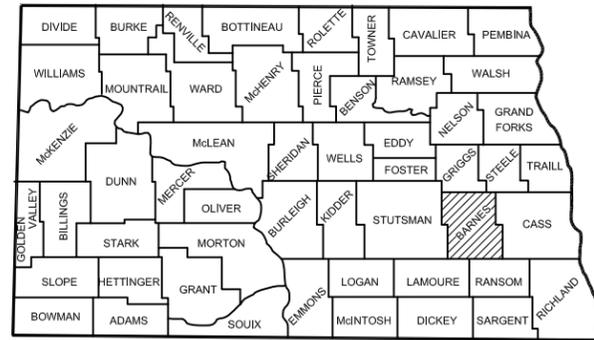


**JOB #13**

STATE	PROJECT NUMBER	PCN	SECTION NUMBER	SHEET NUMBER
ND	SU-2-990(051)055	20855	1	1
	SU-2-990(052)056	20856		



STATE OF NORTH DAKOTA  
SHOWING COUNTIES

**CITY OF VALLEY CITY, NORTH DAKOTA  
PLANS FOR FEDERAL AID PROJECT NUMBER  
SU-2-990(051)055 & SU-2-990(052)056**

**MILL & OVERLAY AND INCIDENTALS  
6th St NE - Central Ave N to 8th Ave NE  
2nd Ave NE - 2nd St NE to 4th St NE**

Project consists of approximately 0.612 Miles of Mill & Overlay, ADA Improvements & Incidentals.

GOVERNING SPECIFICATIONS:

2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

**PROJECT LENGTH**

PROJECT	GROSS MILES	EXCEPTION MILES	NET MILES
SU-2-990(051)055	0.498	0.020	0.478
SU-2-990(052)056	0.134	0.000	0.134
TOTAL	0.632	0.020	0.612

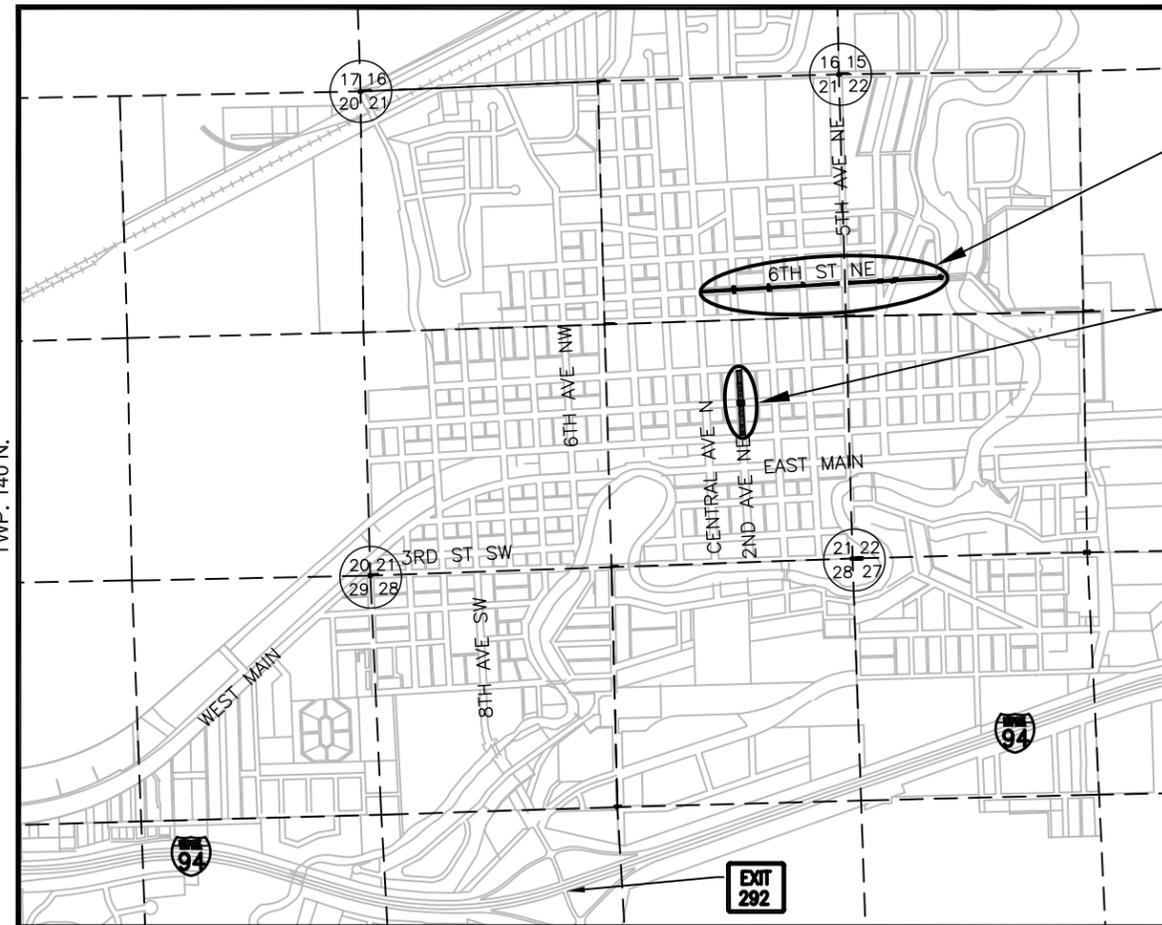
**DESIGN DATA**

6TH STREET NE TRAFFIC		AVERAGE DAILY			EST. 30th MAX. HR.
		PASSENGER	TRUCKS	TOTAL	
CURRENT TRAFFIC	2016	1135	25	1160	116
TRAFFIC FORECAST	2036	1250	30	1280	128

DESIGN SPEED 25 MPH  
MINIMUM SIGHT DISTANCE (STOPPING) 155 FEET

2ND AVENUE NE TRAFFIC		AVERAGE DAILY			EST. 30th MAX. HR.
		PASSENGER	TRUCKS	TOTAL	
CURRENT TRAFFIC	2016	2200	20	2220	222
TRAFFIC FORECAST	2036	2430	25	2455	246

DESIGN SPEED 25 MPH  
MINIMUM SIGHT DISTANCE (STOPPING) 155 FEET



**PROJECT SU-2-990(051)055**  
6TH STREET NE  
CENTRAL AVE NORTH TO  
8TH AVE NE

**PROJECT SU-2-990(052)056**  
2ND AVE NE  
2ND ST NE TO 4TH ST NE

PS&E Corrections Made

January 2016

Surveyed & Designed Date

December 2015 & January 2016

DESIGNER	Taylor Olson
DESIGNER	Mark Loidolt
DESIGNER	-
DESIGNER	-
DESIGNER	-

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY  
ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A  
DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF NORTH DAKOTA.  
  
CHAD A. PETERSEN IS/  
KADRMAS, LEE & JACKSON, INC.  
  
DATE 02/02/16 REGISTRATION NUMBER PE-4884



1010 4TH AVENUE SW  
P.O. BOX 937  
VALLEY CITY, ND 58072-0937  
(701) 845-4980, FAX (855) 288-8055  
© KLJ 2016

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	2	1
		SU-2-990(052)056		

**TABLE OF CONTENTS**

<u>SECTION NO.</u>	<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	1	Title Sheet
2	1	Table of Contents, List of Standard Drawings & Special Provisions
4	1	Scope of Work
6	1	Plan Notes
8	1	Estimate of Quantities & Basis of Estimate
20	1	General Details
20	2	Inlet Protection – Device Detail
30	1	Existing Typical Sections
30	2	Milling Typical Sections
30	3	Proposed Typical Sections
40	1-9	Removals
90	1-9	Paving Layout
100	1	Traffic Control Devices List
100	2	Traffic Control Signing Layout
100	3	Typical Sidewalk Closure Layout

**LIST OF STANDARD DRAWINGS**

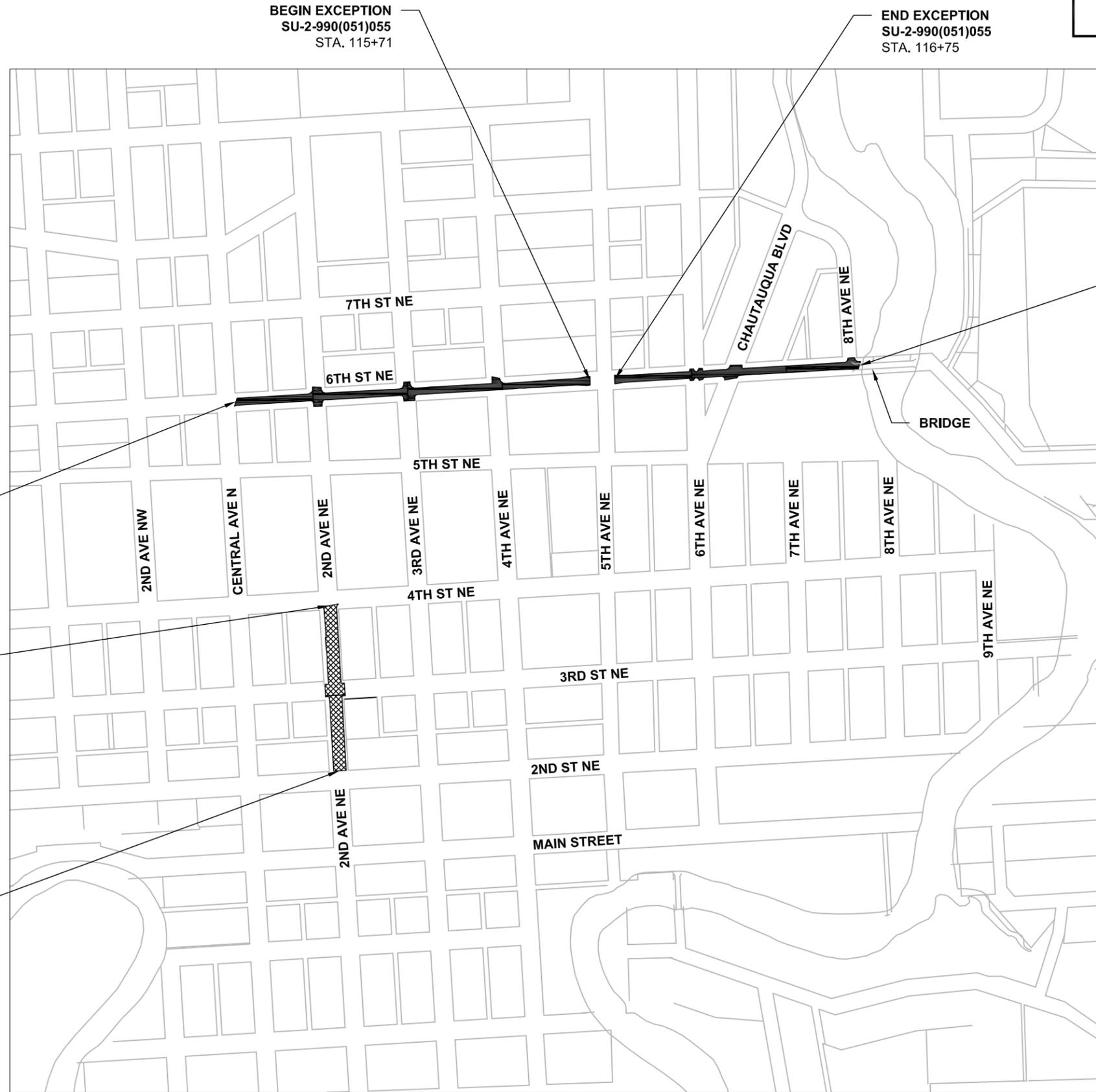
<u>STANDARD NO.</u>	<u>DESCRIPTION</u>
D-101-1, 2 & 3	NDDOT Abbreviations
D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20 & 21	Line Styles
D-101-30, 31 & 32	Symbols
D-704-2	Traffic Control for Coring of Hot Bituminous Pavement
D-704-7 & 8	Breakaway Systems for Construction Zone Signs
D-704-9	Construction Sign Details Terminal and Guide Signs
D-704-11	Construction Sign Details Warning Signs
D-704-13	Barricade and Channelizing Device Details
D-704-14	Construction Sign Punching and Mounting Details
D-704-15	Road Closure Layouts
D-704-20	Terminal and Seal Coat Sign Layouts
D-704-22	Construction Truck and Temporary Detour Layouts
D-704-25	Lane Closures on Urban Streets Layouts
D-704-26	Miscellaneous Sign Layouts
D-704-50	Portable Sign Support Assembly
D-748-1	Curb & Gutter and Valley Gutter
D-750-1	Concrete Driveway - Urban
D-750-2	Sidewalk
D-750-3	Curb Ramp Details
D-762-1	Pavement Marking Message Details

**SPECIAL PROVISIONS**

<u>DESCRIPTION.</u>	<u>NO.</u>
Permits and Environmental Considerations	SP-5100(14)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	4	1
	SU-2-990(052)056		



-  MILL & OVERLAY
-  MILL, OVERLAY & ADA IMPROVEMENTS

END PROJECT  
SU-2-990(051)055  
STA. 127+09



BEGIN EXCEPTION  
SU-2-990(051)055  
STA. 115+71

BEGIN PROJECT  
SU-2-990(051)055  
STA. 100+80

END PROJECT  
SU-2-990(052)056  
STA. 17+82

BEGIN PROJECT  
SU-2-990(052)056  
STA. 10+75

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

<b>SU-2-990(051)055 &amp; SU-2-990(052)056</b> <small>CITY OF VALLEY CITY, NORTH DAKOTA</small>		
	<b>SCOPE OF WORK</b>	
	<small>DRWN. BY</small> ZV	<small>CHKD BY</small> JL

## PLAN NOTES

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	6	1
		SU-2-990(052)056		

- 100-P01**     **NOISE RESTRICTION:** Limit all work to the hours of 6 a.m. to 10 p.m.
- 107-710**     **HAUL ROADS:** Before submitting a proposal, contact the appropriate State, County, Township, or City officials to determine if there are any roadways that will be designated as "no haul routes".
- 202-P01**     **SAW BITUMINOUS & CONCRETE SURFACING:** Include the cost of the full depth vertical saw cuts adjacent to the pavement removal areas, specified in Section 202.04 A "General", in the contract unit price for "REMOVAL OF CONCRETE" and "REMOVAL OF CURB & GUTTER".
- 202-P02**     **REMOVAL OF CURB & GUTTER:** If Contractor operations require the removal of existing pavement and aggregate base adjacent to curb and gutter removals, the maximum width of each removal area will not exceed 3 feet. Include this work in the price bid for "REMOVAL OF CURB & GUTTER".
- 203-P01**     **COMMON EXCAVATION-SUBCUT:** The Engineer will determine the location and actual quantity of "COMMON EXCAVATION-SUBCUT" (see Subgrade Repair Detail on Sheet 1 Section 20). A quantity of 450 CY of "COMMON EXCAVATION-SUBCUT" has been provided in the plans to use for subgrade repair.  
  
Cut the existing asphalt leaving a vertical edge. Include the cost to cut a vertical edge and remove, load, haul and dispose of the existing materials off the right of way in accordance with all requirements of the North Dakota Department of Health in the price bid for "COMMON EXCAVATION-SUBCUT".  
  
Delete the second paragraph of Standard Specification 203.04 C in its entirety.
- 203-P02**     **SUBGRADE REPAIR:** Quantities for "COMMON EXCAVATION-SUBCUT" and "AGGREGATE BASE COURSE CL 5" have been included for subgrade repair at the locations where subgrade is designated for removal. The Engineer in the field will determine the actual locations and extents of the subgrade repair (see Subgrade Repair Detail on Sheet 1 Section 20).
- 302-P01**     **AGGREGATE BASE COURSE CL 5:** The Engineer will determine the actual quantity of "AGGREGATE BASE COURSE CL 5" (see Subgrade Repair Detail on Sheet 1 Section 20). A quantity of 567 Tons of "AGGREGATE BASE COURSE CL 5" has been provided in the plans to use for subgrade repair.
- 411-P01**     **MILLING PAVEMENT SURFACE:** Remove the existing bituminous material to form a straight vertical edge to allow the placement of the full depth surfacing at the beginning and end of milling sections including intersections.  
  
All milled material will become the property of the city and must be stockpiled at the Old Mill Dam site located at the southeast corner of 4<sup>th</sup> Avenue and 4<sup>th</sup> Street SE. Contact the Valley City Public Works at (701) 845-4255 prior to hauling the material to the designated site. Thoroughly sweep the milled areas immediately following the milling operation. If dust becomes a problem, apply dust palliative measures to control the dust. All milled areas will be inspected by the Engineer to determine if subgrade repairs need to be completed. If subgrade repairs are required, repair the designated areas according to the Subgrade Repair Detail on Sheet 1 Section 20.
- 411-P02**     **TEMPORARY ASPHALT WEDGES:** Place temporary asphalt or milled material wedges at the milled taper locations to allow for the smooth passage of vehicles. Include all costs for labor, materials and equipment to install and remove the wedges in the unit price bid for "MILLING PAVEMENT SURFACE".
- 430-P01**     **COMMERCIAL GRADE HOT MIX ASPHALT:** Provide commercial grade asphalt that meets the requirements of Superpave FAA 42 or 43 in Section 430.03 C, "Superpave Mix Properties". Include the cost for tack coat and asphalt cement in the unit price bid for "COMMERCIAL GRADE HOT MIX ASPHALT".
- 430-P02**     **COMMERCIAL GRADE HOT MIX ASPHALT:** Patch pavement surface areas showing signs of failure as per the Subgrade Repair Detail (see Sheet 1 Section 20). Clean, tack and fill existing irregularities in the roadway with hot mix asphalt and compact in a separate operation. All hot mix asphalt required for patching will be measured and paid for by the ton of "COMMERCIAL GRADE HOT MIX ASPHALT". This will be considered full payment for performing this work.  
  
The Engineer will determine the location and actual quantity of "COMMERCIAL GRADE HOT MIX ASPHALT" used for patching. A quantity of 297 Tons of "COMMERCIAL GRADE HOT MIX ASPHALT" has been provided in the plans to use for patching.
- 430-P03**     **COMPACTION:** Ordinary compaction, as specified in Section 430.04 I.3, will be utilized.

- 704-P01**     **TRAFFIC CONTROL DEVICES:** The Contractor shall furnish the necessary signing as shown on Standard Drawings: D-704-15, 20, 22, 25 and 26 under Type A, G, K, N, V W, X, EE, and GG as required by construction operations.  
  
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 required to accommodate the Contractor's operation shall be the Contractor's responsibility. Include all costs to move signs and devices between projects in the unit price bid for "TRAFFIC CONTROL SIGNS".
- 722-P01**     **UTILITY ADJUSTMENTS:** Adjust the Manholes and Gate Valve Boxes to the proposed finish grades under the appropriate bid items. Manholes and Gate Valve adjustments must be by methods approved by the City of Valley City. Include all work related to the adjustment of Manholes and Gate Valve Box in the price bid for "ADJUST GATE VALVE BOX" and "ADJUST MANHOLE".
- 722-P02**     **ADJUST UTILITY APPURTENANCE:** Adjust the existing TV Communications box to the proposed finish grade of the sidewalk. Include all work associated to adjust the utility in the bid item "ADJUST UTILITY APPURTENANCE".
- 748-P01**     **CURB & GUTTER-TYPE I:** The Engineer will determine the location and actual quantity of "CURB & GUTTER-TYPE I" used for patching. A quantity of 900 LF of "CURB & GUTTER-TYPE I" has been provided in the plans to use for patching.
- 750-P01**     **SIDEWALK CONCRETE:** Minimal grading and hydraulic mulch may be required adjacent to the locations designated for sidewalk and curb & gutter replacement. Blend the existing topsoil adjacent to the sidewalk and/or curb & gutter to eliminate any steep slopes or vertical edges. Any excess topsoil will become the property of the Contractor and must be removed from the project site. In these locations hydraulic mulch will be required. The seed mixture shall be as follows:  
  

Species	Pound Pure Live Seed/Acre
Kentucky Bluegrass	50
Perennial Rye Grass	20
Six-Week Fescue or Dural-hard Fescue	30
Annual Rye Grass	50
	150

  
Use hydraulic mulch material as specified in Sections 253.01 to 253.04 of the NDDOT Standard Specifications. Apply the hydraulic mulch after the seed is drilled into the topsoil. Apply fertilizer at a rate of 100 pounds per acre with a mixture of 5-10-5. Water the seed for three weeks minimum after placement in order to provide sufficient moisture for growth as determined by the Engineer. Include all costs for labor, equipment and materials necessary to complete the work in the price bid for "SIDEWALK CONCRETE" or "CURB AND GUTTER-TYPE I".
- 885-001**     **CAST IRON DETECTABLE WARNING PANELS:** If cast iron detectable warning panels are used, provide cast iron panels with a minimum thickness of 0.2 inches.

**Permits Required:**  
Non-Building Floodplain Permit – City of Valley City.  
Status: Has been obtained by the City of Valley City.

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/09/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

SU-2-990(051)055 & SU-2-990(052)056  
CITY OF VALLEY CITY, NORTH DAKOTA

**PLAN NOTES**

DRWN. BY ZV	CHKD. BY JL	PROJECT NO. 5415105
----------------	----------------	------------------------

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	8	1
		SU-2-990(052)056		

**ESTIMATE OF QUANTITIES**

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-2-990(052)056 2ND AVE NE	SU-2-990(051)055 6TH ST NE	TOTAL
103	0100	CONTRACT BOND	L SUM	0.4	0.6	1.0
202	0112	REMOVAL OF CONCRETE	SY	234	12	246
202	0130	REMOVAL OF CURB & GUTTER	LF	510	900	1,410
203	0138	COMMON EXCAVATION-SUBCUT	CY	100	350	450
302	0120	AGGREGATE BASE COURSE CL 5	TON	214	507	721
411	0105	MILLING PAVEMENT SURFACE	SY	4,451	8,744	13,195
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	561	1,201	1,762
430	1000	CORED SAMPLE	EA	2	7	9
702	0100	MOBILIZATION	L SUM	0.4	0.6	1.0
704	0100	FLAGGING	MHR	120	240	360
704	1000	TRAFFIC CONTROL SIGNS	UNIT	1,158	1,518	2,676
704	1052	TYPE III BARRICADE	EA	20	8	28
704	1067	TUBULAR MARKERS	EA	20	50	70
708	1540	INLET PROTECTION-SPECIAL	EA	8	21	29
722	6140	ADJUST GATE VALVE BOX	EA	4	12	16
722	6200	ADJUST MANHOLE	EA	4	12	16
722	6240	ADJUST UTILITY APPURTENANCE	EA	1	0	1
748	0140	CURB & GUTTER-TYPE I	LF	510	900	1,410
750	0100	SIDEWALK CONCRETE	SY	195	0	195
750	1000	DRIVEWAY CONCRETE	SY	39	12	51
750	2115	DETECTABLE WARNING PANELS	SF	148	0	148
754	0592	RESET SIGN PANEL	EA	5	0	5
754	0593	RESET SIGN SUPPORT	EA	4	0	4
762	0103	PVMT MK PAINTED-MESSAGE	SF	0	161	161
762	1106	PVMT MK PAINTED 6IN LINE	LF	636	873	1,509
762	1124	PVMT MK PAINTED 24IN LINE	LF	0	15	15
762	1140	PVMT MK PAINTED CURB TOP & FACE	LF	249	0	249

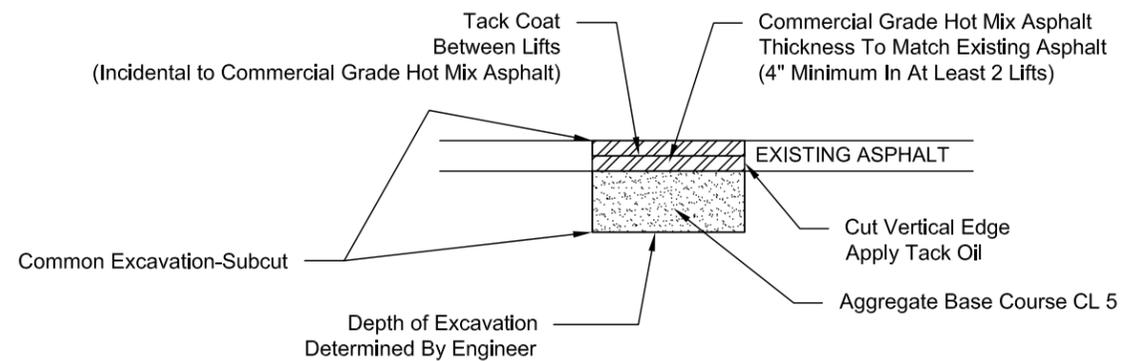
**BASIS OF ESTIMATE**

**Material**

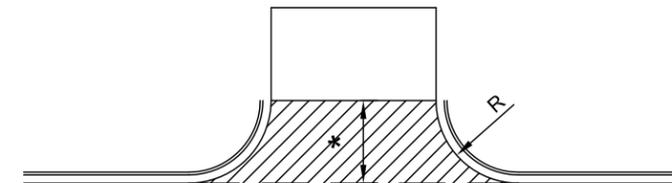
Aggregate Base Course CL 5 @ 1.875 Ton/CY  
Tack Coat @ 0.05 Gal/SY  
**(To be included in the price bid for Hot Mix Asphalt)**  
Commercial Grade Hot Mix Asphalt (FAA 42 or 43) @ 2.0 Ton/CY  
Asphalt Cement PG 58-28 @ 6.5% of Hot Mix Asphalt  
**(To be included in the price bid for Hot Mix Asphalt)**  
Cored Sample @ 1 Core/Block

<b>SU-2-990(051)055 &amp; SU-2-990(052)056</b> <small>CITY OF VALLEY CITY, NORTH DAKOTA</small>		
	<b>ESTIMATE OF QUANTITIES &amp; BASIS OF ESTIMATE</b>	
	<small>DRWN BY</small> ZV	<small>CHKD BY</small> JL

