbl	mountable	PT	point of tangent
GPS	Global Positioning System	Lt	left	Mtd	mounted	POC	point on curve
Gov	government	L	length of curve	Mtg	mounting	POT	point on tangent
Grd	graded/grade	Lens	lenses	Mk	muck	PE	polyethylene
Gr	gravel	Lvl	level	Mun	municipal	PVC	polyvinyl chloride
Grnd	ground	LB	level book	N	nano	PCC	Portland Cement concrete
GWM	ground water monitor	Lvng	leveling	NGS	National Geodetic Survey	Lb or #	pounds
Gdrl	guardrail	Lht	light	NS	near side	PP	power pole
Gtr	gutter	LP	light pole	Neop	neoprene	Preempt	preemption
H Plg	H piling	Ltg	lighting	Ntwk	network	Prefab	prefabricated
Hdwl	headwall	Lig Co	lignite coal	N	newton	Prfmd	performed
Ha	hectare	Lig Sl	lignite slack	N	North	Prep	preparation
Ht	height	LF	linear foot	NE	North East	Press.	pressure
HI	height of instrument	Liq	liquid	NW	North West	PRV	pressure relief valve
Hel	helical	LL	liquid limit	NB	Northbound	Prestr	prestressed
H	henry	L	litre	No. or #	number	Pvt	private
Hz	hertz	Lm	loam	Obsc	obscure(d)	PD	private drive
HDPE	high density polyethylene	Loc	location	Obsn	observation	Prod.	production/produce
HM	high mast	LC	long chord	Ocpd	occupied	Prog	programmed
HP	high pressure	Long.	longitude	Ocpy	occupy	Prop.	property
HPS	high pressure sodium	Lp	loop	Off Loc	office location	Prop Ln	property line
Hwy	highway	LD	loop detector	O/s	offset	Ppsd	proposed
Hor	horizontal	Lm	lumen	OC	on center	PB	pull box
HBP	hot bituminous pavement	Lum	luminaire	C	one dimensional consolidation		
Hr	hour(s)	L Sum	lump sum	OC	organic content		
Hyd	hydrant	Lx	lux	Orig	original		
Ph	hydrogen ion content	ML	main line	O To O	out to out		
Id	identification	M Hr	man hour	OD	outside diameter		
In or "	inch	MH	manhole	OH	overhead		
Incl	inclinometer tube	Mkd	marked	PMT	pad mounted transformer		
IMH	inlet manhole	Mkr	marker	Pg	pages		
ID	inside diameter	Mkg	marking	Pntd	painted		
Inst	instrument	MA	mast arm	Pr	pair		
Intchg	interchange	Matl	material	Pnl	panel		
Intmdt	intermediate	Max	maximum	Pk	park		
Intscn	intersection	MC	meander corner	PK	Parker-Kalon nail		
Inv	invert	Meas	measure	Pa	pascal		
IM	iron monument	Mdn	median	PSD	passing sight distance		
IPn	Iron Pin	MD	median drain	Pvmt	pavement		
IP	iron Pipe	MC	medium curing	Ped	pedestal		
Jt	joint	M	mega	Ped	pedestrian		
		Mer	meridian	PPP	pedestrian pushbutton post		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
06-15-10	
REVISIONS	
DATE	CHANGE
04-20-11	Added Items
03-15-13	Added Items
11-01-13	Added Items

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/01/13 and the original document is stored at the North Dakota Department of Transportation

NDDOT ABBREVIATIONS

Qty	quantity	Sig	signal	Tel	telephone	WB	Westbound
Qtr	quarter	Si Cl	silt clay	Tel B	Telephone Booth	Wrng	wiring
Rad or R	radius	Si Cl Lm	silty clay loam	Tel P	telephone pole	W/	with
RR	railroad	Si Lm	silty loam	Tv	television	W/o	without
Rlwy	railway	Sgl	single	Temp	temperature	WC	witness corner
Rsd	raised	SC	slow curing	Temp	temporary	WGS	World Geodetic System
RTP	random traverse point	SS	slow setting	TBM	temporary bench mark	Z	zenith
Rge or R	range	Sm	small	T	tesla		
RC	rapid curing	S	South	T	thinwall tube sample		
Rec	record	SE	South East	T/mi	tons per mile		
Rcy	recycle	SW	South West	Ts	topsoil		
RPCC	recycled Portland cement concrete	SB	Southbound	Twp or T	township		
Ref	reference	Sp	spaces	Traf	traffic		
R Mkr	reference marker	Spcl	special	TSCB	traffic signal control box		
RM	reference monument	SP	special provisions	Tr	trail		
Refl	reflectorized	G	specific gravity	Transf	transformer		
RCB	reinforced concrete box	Spk	spike	TB	transit book		
RCES	reinforced concrete end section	SC	spiral to curve	Trans	transition		
RCP	reinforced concrete pipe	ST	spiral to tangent	TT	transmission tower		
RCPS	reinforced concrete pipe sewer	SB	split barrel sample	Trans	transverse		
Reinf	reinforcement	SH	sprinkler head	Trav	traverse		
Res	reservation	SV	sprinkler valve	TP	traverse point		
Ret	retaining	Sq	square	Trtd	treated		
Rev	reverse	SF	square feet	Trmt	treatment		
Rt	right	Km2	square kilometer	Qc	triaxial compression		
R/W	right of way	M2	square meter	TERO	tribal employment rights ordinance		
Riv	river	SY	square yard	Tpl	triple		
Rd	road	Stk	stake	TP	turning point		
Rdbd	road bed	Std	standard	Typ	typical		
Rdwy	roadway	N	standard penetration test	Qu	unconfined compressive strength		
RWIS	Roadway Weather Information System	Std Specs	Standard Specifications	Ugrnd	underground		
Rk	rock	Sta	station	USC&G	US Coast & Geodetic Survey		
Rt	route	Sta Yd	station yards	USGS	US Geologic Survey		
Salv	salvage(d)	Stm L	steam line	Util	utility		
Sd	sand	SEC	steel encased concrete	VG	valley gutter		
Sdy Cl	sandy clay	SSD	stopping sight distance	Vap	vapor		
Sdy Cl Lm	sandy clay loam	SD	storm drain	Vert	vertical		
Sdy Fl	sandy fill	St	street	VC	vertical curve		
Sdy Lm	sandy loam	SPP	structural plate pipe	VCP	vitrified clay pipe		
San	sanitary sewer line	SPPA	structural plate pipe arch	V	volt		
Sc	scoria	Str	structure	Vol	volume		
Sec	seconds	Subd	subdivision	Wkwy	walkway		
Sec	section	Sub	subgrade	W	water content		
SL	section line	Sub Prep	subgrade preparation	WGV	water gate valve		
Sep	separation	Ss	subsoil	WL	water line		
Seq	sequence	SE	superelevation	WM	water main		
Serv	service	SS	supplement specification	WMV	water main valve		
Sh	shale	Supp	supplemental	W Mtr	water meter		
Sht	sheet	Surf	surfacing	WSV	water service valve		
Shtng	sheeting	Surv	survey	WW	water well		
Shldr	shoulder	Sym	symmetrical	W	watt		
Sw	sidewalk	SI	Systems International	Wrng	wearing		
S	siemens	Tan	tangent	Wb	weber		
SD	sight distance	T	tangent (semi)	WIM	Weigh In Motion		
		TS	tangent to spiral	W	West		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
06-15-10	
REVISIONS	
DATE	CHANGE
04-20-11	Added Items
03-15-13	Added Items
11-01-13	Added Items

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/01/13 and the original document is stored at the North Dakota Department of Transportation

NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

702COM 702 Communications
 ACCENT Accent Communications
 AGASSIZ WU Agassiz Water Users Incorporated
 AGC Associated General Contractors of America
 All PI Alliance Pipeline
 ALL SEAS WU All Seasons Water Users Association
 AMOCO PI Amoco Pipeline Company
 AMRDA HESS Amerada Hess Corporation
 AT&T AT&T Corporation
 B PAW Bear Paw Energy Incorporated
 BAKER ELEC Baker Electric
 BASIN ELEC Basin Electric Cooperative Incorporated
 BEK TEL Bek Communications Cooperative
 BELLE PL Belle Fourche Pipeline Company
 BLM Bureau of Land Management
 BNSF Burlington Northern Santa Fe Railway
 BOEING Boeing
 BRNS RWD Barnes Rural Water District
 BURK-DIV ELEC Burke-Divide Electric Cooperative
 BURL WU Burleigh Water Users
 Cable One Cable One
 CABLE SERV Cable Services
 CAP ELEC Capital Electric Cooperative Incorporat
 CASS CO ELEC Cass County Electric Cooperative
 CASS RWU Cass Rural Water Users Incorporated
 CAV ELEC Cavalier Rural Electric Cooperative
 CBLCOM Cablecom Of Fargo
 CENEX PL Cenex Pipeline
 CENT PL WATER DIST Central Pipe Line Water District
 CENT PWR ELEC Central Power Electric Cooperative
 COE Corps of Engineers
 CONS TEL Consolidated Telephone
 CONT RES Continental Resource Inc
 CPR Canadian Pacific Railway
 D O E Department Of Energy
 DAK CARR Dakota Carrier Network
 DAK CENT TEL Dakota Central Telephone
 DAK RWD Dakota Rural Water District
 DGC Dakota Gasification Company
 DICKEY R NET Dickey Rural Networks
 DICKEY RWU Dickey Rural Water Users Association
 DICKEY TEL Dickey Telephone
 DNRR Dakota Northern Railroad
 DOME PL Dome Pipeline Company
 DVELEC Dakota Valley Electric Cooperative
 DVMW Dakota, Missouri Valley & Western
 ENBRDG Enbridge Pipelines Incorporated
 ENVENTIS Enventis Telephone
 FALK MNG Falkirk Mining Company
 FHWA Federal Highway Administration
 G FKS-TRL WD Grand Forks-trail Water District
 GETTY TRD & TRAN Getty Trading & Transportation
 GLDN W ELEC Golden West Electric Cooperative
 GRGS CO TEL Griggs County Telephone

GT PLNS NAT GAS Great Plains Natural Gas Company
 HALS TEL Halstad Telephone Company
 IDEA1 Idea1
 INT-COMM TEL Inter-Community Telephone Company
 KANEB PL Kaneb Pipeline Company
 KEM ELEC Kem Electric Cooperative Incorporated
 KOCH GATH SYS Koch Gathering Systems Incorporated
 LKHD PL Lakehead Pipeline Company
 LNGDN RWU Langdon Rural Water Users Incorporated
 LWR YELL R ELEC Lower Yellowstone Rural Electric
 MCKNZ CON McKenzie Consolidated Telcom
 MCKENZ ELEC McKenzie Electric Cooperative
 MCKNZ WRD McKenzie County Water Resource District
 MCLEOD McLeod USA
 MCLN ELEC McLean Electric Cooperative
 MCLN-SHRDN R WAT McLean-Sheridan Rural Water
 MDU Montana-dakota Utilities
 MID-CONT CABLE Mid-Continent Cable
 MIDSTATE TEL Midstate Telephone Company
 MINOT CABLE Minot Cable Television
 MINOT TEL Minot Telephone Company
 MISS W W S Missouri West Water System
 MNKOTA PWR Minnkota Power
 MOR-GRAN-SOU ELEC Mor-gran-sou Electric Cooperative
 MOUNT-WILLI ELEC Mountrail-williams Electric Cooperative
 MRE LBTY TEL Moore & Liberty Telephone
 MUNICIPAL City Water And Sewer
 MUNICIPAL City Of '.....'
 N CENT ELEC North Central Electric Cooperative
 N VALL W DIST North Valley Water District
 ND PKS & REC North Dakota Parks And Recreation
 ND TEL North Dakota Telephone Company
 NDDOT North Dakota Department of Transportation
 NDSU SOIL SCI DEPT NDSU Soil Science Department
 NEMONT TEL Nemont Telephone
 NODAK R ELEC Nodak Rural Electric Cooperative
 NOON FRMS TEL Noonan Farmers Telephone Company
 NPR Northern Plains Railroad
 NSP Northern States Power
 NTH PRAIR RW Northern Prairie Rural Water Association
 NTHN BRDR PL Northern Border Pipeline
 NTHN PLNS ELEC Northern Plains Electric Cooperative Incorporated
 NTHWSTRN REF Northwestern Refinery Company
 NW COMM Northwest Communication Cooperation
 ONEOK Oneok gas
 OSHA Occupational Safety and Health Administration
 OTTR TL PWR Otter Tail Power Company
 P L E M Prairielands Energy Marketing
 POLAR COM Polar Communications
 PVT ELEC Private Electric
 QWEST Qwest Communications
 R & T W SUPPLY R & T Water Supply Association
 RAMSEY R SEW Ramsey Rural Sewer Association
 RAMSEY RW Ramsey Rural Water Association
 RAMSEY UTIL Ramsey County Rural Utilities

