

GRAND FORKS  
COUNTY HIGHWAY DEPARTMENT

**BIDDERS PROPOSAL**

COUNTY PROJECT NUMBER  
CP-1800(024)

32.858 MILES

CHIP SEAL

COUNTY ROAD NUMBERS 1, 6, 10, 12, 17 & 19

DATE OF LETTING: APRIL 22, 2024

PROPOSAL OF:

GRAND FORKS COUNTY COMMISSIONERS

ADVERTISEMENT FOR BIDS

NOTICE TO BITUMINOUS SEAL COAT CONTRACTORS:

By the order of the Board of County Commissioners of Grand Forks County, North Dakota, I hereby give notice that sealed bids will be received by the undersigned at the office of the County Director of Finance & Tax up until 1:00 o'clock p.m., April 22, 2024. Bids will be publicly opened and read at 1:00 p.m. for Chip Seal Projects CP-1800(024) for the county, as per specifications prepared by and available at the office of the County Highway Department, located at 1700 N. Columbia Road, Grand Forks. Bids shall be considered at the May 7, 2024 Commission meeting.

In compliance with Section 11-11-28 of the North Dakota Century, bids to be opened and considered must be accompanied by a bond. A bid shall be accompanied by a separate envelope containing a bidder's bond in a sum equal to five percent of the full amount of the bid, executed by the bidder's as principal and by a surety company authorized to do business in the State as a guaranty that the bidder will enter into the contract if it is awarded to him and he will furnish the necessary bond. Also to be included with the envelope containing the bid bond shall be the contractor's license.

The Board reserves the right to reject any or all bids, in whole or in part, and to waive any technicalities.

The Board reserves the right to extend the date of receiving and opening of bids for a period of not to exceed five days when unforeseeable events may warrant such extension, at the discretion of the Board.

Bids must be enclosed in a sealed envelope, with a separate envelope for the bidder's bond and contractors license both addressed to the County Director of Finance & Tax and Marked on the outside what the bid is for. The County Director of Finance & Tax is located at 151 4<sup>th</sup> Street South and there mailing address is P.O. Box 5726, Grand Forks, ND 58206.

Dated at Grand Forks, North Dakota, this 28 day of March, 2024.

Debbie Nelson  
County Director of Finance & Tax  
Grand Forks, North Dakota

(Publish April 3, 10, 17, 2024)

LEGAL NOTICE

## GRAND FORKS COUNTY HIGHWAY DEPARTMENT

## INSTRUCTION TO BIDDERS

I. Proposals; are requested for the construction of Chip Seal Grand Forks County Highway Department Project Nos. CP-1800(024) in accordance with Plans, North Dakota Standard Specification Manual, North Dakota Supplemental Specification and other Contract Documents prepared by the Grand Forks County Highway Department.

A. Form: Each Proposal shall be made in a form prepared there for by the Engineer and included as one of the Contract Documents. All bids and proposals shall contain a statement showing that the bidder or contractor is dully and regularly licensed in the State of North Dakota. The number and class of the license then held by the contractor shall appear upon each bid or proposal. No contract shall be awarded to any contractor unless he is a holder of a license in the class within which the value of the project shall fall as hereinbefore provided. A contractor must be the holder of a license at least ten days prior to the date set for receiving bids to be qualified bidder. The bid shall be submitted in a sealed envelope upon which there is disclosed the following information:

1. The class of license held by the bidder;
2. The number of the bidder's license;
3. The name of the person, firm or corporation submitting the bid;
4. Date on which license was issued or renewed.
5. Certification of Insurance not less than 1,000,000.00 dollars.
6. 5% Bid Bond

A bid submitted without this information on the envelope shall not be considered and shall be returned to the bidder.

B. Modifications; Proposal shall not contain any recapitulation of the work to be done. Alternate proposals will not be considered unless called for. Oral proposals or modification will not be considered.

C. Examination of Contract Documents and Visit to Site;

Before submitting proposal, Bidder's shall carefully examine the Plans, read the Specification and the other Contract Document, shall visit the site of work, and shall fully inform themselves as to all existing conditions, and limitations, and shall include in the proposal a sum to cover the cost of items included in the Contract Documents.

D. Deliver of Proposal; Proposals shall be delivered by the time and the place stipulated in the Advertisement. It is the sole responsibility of the Bidder to see that his proposal received in proper time. Any proposal received after the scheduled closing time for receipt of proposals shall be returned to the Bidder unopened.

E. Withdrawal; Any Bidder may withdrawal his proposal, either personally or by written request, at any time prior to the scheduled closing time for receipt of proposals.

F. Opening; Proposals will be opened and publicly read aloud at the time and place set forth in the Advertisement.

G. Award or Rejection; The Contract will be awarded to the lowest and/or best qualified responsible Bidder complying with those instructions and with the Advertisement. Grand Forks County reserves the right to reject any or all proposals or to waive any informalities or technicality in any proposal in the interest of Grand Forks County. No bidder may withdraw his proposal for a period of 30 days after the date of opening thereof.

- II INTERPRETATION OF DOCUMENTS; If any person contemplating submitting a proposal is in doubt as to the true meaning of an part of the Plans, Specifications or other Contract Documents, or finds discrepancies in or omissions from the Plans or Specifications, he may submit to the Engineer a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the documents will be made only by Addendum duly issued and a copy of the Addendum will be mailed or delivered to each person receiving a set of the Contract Documents. Neither the County nor the Engineer will be responsible for any other explanation or interpretation of the Contract Documents.
- III ADDENDA; Any addenda issued during the time of bidding, or forming part of the Contract Documents loaned to the Bidder for the preparation of his proposal, shall be covered in the proposal, and shall be made a part of the Contract. Receipt of each Addendum shall be acknowledged in the proposal.
- IV BIDDERS INTERESTED IN MORE THAN ONE PROPOSAL; No person, firm or corporation shall be allowed to make, file or to be interested in more than one proposal for the same work, unless alternate proposals are called for. A person firm or corporation who has submitted a sub-proposal to a Bidder's, or who has quoted prices on materials to a Bidder's is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidder's.
- V PROPOSAL GUARANTY; Each bid must be accompanied by a bidder's bond in the amount of 5 percent of the bid, payable to Grand Forks County. All bonds shall comply with the North Dakota Century Code as amended.

All such bonds will be returned to the respective unsuccessful Bidder's within ten days after the award is made, except those the County elects to hold until the successful Bidder has executed the Contract. Thereafter all remaining bonds will be returned within ten days.

- VI CERTIFICATE FROM TAX COMMISSIONER; In accordance with Section 43-07-11.1 of the North Dakota Century Code, prior to executing the Contract, the contractor shall submit to Grand Forks County a certificate from and by the Tax Commissioner stating that the Contractor has paid all delinquent income taxes if any, owed to the State pursuant to the provisions of Chapter 57-38 of the above mention code.

Note: The envelope containing this proposal should be marked: Proposal for Grand Forks County Highway Project Nos. Chip Seal CP-1800(024), in Grand Forks County.

\*\*\*\*\*

(Proposal of Name) \_\_\_\_\_

(Address) \_\_\_\_\_

to furnish and deliver all material and to do and perform all work, in accordance with the Standard Specification, adopted by the North Dakota Department of Transportation October 2014. Standard Drawings currently in effect, and other Contract Provisions submitted herein, of the Grand Forks County Highway Department except as specifically stated otherwise in the "Special Provisions" contained therein, for the improvement of a certain section of County Highway in Grand Forks County, State of North Dakota,

on which proposal will be accepted until 1:00 o'clock p.m., on the 22 day of April 2024, this highway being known as Grand Forks County Highway Department.

Project Nos. CP-1800(024) Said projects being County Road Numbers 1, 6, 10, 12, 17 & 19.

\*\*\*\*\*

To the County Engineer of the Grand Forks County Highway Department Grand Forks, North Dakota

Sir:

In accordance with Advertisement and Notice to Contractors of the Grand Forks County Highway Department, inviting proposals for the improvement of the section of highway hereinbefore named, and in conformity with the plans and specification, on file in the office of the Grand Forks County Highway Department, I/We hereby certify that I am/we are the only person or persons interested in this proposal as principals; that it is made without collusion with any person, firm or corporation; that an examination has been made of the specifications and Contract Form including "Special Provisions" contained therein, also the Plans, and the site of the work, and propose to furnish all necessary machinery, equipment, tools labor and other means of construction, and to furnish all materials specified, in the manner and at the time specified and understand that the quantities of work as shown herein are approximate only and are subject to increase or decrease, and further understand that all quantities of work whether increased or decreased, are to be preformed at the following unit prices (except as provided in said specification)

The Highway Department reserves the right to reject any or all bids, in whole or in part, and to waive any technicalities.



GRAND FORKS COUNTY HIGHWAY DEPARTMENT

PROPOSAL

It is further proposed that this bidder will:

Do all "Extra Work" which may be required to complete the work contemplated at the unit prices or lump sums, to be agreed upon in writing prior to starting such extra work or if such price or sums cannot be agreed upon, to perform such work on a "Force Account" basis, as provided for in the specifications.

Obtain all required license and authority as may be required by law or foreign corporations prior to executing the contract and agrees that failure to do so shall constitute a default and grounds for forfeiture of proposal guarantee.

Begin work within ten calendar days from the date of the "Notice to Proceed" and to prosecute said work so as to complete the roadway and its appurtenances on or before **September 1, 2024**.

Comply with requirements of Title 65, North Dakota Century Code, as amended, known as the Workmen's Compensation Act.

\_\_\_\_\_  
Contractor

By \_\_\_\_\_

Title \_\_\_\_\_

Dated \_\_\_\_\_, 2024

GRAND FOR COUNTY HIGHWAY DEPARTMENT

CONTRACT

This agreement made and entered into by the Grand Forks County Highway Department, party of the first part, and

\_\_\_\_\_  
PARTY OF THE SECOND PART (hereinafter called Contractor), WITNESSETH:

1. That, for and in consideration of the payments hereinafter mention to be made by the party of the first part, the Contractor promised and agrees to furnish and deliver all the material and to do and perform all the work and labor required to be furnished and delivered, and to pay or cause to be paid as they become due, all claims for any work or labor performed including that performed repairing machinery and equipment, or renting any equipment and machinery or furnishing any, hand tools, or materials or insurance premiums or supplies used for machinery and equipment, all as done and performed in and about the improvement and construction of a certain portion of the public highway

known as Grand Forks County. Highway Department Project Numbers CP-1800(024)

in Grand Forks County, North Dakota for Chip Seal item. In accordance with item numbers and quantities listed in the proposal and the limits of Projects as shown in the plans approved by the County Engineer of Grand Forks County Highway Dep't., a length of 32.858 miles in strict and entire conformity with provisions of this contract, and bond and proposal, and the plans and specifications approved by the County Engineer, copies of which are hereto attached, and which said plans and specifications and proposal and bond are hereby made a part of this agreement. As fully and to the same effect as if the same had been set forth in the body of this agreement.

2. The party of the first part agrees and promised to pay to the Contractor for said work, when completed and accepted in accordance with the provisions of this contract, the price set forth in the said proposal, amounting approximately to

\_\_\_\_\_, payment to be made as provided in said specification upon presentation of the proper certification of the County Engineer of the Grand Forks County Highway Department, or his representatives, and under to terms of this contract.

3. The said work shall be done in accordance with the terms of this agreement and the laws of the State of North Dakota under direct supervision and to the entire satisfaction of the Grand Forks County Highway Department.

4. The decision of said County Engineer upon any question connected with the execution of this agreement or any failure or delay in the prosecution of the work by the said Contractor shall be final and conclusive.

5. The Contractor shall begin construction work when so ordered by the Grand Forks County Highway Department and shall maintain at all times thereon a maximum and effective force.

6. The Said work shall be completed by September 1, 2024.

In Witness Whereof, the parties to this contract have hereunto set their hand and seals this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

GRAND FORKS COUNTY STATE OF NORTH DAKOTA

\_\_\_\_\_  
Chairman of the Board of Grand Forks County  
Commissioner, Party of the First Part

WITNESS TO CONTRACTOR'S SIGNATURE

\_\_\_\_\_

\_\_\_\_\_  
Grand Forks County Director of Finance & Tax

Contractor \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Party of the Second Part



# PROPOSED PROGRESS CHART

North Dakota Department of Transportation, Construction Services  
SFN 7721 (Rev. 12-2011)

Bid Opening Date <b>April 22, 2024</b>
---

**This Block To Be Completed by Contractor**

Project No.
County
Contractor
Proposed Starting Date

**Department Use Only:**

Completion Date Contract <u>09-01-2024</u> with <u>N/A</u> guaranteed working day counted from <u>N/A</u> or from the actual date on which on-site work is started, whichever is earlier.	
Working Day Contract <u>N/A</u> working days counted from <u>N/A</u> or from the actual date on which on-site work is started, whichever is earlier.	
Contract Amount \$	Engineer

Prime Contractor       DBE Subcontractor

TYPE OF OPERATION	YEAR	PROPOSED WORK SCHEDULE																				
		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.									
	2024																					
	2025																					
<b>Contractor:</b> Enter estimate % contract completion to date for end of each month	2024																					
	2025																					
	2026																					
<b>Department Use Only:</b> Actual % completion to date	2024																					
	2025																					
	2026																					

Contractor to submit Proposed Progress Chart within 10 days after opening of bids to: Grand Forks County Highway Department, P.O. Box 5682, Grand Forks, ND 58206

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

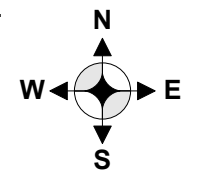
**GRAND FORKS COUNTY, NORTH DAKOTA  
PLANS FOR COUNTY PROJECT  
CP-1800(024)  
CHIP SEAL**

Project consists of 32.858 miles of Chip Seal & Fog Seal on various bituminous surfaced County Routes #1, #6, #10, #12, #17 & #19.

PCN	State	Project No.	Sheet No.
	ND	CP-1800(024)	1

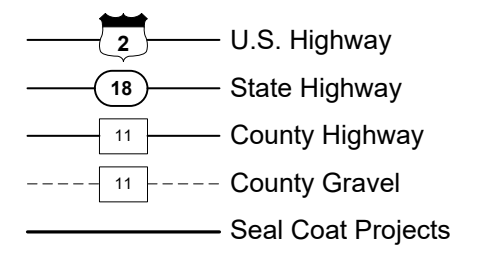
PROJECTS	MILES-GROSS	MILES-NET
CP-1800(024)	32.858	32.858
<b>TOTAL</b>	<b>32.858</b>	<b>32.858</b>

GOVERNING SPECIFICATIONS	Date Published and Adopted By the North Dakota Department of Transportation
Standard Specifications	04/01/2023
Supplemental Specifications	NONE

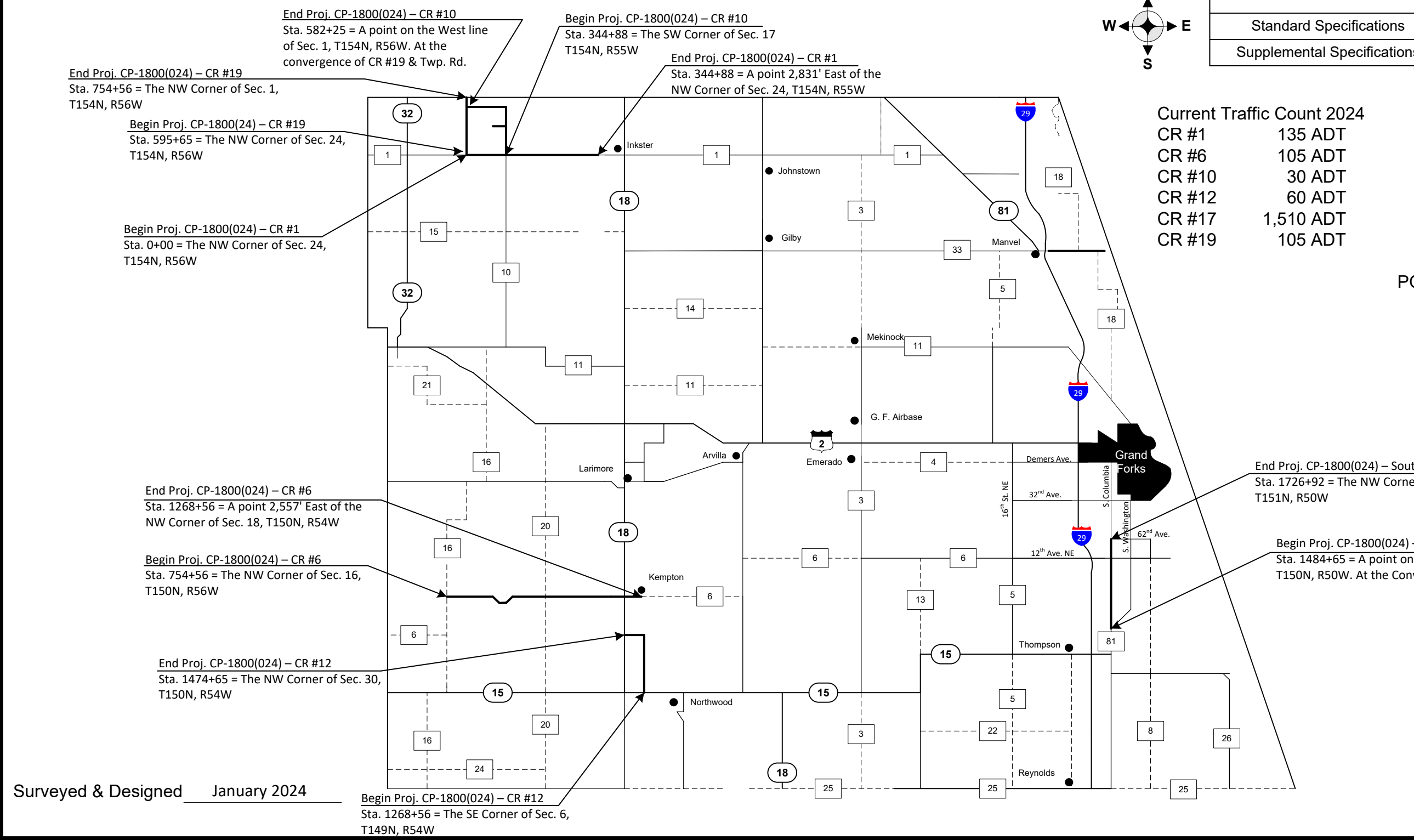


**Current Traffic Count 2024**

CR #1	135 ADT
CR #6	105 ADT
CR #10	30 ADT
CR #12	60 ADT
CR #17	1,510 ADT
CR #19	105 ADT



POC: Scott Clayton  
P.O. Box 5682  
Grand Forks, ND 58206  
(701) 780-8248



Surveyed & Designed January 2024

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department

State	Project No.	Sheet No.
ND	CP-1800(024)	2

TABLE OF CONTENTS

Sheet No.	Description	List of Standard Drawing
1.)	Title Page	D-704-3 Lane Markers for Seal Projects Only
2.)	Table of Contents	D-704-7 Breakaway Systems for Construction Zone Signs
3.)	Scope of Work	D-704-8 Breakaway Systems for Construction Zone Signs
4.)	Notes	D-704-9 Construction Sign Details Terminal And Guide Signs
5.)	Notes	D-704-10 Construction Sign Detail – Regulatory Signs
6.)	Notes	D-704-11 Construction Sign Detail – Warning Signs
7.)	Estimate of Quantities CP-1800(024)	D-704-11A Construction Sign Detail – Warning Signs
8.)	Typical Section & Basis of Estimate CR #1 & #6	D-704-15 Road Closure Layout
9.)	Typical Section & Basis of Estimate CR #10	D-704-20 Terminal and Seal Coat Sign Layout
10.)	Typical Section & Basis of Estimate Fordville Dam Entrance	D-704-22 Construction Truck and Temporary Detour Layout
11.)	Typical Section & Basis of Estimate CR #19	D-704-27 Mobile Operation Pavement Marking
12.)	Typical Section & Basis of Estimate CR #12	D-762-1 Pavement Marking Message Details
13.)	Typical Section & Basis of Estimate CR #17	D-762-4 Pavement Marking
14.)	Typical Section & Basis of Estimate CR #17	D-762-5 Pavement Marking for Standard 90 Degree Flared Intersection
15.)	Construction Sign Detail CR #1, #6, #10, #12, #17 & #19	D-762-11 Short – Term Pavement Marking
16.)	Construction Sign Detail CR #1, #10 & #19	
17.)	Construction Sign Detail CR #6, #12 & #17	
18.)	Traffic Control Devices CR #1, #6, #10, #12, #17 & #19	
19.)	Pavement Marking Installation Detail CR #6, #10, #12, #17, & CR #19	