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	20	1
		SU-2-990(052)056		

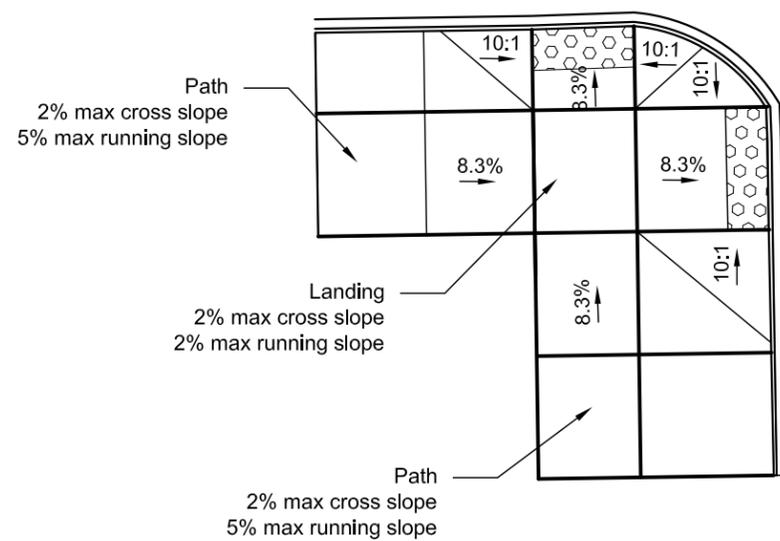


**SUBGRADE REPAIR**



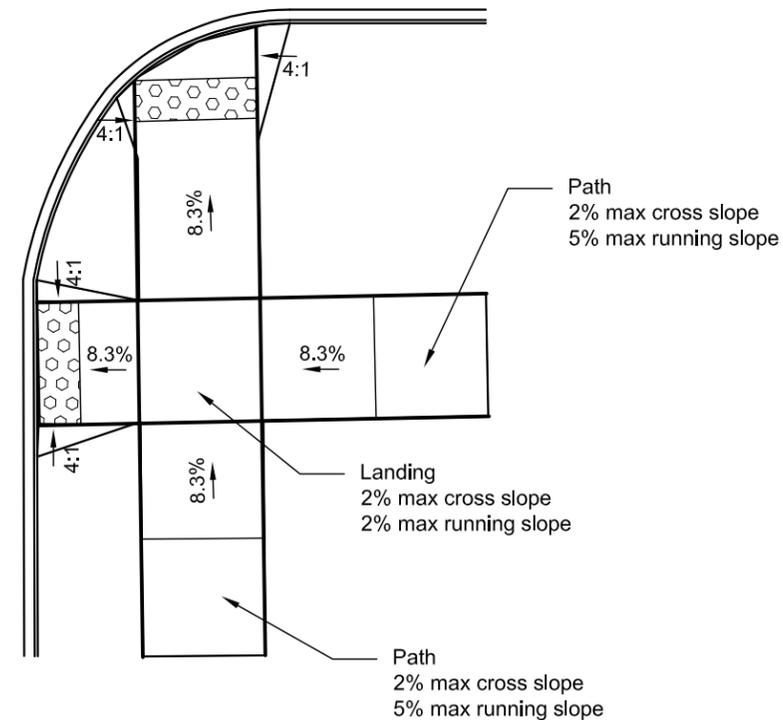
**INTERSECTION DETAIL**

HMA and Milling  
\* Variable Width and Radii



**Type 1B Perpendicular Ramp**

Typical Ramp



**Type 1A Perpendicular Ramp**

4th St NE & 2nd Ave NW - SW & SE Corner

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

SU-2-990(051)055 & SU-2-990(052)056  
CITY OF VALLEY CITY, NORTH DAKOTA

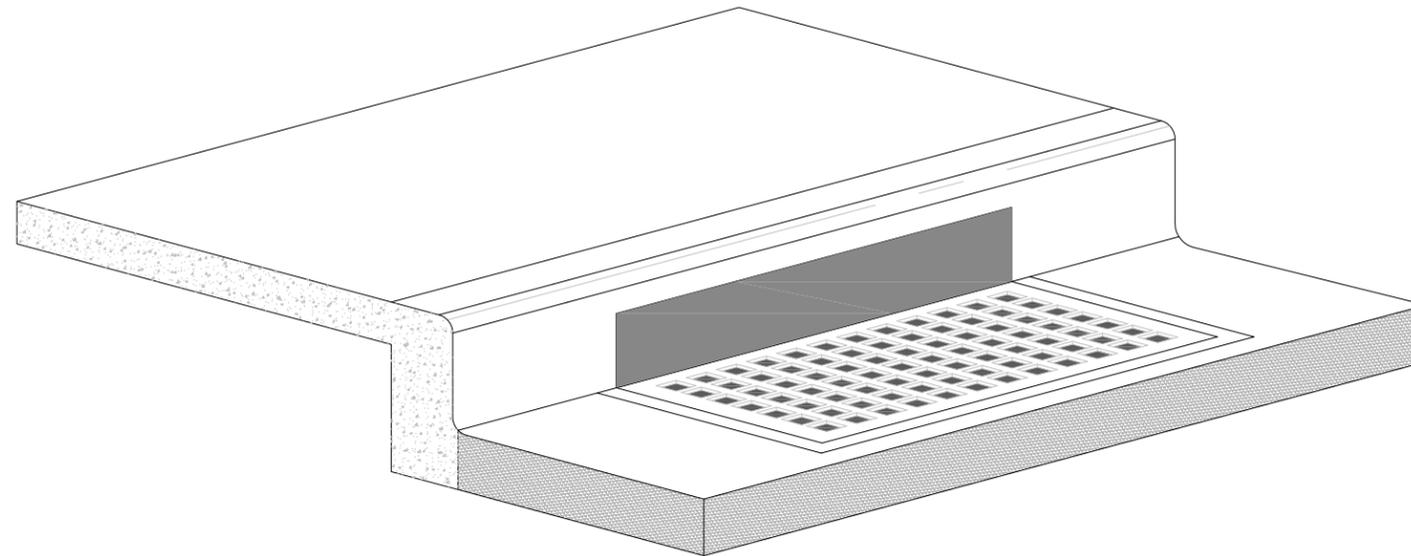


**GENERAL DETAILS**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

- Notes:
1. The Engineer will approve all form grades prior to placing concrete.
  2. Dimensions shown may vary from actual. Field adjust if maximum slope cannot meet dimensions given.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	20	2
		SU-2-990(052)056		



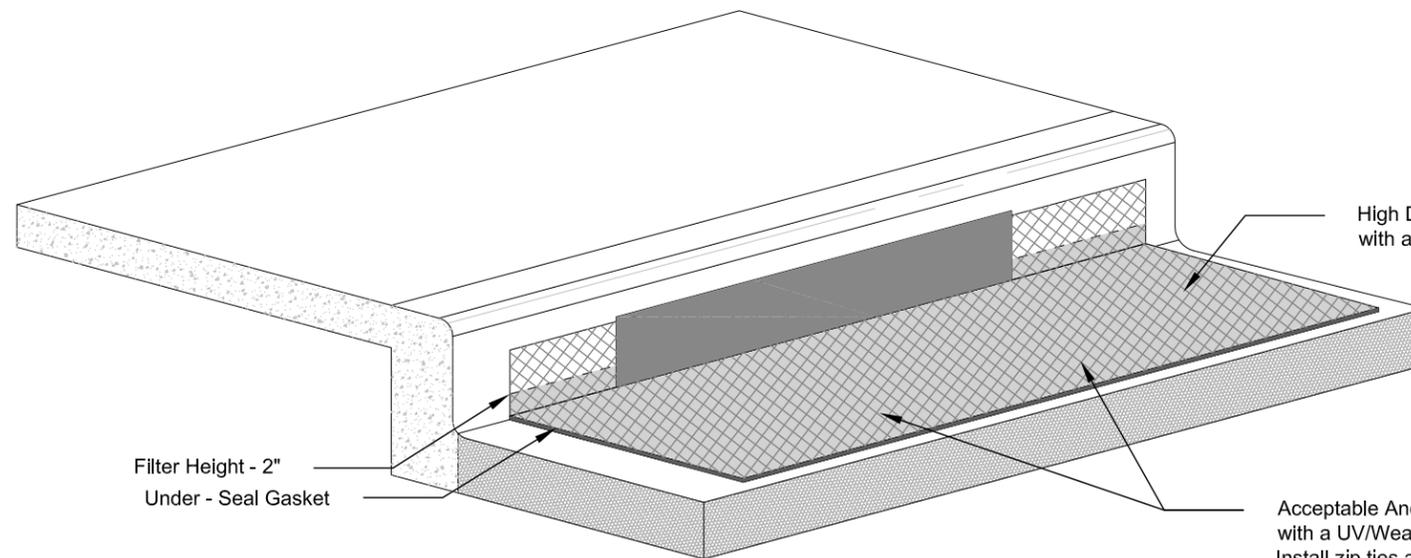
Inlet Protection Device

Installation Notes:

1. Place device tightly against drain opening and cover entire grate. The device should extend at least 2 inches past grate toward street.
2. Overlap the segments at longer openings.
3. Anchor the device so that water cannot flow behind it.

General Notes:

1. Maintain or replace the Inlet Protection as required.
2. Manufactured alternatives may be substituted at the direction of the Engineer.
3. When removing or maintaining inlet protection, care will be taken so that fabric does not fall into the inlet. Remove any material falling into the inlet immediately.
4. Inlet protection is to be used (and reused) as needed to prevent material from entering inlets as the work progresses through the project.
5. Include the cost for removing inlet protection in the unit price bid for "INLET PROTECTION-SPECIAL"



High Density Polyethylene (HDPE) high flow jacket filter (8,000 openings per SY) with an intergrated um (micron meter) fine filter particle mesh.

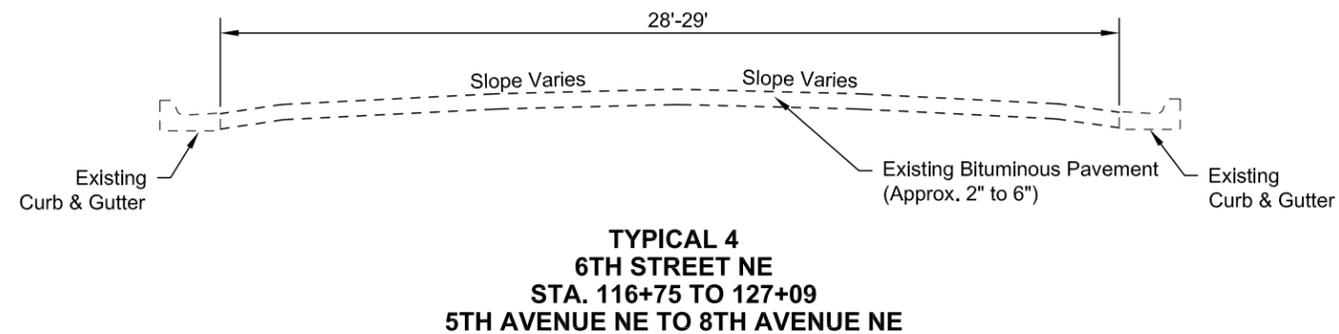
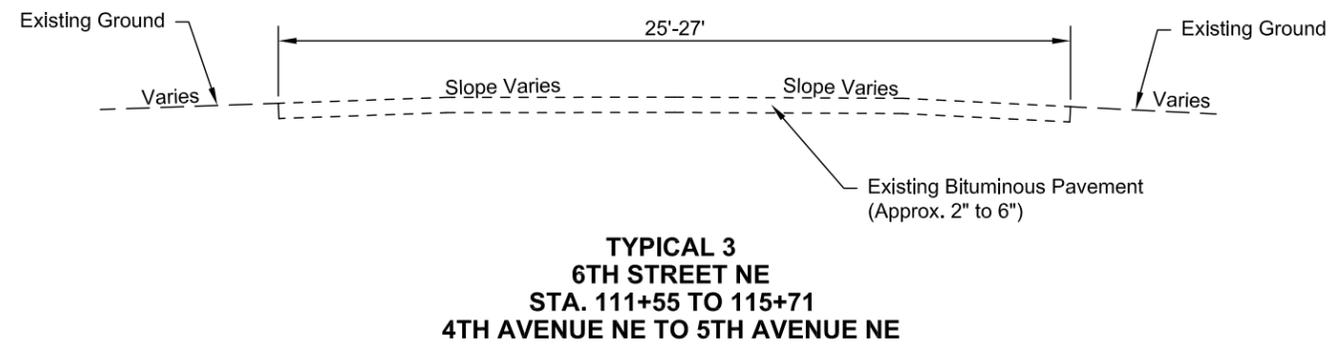
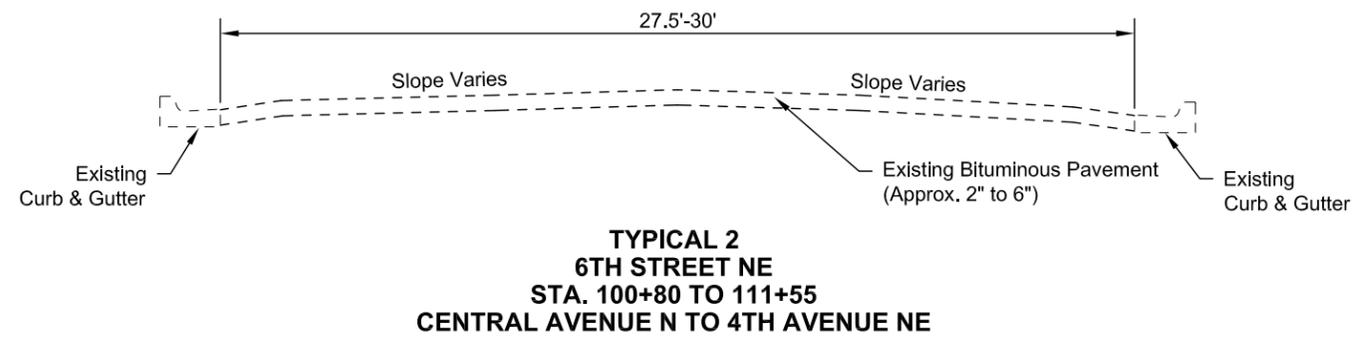
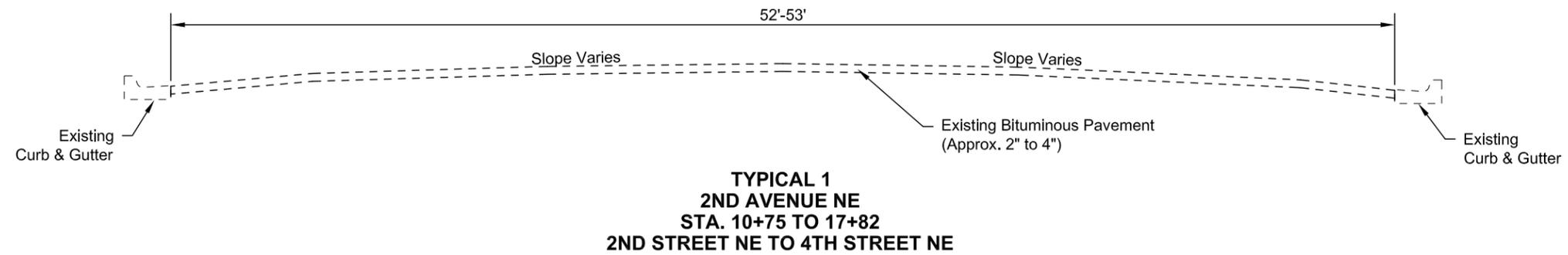
Filter Height - 2"  
Under - Seal Gasket

Acceptable Anchor Method: Fasten to inlet casting grate with a UV/Weather Resistant Plastic Cable Zip Ties - 16 to 24 in. Install zip ties at each corner of the inlet near the perimeter and two additional zip ties near the middle of the casting. Punch hole through filter and run cable tie downward around grate and back up to fasten.

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

<b>SU-2-990(051)055 &amp; SU-2-990(052)056</b> <small>CITY OF VALLEY CITY, NORTH DAKOTA</small>		
	<b>INLET PROTECTION DEVICE DETAIL</b>	
	DRWN. BY ZV	CHKD BY JL

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	30	1
		SU-2-990(052)056		



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

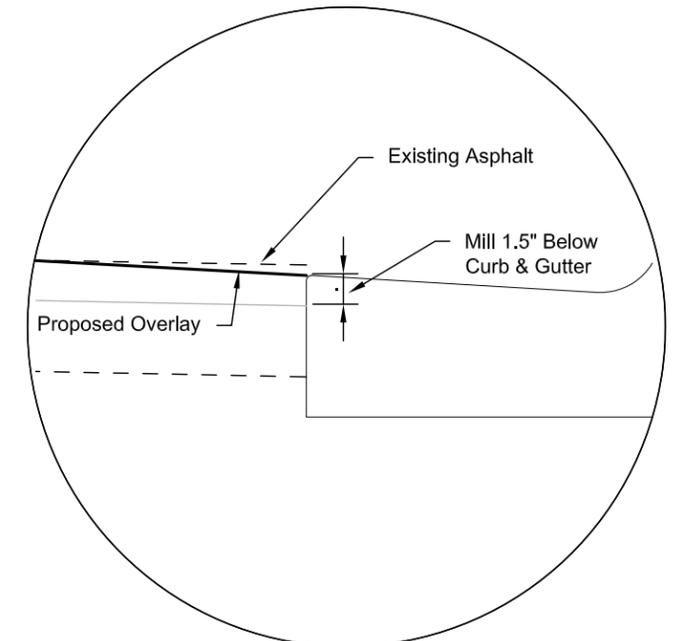
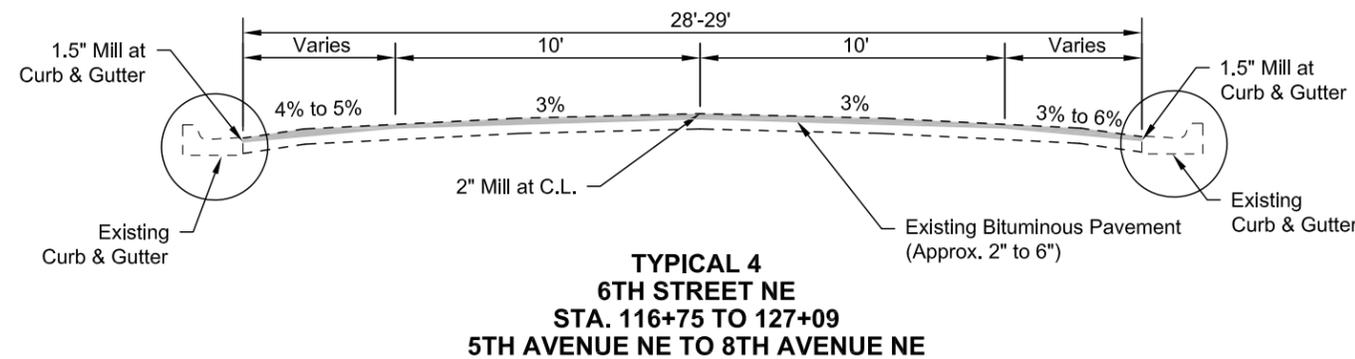
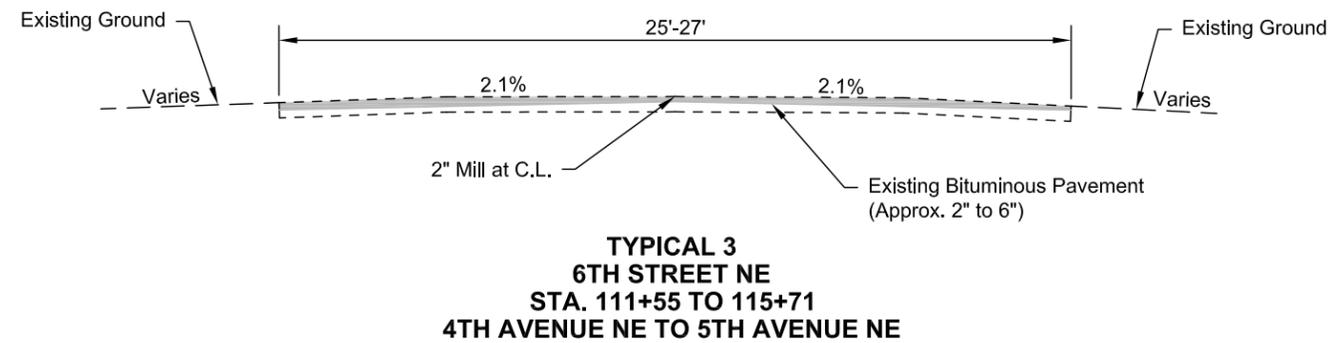
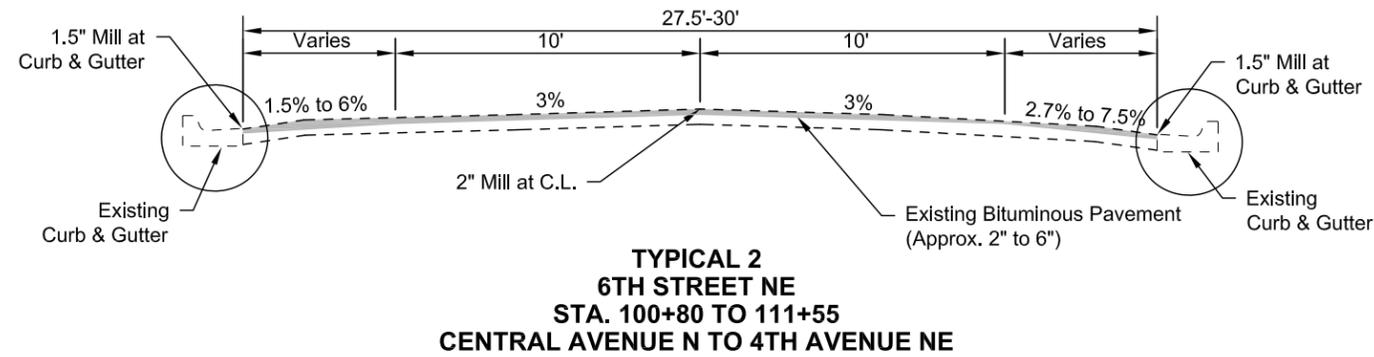
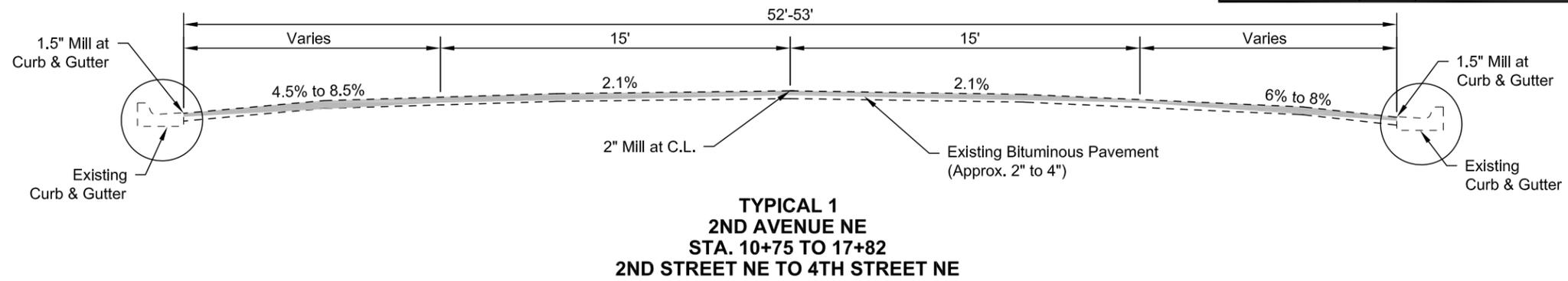
**SU-2-990(051)055 & SU-2-990(052)056**  
 CITY OF VALLEY CITY, NORTH DAKOTA



**EXISTING  
 TYPICAL SECTIONS**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	30	2
	SU-2-990(052)056		



Note: Existing Asphalt may be raised at curb edge. Milling depth will vary.

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

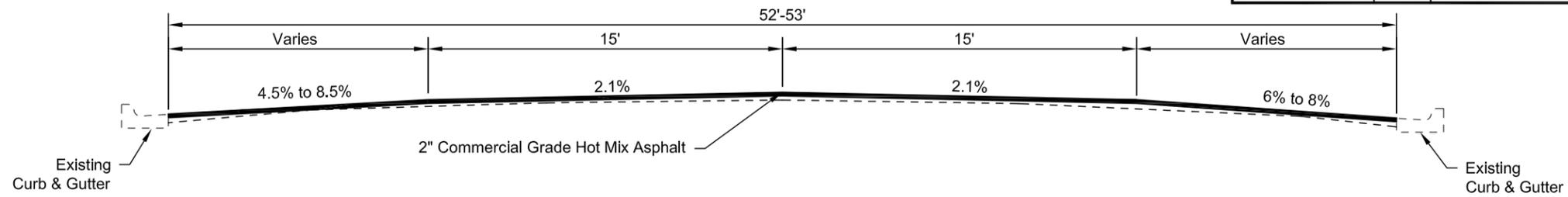
**SU-2-990(051)055 & SU-2-990(052)056**  
 CITY OF VALLEY CITY, NORTH DAKOTA



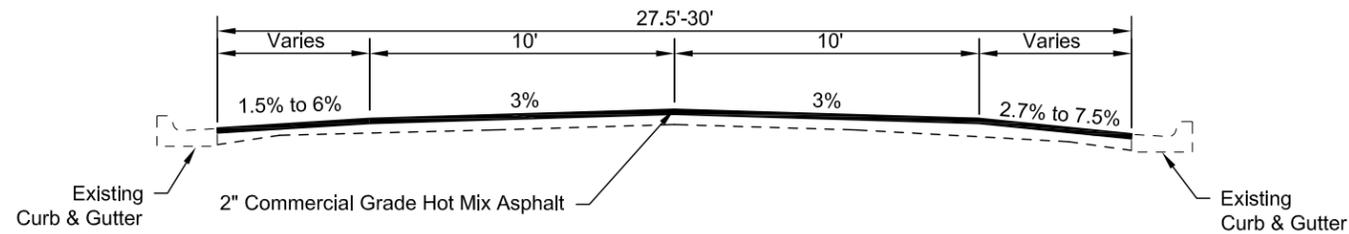
**MILLING  
 TYPICAL SECTIONS**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

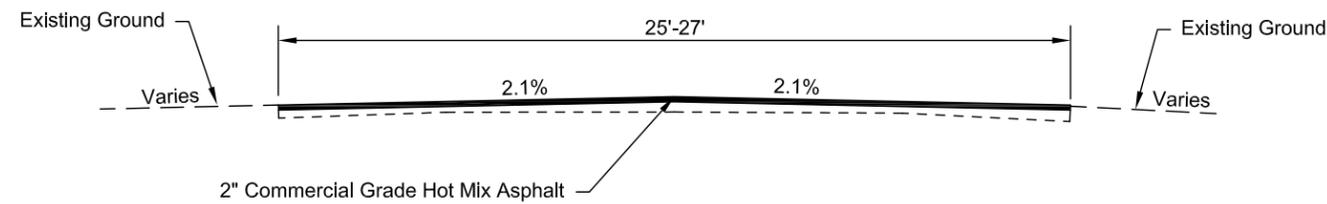
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	30	3
	SU-2-990(052)056		



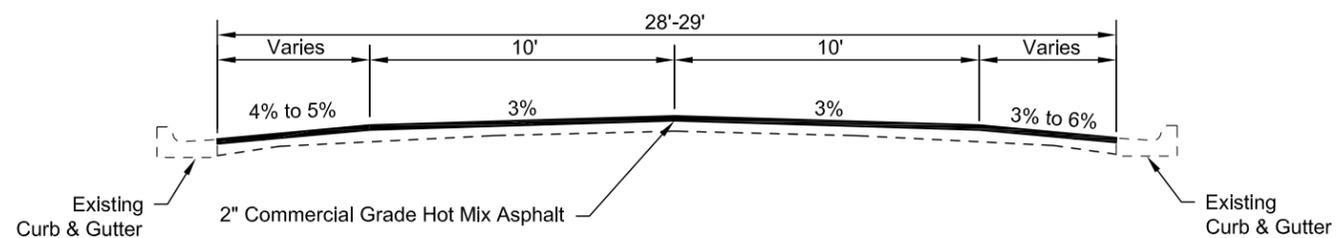
**TYPICAL 1**  
**2ND AVENUE NE**  
**STA. 10+75 TO 17+82**  
**2ND STREET NE TO 4TH STREET NE**