RED RIV TEL Red River Rural Telephone
 RESVTN TEL Reservation Telephone
 ROBRTS TEL Roberts Company Telephone
 R-RIDER ELEC Roughrider Electric Coop
 RRVW Red River Valley & Western Railroad
 RSR ELEC R.S.R. Electric Cooperative
 S E W U South East Water Users Incorporated
 SCOTT CABLE Scott Cable Television Dickinson
 SHERDN ELEC Sheridan Electric Cooperative
 SHEYN VLY ELEC Sheyenne Valley Electric Cooperative
 SKYTECH Skyland Technologies Incorporated
 SLOPE ELEC Slope Electric Cooperative Incorporated
 SOURIS RIV TELCOM Souris River Telecommunications
 ST WAT COMM State Water Commission
 STATE LN WATER State Line Water Cooperative
 STER ENG Sterling Energy
 STUT RWU Stutsman Rural Water Users
 SW PL PRJ Southwest Pipeline Project
 T M C Turtle Mountain Communications
 TCI TCI of North Dakota
 TESORO GHG PLNS PL Tesoro High Plains Pipeline
 TRI-CNTY WU Tri-County Water Users Incorporated
 TRL CO RWU Traill County Rural Water Users
 UNTD TEL United Telephone
 UPPR SOUR WUA Upper Souris Water Users Association
 US SPRINT U.S. Sprint
 USAF MSL CABLE U.S.A.F. Missile Cable
 USFWS US Fish and Wildlife Service
 USW COMM U.S. West Communications
 VRNDRY ELEC Verendrye Electric Cooperative
 W RIV TEL West River Telephone Incorporated
 WEB W. E. B. Water Development Association
 WILLI RWA Williams Rural Water Association
 WILSTN BAS PL Williston Basin Interstate Pipeline Company
 WLSH RWD Walsh Water Rural Water District
 WOLVRTN TEL Wolverton Telephone
 XLENER Xcel Energy
 YSVR Yellowstone Valley Railroad

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
6-15-10	
REVISIONS	
DATE	CHANGE
04-20-11	Added Items
03-15-13	Added Items
11-01-13	Added Items, Changed Standard Name to Include Organizations

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/01/13 and the original document is stored at the North Dakota Department of Transportation

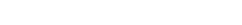
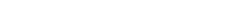
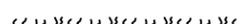
Line Styles

.....	Limits of Const Transition Line	—— s —— s ——	Floating Silt Curtain	—— ——— ———	Existing Aggregate (Cross Section View)	- - - - -	Existing Centerline
.....	Bale Check	—— ——— T ——	Existing Telephone Line	—— ——— ———	Existing Curb and Gutter (Cross Section View)	- - - - -	Supplemental Contour
.....	Rock Check	—— ——— TV ——	Existing TV Line	—— ——— ———	Existing Riprap	—— - - - - -	Right of Way
.....	Sight Distance Triangle Line	Void — void — void — v	Existing Assumed Ground (Not Surveyed)	—— ——— ———	Existing Underground Vault or Lift Station	—— - - - - -	Existing Right of Way
- - - - -	Small Hidden Object	Void — void — void — v	Tentative Ground Line	—— ——— ———	Tangent Line	—— - - - - -	Existing Right of Way Railroad
- - - - -	Dimension Leader	—— ——— w ——	Existing Water or Steam Line	- - - - -	Hidden Object	- - - - -	Failure Line
- - - - -	Existing Ground	=====	Existing Under Drain	—— ——— ———	Existing Dirt Surface	- - - - -	Existing Conditions
- - - - -	Existing Topsoil (Cross Section View)	=====	Under Drain	—— ——— ———	Existing Conduit	- - - - -	Existing Ground (Details)
—— ——— ———	Large Hidden Object	=====	Wall	—— ——— ———	Topsoil Profile	—— - - - - -	Existing Sixteenth Section Line
—— ——— ———	Edge Drain	=====	Existing Slotted Drain	- - - - -	Existing Conductor	- - - - -	Existing Right of Way Not State Owned
—— D —— D ——	Geotextile Fabric Type D	—— + —— + ——	Existing Cemetary Boundary	- - - - -	Conductor	- - - - -	Phantom Object
—— ——— E ——	Existing Electrical	—— ——— ———	Centerline Pavement Marking	- - - - -	Fiber Optic	- - - - -	Centerline Main
—— ——— FO ——	Existing Fiber Optic Line	=====	Barrier with Centerline Pavement Marking	- - - - -	Existing Loop Detector	-	Existing Guardrail Cable
—— ——— FO ——	Existing TV Fiber Optic	=====	Barrier Pavement Marking	- - - - -	Subgrade, Subcut or Ditch Grade	— • — • — • — •	Existing Guardrail Metal
—— ——— G ——	Existing Gas Pipe	- - - - -	Stripe 4 IN Dotted Extension White	—— ——— ———	Existing Asphalt Surface	—— . ——— . ——— . ——— .	Existing Edge of Water
—— Geo —— Geo ——	Geogrid	- - - - -	Stripe 8 IN Dotted Extension White	—— ——— ———	Existing Asphalt (Cross Section View)	- - - - -	Excavation Limits
—— ——— OH ——	Existing Overhead Utility Line	- - - - -	Stripe 8 IN Lane Drop	—— ——— ———	Existing Reinforcement Rebar	—— ——— ———	Existing Government Lot Line
—— ——— P ——	Existing Power	—— v v v v ——	Wetland Mitigation	—— ——— ———	Existing Tie Point Line	.....	Existing Adjacent Block Lines
—— ——— PL ——	Existing Fuel Pipeline	- - - - -	Existing Box Culvert Bridge	—— ——— ———	Existing State or International Line	.....	Existing Adjacent Lot Lines
—— ——— PL ——	Existing Undefined Above Ground Pipe Line	- - - - -	Existing Concrete Surface	—— ——— ———	Existing Quarter Section Line	.....	Existing Adjacent Property Line
—— ——— R —— R ——	Geotextile Fabric Type R	- - - - -	Existing Drainage Structure	—— ——— ———	Existing County	.....	Existing Adjacent Subdivision Lines
—— ——— R —— R ——	Geotextile Fabric Type R1	- - - - -	Easement	—— ——— ———	Existing Section Line	.....
—— REMOVE —— REMOVE ——	Remove Line	- - - - -	Existing Concrete	—— - - - - -	Existing Township	.....
—— RR —— RR ——	Geotextile Fabric Type RR	- - - - -	Existing Easement	—— ——— ———	Existing Railroad Centerline	.....
—— S —— S ——	Geotextile Fabric Type S	—— ——— ———	Existing Gravel Surface	—— - - - - -	Centerline	.....

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
4-20-11	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 4/20/11 and the original document is stored at the North Dakota Department of Transportation

Line Styles

	Subgrade Reinforcement		Existing Railroad Switch		Sheet Piling
	Existing Down Guy Wire Down Guy		Overhead Sign Structure Cantilever		W-Beam w Posts
	Existing Fence		24 Inch Pipe		Existing W-Beam Guardrail with Posts
	Existing Railroad		Reinforced Concrete Pipe		Exst Wet Area-Vegetation Break
	Existing Sanitary Sewer		Signal Head with Mast Arm		Existing Wetland Delineated
	Existing Sanitary Force Main		Existing Signal Head with Mast Arm		
	Existing Storm Drain		Tie Bar at Random Spacing		
	Existing Storm Drain Force Main		3-Cable w Posts		
	Fence		Existing 3-Cable w Posts		
	Silt Fence		Site Boundary		
	Existing Field Line		Fiber Rolls		
	Exst Flow		Doweled Joint		
	Flow		Tie Bar 30 Inch 4 Foot Center to Center		
	Existing Culvert		Tie Bar 18 Inch 3 Foot Center to Center		
	Existing Curb		Existing Berm, Dike, Pit, or Earth Dam		
	Existing Valley Gutter		Existing Ditch Block		
	Existing Driveway Gutter		Depression Contours		
	Existing Curb and Gutter		Existing City Corporate Limits or Reservation Boundary		
	Existing Mountable Curb and Gutter		Gravel Pit - Borrow Area		
	Existing Double Micro Loop Detector		Existing Tree Boundary		
	Micro Loop Detector Double		Tree Row		
	Existing Overhead Sign Structure		Existing Brush or Shrub Boundary		
	Existing Micro Loop Detector		Existing Retaining Wall		
	Micro Loop Detector		Existing Planter or Wall		
	Existing Overhead Sign Structure Cantilever		Retaining Wall (Plan View)		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
4-20-11	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 4/20/11 and the original document is stored at the North Dakota Department of Transportation

Symbols

	North Arrow (Half Scale)		Attenuation Device		Existing Railroad Battery Box		Existing Delineator Type E
	Truck Mounted Attenuator		Diamond Grade Delineator Type A		Existing Bush or Shrub		Existing EFB Misc
	Type I Barricade		Diamond Grade Delineator Type B		Existing Gas Cap or Stub		Existing Flashing Beacon
	Type II Barricade		Diamond Grade Delineator Type C		Existing Sanitary Cap or Stub		Existing Pipe Mounted Flasher
	Type III Barricade		Diamond Grade Delineator Type D		Existing Storm Drain Cap or Stub		Existing Pad Mounted Feed Point
	Catch Basin		Diamond Grade Delineator Type E		Existing Water Cap or Stub		Existing Pipe Mounted Feed Point with Pad
	Cairn or Stone Circle		Flexible Delineator		Existing Sanitary Cleanout		Existing Pole Mounted Feed Point
	Video Detection Camera		Flexible Delineator Type A		Existing Concrete Foundation		Existing Railroad Frog
	Storm Drain Cap or Stub		Flexible Delineator Type B		Existing Traffic Signal Controller		Existing Snow Gate 18
	Corrugated Metal End Section 18 Inch		Flexible Delineator Type C		Existing Pad Mounted Signal Controller		Existing Snow Gate 28
	Corrugated Metal End Section 24 Inch		Flexible Delineator Type D		Existing Sixteenth Section Corner		Existing Snow Gate 40
	Corrugated Metal End Section 30 Inch		Flexible Delineator Type E		Existing Quarter Section Corner		Existing Headwall
	Corrugated Metal End Section 36 Inch		Delineator Type A		Existing Section Corner		Existing Pedestrian Head with Number
	Corrugated Metal End Section 42 Inch		Delineator Type A Reset		Existing Railroad Crossbuck		Existing Signal Head
	Corrugated Metal End Section 48 Inch		Delineator Type B		Existing Satellite Dish		Existing Sprinkler Head
	Concrete Foundation		Delineator Type B Reset		Existing Fuel Dispensers		Existing Fire Hydrant
	Ground Connection Conductor		Delineator Type C		Existing Flexible Delineator Type A		Existing Catch Basin Drop Inlet
	Neutral Connection Conductor		Delineator Type D		Existing Flexible Delineator Type B		Existing Curb Inlet
	Phase 1 Connection Conductor		Delineator Type E		Existing Flexible Delineator Type C		Existing Manhole Inlet
	Phase 2 Connection Conductor		Delineator Drums		Existing Flexible Delineator Type D		Existing Junction Box
	Traffic Cone		Spot Elevation		Existing Flexible Delineator Type E		
	Signal Controller		Existing Access Control Arrow		Existing Delineator Type A		
	Pad Mounted Signal Controller		Existing Artifact		Existing Delineator Type B		
	Alignment Data Point		Existing Flashing Beacon		Existing Delineator Type C		
	Emergency Vehicle Detector		Existing Benchmark		Existing Delineator Type D		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
4-20-11	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 4/20/11 and the original document is stored at the North Dakota Department of Transportation

