

DESIGN DATA			
Traffic		Average Daily	
Current 2024	Pass: 2,138	Trucks: 495	Total: 2,633
Preventive Maintenance			

STATE	PROJECT NO.	PCN	SECTION NO.	HEET NO.
ND	H-6-002(158)317	24796	1	1

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

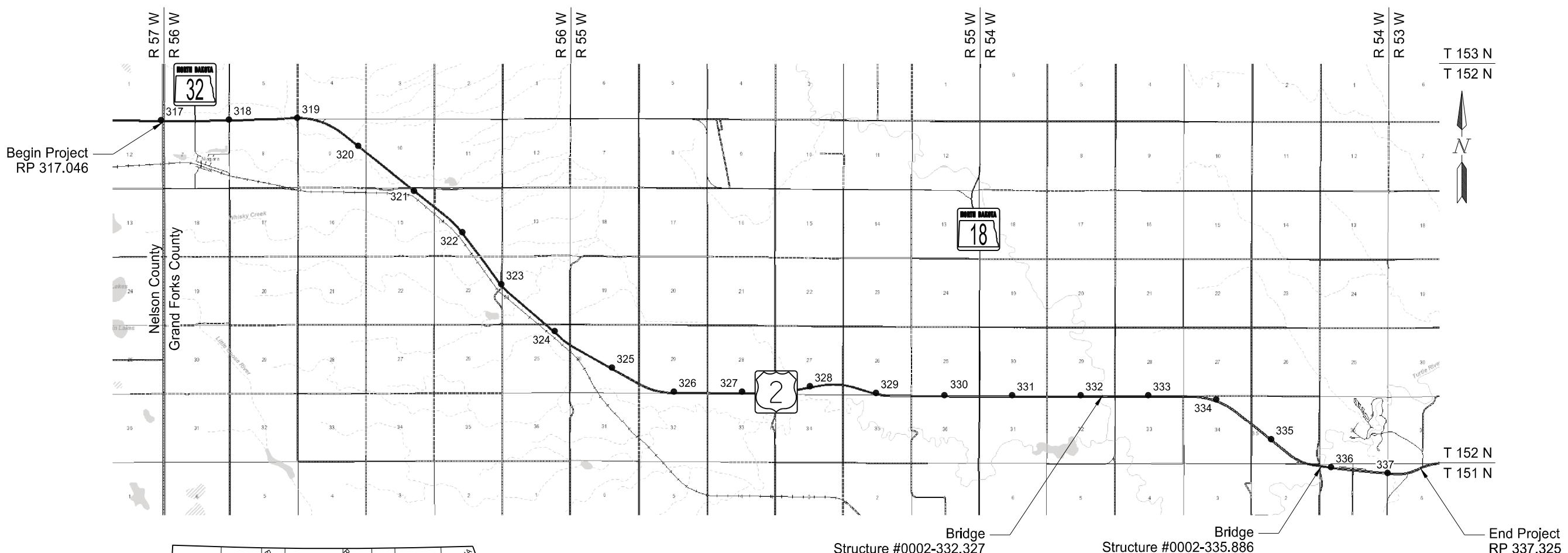
H-6-002(158)317

Grand Forks County

US 2, Niagara E to near Arvilla - WB
Chip Seal

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	7/1/2025
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
H-6-002(158)317	20.279	20.279



STATE COUNTY MAP

DESIGNER
Bryan Fetsch
DESIGNER
DESIGNER

ND DEPARTMENT OF TRANSPORTATION
GRAND FORKS DISTRICT


2/11/25

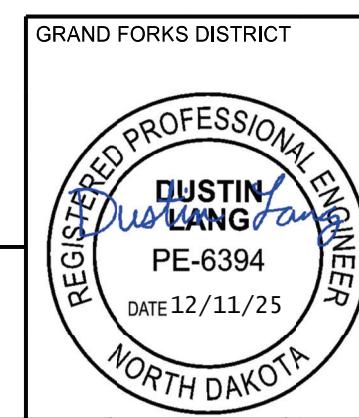
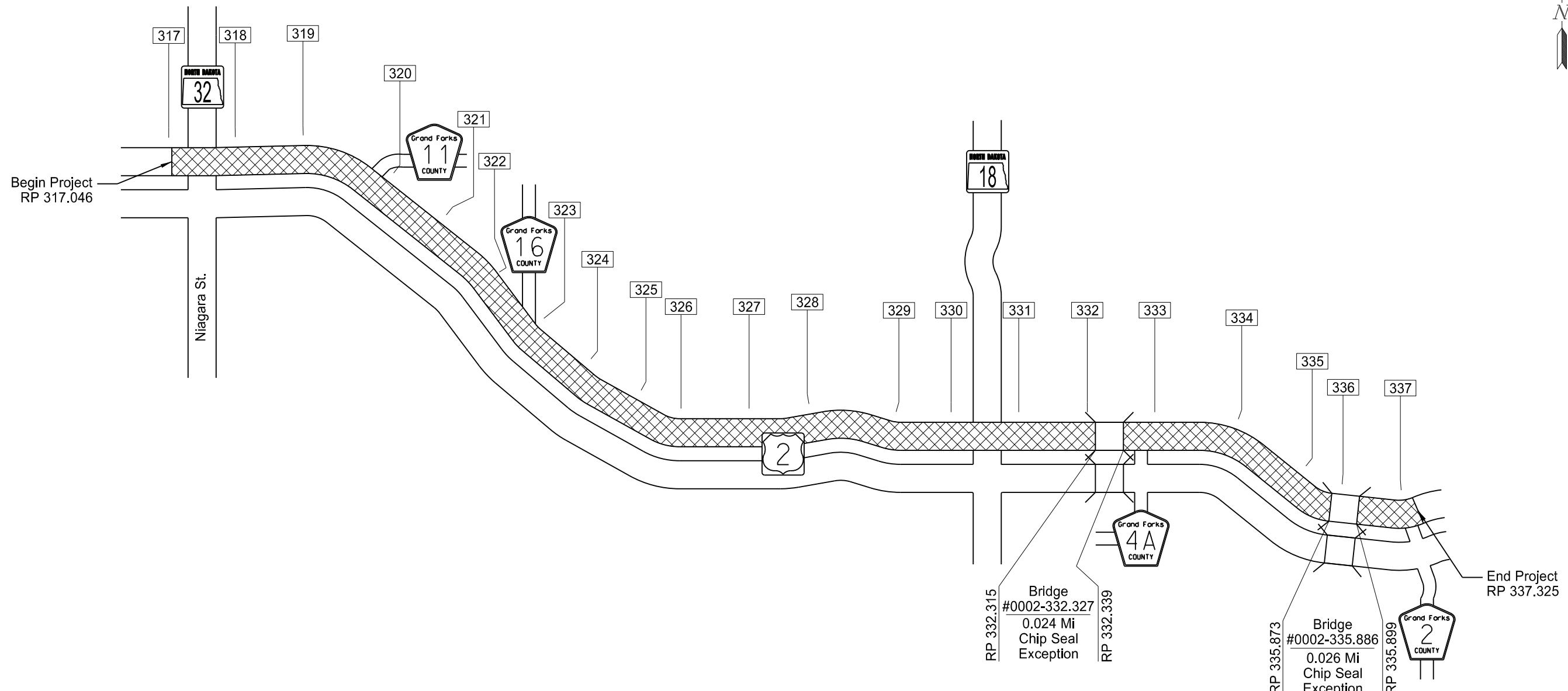


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2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations			
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6	1	Notes	D-101-30, 31, 32, 33	Symbols			
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			D-762-4	Pavement Marking			
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			D-762-11	Short-Term Pavement Marking			
SPECIAL PROVISIONS							
Number	Description						
PSP 31(25)	Permits and Environmental Considerations						
SP 163(25)	Warranty Chip Seal						

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ND	H-6-002(158)317	4	1	

N



Chip Seal

Scope of Work

Chip Seal

US 2, Niagara E to near Arvilla - WB



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-6-002(158)317	6	1

NOTES

100-P01 COORDINATION OF PROJECTS: Another project in the vicinity of this project is under contract during the 2026 construction season. The project is NH-6-002(155)318 - CPR, Grinding, and Mill/Overlay of turn lanes and is located from Niagara E to 1.4 Miles W of Jct ND 18 (Eastbound).

401-P01 FOG SEAL APPLICATION: Use CSS-1H for Fog Seal. Broom roadway before Fog Seal application. Dilute the Fog Seal Oil 50% (Water) and 50% (CSS-1H). Dilution at the supplier will be required. Complete this work within 5 working days of the mainline seal completion.

Liquidated Damages for failure to complete the fog seal within 5 working days will be charged according to Section 108.07.

420-P01 SEAL COAT: Initial light brooming will be during the cool period of the early morning of the next day after seal application. Traffic control will be needed during the brooming operation.

420-P02 SHOULDER SEAL: The Engineer will not measure areas of shoulder seal application, except for those areas requested to be sealed not included in the plans. The Engineer will pay for sealing the areas shown in the plans at plan quantity.

704-P01 TRAFFIC CONTROL FOR CHIP SEAL: Provide traffic control consisting of a lane closure and flagging.

The maximum work zone length is limited to one day's production. The length of the work zone includes the daily construction area plus the longitudinal buffer space and does not include tapers.

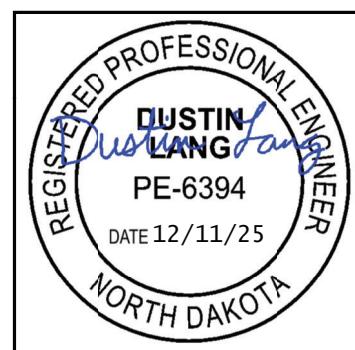
For estimating purposes, the traffic control device list is based on the entire project length and the following list:

1. Standard D-704-20, layout G and H;
2. Standard D-704-22, layouts K and L;
3. Standard D-704-34, quantities include 230 delineator drums for approaches; and
4. Standard D-704-34A.

The Department will pay for delineator drums used for approach access within the work zone at the contract unit price.

Sweep the roadway before allowing traffic on newly placed seal coat.

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



ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	HEET NO.
ND	H-6-002(158)317	8	1

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
103 0100	CONTRACT BOND	L SUM	0.84	0.84
420 0405	SEAL COAT	SY	298,577	298,577
420 0605	SHOULDER SEAL	SY	115,366	115,366
702 0100	MOBILIZATION	L SUM	0.84	0.84
704 1000	TRAFFIC CONTROL SIGNS	UNIT	5,409	5,409
704 1052	TYPE III BARRICADE	EA	41	41
704 1060	DELINEATOR DRUMS	EA	253	253
704 1067	TUBULAR MARKERS	EA	900	900
704 1087	SEQUENCING ARROW PANEL-TYPE C	EA	1	1
762 0103	PVMT MK PAINTED-MESSAGE	SF	352	352
762 0432	SHORT TERM 6IN LINE-TYPE NR	LF	53,538	53,538
762 1106	PVMT MK PAINTED 6IN LINE	LF	241,179	241,179
762 1112	PVMT MK PAINTED 12IN LINE	LF	4,514	4,514
762 1124	PVMT MK PAINTED 24IN LINE	LF	80	80

BASIS OF ESTIMATE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-6-002(158)317	10	1

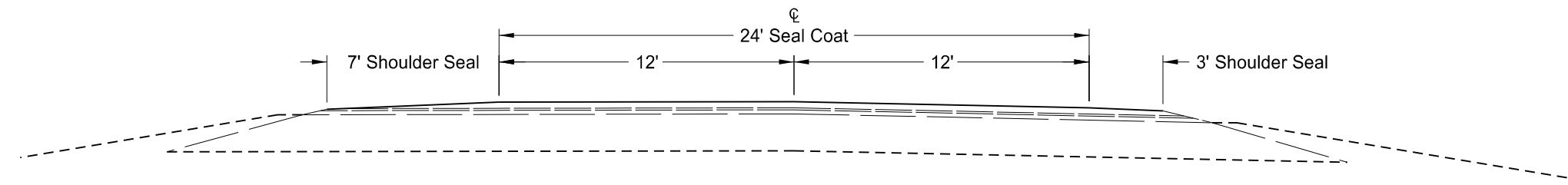
Estimated Mainline Quantities			
Description	Unit	Width	Units/Mile
Typical Section 1 (19.367 Miles)			
Seal Coat (Mainline) (24 ft x 5280 LF/Mi ÷ 9 SF/SY = 14,080 SY/Mi)	SY	24'	14,080
• Cover Coat Material CI 41-M @ 25 lb/SY = 176 Ton/Mi			
• CRS2P Emulsified Asphalt @ 0.40 Gal/SY = 5,632 Gal/Mi			
• Fog Seal @ 0.05 Gal/SY = 704 Gal/Mi			
Shoulder Seal (10 ft x 5280 LF/Mi ÷ 9 SF/SY = 5,867 SY/Mi)	SY	7' LT 3' RT	5,867
• CRS2P Emulsified Asphalt @ 0.20 Gal/SY = 1,174 Gal/Mi			
Additional Quantities			
Description	Unit	Basis	Total
Seal Coat (ND 32, GF 11, GF 16, ND 18, GF 4A & GF 2) • Cover Coat Material CI 41-M @ 25 lb/SY = 324 Ton	SY	See Sec. 90 Sheets 1-6	25,889
• CRS2P Emulsified Asphalt @ 0.40 Gal/SY = 103,556 Gal			
• Fog Seal @ 0.05 Gal/SY = 1,295 Gal			
Shoulder Seal (GF 11, GF 16, GF 4A & GF 2) • CRS2P Emulsified Asphalt @ 0.20 Gal/SY = 348 Gal	SY	See Sec. 90 Sheets 2, 3, 5 & 6	1,739

• indicates quantities to be included in contract price for Seal Coat

Temporary Pavement Marking			
Location	Basis	Quantity	
RP 317.046 to RP 337.325 - WB (20.279 Mi) (2 Applications)			
Short Term 6IN Line-Type NR White Skip Lane Line (10' Line, 30' Skip)	1,320 LF/Mi	53,538 LF	
Permanent Pavement Marking			
Location	Basis	Quantity	
RP 317.046 to RP 337.325 - WB (20.279 Mi)			
Pvmt Mk Painted 6IN White Skip Line (10' Line, 30' Skip)	1,320 LF/Mi	26,769 LF	
Pvmt Mk Painted 6IN White Edge Line	5,280 LF/Mi	107,074 LF	
Pvmt Mk Painted 6IN Yellow Edge Line	5,280 LF/Mi	107,074 LF	
Additional Permanent Pavement Marking Quantities			
Turn Lanes			
ND 18 Lt. & Rt.			
Pvmt Mk Painted Message		96 SF	
Pvmt Mk Painted 6IN White Edge Line		96 LF	
Pvmt Mk Painted 6IN Yellow Double Barrier Line		40 LF	
Pvmt Mk Painted 12IN White Cross Hatch Line		402 LF	
Pvmt Mk Painted 12IN White Edge Line Bordering Cross Hatch		1,052 LF	
Pvmt Mk Painted 12IN White Channel Line		1,212 LF	
Pvmt Mk Painted 24IN White Line - Stop Bar		16 LF	
ND 32 Lt. & Rt., GF Co. 11 Rt., GF Co. 16 Rt., GF Co. 4A Lt., GF Co. 2 Lt.			
Pvmt Mk Painted Message	D-762-1	256 SF	
Pvmt Mk Painted 6IN Yellow Double Barrier Line (ND 32 - 100 LF, GF Co. 11 - 26 LF)		126 LF	
Pvmt Mk Painted 12IN White Channel Line (ND 32 - 598 LF, GF Co. 11 - 186 LF, GF Co. 16 - 154 LF, GF Co. 4A - 441 LF, GF Co. 2 - 469 LF)	D-762-5	1,848 LF	
Pvmt Mk Painted 24IN White Line - Stop Bars (ND 32 - 53 LF, GF Co. 11 - 11LF)		64 LF	
Total 6IN Pavement Marking			
	White	Yellow	
Short Term 6IN Line - Type NR	53,538 LF	-	
Pvmt Mk Painted 6IN Line	133,939 LF	107,240 LF	



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	H-6-002(158)317	30	1



Typical Proposed Section 1

RP 317.046 to RP 317.461
 RP 317.610 to RP 319.373
 RP 319.439 to RP 322.955
 RP 323.017 to RP 330.426
 RP 330.737 to RP 332.315
 RP 332.339 to RP 332.491
 RP 332.626 to RP 335.873
 RP 335.899 to RP 337.098
 RP 337.237 to RP 337.325

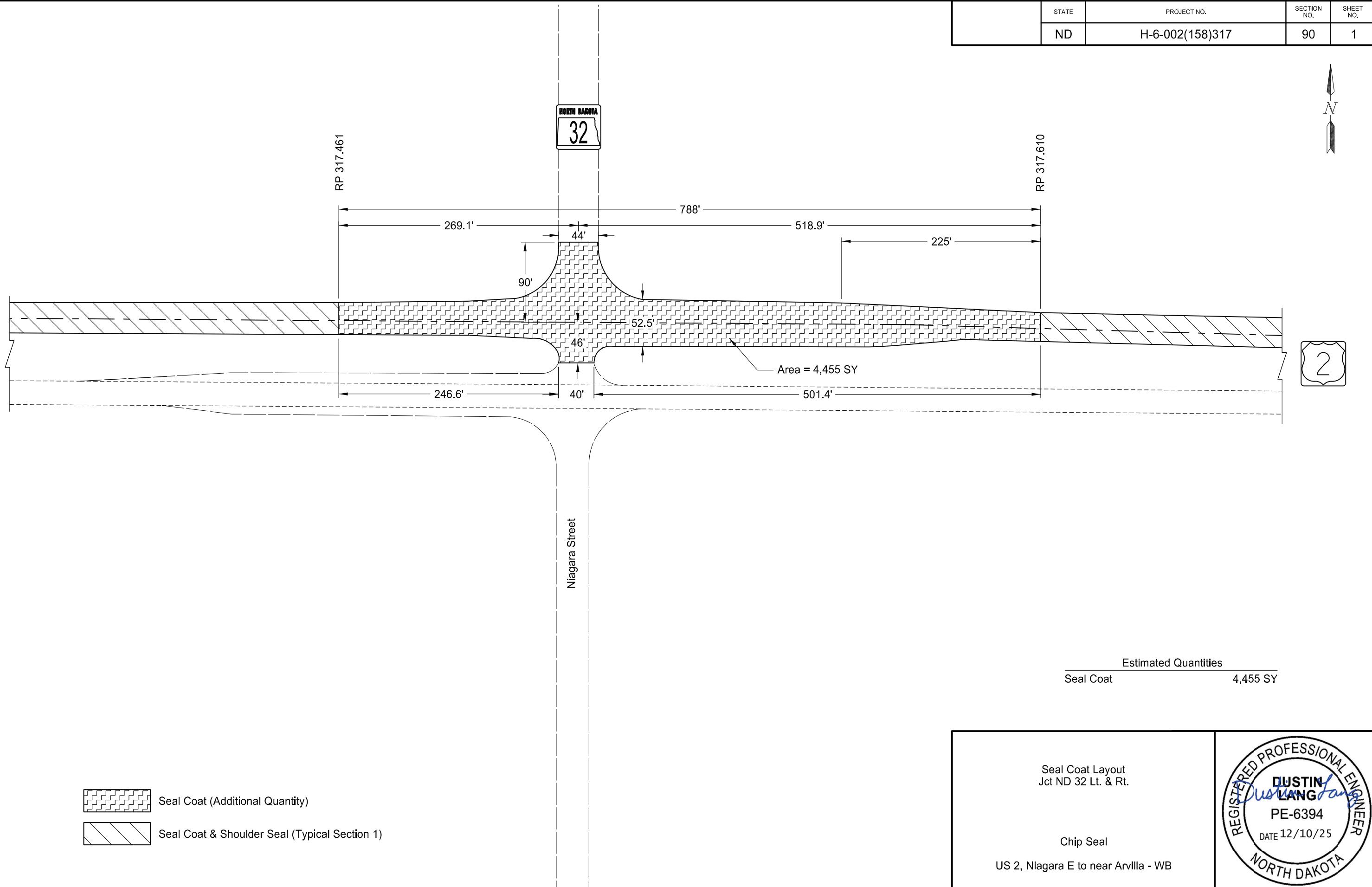
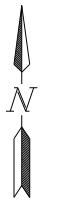
Typical Sections