**TYPICAL 2**  
**6TH STREET NE**  
**STA. 100+80 TO 111+55**  
**CENTRAL AVENUE N TO 4TH AVENUE NE**



**TYPICAL 3**  
**6TH STREET NE**  
**STA. 111+55 TO 115+71**  
**4TH AVENUE NE TO 5TH AVENUE NE**



**TYPICAL 4**  
**6TH STREET NE**  
**STA. 116+75 TO 127+09**  
**5TH AVENUE NE TO 8TH AVENUE NE**

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

**SU-2-990(051)055 & SU-2-990(052)056**  
 CITY OF VALLEY CITY, NORTH DAKOTA



**PROPOSED  
 TYPICAL SECTIONS**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(052)056	40	1

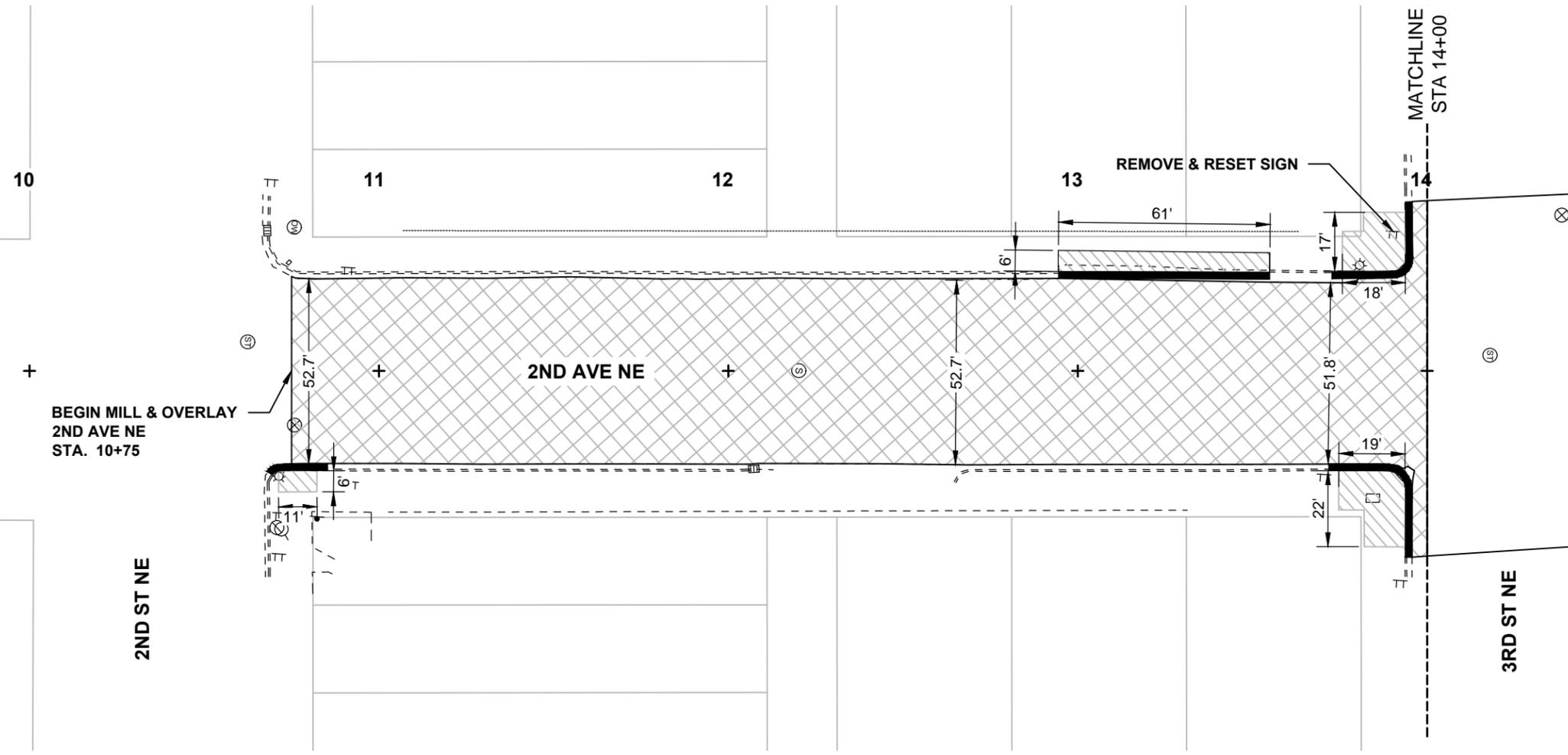
MILLING PAVEMENT SURFACE  
STA. 10+75 TO 14+00 1,931 SY

REMOVAL OF CONCRETE  
 STA. 10+71 TO 10+82 RT 7 SY  
 STA. 12+94 TO 13+55 LT 39 SY  
 STA. 13+75 TO 13+94 LT 30 SY  
 STA. 13+75 TO 13+94 RT 37 SY  
 113 SY

REMOVAL OF CURB & GUTTER  
 STA. 10+67 TO 10+85 RT 17 LF  
 STA. 12+94 TO 13+55 LT 61 LF  
 STA. 13+72 TO 13+95 LT 41 LF  
 STA. 13+72 TO 13+95 RT 46 LF  
 165 LF

RESET SIGN PANEL  
STA. 13+90 LT 1 EA

RESET SIGN SUPPORT  
STA. 13+90 LT 1 EA



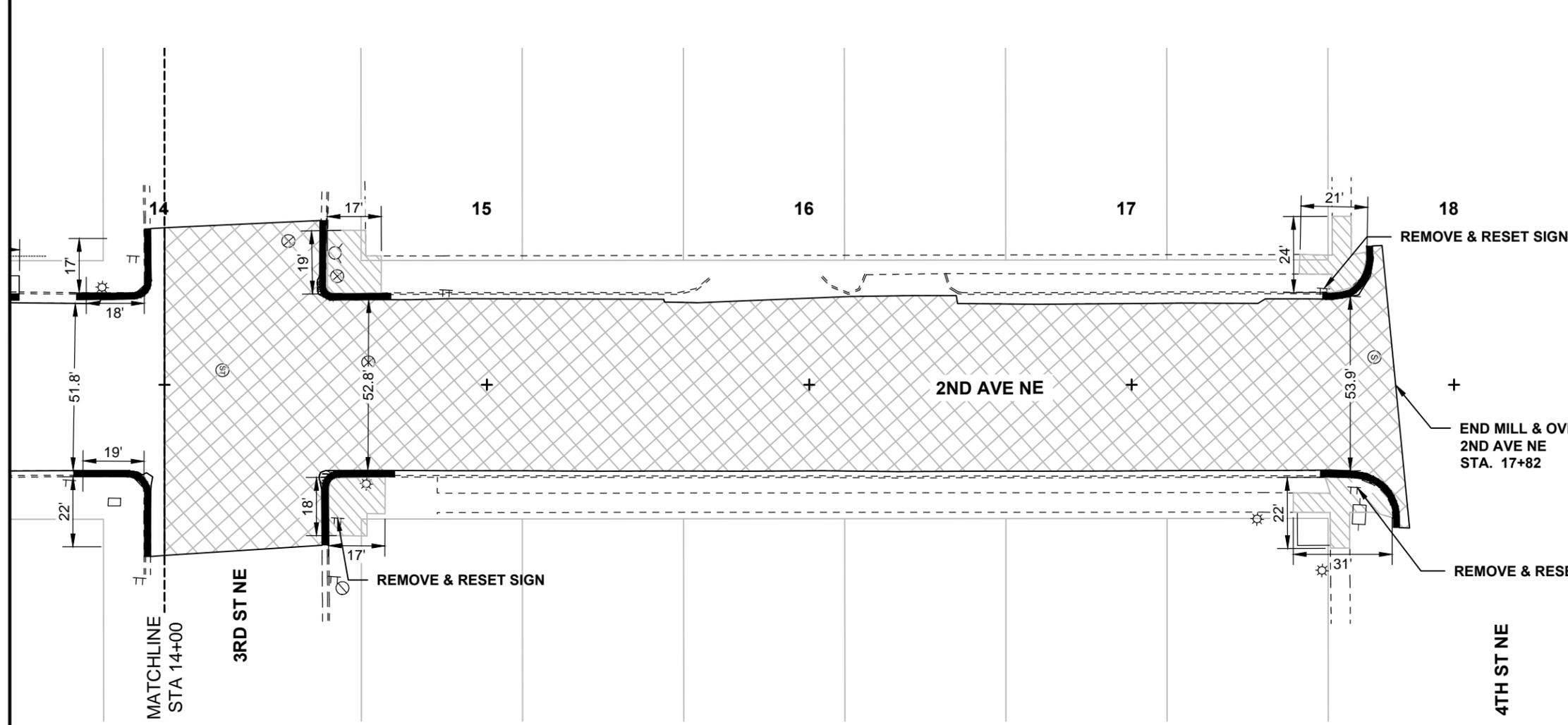
BEGIN MILL & OVERLAY  
2ND AVE NE  
STA. 10+75

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

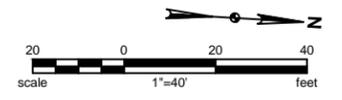
<b>SU-2-990(052)056</b> CITY OF VALLEY CITY, NORTH DAKOTA		
	<b>REMOVALS</b> <b>STA. 10+75 TO 14+00</b>	
	<small>DRWN. BY</small> ZV	<small>CHKD BY</small> JL

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(052)056	40	2



<b>MILLING PAVEMENT SURFACE</b>	
STA. 14+00 TO 17+82	2,520 SY
<b>REMOVAL OF CONCRETE</b>	
STA. 14+51 TO 14+67 LT	32 SY
STA. 14+51 TO 14+68 RT	31 SY
STA. 17+50 TO 17+81 RT	32 SY
STA. 17+52 TO 17+73 LT	26 SY
	<u>121 SY</u>
<b>REMOVAL OF CURB &amp; GUTTER</b>	
STA. 14+49 TO 14+70 LT	44 LF
STA. 14+50 TO 14+71 RT	42 LF
STA. 17+59 TO 17+74 LT	25 LF
STA. 17+59 TO 17+82 RT	34 LF
	<u>145 LF</u>
<b>RESET SIGN PANEL</b>	
STA. 14+54 RT	1 EA
STA. 17+60 LT	2 EA
STA. 17+69 RT	1 EA
	<u>4 EA</u>
<b>RESET SIGN SUPPORT</b>	
STA. 14+54 RT	1 EA
STA. 17+60 LT	1 EA
STA. 17+69 RT	1 EA
	<u>3 EA</u>

	MILLING PAVEMENT SURFACE
	REMOVAL OF CONCRETE
	REMOVAL OF CURB & GUTTER

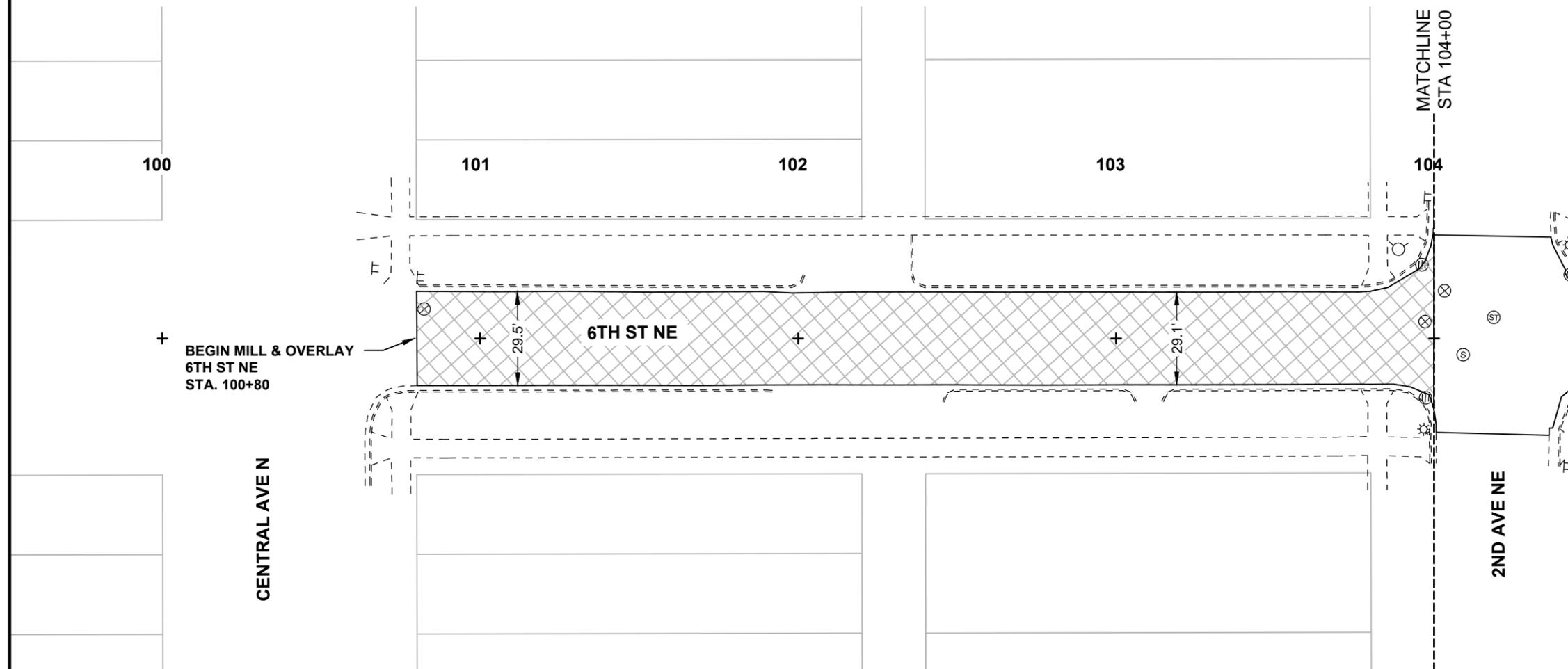


THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(052)056</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>REMOVALS</b> <b>STA. 14+00 TO 17+82</b>					
	<table border="1"> <tr> <td>DRWN. BY</td> <td>CHKD BY</td> <td>PROJECT NO.</td> </tr> <tr> <td>ZV</td> <td>JL</td> <td>5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	3

MILLING PAVEMENT SURFACE  
 STA. 100+80 TO 104+00 1,052 SY

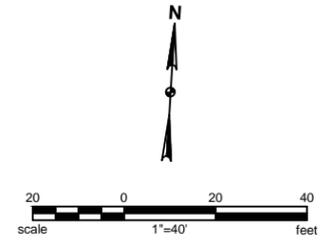


+ BEGIN MILL & OVERLAY  
 6TH ST NE  
 STA. 100+80

CENTRAL AVE N

2ND AVE NE

MATCHLINE  
 STA 104+00



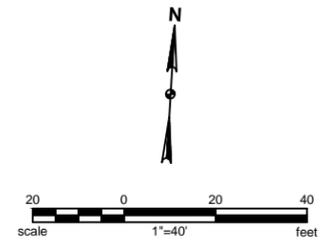
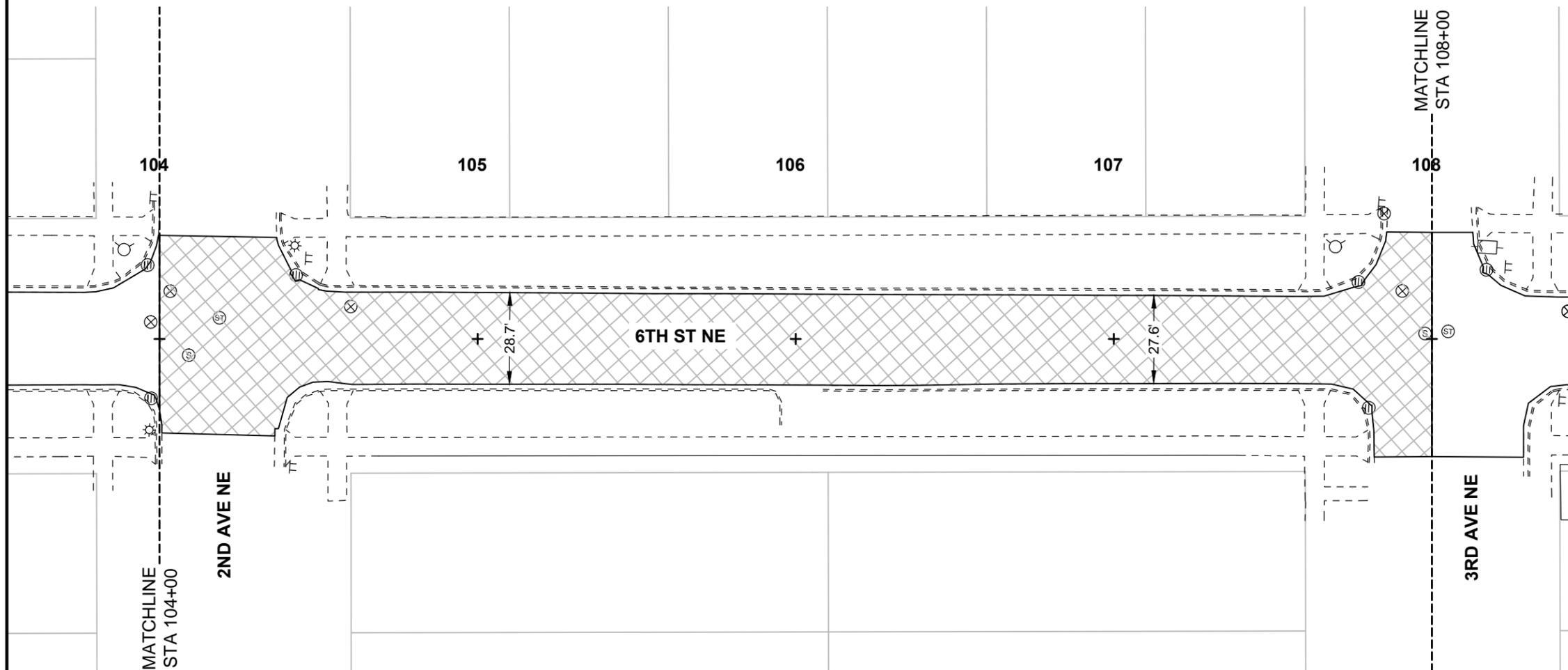
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

- MILLING PAVEMENT SURFACE
- REMOVAL OF CONCRETE
- REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>REMOVALS</b> <b>STA. 100+80 TO 104+00</b>					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">DRWN. BY</td> <td style="font-size: 8px;">CHKD BY</td> <td style="font-size: 8px;">PROJECT NO.</td> </tr> <tr> <td style="font-size: 8px;">ZV</td> <td style="font-size: 8px;">JL</td> <td style="font-size: 8px;">5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	4

MILLING PAVEMENT SURFACE  
 STA. 104+00 TO 108+00 1,498 SY



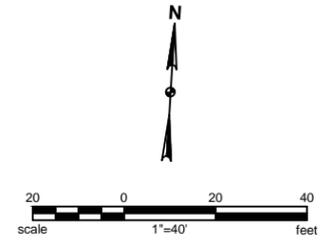
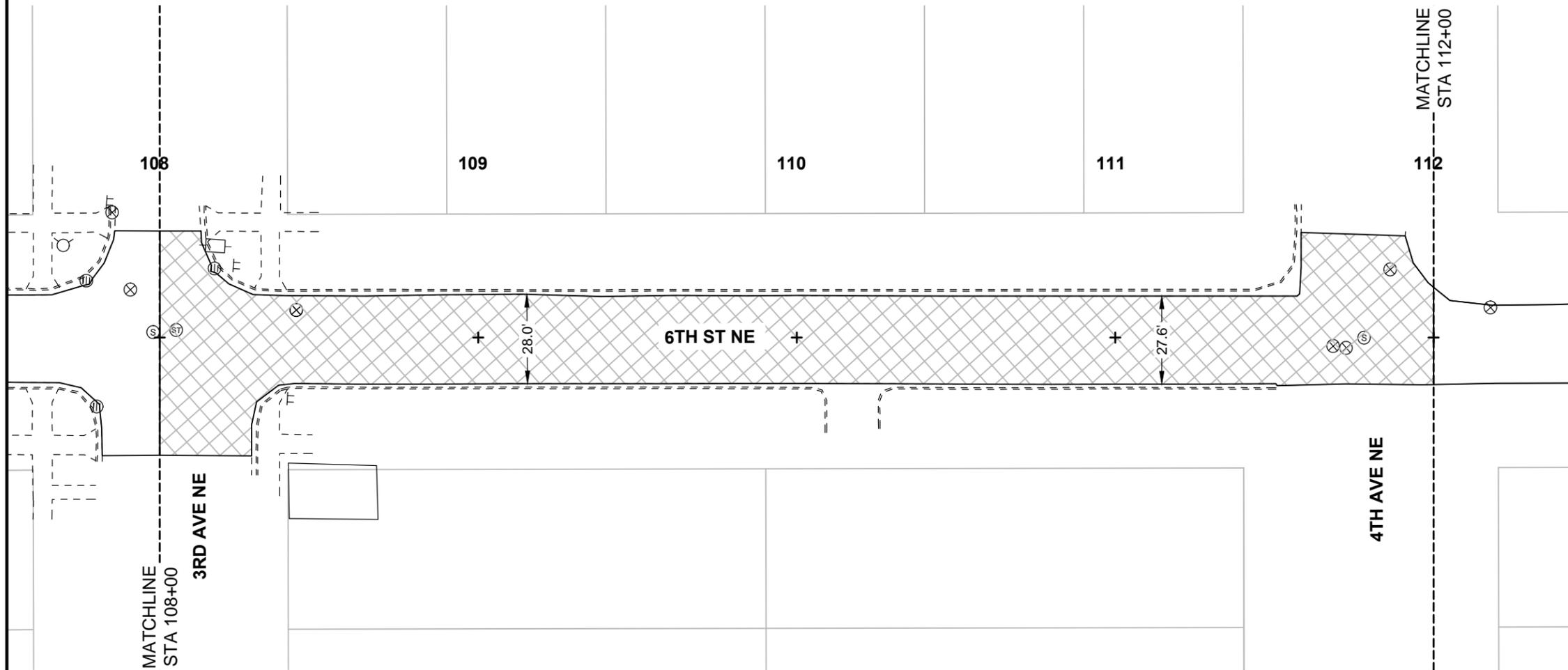
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA			
	<b>REMOVALS</b> <b>STA. 104+00 TO 108+00</b>		
	<table border="1"> <tr> <td>DRWN. BY ZV</td> <td>CHKD BY JL</td> <td>PROJECT NO. 5415105</td> </tr> </table>	DRWN. BY ZV	CHKD BY JL
DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105	

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	5

MILLING PAVEMENT SURFACE  
 STA. 108+00 TO 112+00 1,423 SY



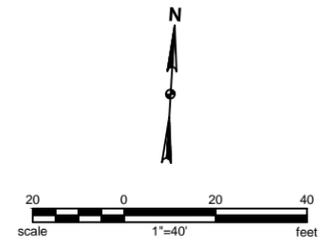
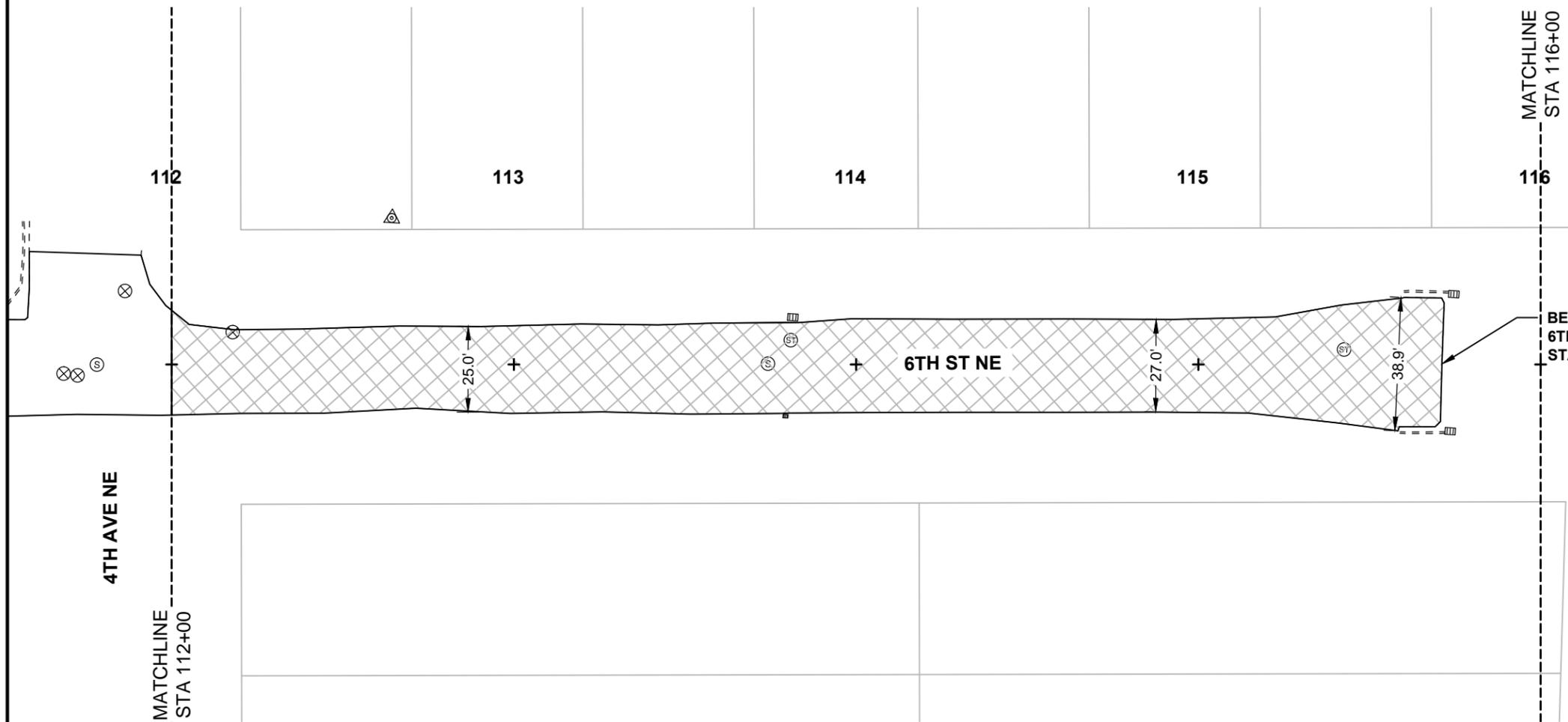
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA		
		
<b>REMOVALS</b> <b>STA. 108+00 TO 112+00</b>		
DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	6