Symbols

	Existing Light Standard		Existing Manhole with Valve Water		Existing Telephone Pole		Existing Undefined Manhole
	Existing High Mast Light Standard 10 Luminaire		Existing Water Manhole		Existing Wood Pole		Existing Undefined Pull Box
	Existing High Mast Light Standard 3 Luminaire		Existing Mile Post Type A		Existing Post		Existing Undefined Pedestal
	Existing High Mast Light Standard 4 Luminaire		Existing Mile Post Type B		Existing Pedestrian Push Button Post		Existing Undefined Valve
	Existing High Mast Light Standard 5 Luminaire		Existing Mile Post Type C		Existing Control Point CP		Existing Undefined Pipe Vent
	Existing High Mast Light Standard 6 Luminaire		Existing Reference Marker		Existing Control Point GPS-RTK		Existing Gas Valve
	Existing High Mast Light Standard 7 Luminaire		Existing RW Marker		Existing Control Point TRI		Existing Water Valve
	Existing High Mast Light Standard 8 Luminaire		Existing Utility Marker		Existing Reference Marker Point NGS		Existing Fuel Pipe Vent
	Existing High Mast Light Standard 9 Luminaire		Existing Monument Found		Existing Pull Box		Existing Gas Pipe Vent
	Existing Overhead Sign Structure Load Center		Existing Monument set		Existing Intelligent Transportation Pull Box		Existing Sanitary Pipe Vent
	Existing Luminaire		Existing RW Property Monument Found		Existing Water Pump		Existing Storm Drain Pipe Vent
	Existing Light Standard Luminaire		Existing RW Property Monument set		Existing Slotted Reinforced Concrete Pipe		Existing Water Pipe Vent
	Existing Federal Mailbox		Existing Object Marker Type I		Existing RR Profile Spot		Existing Weather Station
	Existing Private Mailbox		Existing Object Marker Type II		Existing Fuel Leak Sensors		Existing Ground Water Well Bore Hole
	Existing Meander Section Corner		Existing Object Marker Type III		Existing Highway Sign		Existing Windmill or Tower
	Existing Meter		Existing Electrical Pedestal		Existing Miscellaneous Spot		Existing Witness Corner
	Existing Electrical Manhole		Existing Telephone Pedestal		Existing Lighting Standard Pole		Flashing Beacon
	Existing Gas Manhole		Existing Fiber Optic Telephone Pedestal		Existing Traffic Signal Standard		Flagger
	Existing Sanitary Manhole		Existing TV Pedestal		Existing Transformer		Pipe Mounted Flasher
	Existing Sanitary Force Main Manhole		Existing Fiber Optic TV Pedestal		Existing Large Evergreen Tree		Sanitary Force Main with Valve
	Existing Sanitary Manhole with Valve		Existing Fuel Filler Pipes		Existing Small Evergreen Tree		
	Existing Storm Drain Manhole		Existing Traverse PI Aerial Panel		Existing Large Tree		
	Existing Force Main Storm Drain Manhole		Existing Pole		Existing Small Tree		
	Existing Force Main Storm Drain Manhole with Valve		Existing Power Pole		Existing Tree Trunk		
	Existing Telephone Manhole		Existing Power Pole with Transformer		Existing Pad Mounted Traffic Signal Control Box		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
4-20-11	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 4/20/11 and the original document is stored at the North Dakota Department of Transportation

Symbols

D-20-32

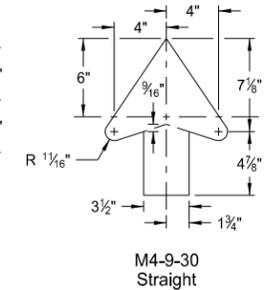
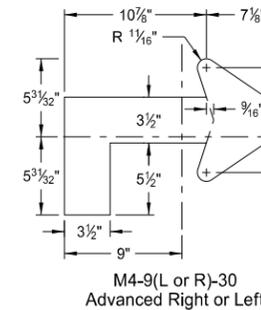
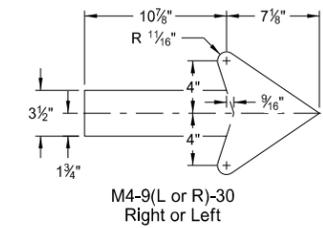
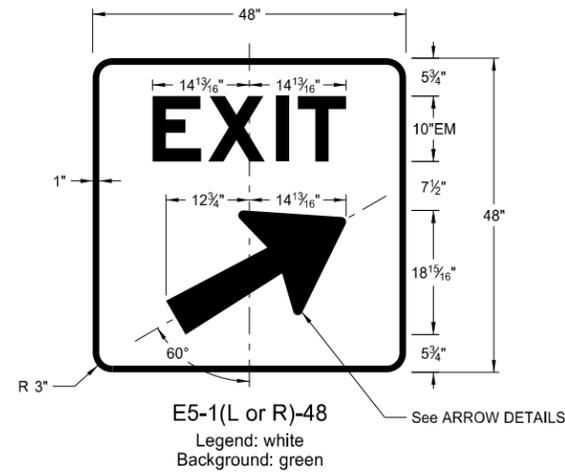
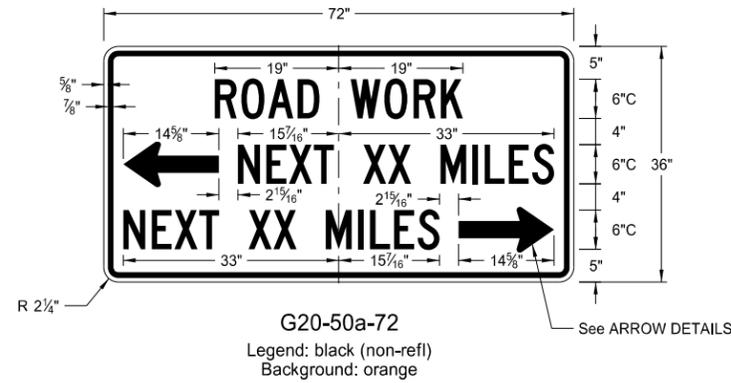
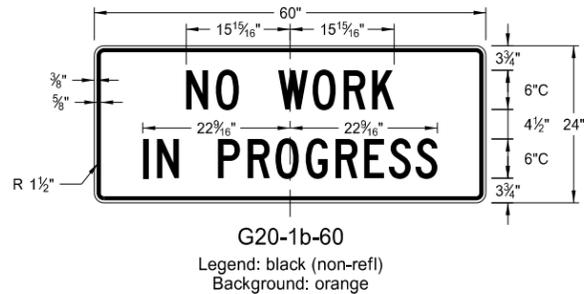
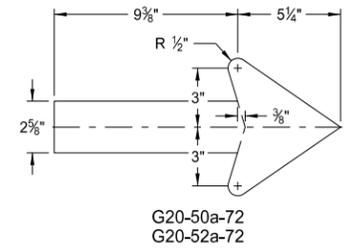
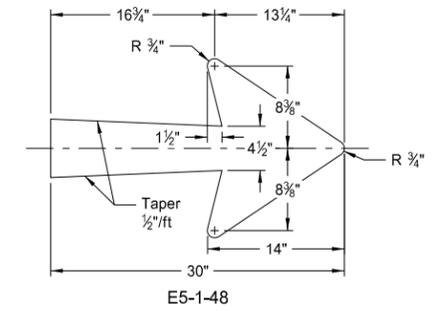
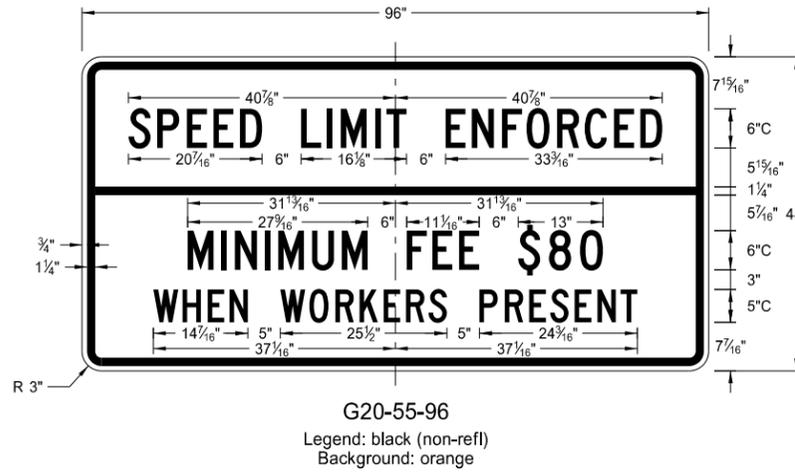
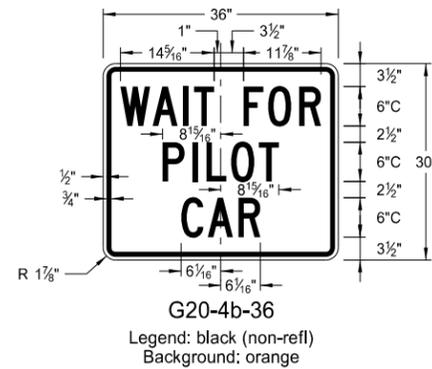
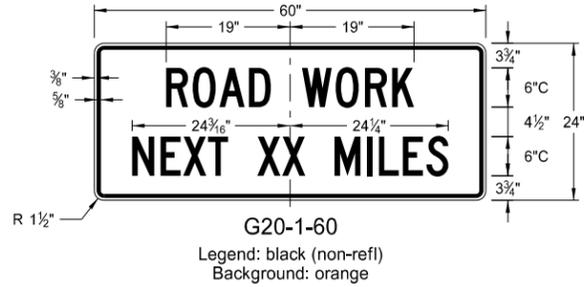
 Pad Mounted Feed Point  Pipe Mounted Feed Point with Pad  Pole Mounted Feed Point  Headwall  Double Headwall with Vegetation Barrier  Single Headwall with Vegetation Barrier  Pole Mounted Head  Sprinkler Head  Fire Hydrant  Inlet Type 1  Inlet Type 2  Double Inlet Type 2  Inlet Grate Type 2  Junction Box  High Mast Light Standard 10 Luminaire  High Mast Light Standard 3 Luminaire  High Mast Light Standard 4 Luminaire  High Mast Light Standard 5 Luminaire  High Mast Light Standard 6 Luminaire  High Mast Light Standard 7 Luminaire  High Mast Light Standard 8 Luminaire  High Mast Light Standard 9 Luminaire  Relocate Light Standard  Overhead Sign Structure Load Center  Light Standard 100 Watt High Pressure Sodium Vapor Luminaire	 Light Standard 1000 Watt High Pressure Sodium Vapor Luminaire  Light Standard 150 Watt High Pressure Sodium Vapor Luminaire  Light Standard 175 Watt High Pressure Sodium Vapor Luminaire  Light Standard 200 Watt High Pressure Sodium Vapor Luminaire  Light Standard 250 Watt High Pressure Sodium Vapor Luminaire  Light Standard 310 Watt High Pressure Sodium Vapor Luminaire  Light Standard 35 Watt High Pressure Sodium Vapor Luminaire  Light Standard 400 Watt High Pressure Sodium Vapor Luminaire  Light Standard 50 Watt High Pressure Sodium Vapor Luminaire  Light Standard 70 Watt High Pressure Sodium Vapor Luminaire  Light Standard 700 Watt High Pressure Sodium Vapor Luminaire  Manhole  Manhole 48 Inch  Sanitary Force Main Manhole  Sanitary Sewer Manhole  Storm Drain Manhole  Storm Drain Manhole with Inlet  Reset Mile Post  Mile Post Type A  Mile Post Type B  Mile Post Type C  Right of Way Marker  Tubular Marker  Concrete Monument to Be Set  RW Property Monument to Be Set	 Object Marker Type I  Object Marker Type II  Object Marker Type III  Caution Mode Arrow Panel  Back to Back Vertical Panel Sign  Double Direction Arrow Panel  Left Directional Arrow Panel  Right Directional Arrow Panel  Sequencing Arrow Panel  Truck Mounted Arrow Panel  Power Pole  Wood Pole  Pedestrian Push Button Post  Property Corner  Pull Box  Intelligent Transportation Pull Box  Sanitary Pump  Storm Drain Pump  Reinforced Pavement  Reinforced Concrete End Section 15 Inch  Reinforced Concrete End Section 18 Inch  Reinforced Concrete End Section 24 Inch  Reinforced Concrete End Section 30 Inch  Reinforced Concrete End Section 36 Inch  Reinforced Concrete End Section 42 Inch	 Reinforced Concrete End Section 48 Inch  Reinforced Concrete End Section 54 Inch  Reset Right of Way Marker  Reset USGS Marker  Right of Way Markers  Riser 30 Inch  Continuous Split Barrel Sample  Flight Auger Sample  Split Barrel Sample  Thinwall Tube Sample  Highway Sign  SNOW GATE 18 FT  SNOW GATE 28 FT  SNOW GATE 40 FT  Standard Penetration Test  Transformer  Inclinometer Tube  Underdrain Cleanout  Excavation Unit  Water Valve
--	--	---	--