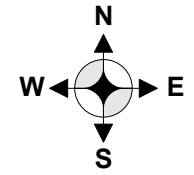
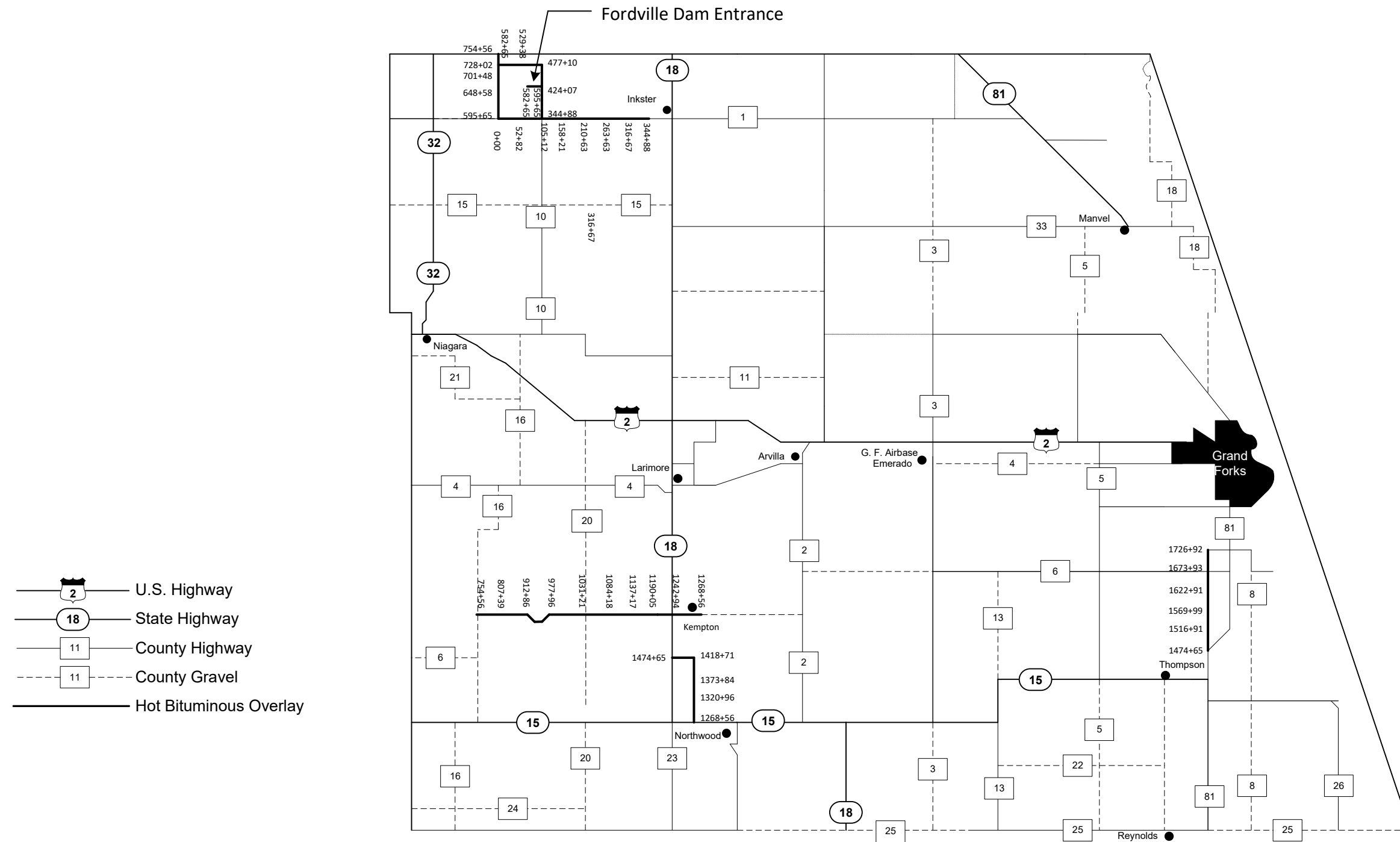
This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Table  
 of  
 Contents

State	Project No.	Sheet No.
ND	CP-1800(024)	3

### SCOPE OF WORK

Project consists of 32.858 miles of Chip Seal & Fog Seal on various bituminous surfaced County Routes #1, #6, #10, #12, #17, #19 & Fordville Dam Entrance



This document was originally issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 on 04-02-2024  
 document is stored at the  
 Grand Forks County Highway  
 Department

State	Project No.	Sheet No.
ND	CP-1800(024)	4

NOTES

**107 RAILWAY PROTECTION INSURANCE:** This project crosses the BNSF Railroad Company at Sta. 1267+36 C/L on Grand Forks County Highway 6. The type of work that will be performed within the railroad right of way is bituminous seal coat, fog seal, and incidentals. Direct inquiries regarding protective liability insurance to”

Rosa Martinez  
March Co.  
Texas  
214-303-8519

Information on crossing number 086696H may be obtained from the Federal Railroad Administration website:  
<http://safetydata.fra.dot.gov/Officeofsafety/>

**401 FOG SEAL APPLICATION:** Broom the roadway immediately prior to the Fog Seal application. Apply Fog Seal of CSS-1H at the residual rate shown on the Basis of Estimate, or as directed by the Engineer. The dilution rate of the Fog Seal will be 50% water and 50% CSS-1H, or as directed by the Engineer. Dilution at the supplier will be required. Begin this work within 48 hours of mainline seal completion.

**420 COVER COAT MATERIAL CL 41:** Contractor is allowed to use Class #41 or 41M for cover coat material.

**420 CHIP SEAL:** Use a vacuum or pickup sweeper to remove loose cover coat material accumulated in the following areas:

- County Road #17
- Sta. 1505+00 to Sta. 1515+00 Rt
- Sta. 1569+99 to Sta. 1586+00 Rt
- Sta. 1569+99 to Sta. 1597+00 Lt
- Sta. 1596+40 to Sta. 1622+60 Rt
- Sta. 1658+23 to Sta. 1664+80 Lt
- Sta. 1673+93 to Sta. 1688+50 Rt
- Sta. 1673+93 to Sta. 1700+00 Lt
- Sta. 1722+20 to Sta. 1726+92 Lt
- Sta. 1726+92 to Sta. 1730+92 Rt & Lt
- Sta. 1730+92 to Sta. 1734+92 Rt & Lt

Perform this action after the material has set and within 24 hours of application. Do not dislodge embedded aggregate. Do not sweep loose cover coat material across driving lanes during this process.

**704 TRAFFIC CONTROL FOR SEAL COATS:** Traffic control for the seal coat shall consist of a temporary road closure, flagging, and a pilot car. Traffic Control Devices shall comply with the following Standard Drawings:

- 1.) Standard D-704-15 layout A: For construction signing just beyond the daily work areas during seal coat operation. Intermediate flagging station will require signs W20-7a-48 only.
- 2.) Standard D-704-20 layout H: For construction signing during seal coat operations.
- 3.) Standard D-704-22, layout K and L: For trucks hauling material
- 4.) Standard D-704-7, 8, 9, 10, 11, and 11A are applicable.
- 5.) Standard D-704-3, Lane Markers for Seal Jobs (Spotting Tabs)

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. Additional devices require to accommodate the Contractor's operation shall be the Contractor's responsibility. The Contractor is allowed to use portable signs.

**762 RAISED PAVEMENT MARKERS:** RPMs shall be installed every 200 feet along the centerline and at the beginning and end of no passing zones.

**762 PAVEMENT MARKING PAINTED MESSAGE:** The contractor shall install pavement marking at RR Tracks at Sta. 1267+36.

**762 PAVEMENT MARKING EDGE LINE:** A 4 inch white edge line has been added to quantity to be used throughout the length of the project. Edge line shall continue through private drives and field drives, and break for intersections.

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department

Notes

State	Project No.	Sheet No.
ND	CP-1800(024)	5

NOTES

**762 PAVEMENT MARKING:** The quantity for Permanent Pavement Marking one application and Short Term Painted Line – Seal Coat are based on two application. Pavement marking paint for Permanent Pavement Marking and Short Term Painted Line – Seal Coat shall be commercially available traffic marking paint. Glass beads for permanent pavement marking shall meet the requirement of Standard Specification 880.02 and be tested approved prior to use on the project.

County Road #1	Station to	Station	Rt/Lt	Length	Overlap
	0+20	7+90	Lt.	689'	
	98+16	104+82	Rt.	666'	
	105+40	112+35	Lt.	695'	
	159+20	176+66	Rt.	1,746'	
	175+57	189+18	Lt.	1,361'	109'
	230+90	238+66	Rt.	776'	
	243+75	251+87	Lt.	812'	
	260+16	266+07	Rt.	591'	
	268+10	278+03	Lt.	993'	
County Road #10					
	345+30	350+09	Lt.	489'	
	416+09	439+32	Rt.	2,323'	1,447'
	424+85	451+66	Lt.	2,681'	181'
	449+85	476+82	Rt.	2,695'	1,126'
	465+56	476+80	Lt.	1,134'	
	477+18	483+08	Lt.	560'	
	577+00	581+78	Rt.	478'	
County Road #19					
	596+17	603+22	Lt.	705'	
	626+32	634+81	Rt.	849'	
	638+09	647+01	Lt.	892'	330'
	643+71	653+14	Rt.	943'	198'
	651+16	658+65	Lt.	749'	
	685+29	692+55	Rt.	726'	
	692+14	700+20	Lt.	806'	41'
	721+00	727+69	Rt.	669'	
	728+35	735+06	Lt.	671'	

County Road #6	Station to	Station	Rt/Lt	Length	Overlap
	754+84	761+69	Lt.	685'	
	794+30	803+64	Rt.	934'	
	804+63	812+75	Lt.	812'	
	832+39	841+24	Rt.	885'	
	842+59	850+35	Lt.	776'	
	861+30	868+27	Rt.	697'	
	867+72	877+38	Lt.	966'	115'
	883+62	889+27	Rt.	565'	
	892+23	899+22	Lt.	699'	
	896+15	920+20	Rt.	2,405'	307'
	906+00	920+20	Lt.	1,420'	1,420'
	925+57	979+43	Rt.	5,386'	
	925+57	979+43	Lt.	5,386'	5,386'
	979+85	985+47	Lt.	562'	
	1015+01	1030+95	Rt.	1,594'	
	1023+33	1030+95	Lt.	762'	818'
	1031+43	1037+89	Lt.	646'	
	1038+12	1056+04	Rt.	1,792'	
	1049+24	1067+42	Lt.	1,818'	680'
	1069+23	1075+73	Rt.	650'	
	1079+48	1085+67	Lt.	619'	
	1102+87	1109+00	Rt.	613'	
	1110+42	1118+12	Lt.	770'	
	1234+53	1242+34	Rt.	691'	
	1243+62	1250+20	Lt.	658'	
	1260+34	1267+21	Rt.	687'	
	1267+34	1268+56	Rt.	122'	
	1267+34	1268+56	Lt.	122'	122'

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department

Notes

State	Project No.	Sheet No.
ND	CP-1800(024)	6

NOTES

County Road #12

Station	to	Station	Rt/Lt	Length	Overlap
1269+21		1276+60	Lt.	739'	
1417+65		1425+31	Rt.	766'	
1425+31		1432+41	Lt.	710'	
1467+62		1474+37	Rt.	675'	

County Road #17

1474+82		1481+71	Rt.	689'	
1474+82		1484+10	Lt.	928'	689'
1661+51		1673+43	Rt.	1,192'	
1665+48		1673+43	Lt.	795'	795'
1674+41		1686+65	Lt.	1,224'	
1726+92		1730+92	Rt.	400'	
1730+92		1734+92	Rt.	400'	

**762 PAVEMENT MARKING:** Replace all references to 6" wide pavement marking with 4" wide pavement marking in Standard Drawings D-762-1, D-762-4 & D-762-5. If the Engineer and Contractor agree, plan quantity will be used as the measurement for payment for pavement marking items.

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Notes

Estimate of Quantities CP-1800(024)

State	Project No.	Sheet No.
ND	CP-1800(024)	7

Spec No	Code No	Description	Unit	CR #1	CR #6	CR #10 & Dam Entrance	CR #12	CR #17 & Spurs	CR #19	Project CP-1800(024)
103	0100	Contract Bond	L Sum	.205	.305	.150	.110	.137	.093	1
107	0100	Railway Protection Insurance	L Sum	-----	1	-----	-----	-----	-----	1
401	0070	Fog Seal	Gal	6,131	9,138	4,685	2,977	3,568	2,472	28,971
420	0111	CRS2P Emulsified Asphalt	Gal	34,948	52,085	25,452	19,143	24,814	16,103	172,545
420	0125	Cover Coat Material CI 41	Ton	1,104	1,645	804	605	784	509	5,451
702	0100	Mobilization	L Sum	.205	.305	.150	.110	.137	.093	1
704	1000	Traffic Control Signs	Unit	914	1,088	676	458	875	711	4,722
762	0103	Pvmt Mk Painted - Message	SF	-----	361	228	152	228	76	1,045
762	0460	Short Term Painted Line – Seal Jobs	LF	33,848	88,720	32,264	15,950	23,528	21,682	215,692
762	1104	Pvmt Mk Painted 4 In Line	LF	85,900	147,160	66,286	49,265	63,818	42,623	455,052

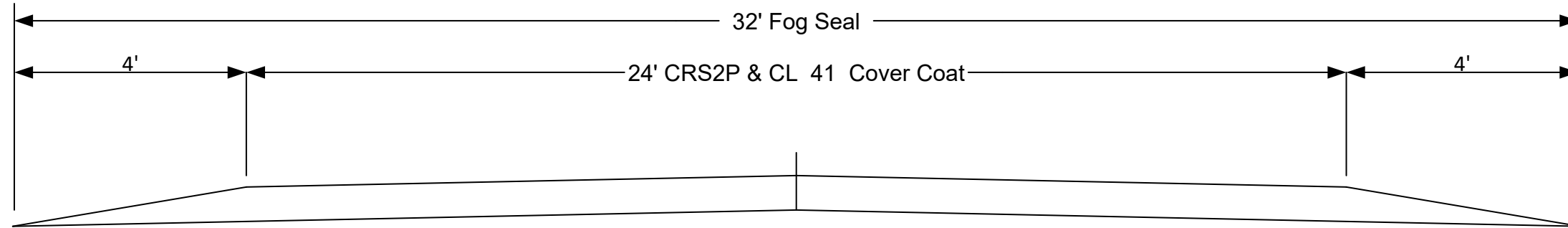
This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Estimate  
 of  
 Quantities



TYPICAL SECTION & BASIS OF ESTIMATE  
 COUNTY ROAD #1 & #6

State	Project No.	Sheet No.
ND	CP-1800(024)	8



Sta. 0+00 to Sta. 344+88 = 34,488' CR #1  
 Sta. 754+56 to Sta. 1268+56 = 54,000' CR #6

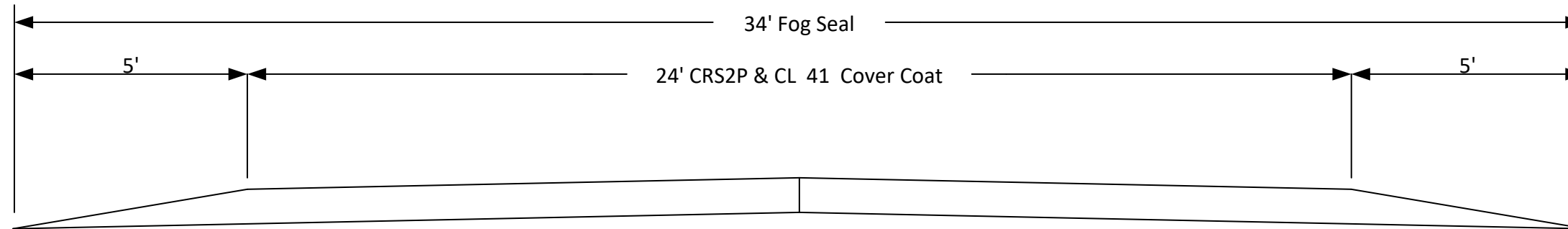
Description	Basis of Estimate		
	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	24'	5,350
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	24'	169
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal	32'	939

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
 COUNTY ROAD #10

State	Project No.	Sheet No.
ND	CP-1800(024)	9



Sta. 344+88 to Sta. 582+65 = 23,777' CR #10

Basis of Estimate

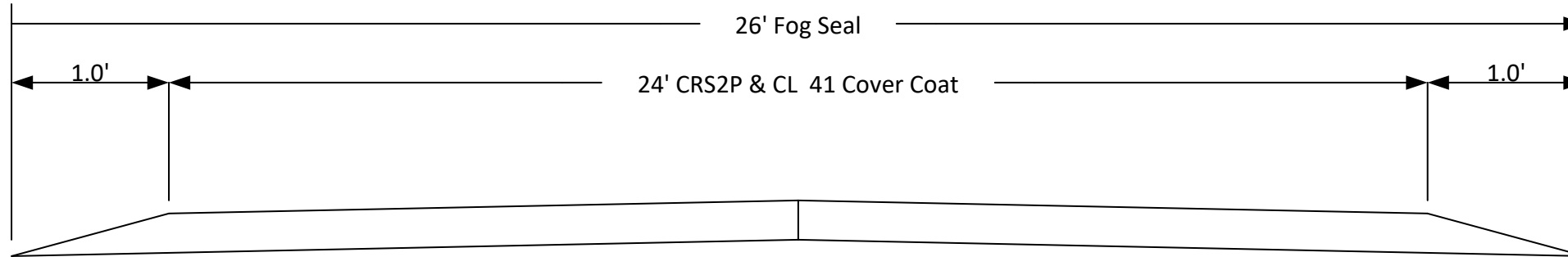
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	24'	5,350
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	24'	169
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	34'	997

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
 FORDVILLE DAM ENTRANCE

State	Project No.	Sheet No.
ND	CP-1800(024)	10



Sta. 582+85 to Sta. 595+65 =	1,340'	Fordville Dam Entrance
Sta. 1726+92 to Sta. 1730+92 =	400'	CR #17 Spur Rt.
Sta. 1730+92 to Sta. 1734+92 =	400'	CR #17 Spur Lt.

Basis of Estimate

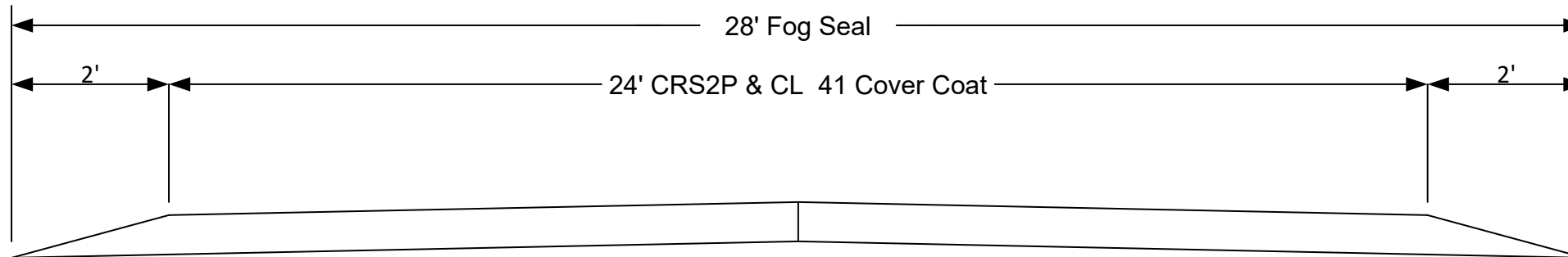
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	24'	5,350
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	24'	169
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	26'	763

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
 COUNTY ROAD #19

State	Project No.	Sheet No.
ND	CP-1800(024)	11



Sta. 595+65 to Sta. 754+56 = 15,891' CR #19

Basis of Estimate

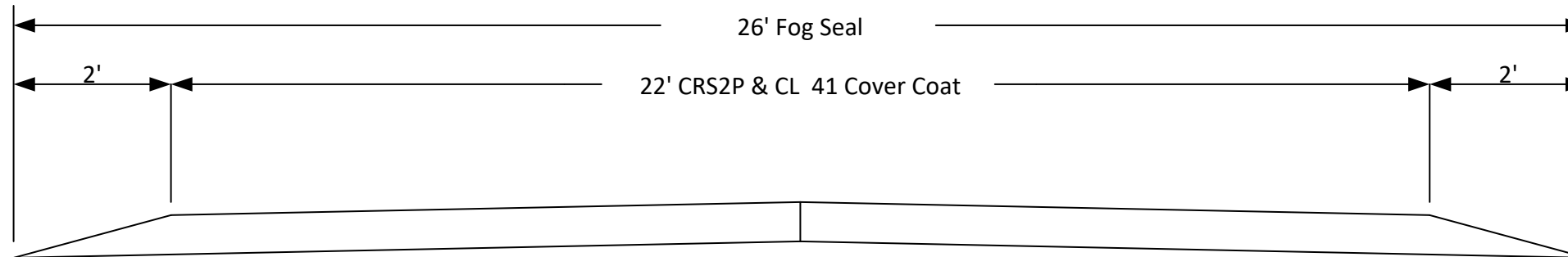
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	24'	5.350
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	24'	169
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	28'	821