MILLING PAVEMENT SURFACE  
 STA. 112+00 TO 115+71 1,127 SY



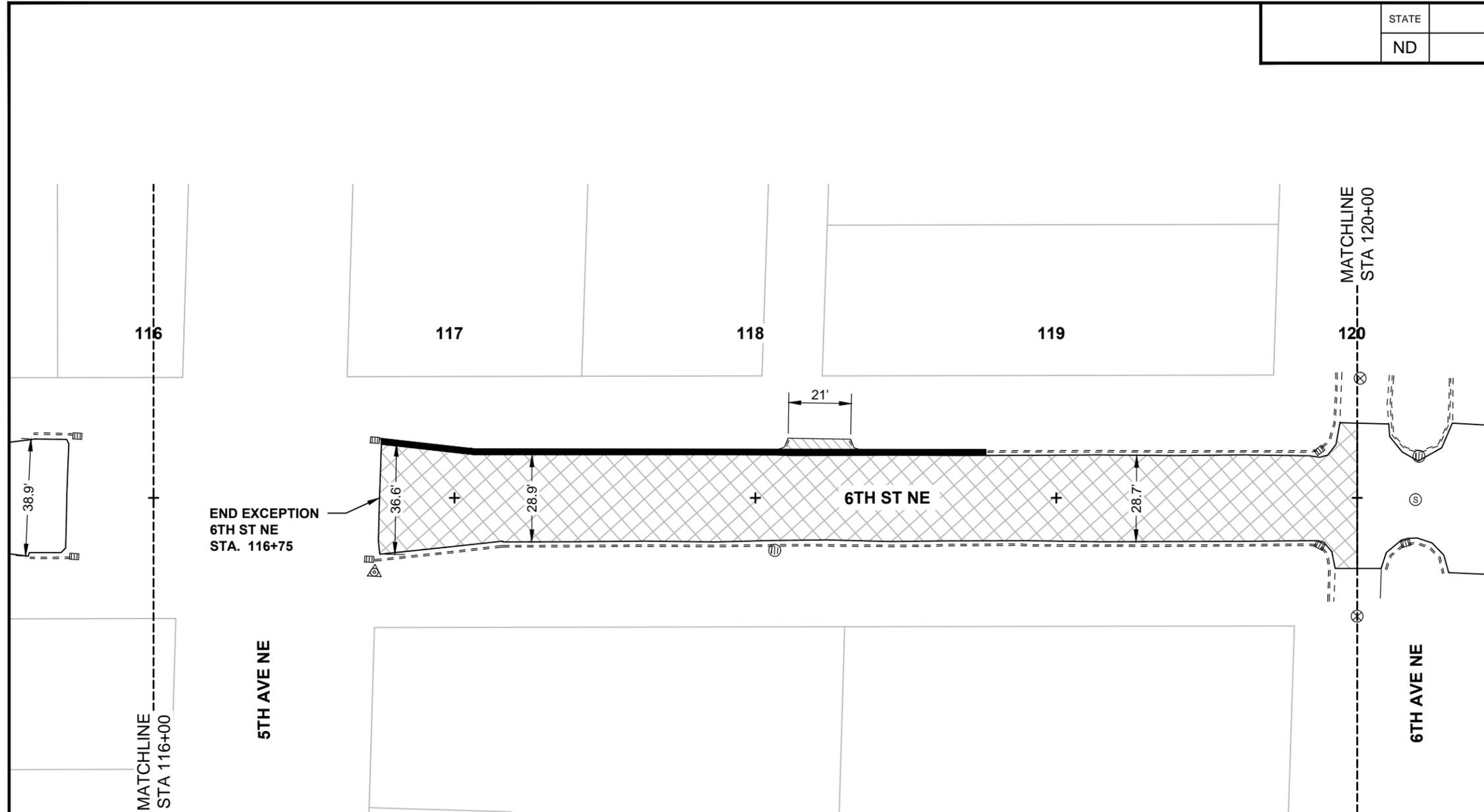
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA		
	<b>REMOVALS</b> <b>STA. 112+00 TO 115+71</b>	
	DRWN. BY ZV	CHKD BY JL

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	7

REMOVAL OF CONCRETE	
STA. 118+08 TO 118+35 LT	12 SY
REMOVAL OF CURB & GUTTER	
STA. 116+75 TO 118+75 LT	200 LF
MILLING PAVEMENT SURFACE	
STA. 116+75 TO 120+00	1,065 SY



END EXCEPTION  
6TH ST NE  
STA. 116+75

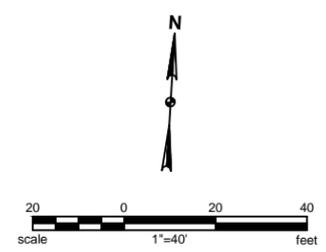
MATCHLINE  
STA 116+00

5TH AVE NE

6TH ST NE

6TH AVE NE

MATCHLINE  
STA 120+00



THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

**SU-2-990(051)055**  
CITY OF VALLEY CITY, NORTH DAKOTA

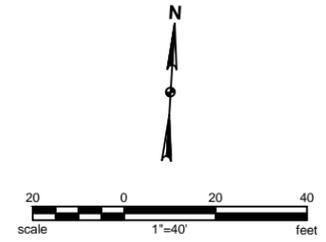
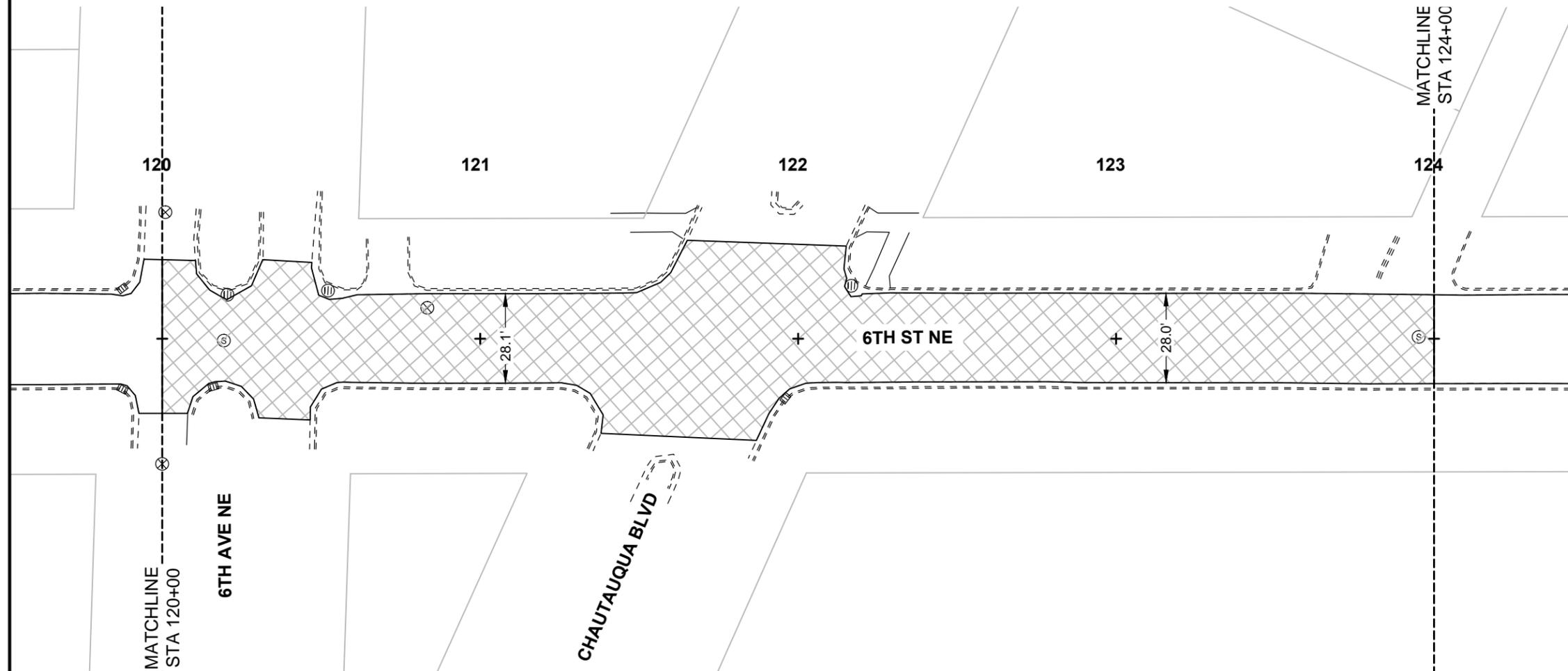


**REMOVALS**  
STA. 116+75 TO 120+00

DRWN. BY	CHKD BY	PROJECT NO.
ZV	JL	5415105

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	8

MILLING PAVEMENT SURFACE  
 STA. 120+00 TO 124+00 1,516 SY



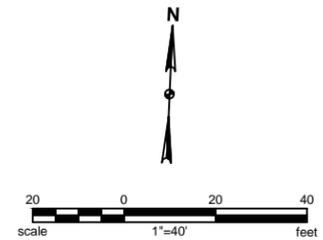
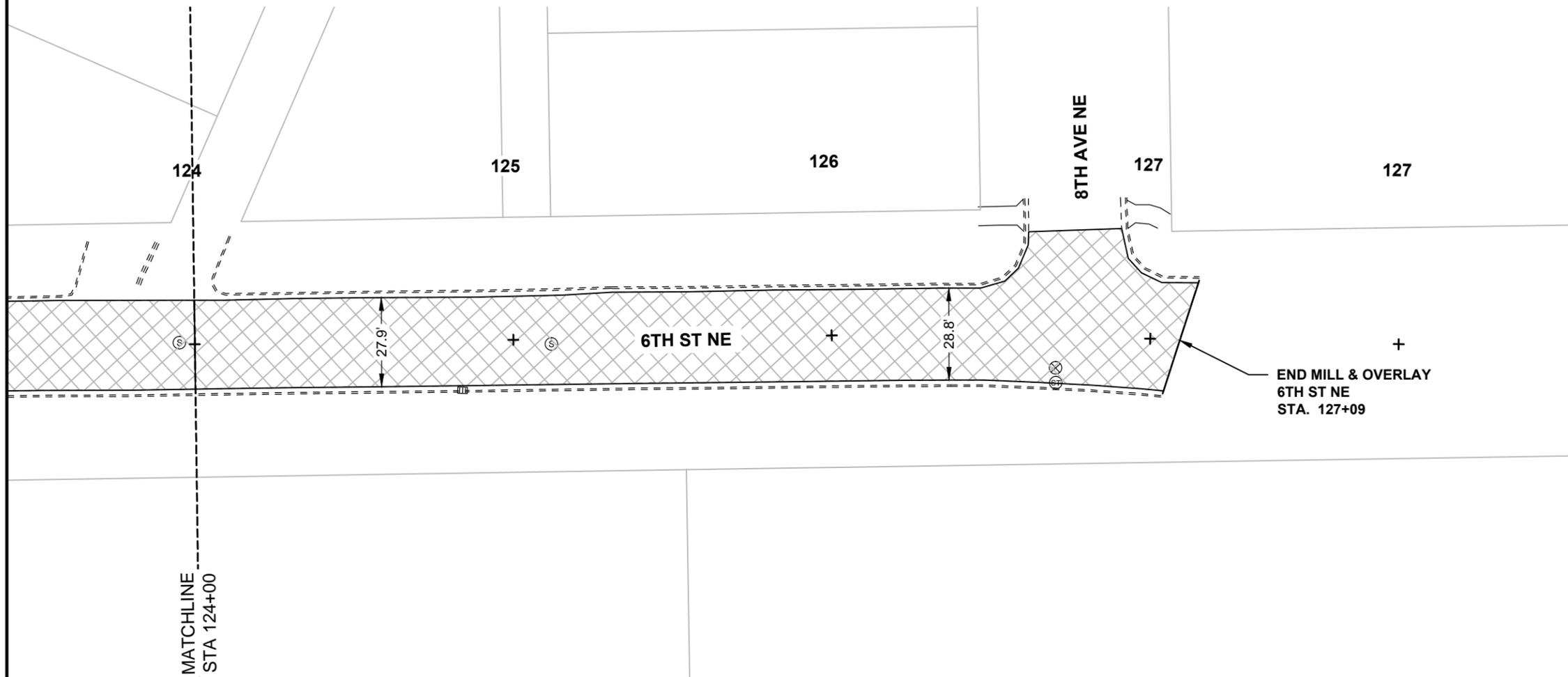
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA		
	<b>REMOVALS</b> <b>STA. 120+00 TO 124+00</b>	
	<small>DRWN. BY</small> ZV	<small>CHKD BY</small> JL

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	40	9

MILLING PAVEMENT SURFACE  
 STA. 124+00 TO 127+09 1,063 SY

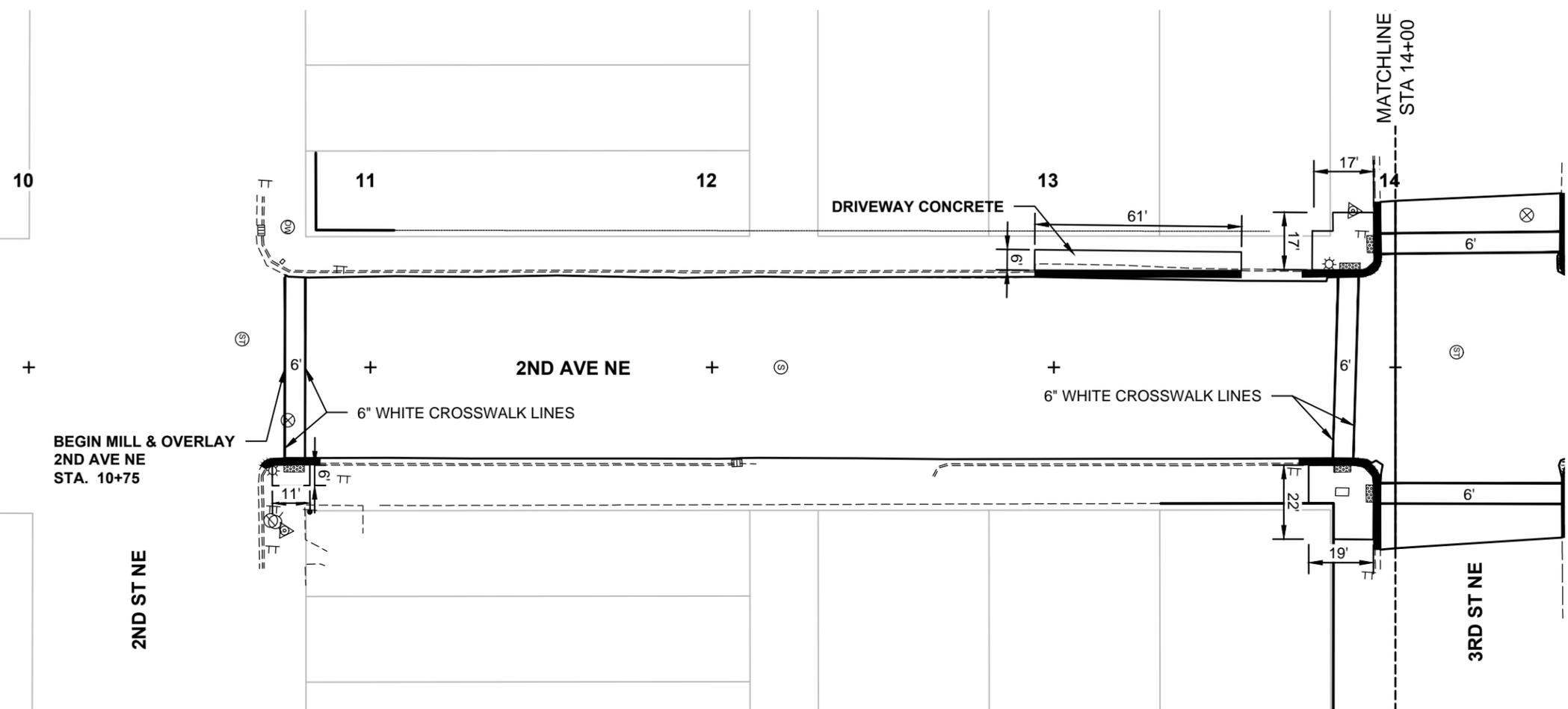


THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

-  MILLING PAVEMENT SURFACE
-  REMOVAL OF CONCRETE
-  REMOVAL OF CURB & GUTTER

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA			
	<b>REMOVALS</b> <b>STA. 124+00 TO 127+09</b>		
	<table border="1"> <tr> <td>DRWN. BY ZV</td> <td>CHKD BY JL</td> <td>PROJECT NO. 5415105</td> </tr> </table>	DRWN. BY ZV	CHKD BY JL
DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105	

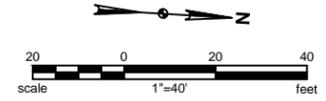
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(052)056	90	1



BEGIN MILL & OVERLAY  
2ND AVE NE  
STA. 10+75

2ND ST NE

3RD ST NE



AGGREGATE BASE COURSE CL 5	
STA. 10+75 TO 14+00	39 TON

COMMERCIAL GRADE HOT MIX ASPHALT	
STA. 10+75 TO 14+00	215 TON

INLET PROTECTION-SPECIAL	
STA. 10+68 LT	1 EA
STA. 12+07 RT	1 EA
STA. 13+93 RT	1 EA
STA. 13+93 LT	1 EA
	4 EA

ADJUST GATE VALVE BOX	
STA. 10+76 RT	1 EA

ADJUST MANHOLE	
STA. 12+20 CL	1 EA

ADJUST UTILITY APPURTENANCE	
STA. 13+83 RT	1 EA

CURB & GUTTER - TYPE I	
STA. 10+67 TO 10+85 RT	17 LF
STA. 12+94 TO 13+55 LT	61 LF
STA. 13+72 TO 13+95 LT	41 LF
STA. 13+72 TO 13+95 RT	46 LF
	165 LF

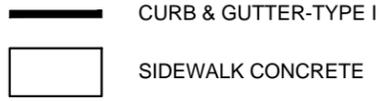
SIDEWALK CONCRETE	
STA. 10+71 TO 10+82 RT	7 SY
STA. 13+75 TO 13+94 LT	30 SY
STA. 13+75 TO 13+94 RT	37 SY
	74 SY

DRIVEWAY CONCRETE	
STA. 12+94 TO 13+55 LT	39 SY

DETECTABLE WARNING PANELS	
STA. 10+78 RT	12 SF
STA. 13+86 RT	10 SF
STA. 13+86 LT	12 SF
STA. 13+93 LT	10 SF
STA. 13+93 RT	10 SF
	54 SF

PVMT MK PAINTED 6IN LINE	
STA. 10+75 TO 14+00	212 LF

PVMT MK PAINTED CURB TOP & FACE	
STA. 10+75 TO 14+00	104 LF



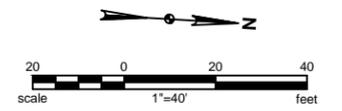
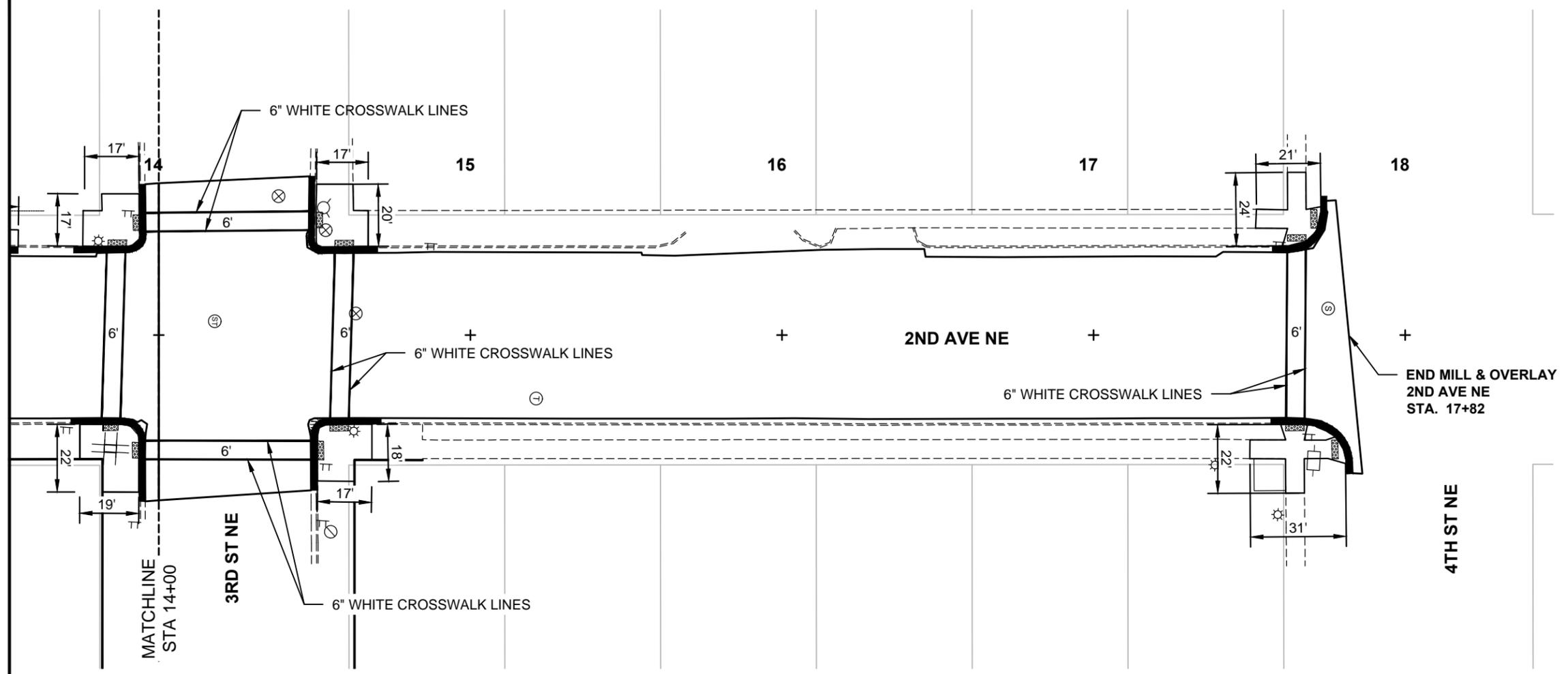
THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

**SU-2-990(052)056**  
CITY OF VALLEY CITY, NORTH DAKOTA



**PAVING LAYOUT**  
STA. 10+75 TO 14+00

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------



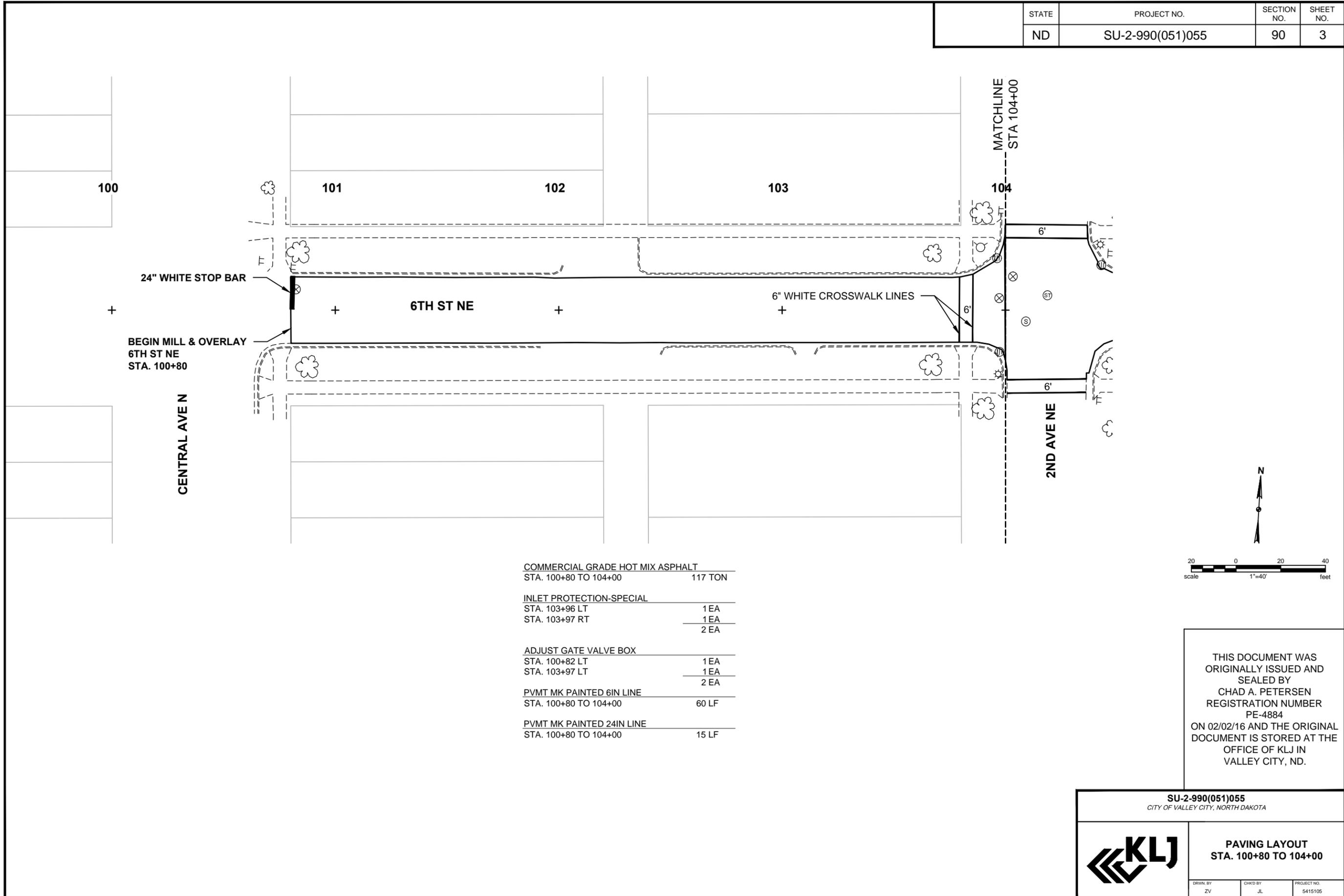
<u>AGGREGATE BASE COURSE CL 5</u> STA. 14+00 TO 17+82                      35 TON  <u>COMMERCIAL GRADE HOT MIX ASPHALT</u> STA. 14+00 TO 17+82                      280 TON  <u>INLET PROTECTION-SPECIAL</u> STA. 14+48 LT                                1 EA STA. 14+50 RT                                1 EA STA. 17+71 LT                                1 EA STA. 17+73 RT                                1 EA _____ 4 EA  <u>ADJUST GATE VALVE BOX</u> STA. 14+38 LT                                1 EA STA. 14+54 LT                                1 EA STA. 14+63 LT                                1 EA _____ 3 EA  <u>ADJUST MANHOLE</u> STA. 14+18 LT                                1 EA STA. 15+21 RT                                1 EA STA. 17+76 LT                                1 EA _____ 3 EA	<u>CURB &amp; GUTTER - TYPE I</u> STA. 14+49 TO 14+70 LT                      44 LF STA. 14+50 TO 14+71 RT                      42 LF STA. 17+59 TO 17+74 LT                      25 LF STA. 17+59 TO 17+82 RT                      34 LF _____ 145 LF  <u>SIDEWALK CONCRETE</u> STA. 14+51 TO 14+67 LT                      32 SY STA. 14+51 TO 14+69 RT                      31 SY STA. 17+50 TO 17+81 RT                      32 SY STA. 17+52 TO 17+73 LT                      26 SY _____ 121 SY  <u>DETECTABLE WARNING PANELS</u> STA. 14+52 RT                                12 SF STA. 14+52 LT                                10 SF STA. 14+58 RT                                12 SF STA. 14+59 LT                                12 SF STA. 17+64 LT                                12 SF STA. 17+64 RT                                12 SF STA. 17+71 LT                                12 SF STA. 17+77 RT                                12 SF _____ 94 SF	<u>PVMT MK PAINTED 6IN LINE</u> STA. 14+00 TO 17+82                      424 LF  <u>PVMT MK PAINTED CURB TOP &amp; FACE</u> STA. 14+00 TO 17+82                      145 LF
---	--	---

CURB & GUTTER-TYPE I  
 SIDEWALK CONCRETE

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(052)056</b> CITY OF VALLEY CITY, NORTH DAKOTA	
	<b>PAVING LAYOUT</b> <b>STA. 14+00 TO 17+82</b>
DRWN. BY ZV	CHKD BY JL
PROJECT NO. 5415105	