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
4-20-11	
REVISIONS	
DATE	CHANGE

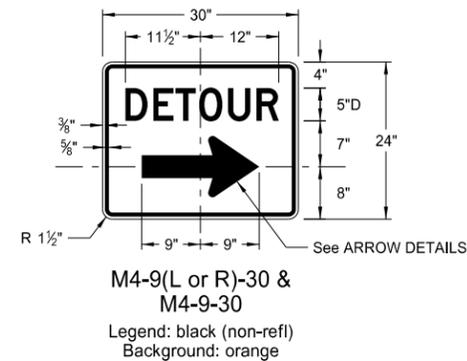
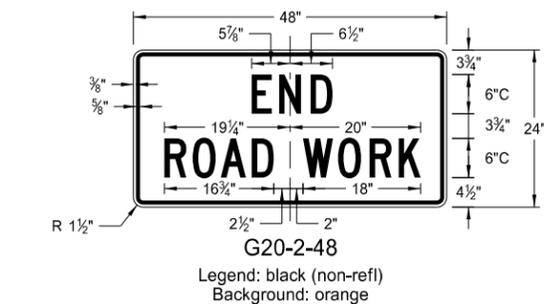
This document was originally issued and sealed by
Roger Weigel,
 Registration Number
 PE-2930,
 on 4/20/11 and the original document is stored at the
 North Dakota Department
 of Transportation

CONSTRUCTION SIGN DETAILS
 TERMINAL AND GUIDE SIGNS

D-704-9



ARROW DETAILS



NOTES:

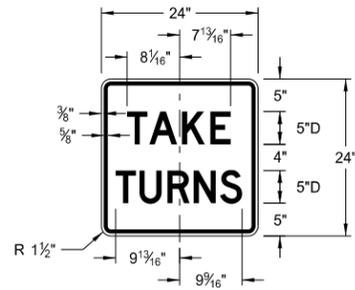
(A) Arrow may be right or left of the legend to indicate construction to the right or left.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 8/13/13 and the original document is stored at the North Dakota Department of Transportation

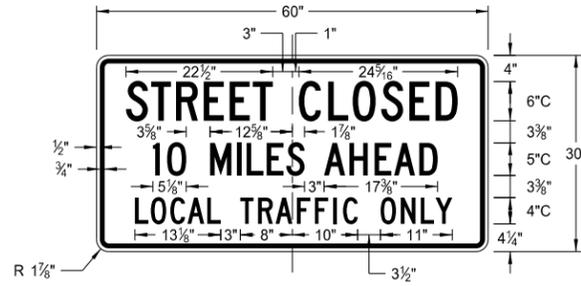
CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

D-704-10



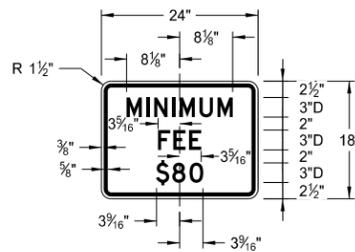
R1-50-24

Legend: black (non-refl)
Background: white



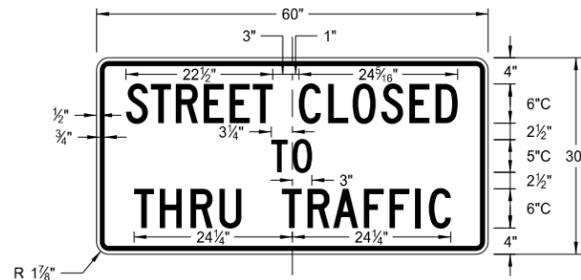
R11-3c-60

Legend: black (non-refl)
Background: white



R2-1a-24

Legend: black (non-refl)
Background: white



R11-4a-60

Legend: black (non-refl)
Background: white



R11-2a-48

Legend: black (non-refl)
Background: white

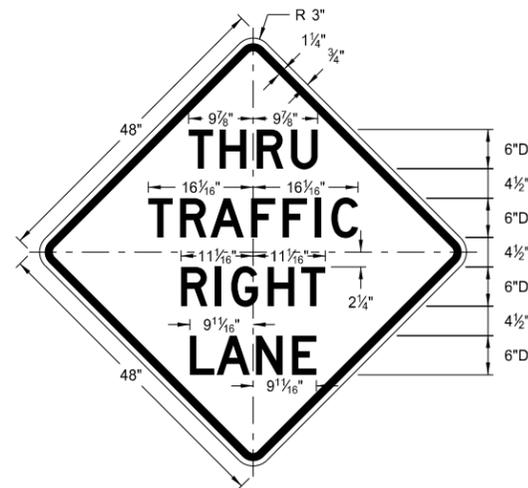
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 8/13/13 and the original document is stored at the North Dakota Department of Transportation

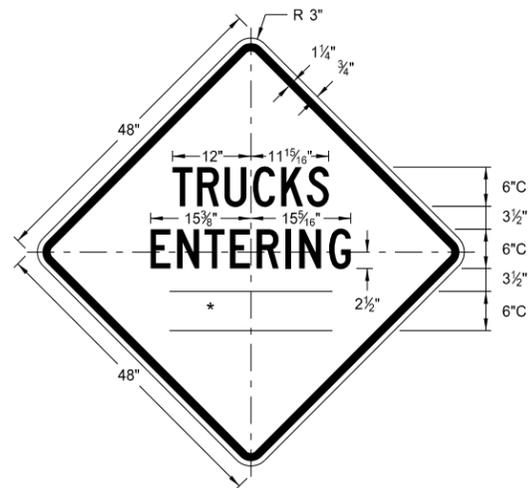
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

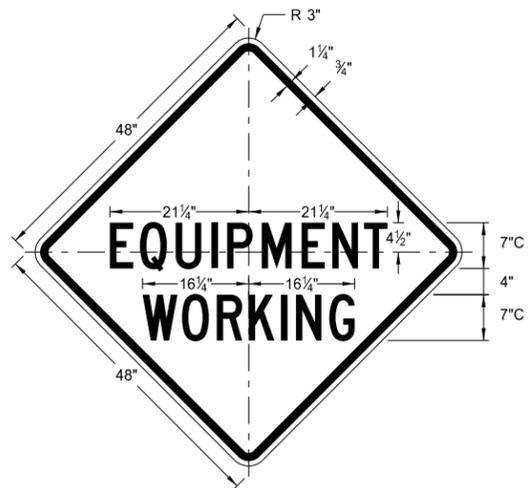
* DISTANCE MESSAGES



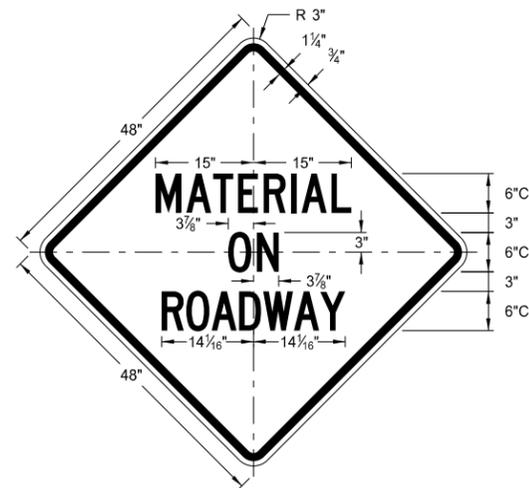
W5-8-48
Legend: black (non-refl)
Background: orange



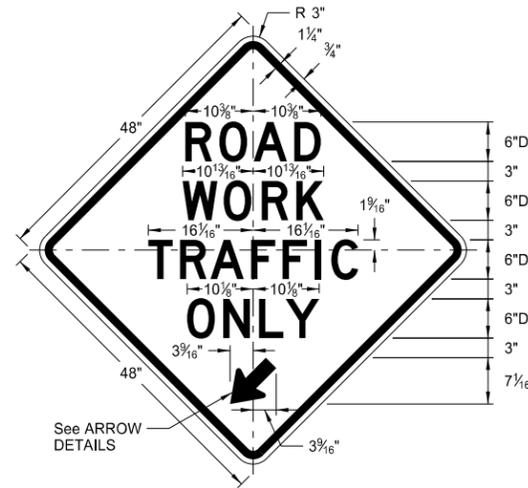
W8-54-48
Legend: black (non-refl)
Background: orange



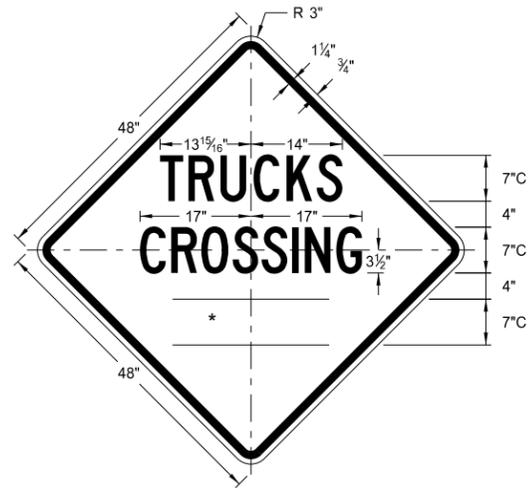
W20-51-48
Legend: black (non-refl)
Background: orange



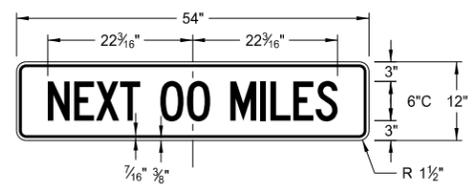
W21-51-48
Legend: black (non-refl)
Background: orange



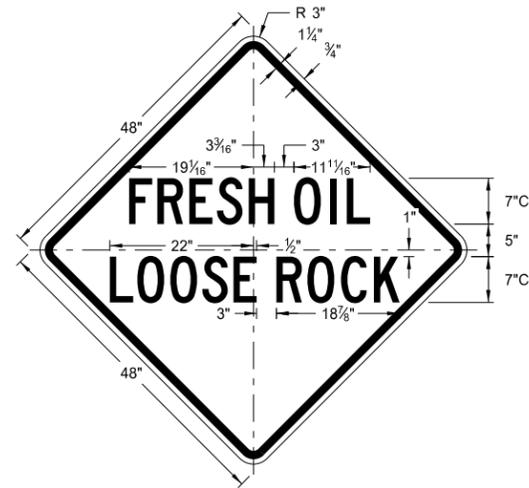
W5-9-48
Legend: black (non-refl)
Background: orange



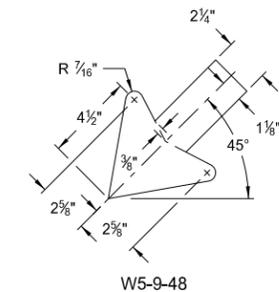
W8-55-48
Legend: black (non-refl)
Background: orange



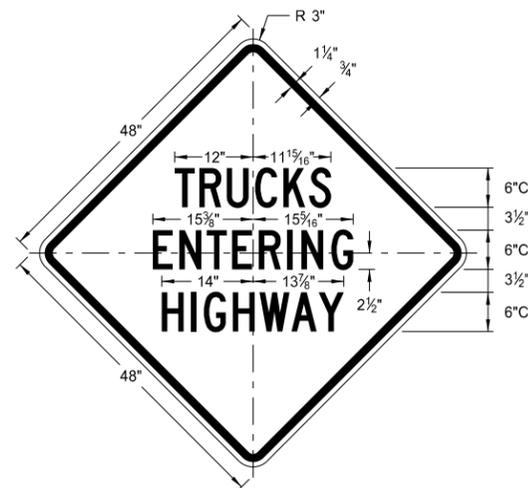
W20-52-54
Legend: black (non-refl)
Background: orange