Chip Seal

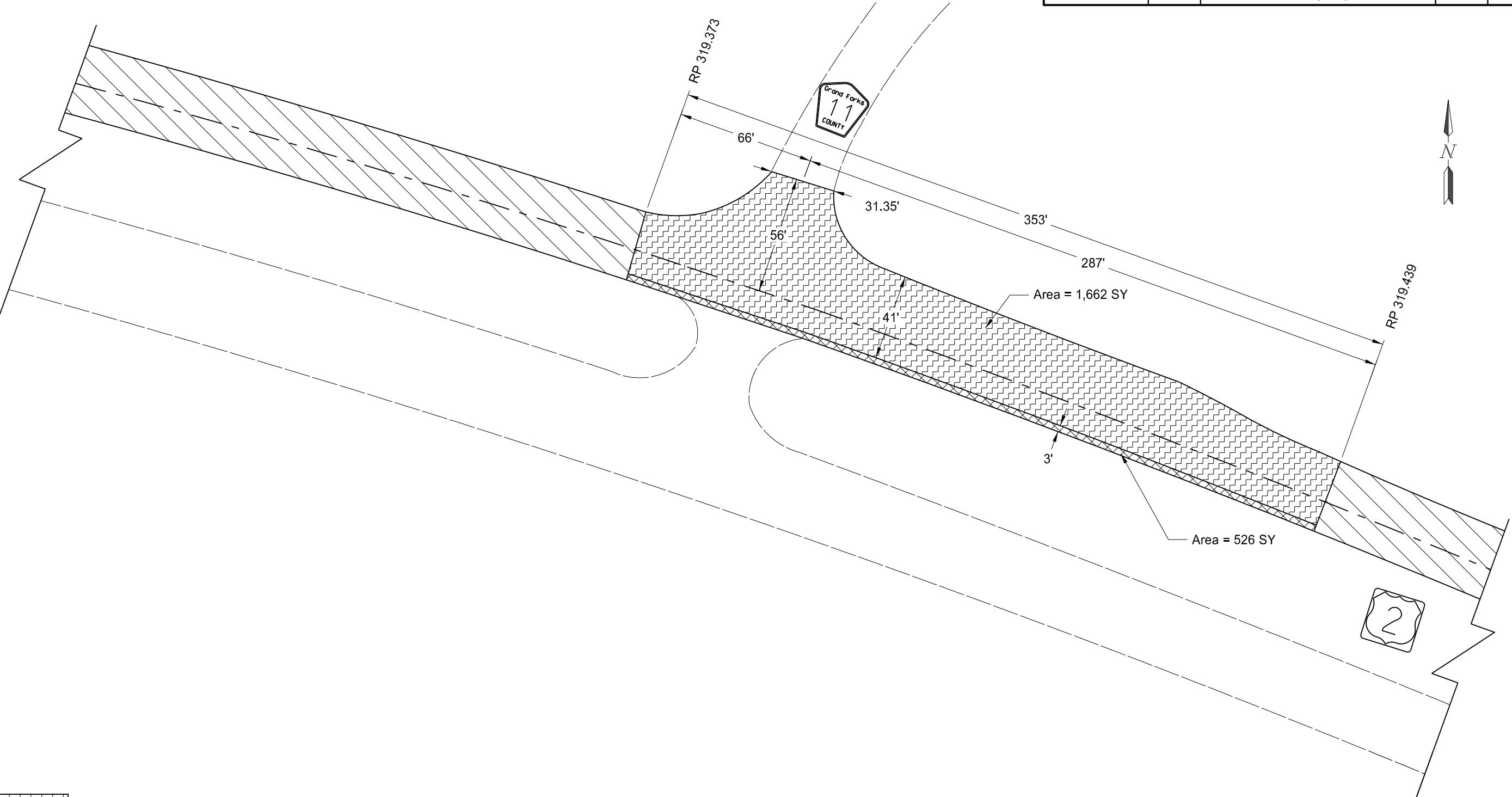
US 2, Niagara E to near Arvilla - WB

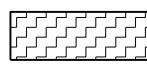


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-6-002(158)317	90	1	



	STATE	PROJECT NO.	SECTION NO.	HEET NO.
ND	H-6-002(158)317	90	2	



-  Seal Coat (Additional Quantity)
-  Shoulder Seal (Additional Quantity)
-  Seal Coat & Shoulder Seal (Typical Section 1)

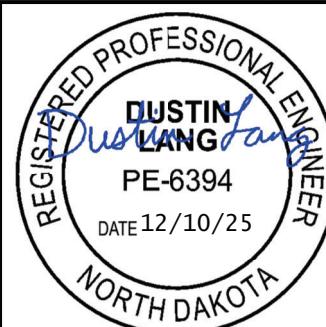
Estimated Quantities

Seal Coat	1,662 SY
Shoulder Seal	526 SY

Seal Coat Layout
Jct Grand Forks Co 11

Chip Seal

US 2, Niagara E to near Arvilla - WB



	STATE	PROJECT NO.	SECTION NO.	HEET NO.
ND	H-6-002(158)317	90	3	

N



RP 322.955

25'

60'

36'

Area = 111 SY

3'

Area = 1,389 SY

9'

23'

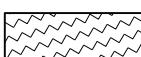
328'

RP 323.017

3'



Estimated Quantities
Seal Coat 1,389 SY
Shoulder Seal 111 SY



Seal Coat (Additional Quantity)



Shoulder Seal (Additional Quantity)



Seal Coat & Shoulder Seal (Typical Section 1)

Seal Coat Layout
Jct Grand Forks Co 16

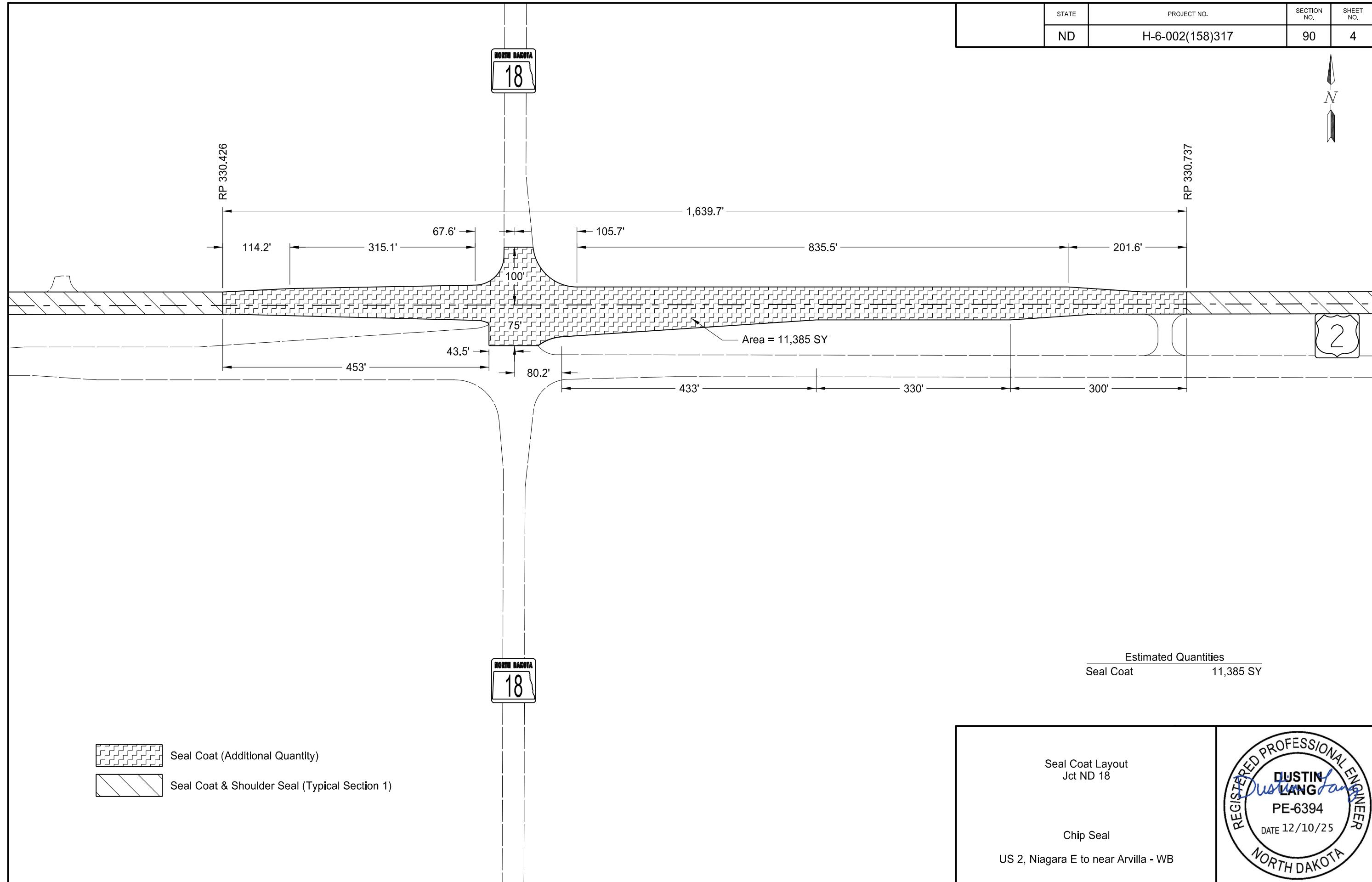
Chip Seal

US 2, Niagara E to near Arvilla - WB



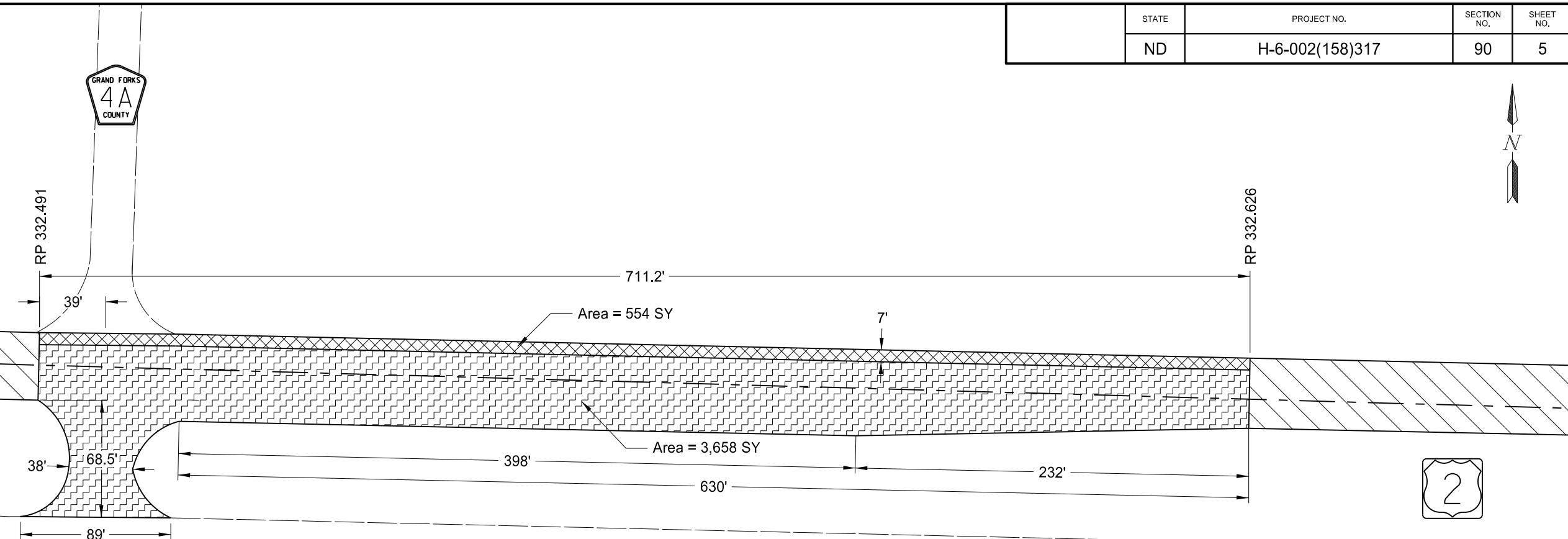
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-6-002(158)317	90	4	

N



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-6-002(158)317	90	5	

N



Estimated Quantities

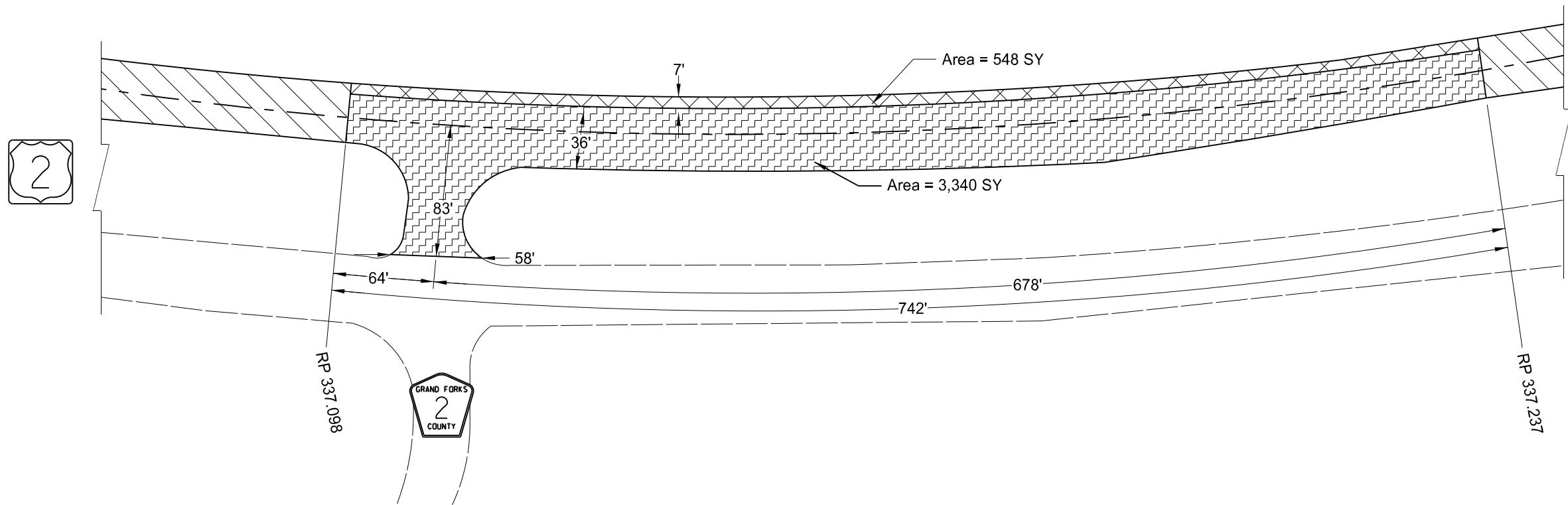
Seal Coat	3,658 SY
Shoulder Seal	554 SY

- Seal Coat (Additional Quantity)
- Shoulder Seal (Additional Quantity)
- Seal Coat & Shoulder Seal (Typical Section 1)

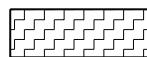
Seal Coat Layout
Jct Grand Forks Co 4A
Chip Seal
US 2, Niagara E to near Arvilla - WB



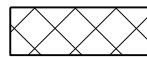
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND		H-6-002(158)317	90	6



Estimated Quantities	
Seal Coat	3,340 SY
Shoulder Seal	548 SY



Seal Coat (Additional Quantity)



Shoulder Seal (Additional Quantity)



Seal Coat & Shoulder Seal (Typical Section 1)

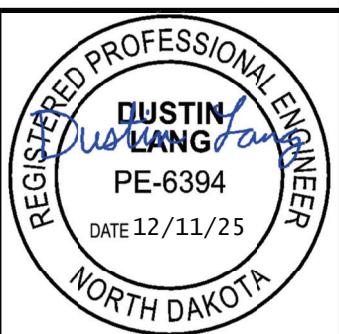
Seal Coat Layout
Jct Grand Forks Co 2

Chip Seal

US 2, Niagara E to near Arvilla - WB



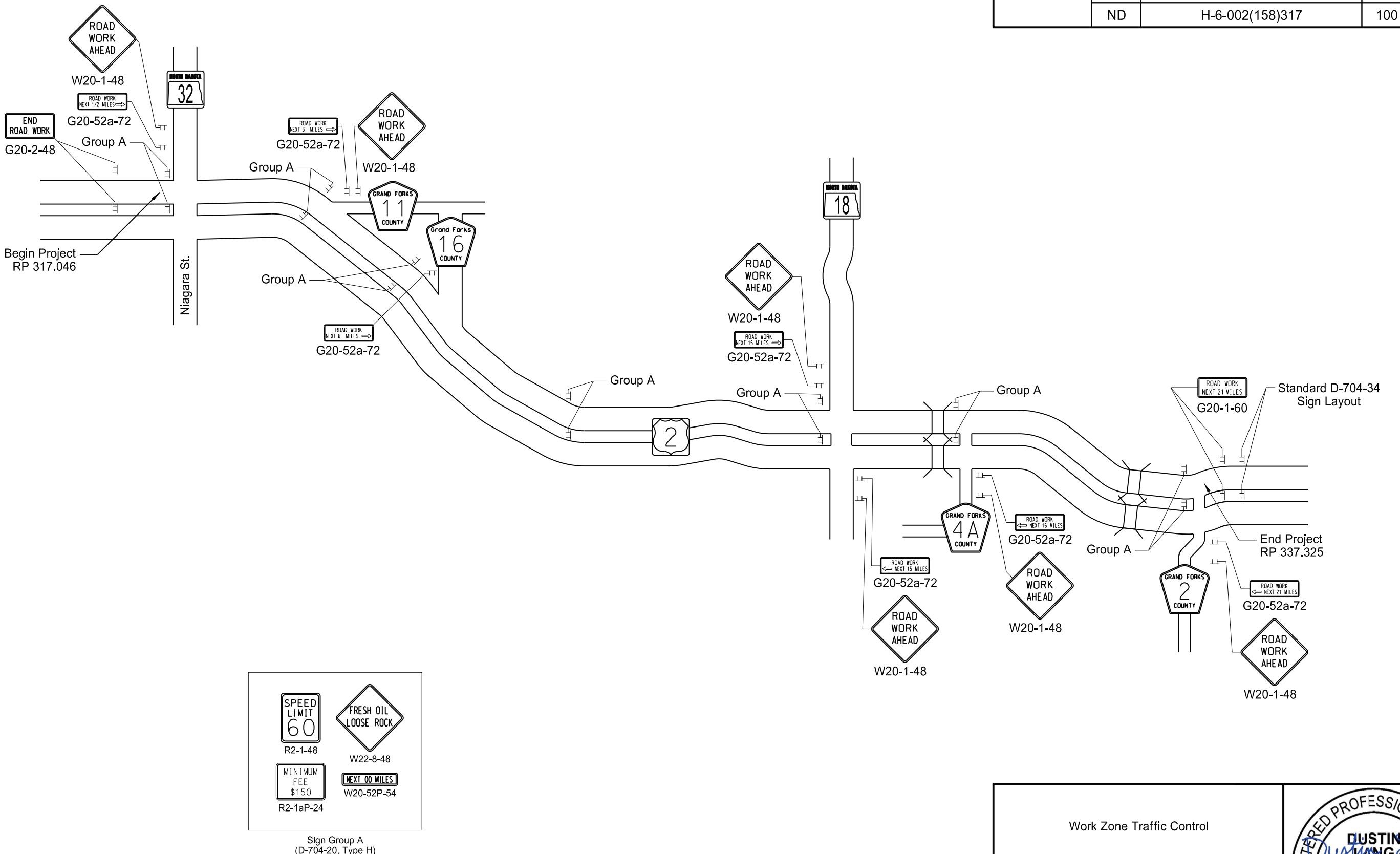
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List