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	3



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

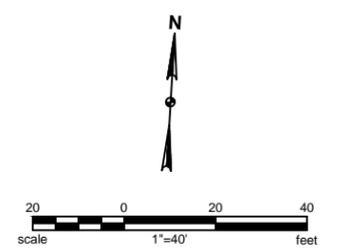
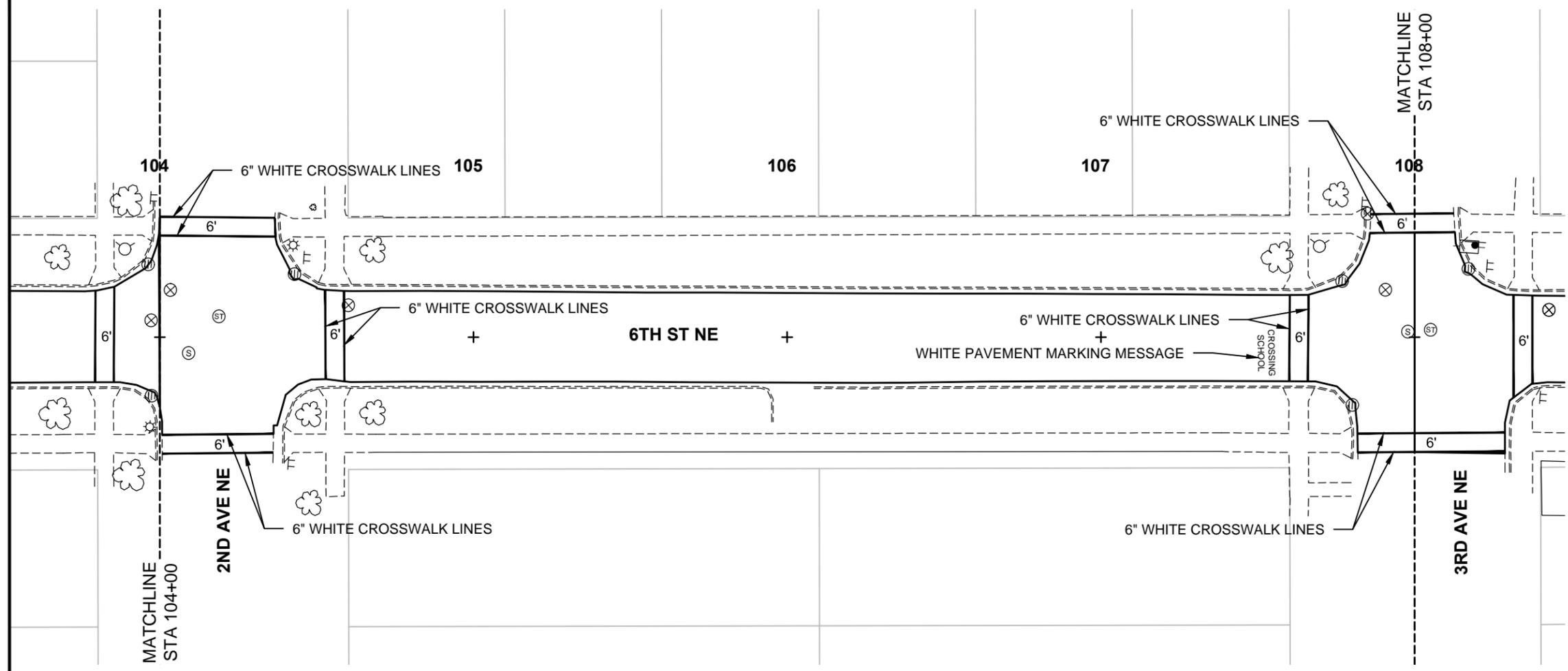
**SU-2-990(051)055**  
 CITY OF VALLEY CITY, NORTH DAKOTA



**PAVING LAYOUT**  
**STA. 100+80 TO 104+00**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	4



<b>COMMERCIAL GRADE HOT MIX ASPHALT</b>	
STA. 104+00 TO 108+00	166 TON
<b>INLET PROTECTION-SPECIAL</b>	
STA. 104+43 LT	1 EA
STA. 107+77 LT	1 EA
STA. 107+80 RT	1 EA
	3 EA
<b>ADJUST GATE VALVE BOX</b>	
STA. 104+03 LT	1 EA
STA. 104+60 LT	1 EA
STA. 107+91 LT	1 EA
	3 EA
<b>ADJUST MANHOLE</b>	
STA. 104+09 RT	1 EA
STA. 104+19 LT	1 EA
STA. 107+98 LT	1 EA
	3 EA
<b>PVMT MK PAINTED-MESSAGE</b>	
STA. 104+00 TO 108+00	80.5 SF
<b>PVMT MK PAINTED 6IN LINE</b>	
STA. 104+00 TO 108+00	322 LF

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

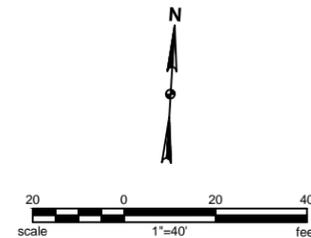
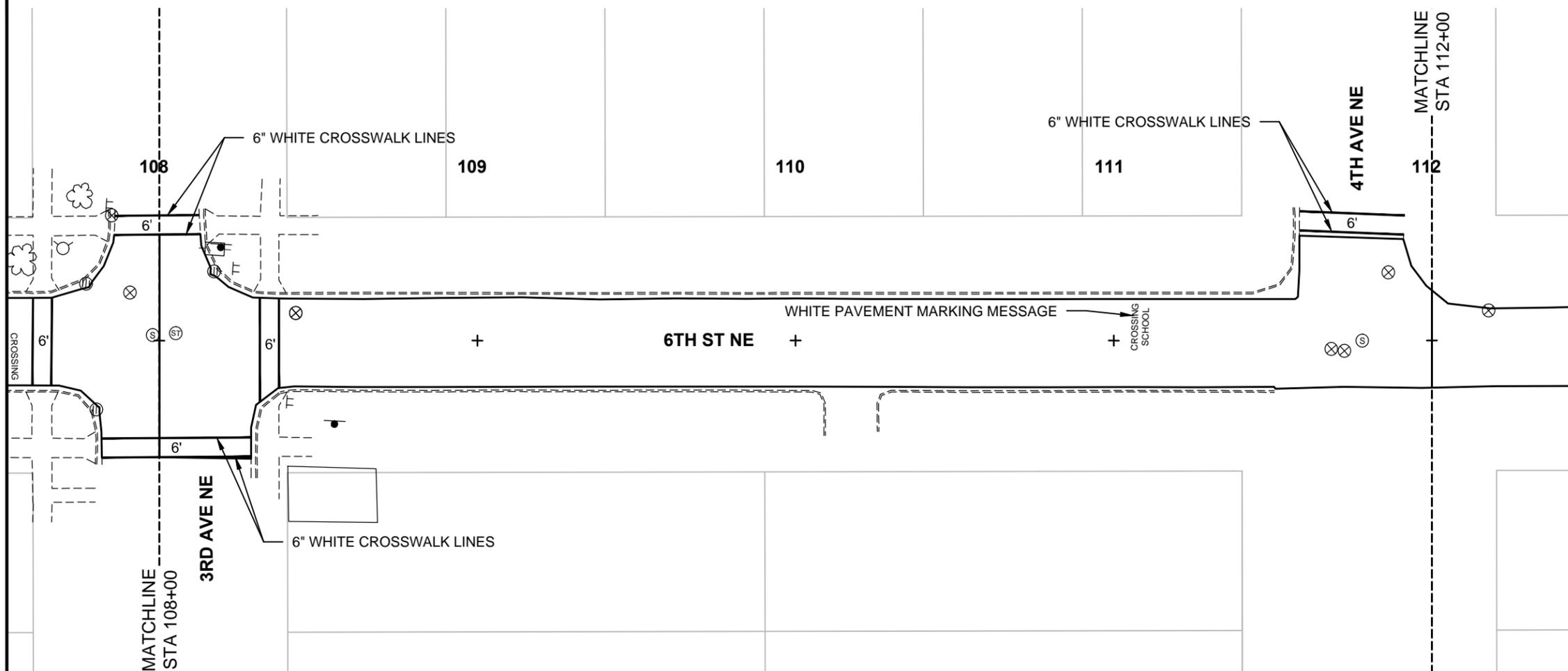
**SU-2-990(051)055**  
 CITY OF VALLEY CITY, NORTH DAKOTA

KLJ

**PAVING LAYOUT**  
**STA. 104+00 TO 108+00**

DRWN. BY ZV	CHKD BY JL	PROJECT NO. 5415105
----------------	---------------	------------------------

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	5

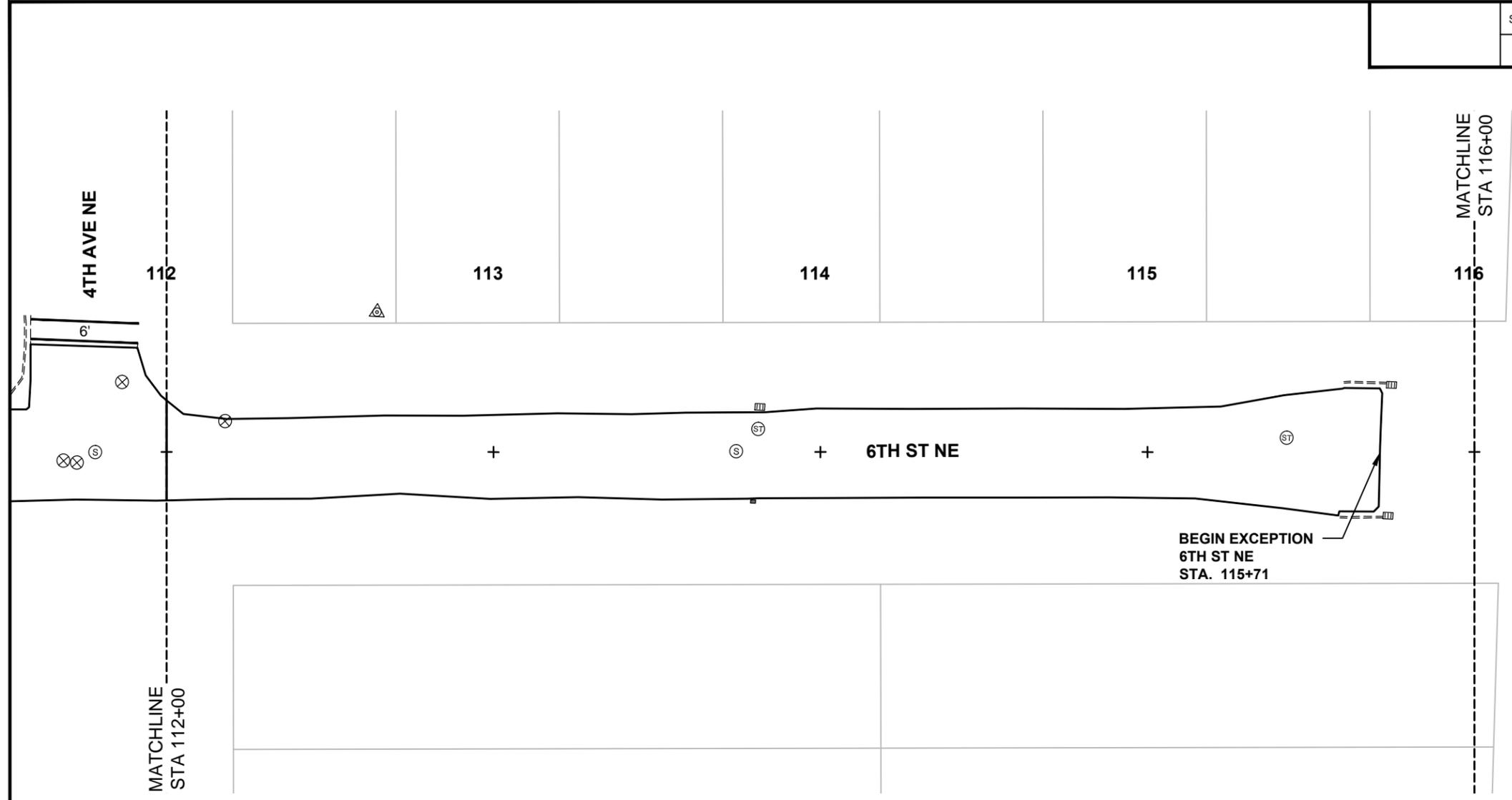


<b>COMMERCIAL GRADE HOT MIX ASPHALT</b>	
STA. 108+00 TO 112+00	158 TON
<b>INLET PROTECTION-SPECIAL</b>	
STA. 108+17 LT	1 EA
<b>ADJUST GATE VALVE BOX</b>	
STA. 108+43 LT	1 EA
STA. 111+68 RT	1 EA
STA. 111+73 RT	1 EA
STA. 111+86 LT	1 EA
	4 EA
<b>ADJUST MANHOLE</b>	
STA. 108+05 LT	1 EA
STA. 111+78 CL	1 EA
	2 EA
<b>PVMT MK PAINTED-MESSAGE</b>	
STA. 108+00 TO 112+00	80.5 SF
<b>PVMT MK PAINTED 6IN LINE</b>	
STA. 108+00 TO 112+00	211 LF

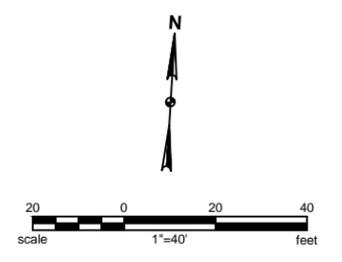
THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>PAVING LAYOUT</b> STA. 108+00 TO 112+00					
	<table border="0"> <tr> <td>DRWN. BY</td> <td>CHKD BY</td> <td>PROJECT NO.</td> </tr> <tr> <td>ZV</td> <td>JL</td> <td>5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	6



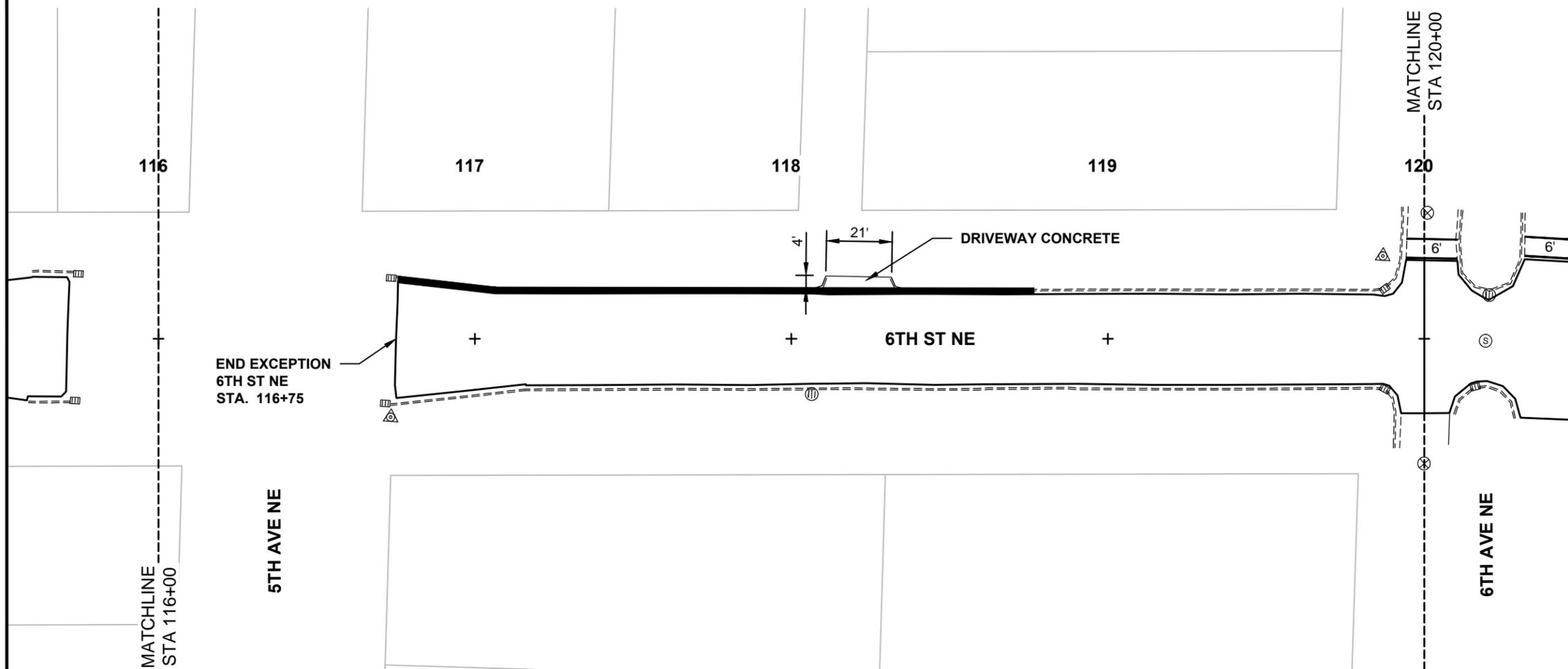
<u>COMMERCIAL GRADE HOT MIX ASPHALT</u>	
STA. 112+00 TO 115+71	125 TON
<u>INLET PROTECTION-SPECIAL</u>	
STA. 113+79 LT	1 EA
STA. 113+79 RT	1 EA
STA. 115+73 RT	1 EA
STA. 115+75 LT	1 EA
	4 EA
<u>ADJUST GATE VALVE BOX</u>	
STA. 112+18 LT	1 EA
<u>ADJUST MANHOLE</u>	
STA. 113+74 LT	1 EA
STA. 113+81 LT	1 EA
STA. 115+43 LT	1 EA
	3 EA



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

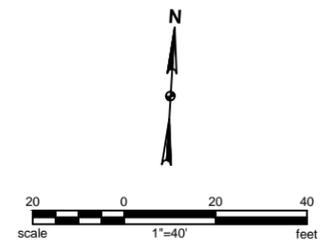
<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>PAVING LAYOUT</b> <b>STA. 112+00 TO 115+71</b>					
	<table border="0"> <tr> <td style="font-size: small;">DRWN. BY</td> <td style="font-size: small;">CHKD BY</td> <td style="font-size: small;">PROJECT NO.</td> </tr> <tr> <td>ZV</td> <td>JL</td> <td>5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	7



<u>COMMERCIAL GRADE HOT MIX ASPHALT</u>	
STA. 116+75 TO 120+00	18 TON
<u>SUPERPAVE FAA 43</u>	
STA. 116+75 TO 120+00	118 TON
<u>INLET PROTECTION-SPECIAL</u>	
STA. 116+71 RT	1 EA
STA. 116+74 LT	1 EA
STA. 118+06 RT	1 EA
STA. 119+88 LT	1 EA
STA. 119+88 RT	1 EA
	5 EA
<u>CURB &amp; GUTTER - TYPE I</u>	
STA. 116+75 TO 118+75	200 LF
<u>DRIVEWAY CONCRETE</u>	
STA. 118+08 TO 118+35 LT	12 SY

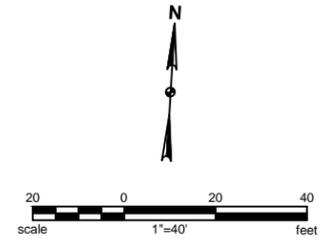
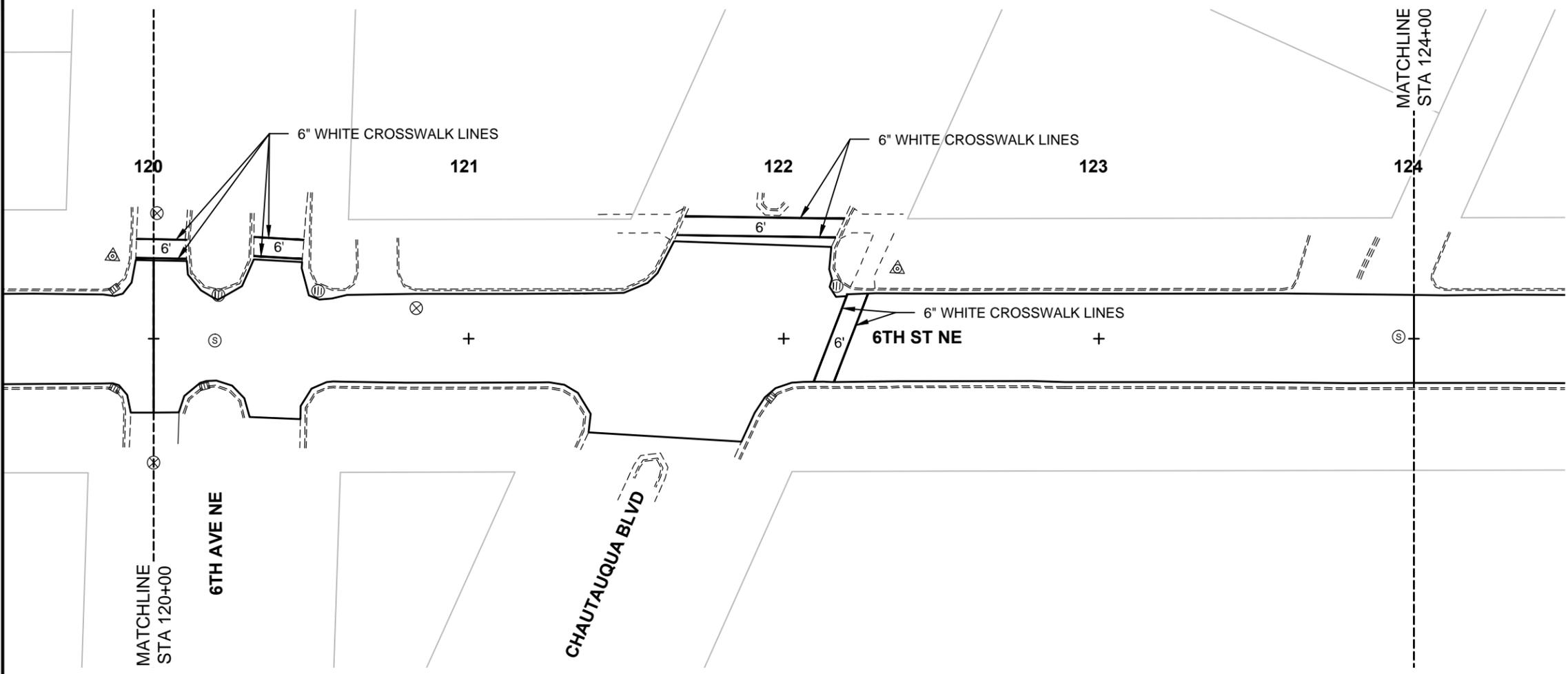
- CURB & GUTTER-TYPE I
- SIDEWALK CONCRETE



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>PAVING LAYOUT</b> <b>STA. 116+75 TO 120+00</b>					
	<table border="0" style="width: 100%; font-size: small;"> <tr> <td>DRWN. BY</td> <td>CHKD BY</td> <td>PROJECT NO.</td> </tr> <tr> <td>ZV</td> <td>JL</td> <td>5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	8

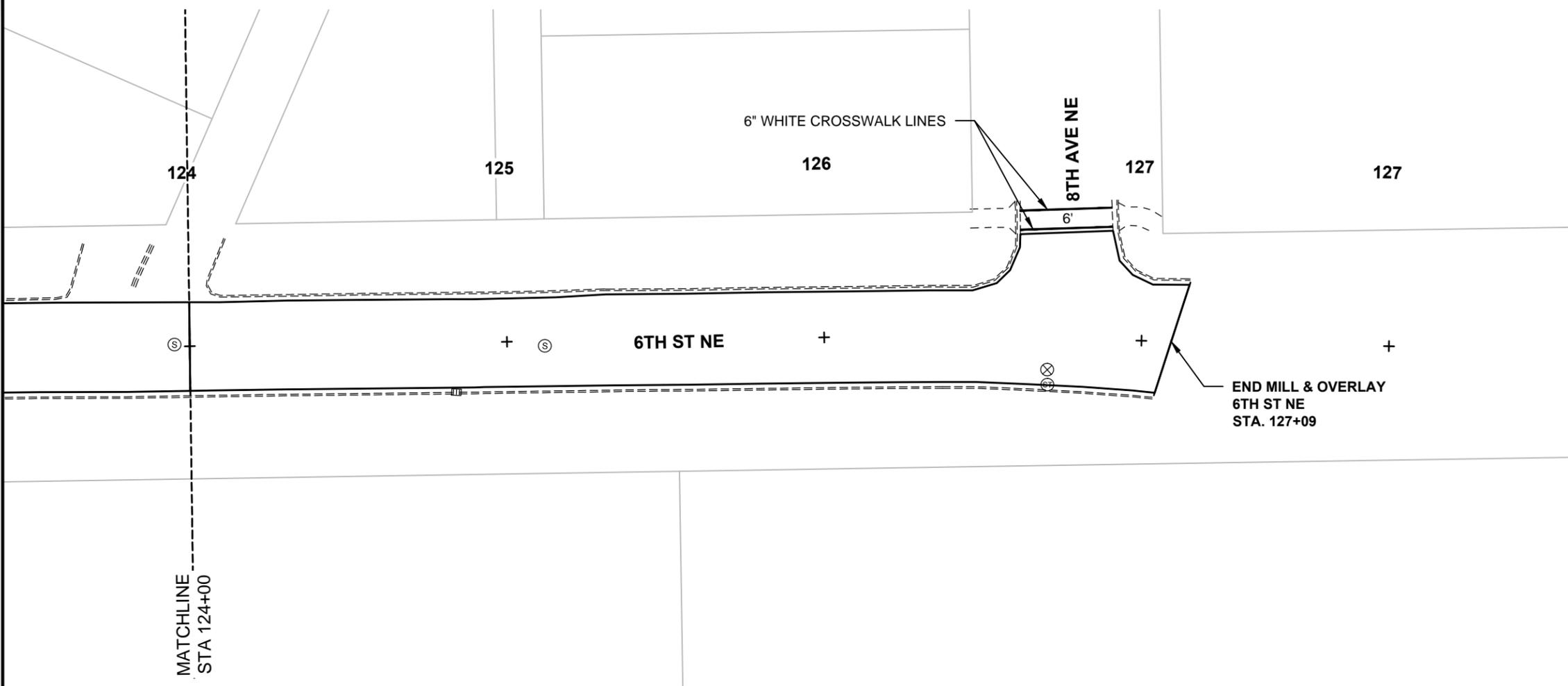


<u>COMMERCIAL GRADE HOT MIX ASPHALT</u>	
STA. 120+00 TO 124+00	168 TON
<u>INLET PROTECTION-SPECIAL</u>	
STA. 120+15 RT	1 EA
STA. 120+20 LT	1 EA
STA. 120+52 LT	1 EA
STA. 121+96 RT	1 EA
STA. 122+17 LT	1 EA
	5 EA
<u>ADJUST GATE VALVE BOX</u>	
STA. 120+83 LT	1 EA
<u>ADJUST MANHOLE</u>	
STA. 120+19 RT	1 EA
STA. 123+95 LT	1 EA
	2 EA
<u>PVMT MK PAINTED 6IN LINE</u>	
STA. 120+00 TO 124+00	222 LF

THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

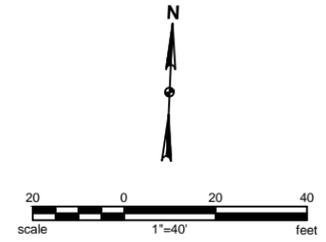
<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA						
	<b>PAVING LAYOUT</b> <b>STA. 120+00 TO 124+00</b>					
	<table border="0"> <tr> <td style="font-size: small;">DRWN. BY</td> <td style="font-size: small;">CHKD BY</td> <td style="font-size: small;">PROJECT NO.</td> </tr> <tr> <td style="font-size: x-small;">ZV</td> <td style="font-size: x-small;">JL</td> <td style="font-size: x-small;">5415105</td> </tr> </table>	DRWN. BY	CHKD BY	PROJECT NO.	ZV	JL
DRWN. BY	CHKD BY	PROJECT NO.				
ZV	JL	5415105				

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	90	9



MATCHLINE  
STA 124+00

COMMERCIAL GRADE HOT MIX ASPHALT	
STA. 124+00 TO 127+09	118 TON
INLET PROTECTION-SPECIAL	
STA. 124+84 RT	1 EA
ADJUST GATE VALVE BOX	
STA. 126+71 RT	1 EA
ADJUST MANHOLE	
STA. 125+12 RT	1 EA
STA. 126+71 RT	1 EA
	2 EA
PVMT MK PAINTED 6IN LINE	
STA. 124+00 TO 127+07	58 LF

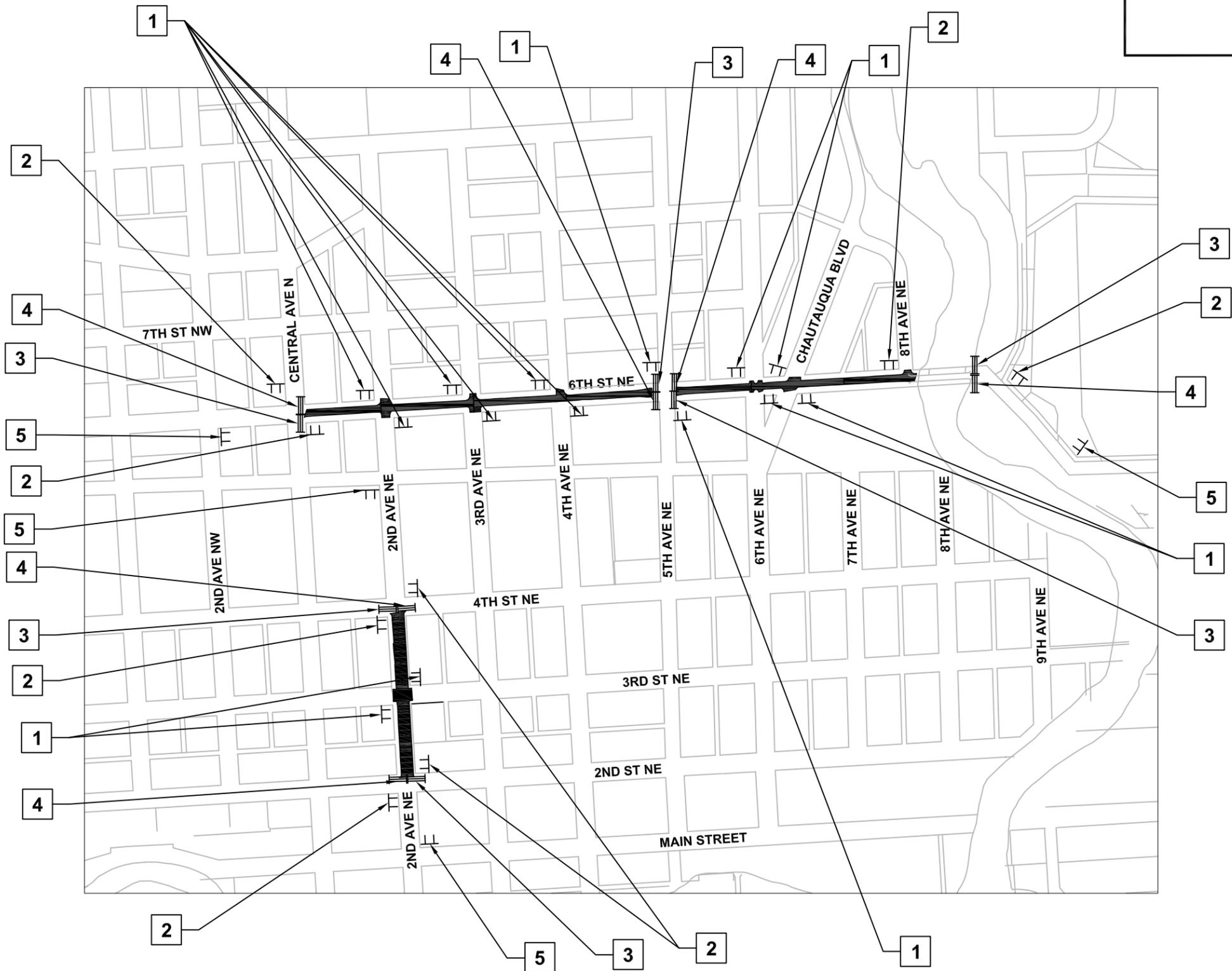


THIS DOCUMENT WAS  
ORIGINALLY ISSUED AND  
SEALED BY  
CHAD A. PETERSEN  
REGISTRATION NUMBER  
PE-4884  
ON 02/02/16 AND THE ORIGINAL  
DOCUMENT IS STORED AT THE  
OFFICE OF KLJ IN  
VALLEY CITY, ND.