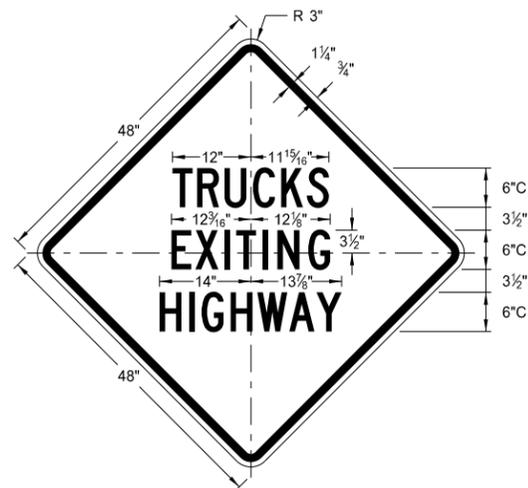
W22-8-48
Legend: black (non-refl)
Background: orange



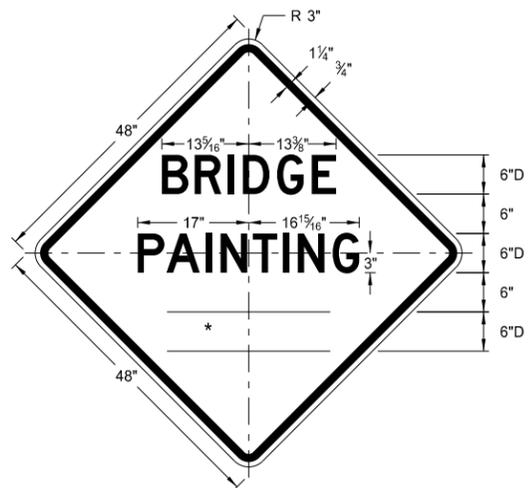
W5-9-48
ARROW DETAILS



W8-53-48
Legend: black (non-refl)
Background: orange



W8-56-48
Legend: black (non-refl)
Background: orange

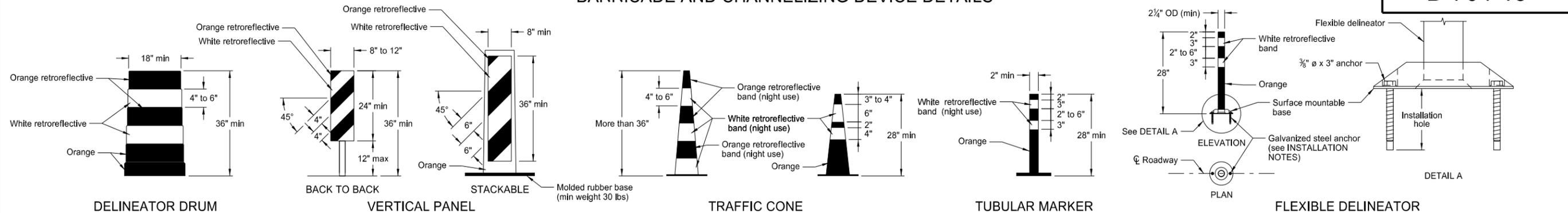


W21-50-48
Legend: black (non-refl)
Background: orange

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 8/13/13 and the original document is stored at the North Dakota Department of Transportation

BARRICADE AND CHANNELIZING DEVICE DETAILS



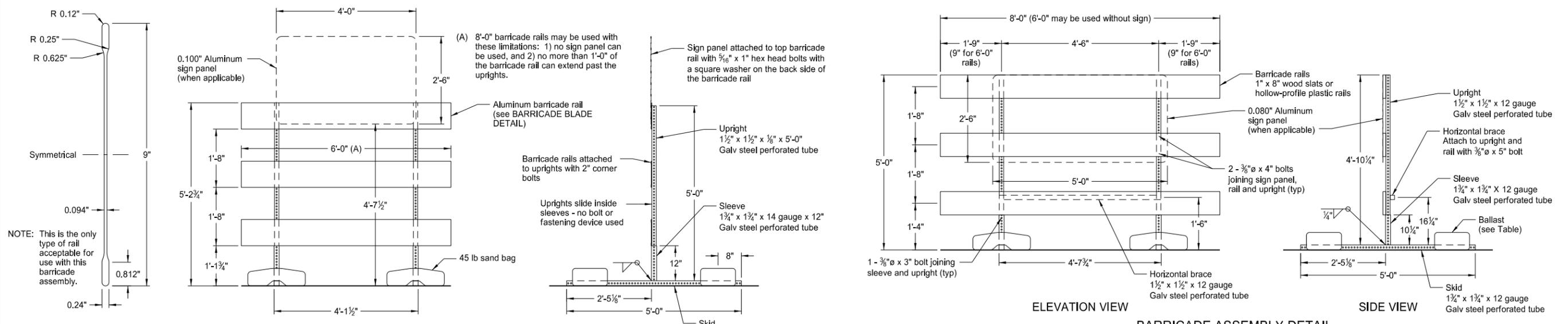
- INSTALLATION NOTES:**
1. Drill installation holes to diameter and depth as required by manufacturer's specifications.
 2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
 3. In lieu of bolted down base, the contractor may use an 8" x 8" butyl pad or hot melt butyl. Butyl shall be removed as close as possible to pavement surface.

The markings on drums shall be horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide. Each drum shall have a minimum of two orange and two white stripes with the top stripe being orange. Any nonretroreflective spaces between the horizontal orange and white stripes shall not exceed 3" wide. Stripes shall not be placed on ribs or indentations in the drum. Drums shall have closed tops that will not allow collection of construction debris or other debris. Ballast shall not be placed on the top of a drum.

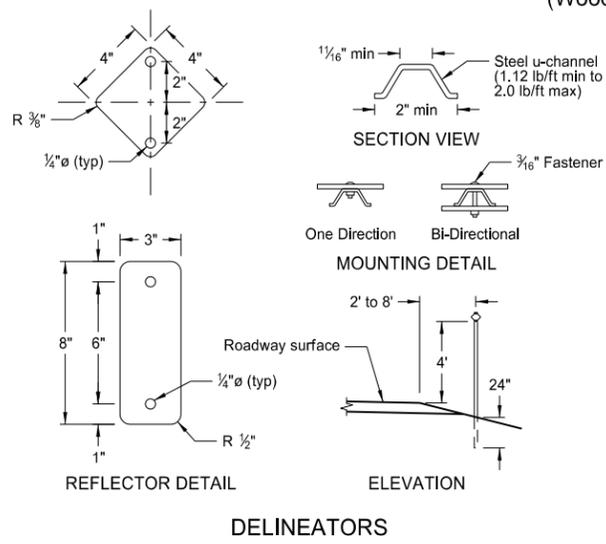
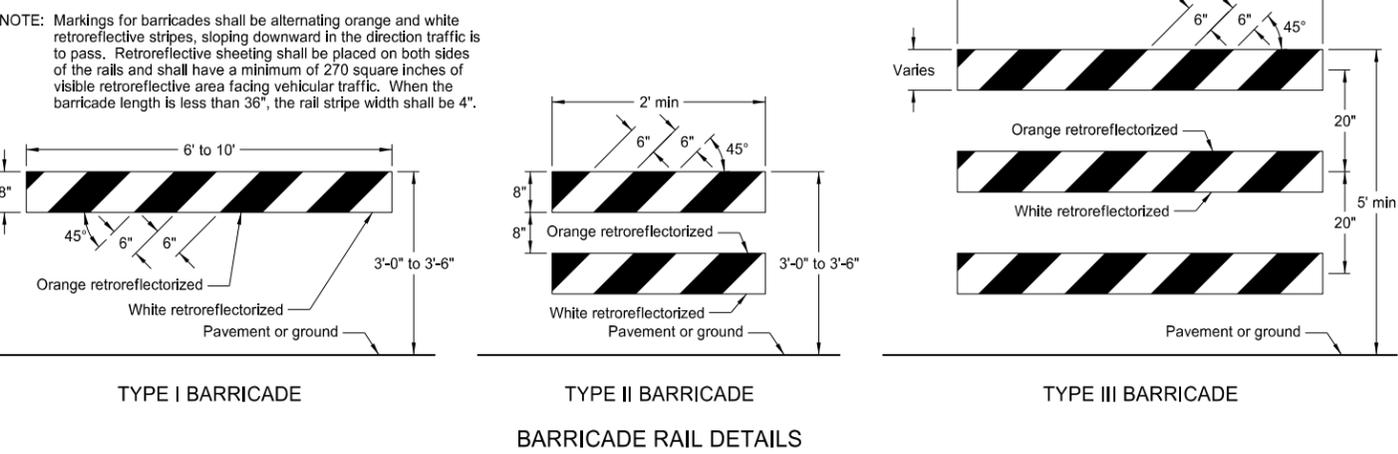
Markings for vertical panels shall be alternating orange and white retroreflective stripes, sloping downward in the direction vehicular traffic is to pass. Retroreflective sheeting shall be placed on both sides of panel and shall have a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective material on the vertical panel is 36 inches or more, a stripe width of 6 inches shall be used.

Retroreflectization of cones more than 36" in height shall be provided by alternating orange and white retroreflective stripes. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any nonretroreflective space between the orange and white stripes shall not exceed 3" wide.

Retroreflectization of tubular markers more than 42" in height shall be provided by alternating four 4" to 6" wide orange and white stripes with the top stripe being orange.



NOTE: Markings for barricades shall be alternating orange and white retroreflective stripes, sloping downward in the direction traffic is to pass. Retroreflective sheeting shall be placed on both sides of the rails and shall have a minimum of 270 square inches of visible retroreflective area facing vehicular traffic. When the barricade length is less than 36", the rail stripe width shall be 4".



MINIMUM BALLAST
(For each side of barricade support)

Without Sign	4 - 25 lb sandbags
With Sign	6 - 25 lb sandbags

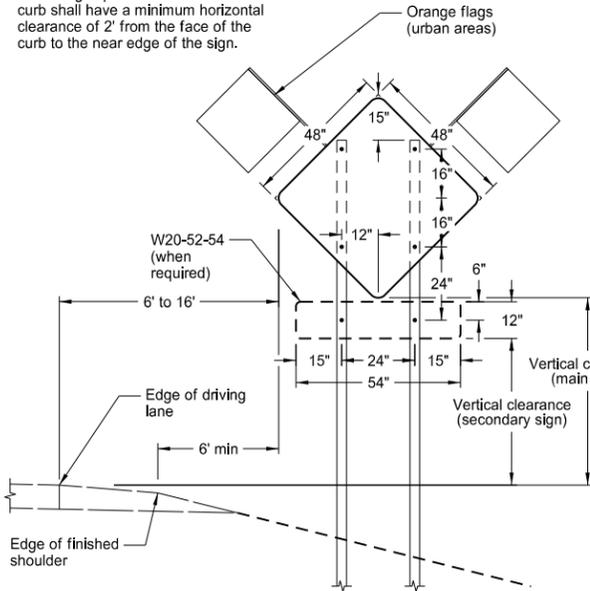
Note: The number of sandbags are based on a wind speed of 55 MPH. The sandbags are assumed to be placed at or near the ends of the skids.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE

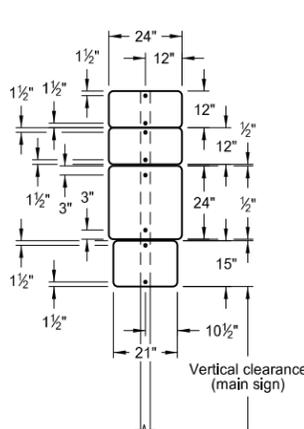
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 10/3/13 and the original document is stored at the North Dakota Department of Transportation

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

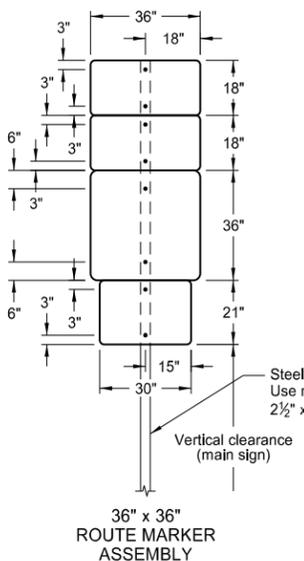
Note: Signs placed in sections with curb shall have a minimum horizontal clearance of 2' from the face of the curb to the near edge of the sign.