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
COUNTY ROAD #12

State	Project No.	Sheet No.
ND	CP-1800(024)	12



Sta. 1268+56 to Sta. 1474+65 = 20,609' CR #12

Basis of Estimate

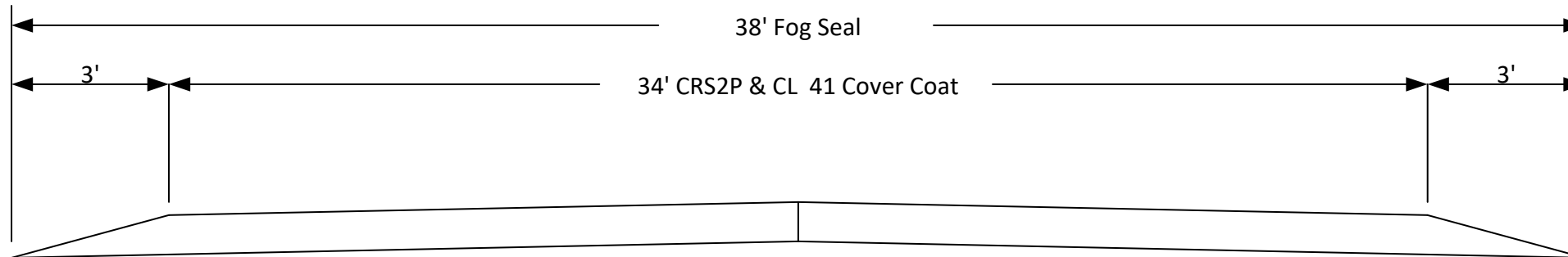
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	22'	4,905
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	22'	155
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	26'	767

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department

Typical Section  
&  
Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
 COUNTY ROAD #17 & SOUTH COLUMBIA ROAD

State	Project No.	Sheet No.
ND	CP-1800(024)	13



Sta. 1666+07 to Sta. 1677+32 = 1,125' CR #17 & South Columbia Road

Basis of Estimate

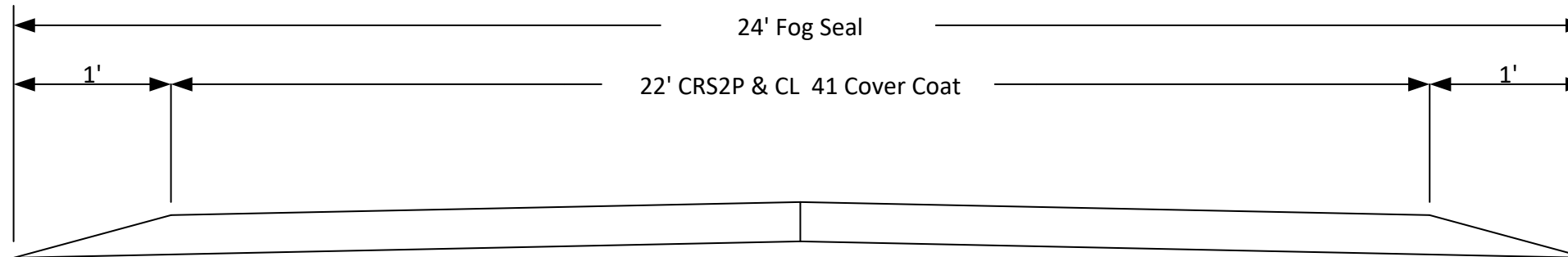
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	34'	7,580
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	34'	239
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	38'	1,115

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

TYPICAL SECTION & BASIS OF ESTIMATE  
 COUNTY ROAD #17 & SOUTH COLUMBIA ROAD

State	Project No.	Sheet No.
ND	CP-1800(024)	14



Sta. 1474+65 to Sta. 1666+07 = 19,142' CR #17  
 Sta. 1677+32 to Sta. 1726+92 = 4,960' South Columbia Road

Basis of Estimate

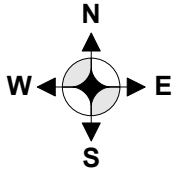
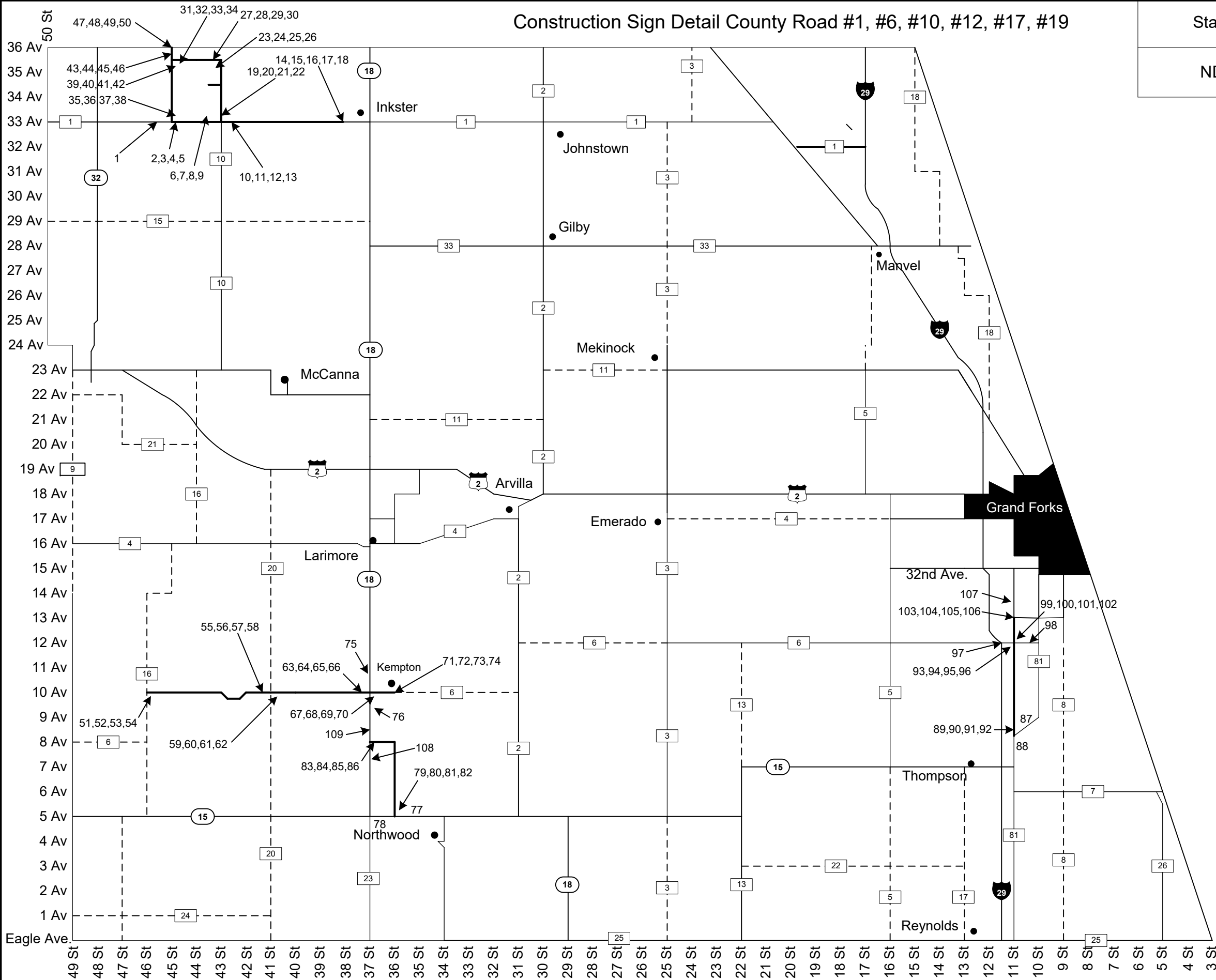
Description	Unit	Width	Unit/Mile
CRS2P Emulsified Asphalt @ 0.38 gal/sy	Gal	22'	4,906
Cover Coat Material Cl. 41 @ 24 lbs/sy	Ton	22'	155
CSS-1H Emulsified Asphalt @ 0.05 gal/sy	Gal.	24'	704

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Typical Section  
 &  
 Basis Estimate

# Construction Sign Detail County Road #1, #6, #10, #12, #17, #19

State	Project No.	Sheet No.
ND	CP-1800(024)	15



**Construction Sign Detail**

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department



**Construction Sign Detail**  
**County Road #1, #10 & #19**

State	Project No.	Sheet No.
ND	CP-1800(024)	16

**County Road #1**

- 1.) Road Work Ahead (W20-1-48)
- 2.) No Center Stripe (W8-12-48)
- 3.) Do Not Pass (R4-1-48)
- 4.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 5.) Fresh Oil Loose Rock (W22-8-48), Next 6.0 Miles (W20-52P-54)
- 6.) Fresh Oil Loose Rock (W22-8-48), Next 1.5 Miles (W20-52P-54)
- 7.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 8.) Do Not Pass (R4-1-48)
- 9.) No Center Stripe (W8-12-48)
- 10.) No Center Stripe (W8-12-48)
- 11.) Do Not Pass (R4-1-48)
- 12.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 13.) Fresh Oil Loose Rock (W22-8-48), Next 4.1 Miles (W20-52P-54)
- 14.) Fresh Oil Loose Rock (W22-8-48), Next 6.1 Miles (W20-52P-54)
- 15.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 16.) Do Not Pass (R4-1-48)
- 17.) No Center Stripe (W8-12-48)
- 18.) Road Work Ahead (W20-1-48)

**County Road #10**

- 19.) No Center Stripe (W8-12-48)
- 20.) Do Not Pass (R4-1-48)
- 21.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 22.) Fresh Oil Loose Rock (W22-8-48), Next 4.0 Miles (W20-52P-54)
- 23.) Fresh Oil Loose Rock (W22-8-48), Next 2.0 Miles (W20-52P-54)
- 24.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 25.) Do Not Pass (R4-1-48)
- 26.) No Center Stripe (W8-12-48)
- 27.) No Center Stripe (W8-12-48)
- 28.) Do Not Pass (R4-1-48)
- 29.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 30.) Fresh Oil Loose Rock (W22-8-48), Next 1.5 Miles (W20-52P-54)
- 31.) Fresh Oil Loose Rock (W22-8-48), Next 4.0 Miles (W20-52P-54)
- 32.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 33.) Do Not Pass (R4-1-48)
- 34.) No Center Stripe (W8-12-48)

**County Road #19**

- 35.) No Center Stripe (W8-12-48)
- 36.) Do Not Pass (R4-1-48)
- 37.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 38.) Fresh Oil Loose Rock (W22-8-48), Next 2.5 Miles (W20-52P-54)
- 39.) Fresh Oil Loose Rock (W22-8-48), Next 2.0 Miles (W20-52P-54)
- 40.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 41.) Do Not Pass (R4-1-48)
- 42.) No Center Stripe (W8-12-48)
- 43.) No Center Stripe (W8-12-48)
- 44.) Do Not Pass (R4-1-48)
- 45.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 46.) Fresh Oil Loose Rock (W22-8-48), Next 0.5 Miles (W20-52P-54)
- 47.) Fresh Oil Loose Rock (W22-8-48), Next 2.5 Miles (W20-52P-54)
- 48.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 49.) Do Not Pass (R4-1-48)
- 50.) No Center Stripe (W8-12-48)
- 51.) Road Work Ahead (W20-1-48)

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

**Construction Sign  
 Detail**

Construction Sign Detail  
 County Road #6, #12, #17

State	Project No.	Sheet No.
ND	CP-1800(024)	17

**County Road #6**

- 51.) No Center Line (W8-12-48)
- 52.) Do Not Pass (R4-1-48)
- 53.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 54.) Fresh Oil Loose Rock (W22-8-48), Next 8.8 Miles (W20-52P-54)
- 55.) Fresh Oil Loose Rock (W22-8-48), Next 4.8 Miles (W20-52P-54)
- 56.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 57.) Do Not Pass (R4-1-48)
- 58.) No Center Stripe (W8-12-48)
- 59.) No Center Stripe (W8-12-48)
- 60.) Do Not Pass (R4-1-48)
- 61.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 62.) Fresh Oil Loose Rock (W22-8-48), Next 3.6 Miles (W20-52P-54)
- 63.) Fresh Oil Loose Rock (W22-8-48), Next 8.8 Miles (W20-52P-54)
- 64.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1ap-24)
- 65.) Do Not Pass (R4-1-48)
- 66.) No Center Stripe (W8-12-48)
- 67.) No Center Stripe (W8-12-48)
- 68.) Do Not Pass (R4-1-48)
- 69.) Speed Limit 25 MPH (R2-1-48), Minimum Fee \$80 (R2-1a-24)
- 70.) Fresh Oil Loose Rock (W22-8-48), Next 0.3 Miles (W20-52P-54)
- 71.) Fresh Oil Loose Rock (W22-8-48), Next 0.3 Miles (W20-52P-54)
- 72.) Speed Limit 25 MPH (R2-1-48), Minimum Fee \$80 (R2-1a-24)
- 73.) Do Not Pass (R4-1-48)
- 74.) No Center Stripe (W8-12-48)
- 75.) Road Work Next 9.3 Miles Rt Arrow, Next 0.5 Miles Lt Arrow (G20-50a-72)
- 76.) Road Work Next 0.5 Miles Rt Arrow, Next 9.3 Miles Lt Arrow (G20-50a-72)

**County Road #12**

- 77.) Road Work Next 3.9 Miles Rt Arrow (G20-52a-72)
- 78.) Road Work Next 3.9 Miles Lt Arrow (G20-52a-72)
- 79.) No Center Stripe (W8-12-48)
- 80.) Do Not Pass (R4-1-48)
- 81.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 82.) Fresh Oil Loose Rock (W22-8-48), Next 3.5 Miles (W20-52P-54)
- 83.) Fresh Oil Loose Rock (W22-8-48), Next 3.5 Miles (W20-52P-54)
- 84.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1ap-24)
- 85.) Do Not Pass (R4-1-48)
- 86.) Center Stripe (W812-48)
- 108.) Road Work Next 3.9 Miles Rt Arrow (G20-52a-72)
- 109.) Road Work Next 3.9 Miles Lt Arrow (G20-52a-72)

**County Road #17**

- 87.) Road Work Next 4.8 Miles Rt Arrow (G20-52a-72)
- 88.) Road Work Next 4.8 Miles Lt Arrow (G20-52a-72)
- 89.) No Center Stripe (W8-12-48)
- 90.) Do Not Pass (R4-1-48)
- 91.) Speed Limit 45 MPH (R21-48), Minimum Fee \$80 (R2-1aP-24)
- 92.) Fresh Oil Loose Rock (W22-8-48), Next 4.3 Miles (G20-52P-54)
- 93.) Fresh Oil Loose Rock (W22-8-48), Next 3.3 Miles (G20-52P-54)
- 94.) Speed Limit 45 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 95.) Do Not Pass (R4-1-48)
- 96.) No Center Stripe (W8-12-48)
- 97.) Road Work Next 3.8 Miles Rt Arrow, Next 1.0 Mile Lt Arrow (G20-50a-72)
- 98.) Road Work Next 1.0 Mile Rt Arrow, Next 3.8 Miles Lt Arrow (G20-50a-72)
- 99.) No Center Stripe (W8-12-48)
- 100.) Do Not Pass (R4-1-48)
- 101.) Speed Limit 35 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 102.) Fresh Oil Loose Rock (W22-8-48), Next 0.6 Miles (G20-52a-54)
- 103.) Fresh Oil Loose Rock (W22-8-48), Next 4.3 Miles (G20-52a-54)
- 104.) Speed Limit 35 MPH (R2-1-48), Minimum Fee \$80 (R2-1aP-24)
- 105.) Do Not Pass (R4-1-48)
- 106.) No Center Stripe (W8-12-48)
- 107.) Road Work Ahead (W20-1-48)
- 108.) Road Work Next 4.8 Miles Lt Arrow (G20-52a-72)

This document was originally  
 Issued and sealed by  
 Nicholas J. West  
 Registration Number PE-5961  
 On 04-02-2024  
 Document is stored at the  
 Grand Forks County Highway  
 Department

Construction Sign  
 Detail

PROJECT TRAFFIC CONTROL DEVICES LIST PROJECT COUNTY ROAD 1, 6, 10, 12, 17 & 19						
Sign Number	Sign Size	Description	Quantity Required	Unit Per Sign	Units Sub Total	
G20-1a-60	60" x 24"	Road Work __ Miles		34	0	
G20-1b-60	60" x 24"	Work In Progress/No Work In Progress		28	0	
G20-2a-48	48" x 24"	End Road Work		26	0	
<b>G20-4-36</b>	<b>36" x18"</b>	<b>Pilot Car Follow Me</b>	<b>1</b>	<b>18</b>	<b>18</b>	
<b>G20-50a-72</b>	<b>72" x 36"</b>	<b>Road Work Next __ Miles Rt &amp; Lt Arrow</b>	<b>4</b>	<b>37</b>	<b>148</b>	
<b>G20-52a-72</b>	<b>72" x 24"</b>	<b>Road Work __ Miles Rt or Lt Arrow</b>	<b>7</b>	<b>30</b>	<b>210</b>	
G20-55-96	96" x 48"	Work Zone Speed Limit Enforced		59	0	
R1-1-30	30" x 30"	Stop		17	0	
R1-1-48	48" x 48"	Stop		32	0	
<b>R1-1a-18</b>	<b>18" x 18"</b>	<b>Stop and Slow Paddle (back to back)</b>	<b>2</b>	<b>5</b>	<b>10</b>	
<b>R2-1-48</b>	<b>48" x 60"</b>	<b>Speed Limit</b>	<b>24</b>	<b>39</b>	<b>936</b>	
<b>R2-1a-24</b>	<b>24" x 18"</b>	<b>Minimum Fee \$80 (mounted on speed limit post)</b>	<b>24</b>	<b>10</b>	<b>240</b>	
<b>R4-1-48</b>	<b>48" x 60"</b>	<b>Do Not Pass</b>	<b>24</b>	<b>39</b>	<b>936</b>	
<b>W3-4-48</b>	<b>48" x 48"</b>	<b>Be Prepared To Stop</b>	<b>2</b>	<b>35</b>	<b>70</b>	
W3-5-48	48" x 48"	Speed Reduction Ahead		35	0	
W8-1-48	48" x 48"	Bump		35	0	
W8-11-48	48" x 48"	Uneven Lanes		35	0	
<b>W8-12-48</b>	<b>48" x 48"</b>	<b>No Center Stripe</b>	<b>24</b>	<b>35</b>	<b>840</b>	
W8-53-48	48" x 48"	Trucks Entering Highway		35	0	
W8-54-48	48" x 48"	Trucks Entering Ahead or __ Ft.		35	0	
W8-55-48	48" x 48"	Trucks Crossing Ahead or Ft.		35	0	
<b>W20-1-48</b>	<b>48" x 48"</b>	<b>Road Work Ahead or __ Ft. or __ Mile</b>	<b>4</b>	<b>35</b>	<b>140</b>	
<b>W20-7a-48</b>	<b>48" x 48"</b>	<b>Flagging Symbol</b>	<b>2</b>	<b>35</b>	<b>70</b>	
W20-7b-48	48" x 48"	Be Prepared to Stop		35	0	
W20-7k-48	24" x 18"	__ Ft.		10	0	
W20-51-48	48" x 48"	Equipment Working		35	0	
<b>W20-52-54</b>	<b>54" x 12"</b>	<b>Next __ Miles</b>	<b>24</b>	<b>12</b>	<b>288</b>	
W21-2-48	48" x 48"	Fresh Oil		35	0	
<b>W22-8-48</b>	<b>48" x 48"</b>	<b>Fresh Oil Loose Rock</b>	<b>24</b>	<b>34</b>	<b>816</b>	
		<b>TOTAL UNITS</b>			<b>4,722</b>	

Pay Item Description	Unit	Spec & Code	Quantity
Traffic Control Signs	Unit	704-1000	
Type III Barricades	Each	704-1050	
Type II Barricades	Each	704-1051	
Type I Barricades	Each	704-1052	
Delineator Drums	Each	704-1060	
Traffic Cones	Each	704-1065	
Tubular Marker	Each	704-1067	
Flexible Delineator	Each	704-1072	
Obliteration of Pavement Marking	L.F.	704-0104	
Raised Pavement Markers	Each	762-0200	<b>1,109</b>

This document was originally  
Issued and sealed by  
Nicholas J. West  
Registration Number PE-5961  
On 04-02-2024  
Document is stored at the  
Grand Forks County Highway  
Department

Traffic Control  
Devices

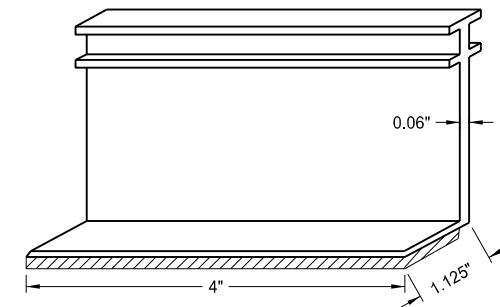
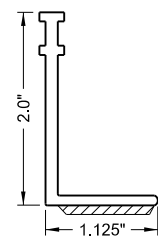
State	Project No.	Sheet No.
ND	CP-1800(024)	18



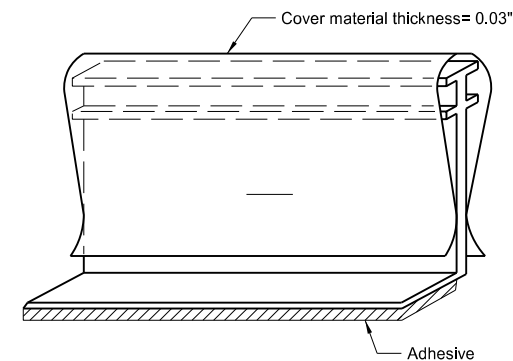
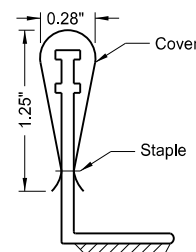
LANE MARKERS  
(Spotting Tab for Seal Projects only)

Notes:

1. Install lane line markers as shown, prior to beginning the seal coat.
2. Attach cover to vertical part of marker so traffic does not cause it to detach, but it can be easily removed manually.
3. Remove protective covers immediately after seal coat is applied.
4. Remove markers after permanent pavement marking is installed.
5. Use marker body and cover manufactured from polyurethane material.
6. Marker types:  
 Type Y - Yellow body and cover with yellow reflective tape on both sides.  
 Type W - White body and cover with white reflective tape on one side.
7. Use retroreflective tape with a minimum reflectance of 1200 candle power per foot-candle per square foot, using a .1 degree observation angle and 0 degree entrance angle.
8. Use adhesive conforming to AASHTO M 237.