<b>SU-2-990(051)055</b> CITY OF VALLEY CITY, NORTH DAKOTA		
	<b>PAVING LAYOUT</b> <b>STA. 124+00 TO 127+09</b>	
	DRWN. BY ZV	CHKD BY JL



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-2-990(051)055	100	2
	SU-2-990(052)056		



- 1 G20-50a-72 Post Mounted
- 2 G20-52a-72 Post Mounted
- 3 G20-1-60 Barricade Mounted
- 4 G20-2-48 Barricade Mounted
- 5 W20-1-48 Post Mounted

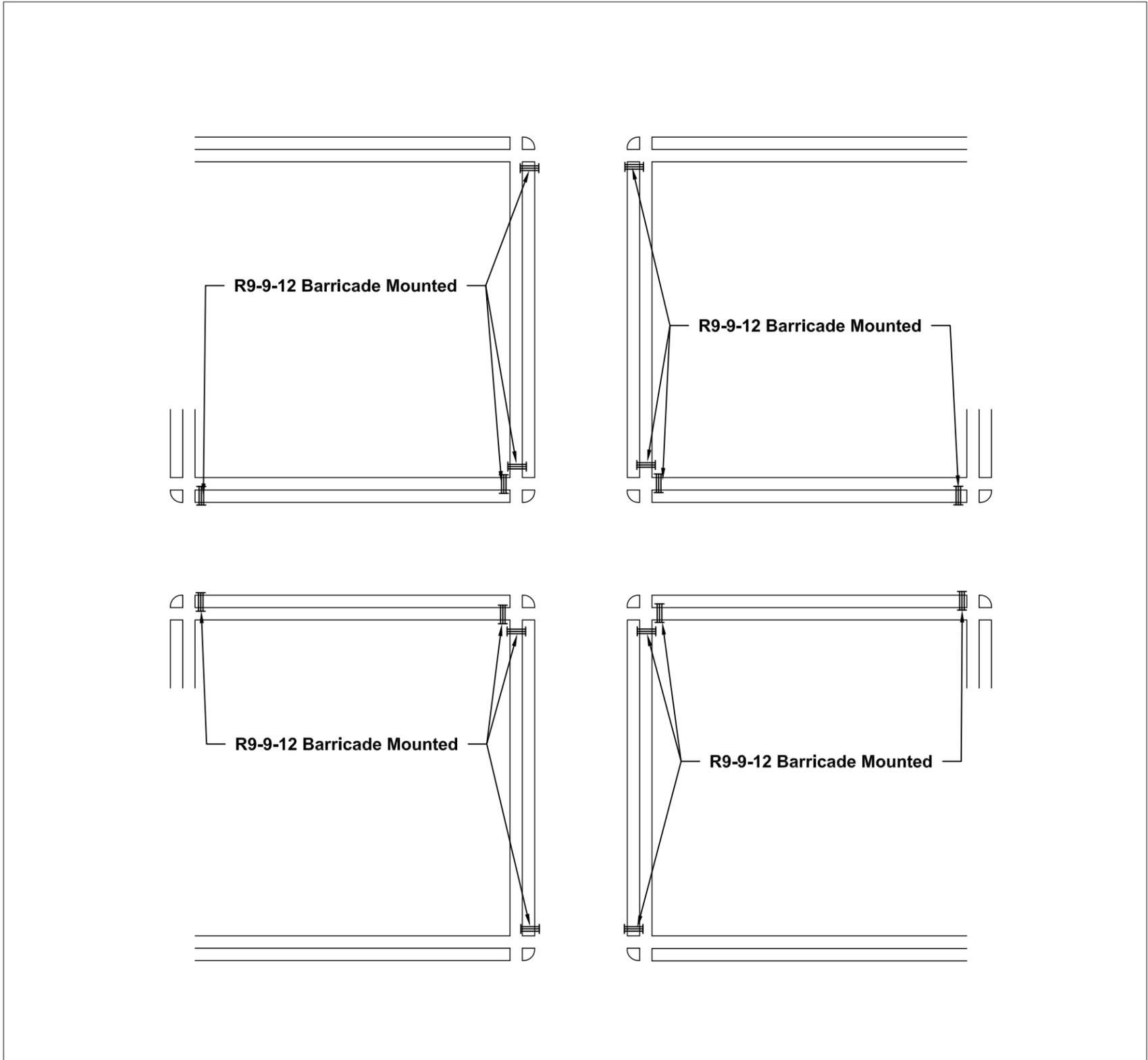


THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(051)055 &amp; SU-2-990(052)056</b> <small>CITY OF VALLEY CITY, NORTH DAKOTA</small>		
		<b>TRAFFIC CONTROL          SIGNING LAYOUT</b>
<small>DRWN. BY</small> ZV	<small>CHKD BY</small> JL	<small>PROJECT NO.</small> 5415105

The sign layout as shown is for general information purposes only. The Contractor will be required to conform to MUTCD and the Standard Drawings when installing the traffic control signing.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-2-990(051)055	100	3
		SU-2-990(052)056		



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY  
 CHAD A. PETERSEN  
 REGISTRATION NUMBER  
 PE-4884  
 ON 02/02/16 AND THE ORIGINAL  
 DOCUMENT IS STORED AT THE  
 OFFICE OF KLJ IN  
 VALLEY CITY, ND.

<b>SU-2-990(051)055 &amp; SU-2-990(052)056</b> <small>CITY OF VALLEY CITY, NORTH DAKOTA</small>		
	<b>TYPICAL SIDEWALK          CLOSURE LAYOUT</b>	
	DRWN. BY ZV	CHKD BY JL

*The sign layout as shown is for general information purposes only. The Contractor will be required to conform to MUTCD and the Standard Drawings when installing the traffic control signing.*

NDDOT ABBREVIATIONS

? 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.

Abn abandoned  
 Abut abutment  
 Ac acres  
 Adj adjusted  
 Aggr aggregate  
 Ahd ahead  
 ARV air release valve  
 Align alignment  
 Al alley  
 Alt alternate  
 Alum aluminum  
 ADA Americans with Disabilities Act  
 A ampere  
 & and  
 Appr approach  
 Approx approximate  
 ACP asbestos cement pipe  
 Asph asphalt  
 AC asphalt cement  
 Assmd assumed  
 @ at  
 Atten attenuation  
 ATR automatic traffic recorder  
 Ave Avenue  
 Avg average  
 ADT average daily traffic  
 Az azimuth  
 Bk back  
 BF back face  
 Bs backsight  
 Balc balcony  
 B Wire barbed wire  
 Barr barricade  
 Btry battery  
 Brg bearing  
 BI beehive inlet  
 Beg begin  
 BM bench mark  
 Bkwy bikeway  
 Bit bituminous  
 Blk block  
 Bd Ft board feet  
 BH bore hole  
 BS both sides  
 Bot bottom  
 Blvd Boulevard  
 Bndry boundary  
 BC brass cap  
 Brkwy breakaway  
 Br bridge  
 Bldg building

BV butterfly valve  
 Byp bypass  
 C Gdrl cable guardrail  
 Calc calculate  
 Cd candela  
 CIP cast iron pipe  
 CB catch basin  
 CRS cationic rapid setting  
 C Gd cattle guard  
 C To C center to center  
 Cl or C centerline  
 Cm centimeter  
 Ch chain  
 Chnlk chain-link  
 Ch Blk channel block  
 Ch Ch channel change  
 Chk check  
 Chsld chiseled  
 Cir circle  
 Cl class  
 Cl clay  
 Cl F clay fill  
 Cl Hvy clay heavy  
 Cl Lm clay loam  
 Clnt clean-out  
 Clr clear  
 Cl&gr clearing & grubbing  
 Co S coal slack  
 Comb. combination  
 Coml commercial  
 Compr compression  
 CADD computer aided drafting & design  
 Conc concrete  
 Cond conductor  
 Const construction  
 Cont continuous  
 CSB continuous split barrel sample  
 Contr contraction  
 Contr contractor  
 CP control point  
 Coord coordinate  
 Cor corner  
 Corr corrected  
 CAES corrugated aluminum end section  
 CAP corrugated aluminum pipe  
 CMES corrugated metal end section  
 CMP corrugated metal pipe  
 CPVCP corrugated poly-vinyl chloride pipe  
 CSES corrugated steel end section  
 CSP corrugated steel pipe  
 C coulomb  
 Co County  
 Crse course  
 C Gr course gravel  
 CS course sand

Ct Court  
 Xarm cross arm  
 Xbuck cross buck  
 Xsec cross sections  
 Xing crossing  
 Xrd Crossroad  
 Crn crown  
 CF cubic feet  
 M3 cubic meter  
 M3/s cubic meters per second  
 CY cubic yard  
 Cy/mi cubic yards per mile  
 Culv culvert  
 C&G curb & gutter  
 CI curb inlet  
 CR curb ramp  
 CS curve to spiral  
 C cut  
 Dd Ld dead load  
 Defl deflection  
 Defm deformed  
 Deg or D degree  
 DInt delineate  
 DIntr delineator  
 Depr depression  
 Desc description  
 Det detail  
 DWP detectable warning panel  
 Dtr detour  
 Dia diameter  
 Dir direction  
 Dist distance  
 DM disturbed material  
 DB ditch block  
 DG ditch grade  
 Dbl double  
 Dn down  
 Dwg drawing  
 Dr drive  
 Drwy driveway  
 DI drop inlet  
 D dry density  
 Ea each  
 Esmt easement  
 E East  
 EB Eastbound  
 Elast elastomeric  
 EL electric locker  
 E Mtr electric meter  
 Elec electric/al  
 EDM electronic distance meter  
 Elev or El elevation  
 Ellipt elliptical  
 Emb embankment  
 Emuls emulsion/emulsified

ES end section  
 Engr engineer  
 ESS environmental sensor station  
 Eq equal  
 Eq equation  
 Evgr evergreen  
 Exc excavation  
 Exst existing  
 Exp expansion  
 Expy Expressway  
 E external of curve  
 Extru extruded  
 FOS factor of safety  
 F Fahrenheit  
 FS far side  
 F farad  
 Fed Federal  
 FP feed point  
 Ft feet/foot  
 Fn fence  
 Fn P fence post  
 FO fiber optic  
 FB field book  
 FD field drive  
 F fill  
 FAA fine aggregate angularity  
 FS fine sand  
 FH fire hydrant  
 Fl flange  
 Flrd flared  
 FES flared end section  
 F Bcn flashing beacon  
 FA flight auger sample  
 FL flow line  
 Ftg footing  
 FM force main  
 Fs foresight  
 Fnd found  
 Fdn foundation  
 Frac fractional  
 Frwy freeway  
 Frt front  
 FF front face  
 F Disp fuel dispenser

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

NDDOT ABBREVIATIONS

D-101-2

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
08-03-15	General Revisions

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 08/03/15 and the original document is stored at the North Dakota Department of Transportation

NDDOT ABBREVIATIONS

D-101-3

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
08-03-15	General Revisions

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 08/03/15 and the original document is stored at the North Dakota Department of Transportation

NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

D-101-10

702COM	702 Communications	GT PLNS NAT GAS	Great Plains Natural Gas Company	RED RIV TEL	Red River Rural Telephone
ACCENT	Accent Communications	HALS TEL	Halstad Telephone Company	RESVTN TEL	Reservation Telephone
AGASSIZ WU	Agassiz Water Users Incorporated	IDEA1	Idea1	ROBRTS TEL	Roberts Company Telephone
AGC	Associated General Contractors of America	INT-COMM TEL	Inter-Community Telephone Company	R-RIDER ELEC	Roughrider Electric Coop
All PI	Alliance Pipeline	KANEB PL	Kaneb Pipeline Company	RRVW	Red River Valley & Western Railroad
ALL SEAS WU	All Seasons Water Users Association	KEM ELEC	Kem Electric Cooperative Incorporated	RSR ELEC	R.S.R. Electric Cooperative
AMOCO PI	Amoco Pipeline Company	KOCH GATH SYS	Koch Gathering Systems Incorporated	S E W U	South East Water Users Incorporated
AMRDA HESS	Amerada Hess Corporation	LKHD PL	Lakehead Pipeline Company	SCOTT CABLE	Scott Cable Television Dickinson
AT&T	AT&T Corporation	LNGDN RWU	Langdon Rural Water Users Incorporated	SHERDN ELEC	Sheridan Electric Cooperative
B PAW	Bear Paw Energy Incorporated	LWR YELL R ELEC	Lower Yellowstone Rural Electric	SHEYN VLY ELEC	Sheyenne Valley Electric Cooperative
BAKER ELEC	Baker Electric	MCKNZ CON	McKenzie Consolidated Telcom	SKYTECH	Skyland Technologies Incorporated
BASIN ELEC	Basin Electric Cooperative Incorporated	MCKNZ ELEC	McKenzie Electric Cooperative	SLOPE ELEC	Slope Electric Cooperative Incorporated
BEK TEL	Bek Communications Cooperative	MCKNZ WRD	McKenzie County Water Resource District	SOURIS RIV TELCOM	Souris River Telecommunications
BELLE PL	Belle Fourche Pipeline Company	MCLEOD	McLeod USA	ST WAT COMM	State Water Commission
BLM	Bureau of Land Management	MCLN ELEC	McLean Electric Cooperative	STATE LN WATER	State Line Water Cooperative
BNSF	Burlington Northern Santa Fe Railway	MCLN-SHRDN R WAT	McLean-Sheridan Rural Water	STER ENG	Sterling Energy
BOEING	Boeing	MDU	Montana-dakota Utilities	STUT RWU	Stutsman Rural Water Users
BRNS RWD	Barnes Rural Water District	MID-CONT CABLE	Mid-Continent Cable	SW PL PRJ	Southwest Pipeline Project
BURK-DIV ELEC	Burke-Divide Electric Cooperative	MIDSTATE TEL	Midstate Telephone Company	T M C	Turtle Mountain Communications
BURL WU	Burleigh Water Users	MINOT CABLE	Minot Cable Television	TCI	TCI of North Dakota
Cable One	Cable One	MINOT TEL	Minot Telephone Company	TESORO GHG PLNS PL	Tesoro High Plains Pipeline
CABLE SERV	Cable Services	MISS W W S	Missouri West Water System	TRI-CNTY WU	Tri-County Water Users Incorporated
CAP ELEC	Capital Electric Cooperative Incorporat	MNKOTA PWR	Minnkota Power	TRL CO RWU	Traill County Rural Water Users
CASS CO ELEC	Cass County Electric Cooperative	MOR-GRAN-SOU ELEC	Mor-gran-sou Electric Cooperative	UNTD TEL	United Telephone
CASS RWU	Cass Rural Water Users Incorporated	MOUNT-WILLI ELEC	Mountrail-williams Electric Cooperative	UPPR SOUR WUA	Upper Souris Water Users Association
CAV ELEC	Cavalier Rural Electric Cooperative	MRE LBTY TEL	Moore & Liberty Telephone	US SPRINT	U.S. Sprint
CBLCOM	Cablecom Of Fargo	MUNICIPAL	City Water And Sewer	USAF MSL CABLE	U.S.A.F. Missile Cable
CENEX PL	Cenex Pipeline	MUNICIPAL	City Of '.....'	USFWS	US Fish and Wildlife Service
CENT PL WATER DIST	Central Pipe Line Water District	N CENT ELEC	North Central Electric Cooperative	USW COMM	U.S. West Communications
CENT PWR ELEC	Central Power Electric Cooperative	N VALL W DIST	North Valley Water District	VRNDRY ELEC	Verendrye Electric Cooperative
COE	Corps of Engineers	ND PKS & REC	North Dakota Parks And Recreation	W RIV TEL	West River Telephone Incorporated
CONS TEL	Consolidated Telephone	ND TEL	North Dakota Telephone Company	WEB	W. E. B. Water Development Association
CONT RES	Continental Resource Inc	NDDOT	North Dakota Department of Transportation	WILLI RWA	Williams Rural Water Association
CPR	Canadian Pacific Railway	NDSU SOIL SCI DEPT	NDSU Soil Science Department	WILSTN BAS PL	Williston Basin Interstate Pipeline Company
D O E	Department Of Energy	NEMONT TEL	Nemont Telephone	WLSH RWD	Walsh Water Rural Water District
DAK CARR	Dakota Carrier Network	NODAK R ELEC	Nodak Rural Electric Cooperative	WOLVRTN TEL	Wolverton Telephone
DAK CENT TEL	Dakota Central Telephone	NOON FRMS TEL	Noonan Farmers Telephone Company	XLENER	Xcel Energy
DAK RWD	Dakota Rural Water District	NPR	Northern Plains Railroad	YSVR	Yellowstone Valley Railroad
DGC	Dakota Gasification Company	NSP	Northern States Power		
DICKEY R NET	Dickey Rural Networks	NTH PRAIR RW	Northern Prairie Rural Water Association		
DICKEY RWU	Dickey Rural Water Users Association	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	ONEOK	Oneok gas		
DVMW	Dakota, Missouri Valley & Western	OSHA	Occupational Safety and Health Administration		
ENBRDG	Enbridge Pipelines Incorporated	OTTR TL PWR	Otter Tail Power Company		
ENVENTIS	Enventis Telephone	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-traill Water District	QWEST	Qwest Communications		
GETTY TRD & TRAN	Getty Trading & Transportation	R&T W SUPPLY	R & T Water Supply Association		
GLDN W ELEC	Golden West Electric Cooperative	RAMSEY R SEW	Ramsey Rural Sewer Association		
GRGS CO TEL	Griggs County Telephone	RAMSEY RW	Ramsey Rural Water Association		
		RAMSEY UTIL	Ramsey County Rural Utilities		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

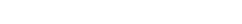
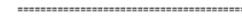
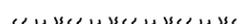
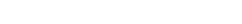
Line Styles

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

Line Styles

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

Symbols

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

Symbols

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 07/01/14 and the original document is stored at the North Dakota Department of Transportation

# Symbols

D-101-32

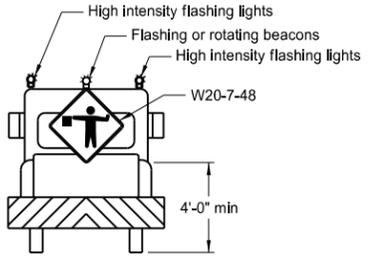
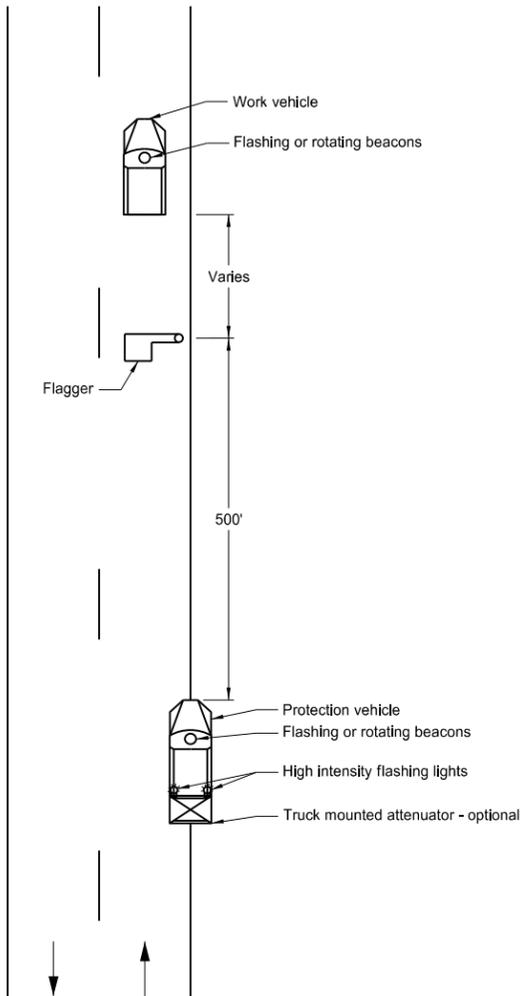
 Pad Mounted Feed Point  Pipe Mounted Feed Point with Pad  Pole Mounted Feed Point  Headwall  Double Headwall with Vegetation Barrier  Single Headwall with Vegetation Barrier  Pole Mounted Head  Sprinkler Head  Fire Hydrant  Inlet Type 1  Inlet Type 2  Double Inlet Type 2  Inlet Gate Type 2  Junction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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by  
**Roger Weigel,**  
 Registration Number  
 PE-2930,  
 on 07/01/14 and the original document is stored at the  
 North Dakota Department  
 of Transportation

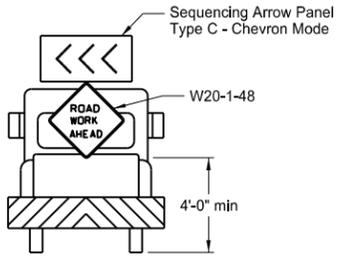
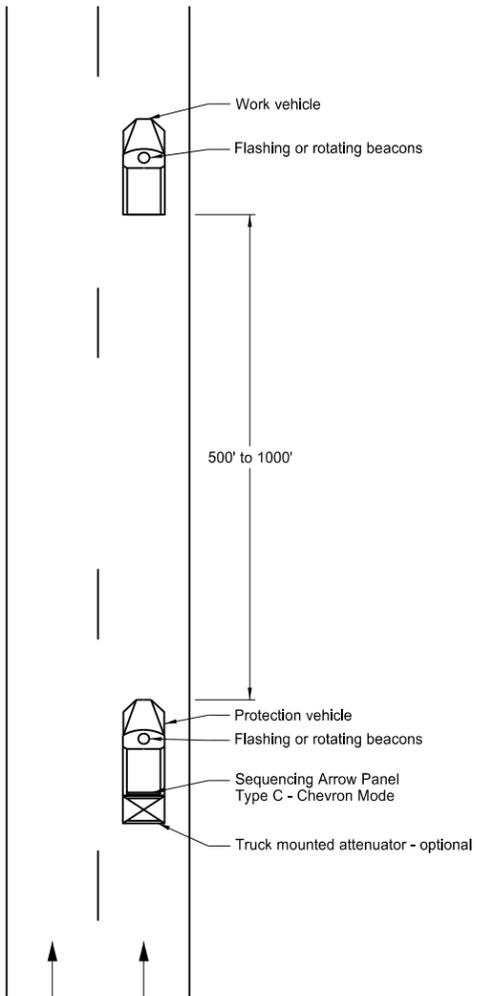
TRAFFIC CONTROL FOR CORING OF HOT BITUMINOUS PAVEMENT

Two Lane, Two Way Roadways



Typical Protection Vehicle

Multilane Roadways

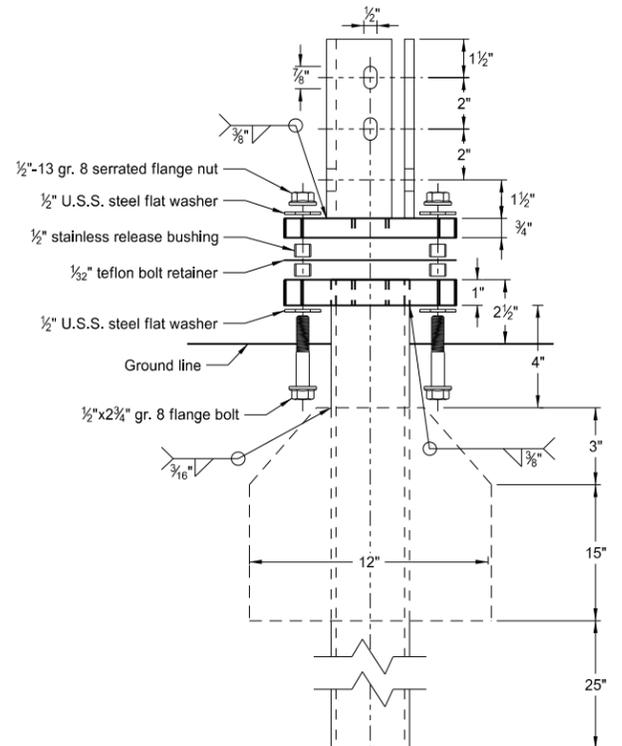


Typical Protection Vehicle

- Notes:
1. The working vehicle shall display a 360 degree rotating, flashing, oscillating or strobe light.
  2. The shadow vehicle shall display a 360 degree rotating, flashing, oscillating or strobe light. The shadow vehicle for Multilane Roadway shall also have a sequencing arrow panel Type C operated in the chevron mode.
  3. This application is for use during daylight hours and in areas of good visibility only.
  4. Two lane, two way roadway, a flagger shall be used to protect the work area and warn oncoming traffic.