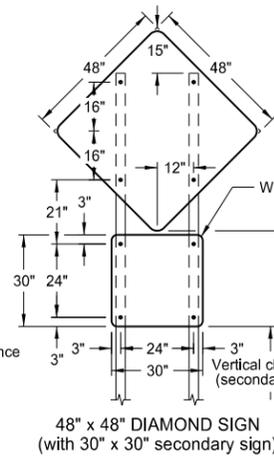
TYPICAL SECTION (48" x 48" diamond warning sign shown)



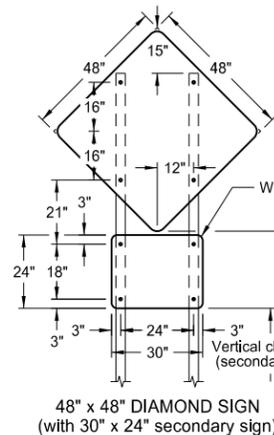
24" x 24" ROUTE MARKER ASSEMBLY



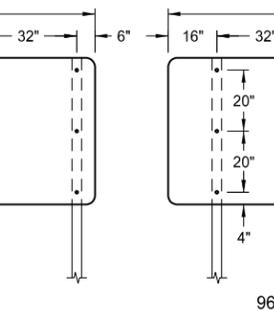
36" x 36" ROUTE MARKER ASSEMBLY



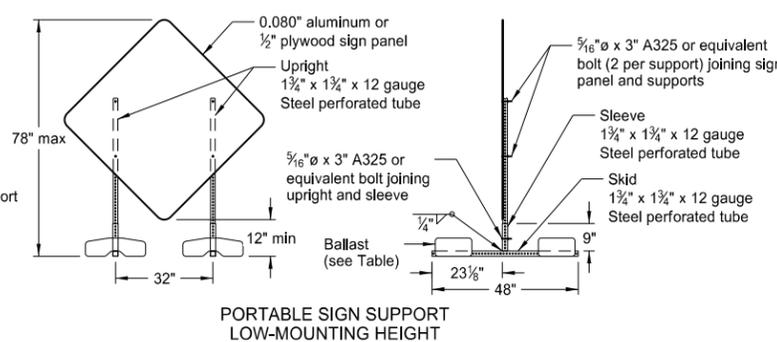
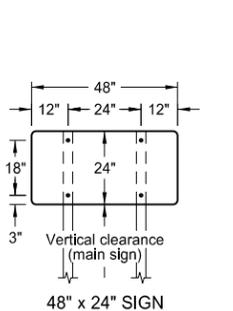
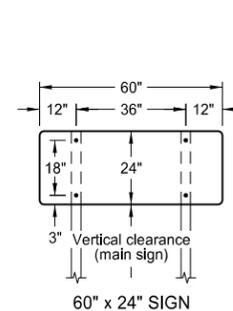
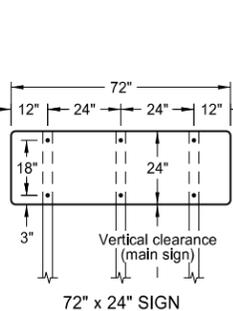
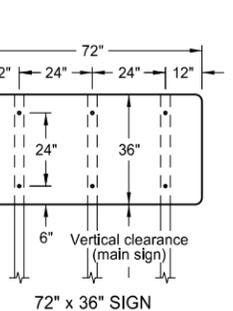
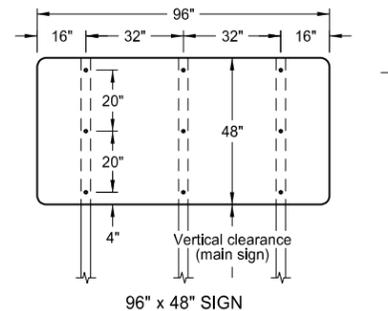
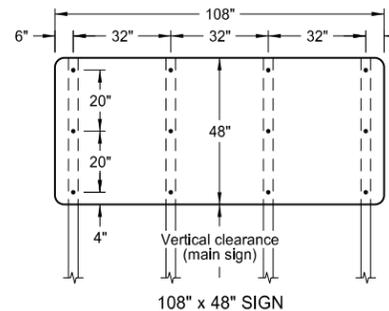
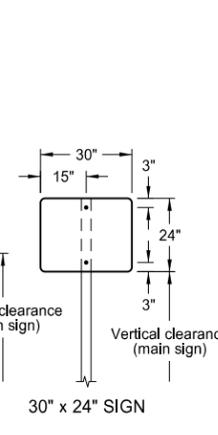
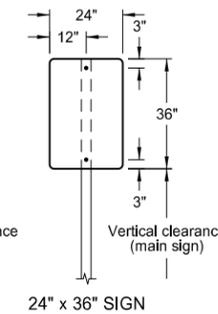
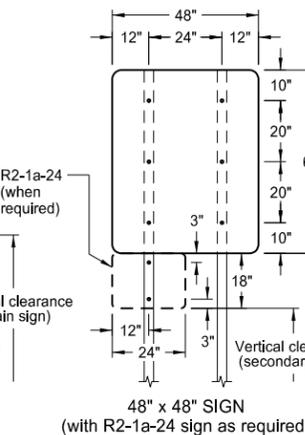
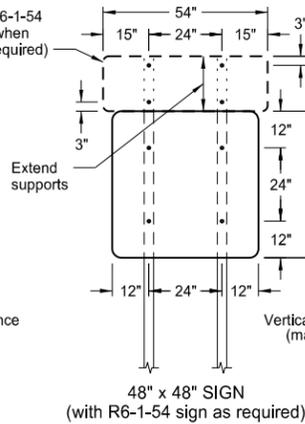
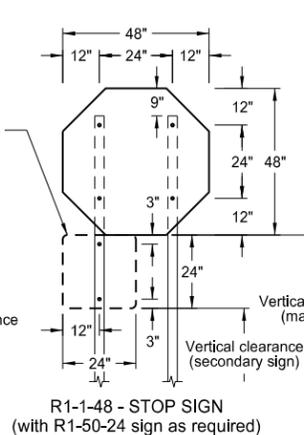
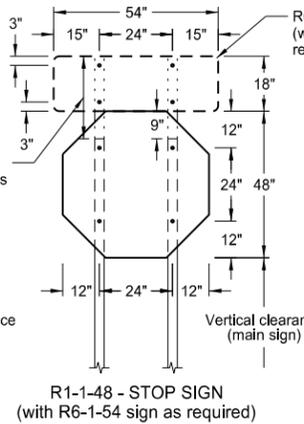
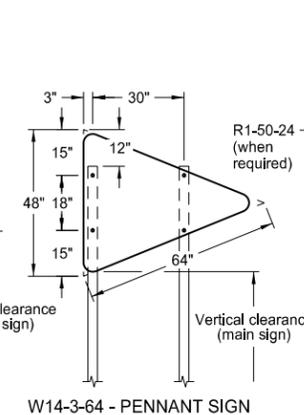
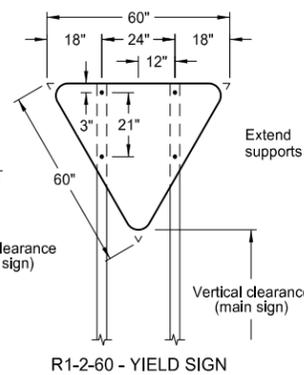
48" x 48" DIAMOND SIGN (with 30" x 30" secondary sign)



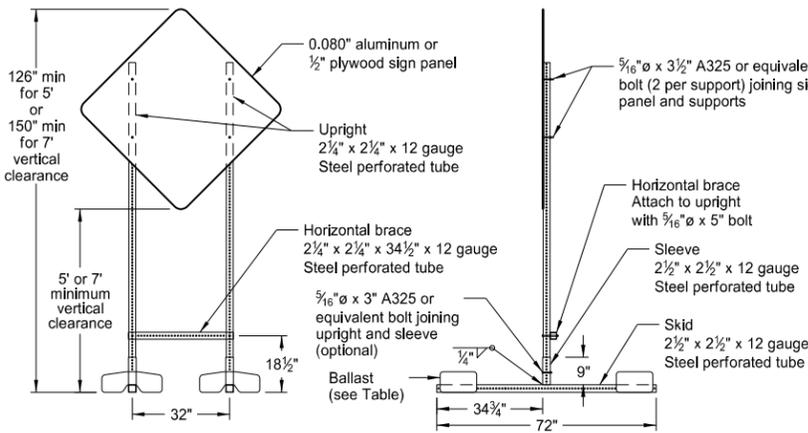
18" x 18" DIAMOND SIGN



48" x 48" DIAMOND SIGN (with 30" x 24" secondary sign)



PORTABLE SIGN SUPPORT LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT HIGH-MOUNTING HEIGHT

- NOTES:
- Sign Supports: Supports shall be galvanized or painted. Minimum post sizes are 2.5 lb/ft u-channel or 2" x 2" x 12 gauge steel perforated tube, except where noted. When installing signs on u-channel, the minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes are based on a wind speed of 55 MPH.
Signs over 50 square feet should be installed on 2 1/2" x 2 1/2" perforated tube supports as a minimum.
Guy wires shall not be attached to sign supports. Wind beams may be attached to u-posts behind the sign panels.
 - Sign Panels: Provide sign panels made of 0.100" aluminum, 1/2" plywood, or other approved material, except where noted. All holes to be punched round for 3/8" bolts.
 - Alternate Messages: The signs that have alternate messages may have these alternate messages placed on a reflectorized plate (without a border) and installed and removed as required. (i.e. "Left" and "Right" message on a lane closure sign)
 - Route Marker Auxiliary Signs: Provide route marker auxiliary signs, such as the cardinal direction and directional arrows, with a background and legend that match the route marker they are used with:
Interstate - white legend on blue background
Interstate Business Loop - white legend on green background
US and State - black legend on white background
County - yellow legend on blue background
 - Vertical Clearance: Install signs with a vertical clearance of 5'-0" (see TYPICAL SECTION.) In areas where parking or pedestrian movements are likely or the view of the sign may be obstructed, install signs with a vertical clearance of 7'-0" from the top of the curb or from the near edge of the driving lane in absence of a curb.
The vertical clearance to secondary signs is 1'-0" less than the vertical clearance as stated above.
Large signs having an area exceeding 50 square feet shall have a minimum clearance of 7'-0" from the ground at the post.
 - Portable Signs: Provide portable signs that meet the vertical clearance as stated above. Use portable signs when it is necessary to place signs within the pavement surface.
When portable signs are used for 5 days or less, low-mounting height (minimum 12" vertical clearance) sign supports may be used as long as the view of the sign is not obstructed. Time delays caused by unforeseen circumstances, such as equipment breakdown, rain, subgrade failures, etc., will not accrue towards the 5 day period. The R9-8 through R9-11a series, W1-5 through W1-8 series, M4-10, and E5-1 may be used for longer than 5 days.
Signs mounted to the portable sign supports shown in the LOW-MOUNTING HEIGHT and HIGH-MOUNTING HEIGHT Details shall have a maximum surface area of 16 square feet.