Marker Body



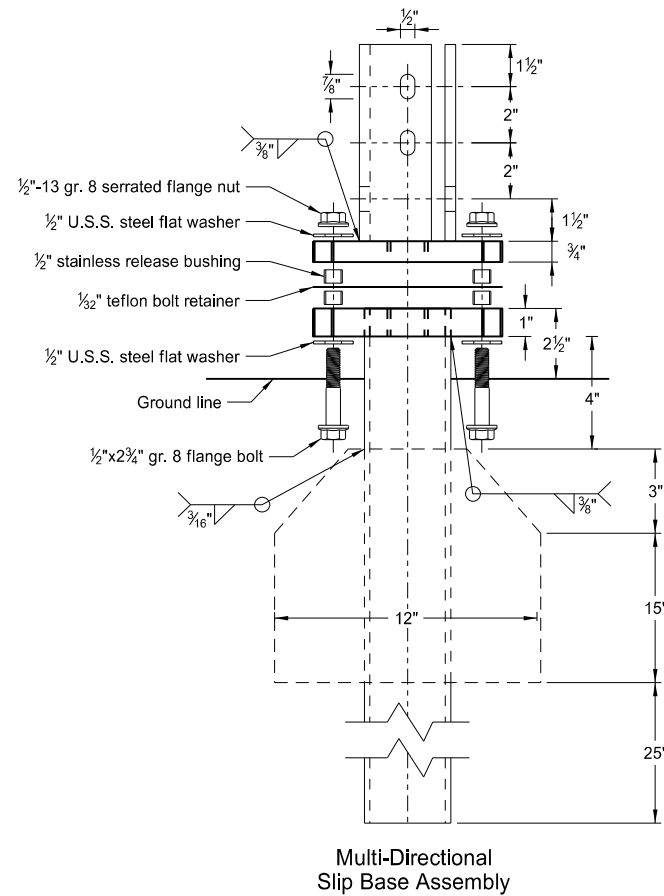
Marker Body with Protective Cover

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
10-03-19	New Design Engr PE Stamp

This document was originally issued and sealed by  
 Kirk J Hoff,  
 Registration Number  
 PE- 4683,  
 on 10/03/19 and the original document is stored at the  
 North Dakota Department  
 of Transportation

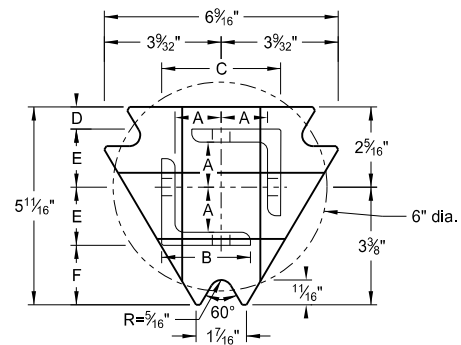
BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

Perforated Tube



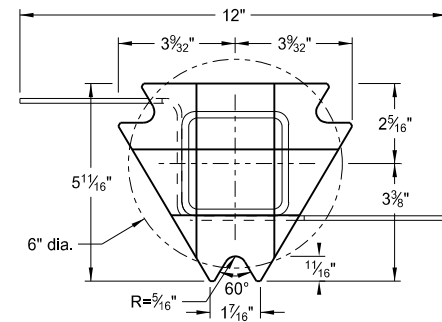
Multi-Directional Slip Base Assembly

Traffic Flow

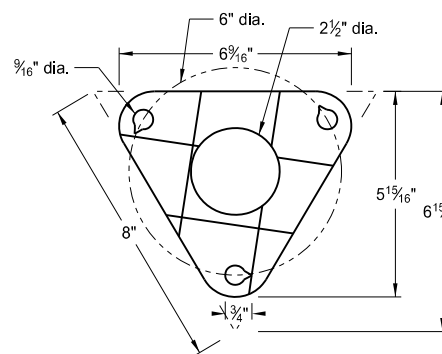


Top Post Receiver  
Plate - ASTM A572 grade 50  
Angle Receiver - 2 1/2" x 2 1/2" x 3/8" ASTM A36 structural angle

Traffic Flow



Bottom Soil Stub  
Tube - 3"x3"x7 gauge ASTM A500 grade B tube  
Stabilizing Wing - 7 gauge H.R.P.O. ASTM A1011  
Plate - ASTM A572 grade 50



Bolt Retainer for Base Connection  
Bolt Retainer- 1/2" Reprocessed Teflon

Notes:

1. Torque slip base bolts as specified by manufacturer.
2. Use anchor with 43.9 KSI yield strength and 59.3 KSI tensile strength.
3. Provide 4" vertical clearance for anchor or breakaway base. Measure the 4"x60" measurement above and below post location and back and ahead of post.
4. In concrete sidewalk, use same anchor without wings.
5. Provide more than 7' between the first and fourth posts of a four post sign.

Telescoping Perforated Tube

Number of Posts	Post Size in.	Wall Thickness Gauge	Sleeve Size in.	Wall Thickness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2 1/4
1	2 1/4	12			No	2 1/2
1	2 1/2	12			(A)	3
1	2 1/2	10			Yes	
1	2 1/2	12	2	12	Yes	
1	2 1/2	12	2 1/4	12	Yes	
2	2	12			No	2 1/4
2	2 1/4	12			No	2 1/2
2	2 1/2	12			Yes	
2	2 1/2	12			Yes	
2	2 1/4	10	2	12	Yes	
2	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/2	12			Yes	
3 & 4	2 1/2	10			Yes	
3 & 4	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/4	12	2	12	Yes	
3 & 4	2 1/2	10	2 3/16	10	Yes	

Properties of Telescoping Perforated Tube

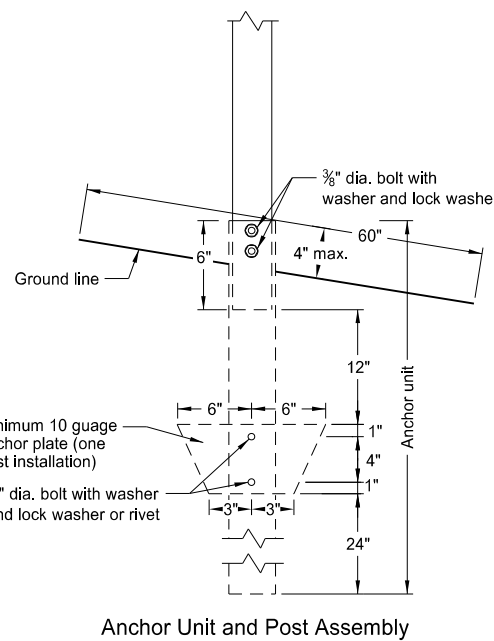
Tube Size in.	Wall Thickness in.	U.S. Standard Gauge	Weight per Foot lbs.	Moment of Inertia in. <sup>4</sup>	Cross Sec. Area in. <sup>2</sup>	Section Modulus in. <sup>3</sup>
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499
2 3/16 x 2 3/16	0.135	10	3.432	0.605	0.841	0.590
2 1/2 x 2 1/2	0.105	12	3.141	0.804	0.803	0.643
2 1/2 x 2 1/2	0.135	10	4.006	0.979	1.010	0.785

Top Post Receiver Data Table

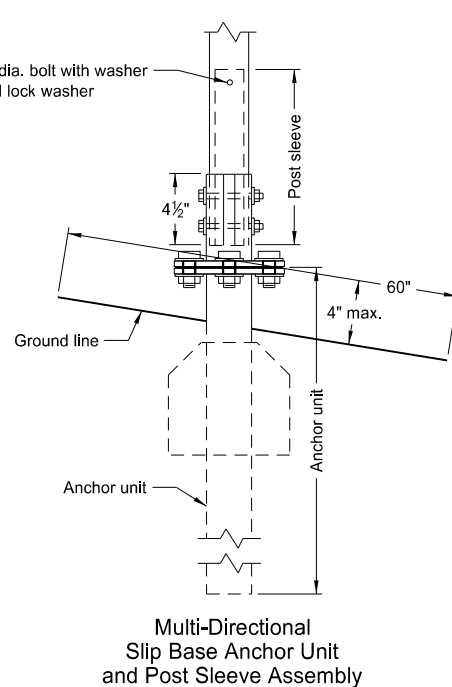
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16" x 10 ga.	1 5/16"	2 1/2"	3 1/2"	2 5/32"	1 3 3/64"	1 7/8"
2 1/2" x 10 ga.	1 3/32"	2 1/2"	3 5/16"	5/8"	1 2 1/32"	1 3/4"

(A) Use breakaway base when support is placed in weak soils. Engineer determines if soils are weak.

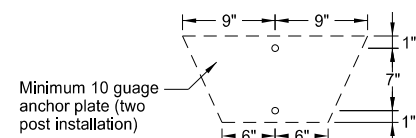
(B) For additional wind load, insert the 2 3/16" x 10 ga. into 2 1/2" x 10 ga.



Anchor Unit and Post Assembly



Multi-Directional Slip Base Anchor Unit and Post Sleeve Assembly

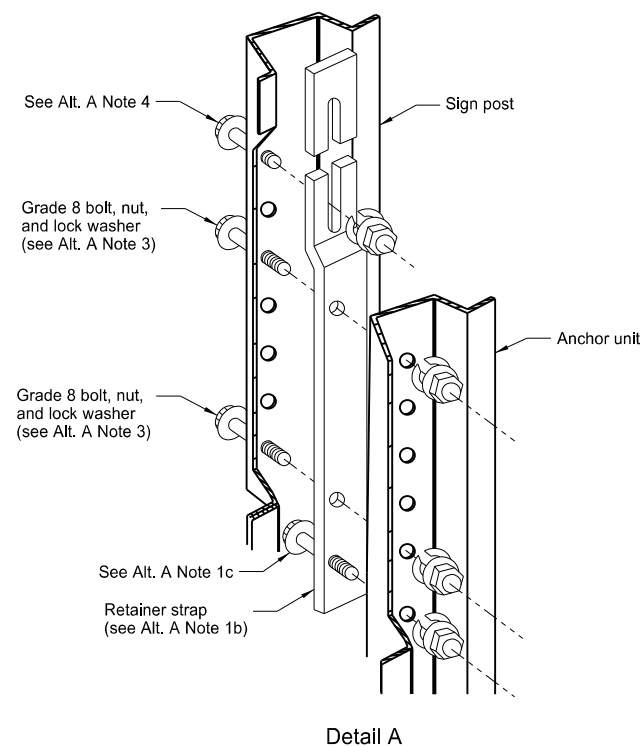


Minimum 10 gauge anchor plate (two post installation)

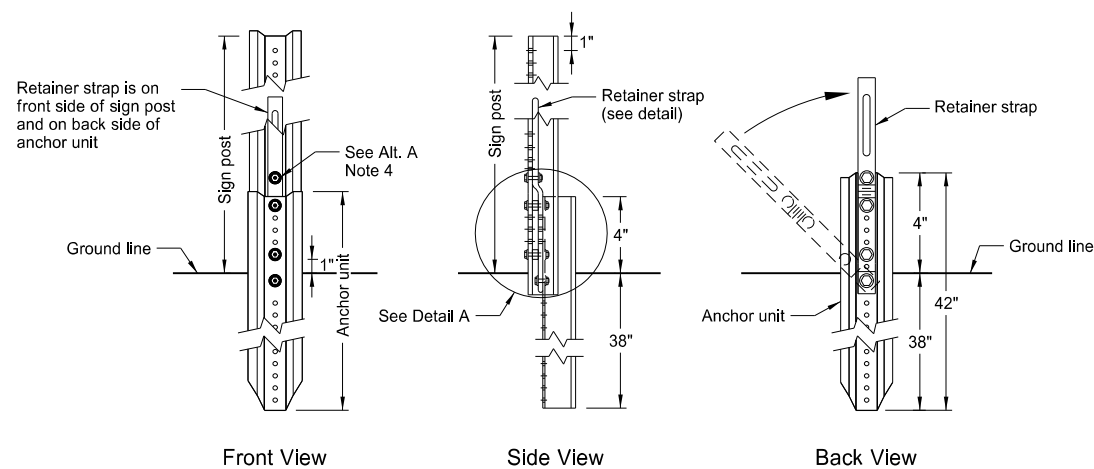
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
10-03-19	New Design Engr PE Stamp

This document was originally issued and sealed by  
Kirk J Hoff,  
Registration Number  
PE-4683,  
on 10/03/19 and the original document is stored at the  
North Dakota Department  
of Transportation

U-Channel Post



Detail A



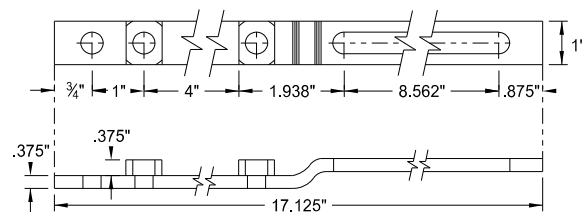
Front View

Side View

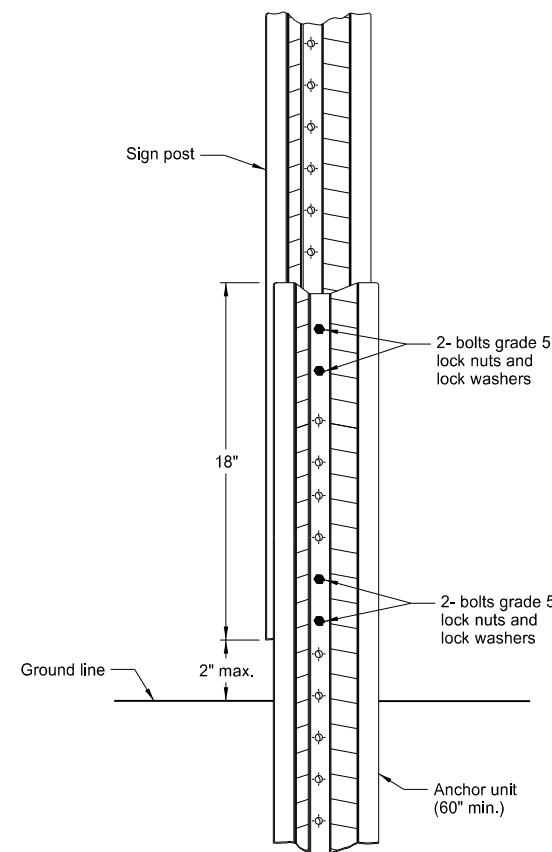
Back View

Breakaway U-Channel Detail Alternate A

Install a maximum of 2 posts within 7'.

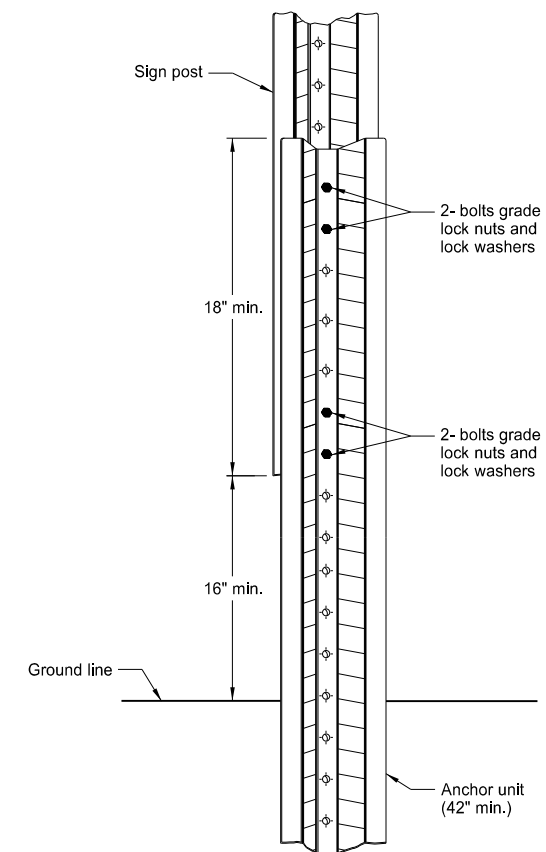


Retainer Strap Detail



Breakaway U-Channel Splice Detail Alternate B (2.5 and 3 lb/ft)

Install a maximum of 3 posts within 7'.



Breakaway U-Channel Splice Detail Alternate C (2.5 and 3 lb/ft)

Install a maximum of 3 posts within 7'.

Alternate A Steps of Installation:

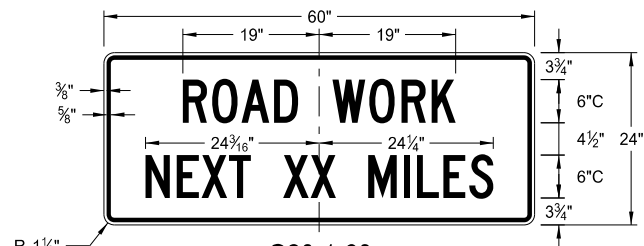
1. a) Drive anchor unit to within 12" of ground level.  
b) Establish proper assembly by lining up bottom hole of retainer strap with 6th hole from the top of the anchor unit.  
c) Assemble strap to back of anchor unit using 5/16"x2" bolt, lock washer and nut.  
d) Rotate strap 90° to left.
2. a) Drive anchor unit to 4" above ground.  
b) Rotate strap to vertical position.
3. a) Place 5/16"x2" bolt, lock washer and nut in bottom of sign post to facilitate alignment of sign post with proper hole in anchor unit.  
b) Alternately tighten two connector bolts.
4. Complete assembly by tightening 5/16"x2" bolt (this fastens sign post to retainer strap).
5. Properly nest base post, strap, and sign post. Proper nesting occurs when all flat surfaces of the base post, strap, and sign post at the bolts have full contact across the entire width.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17 10-03-19	Updated to active voice New Design Engr PE Stamp

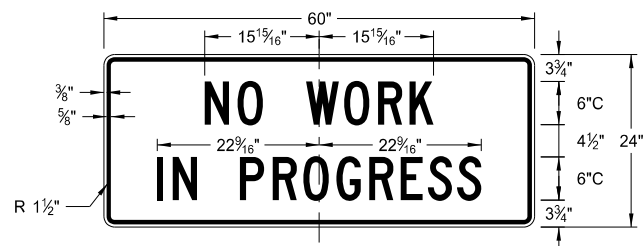
This document was originally issued and sealed by  
Kirk J Hoff,  
Registration Number  
PE- 4683,  
on 10/03/19 and the original document is stored at the North Dakota Department of Transportation

CONSTRUCTION SIGN DETAILS  
 TERMINAL AND GUIDE SIGNS

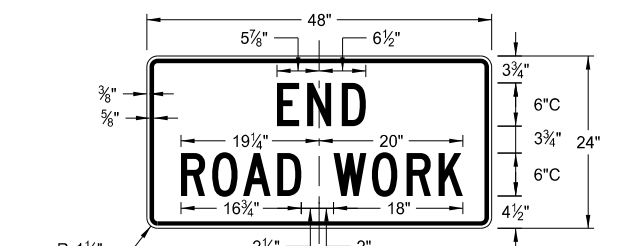
D-704-9



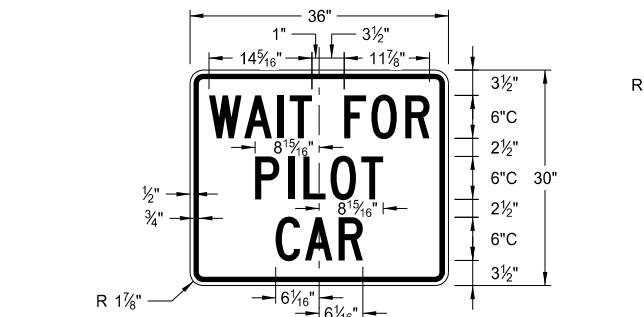
G20-1-60  
 Legend: black (non-refl)  
 Background: orange



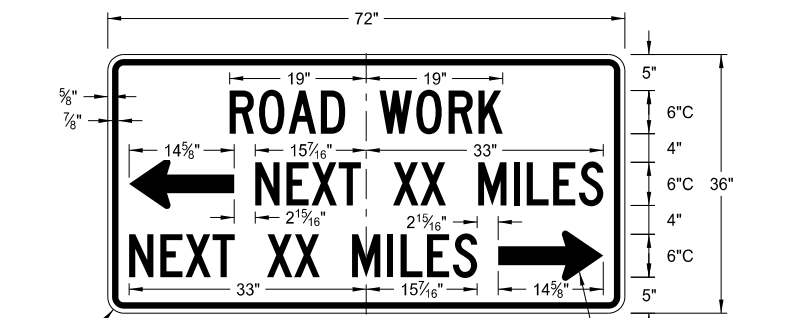
G20-1b-60  
 Legend: black (non-refl)  
 Background: orange