Chip Seal

US 2, Niagara E to near Arvilla - WB

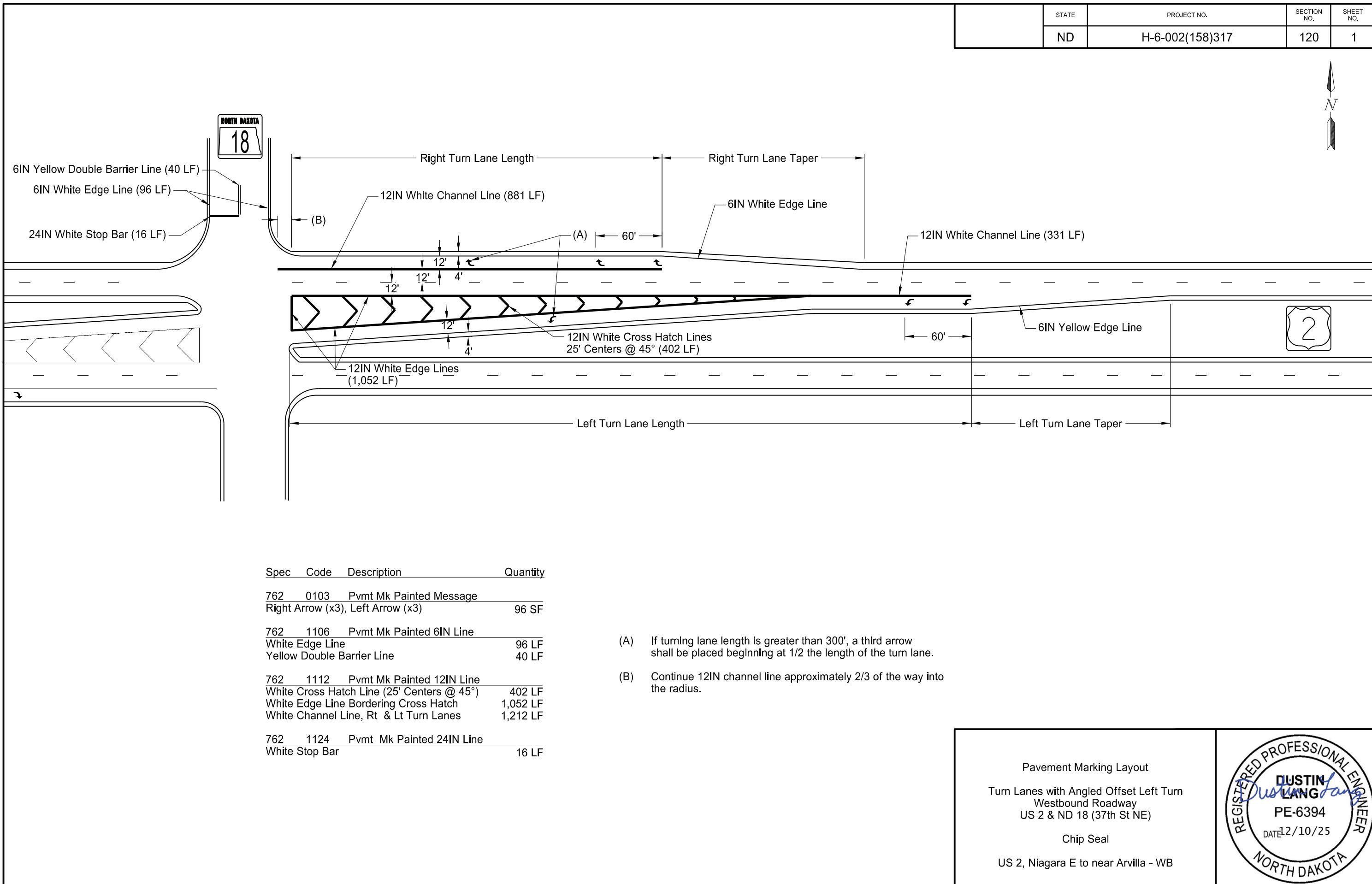


Work Zone Traffic Control

Chip Seal

US 2, Niagara E to near Arvilla - WB





NDDOT ABBREVIATIONS

D-101-1

?	This is a special text character used in the labeling of existing features. It indicates a feature that has an unknown characteristic, potentially based on: lack of description, location accuracy or purpose.	C Gdrl	cable guardrail	Culv	culvert	FOS	factor of safety
		Calc	calculate	C&G	curb & gutter	Fed	Federal
		CIP	cast iron pipe	CI	curb inlet	FP	feed point
		CB	catch basin	CR	curb ramp	Fn	fence
		CRS	cationic rapid setting	C	cut	Fn P	fence post
Abn	abandoned	C Gd	cattle guard	Dd Ld	dead load	FO	fiber optic
Abut	abutment	C To C	center to center	Defl	deflection	FD	field drive
Adj	adjusted	CL or C	centerline	Defm	deformed	F	fill
Aggr	aggregate	Ch	chain	DInt	delineate	FAA	fine aggregate angularity
Ahd	ahead	Chnlk	chain-link	Dlntr	delineator	FH	fire hydrant
ARV	air release valve	Ch Blk	channel block	Depr	depression	Fl	flange
Align	alignment	Ch Ch	channel change	Desc	description	Flrd	flared
Al	alley	Chk	check	Det	detail	FES	flared end section
Alt	alternate	Chsld	chiseled	DWP	detectable warning panel	F Bcn	flashing beacon
Alum	aluminum	Cir	circle	Dtr	detour	FA	flight auger sample
ADA	Americans with Disabilities Act	Cl	class	Dia or ø	diameter	FL	flow line
&	and	CInt	clean-out	Dir	direction	Ftg	footing
Appr	approach	Clr	clear	Dist	distance	FM	force main
Approx	approximate	Cl&gr	clearing & grubbing	DM	disturbed material	Fnd	found
ACP	asbestos cement pipe	Comb.	combination	DB	ditch block	Fdn	foundation
Asph	asphalt	Coml	commercial	DG	ditch grade	Frac	fractional
AC	asphalt cement	Compr	compression	Dbl	double	Frwy	freeway
Assmd	assumed	CADD	computer aided drafting & design	Dn	down	Fr	front
@	at	Conc	concrete	Dwg	drawing	FF	front face
Atten	attenuation	CECB	concrete erosion control blanket	Dr	drive	F Disp	fuel dispenser
ATR	automatic traffic recorder	Cond	conductor	Drwy	driveway	FFP	fuel filler pipes
Ave	Avenue	Const	construction	DI	drop inlet	FLS	fuel leak sensor
Avg	average	Cont	continuous	D	dry density	Furn	furnish/ed
ADT	average daily traffic	CSB	continuous split barrel sample				
		Contr	contraction				
		Contr	contractor				
Bk	back	CP	control point	Ea	each		
BF	back face	Coord	coordinate	Esmt	easement		
Balc	balcony	Cor	corner	E	East		
B Wire	barbed wire	Corr	corrected	EB	Eastbound		
Barr	barricade	CAES	corrugated aluminum end section	Elast	elastomeric		
Btry	battery	CAP	corrugated aluminum pipe	EL	electric locker		
BI	beehive inlet	CMES	corrugated metal end section	E Mtr	electric meter		
Beg	begin	CMP	corrugated metal pipe	EVSE	electric vehicle supply equipment		
BG	below grade	CPVCP	corrugated poly-vinyl chloride pipe	Elec	electric/al		
BM	bench mark	CSES	corrugated steel end section	EDM	electronic distance meter		
Bkwy	bikeway	CSFES	corrugated steel flared end section	Elev or El	elevation		
Bit	bituminous	CSP	corrugated steel pipe	Ellipt	elliptical		
Blk	block	CSTES	corrugated steel traversable end section	Emb	embankment		
BH	bore hole	Co	County	Emuls	emulsion/emulsified		
Bot	bottom	Crse	course	ES	end section		
Blvd	Boulevard	Ct	Court	Engr	engineer		
Bndry	boundary	Xarm	cross arm	ESS	environmental sensor station		
Brkwy	breakaway	Xbuck	cross buck	Eq	equal		
Br	bridge	Xsec	cross sections	Evgr	evergreen		
Bldg	building	Xing	crossing	Exc	excavation		
Bus.	business	Xrd	crossroad	Exst	existing		
BV	butterfly valve	Crn	crown	Exp	expansion		
Byp	bypass			Expy	Expressway		
				E	external of curve		
				Extru	extruded		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
04-23-18 09-20-18 12-18-20 08-16-22 04-14-25	General Revisions General Revisions General Revisions General Revisions General Revisions



KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
04/14/25
ENGINEER
NORTH DAKOTA

NDDOT ABBREVIATIONS

D-101-2

Galv	galvanized	Ln	lane	Obsc	obscure(d)	Qty	quantity
Gar	garage	Lg	large	Ocpd	occupied	Qtr	quarter
Gs L	gas line	Lat	latitude	Ocpy	occupy		
G Reg	gas line regulator	Lt	left	O/s	offset		
GMV	gas main valve	Lens	lenses	OC	on center	Rad or R	radius
G Mtr	gas meter	Lvl	level	C	one dimensional consolidation	RR	railroad
GSV	gas service valve	Lvng	leveling	OC	organic content	Rlw	railway
GVP	gas vent pipe	Lht	light	Orig	original	Rsd	raised
GV	gate valve	LP	light pole	O To O	out to out	RC	rapid curing
Ga	gauge	Ltg	lighting	OD	outside diameter	Rec	record
Gov	government	Liq	liquid	OH	overhead	Rcy	recycle
Grd	graded/grade	LL	liquid limit			RAP	recycled asphalt pavement
Grnd	ground	Loc	location	PMT	pad mounted transformer	RPCC	recycled portland cement concrete
GWM	ground water monitor	Long.	longitude	Pg	pages	Ref	reference
Gdrl	guardrail	Lp	loop	Pntd	painted	R Mkr	reference marker
Gtr	gutter	LD	loop detector	Pr	pair	RM	reference monument
		Lum	luminaire	Pnl	panel	RP	reference point
				Pk	park	Refl	reflectorized
H Plg	H piling			PSD	passing sight distance	RCB	reinforced concrete box
Hdwl	headwall	Mb	mailbox	Pvmt	pavement	RCES	reinforced concrete end section
Ht	height	ML	main line	Ped	pedestal	RCFES	reinforced concrete flared end section
Hel	helical	MH	manhole	Ped	pedestrian	RCP	reinforced concrete pipe
HDPE	high density polyethylene	Mkd	marked	PPP	pedestrian pushbutton post	RCPS	reinforced concrete pipe sewer
HM	high mast	Mkr	marker	Pen.	penetration	RCTES	reinforced concrete traversable end section
HP	high pressure	Mkg	marking	Perf	perforated	Reinf	reinforcement
HPS	high pressure sodium	MA	mast arm	Per.	perimeter	Res	reservation
HTCG	high tension cable guardrail	Matl	material	Perm	permanent	Res	residence
Hwy	highway	Max	maximum	PL	pipeline	Ret	retaining
Hor	horizontal			PI	place	Rev	reverse
HBP	hot bituminous pavement	Meas	measure	P&P	plan & profile	Rt	right
HMA	hot mix asphalt	Mdn	median	PL	plastic limit	R/W	right of way
Hyd	hydrant	MD	median drain	PI or P	plate	Riv	river
Ph	hydrogen ion content	MC	medium curing	Pt	point	Rd	road
		MGS	Midwest Guardrail System	PE	polyethylene	Rdbo	road bed
		MM	mile marker	PVC	polyvinyl chloride	Rdw	roadway
Id	identification	MP	mile post	PCC	Portland Cement concrete	RWIS	roadway weather information system
Incl	inclinometer tube	Min	minimum	PP	power pole	Rk	rock
IMH	inlet manhole	Misc	miscellaneous	Preempt	preemption	Rt	route
ID	inside diameter	Mon	monument	Prefab	prefabricated		
Inst	instrument	Mnd	mound	Prfmd or Pref	preformed		
Intchg	interchange	Mtbl	mountable	Prep	preperation		
Intmdt	intermediate	Mtd	mounted	Press.	pressure		
Intscn	intersection	Mtg	mounting	PRV	pressure relief valve		
Inv	invert	Mk	muck	Prestr	prestressed		
IP	iron pipe			Pvt	private		
				PD	private drive		
Jt	joint			Prod.	production/produce		
Jct	junction	Neop	neoprene	Prog	programmed	07-01-14	
		Ntwk	network	Prop.	property	REVISIONS	
		N	North	Ppsd	proposed	DATE	CHANGE
		NE	Northeast	PB	pull box	08-03-15	General Revisions
		NW	Northwest			04-23-18	General Revisions
		NB	Northbound			12-18-20	General Revisions
		No. or #	number			08-16-22	General Revisions
						04-14-25	General Revisions

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NDDOT ABBREVIATIONS

D-101-3

Salv	salvage(d)	Tel	telephone
San	sanitary sewer line	Tel B	Telephone Booth
Sec	section	Tel P	telephone pole
SL	section line	Tv	television
Sep	separation	Temp	temperature
Seq	sequence	Temp	temporary
Serv	service	TBM	temporary bench mark
Sht	sheet	T	thinwall tube sample
Shtng	sheeting	Ts	topsoil
Shldr	shoulder	Traf	traffic
Sw or Sdwk	sidewalk	TSCB	traffic signal control box
SD	sight distance	Tr	trail
SN	sign number	Transf	transformer
Sig	signal	Trans	transition
Sgl	single	TT	transmission tower
SRCP	slotted reinforced concrete pipe	TES	traversable end section
SC	slow curing	Trans	transverse
SS	slow setting	Trtd	treated
Sm	small	Trmt	treatment
S	South	Qc	triaxial compression
SE	Southeast	TERO	tribal employment rights ordinance
SW	Southwest	Tpl	triple
SB	Southbound	Typ	typical
Sp	spaces		
Spcl	special		
SA	special assembly	Qu	unconfined compressive strength
SP	special provisions	Ugrnd	underground
G	specific gravity	Util	utility
Spk	spike		
SB	split barrel sample		
SH	sprinkler head	VG	valley gutter
SV	sprinkler valve	Vap	vapor
Sq	square	Vert	vertical
Stk	stake	VCP	vitrified clay pipe
Std	standard	Vol	volume
N	standard penetration test	VSFS	vehicle speed feedback sign
Std Specs	standard specifications		
Stm L	steam line	Wkwy	walkway
SEC	steel encased concrete	W	water content
SMA	stone matrix asphalt	WGV	water gate valve
SSD	stopping sight distance	WL	water line
SD	storm drain	WM	water main
St	street	WMV	water main valve
SPP	structural plate pipe	W Mtr	water meter
SPPA	structural plate pipe arch	WSV	water service valve
Str	structure	WW	water well
Subd	subdivision	Wrng	wearing
Sub	subgrade	WIM	weigh in motion
Sub Prep	subgrade preperation	W	west
Ss	subsoil	WB	westbound
SS	supplement specification	Wrng	wiring
Supp	supplemental	W/	with
Surf	surfacing	W/o	without
Surv	survey		
Sym	symmetrical		

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NDDOT ABBREVIATIONS

D-101-4

MEASUREMENTS

ac	acres
A	ampere
Bd Ft	board feet
Cd	candela
cm	centimeter
C	coulomb
CF	cubic feet
m3	cubic meter
m3/s	cubic meters per second
CY	cubic yard
CY/mi	cubic yards per mile
D or Deg	degree
F	Fahrenheit
F	farad
ft	feet/foot
Gal	gallon
G	giga
Ha	hectare
H	henry
Hz	hertz
hr	hour(s)
in.	inch
J	joule
K	kelvin
kN	kilo newton
kPa	kilo pascal
kg	kilogram
kg/m3	kilogram per cubic meter
km	kilometer
K	Kip(s)
LF	linear foot
L	litre
Lm	lumen
L sum	lump sum
Lx	lux
M Hr	man hour
M	mega
m	meter
m/s	meters per second
mi	mile
mL	milliliter
mm	millimeter
mm/hr	millimeters per hour
n	nano
N	newton
Pa	pascal
lb	pounds
sec	seconds
S	siemens
SF	square feet
km2	square kilometer
m2	square meter
SY	square yard
Sta Yd	station yards
SI	Systems International

T	tesla
T/mi	tons per mile
V	volt
W	watt
Wb	weber

SURVEY DESCRIPTIONS

Az	azimuth
Bs	backsight
Brg	bearing
BP Cap	blue plastic cap
BS	both sides
BC	brass cap
CC	closing corner
CS	curve to spiral
Eq	equation
E	external of curve
FS	far side
FB	field book
Fs	foresight
Geod	geodetic
GIS	Geographical Information System
GPS	Global Positioning System
HI	height of instrument
IM	iron monument
I Pn	iron pin
LS	Land Surveyor (licensed)
LSIT	Land Surveyor In Training
L	length of curve
LC	long chord
LB	level book
MC	meander corner
Mer	meridian
M	mid ordinate of curve
NGS	National Geodetic Survey
NS	near side
Obsn	observation
Off Loc	office location
OP Cap	orange plastic cap
PK	Parker-Kalon nail
P Cap	plastic cap
PP Cap	pink plastic cap
PCC	point of compound curve
PC	point of curve
PI	point of intersection
PRC	point of reverse curvature
PT	point of tangent
POC	point on curve
POT	point on tangent
RTP	random traverse point
Rge	range
RP Cap	red plastic cap
SC	spiral to curve
SC	standard corner
ST	spiral to tangent
Sta	station
SE	superelevation
Tan	tangent
T	tangent (semi)
TS	tangent to spiral
Twp	township
TB	transit book
TP	traverse point
TP	turning point
USC&G	US Coast & Geodetic Survey
USGS	US Geologic Survey
VC	vertical curve
WC	witness corner
WGS	World Geodetic System
YP Cap	yellow plastic cap
Z	zenith

SOIL TYPES

Cl	clay
Cl F	clay fill
Cl Hvy	clay heavy
Cl Lm	clay loam
Co S	coal slack
C Gr	coarse gravel
CS	coarse sand
FS	fine sand
Gr	gravel
Lig Co	lignite coal
Lig Sl	lignite slack
Lm	loam
Rk	rock
Sd	sand
Sdy Cl	sandy clay
Sdy Cl Lm	sandy clay loam
Sdy Fl	sandy fill
Sdy Lm	sandy loam
Sc	scoria
Sh	shale
Si Cl	silt clay
Si Cl Lm	silty clay loam
Si Lm	silty loam

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NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

D-101-10

702COM	702 Communications	GTR RAMSEY WD	Greater Ramsey Water District	RED RIV COMM	Red River Communications
ACCENT	Accent Communications	GT PLNS NAT GAS	Great Plains Natural Gas Company	RESVTN TEL	Reservation Telephone
AGASSIZ WU	Agassiz Water Users District	HALS TEL	Halstad Telephone Company	ROBRTS TEL	Roberts Company Telephone
AGC	Associated General Contractors of America	IDEA1	Idea1	R-RIDER ELEC	Roughrider Electric Cooperative
ALL PL	Alliance Pipeline	INT-COMM TEL	Inter-Community Telephone Company	RRVW	Red River Valley & Western Railroad
ALL SEAS WU	All Seasons Water Users District	KANEPL	Kaneb Pipeline Company	S CENT REG WD	South Central Regional Water District
AMOCO PI	Amoco Pipeline Company	KEM ELEC	Kem Electric Cooperative Incorporated	SE WU	Southeast Water Users Incorporated
AMRDA HESS	Amerada Hess Corporation	KOCH GATH SYS	Koch Gathering Systems Incorporated	SCOTT CABLE	Scott Cable Television Dickinson
AT&T	AT&T Corporation	LKHD PL	Lakehead Pipeline Company	SHERDN ELEC	Sheridan Electric Cooperative
B PAW	Bear Paw Energy Incorporated	LWR YELL R ELEC	Lower Yellowstone Rural Electric	SHEYEN VLY ELEC	Sheyenne Valley Electric Cooperative
BAKER ELEC	Baker Electric	LUMEN	Lumen Technologies Incorporated	SKYTECH	Skyland Technologies Incorporated
BASIN ELEC	Basin Electric Cooperative Incorporated	MCKNZ CON	McKenzie Consolidated Telcom	SLOPE ELEC	Slope Electric Cooperative Incorporated
BEK TEL	Bek Communications Cooperative	MCKNZ ELEC	McKenzie Electric Cooperative	SOURIS RIV TELCOM	Souris River Telecommunications
BELLE PL	Belle Fourche Pipeline Company	MCKNZ WRD	McKenzie County Water Resource District	ST WAT COMM	State Water Commission
BLM	Bureau of Land Management	MCLEOD	McLeod USA	STATE LN WATER	State Line Water Cooperative
BNSF	Burlington Northern Santa Fe Railway	MCLN ELEC	McLean Electric Cooperative	STER ENG	Sterling Energy
BOEING	Boeing	MCLN-SHRDN R WAT	McLean-Sheridan Rural Water District	STUT RWD	Stutsman Rural Water District
BRNS RWD	Barnes Rural Water District	MDU	Montana-dakota Utilities	SW PL PRJ	Southwest Pipeline Project
BURK-DIV ELEC	Burke-Divide Electric Cooperative	MIDCO	MidContinent Communications	SWWA	Southwest Water Authority
BURL WRD	Burleigh County Water Resource District	MIDSTATE TEL	Midstate Telephone Company	SUNOCO	Sunoco LP
CABLE ONE	Cable One	MINOT CABLE	Minot Cable Television	T M C	Turtle Mountain Communications
CABLE SERV	Cable Services	MINOT TEL	Minot Telephone Company	TCI	TCI of North Dakota
CAP ELEC	Capital Electric Cooperative Incorporated	MISS VALL COMM	Missouri Valley Communications Incorporated	TESORO HGH PLNS PL	Tesoro High Plains Pipeline
CASS CO ELEC	Cass County Electric Cooperative	MISS W W S	Missouri West Water System	TRI-CNTY WU	Tri-County Water Users Incorporated
CASS RWU	Cass Rural Water Users District	MNKOTA PWR	Minnkota Power	TRL CO WRD	Trall County Water Resource District
CAV ELEC	Cavalier Rural Electric Cooperative	MOR-GRAN-SOU ELEC	Mor-gran-sou Electric Cooperative	UNTD TEL	United Telephone
CBLCOM	Cablecom Of Fargo	MOUNT-WILLIELEC	Mountrail-williams Electric Cooperative	UPPR SOUR WD	Upper Souris Water District
CENEX PL	Cenex Pipeline	MLGC	Moore & Liberty - Griggs County	US SPRINT	U.S. Sprint
CENT PL WATER DIST	Central Pipe Line Water District	MUNICIPAL	City Water And Sewer	USAF MSL CABLE	U.S.A.F. Missile Cable
CENT PWR ELEC	Central Power Electric Cooperative	MUNICIPAL	City Of '.....'	USFWS	US Fish and Wildlife Service
CENTURYLINK	CenturyLink	N CENT ELEC	North Central Electric Cooperative	USW COMM	U.S. West Communications
COE	Corps of Engineers	N PRAIR REG WD	North Prairie Regional Water District	VRNDRY ELEC	Verendrye Electric Cooperative
CONS COMM	Consolidated Communications	ND PKS & REC	North Dakota Parks And Recreation	W RIV TEL	West River Telephone Incorporated
CONS TELCOM	Consolidated Telcom	ND TEL	North Dakota Telephone Company	WAPA	Western Area Power Administration
CONT RES	Continental Resource Inc	NDDDOT	North Dakota Department of Transportation	WAWSA	Western Area Water Supply Authority
CPR	Canadian Pacific Railway	NE REG WD	Northeast Regional Water District	WEB	W. E. B. Water Development Association
D O E	Department Of Energy	NDSU SOIL SCI DEPT	NDSU Soil Science Department	WILLI WRD	Williams County Water Resource District
DAK CARR	Dakota Carrier Network	NEMONT TEL	Nemont Telephone	WILSTN BAS PL	Williston Basin Interstate Pipeline Company
DAK CENT TEL	Dakota Central Telephone	NODAK R ELEC	Nodak Rural Electric Cooperative	WLSH RWD	Walsh Water Rural Water District
DAK RWD	Dakota Rural Water District	NOON FRMS TEL	Noonan Farmers Telephone Company	WOLVRTN TEL	Wolverton Telephone
DGC	Dakota Gasification Company	NPR	Northern Plains Railroad	XLENER	Xcel Energy
DICKEY R NET	Dickey Rural Networks	NSP	Northern States Power	YSVR	Yellowstone Valley Railroad
DICKEY WRD	Dickey County Water Resource District	NTHN BRDR PL	Northern Border Pipeline		
DICKEY TEL	Dickey Telephone	NTHN PLNS ELEC	Northern Plains Electric Cooperative Incorporated		
DNRR	Dakota Northern Railroad	NTHWSTRN REF	Northwestern Refinery Company		
DOME PL	Dome Pipeline Company	NW COMM	Northwest Communication Cooperation		
DVELEC	Dakota Valley Electric Cooperative	NWRWD	Northwest Rural Water District		
DVMW	Dakota, Missouri Valley & Western	ONEOK	Oneok gas		
E CENT REG WD	East Central Water District	OSHA	Occupational Safety and Health Administration		
ENBRDG	Enbridge Pipelines Incorporated	OTTR TL PWR	Otter Tail Power Company		
ENVENTIS	Enventis Telephone	PAAP	Plains All American Pipeline		
EQUINOR	Equinor Pipeline	P L E M	Prairielands Energy Marketing		
FALK MNG	Falkirk Mining Company	POLAR COM	Polar Communications		
FHWA	Federal Highway Administration	PVT ELEC	Private Electric		
G FKS-TRL WD	Grand Forks-trail Water District	QWEST	Qwest Communications		
GETTY TRD & TRAN	Getty Trading & Transportation	R&T REG WD	R & T Water District		
GLDN W ELEC	Golden West Electric Cooperative				

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LINE STYLES

D-101-20

Existing Topography

Void — Void — Void — v Existing Ground Void

—+—+— Existing Cemetery Boundary

----- Existing Box Culvert Bridge

----- Existing Concrete Surface

----- Existing Drainage Structure

— Existing Gravel Surface

— Existing Riprap

— Existing Dirt Surface

— Existing Asphalt Surface

— Existing Tie Point Line

— Existing Railroad Centerline

----- Existing Guardrail Cable

•—•—•— Existing Guardrail Metal

— Existing Edge of Water

—x—x— Existing Fence

|—|—|— Existing Railroad

...—... Existing Field Line

—>—>— Existing Flow

----- Existing Curb

----- Existing Valley Gutter

----- Existing Driveway Gutter

----- Existing Curb and Gutter

----- Existing Mountable Curb and Gutter

Existing 3-Cable w Posts

Site Boundary

..... Existing Berm, Dike, Pit, or Earth Dam

..... Existing Ditch Block

..... Existing Tree Boundary

..... Existing Brush or Shrub Boundary

..... Existing Retaining Wall

— Existing Planter or Wall

— Existing W-Beam Guardrail with Posts

●— Existing Railroad Switch

— Existing Gravel Pit - Borrow Area

— Existing Wet Area-Vegetation Break

— Existing High Tension Cable Guardrail

— Existing High Tension Cable Guardrail with Posts

Proposed Topography

— Existing 3-Cable w Posts

—>—>— Flow

x—x—x—x— Existing Fence

— REMOVE — REMOVE — Remove Line

— Existing Wall

— Existing Retaining Wall (Plan View)