MINIMUM BALLAST (For each side of sign support base)

Sign Panel Mounting Height (ft)	Number of 25 lb sandbags for 4' x 4' sign panel
1'	6
5'	8
7'	10

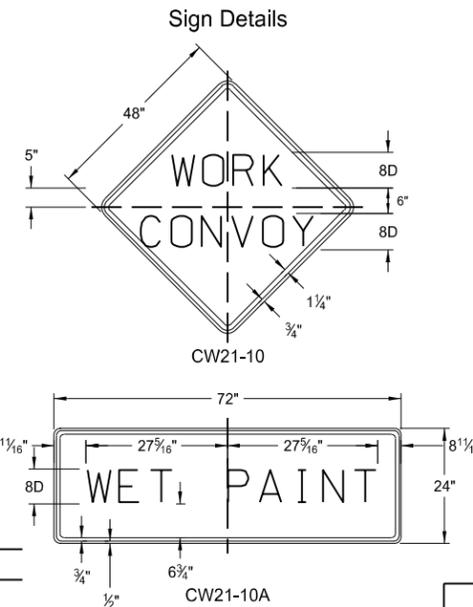
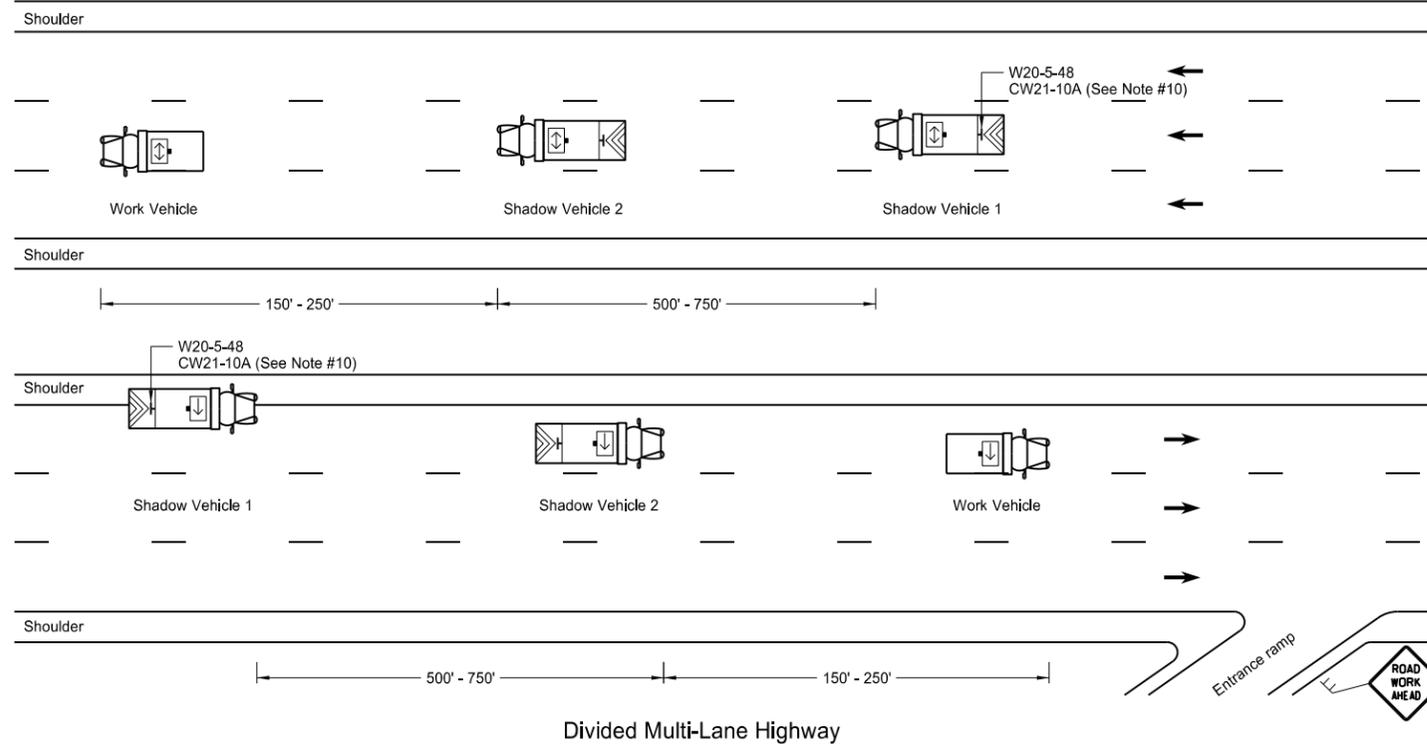
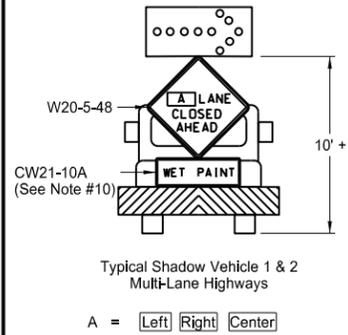
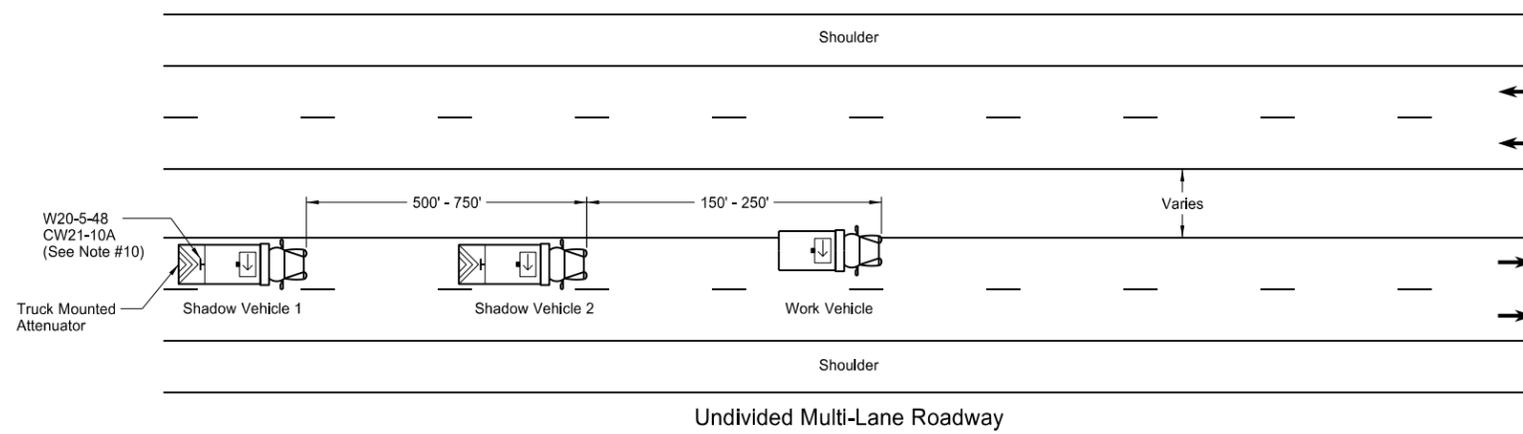
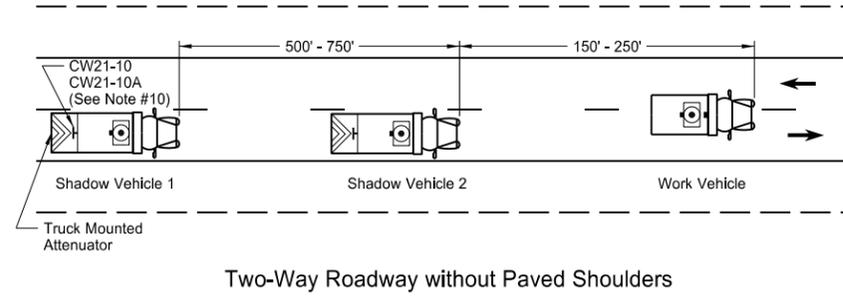
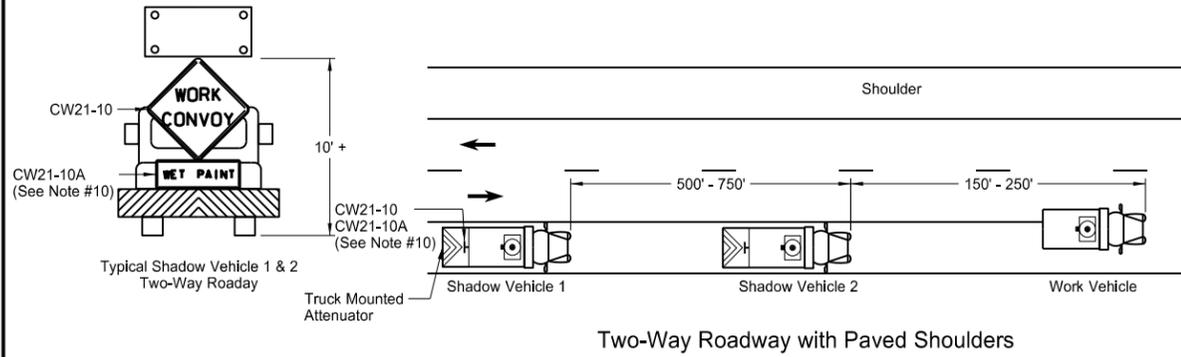
Note: The number of sandbags are based on a wind speed of 55 MPH. The sandbags are assumed to be placed at or near the ends of the skids.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	
REVISIONS	
DATE	CHANGE
11-14-13	Revised Note 6.

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/14/13 and the original document is stored at the North Dakota Department of Transportation

TRAFFIC CONTROL PLAN FOR MOVING OPERATIONS

D-704-27



- Notes
1. If the contractor chooses to place more vehicles in the convoy than are shown, these vehicles shall have the truck mounted attenuator and shall be at the contractor's expense.
 2. Shadow and work vehicles shall display yellow rotating beacons or strobe lights unless otherwise stated elsewhere in the plans.
 3. Flashing arrow panels shall be Type B or Type C. The panel operation shall be controlled from inside the vehicle.
 4. Each vehicle shall have two-way electronic communication capability.
 5. When work convoys must change lanes, shadow vehicle 1 should change lanes first to shadow other convoy vehicles.
 6. Vehicle spacing between the shadow vehicle 1 and shadow vehicle 2 will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the trail vehicle in time to slow down and/or change lanes as they approach the shadow vehicle.
 7. Sign Colors
Letters = Black
Border = Black
Background = Orange
 8. Shadow vehicle 2 may be used as the paint tender vehicle.
 9. Sign CW21-10A shall only be used during a painting operation.
 10. On two lane - two way roadways, the work and shadow vehicles should pull over periodically to allow motor vehicle traffic to pass.

KEY

- Sign
- Truck mounted attenuator
- Flashing arrow panels:
 - Right directional
 - Left directional
 - Double arrow directional
 - Caution Mode

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel Registration Number PE-2930, on 09/27/13 and the original document is stored at the North Dakota Department of Transportation

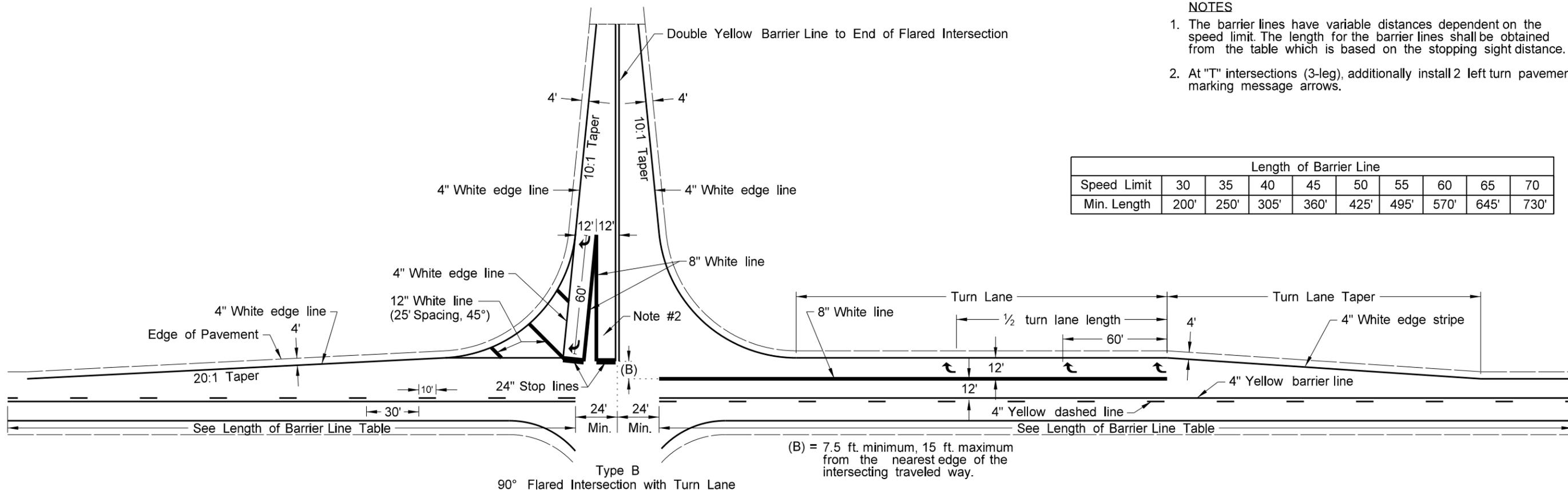
PAVEMENT MARKING FOR STANDARD 90° FLARED INTERSECTION