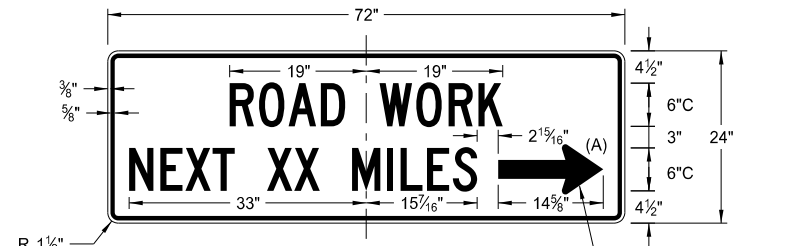
G20-2-48  
 Legend: black (non-refl)  
 Background: orange



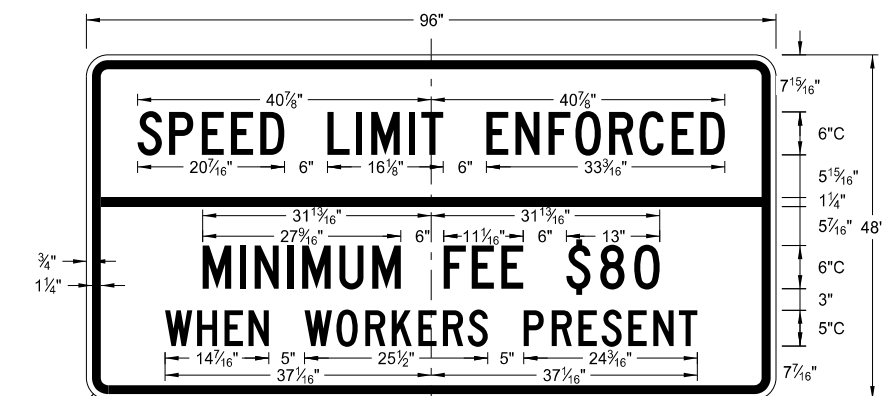
G20-4b-36  
 Legend: black (non-refl)  
 Background: orange



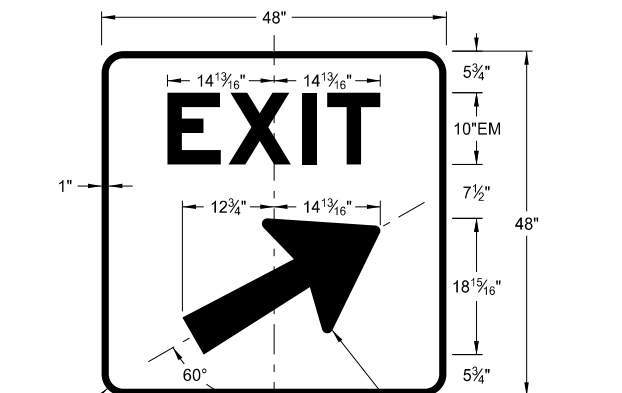
G20-50a-72  
 Legend: black (non-refl)  
 Background: orange



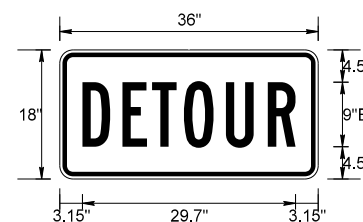
G20-52a-72  
 Legend: black (non-refl)  
 Background: orange



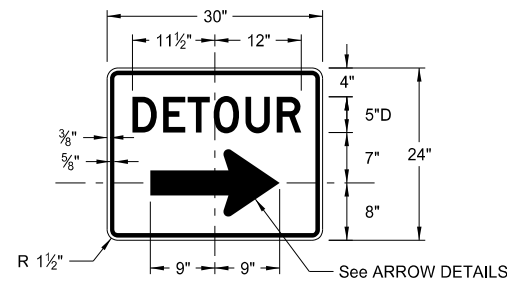
G20-55-96  
 Legend: black (non-refl)  
 Background: orange



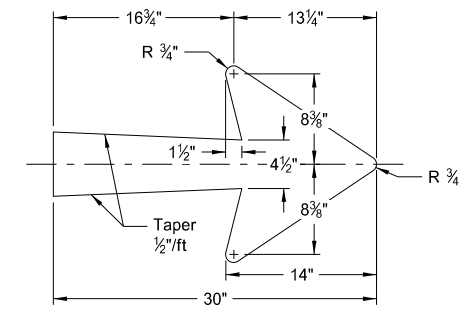
E5-1(L or R)-48  
 Legend: white  
 Background: green (orange optional)



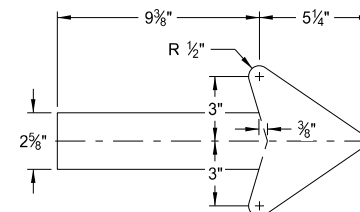
M4-8-36  
 Legend: black (non-refl)  
 Background: orange



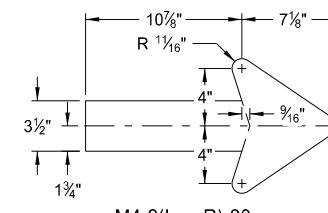
M4-9(L or R)-30 &  
 M4-9-30  
 Legend: black (non-refl)  
 Background: orange



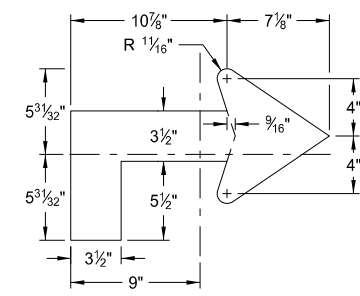
E5-1-48



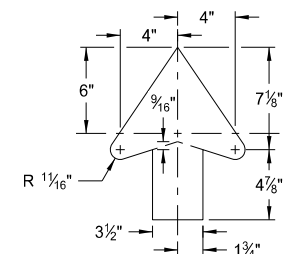
G20-50a-72  
 G20-52a-72



M4-9(L or R)-30  
 Right or Left



M4-9(L or R)-30  
 Advanced Right or Left



M4-9-30  
 Straight

ARROW DETAILS

NOTES:

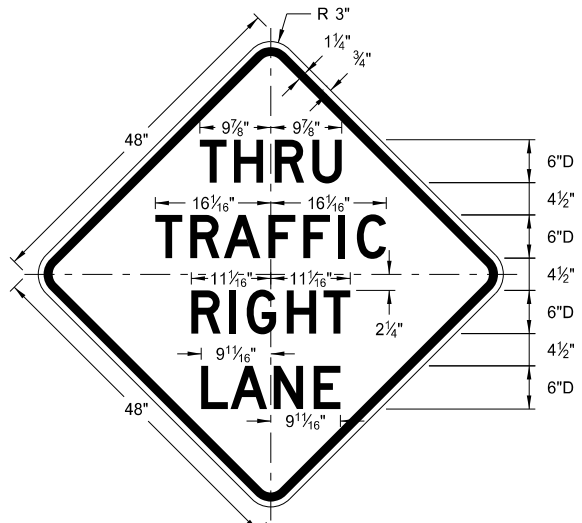
(A) Arrow may be right or left of the legend to indicate construction to the right or left.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17 10-03-19	Added sign & background color New Design Engineer PE Stamp

This document was originally issued and sealed by  
 Kirk J Hoff,  
 Registration Number  
 PE- 4683,  
 on 10/03/19 and the original document is stored at the  
 North Dakota Department  
 of Transportation

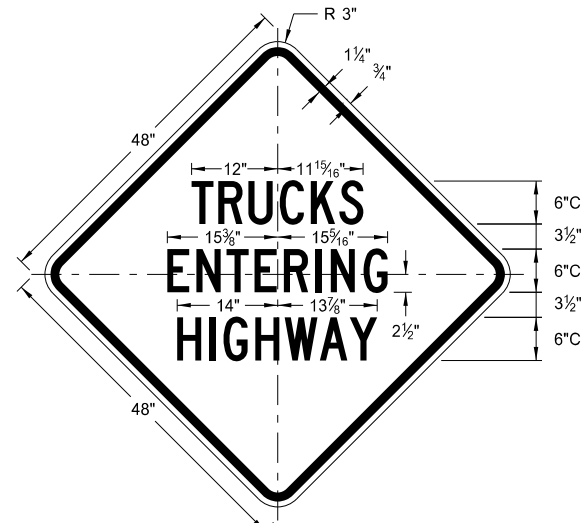


CONSTRUCTION SIGN DETAILS  
WARNING SIGNS



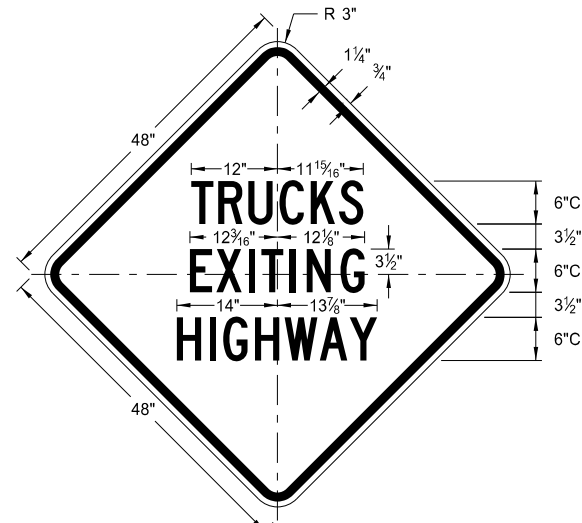
W5-8-48

Legend: black (non-refl)  
Background: orange



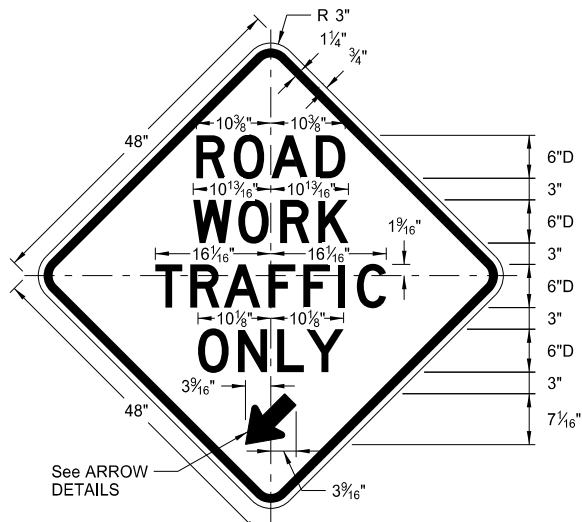
W8-53-48

Legend: black (non-refl)  
Background: orange



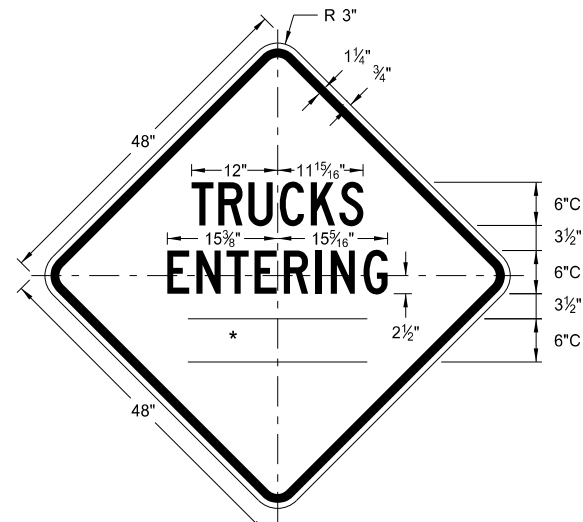
W8-56-48

Legend: black (non-refl)  
Background: orange



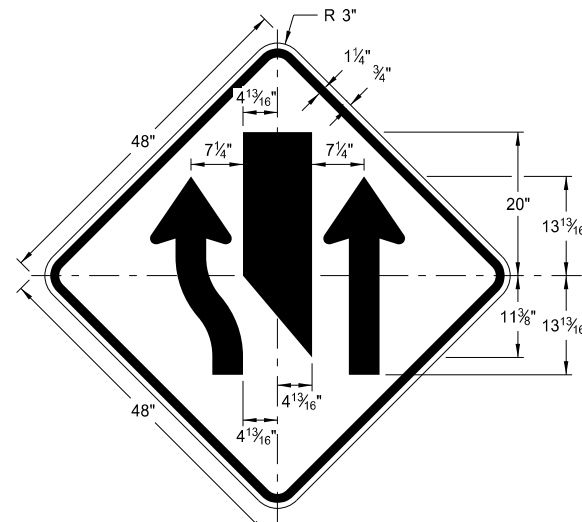
W5-9-48

Legend: black (non-refl)  
Background: orange



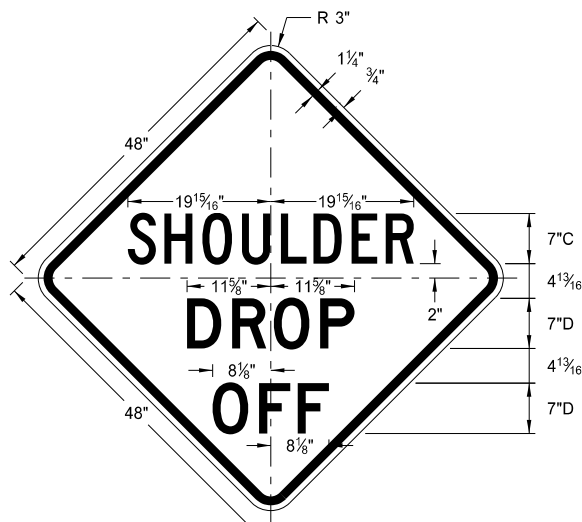
W8-54-48

Legend: black (non-refl)  
Background: orange



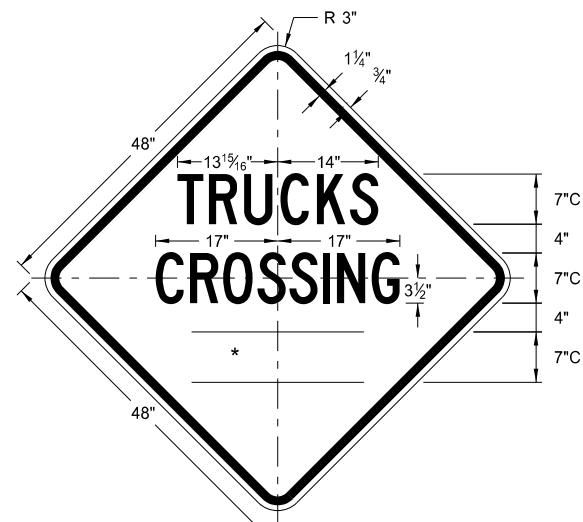
W9-3a-48

Legend: black (non-refl)  
Background: orange



W8-9a-48

Legend: black (non-refl)  
Background: orange

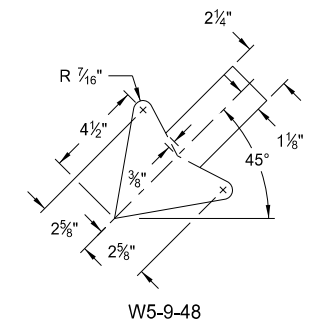


W8-55-48

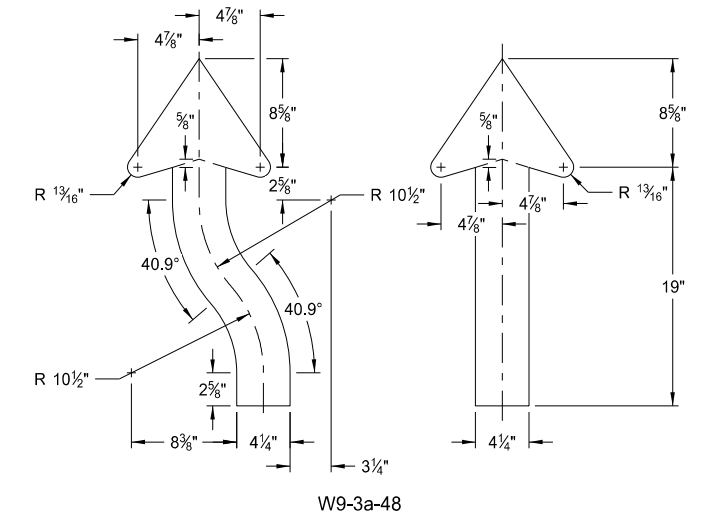
Legend: black (non-refl)  
Background: orange

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



W5-9-48



W9-3a-48

ARROW DETAILS

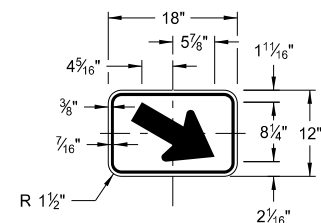
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17	Updated sign number
5-31-18	Revised sign and arrow details
10-03-19	New Design Engineer PE Stamp

This document was originally issued and sealed by  
Kirk J Hoff,  
Registration Number  
PE- 4683,  
on 10/03/19 and the original document is stored at the North Dakota Department of Transportation

CONSTRUCTION SIGN DETAILS  
WARNING SIGNS

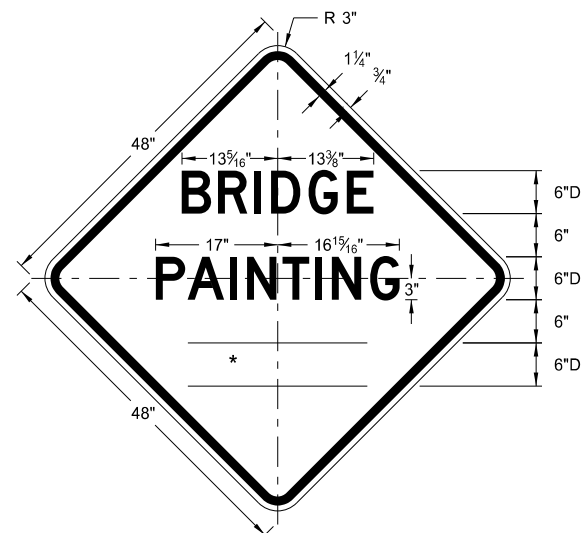
WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