— Existing W-Beam w Posts

— Existing High Tension Cable Guardrail with Posts

Existing Utilities

— E — Existing Electrical

— FO — Existing Fiber Optic Line

— FO — Existing TV Fiber Optic

— G — Existing Gas Pipe

— OH — Existing Overhead Utility Line

— P — Existing Power

— PL — Existing Fuel Pipeline

— PL — Existing Undefined Above Ground Pipe Line

— SAN — Existing Sanitary Sewer

— SAN FM — Existing Sanitary Force Main

— SD — Existing Storm Drain

— SD FM — Existing Storm Drain Force Main

— Existing Culvert

— T — Existing Telephone Line

— TV — Existing TV Line

— W — Existing Water or Steam Line

— Existing Under Drain

— Existing Slotted Drain

— Existing Conduit

— Existing Conductor

— Existing Down Guy Wire Down Guy

— Existing Underground Vault or Lift Station

Proposed Utilities

— 24 Inch Pipe

— Reinforced Concrete Pipe

— Under Drain

— Edge Drain

Traffic Utilities

— Conductor

— Fiber Optic

— Existing Loop Detector

•— Existing Double Micro Loop Detector

•— Micro Loop Detector Double

•— Existing Micro Loop Detector

•— Micro Loop Detector

— Signal Head with Mast Arm

— Existing Signal Head with Mast Arm

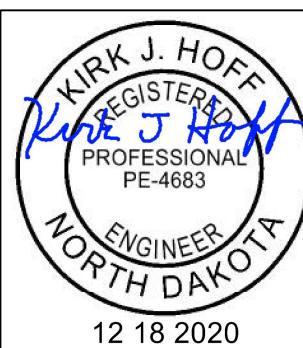
Sign Structures

•— Existing Overhead Sign Structure

•— Existing Overhead Sign Structure Cantilever

•— Overhead Sign Structure Cantilever

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LINE STYLES

D-101-21

Right Of Way

-----	Easement
-----	Existing Easement
-----	Right of Way
-----	Existing Right of Way
-----	Existing Right of Way Railroad
-----	Existing Right of Way Not State Owned
-----	Existing Government Lot Line
.....	Existing Adjacent Block Lines

Cross Sections and Typicals

-----	Existing Ground
-----	Existing Topsoil (Cross Section View)
void — void — void — v	Existing Ground Void (Not Surveyed)
-----	Existing Concrete
-----	Existing Aggregate (Cross Section View)
-----	Existing Curb and Gutter (Cross Section View)
-----	Existing Asphalt (Cross Section View)
-----	Existing Reinforcement Rebar

Striping

-----	Centerline Pavement Marking
=====	Barrier with Centerline Pavement Marking
=====	Barrier Pavement Marking
- - - - -	Stripe 4 IN Dotted Extension White
- - - - -	Stripe 8 IN Dotted Extension White
- - - - -	Stripe 8 IN Lane Drop

Erosion Control

.....	Limits of Const Transition Line
.....	Bale Check
.....	Rock Check
-----	Floating Silt Curtain
-----	Silt Fence
.....	Excavation Limits
-----	Fiber Rolls

Geotechnical

----- D ----- D -----	Geotextile Fabric Type D
----- Geo ----- Geo -----	Geogrid
----- R ----- R -----	Geotextile Fabric Type R
----- R ----- R -----	Geotextile Fabric Type R1
----- RR ----- RR -----	Geotextile Fabric Type RR

Pavement Joints

*****	Doweled Joint
+++++	Tie Bar 30 Inch 4 Foot Center to Center
+++++	Tie Bar 18 Inch 3 Foot Center to Center
+++++	Tie Bar at Random Spacing

Environmental

-----	Wetland Mitigation
-----	Existing Wetland Easement USFWS
-----	Existing Wetland Jurisdictional
-----	Existing Wetland
-----	Tree Row

Boundary Control

Existing City Corporate Limits or Reservation Boundary

Existing State or International Line

Existing Township

Existing County

Existing Section Line

Existing Quarter Section Line

Existing Sixteenth Section Line

Existing Centerline

Tangent Line

Contours

Depression Contours

Supplemental Contour

Profile

Subgrade, Subcut or Ditch Grade

Topsoil Profile

Small Hidden Object

Large Hidden Object

Phantom Object

Existing Conditions Object

Centerline Main

Centerline Secondary

Excavation Limits

Proposed Ground

Sheet Piling

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SYMBOLS

D-101-30

	North Arrow (Half Scale)
	Alignment Data Point
	Alignment Monument
	Spot Elevation
	Existing Miscellaneous Spot
	Existing Access Control Arrow
	Existing Benchmark
	Reset USGS Marker
	Iron Monument Found
	Iron Pin R/W Monument
	Property Corner
	Iron Pin Reference Monument
	Right of Way Marker (Exst, Ppsd, Reset)
	Existing Federal Reference Corner
	Existing Section Corner (Full, Quarter, Sixteenth, Meander)
	Existing Witness Corner
	Existing Control Point (CP, GPS-RTK, TRI)
	Existing Traverse PI Aerial Panel
	Existing Reference Marker Point NGS
	Existing EFB Misc
	Existing Bush or Shrub
	Existing Large Evergreen Tree
	Existing Small Evergreen Tree
	Existing Large Tree
	Existing Small Tree
	Existing Tree Trunk
	Cairn or Stone Circle
	Existing Artifact
	Existing Satellite Dish
	Existing Weather Station
	Existing Windmill or Tower
	Reinforced Pavement
	Continuous Split Barrel Sample
	Flight Auger Sample
	Split Barrel Sample
	Thinwall Tube Sample
	Standard Penetration Test
	Inclinometer Tube
	Excavation Unit
	Existing Ground Water Well Bore Hole

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SYMBOLS

D-101-31

■	Flexible Delineator	■	Highway Sign (Exst, Ppsd)
□ □	Flexible Delineator Type A (Exst, Ppsd)	□ □	Mile Post Type A (Exst-Ppsd-Reset)
□ □	Flexible Delineator Type B (Exst, Ppsd)	□ □	Mile Post Type B (Exst, Ppsd)
□ □	Flexible Delineator Type C (Exst, Ppsd)	□ □	Mile Post Type C (Exst, Ppsd)
○ ○	Flexible Delineator Type D (Exst, Ppsd)	○ ○	Object Marker Type I (Exst, Ppsd)
○ ○	Flexible Delineator Type E (Exst, Ppsd)	○ ○	Object Marker Type II (Exst, Ppsd)
└ └ └ └	Delineator Type A (Exst, Ppsd, Diamond Grade-Reset)	└ └	Object Marker Type III (Exst, Ppsd)
└ └ └ └	Delineator Type B (Exst, Ppsd, Diamond Grade-Reset)	○	Existing Reference Marker
└ └ └ └	Delineator Type C (Exst, Ppsd, Diamond Grade)	○—○	Road Closure Gate 18 Ft (Exst, Ppsd)
○ ○ ○	Delineator Type D (Exst, Ppsd, Diamond Grade)	○—○	Road Closure Gate 28 Ft (Exst, Ppsd)
○ ○ ○	Delineator Type E (Exst, Ppsd, Diamond Grade)	○—○	Road Closure Gate 40 Ft (Exst, Ppsd)
└ └ └	Barricade (Type I, Type II, Type III)	□	Existing Railroad Battery Box
○ ○ ○	Arrow Panel (Caution Mode, Double Direction, Left Directional, Right Directional, Sequencing, Truck Mounted)	×	Existing RR Profile Spot
△	Attenuation Device	×	Existing Railroad Crossbuck
☒	Truck Mounted Attenuator	×	Existing Railroad Frog
●	Delineator Drums	—	Existing Mailbox (Private, Federal)
□	Flagger		
←	Tubular Marker		
▲	Traffic Cone		
---	Back to Back Vertical Panel Sign		

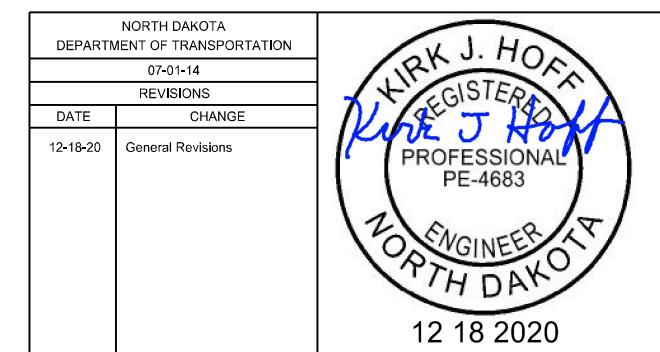
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SYMBOLS

D-101-32

	Existing Luminaire			High Mast Light Standard 3 Luminaire (Exst, Ppsd)			Existing Traffic Signal Standard
	Luminaire LED			High Mast Light Standard 4 Luminaire (Exst, Ppsd)			Pull Box (Exst-Ppsd-Undefined)
	Existing Light Standard Luminaire			High Mast Light Standard 5 Luminaire (Exst, Ppsd)			Intelligent Transportation Pull Box (Exst, Ppsd)
	Relocate Light Standard			High Mast Light Standard 6 Luminaire (Exst, Ppsd)			Transformer (Exst, Ppsd)
	Light Standard Light LED Luminaire			High Mast Light Standard 7 Luminaire (Exst, Ppsd)			Power Pole (Exst-Ppsd-with Transformer)
	Light Standard 35 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 8 Luminaire (Exst, Ppsd)			Wood Pole (Exst, Ppsd)
	Light Standard 50 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 9 Luminaire (Exst, Ppsd)			Pedestrian Push Button Post (Exst, Ppsd)
	Light Standard 70 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 10 Luminaire (Exst, Ppsd)			Existing Pole
	Light Standard 100 Watt High Pressure Sodium Vapor Luminaire			Overhead Sign Structure Load Center (Exst, Ppsd)			Existing Telephone Pole
	Light Standard 150 Watt High Pressure Sodium Vapor Luminaire			Traffic Signal Controller (Exst, Ppsd)			Existing Post
	Light Standard 200 Watt High Pressure Sodium Vapor Luminaire			Pad Mounted Traffic Signal Controller (Exst, Ppsd)			Connection Conductor (Ground, Neutral, Phase 1, Phase 2)
	Light Standard 250 Watt High Pressure Sodium Vapor Luminaire			Flashing Beacon (Exst, Ppsd)			
	Light Standard 310 Watt High Pressure Sodium Vapor Luminaire			Concrete Foundation (Exst, Ppsd)			
	Light Standard 400 Watt High Pressure Sodium Vapor Luminaire			Pipe Mounted Flasher (Exst, Ppsd)			
	Light Standard 700 Watt High Pressure Sodium Vapor Luminaire			Pad Mounted Feed Point (Exst, Ppsd)			
	Light Standard 1000 Watt High Pressure Sodium Vapor Luminaire			Pipe Mounted Feed Point with Pad (Exst, Ppsd)			
	Emergency Vehicle Detector			Pole Mounted Feed Point (Exst, Ppsd)			
	Video Detection Camera			Junction Box (Exst, Ppsd)			
				Existing Pedestrian Head with Number			
				Existing Signal Head			
				Pole Mounted Head			
				Existing Lighting Standard Pole			

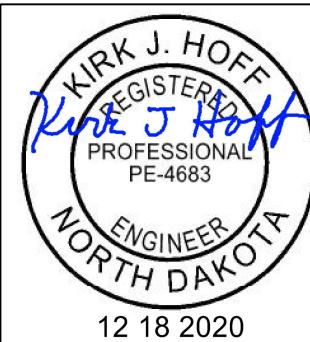


SYMBOLS

D-101-33

○ ○ ○	Existing Manhole (Electrical, Gas, Telephone)	Cap or Stub Exst Gas, Exst Sanitary, Exst Storm Drain, Ppsd Storm Drain, Exst Water
○ ○ ○	Water Manhole (Exst, Exst with Valve)	□ □ □ □ □
○ ○ ○	Sanitary Sewer Manhole (Exst, Ppsd, Exst with Valve)	Existing Pedestal Electrical, Telephone, Fiber Optic Telephone, TV, Fiber Optic TV, Undefined
○ ○ ○	Sanitary Force Main Manhole (Exst, Ppsd, Exst with Valve)	□ □ □ □ □ □
○ ○ ○	Storm Drain Manhole (Exst, Ppsd, Exst with Inlet, Ppsd with Inlet)	Existing Pipe Vent Gas, Fuel, Sanitary, Storm Drain, Water, Undefined
○ ○ ○	Force Main Storm Drain Manhole (Exst, Exst with Valve)	□ □ □ □ □ □
○ ○ ○	Manhole (Ppsd, Ppsd 48 Inch, Exst Undefined)	Valve Exst Gas, Exst Water, Ppsd Water, Exst Undefined
○ ○ ○	Existing Water Appurtenance	○ ○ ○ ○
○ ○ ○	Sprinkler Head (Exst, Ppsd)	Pump Sanitary, Storm Drain, Exst Water
○ ○ ○	Fire Hydrant (Exst, Ppsd)	○ ○ ○
○ ○ ○	Cleanout (Exst Sanitary, Underdrain)	Corrugated Metal End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
○ ○ ○	Existing Catch Basin Inlet (Round, Square)	□ □ □ □ □ □ □ □
○ ○ ○	Existing Curb Inlet (Round, Square)	Reinforced Concrete End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
○ ○ ○	Existing Slotted Reinforced Concrete Pipe	□ □ □ □ □ □ □
○ ○ ○	Catch Basin (Riser 30 Inch, Beehive, Type A)	
○ ○ ○	Inlet Mountable Curb (Type A, Type B)	— Existing Utility Marker
○ ○ ○	Inlet Saddle Base (Type 1, Type 2)	□ Existing Meter
○ ○ ○	Inlet Special (Catch Basin, Type 1, Type A)	□ Existing Fuel Dispensers
○ ○ ○	Inlet (Tee, Type 1, Type 2, Type 2 Double)	□ Existing Fuel Filler Pipes
○ ○ ○	Median Drain	○ Existing Fuel Leak Sensors
○ ○ ○	Headwall (Exst, Ppsd, Ppsd Single with Vegetation Barrier, Ppsd Double with Vegetation Barrier)	

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions Sheet added - Continued from D-101-32



LANE MARKERS
(Spotting Tab for Seal Projects only)

D-704-3

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.

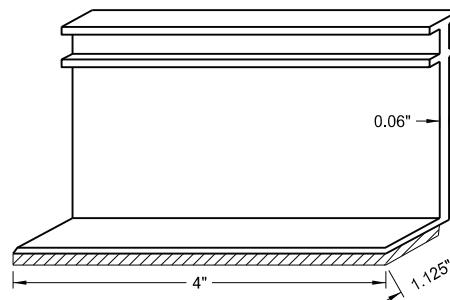
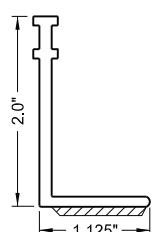
5. Use marker body and cover manufactured from polyurethane material.

6. Marker types:

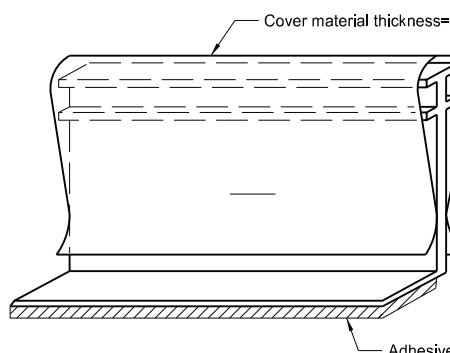
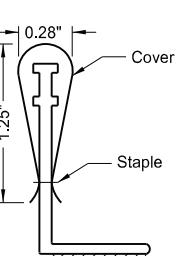
Type Y - Yellow body and cover with yellow reflective tape on both sides.
Type W - White body and cover with white reflective tape on one side.

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



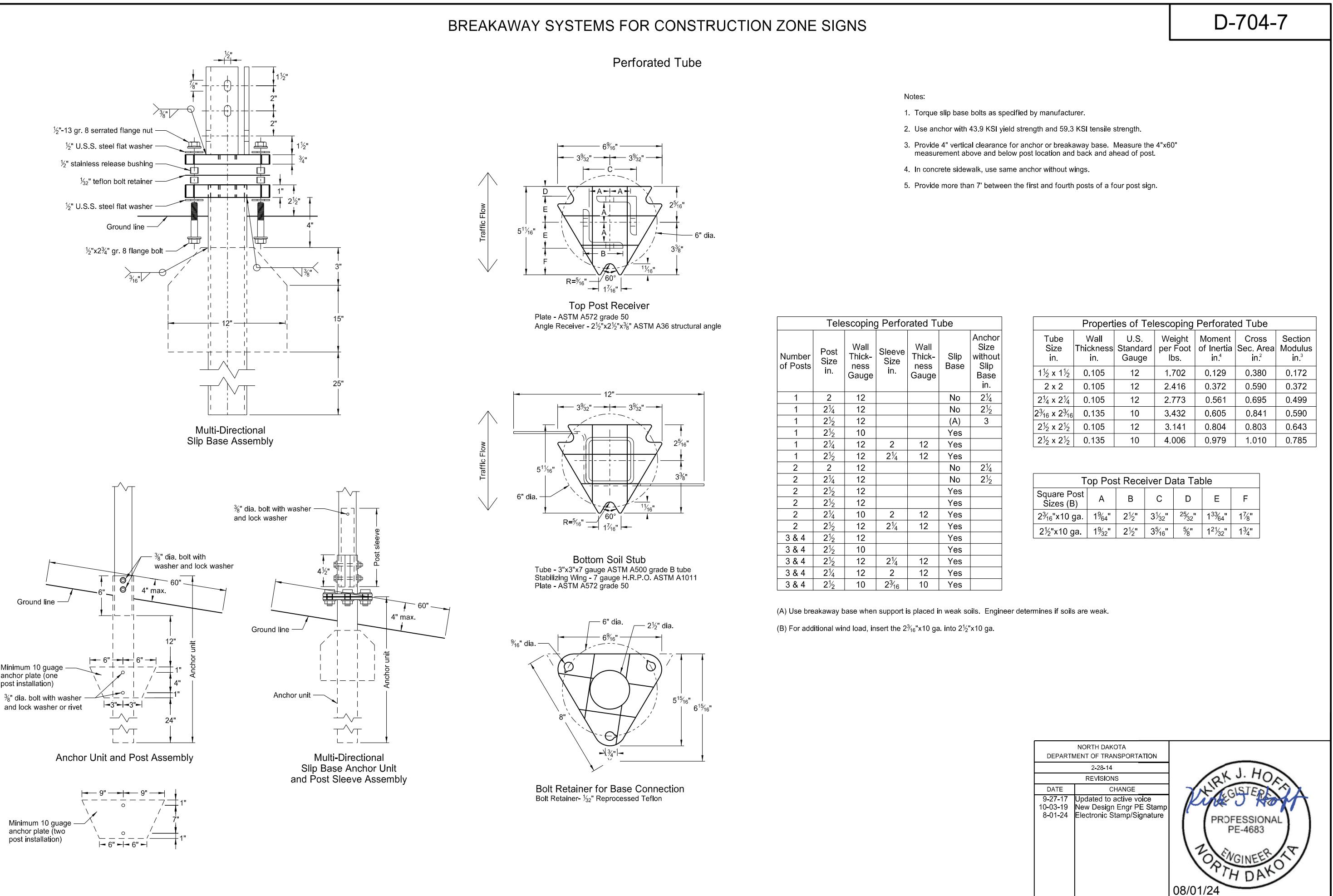
Marker Body with Protective Cover

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
9-27-17 10-03-19 8-01-24	Updated to active voice New Design Engr PE Stamp Electronic Stamp/Signature



BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

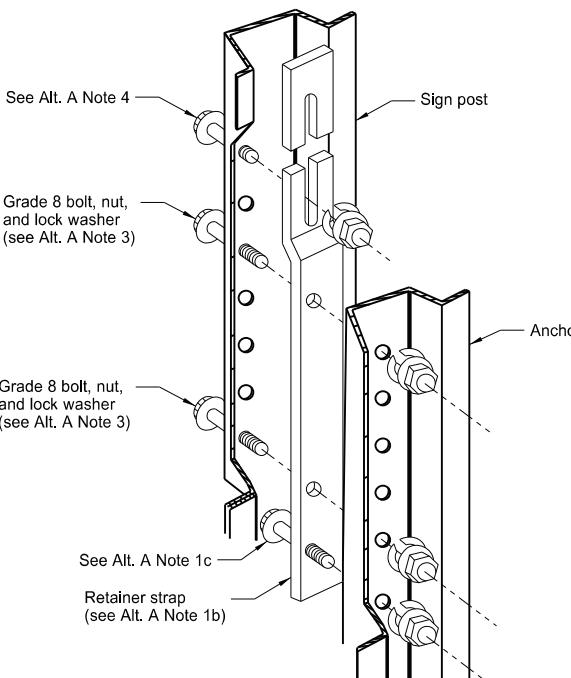
D-704-7



BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

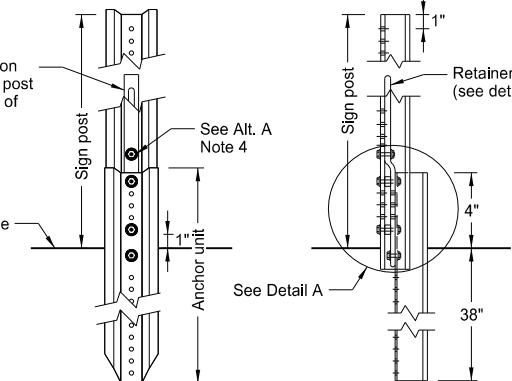
D-704-8

U-Channel Post

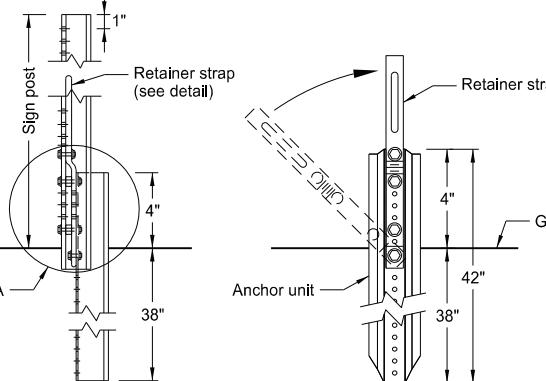


Detail A

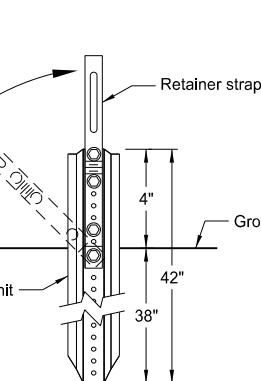
Retainer strap is on front side of sign post and on back side of anchor unit



Front View



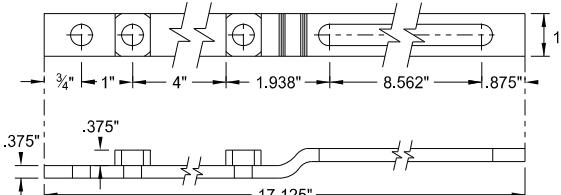
Side View



Back View

Breakaway U-Channel Detail Alternate A

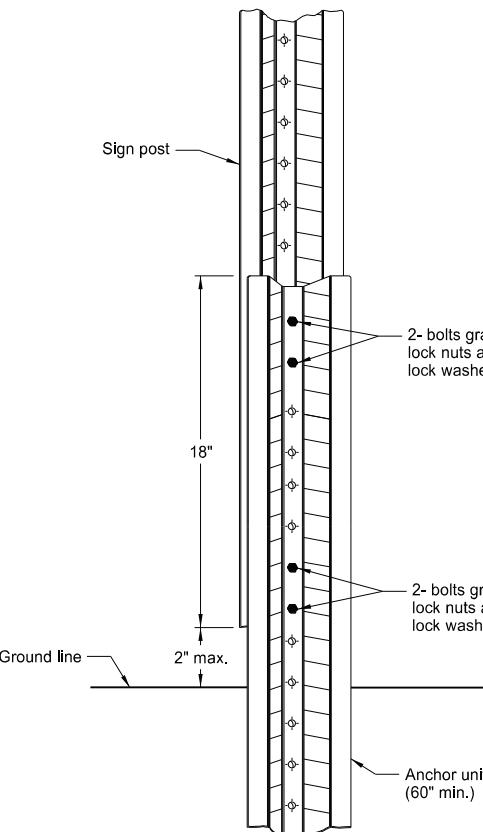
Install a maximum of 2 posts within 7'.