D-762-3

NOTES

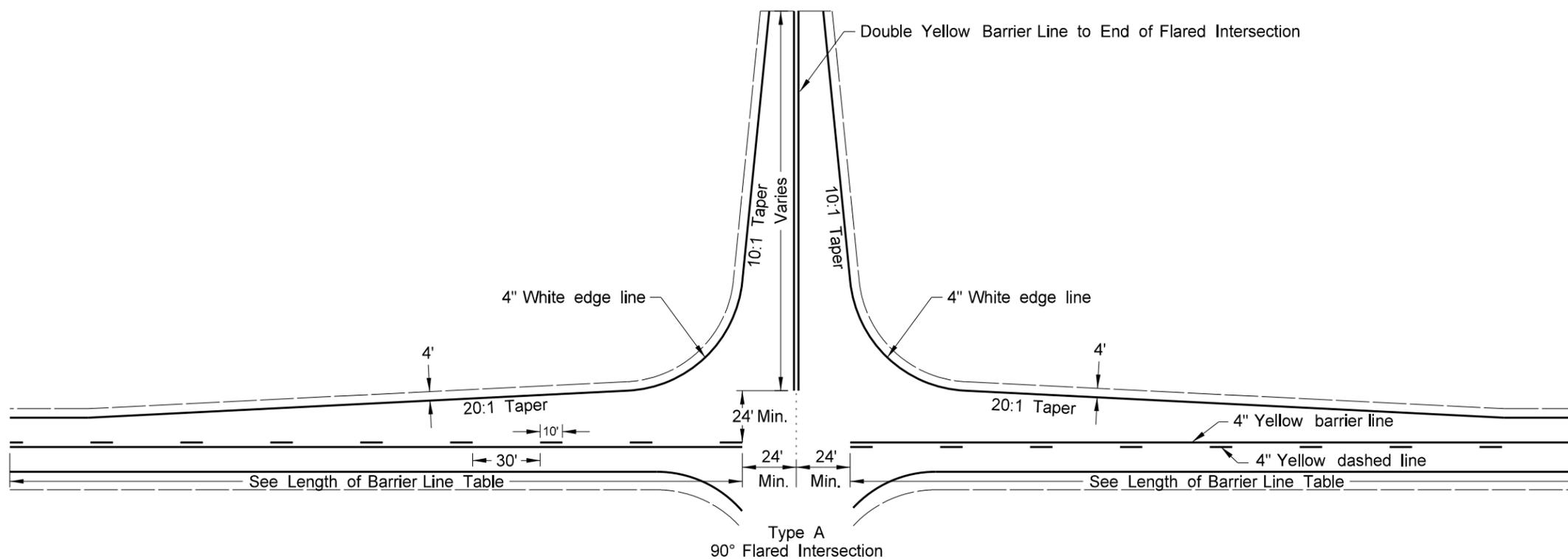
1. The barrier lines have variable distances dependent on the speed limit. The length for the barrier lines shall be obtained from the table which is based on the stopping sight distance.
2. At "T" intersections (3-leg), additionally install 2 left turn pavement marking message arrows.

Length of Barrier Line									
Speed Limit	30	35	40	45	50	55	60	65	70
Min. Length	200'	250'	305'	360'	425'	495'	570'	645'	730'



Legend

- 4" Line
- 8" Line
- 12" Line
- 24" Line

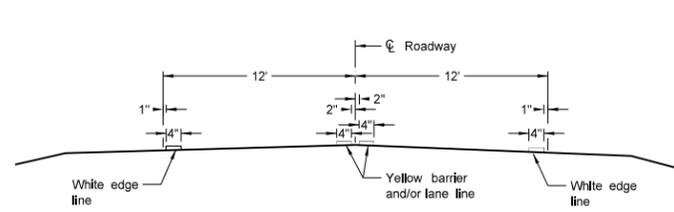


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
6-9-09	
REVISIONS	
DATE	CHANGE
9-24-09	Barrier Stripe Correction
9-21-11	Revised Turn Lane Markings
11-25-13	Revised Type B Layout

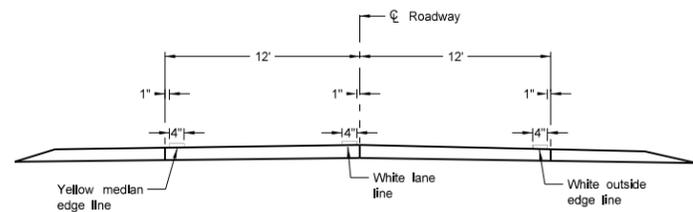
This document was originally issued and sealed by
 Roger Weigel
 Registration Number
 PE- 2930 ,
 on 11/25/2013 and the original document is stored at the
 North Dakota Department
 of Transportation

PAVEMENT MARKING

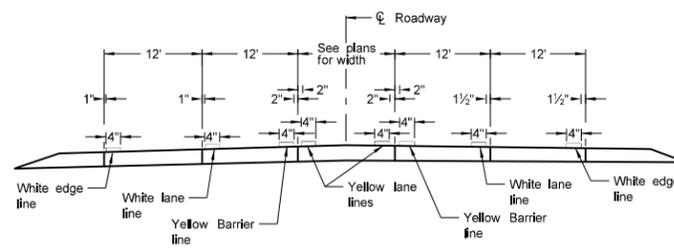
D-762-4



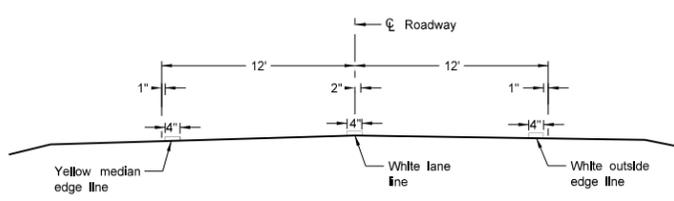
Two Lane Two Way
RURAL ROADWAY



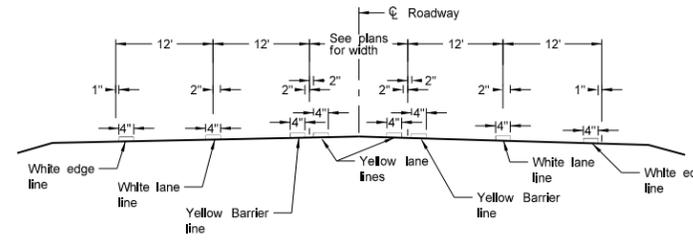
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



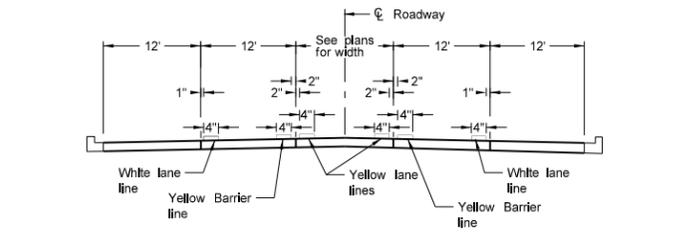
RURAL FIVE LANE ROADWAY
Concrete Section



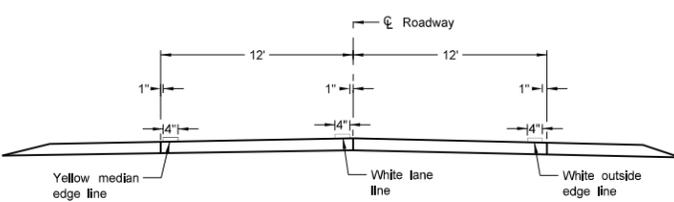
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



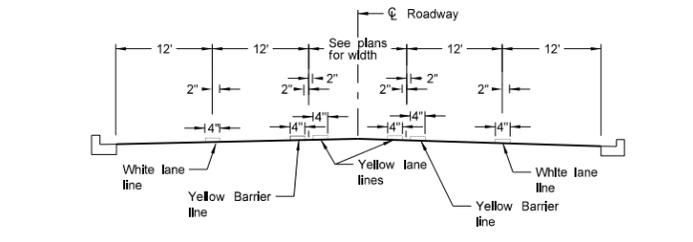
RURAL FIVE LANE ROADWAY
Asphalt Section



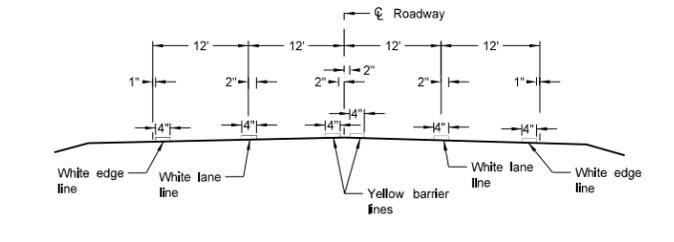
URBAN FIVE LANE SECTION
Concrete Section



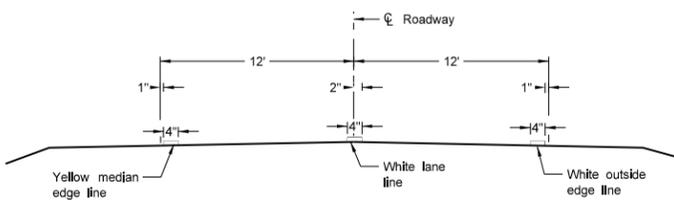
Two Lane Roadway
PRIMARY HIGHWAY
Concrete Section



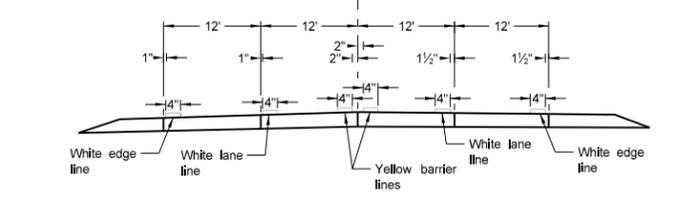
URBAN FIVE LANE SECTION
Asphalt Section



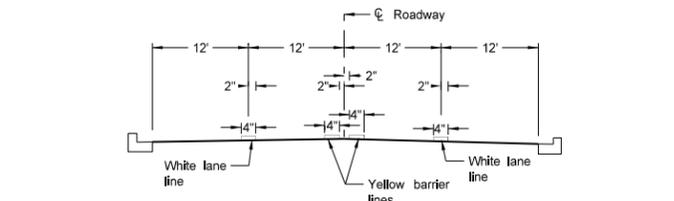
RURAL FOUR LANE ROADWAY
Asphalt Section



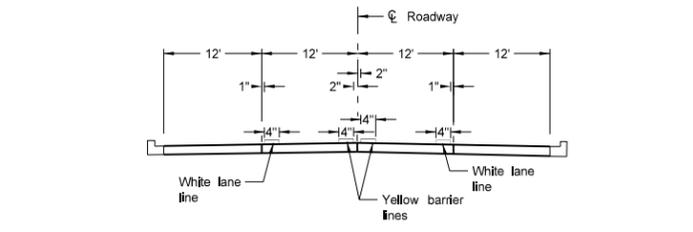
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



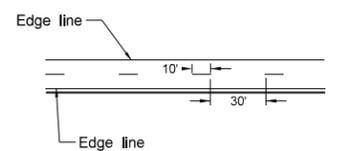
RURAL FOUR LANE ROADWAY
Concrete Section



URBAN FOUR LANE SECTION
Asphalt Section



URBAN FOUR LANE SECTION
Concrete Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

NOTES:
1. Edge lines shall be continued through private drives and field drives and broken for intersections.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-1-10	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 12-1-10 and the original document is stored at the North Dakota Department of Transportation