\* DISTANCE MESSAGES



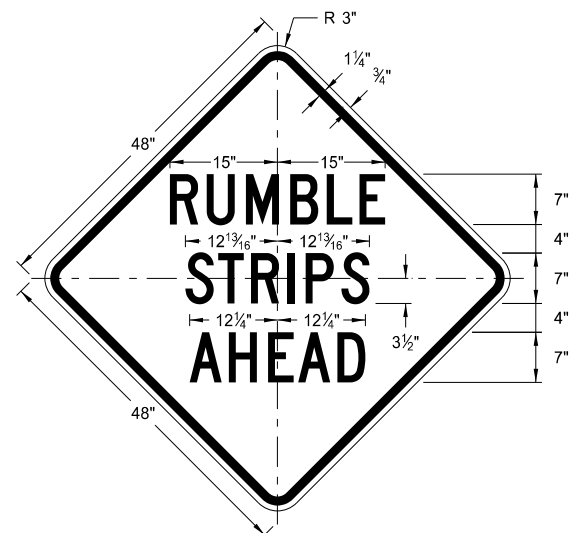
W16-7aP-18

Legend: black (non-refl)  
Background: orange



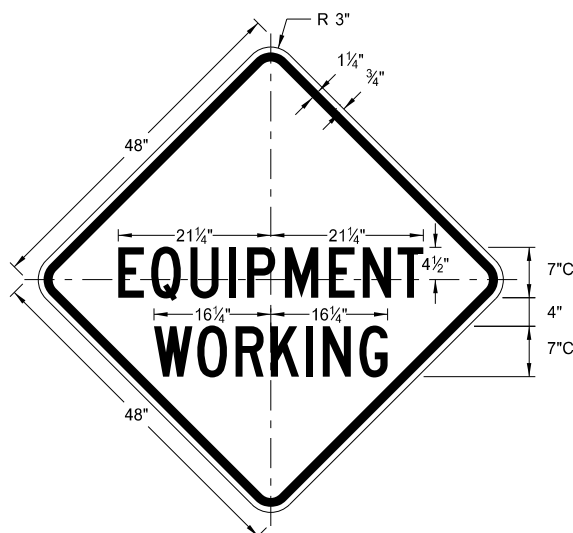
W21-50-48

Legend: black (non-refl)  
Background: orange



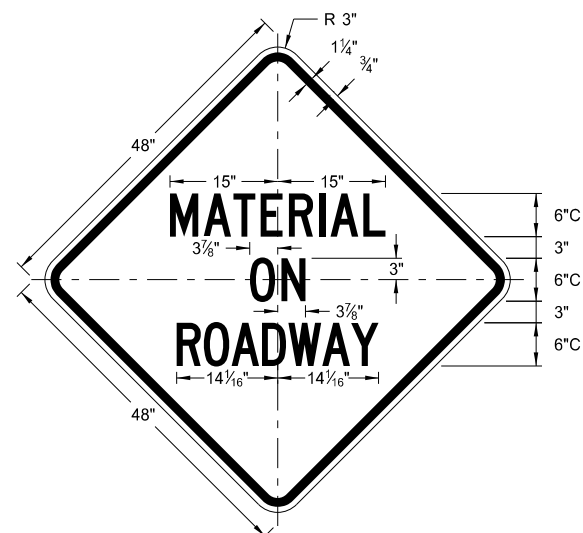
W21-53-48

Legend: black (non-refl)  
Background: orange



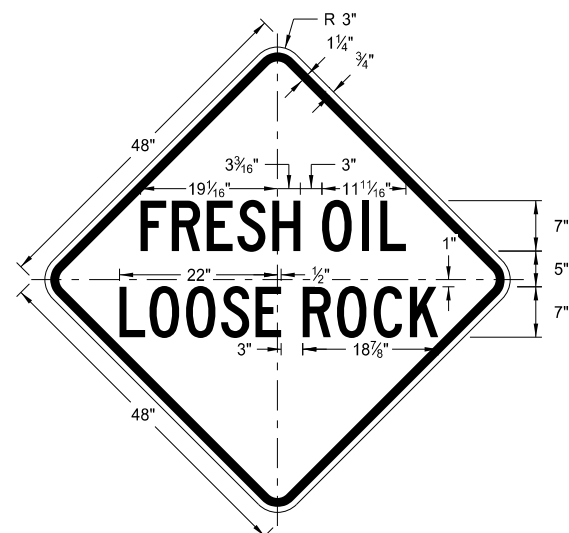
W20-51-48

Legend: black (non-refl)  
Background: orange



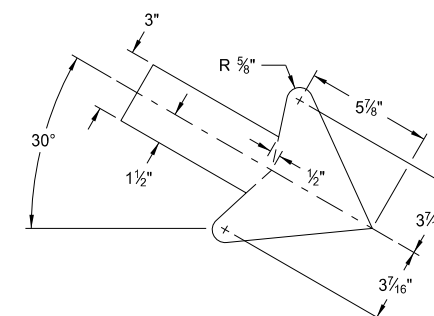
W21-51-48

Legend: black (non-refl)  
Background: orange

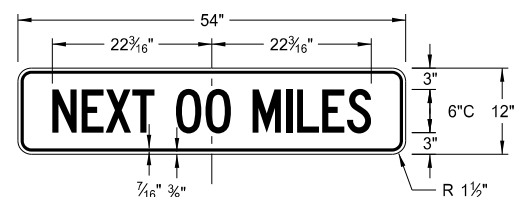


W22-8-48

Legend: black (non-refl)  
Background: orange

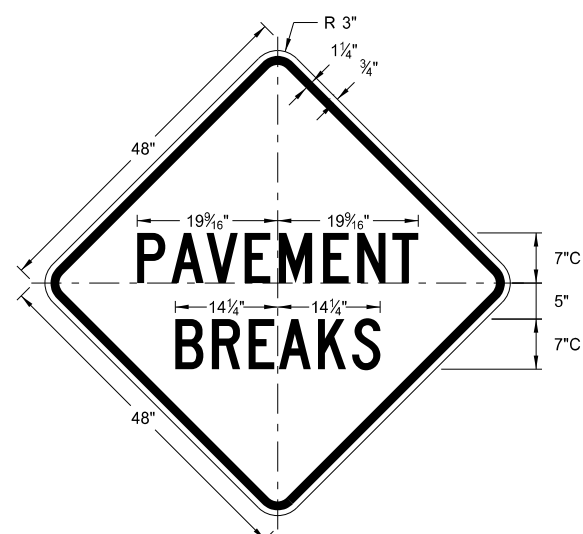


W16-7aP-18



W20-52P-54

Legend: black (non-refl)  
Background: orange



W21-52-48

Legend: black (non-refl)  
Background: orange

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
5-31-18	
REVISIONS	
DATE	CHANGE
11-01-19	Added details for sign W16-7aP-18.

This document was originally issued and sealed by  
Kirk J Hoff,  
Registration Number  
PE- 4683,  
on 11/1/19 and the original document is stored at the North Dakota Department of Transportation

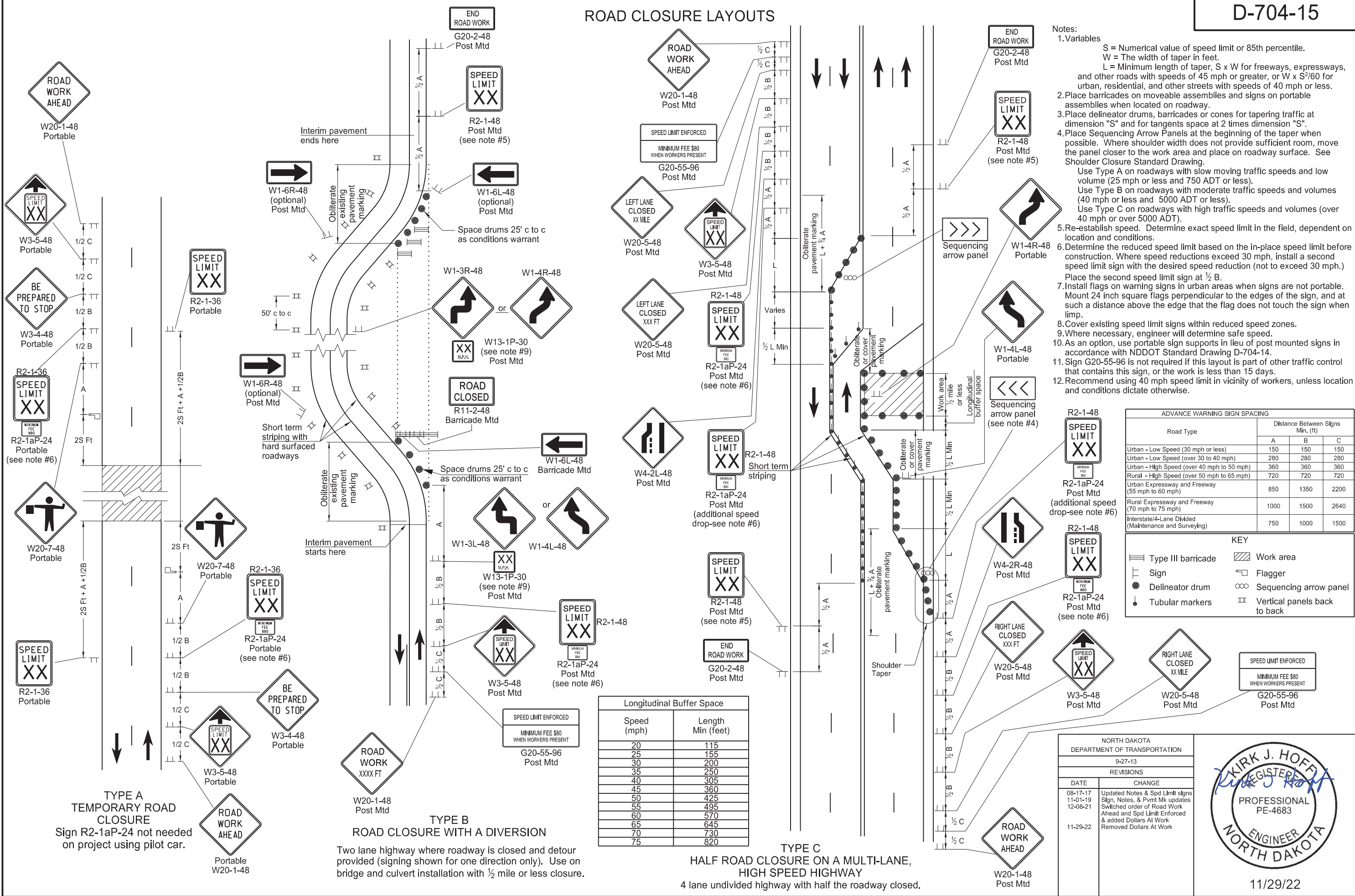
ROAD CLOSURE LAYOUTS

Notes:

- Variables
  - S = Numerical value of speed limit or 85th percentile.
  - W = The width of taper in feet.
  - L = Minimum length of taper, S x W for freeways, expressways, and other roads with speeds of 45 mph or greater, or W x S<sup>2</sup>/60 for urban, residential, and other streets with speeds of 40 mph or less.
- Place barricades on moveable assemblies and signs on portable assemblies when located on roadway.
- Place delineator drums, barricades or cones for tapering traffic at dimension "S" and for tangents space at 2 times dimension "S".
- Place Sequencing Arrow Panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on roadway surface. See Shoulder Closure Standard Drawing.
  - Use Type A on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
  - Use Type B on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
  - Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
- Re-establish speed. Determine exact speed limit in the field, dependent on location and conditions.
- Determine the reduced speed limit based on the in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at 1/2 B.
- Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
- Cover existing speed limit signs within reduced speed zones.
- Where necessary, engineer will determine safe speed.
- As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
- Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or the work is less than 15 days.
- Recommend using 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.

Road Type	ADVANCE WARNING SIGN SPACING		
	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

KEY			
	Type III barricade		Work area
	Sign		Flagger
	Delineator drum		Sequencing arrow panel
	Tubular markers		Vertical panels back to back



Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

**TYPE A**  
TEMPORARY ROAD CLOSURE  
Sign R2-1aP-24 not needed on project using pilot car.

**TYPE B**  
ROAD CLOSURE WITH A DIVERSION  
Two lane highway where roadway is closed and detour provided (signing shown for one direction only). Use on bridge and culvert installation with 1/2 mile or less closure.

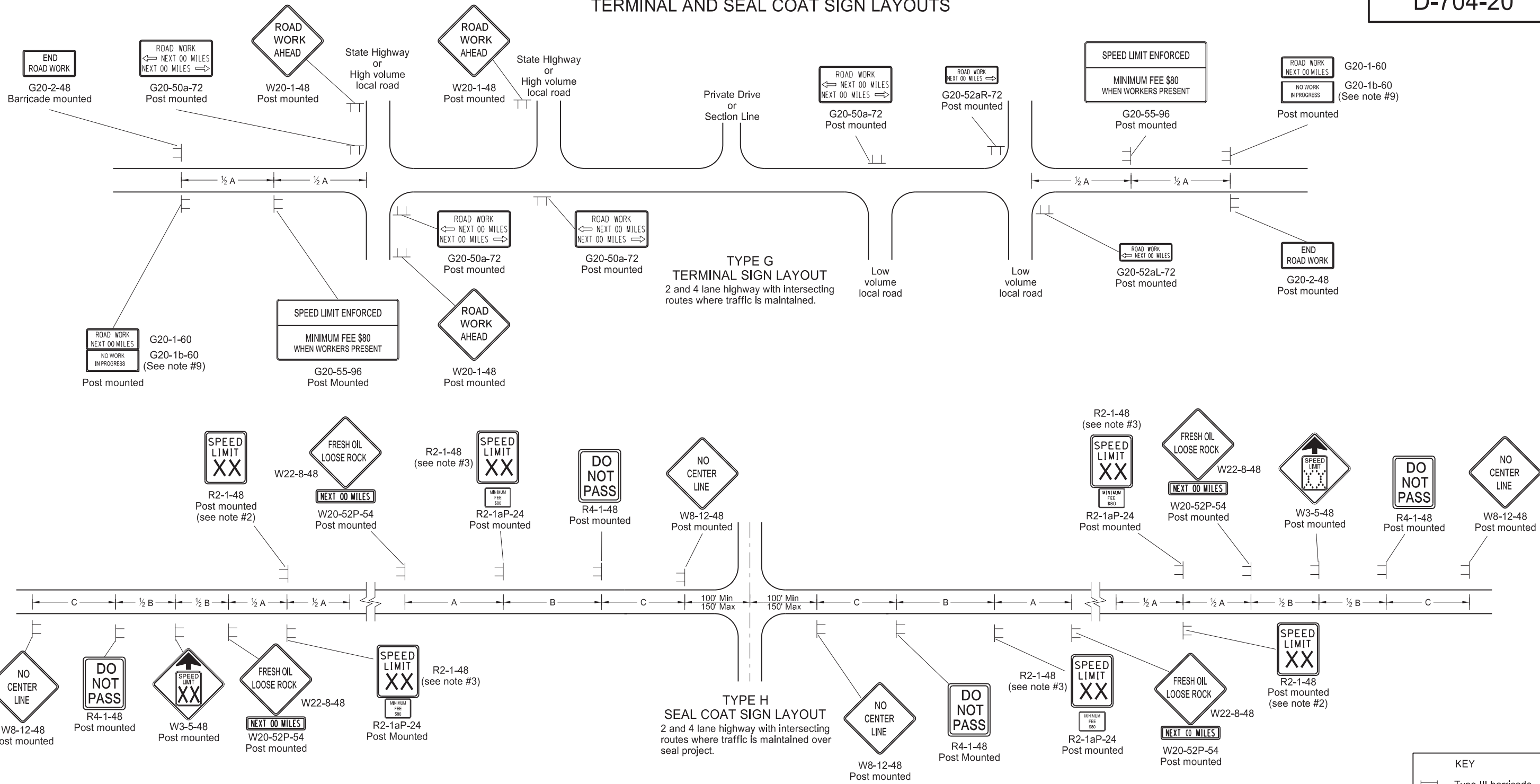
**TYPE C**  
HALF ROAD CLOSURE ON A MULTI-LANE, HIGH SPEED HIGHWAY  
4 lane undivided highway with half the roadway closed.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Updated Notes & Spd Limit signs
11-01-19	Sign, Notes, & Pmnt Mk updates
12-08-21	Switched order of Road Work Ahead and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work



11/29/22

TERMINAL AND SEAL COAT SIGN LAYOUTS



- Notes:
- Place barricades on moveable assemblies and signs on portable assemblies when located on roadway.
  - Determine the exact speed limit in the field, based on location and conditions.
  - Determine the reduced speed limit based on the in place speed limit before construction. Where speed limit reductions exceed 30 MPH, install a second speed limit sign with the desired speed reduction (not to exceed 30 MPH.) Place the second speed limit sign at 1/2 B.
  - Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
  - Cover existing speed limit signs within a reduced speed zone.
  - On seal coat projects, place signs R2-1-48, R2-1aP-24, R4-1-48, W22-8-48 and W20-52P-54 after all important intersections and at five mile intervals. Place sign W8-12-48 after all important intersections and at 2 mile intervals until short term center line pavement marking is placed.
  - As an option, use portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Drawing D-704-14.
  - Cover or remove speed limit signs from layout Type H when loose aggregate is removed.
  - Install sign G20-1b-60 when work is suspended for winter.
  - Use other traffic control layouts in immediate work areas. Place sign R2-1aP-24 below speed limit signs in reduced speed limit work areas.
  - Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or the work is less than 15 days.
  - Recommend using 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Updated notes & sign numbers
11-01-19	Updated note & sign
12-08-21	Switched order of Road Work and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work



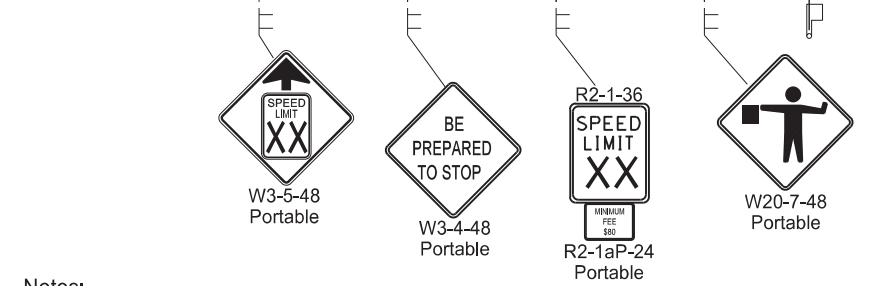
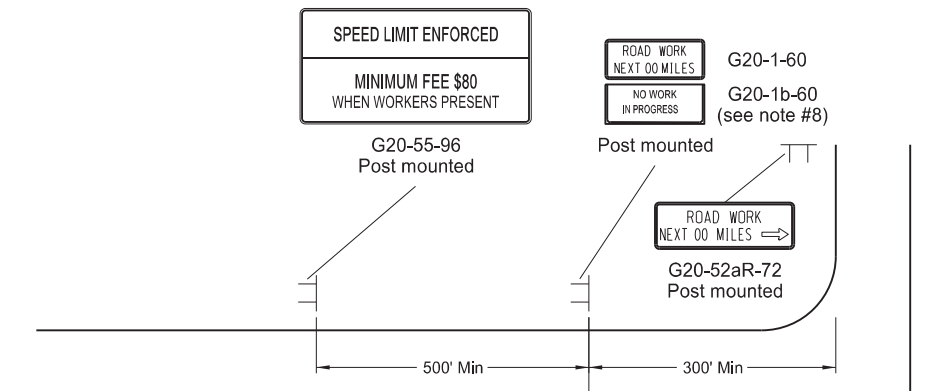
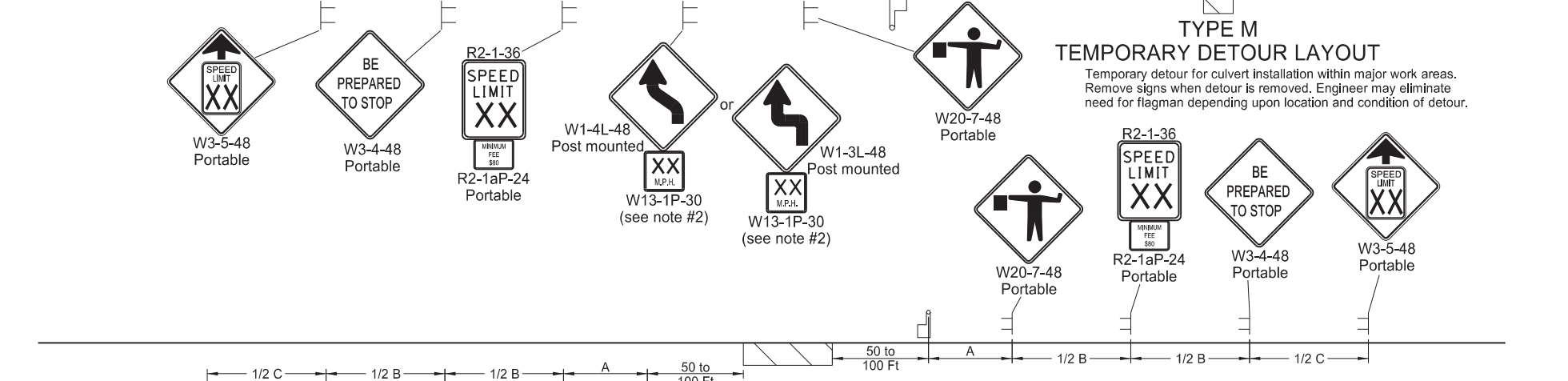
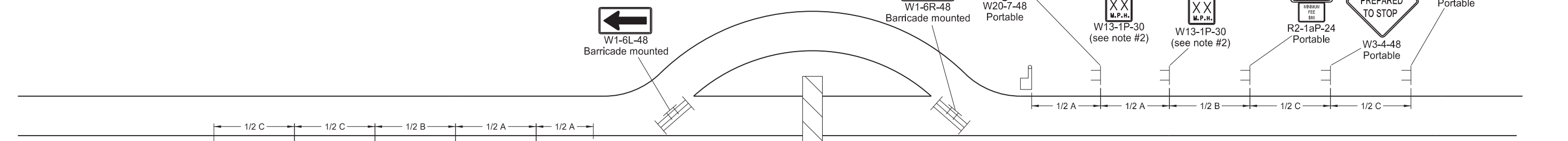
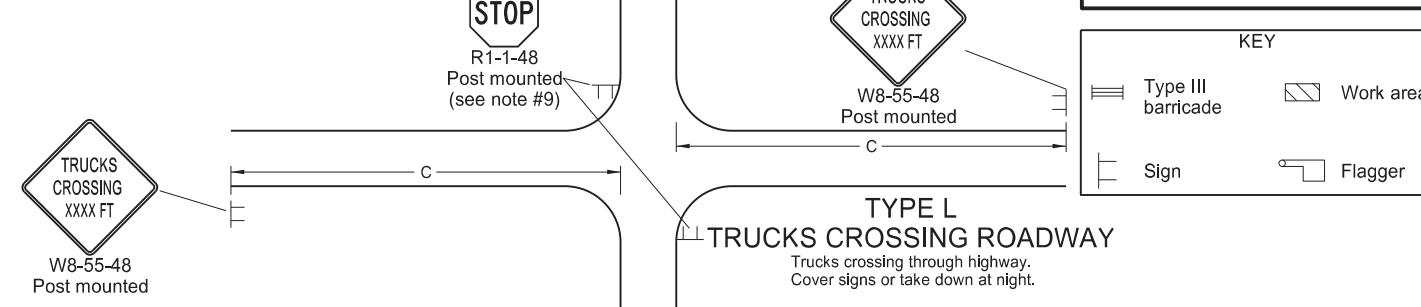
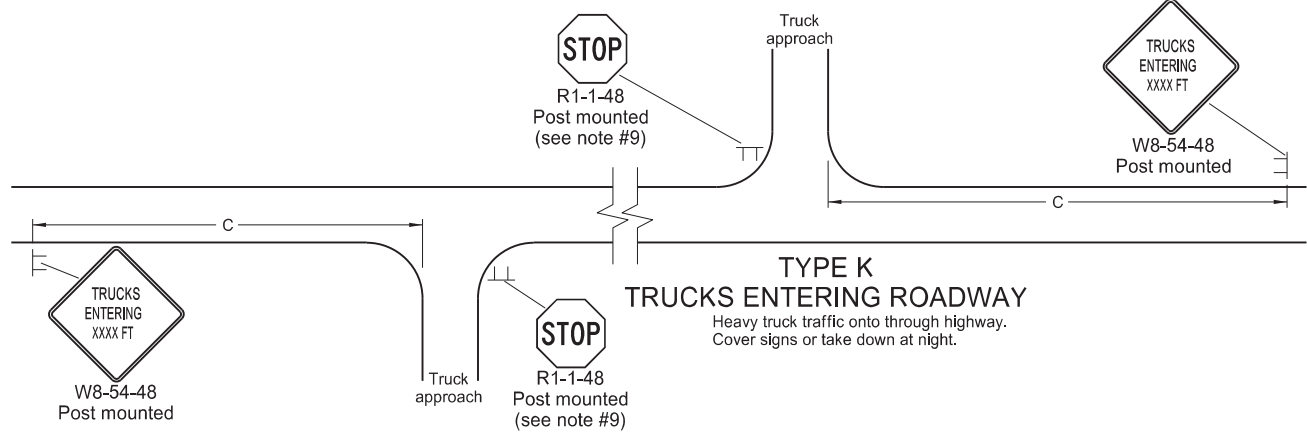


# CONSTRUCTION TRUCK AND TEMPORARY DETOUR LAYOUTS

D-704-22

**KEY**

- Type III barricade
- Sign
- Work area
- Flagger



- Notes:**
- Place barricades on a moveable assemblies and signs on portable assemblies when located on roadway.
  - Where necessary, safe speed to be determined by the Engineer.
  - Determine the reduced speed limit based on the in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at 1/2 B.
  - Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
  - Cover existing speed limit signs within a reduced speed zone.
  - Covered (when approved by engineer) or obliterated pavement marking measured as Obliteration of Pavement Marking.
  - As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
  - Install sign G20-1b-60 when work is suspended for winter.
  - If existing stop sign is in place, a 48" stop sign is not required.
  - Sign G20-55-96 is not required if layout is part of other traffic control that contains this sign, or if work is less than 15 days.
  - Recommend using 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.