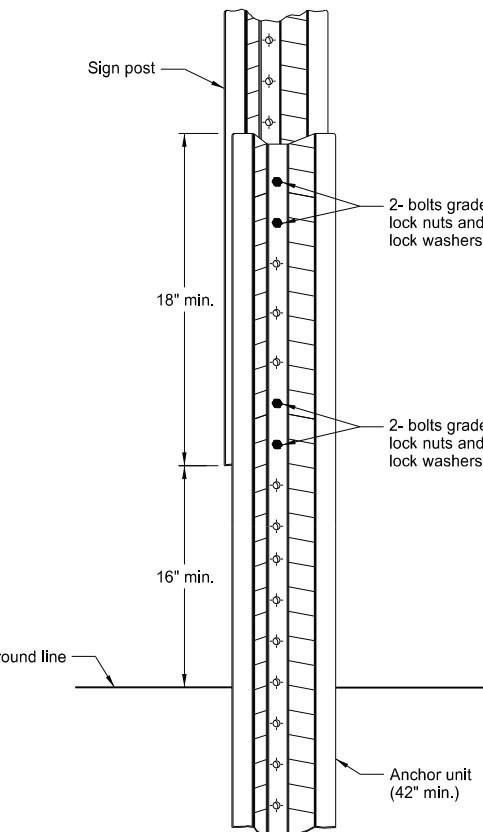
Retainer Strap Detail

Alternate A Steps of Installation:

- 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 $\frac{5}{16}$ "x2" bolt, lock washer and nut.
d) Rotate strap 90° to left.
- a) Drive anchor unit to 4" above ground.
b) Rotate strap to vertical position.
- a) Place $\frac{5}{16}$ "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.
- Complete assembly by tightening $\frac{5}{16}$ "x2" bolt (this fastens sign post to retainer strap).
- 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.

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'.

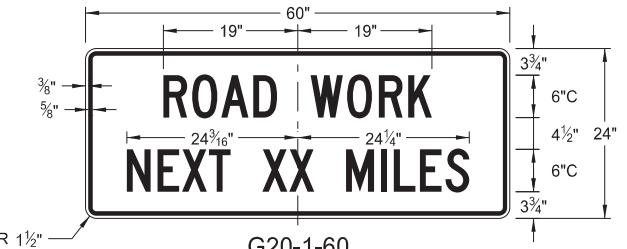
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17 10-03-19 8-01-24	Updated to active voice New Design Engr PE Stamp Electronic Stamp/Signature



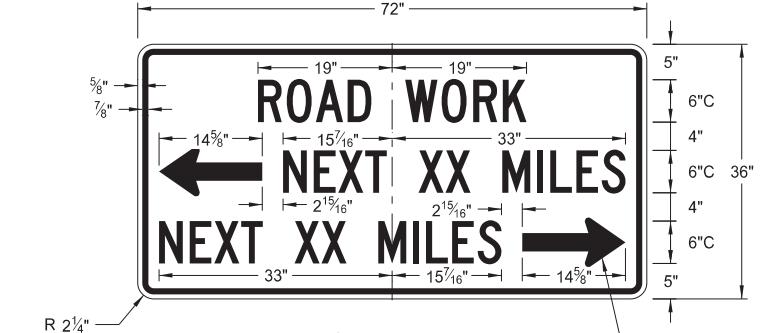
08/01/24

CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS

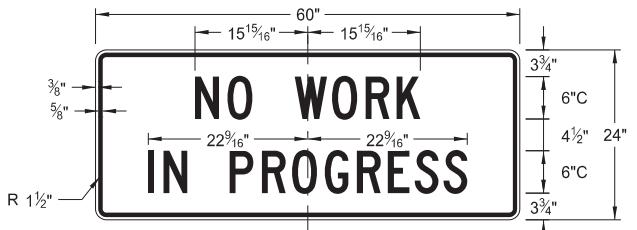
D-704-9



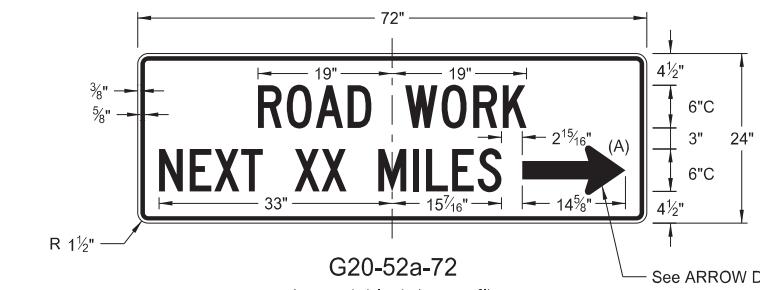
G20-1-60

Legend: black (non-refl)
Background: orange

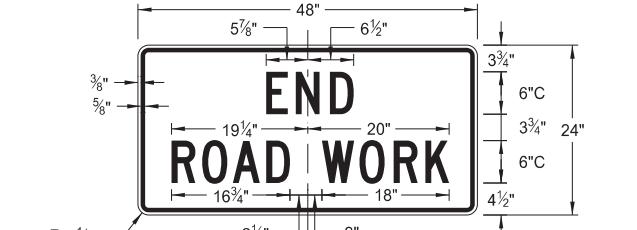
G20-50a-72

Legend: black (non-refl)
Background: orange

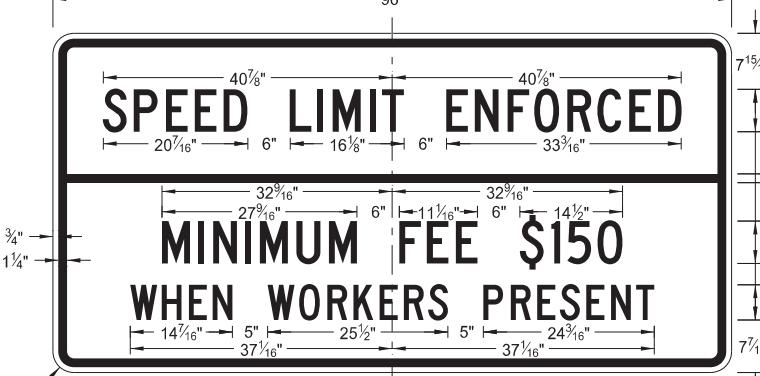
G20-1b-60

Legend: black (non-refl)
Background: orange

G20-52a-72

Legend: black (non-refl)
Background: orange

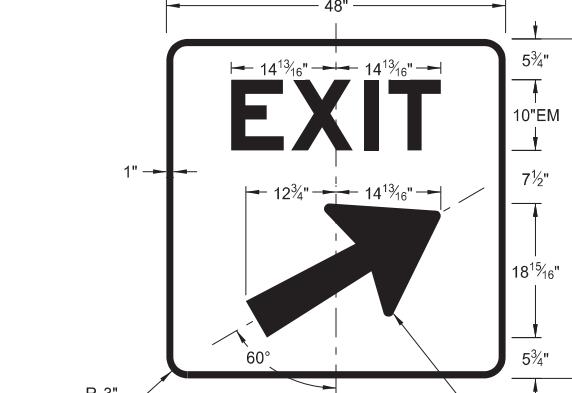
G20-2-48

Legend: black (non-refl)
Background: orange

G20-55-96

Legend: black (non-refl)
Background: orange

G20-4b-36

Legend: black (non-refl)
Background: orange

E5-1(L or R)-48

Legend: white
Background: green (orange optional)

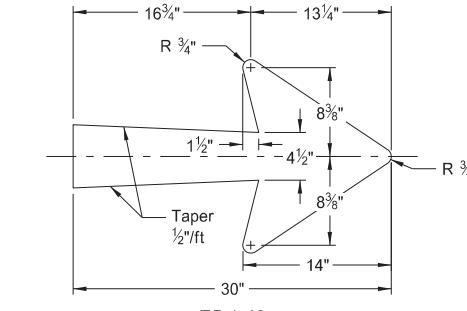
See ARROW DETAILS



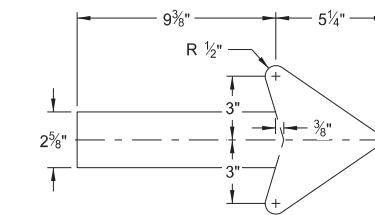
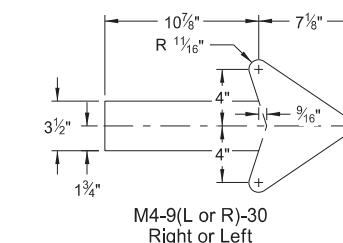
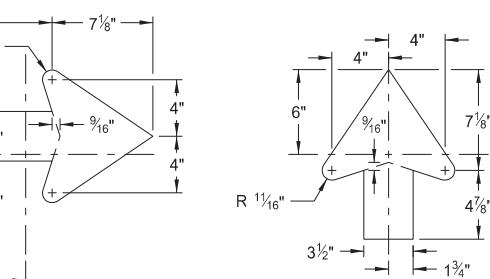
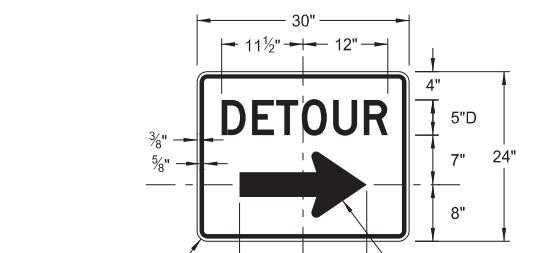
M4-8-36

Legend: black (non-refl)
Background: orange

See ARROW DETAILS



E5-1-48

G20-50a-72
G20-52a-72M4-9(L or R)-30
Right or LeftM4-9(L or R)-30
Advanced Right or LeftM4-9-30
StraightM4-9(L or R)-30 &
M4-9-30Legend: black (non-refl)
Background: orange

See ARROW DETAILS

NOTES:

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

ARROW DETAILS

DATE

8-17-17

10-03-19

08-01-24

06-30-25

CHANGE

Added sign & background color

New Design Engineer PE Stamp

Electronic Stamp/Signature

Legislative Changes

REVISIONS

8-13-13

REVISIONS

PE-4683

06/30/25

Kirk J. Hoff

REGISTERED

PROFESSIONAL

PE-4683

06/30/25

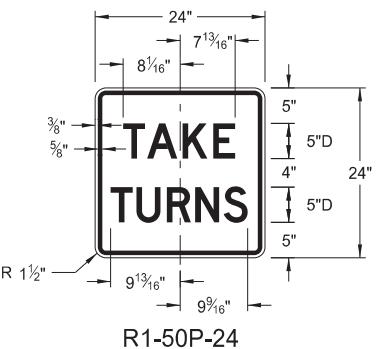
ENGINEER

NORTH DAKOTA

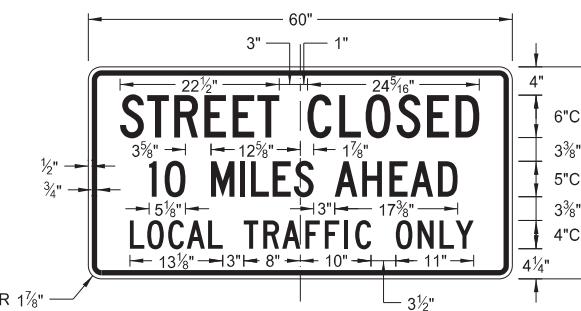
NORTH DAKOTA

CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

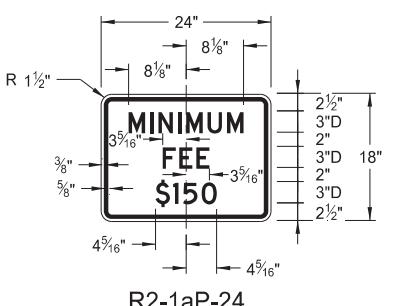
D-704-10



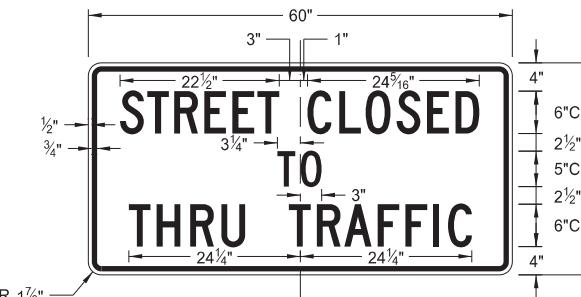
R1-50P-24

Legend: black (non-refl)
Background: white

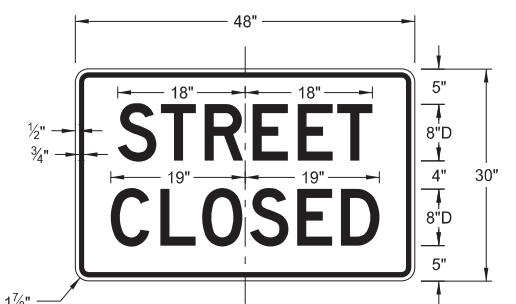
R11-3c-60

Legend: black (non-refl)
Background: white

R2-1aP-24

Legend: black (non-refl)
Background: white

R11-4a-60

Legend: black (non-refl)
Background: white

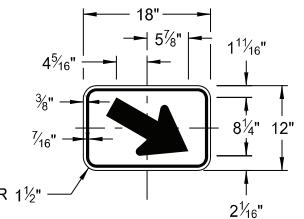
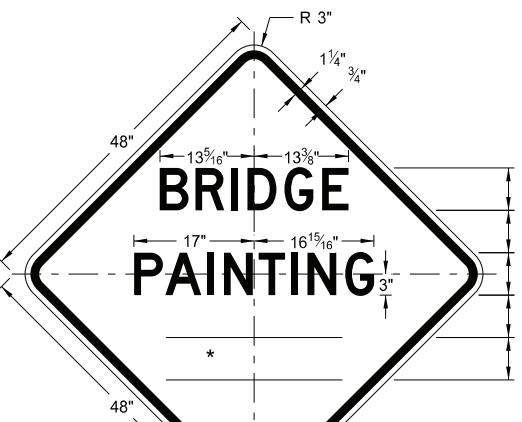
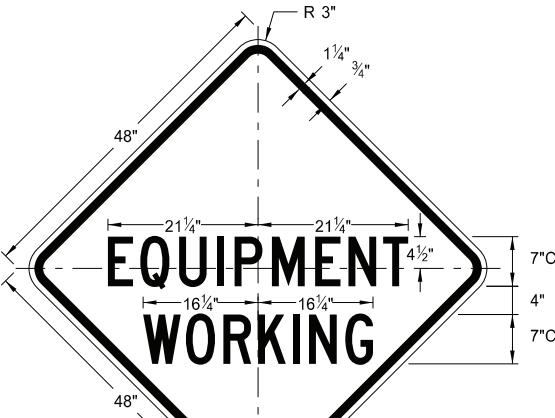
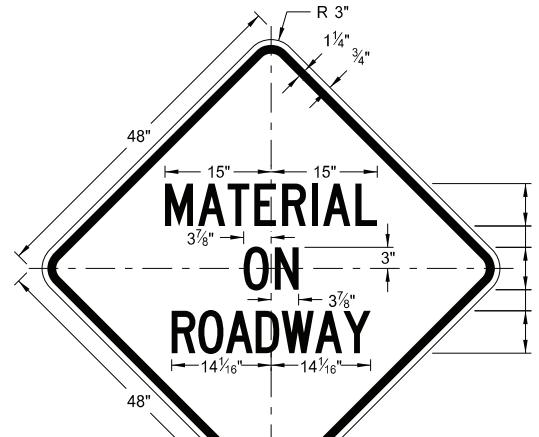
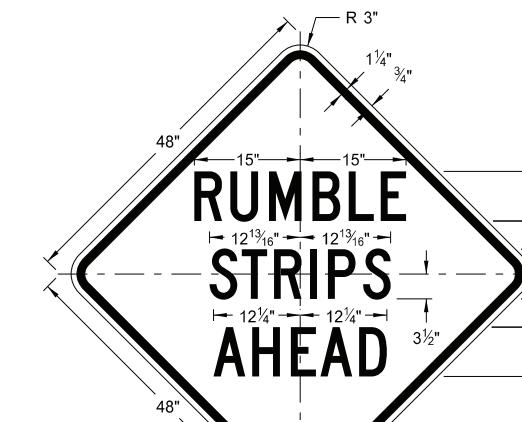
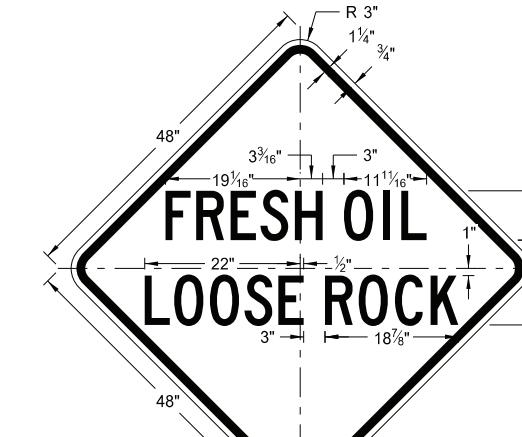
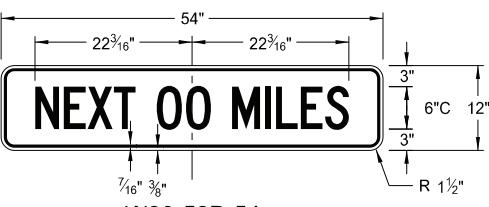
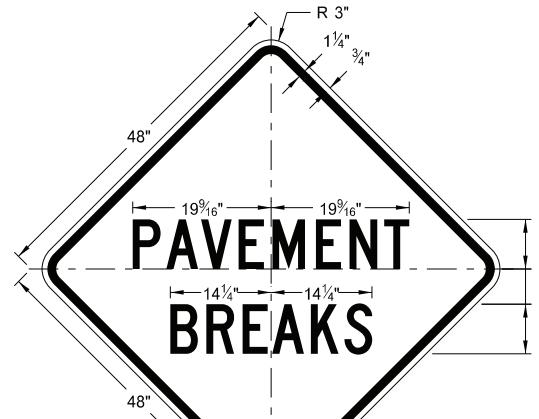
R11-2a-48

Legend: black (non-refl)
Background: white

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17 10-03-19 08-01-24 06-30-25	Revised sign number New Design Engineer PE Stamp Electronic Stamp/Signature Legislative Changes

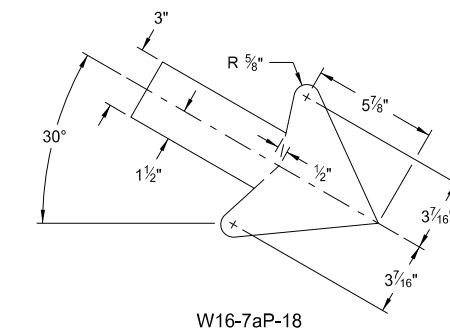


D-704-11A

CONSTRUCTION SIGN DETAILS
WARNING SIGNSW16-7aP-18
Legend: black (non-refl)
Background: orangeW21-50-48
Legend: black (non-refl)
Background: orangeW20-51-48
Legend: black (non-refl)
Background: orangeW21-51-48
Legend: black (non-refl)
Background: orangeW21-53-48
Legend: black (non-refl)
Background: orangeW22-8-48
Legend: black (non-refl)
Background: orangeW20-52P-54
Legend: black (non-refl)
Background: orangeW21-52-48
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