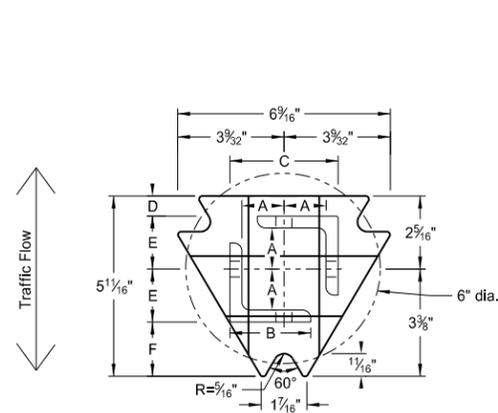
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-25-12	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 9/25/2012 and the original document is stored at the North Dakota Department of Transportation

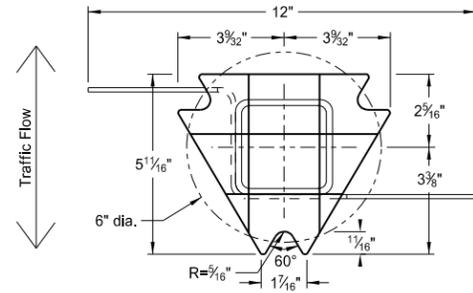


Multi-Directional Slip Base Assembly

Perforated Tube



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



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

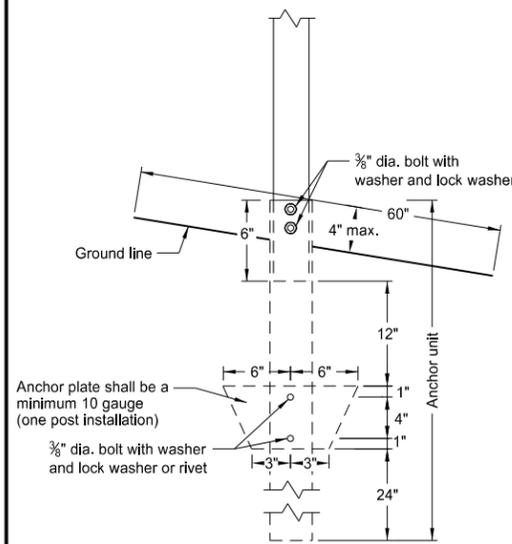
Notes:

1. Slip base bolts shall be torqued as specified by the manufacturer.
2. Anchor shall have a yield strength of 43.9 KSI and tensile strength of 59.3 KSI.
3. The 4" vertical clearance is required for the anchor or breakaway base. The 4"x60" measurement shall be made above and below post location and also back and ahead of the post.
4. When used in concrete sidewalk, anchor shall be same except without the wings.
5. Four post signs shall have over 7' between the first and the fourth posts.

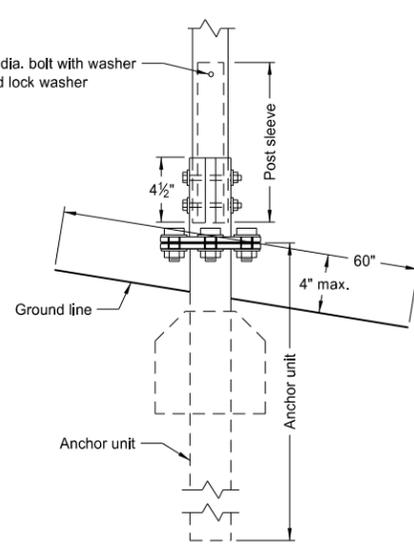
Telescoping Perforated Tube						
Number of Posts	Post Size in.	Wall Thickness Gauge	Sleeve Size in.	Wall Thickness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2 1/4
1	2 1/4	12			No	2 1/2
1	2 1/2	12			(A)	3
1	2 1/2	10			Yes	
1	2 1/4	12	2	12	Yes	
1	2 1/2	12	2 1/4	12	Yes	
2	2	12			No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

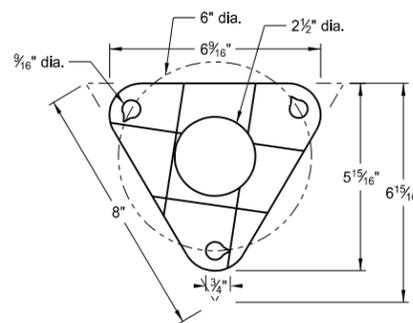
Top Post Receiver Data Table						
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16"x10 ga.	1 9/64"	2 1/2"	3 1/32"	2 5/32"	1 33/64"	1 1/8"
2 1/2"x10 ga.	1 9/32"	2 1/2"	3 5/16"	5/8"	1 21/32"	1 3/4"



Anchor Unit and Post Assembly

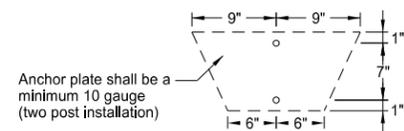


Multi-Directional Slip Base Anchor Unit and Post Sleeve Assembly



Bolt Retainer for Base Connection  
Bolt Retainer - 1/32" Reprocessed Teflon

- (A) The breakaway base is required when the support is placed in weak soils. The Engineer shall determine if the soils are weak.  
(B) The 2 3/16"x10 ga. may be inserted into 2 1/2"x10 ga. for additional wind load.

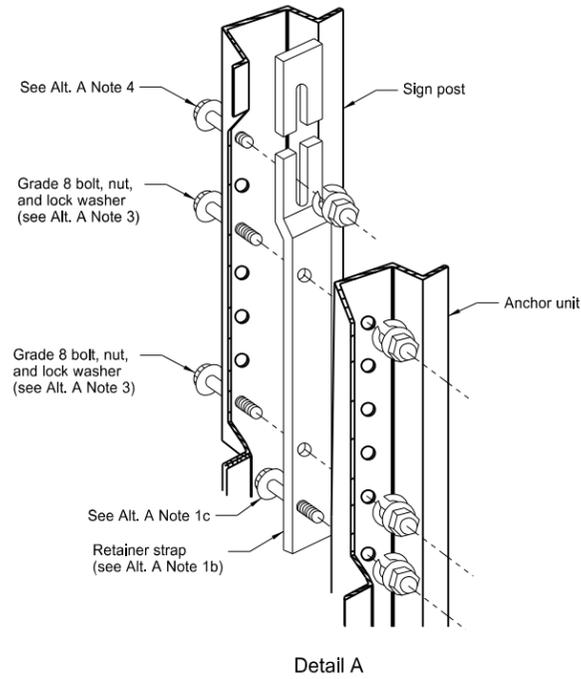


Anchor plate shall be a minimum 10 gauge (two post installation)

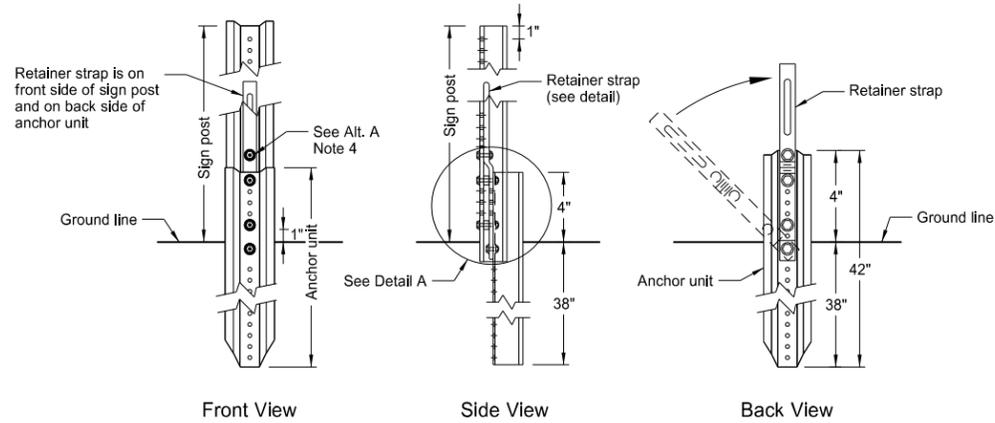
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 2/28/14 and the original document is stored at the North Dakota Department of Transportation

U-Channel Post



Detail A



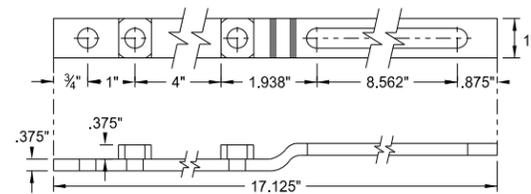
Front View

Side View

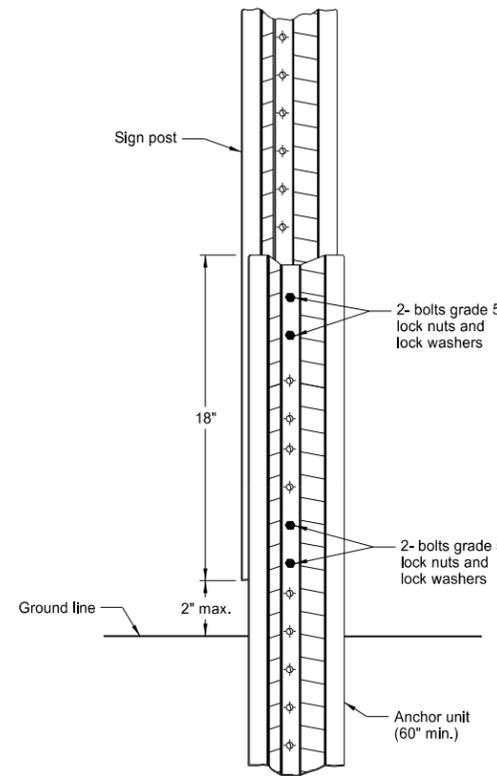
Back View

Breakaway U-Channel Detail Alternate A

A maximum of 2 posts shall be installed within 7'.

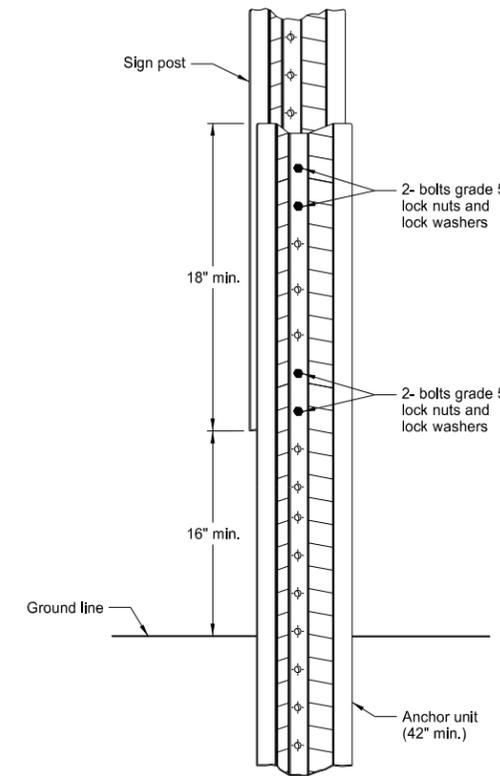


Retainer Strap Detail



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

A maximum of 3 posts shall be installed within 7'.



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

A maximum of 3 posts shall be installed within 7'.

Alternate A Steps of Installation:

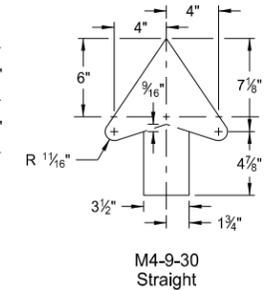
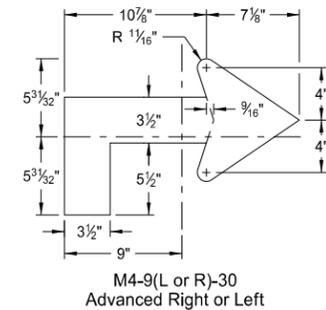
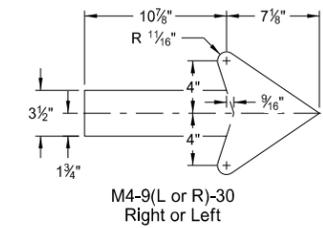
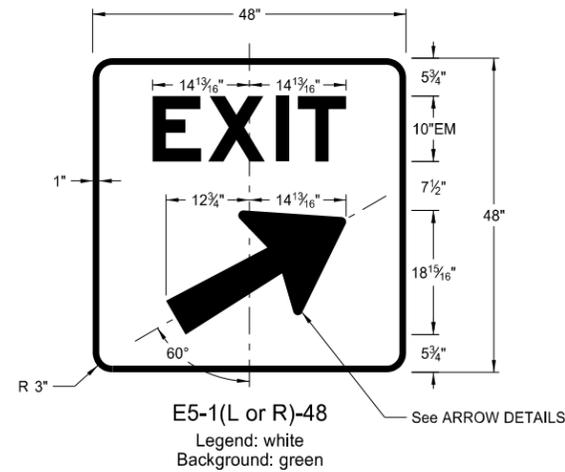
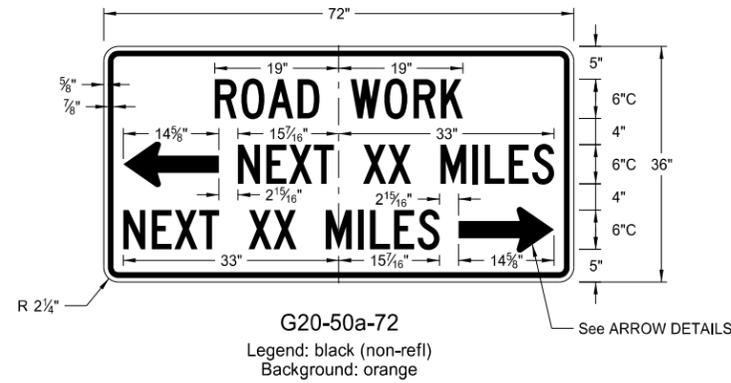
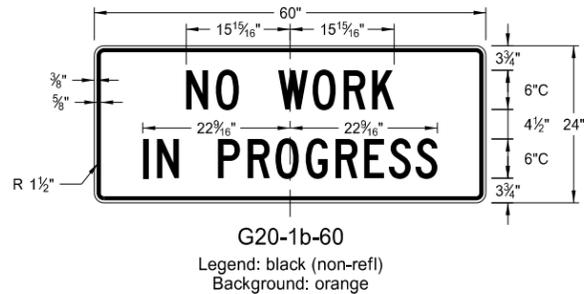
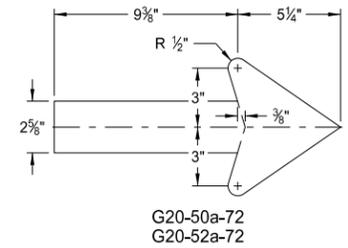
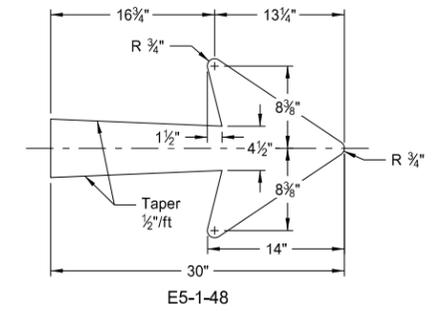
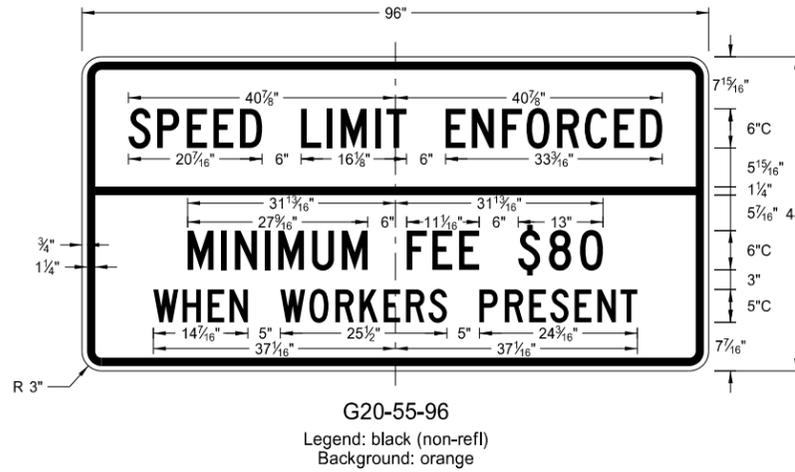
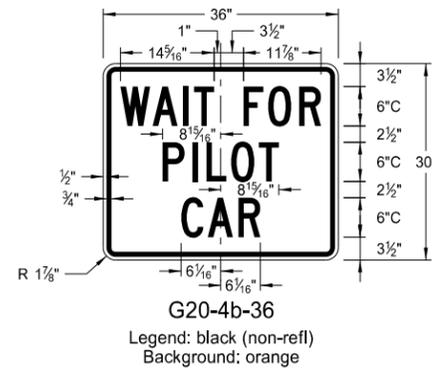
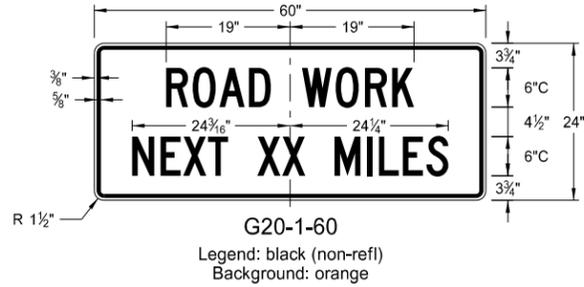
1. a) Drive anchor unit to within 12" of ground level.  
b) Proper assembly established by lining up the bottom hole of retainer strap with the 6th hole from the top of the anchor unit.  
c) Assemble strap to back of anchor unit using 5/16"x2" bolt, lock washer and nut.  
d) Rotate strap 90° to left.
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. The base post, strap and sign post shall be properly nested. 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

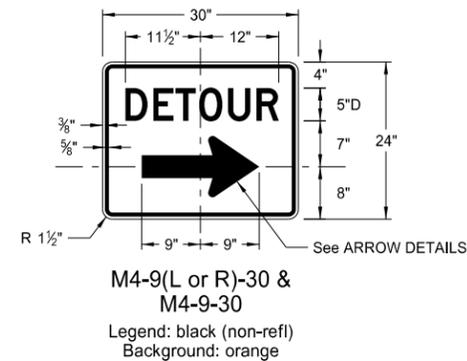
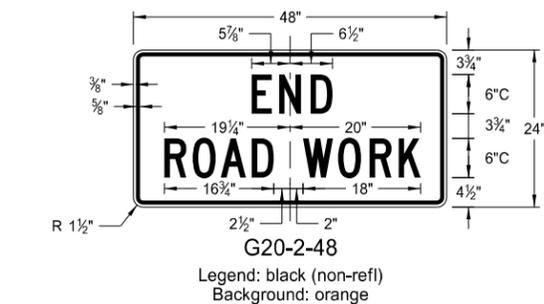
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 2/28/14 and the original document is stored at the North Dakota Department of Transportation

CONSTRUCTION SIGN DETAILS  
 TERMINAL AND GUIDE SIGNS

D-704-9



ARROW DETAILS



NOTES:

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

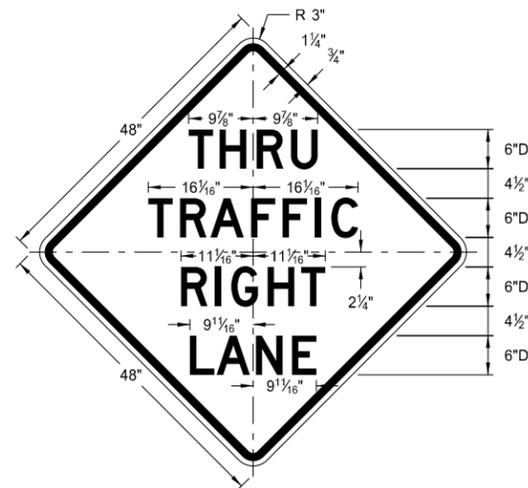
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE

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

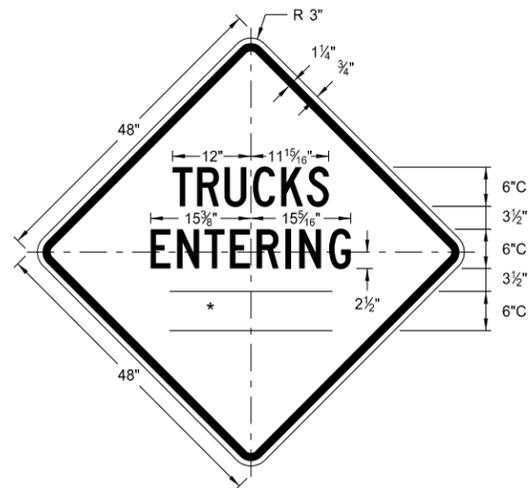
CONSTRUCTION SIGN DETAILS  
WARNING SIGNS

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

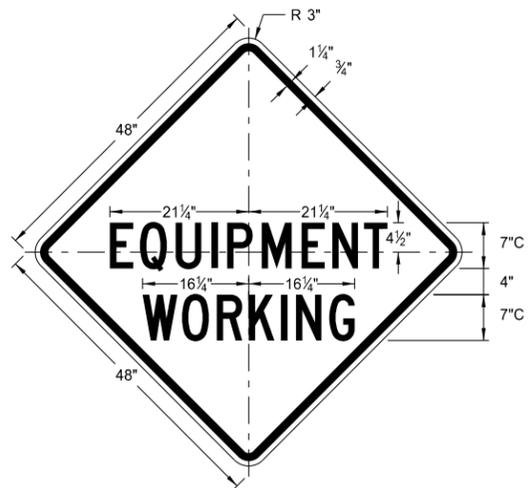
\* DISTANCE MESSAGES



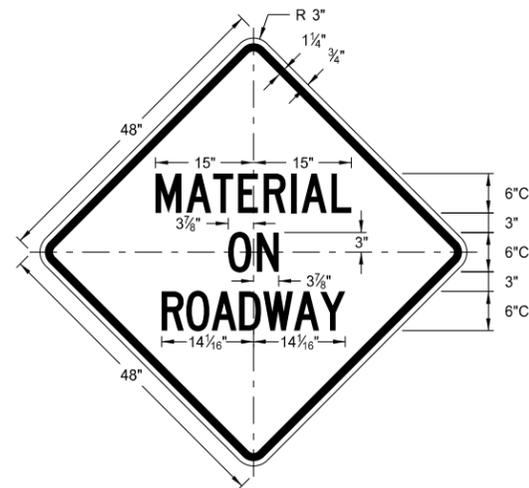
W5-8-48  
Legend: black (non-refl)  
Background: orange



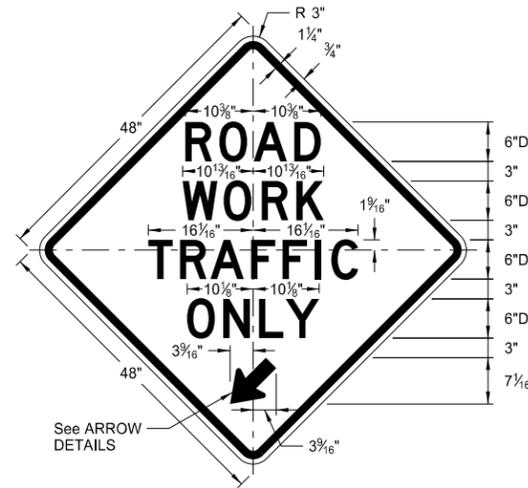
W8-54-48  
Legend: black (non-refl)  
Background: orange



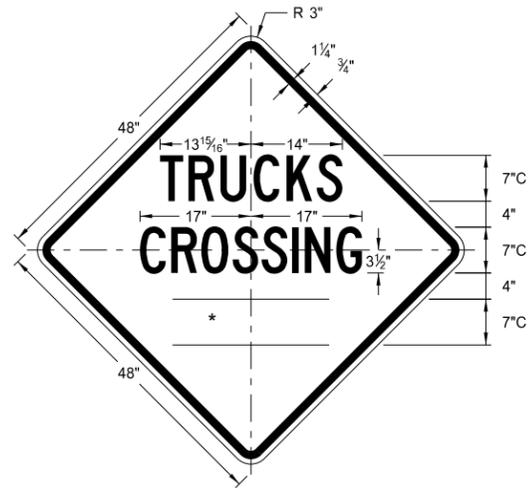
W20-51-48  
Legend: black (non-refl)  
Background: orange



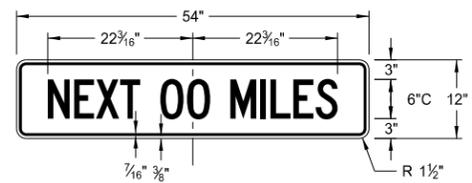
W21-51-48  
Legend: black (non-refl)  
Background: orange



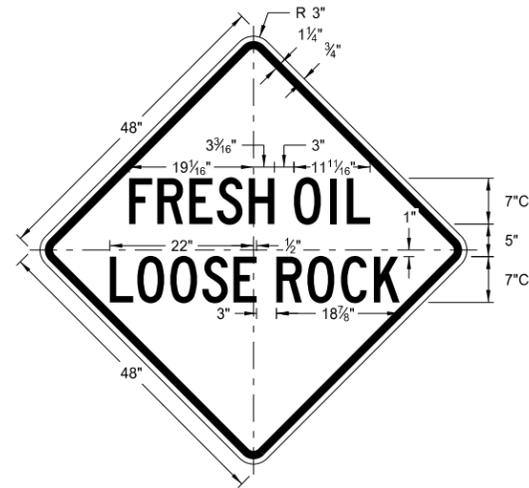
W5-9-48  
Legend: black (non-refl)  
Background: orange



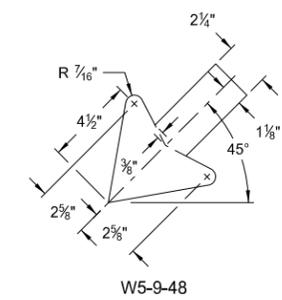
W8-55-48  
Legend: black (non-refl)  
Background: orange



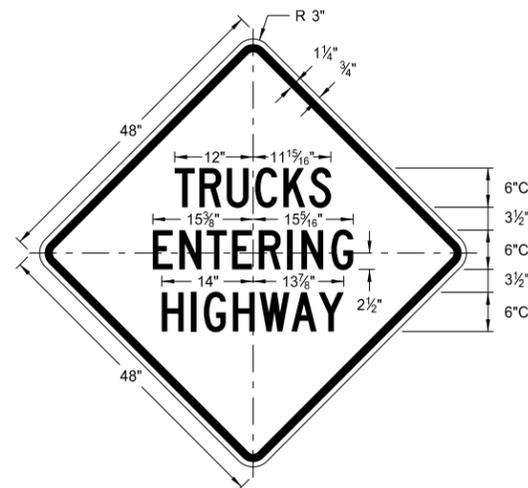
W20-52-54  
Legend: black (non-refl)  
Background: orange