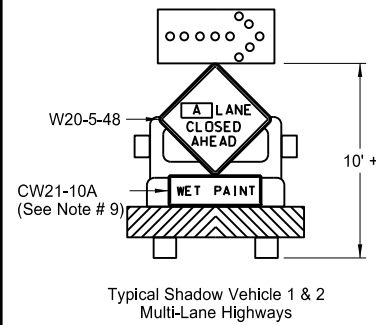
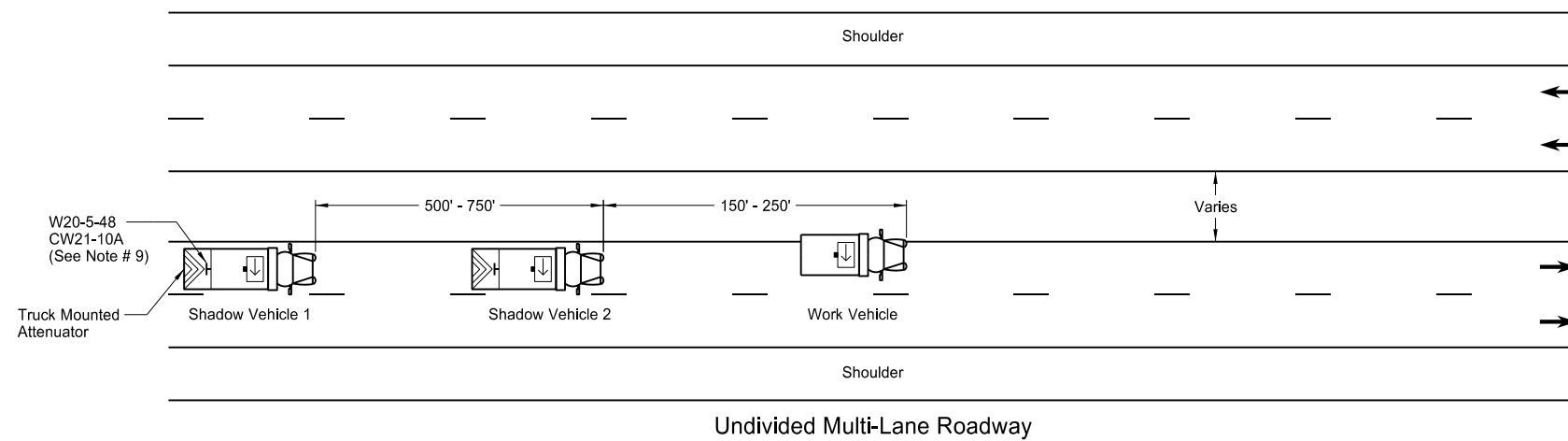
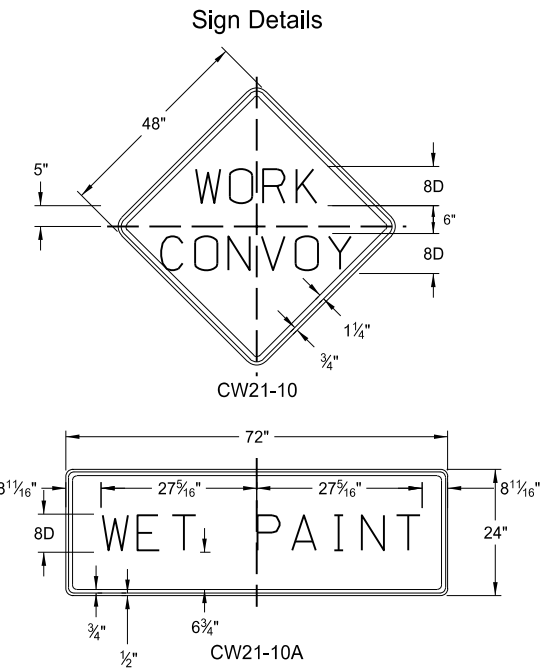
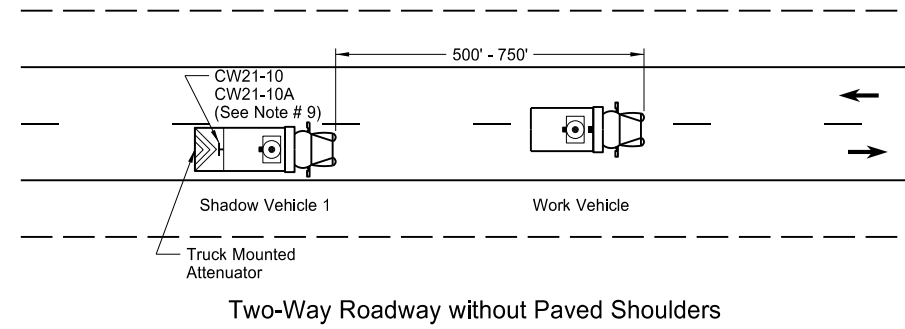
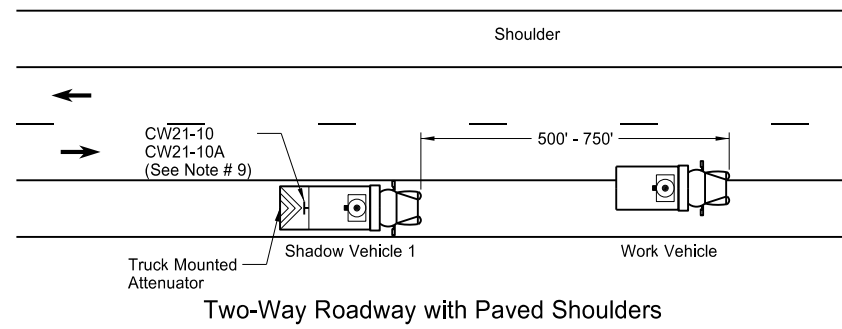
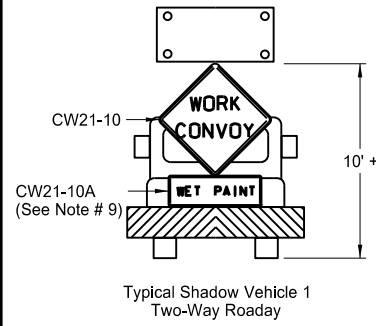
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Update notes & sign numbers
11-01-19	Revised sign numbers & note 7
12-09-21	Added Speed Limit Enforced and Dollars At Work signs
11-29-22	Removed Dollars At Work

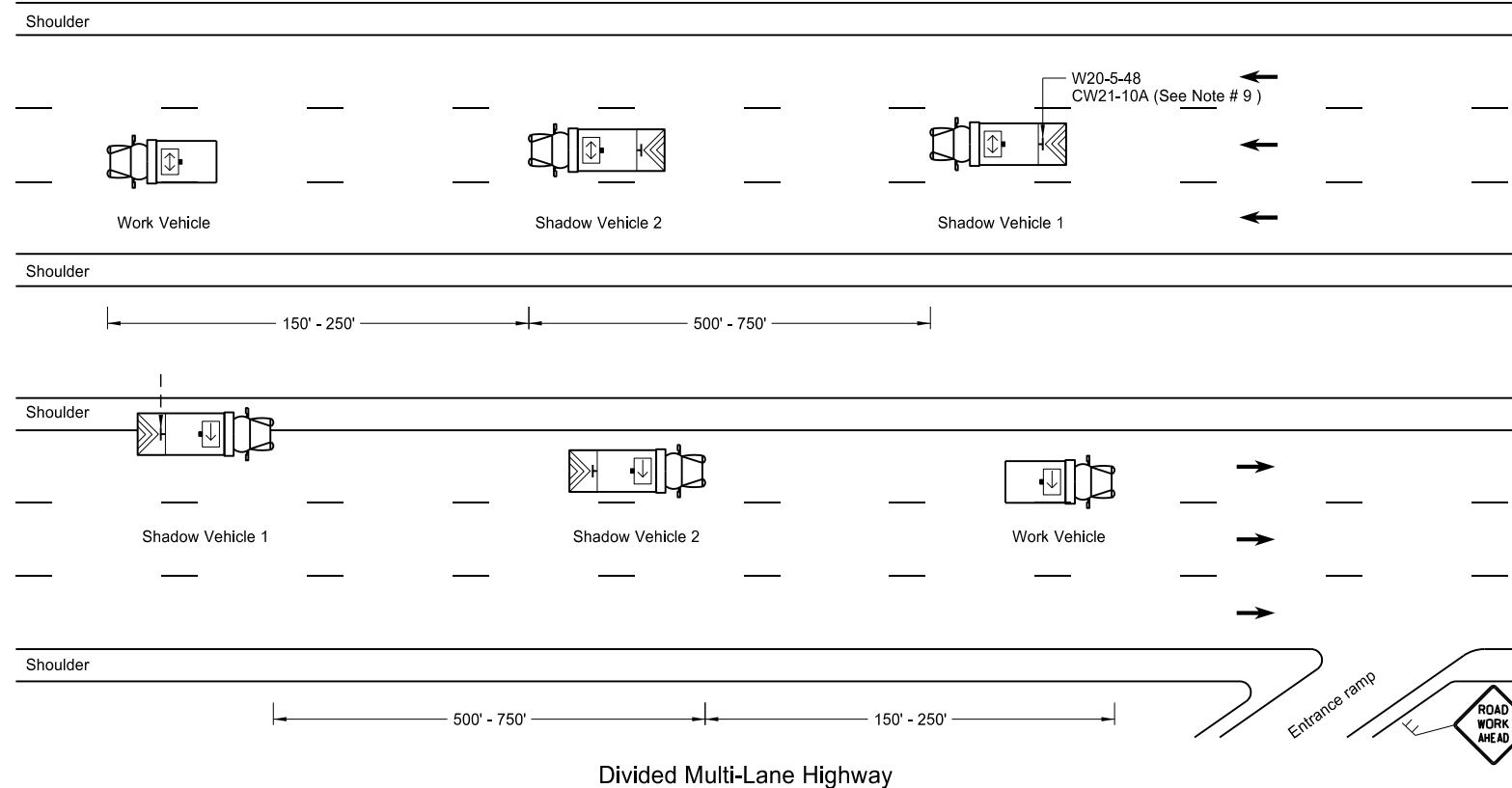


11/29/22

MOBILE OPERATION  
(PAVEMENT MARKING)

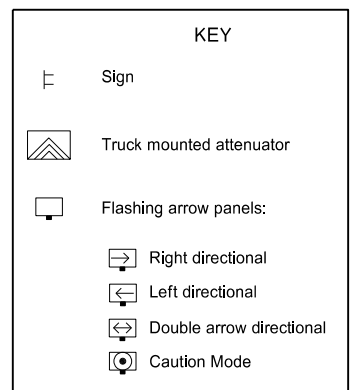


A = Left Right Center



Notes

- Use additional vehicles you choose to be in the convoy with truck mounted attenuators, at your own expense.
- Display yellow rotating beacons or strobe lights on shadow and work vehicles, unless otherwise stated in the plans.
- Use Type B or Type C flashing arrow panels controlled from inside the vehicle.
- Provide each vehicle with two-way electronic communication capability.
- Move shadow vehicle 1 first to shadow other convoy vehicles when convoy changes lane.
- Vary vehicle spacing between shadow vehicle 1 and shadow vehicle 2 based on sight distance restrictions. Motorists approaching the work convoy need to see trail vehicle in time to slow down and/or change lanes as they approach shadow vehicle.
- Sign Colors  
Letters = Black  
Border = Black  
Background = Orange
- As an option, use shadow vehicle 2 the paint tender vehicle.
- Use sign CW21-10A only during painting operation.
- Pull over work and shadow vehicles periodically to allow motor vehicle traffic to pass on two lane - two way roadways.

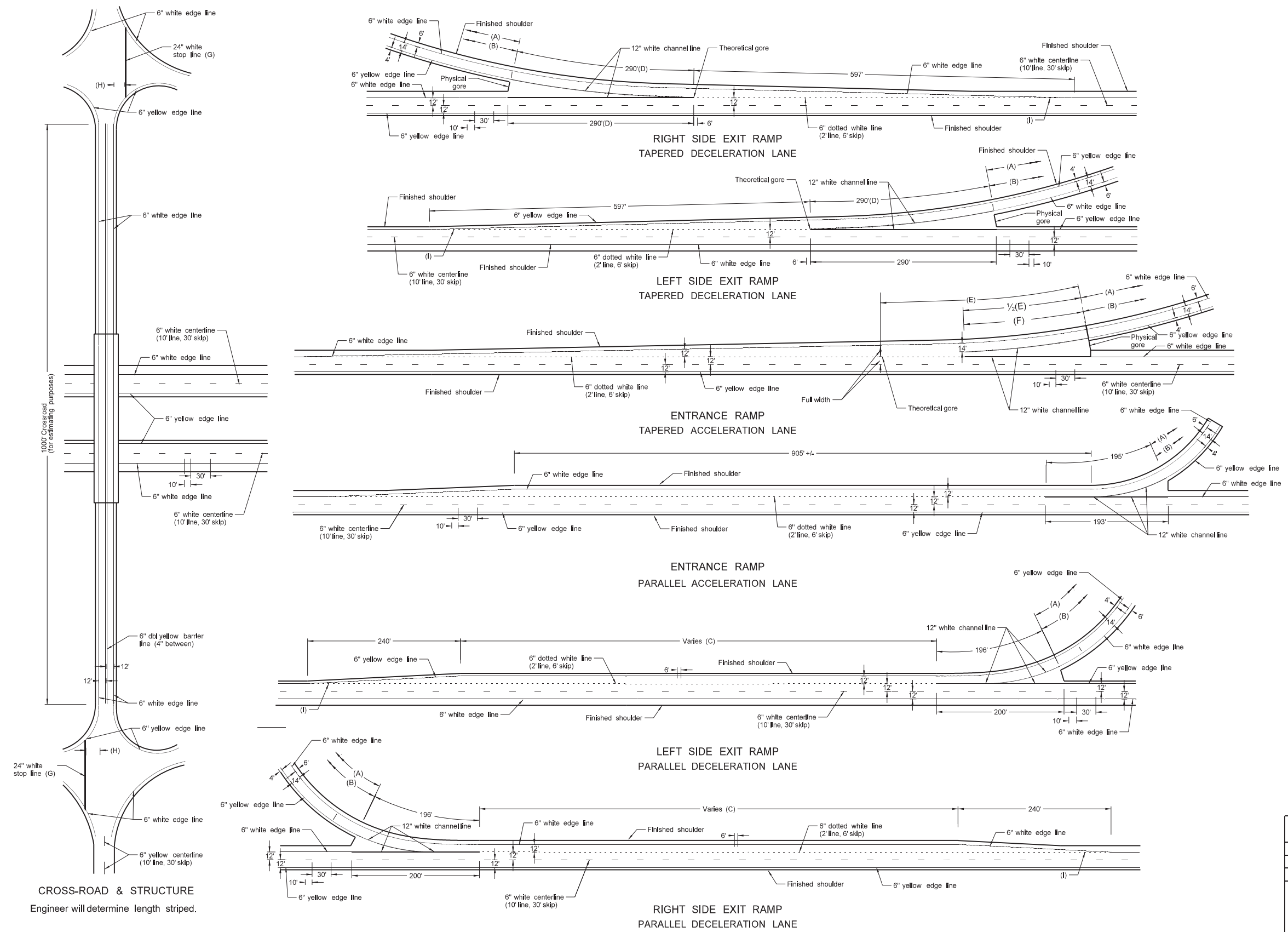


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
6-18-14	Removed shadow vehicle 2 on two lane roadways
9-27-17	Updated to active voice
11-08-19	Changed Standard Heading

This document was originally issued and sealed by  
Kirk J Hoff,  
Registration Number  
PE- 4683,  
on 11/08/19 and the original document is stored at the  
North Dakota Department  
of Transportation



# INTERSTATE PAVEMENT MARKING 4 LANE DIVIDED HIGHWAY



- NOTE:
- (A) Normal width white edge line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.  
Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40 mph.
  - (B) Normal width yellow edge line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.  
Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40 mph.
  - (C) Assume "varies" equals 790' for purpose of estimate. Place pavement marking from beginning of taper to the 12" line.
  - (D) Beginning of physical gore to theoretical gore.
  - (E) If the distance is less than 350' extend the 12" channel line to the theoretical gore, otherwise use 195'.
  - (F) Use 195' for estimating purposes.
  - (G) Not required for gravel surface crossroad approaches.
  - (H) 4' minimum, 15' maximum from nearest edge of intersection traveled way.
  - (I) Extend dotted line until it touches the edgeline.

LOCATION	BASIS OF ESTIMATE	
	ITEM	
Right or Left Side Exit Ramp TAPERED	12" White channel line	580 LF
	24" White stop line	60 LF
	6" White dotted line	148 LF
	6" White edge line	1115 LF
	6" Yellow edge line	1075 LF
Entrance Ramp TAPERED	12" White channel line	390 LF
	6" White dotted line	258 LF
	6" White edge line	1270 LF
Right or Left Side Exit Ramp PARALLEL	12" White channel line	398 LF
	24" White stop line	60 LF
	6" White dotted line (C)	258 LF
	6" White edge line	1115 LF
	6" Yellow edge line	1075 LF
Entrance Ramp PARALLEL	12" White channel line	388 LF
	6" White dotted line	253 LF
	6" White edge line	1275 LF
	6" Yellow edge line	1075 LF
Main Line (Both Roadways)	6" White lane line, 10' line, 30' skip	2640 LF/MI
	6" White edge line	10,560 LF/MI
	6" Yellow edge line	10,560 LF/MI
Cross Road	6" White edge line	2000 LF
	6" Dbl yellow barrier line (4" between)	2000 LF

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-3-11	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice
10-25-19	Replaced 2' Max dim with Note (I)
11-05-21	Revised labels
11-22-23	Revised pvmt marking widths
1-17-24	Revised wide pvmt marking width

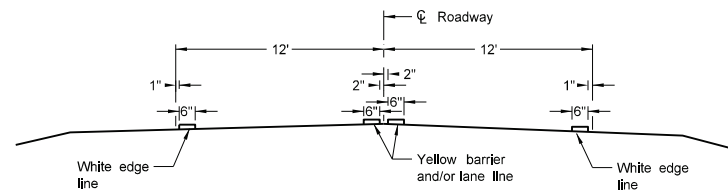


CROSS-ROAD & STRUCTURE  
Engineer will determine length striped.