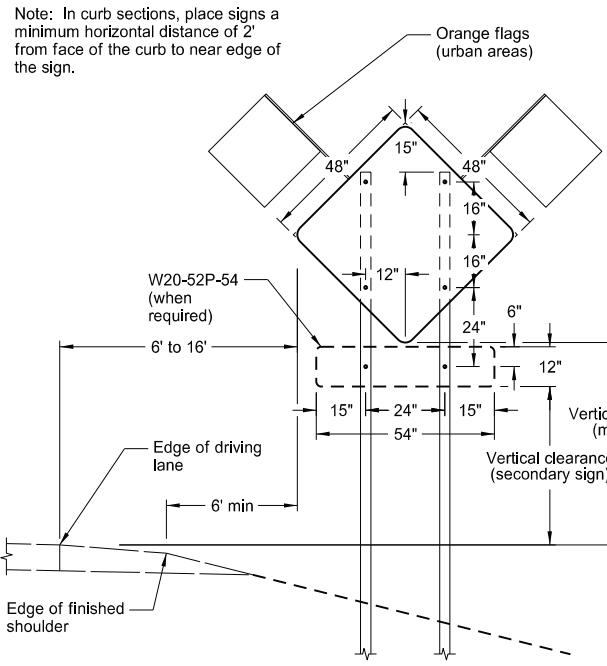
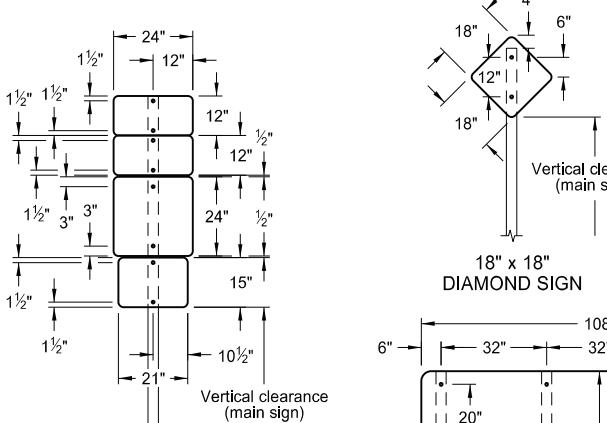
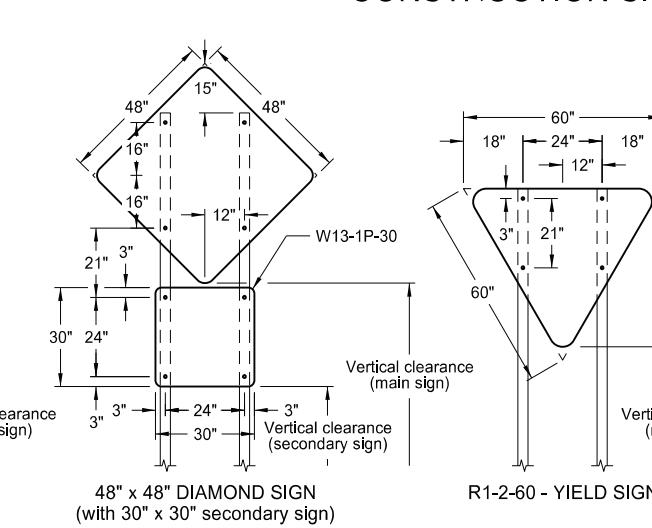
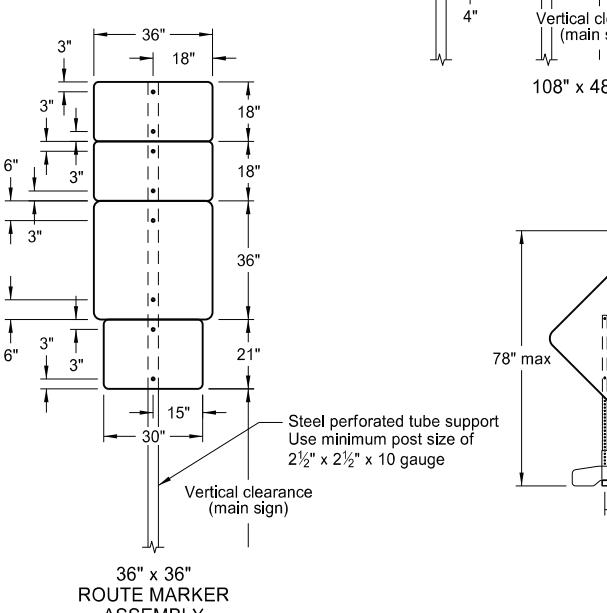
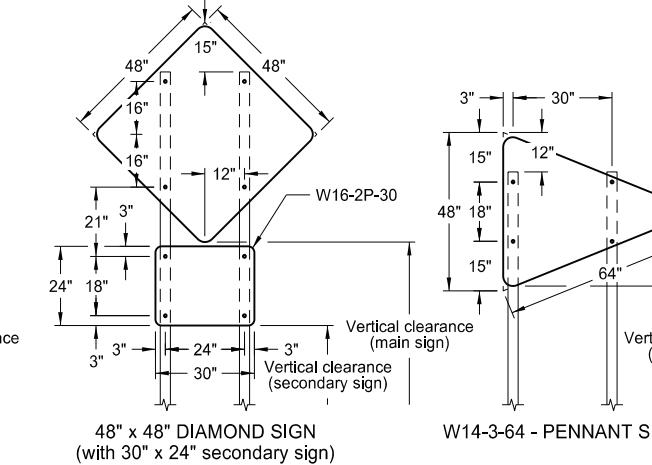
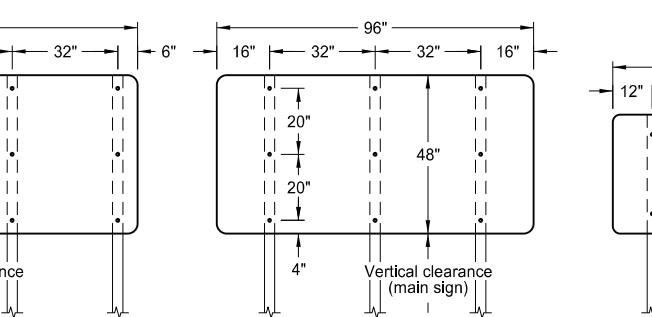


W16-7aP-18

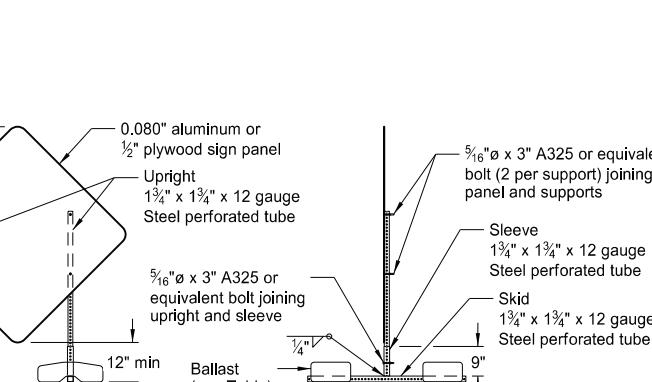
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
5-31-18	
REVISIONS	
DATE	CHANGE
11-01-19 8-01-24	Added details for sign W16-7aP-18. Electronic Stamp/Signature.
KIRK J. HOFF REGISTERED PROFESSIONAL PE-4683	
Kirk J. Hoff	
ENGINEER NORTH DAKOTA	
08/01/24	

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

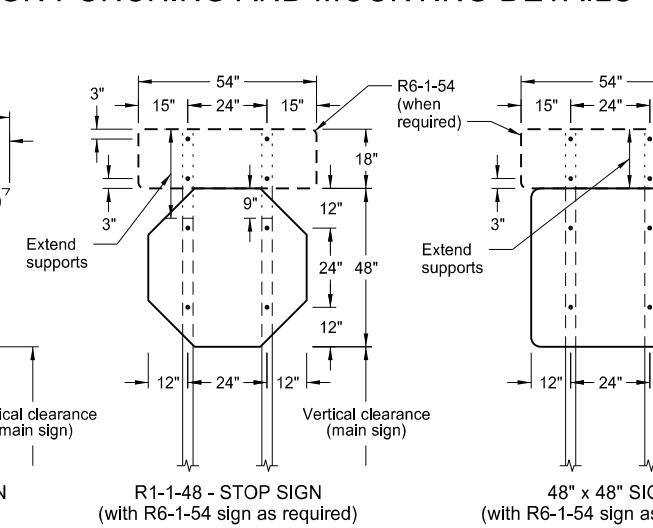
D-704-14

TYPICAL SECTION
(48" x 48" diamond warning sign shown)ROUTE MARKER
ASSEMBLY48" x 48" DIAMOND SIGN
(with 30" x 30" secondary sign)18" x 18" DIAMOND SIGN
(with 30" x 24" secondary sign)

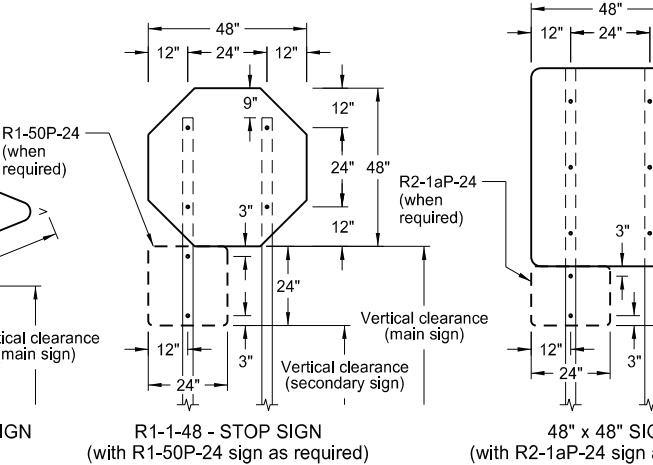
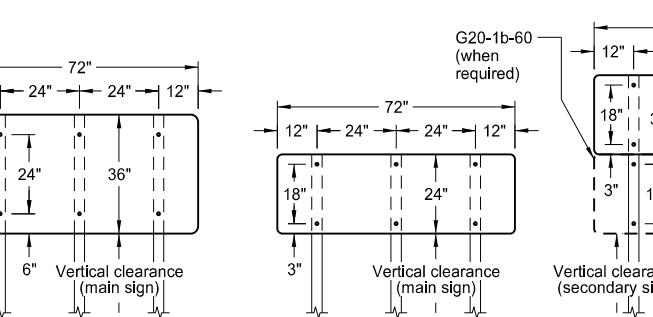
96" x 48" SIGN



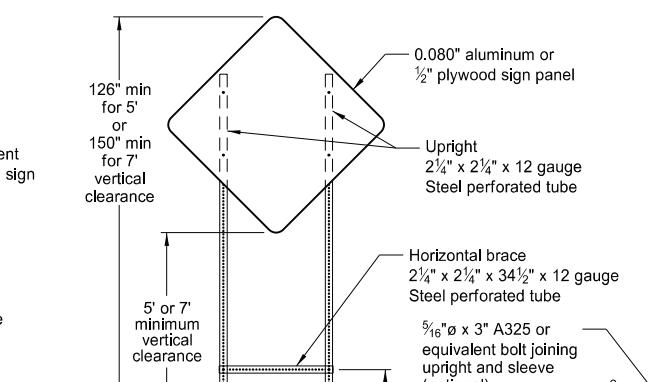
72" x 36" SIGN



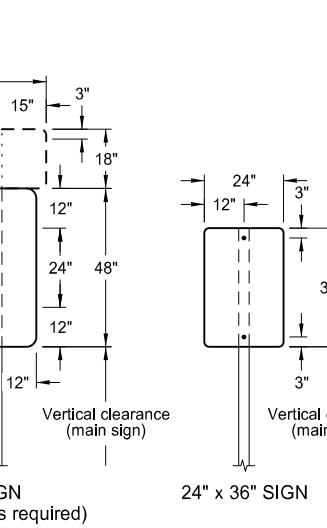
R1-2-60 - YIELD SIGN

R1-1-48 - STOP SIGN
(with R1-50P-24 sign as required)

72" x 24" SIGN



60" x 24" SIGN



24" x 36" SIGN

NOTES:

1. Sign Supports: Galvanize or paint supports. 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, minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes based on a wind speed of 55 MPH.
2. Place signs over 50 square feet on 2 1/2" x 2 1/2" perforated tube supports as a minimum.
3. Do not attach guy wires to sign supports. Attach wind beams behind sign panels when used with u-posts.
4. Sign Panels: Provide sign panels made of 0.100" aluminum, 1/2" plywood, or other approved material, except where noted. Punch all holes round for 3/8" bolts.
5. Alternate Messages: Install and remove alternate message signs on reflectorized plate (without borders) as required. (i.e. "Left" and "Right" message on lane closure sign)
6. 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

7. 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 stated above.

Provide a minimum clearance of 7'-0" from the ground at the post for signs with an area exceeding 50 square feet.

8. Portable Signs: Provide portable signs that meet the vertical clearance stated above when it is necessary to place signs within the pavement surface.

Use of low-mounting height (minimum 12" vertical clearance) portable signs for 5 days or less, is allowed 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. Use of R9-8 through R9-11a series, W1-6 through W1-8 series, M4-10, and E5-1 is allowed for longer than 5 days.

Restrict signs mounted on portable sign supports shown in the LOW-MOUNTING HEIGHT and HIGH-MOUNTING HEIGHT details to a maximum surface area of 16 square feet.

MINIMUM BALLAST
(For each side of sign support base)

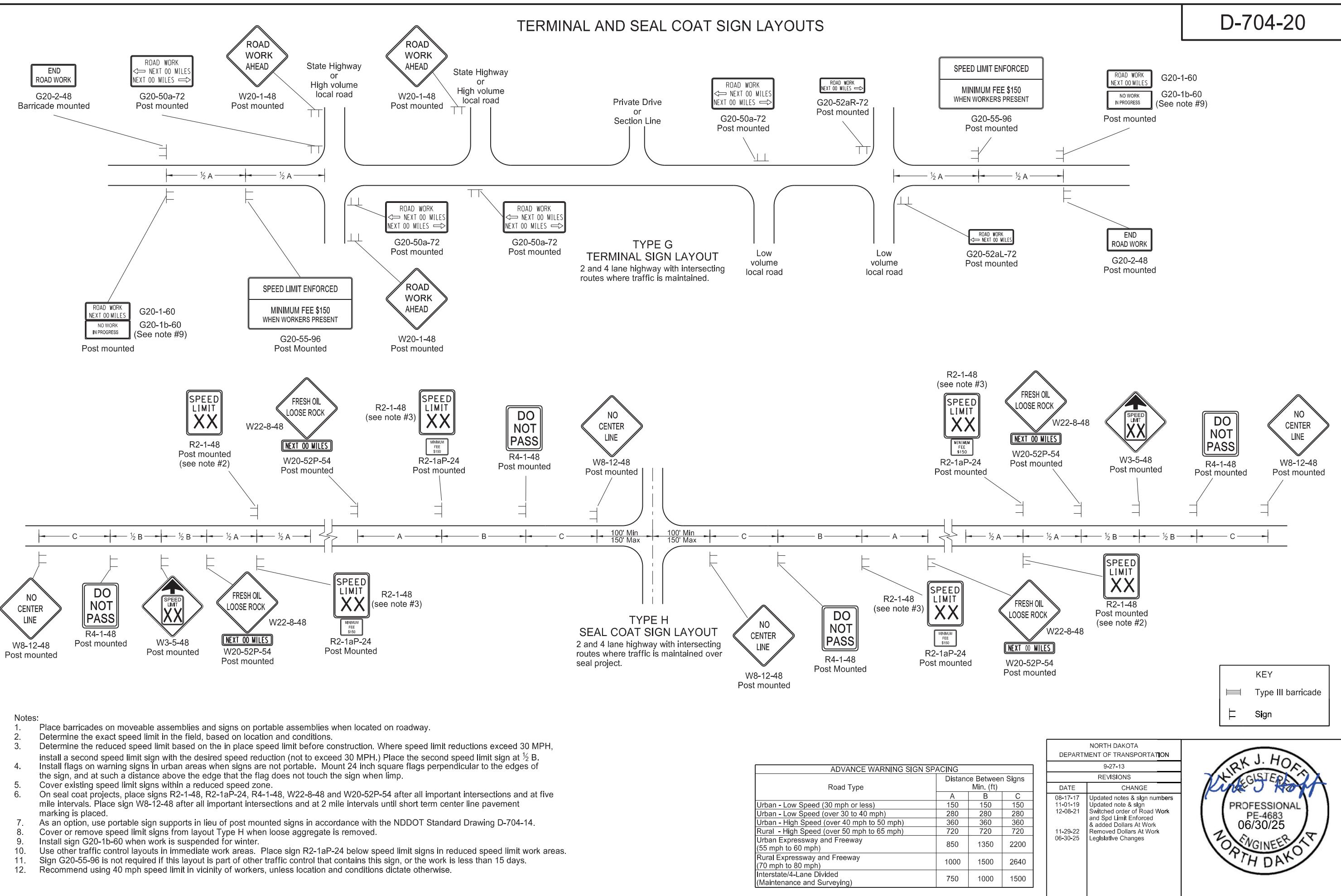
Sign Panel Mounting Height (ft)	Number of 25 lb sandbags for 4' x 4' sign panel
1'	6
5'	8
7'	10

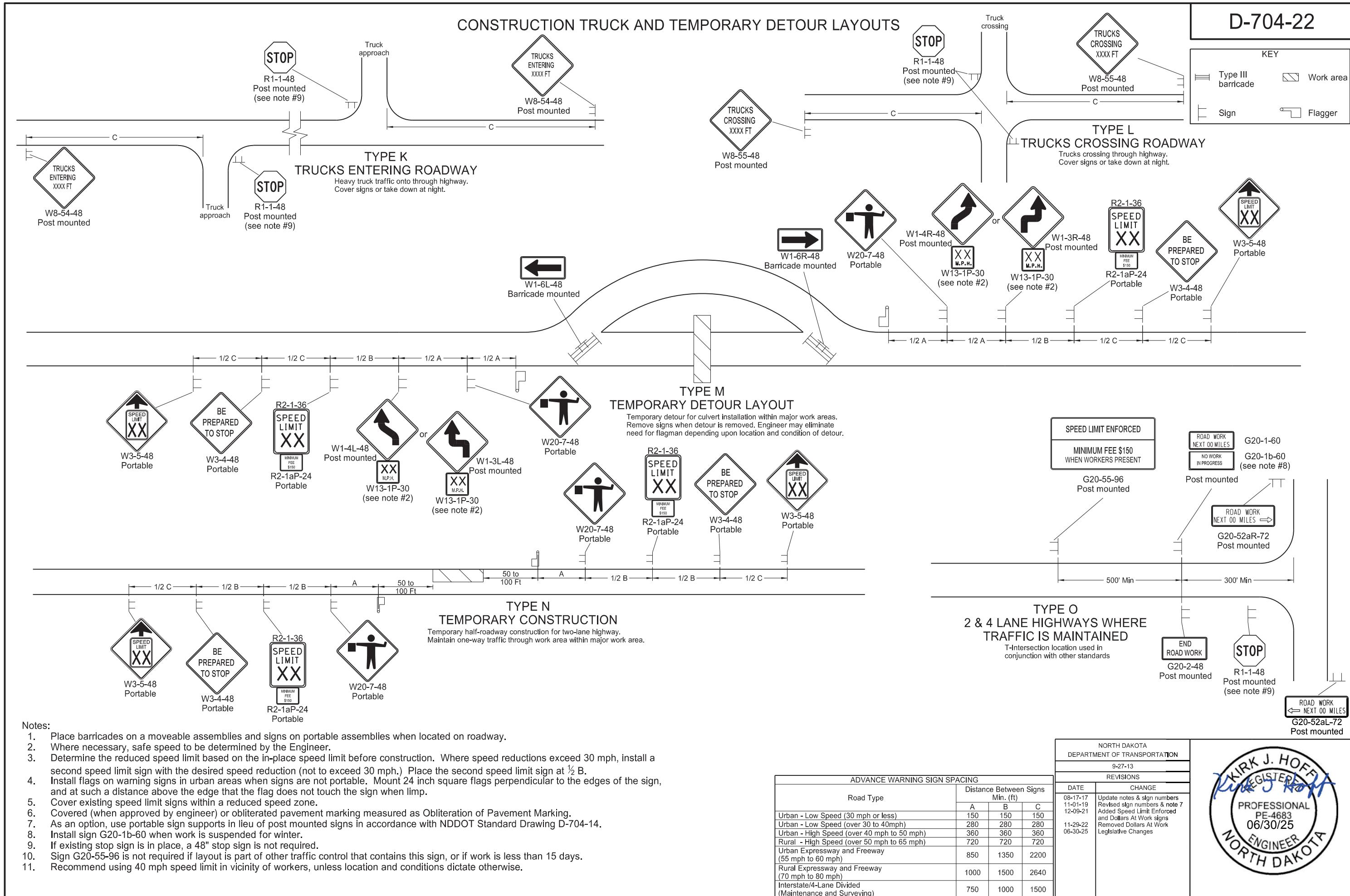
Note: The number of sandbags are based on a wind speed of 55 MPH. Place sandbags at or near the ends of skids.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	REVISIONS
DATE	
11-14-13 9-27-17 11-01-19 8-01-24	CHANGE
Revised Note 6 Updated to active voice Revised 60"x24" sign detail Electronic Stamp/Signature	



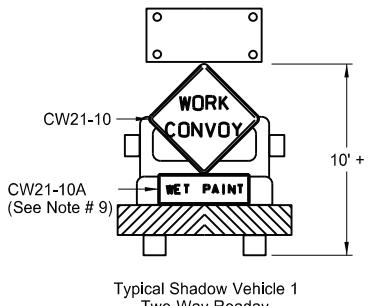
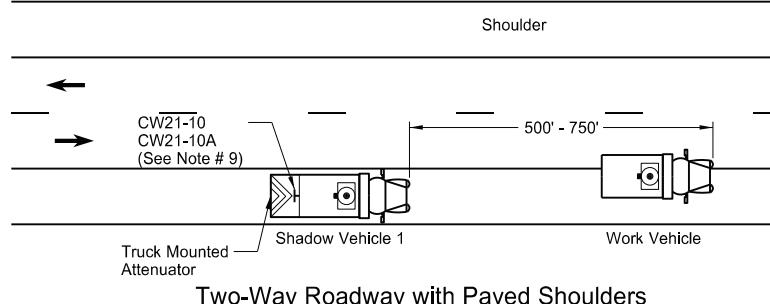
TERMINAL AND SEAL COAT SIGN LAYOUTS