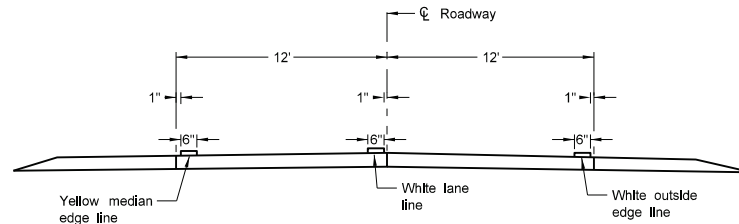


# PAVEMENT MARKING

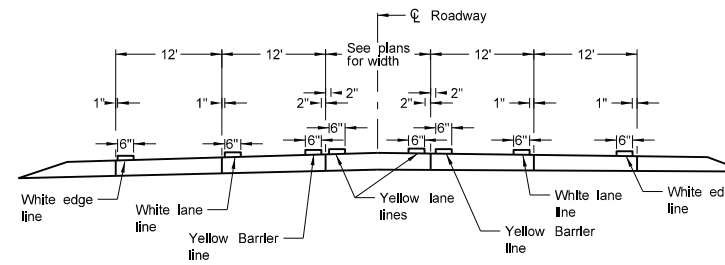
D-762-4



Two Lane Two Way  
RURAL ROADWAY



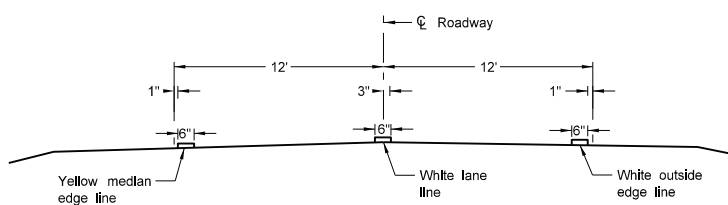
Two Lane Roadway  
INTERSTATE HIGHWAY  
Concrete Section



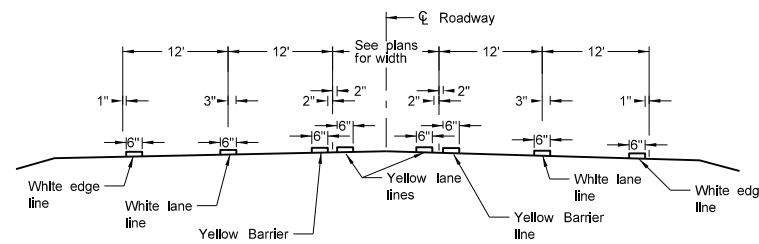
RURAL FIVE LANE ROADWAY  
Concrete Section

**NOTES:**

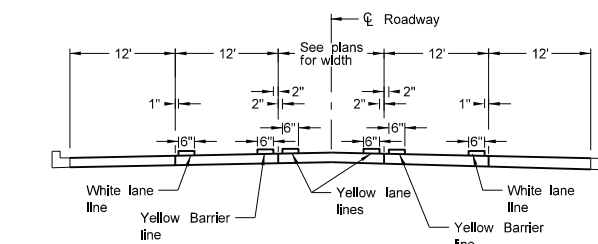
1. Continue edge lines through private drives and field drives. Break edge lines for intersections.
2. Normal width line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.
3. Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40 mph.



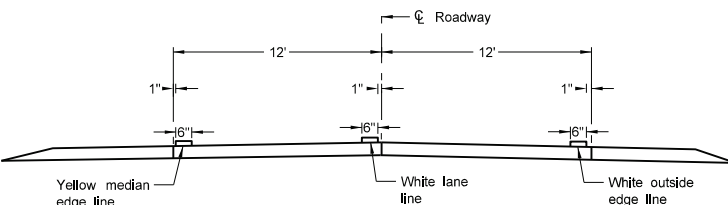
Two Lane Divided  
Rural Roadway  
PRIMARY HIGHWAY  
Asphalt Section



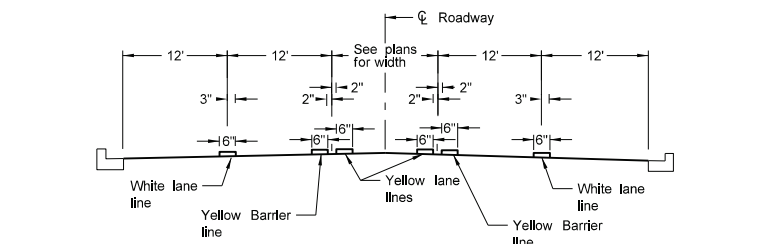
RURAL FIVE LANE ROADWAY  
Asphalt Section



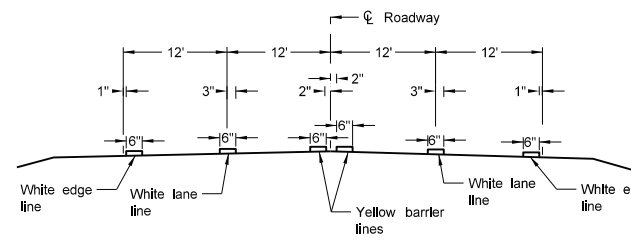
URBAN FIVE LANE SECTION  
Concrete Section



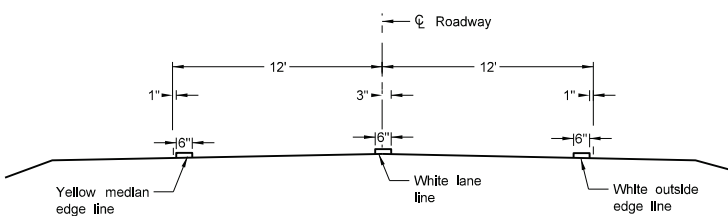
Two Lane Divided  
Rural Roadway  
PRIMARY HIGHWAY  
Concrete Section



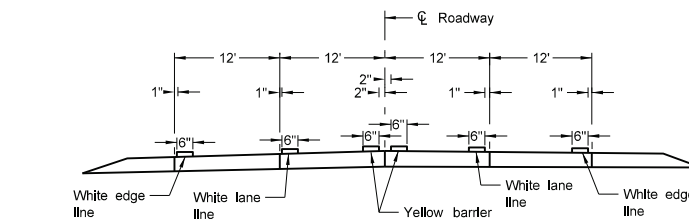
URBAN FIVE LANE SECTION  
Asphalt Section



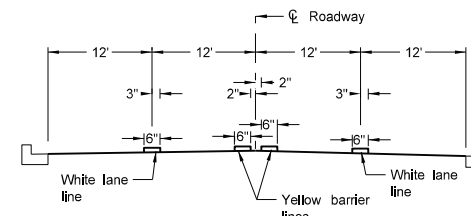
RURAL FOUR LANE ROADWAY  
Asphalt Section



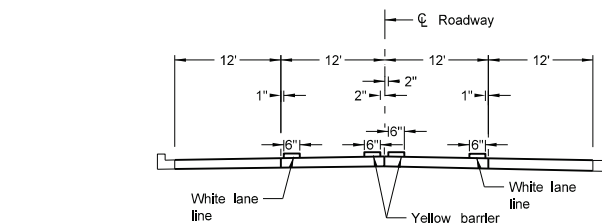
Two Lane Roadway  
INTERSTATE HIGHWAY  
Asphalt Section



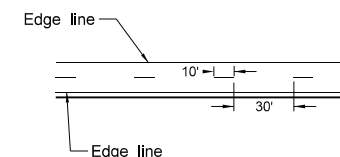
RURAL FOUR LANE ROADWAY  
Concrete Section



URBAN FOUR LANE SECTION  
Asphalt Section



URBAN FOUR LANE SECTION  
Concrete Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-1-10	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
08-27-19	New Design Engineer PE Stamp.
11-22-23	Revised pavement marking widths.

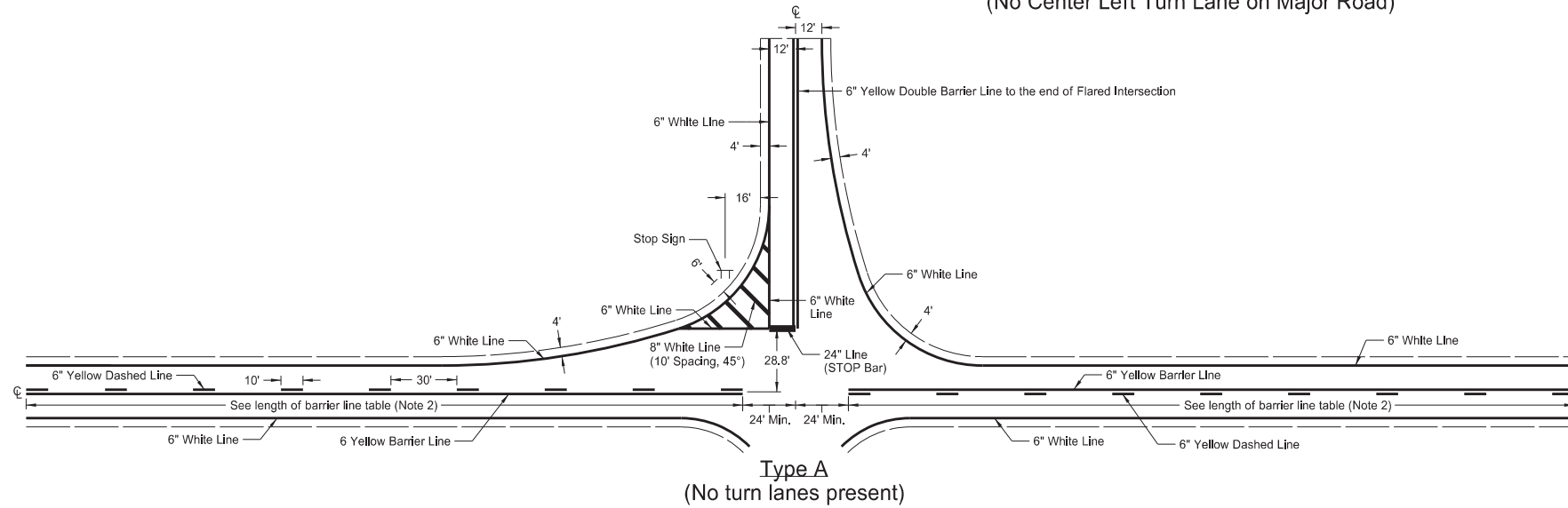


### PAVEMENT MARKING FOR STANDARD 90 DEGREE FLARED INTERSECTION

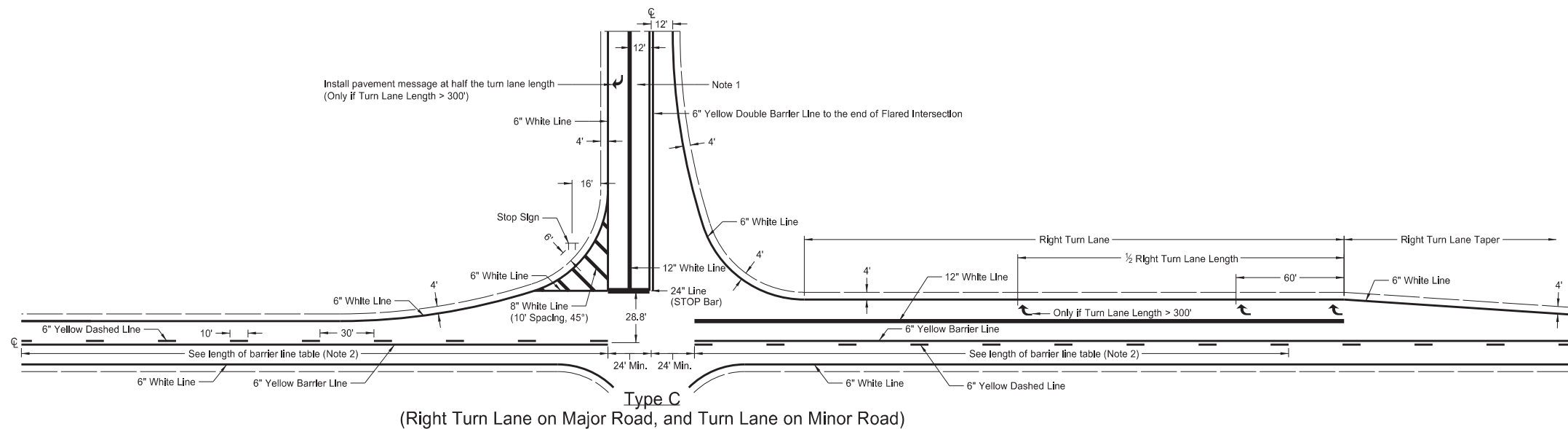
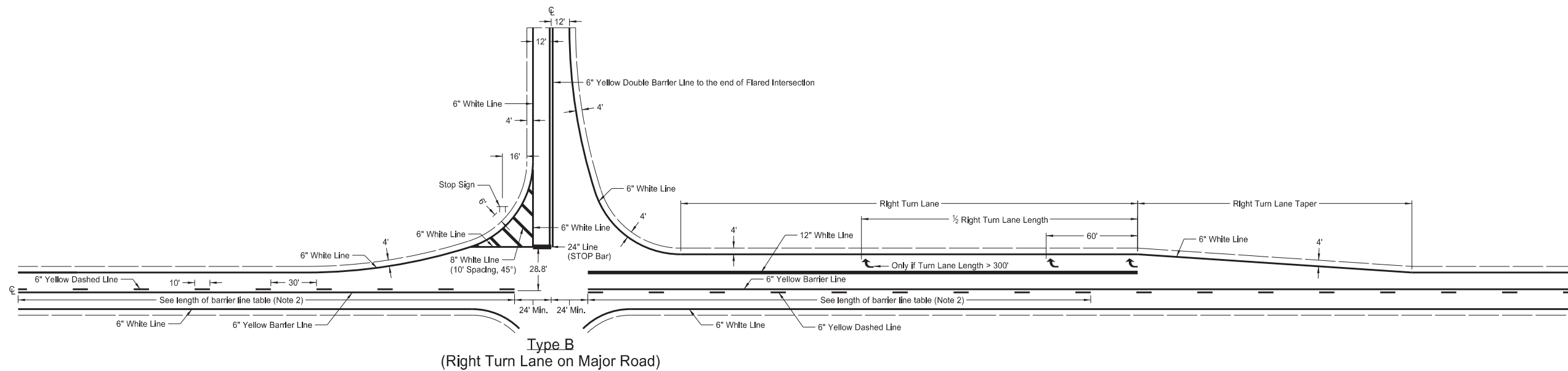
(No Center Left Turn Lane on Major Road)

**Notes**

1. At "T" intersections (3-leg), additionally install left turn pavement marking message arrow.
2. The barrier lines have variable distances dependent on speed limit. Obtain barrier line length from table below (stopping sight distance.)
3. Normal width line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.
4. Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40.
5. Wide line - 8 inches wide if 4 inch normal width lines are used and 12 inches wide if 6 inch normal width lines are used.



Speed Limit (mph)	30	35	40	45	50	55	60	65	70
Minimum Length	200'	250'	305'	360'	425'	495'	570'	645'	730'



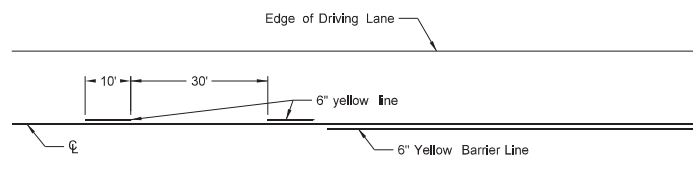
- 6" Marking
- 8" Marking
- 12" Marking
- 24" Marking

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
3-29-16	
REVISIONS	
DATE	CHANGE
8-17-17	Updated note & dimensioning.
8-30-18	Corrected pvmt mkg placement.
8-27-19	New Design Engineer PE Stamp.
11-22-23	Revised pavement marking widths.
1-17-24	Revised wide pvmt mkg width.

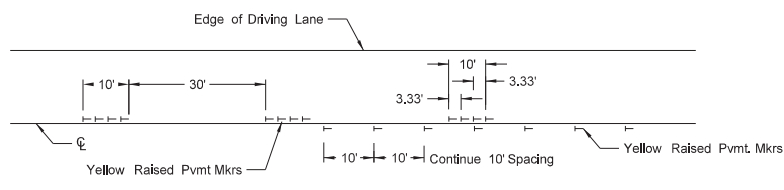


# SHORT-TERM PAVEMENT MARKING

D-762-11

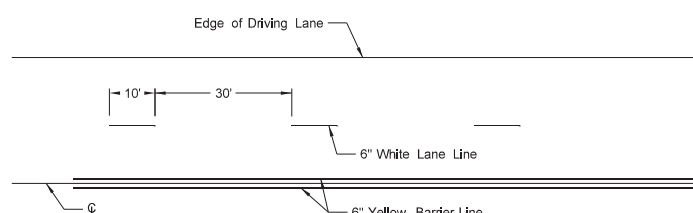


Painted or Tape Lines

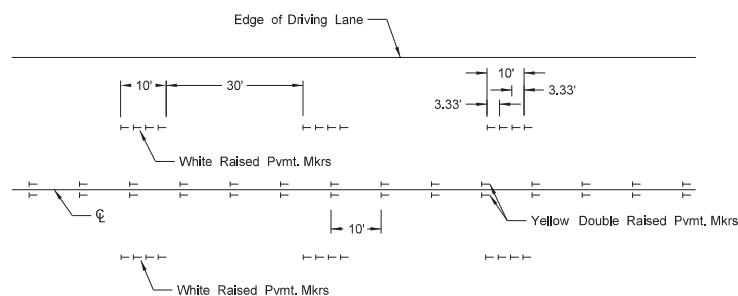


Raised Pavement Markers

TWO-LANE TWO-WAY ROADWAY

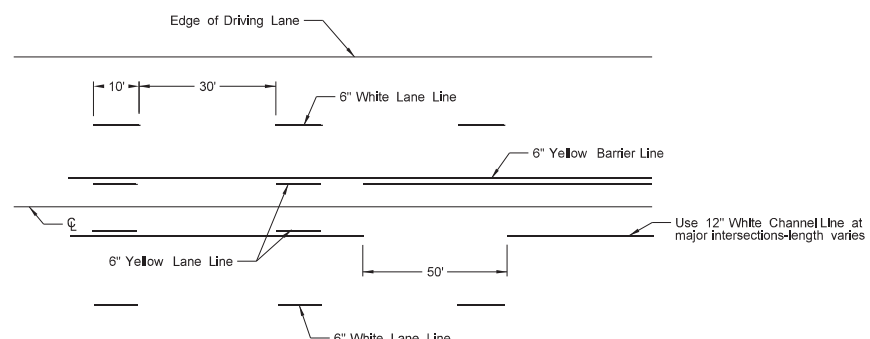


Painted or Tape Lines

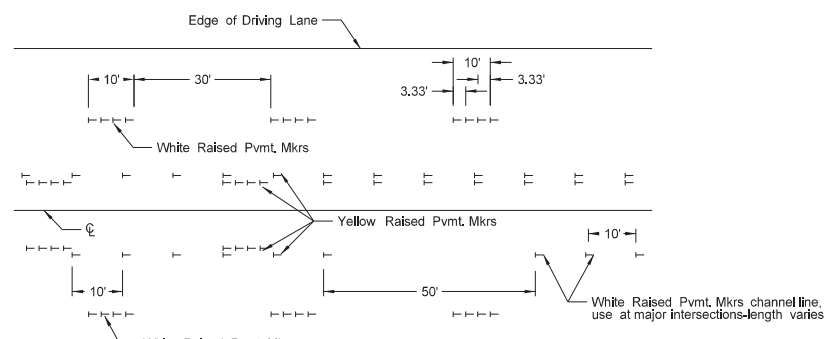


Raised Pavement Markers

FOUR LANE ROADWAY

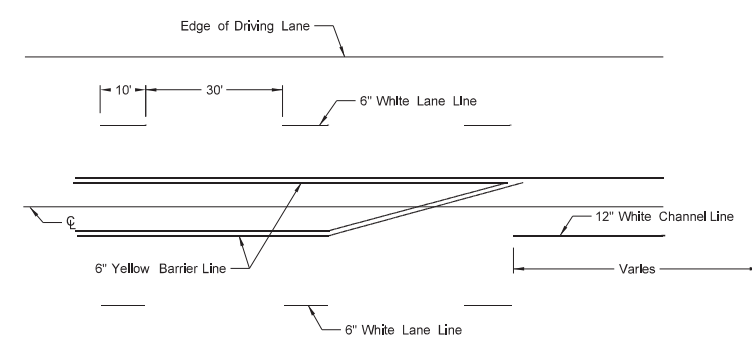


Painted or Tape Lines

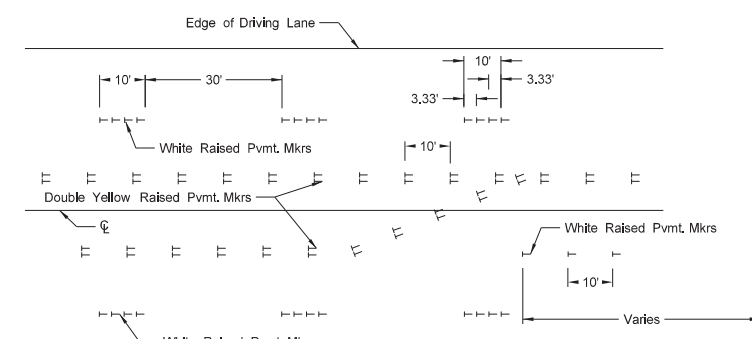


Raised Pavement Markers

FIVE LANE ROADWAY TWO WAY LEFT TURN



Painted or Tape Lines



Raised Pavement Markers

FIVE LANE ROADWAY WITH MARKED ISLANDS

**NOTES:**

1. Place no passing zones on two-lane two-way roadways as shown. In lieu of short term no passing zone pavement markings, place no passing zone signs. Replace no passing zone signs with short term no passing zone pavement marking within three days.
2. Place short term center line stripe (paint) on top lift to match exact placement of permanent stripe.
3. Remove raised markers and tape markings after permanent pavement marking is installed.
4. Normal width line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.
5. Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40 mph.
6. Wide lines - 8 inches wide if 4 inch normal width lines are used and 12 inches wide if 6 inch normal width lines are used.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-1-10	
REVISIONS	
DATE	CHANGE
3-29-16	Re-numbered to be D-762-11 (previously was D-762-6)
10-17-17	Updated to active voice.
8-27-19	New Desgn Engineer PE Stamp.
11-22-23	Revised pavement marking widths
1-17-24	Revised wide pvmt marking width.