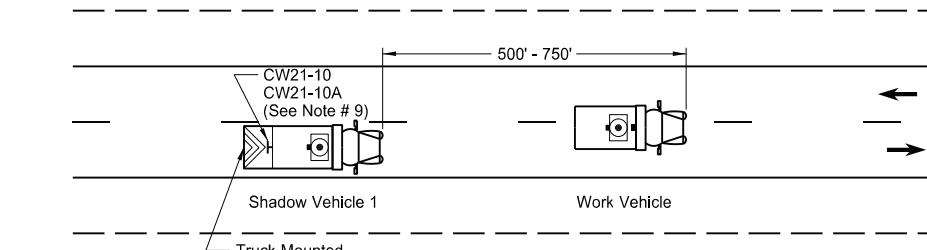


MOBILE OPERATION
(PAVEMENT MARKING)

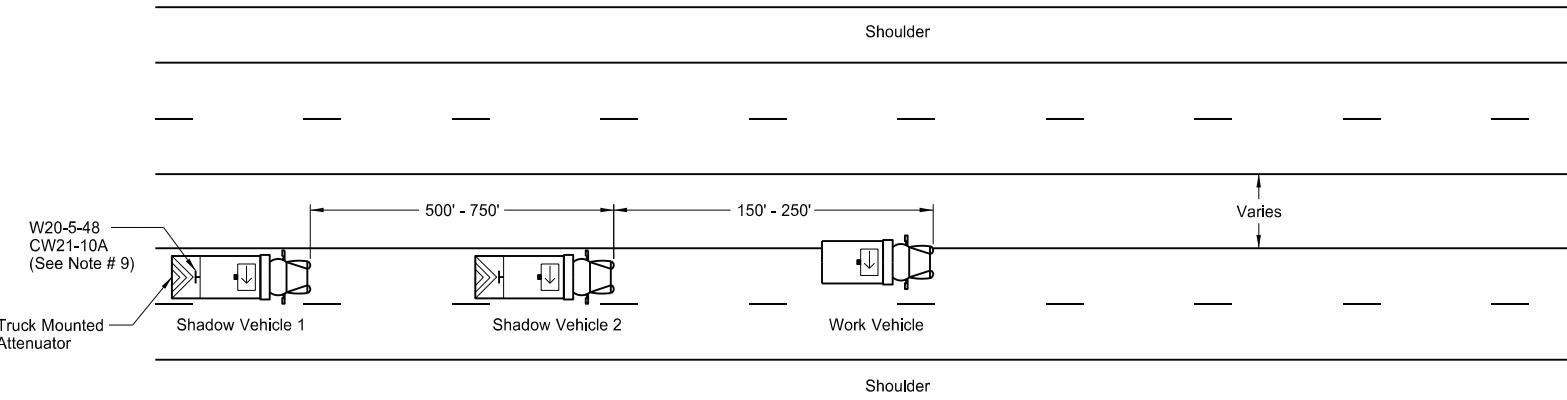
D-704-27

Typical Shadow Vehicle 1
Two-Way Roaday

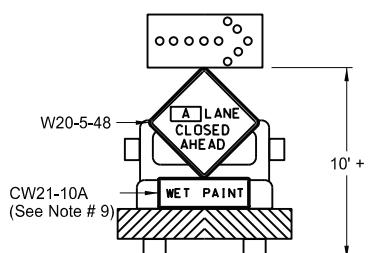
Two-Way Roadway with Paved Shoulders



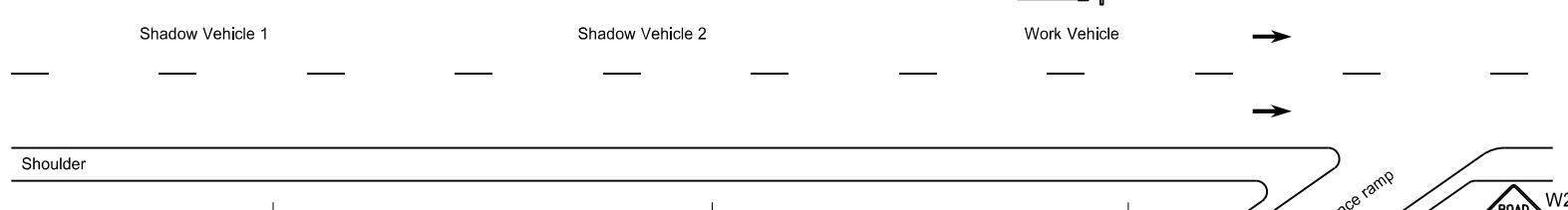
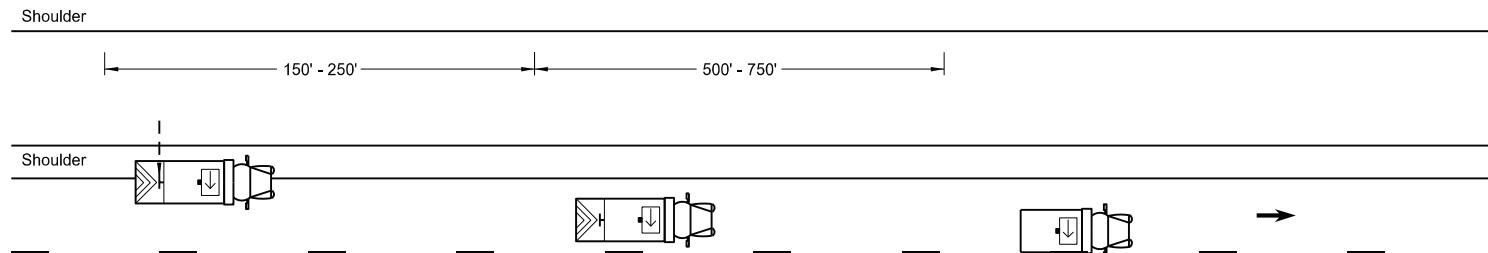
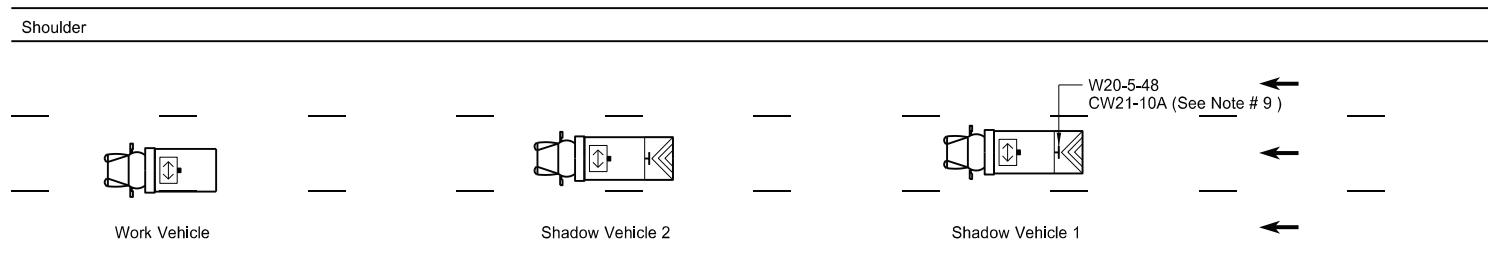
Two-Way Roadway without Paved Shoulders



Undivided Multi-Lane Roadway

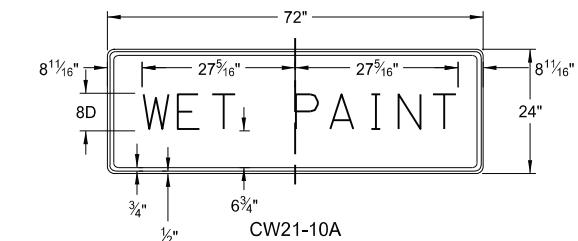
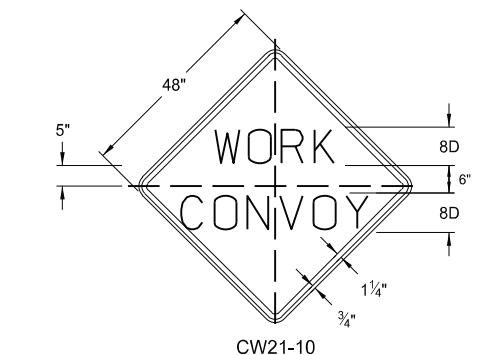
Typical Shadow Vehicle 1 & 2
Multi-Lane Highways

A = [Left] [Right] [Center]



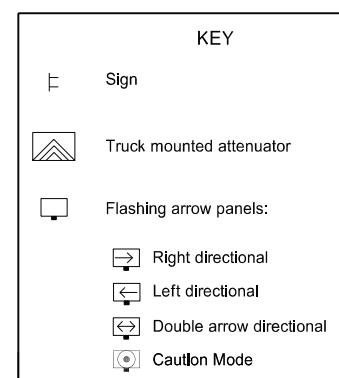
Divided Multi-Lane Highway

Sign Details



Notes

1. Use additional vehicles you choose to be in the convoy with truck mounted attenuators, at your own expense.
2. Display yellow rotating beacons or strobe lights on shadow and work vehicles, unless otherwise stated in the plans.
3. Use Type B or Type C flashing arrow panels controlled from inside the vehicle.
4. Provide each vehicle with two-way electronic communication capability.
5. Move shadow vehicle 1 first to shadow other convoy vehicles when convoy changes lane.
6. 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.
7. Sign Colors
Letters = Black
Border = Black
Background = Orange
8. As an option, use shadow vehicle 2 the paint tender vehicle.
9. Use sign CW21-10A only during painting operation.
10. 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

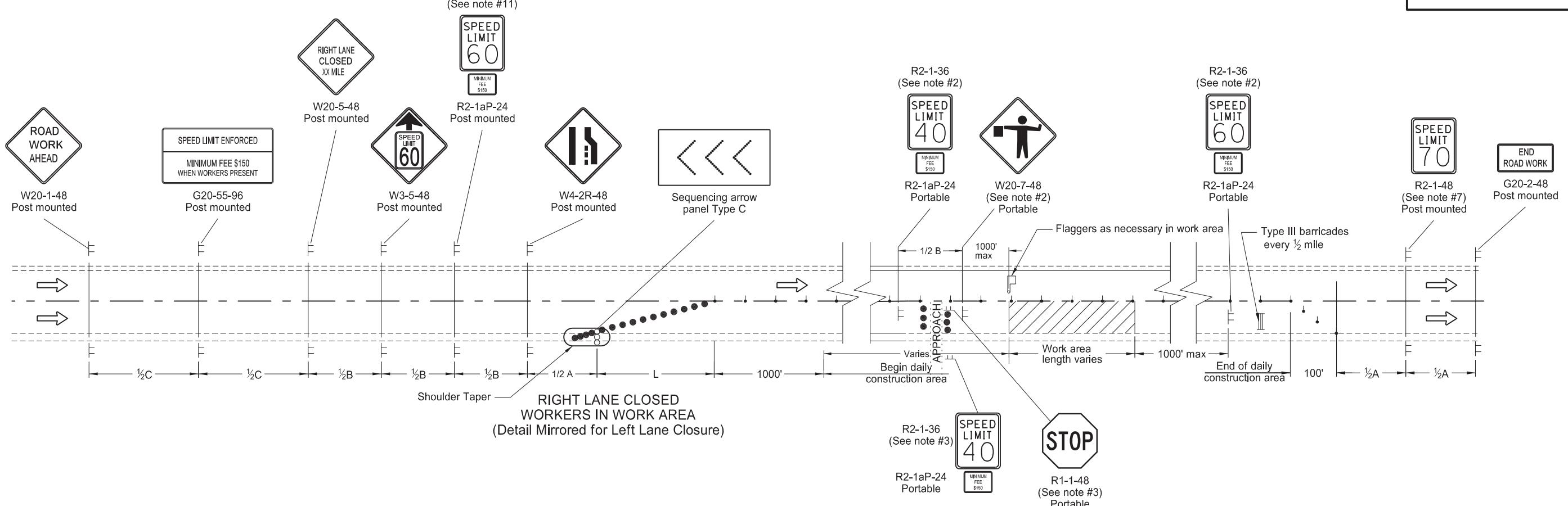
DATE	CHANGE
6-18-14	Removed shadow vehicle 2 on two lane roadways
9-27-17 11-08-19 8-02-24	Updated to active voice Changed Standard Heading Electronic Stamp/Signature



08/02/24

D-704-34

SIGN LAYOUT FOR ONE LANE CLOSURE



Notes:

1. Install advance signs for flagging when flaggers are flagging.
2. Move the advanced flagger sign and speed limit signs as the work area moves through the construction zone. When the work area is not visible from the flagger, move the flagger station so the work area is visible. Place the 40 mph speed limit sign at $\frac{1}{2}A$ in advance of the flagger sign and move the 60 mph speed limit sign. Cover or remove the 40 mph speed limit and the Minimum Fee \$150 signs upon completion of the work day or when workers are not present. Determine the exact speed limit in the field, dependent on location and conditions.
3. Approaches: When the work area encompasses an approach, install a 40 mph speed limit sign to control the approach. Cover the existing stop sign and install a new portable stop sign when the approach is on the side of the lane closure. Remove the approach speed limit sign once the main line 40 mph zone is moved past the approach.
4. Variables:
 - S=Numerical value of speed limit or 85th percentile
 - W=The width of taper.
 - L=Minimum length of taper, or $S \times W$ for freeways, expressways, and all other roads with speeds of 45 mph or greater, or $(W \times S \times S)/60$ for urban, residential, and other streets with speeds of 40 mph or less.
5. Space delineator drums for tapering traffic at the dimension "S". Space tubular markers used for tangents at 2 times dimension "S".
6. 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 the roadway surface.
 - 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).
7. Re-establish the speed limit. Determine the exact speed limit in the field, dependent on location and conditions.
8. Cover existing speed limit signs within a reduced speed zone.
9. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the diamond sign, and at such a distance above the edge that the flag does not touch the sign when limp.
10. Determine the reduced speed limit dependent on the in place speed limit before construction. Where speed limits are to be reduced more than 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 $\frac{1}{2}B$.
11. As an option use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
12. 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.

KEY	
Type I barricade	Work area
Type II barricade	Flagger
Type III barricade	Sequencing arrow panel
Sign	Tubular markers
Delineator drum	

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 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

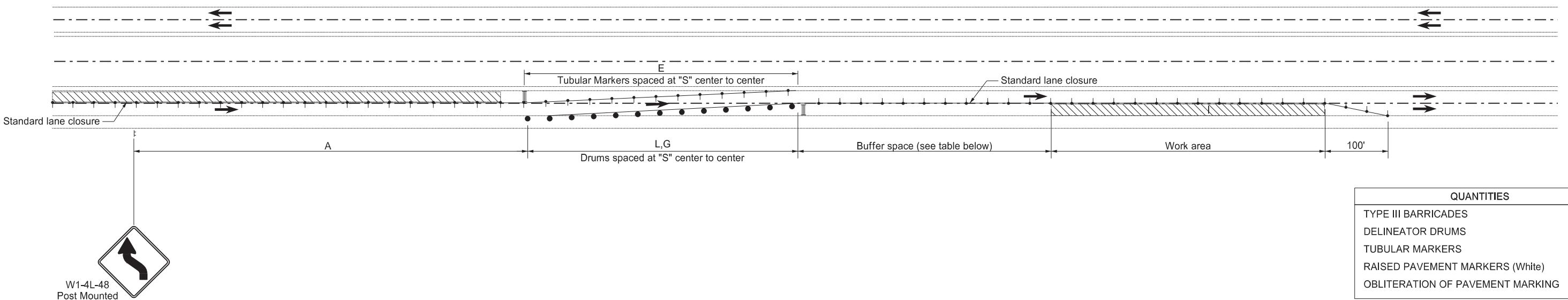
DATE	CHANGE	NORTH DAKOTA	
		DEPARTMENT OF TRANSPORTATION	REVISIONS
9-26-2012			
03-15-16	Removed Do Not Pass signs & updated notes		
08-17-17	Updated notes & sign numbers & moved Speed Limit signs		
11-01-19	Removed child taper details & revised tubular mkr symbol		
12-08-21	Switched order of Road Work and Spd Limit Enforced, removed table, & added Dollars At Work		
11-29-22	Removed Dollars At Work		
06-30-25	Legislative Changes		



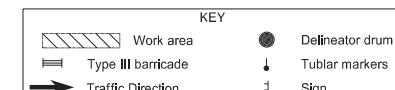
TRAFFIC CONTROL SYSTEM

LANE SHIFT BETWEEN A LANE CLOSURE AND AN OPPOSITE LANE CLOSURE

D-704-34A



QUANTITIES	
TYPE III BARRICADES	2 Each
DELINERATOR DRUMS	13 Each
TUBULAR MARKERS	13 Each
RAISED PAVEMENT MARKERS (White)	Varies
OBLITERATION OF PAVEMENT MARKING	Varies



LEGEND	
E	Obliteration of pavement marking (10' line, 30' skip centerline)
G	Raised pavement markers (white) 5' ctrs.

Notes

- Variables
S = Numerical value of posted speed limit, off-peak 85th percentile speed prior to work starting, or the anticipated operating speed in mph.
W = Width of offset in feet.
L = Taper length in feet. Speeds 40 mph or less $L=WS^2/60$. Speeds 45 mph or greater $L= WS$.
- Place signs and barricade on roadway on moveable assemblies.
- Cover existing speed limit signs within reduced speed zones.
- Upon approval, the Engineer will measure obliterated or covered pavement marking as Obliteration of Pavement Marking.
- As an option, use portable sign supports in lieu of post mounted sign in accordance with NDDOT Standard Drawing D-704-14.
- Place "Minimum Fee \$150" signs below speed limit signs when placing traffic control devices to reduce speed.
- When duration of work is 14 days or less, obliteration of pavement marking (10' line, 30' skip, centerline) and raised pavement markers are not required.

Longitudinal Buffer Space	
*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
80	910

* Posted speed, off-peak 85th percentile speed prior to work starting, or the anticipated operating speed in mph.

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 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

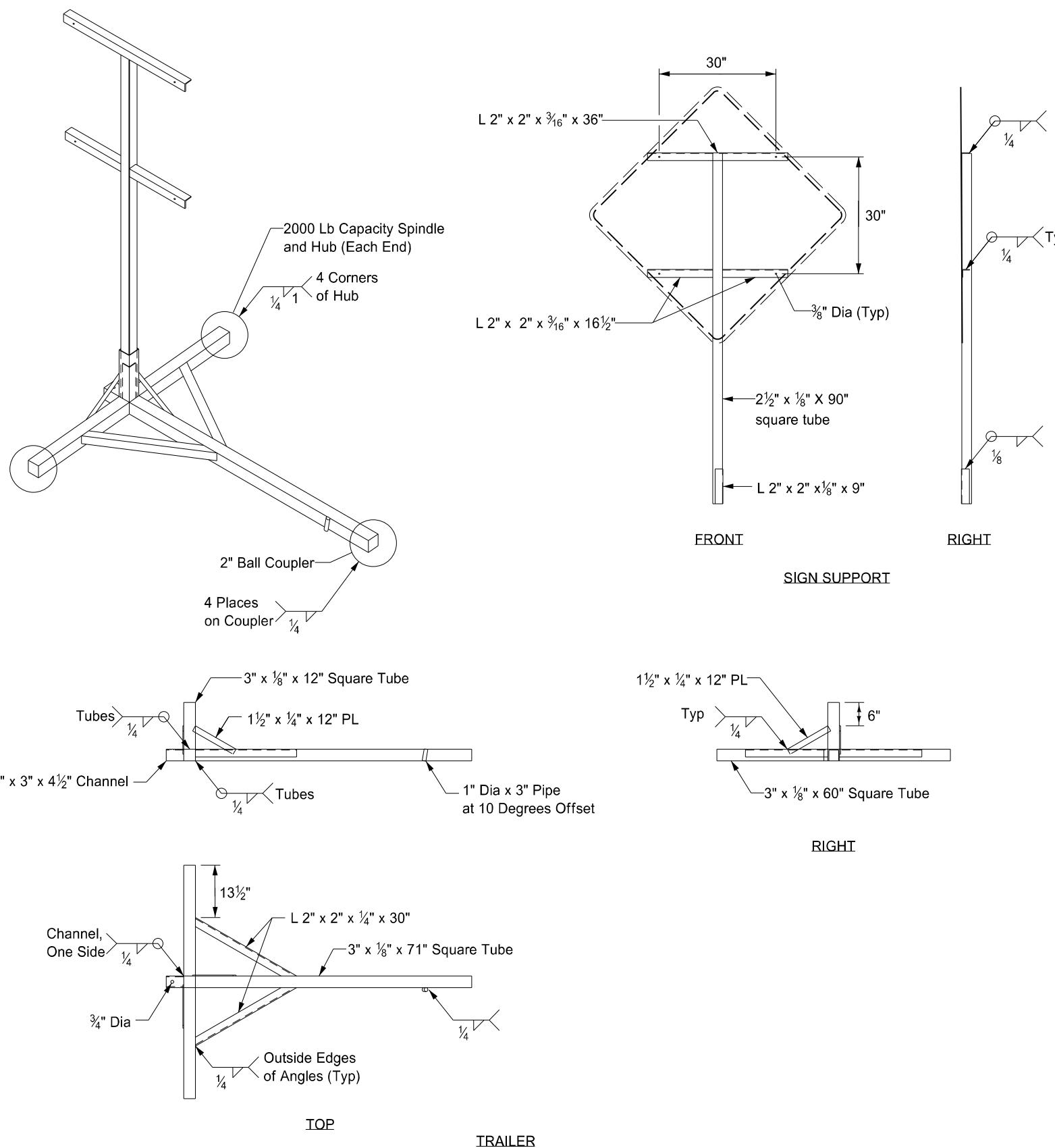
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-26-2012	
REVISIONS	
DATE	CHANGE

09-27-17 Updated to active voice
11-01-19 Clarified work zone
08-02-24 Electronic Stamp/Signature
06-30-25 Legislative Changes



PORTABLE SIGN SUPPORT ASSEMBLY

D-704-50

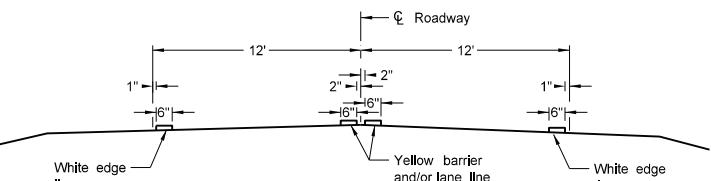


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE
12/02/2020	Updated Note to active voice.

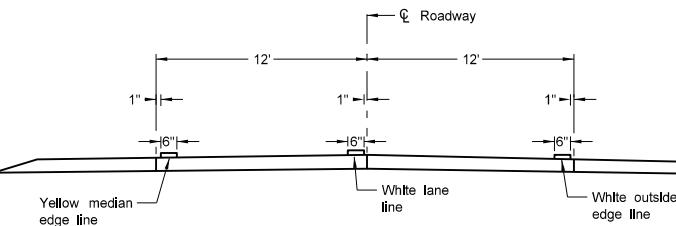


PAVEMENT MARKING

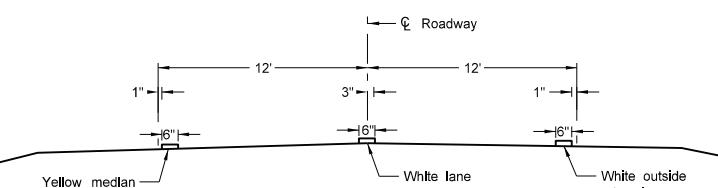
D-762-4



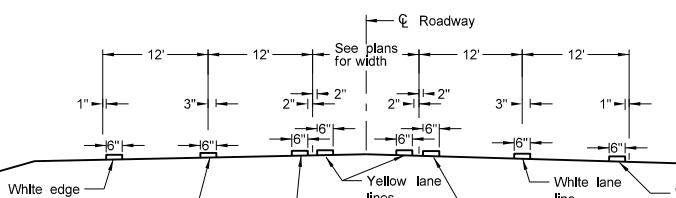
Two Lane Two Way
RURAL ROADWAY



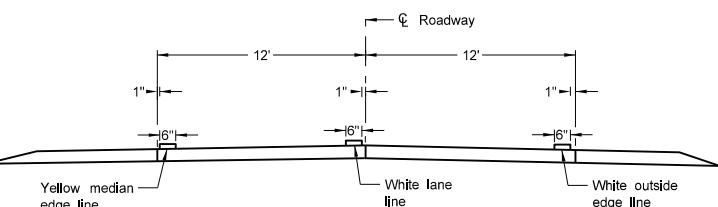
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



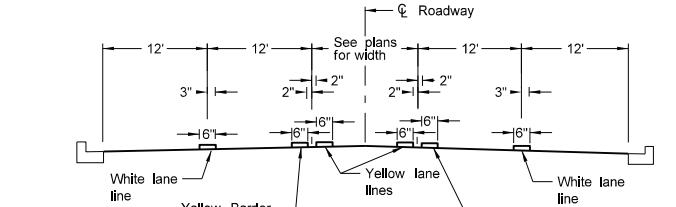
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



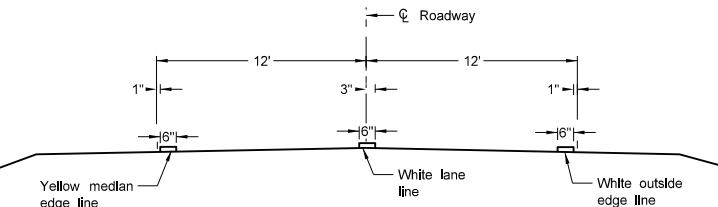
RURAL FIVE LANE ROADWAY
Asphalt Section



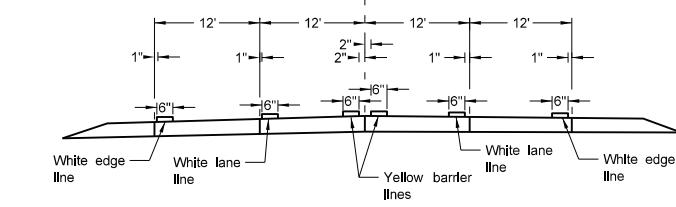
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Concrete Section



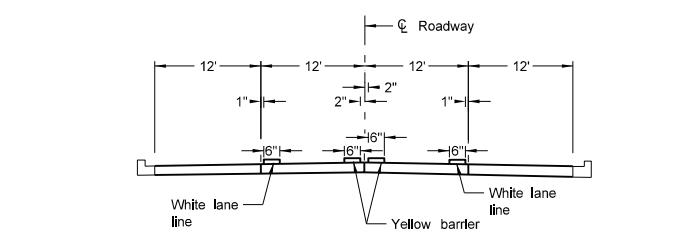
URBAN FIVE LANE SECTION
Asphalt Section



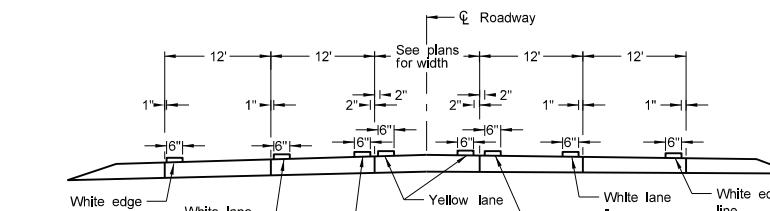
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



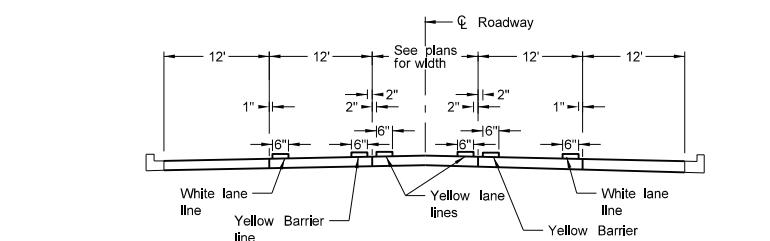
RURAL FOUR LANE ROADWAY
Concrete Section



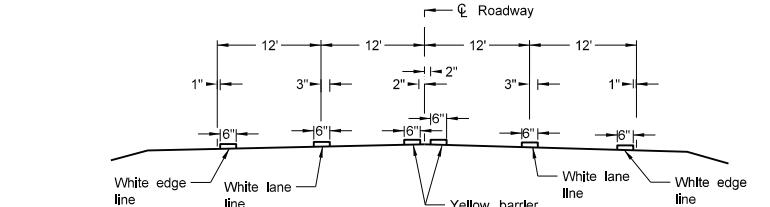
URBAN FOUR LANE SECTION
Concrete Section



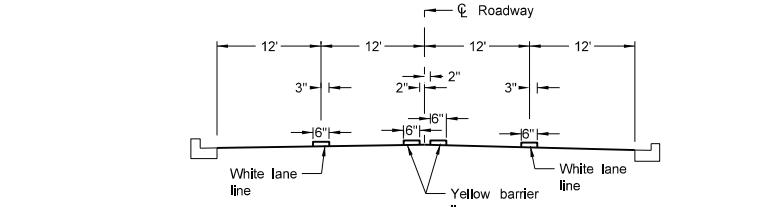
RURAL FIVE LANE ROADWAY
Concrete Section



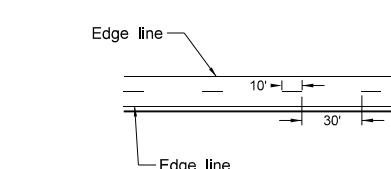
URBAN FIVE LANE SECTION
Concrete Section



RURAL FOUR LANE ROADWAY
Asphalt Section



URBAN FOUR LANE SECTION
Asphalt Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

NOTES:

1. Continue edge lines through private drives and field drives. Break edge lines for intersections.

For section lines, county roads, and street approaches, stripe the radii and edge lines of the paved surface within the right of way except where curb and gutter is present.

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.

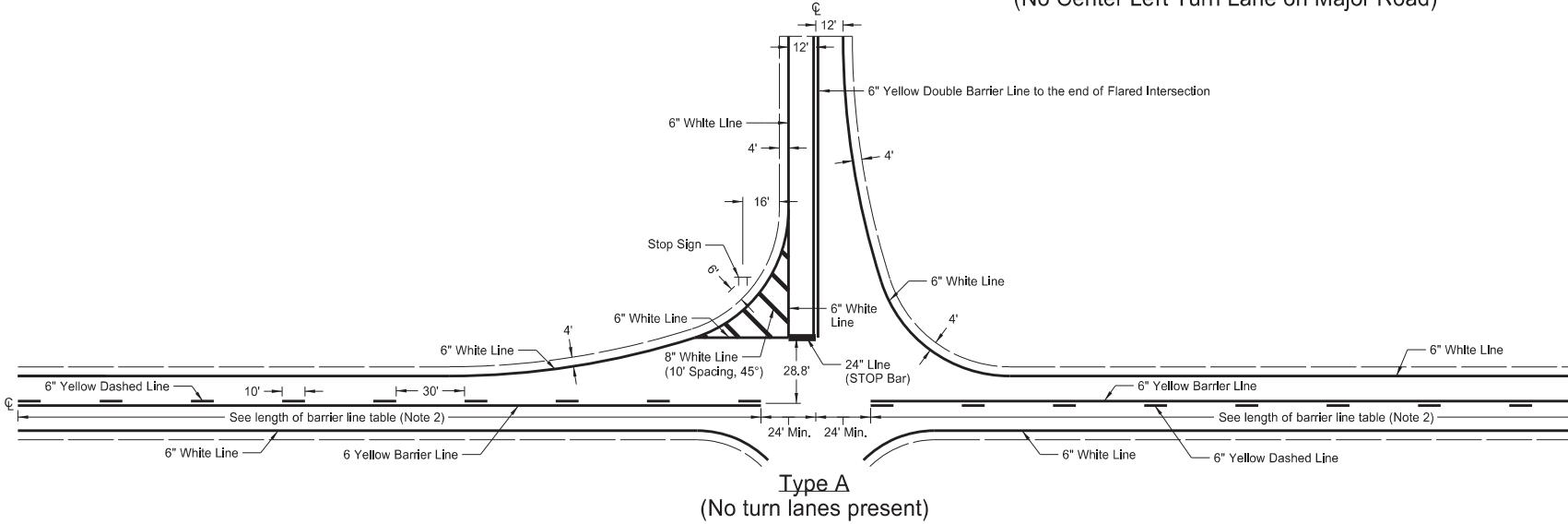
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-1-10	
REVISIONS	
DATE	CHANGE
10-17-17 08-27-19 11-22-23 07-09-24	Updated to active voice. New Design Engineer PE Stamp. Revised pavement marking widths. Modified Note 1.



PAVEMENT MARKING FOR STANDARD 90 DEGREE FLARED INTERSECTION

D-762-5

(No Center Left Turn Lane on Major Road)

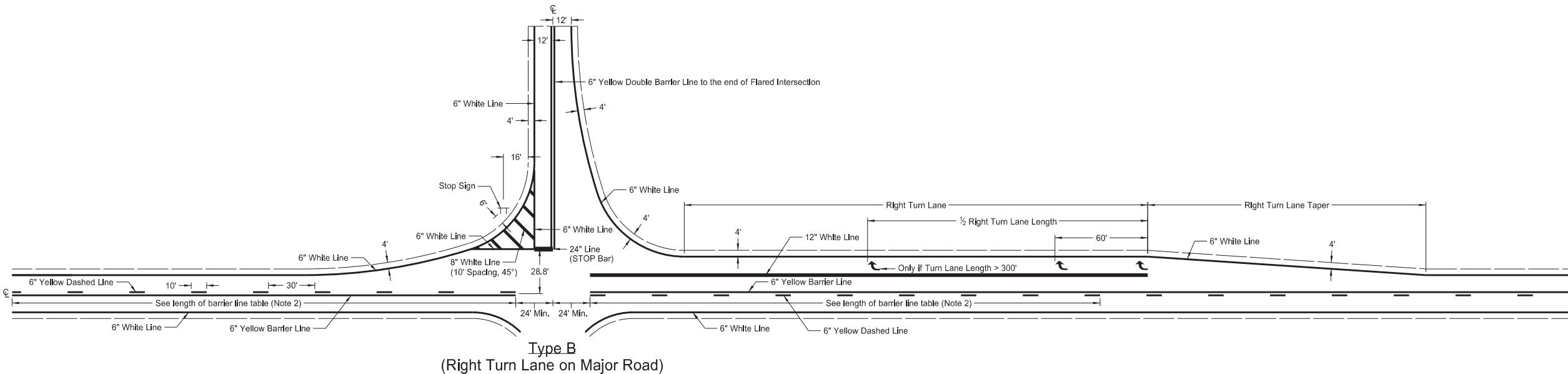


Notes

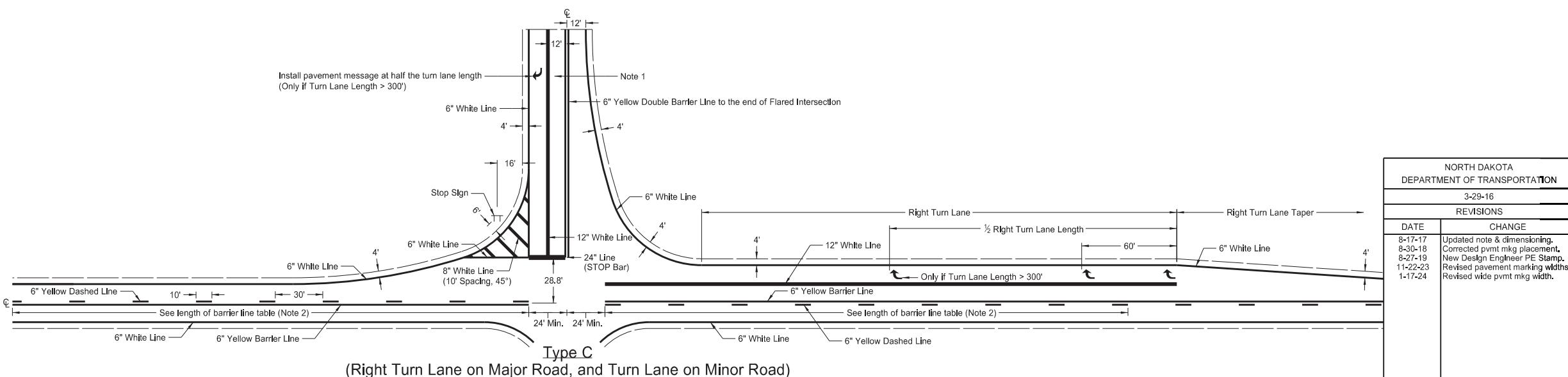
1. At "T" intersections (3-leg), additionally install left turn pavement marking message arrow.
2. The barrier lines have variable distances dependent on speed limit. Obtain barrier line length from table below (stopping sight distance.)
3. Normal width line - 6 inches wide for freeways, expressways, 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 \leq 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.

Table for Length of Barrier Line

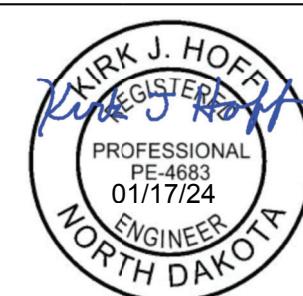
Speed Limit (mph)	30	35	40	45	50	55	60	65	70
Minimum Length	200'	250'	305'	360'	425'	495'	570'	645'	730'



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

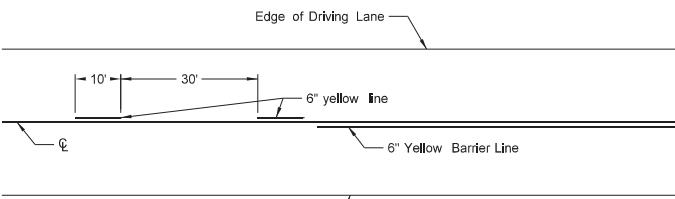


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
3-29-16	
REVISIONS	
DATE	CHANGE
8-17-17 8-30-18 8-27-19 11-22-23 1-17-24	Updated note & dimensioning. Corrected pmkt mkg placement. New Design Engineer PE Stamp. Revised pavement marking widths. Revised wide pmkt mkg width.

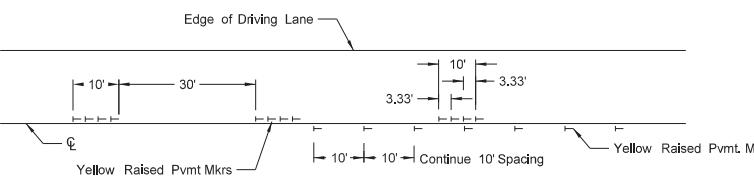


SHORT-TERM PAVEMENT MARKING

D-762-11

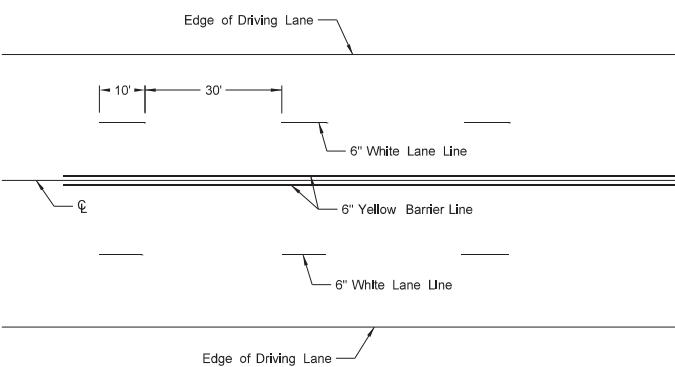


Painted or Tape Lines

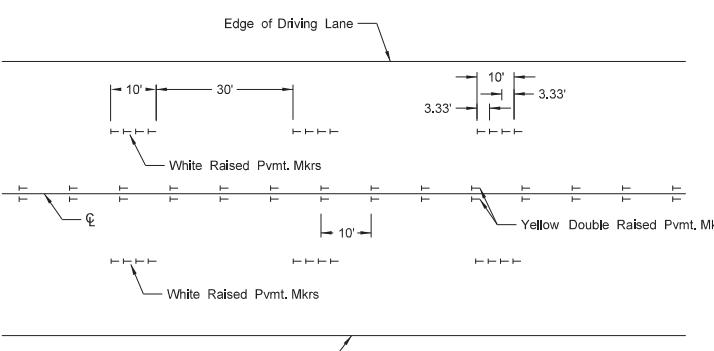


Raised Pavement Markers

TWO-LANE TWO-WAY ROADWAY

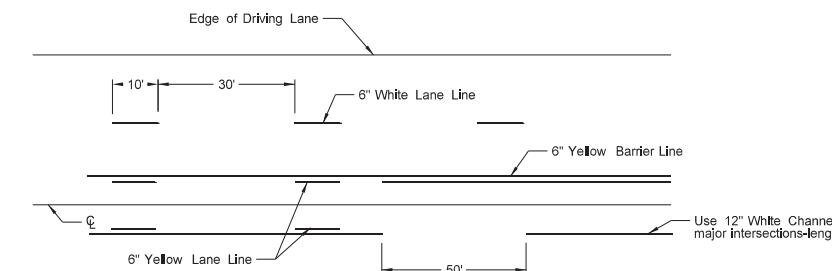


Painted or Tape Lines

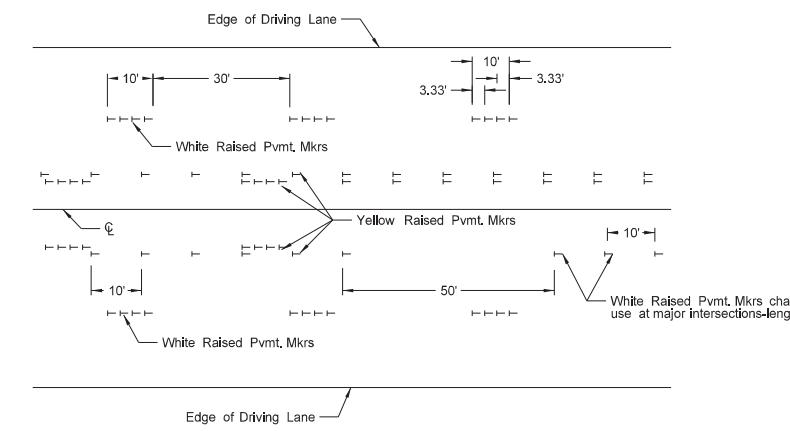


Raised Pavement Markers

FOUR LANE ROADWAY

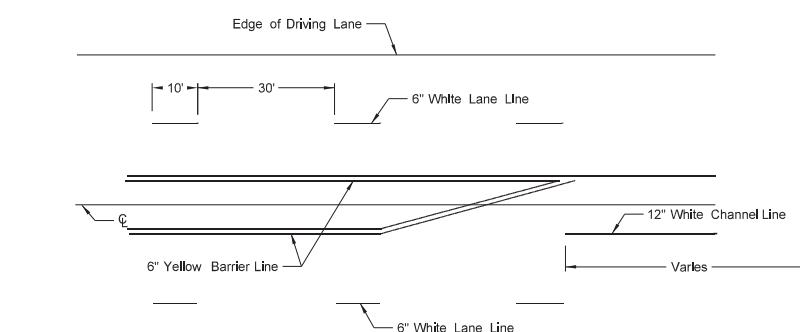


Painted or Tape Lines

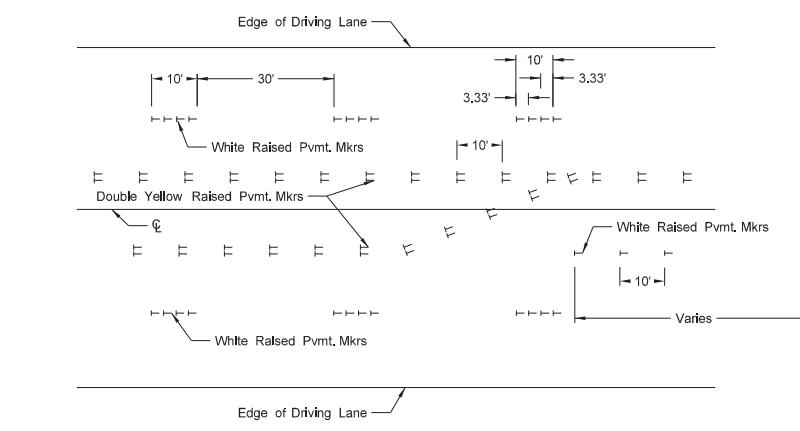


Raised Pavement Markers

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 Design Engineer PE Stamp.
11-22-23	Revised pavement marking widths.
1-17-24	Revised wide pvt. marking width.