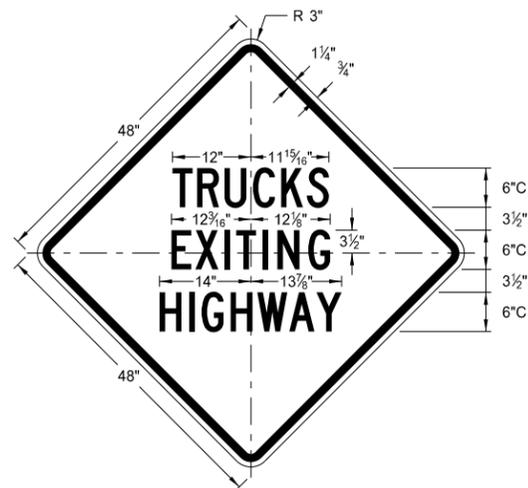
W22-8-48  
Legend: black (non-refl)  
Background: orange



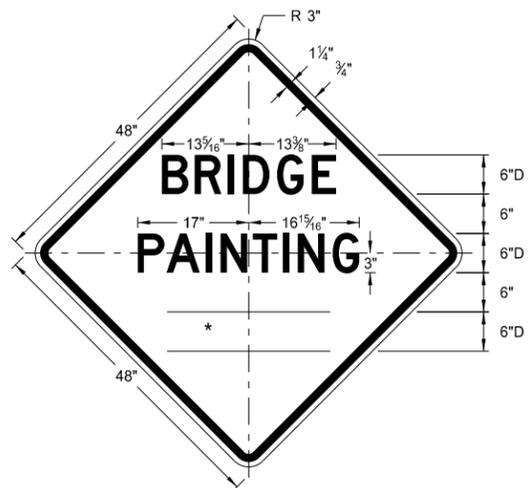
W5-9-48  
ARROW DETAILS



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



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

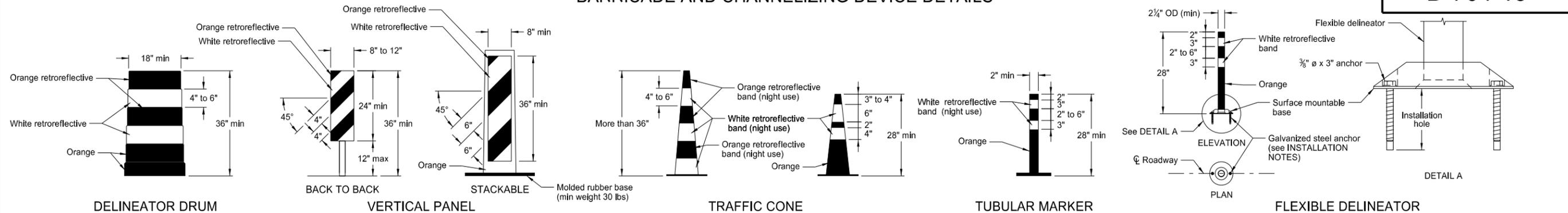


W21-50-48  
Legend: black (non-refl)  
Background: orange

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

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

BARRICADE AND CHANNELIZING DEVICE DETAILS



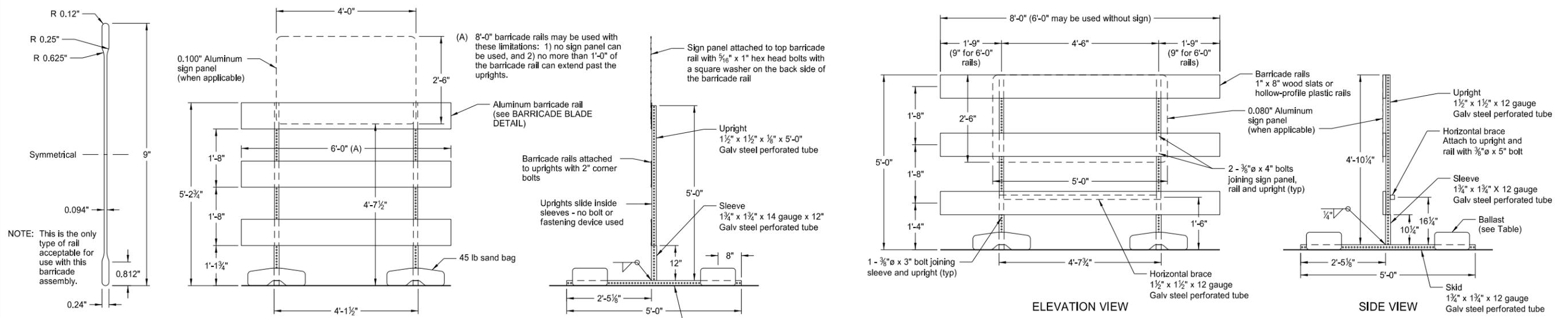
The markings on drums shall be horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide. Each drum shall have a minimum of two orange and two white stripes with the top stripe being orange. Any nonretroreflective spaces between the horizontal orange and white stripes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

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

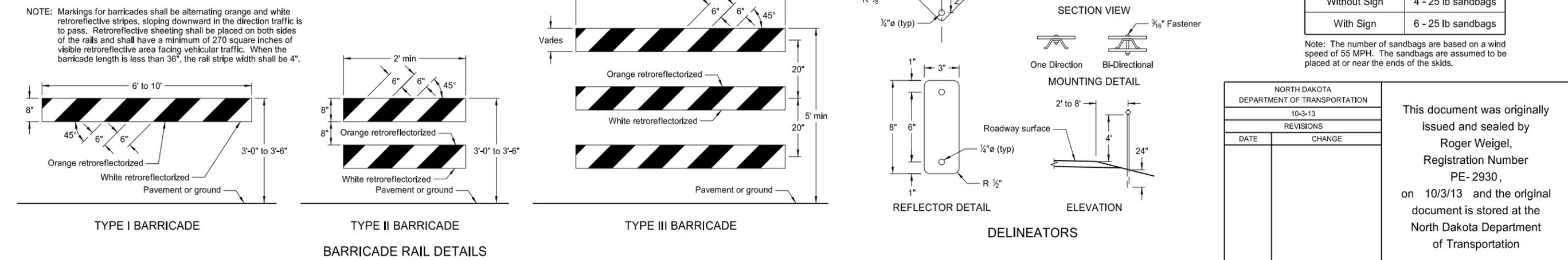
Retroreflectization of cones more than 36" in height shall be provided by alternating orange and white retroreflective stripes. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any nonretroreflective space between the orange and white stripes shall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

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

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



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



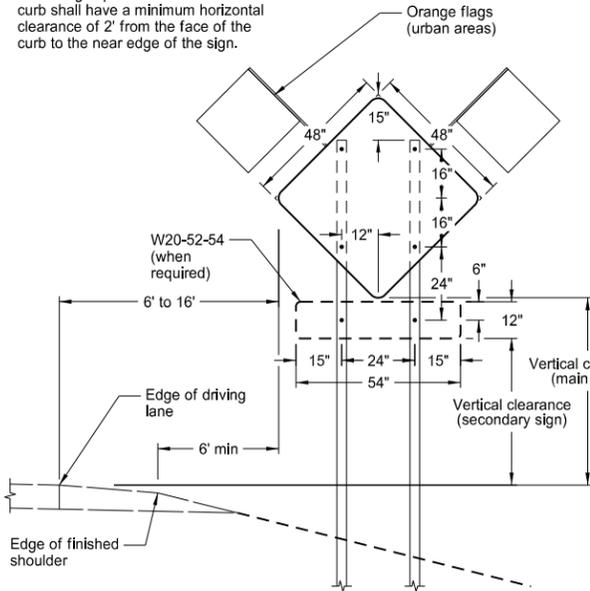
NORTH DAKOTA  
 DEPARTMENT OF TRANSPORTATION  
 10-3-13  
 REVISIONS

DATE	CHANGE

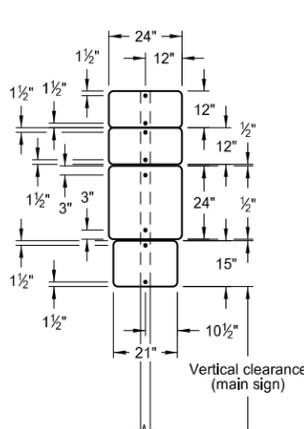
This document was originally issued and sealed by  
 Roger Weigel,  
 Registration Number  
 PE-2930,  
 on 10/3/13 and the original document is stored at the  
 North Dakota Department  
 of Transportation

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

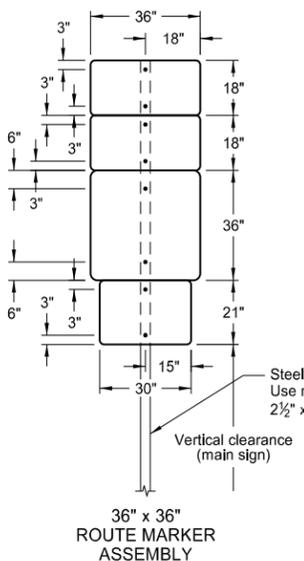
Note: Signs placed in sections with curb shall have a minimum horizontal clearance of 2' from the face of the curb to the near edge of the sign.



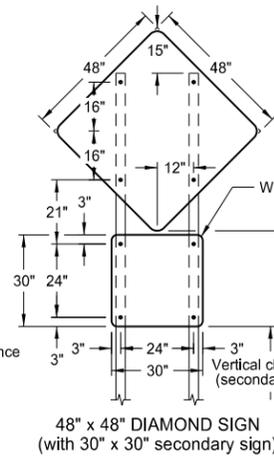
TYPICAL SECTION (48" x 48" diamond warning sign shown)



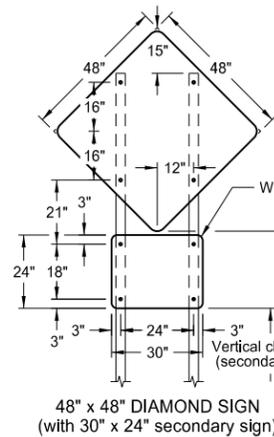
24" x 24" ROUTE MARKER ASSEMBLY



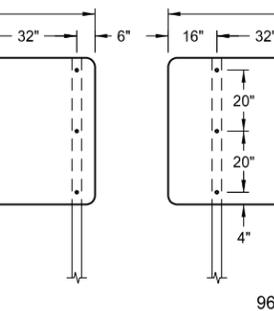
36" x 36" ROUTE MARKER ASSEMBLY



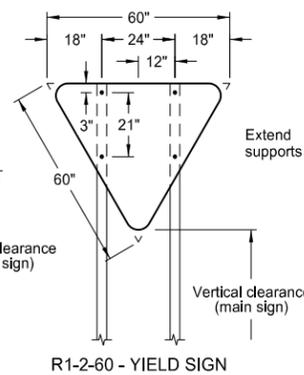
48" x 48" DIAMOND SIGN (with 30" x 30" secondary sign)



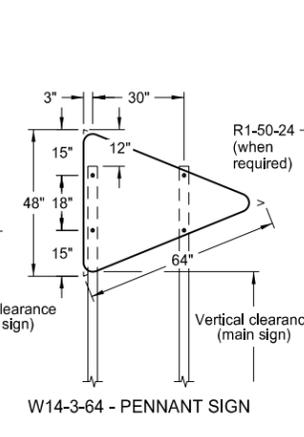
18" x 18" DIAMOND SIGN



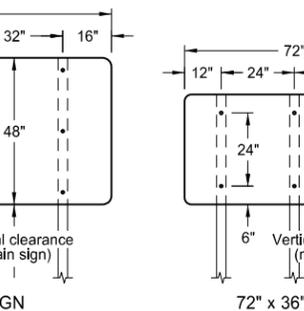
108" x 48" SIGN



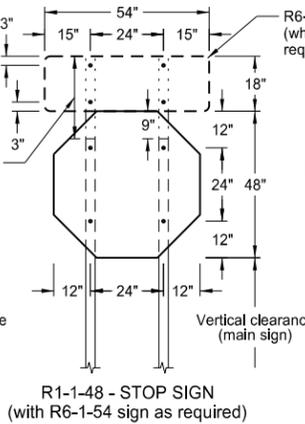
R1-2-60 - YIELD SIGN



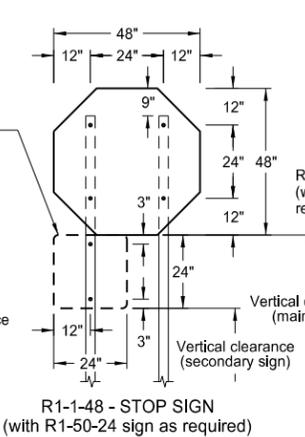
W14-3-64 - PENNANT SIGN



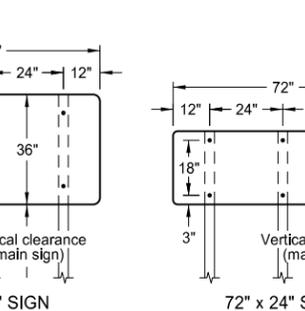
96" x 48" SIGN



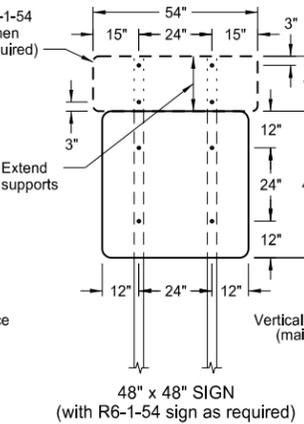
R1-1-48 - STOP SIGN (with R6-1-54 sign as required)



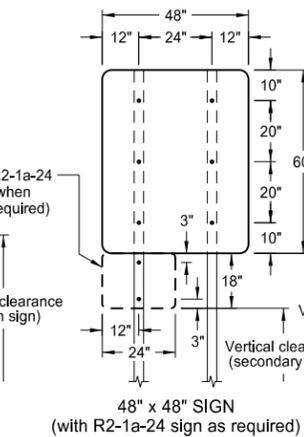
R1-1-48 - STOP SIGN (with R1-50-24 sign as required)



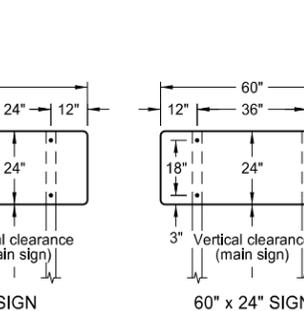
72" x 36" SIGN



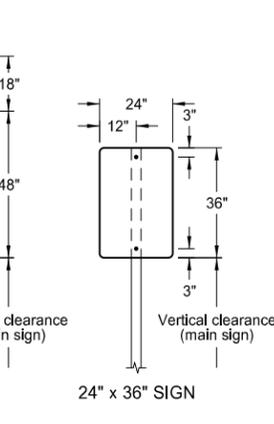
48" x 48" SIGN (with R6-1-54 sign as required)



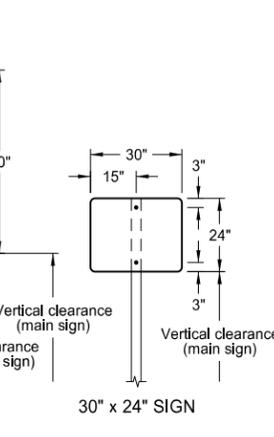
48" x 48" SIGN (with R2-1a-24 sign as required)



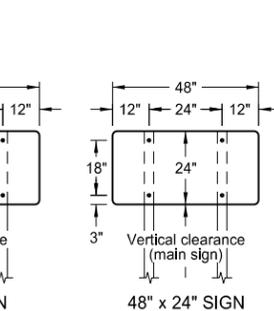
72" x 24" SIGN



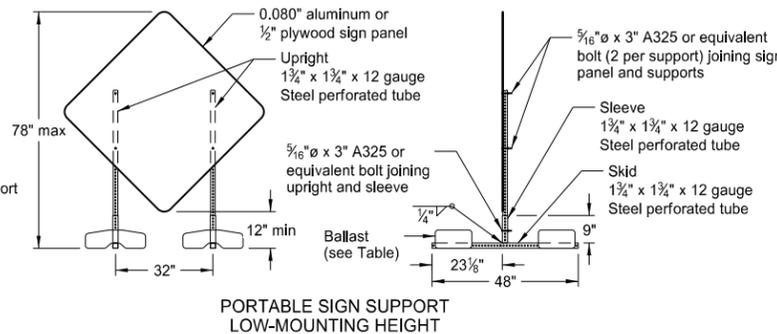
24" x 36" SIGN



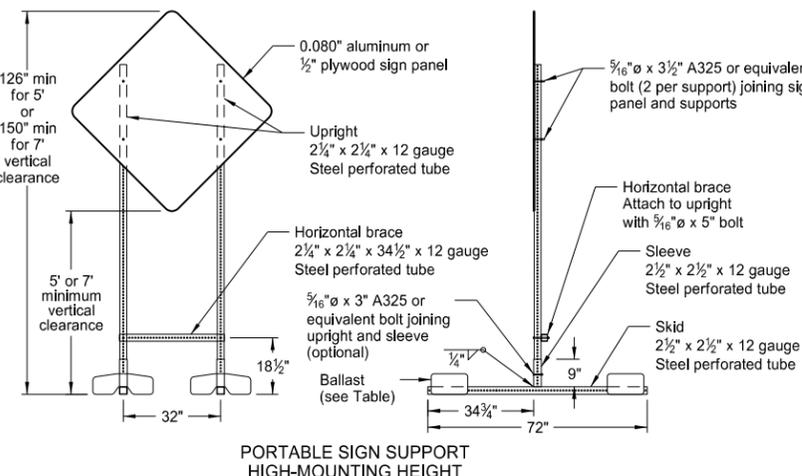
60" x 24" SIGN



48" x 24" SIGN



PORTABLE SIGN SUPPORT LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT HIGH-MOUNTING HEIGHT

NOTES:

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

MINIMUM BALLAST (For each side of sign support base)

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

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

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

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

ROAD CLOSURE LAYOUTS

Notes

- Variables
  - S = Numerical value of speed limit or 85th percentile.
  - W = The width of taper.
  - L = Minimum length of taper, or S x W for freeways, expressways, and all other roads with speeds of 45 mph or greater, or  $W \times S^2/60$  for urban, residential, and other streets with speeds of 40 mph or less.
- Barricades placed on roadway shall be on a moveable assembly. Signs placed on roadway shall be placed on skid mounted assemblies.
- Delineator drums, barricades or cones used for tapering traffic shall be spaced at the dimension "S". Delineator drums or cones used for tangents shall be spaced at 2 times dimension "S".
- Sequencing Arrow Panels
  - Panels should normally be placed at the beginning of the taper. Where shoulder width does not provide sufficient room, the panel should be moved closer to the work area so that it can be placed on the roadway surface. See Shoulder Closure Standard Drawing.
  - Type A shall be used on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
  - Type B shall be used on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
  - Type C shall be used on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
- The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
- The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 mph. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
- Use when work area is 1 mile or longer.
- When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
- Existing speed limit signs within a reduced speed zone shall be covered.
- Where necessary, safe speed to be determined by the Engineer.
- The contractor has the option of using portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Specifications.
- G20-55-96 sign is not required if this standard is part of other traffic control layouts, or the work is less than 15 days.

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

**KEY**

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

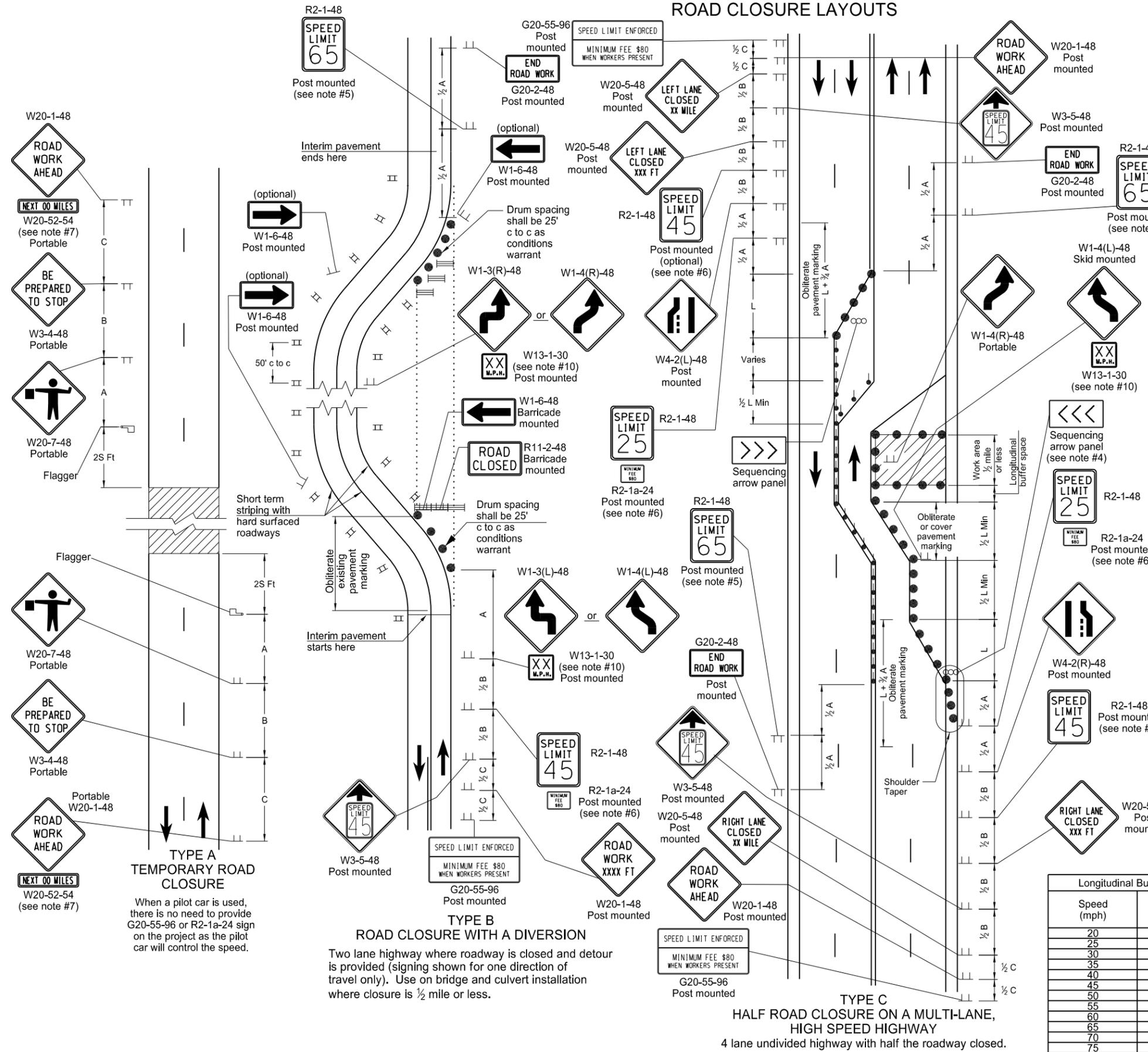
**Longitudinal Buffer Space**

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

NORTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
9-27-13

REVISIONS	
DATE	CHANGE

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



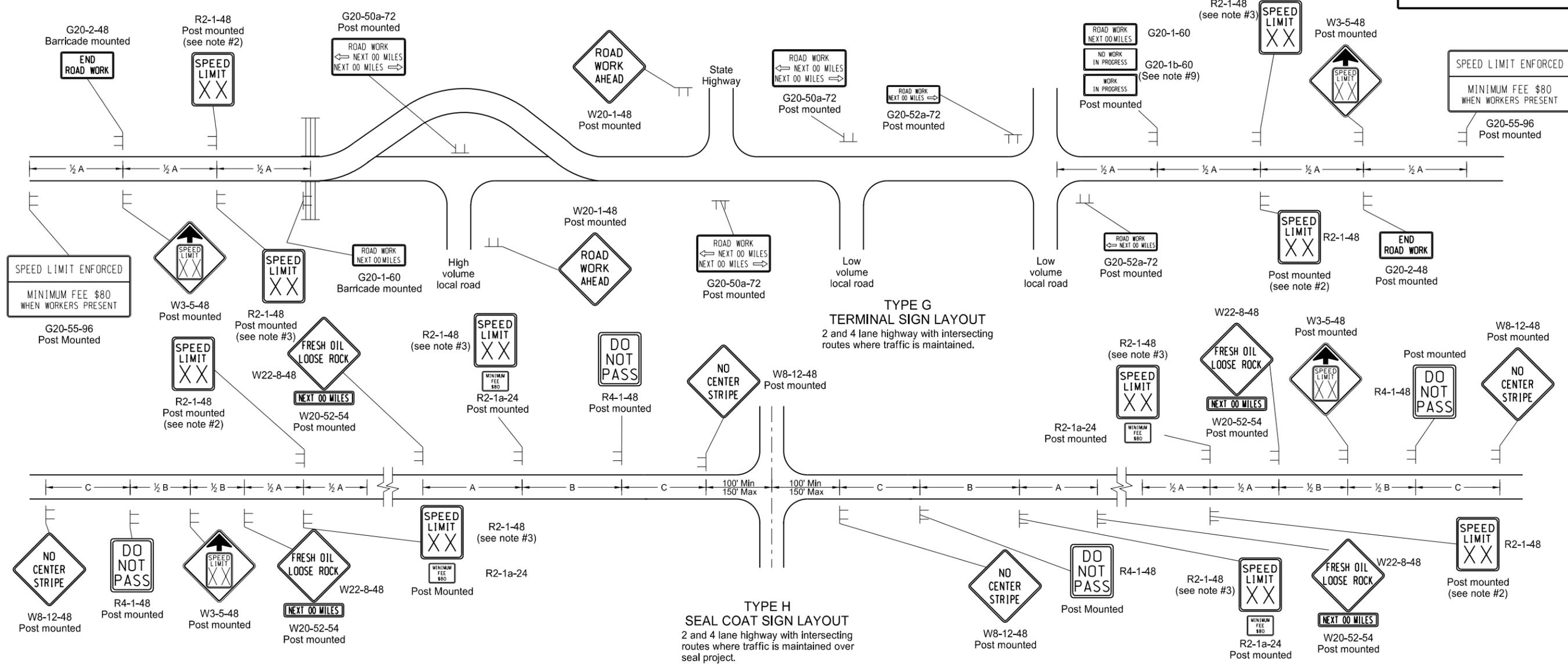
**TYPE A TEMPORARY ROAD CLOSURE**  
When a pilot car is used, there is no need to provide G20-55-96 or R2-1a-24 sign on the project as the pilot car will control the speed.

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

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

# TERMINAL AND SEAL COAT SIGN LAYOUTS

D-704-20



- Barricades placed on roadway shall be on a moveable assembly. Signs placed on the roadway shall be placed on skid mounted assemblies.
- The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
- The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 MPH below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 MPH. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
- When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
- Existing speed limit signs within a reduced speed zone shall be covered.
- On seal projects, signs R2-1-48, R2-1a-24, R4-1-48, W22-8-48 and W20-52-54 shall be placed just after all important intersections and at five mile intervals thereafter. Sign W8-12-48 shall be placed just after all important intersections and at 2 mile intervals thereafter until the short term center line pavement marking is in place. No short term pavement markings are placed when traffic volumes are 750 ADT or less.

- The contractor has the option of using portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Specifications.
- Type H construction sign traffic control shall have the speed limit signs covered or removed once the loose aggregate has been removed.
- The contractor shall install the G20-1b-60 sign when work is suspended for winter.
- Other traffic control layouts will be required in the immediate work areas. If the speed limit is reduced in the work area, speed limit signs shall have the R2-1a-24 sign placed below.
- G20-55-96 sign is not required if work is less than 15 days.

**KEY**

≡ Type III barricade

┌ Sign

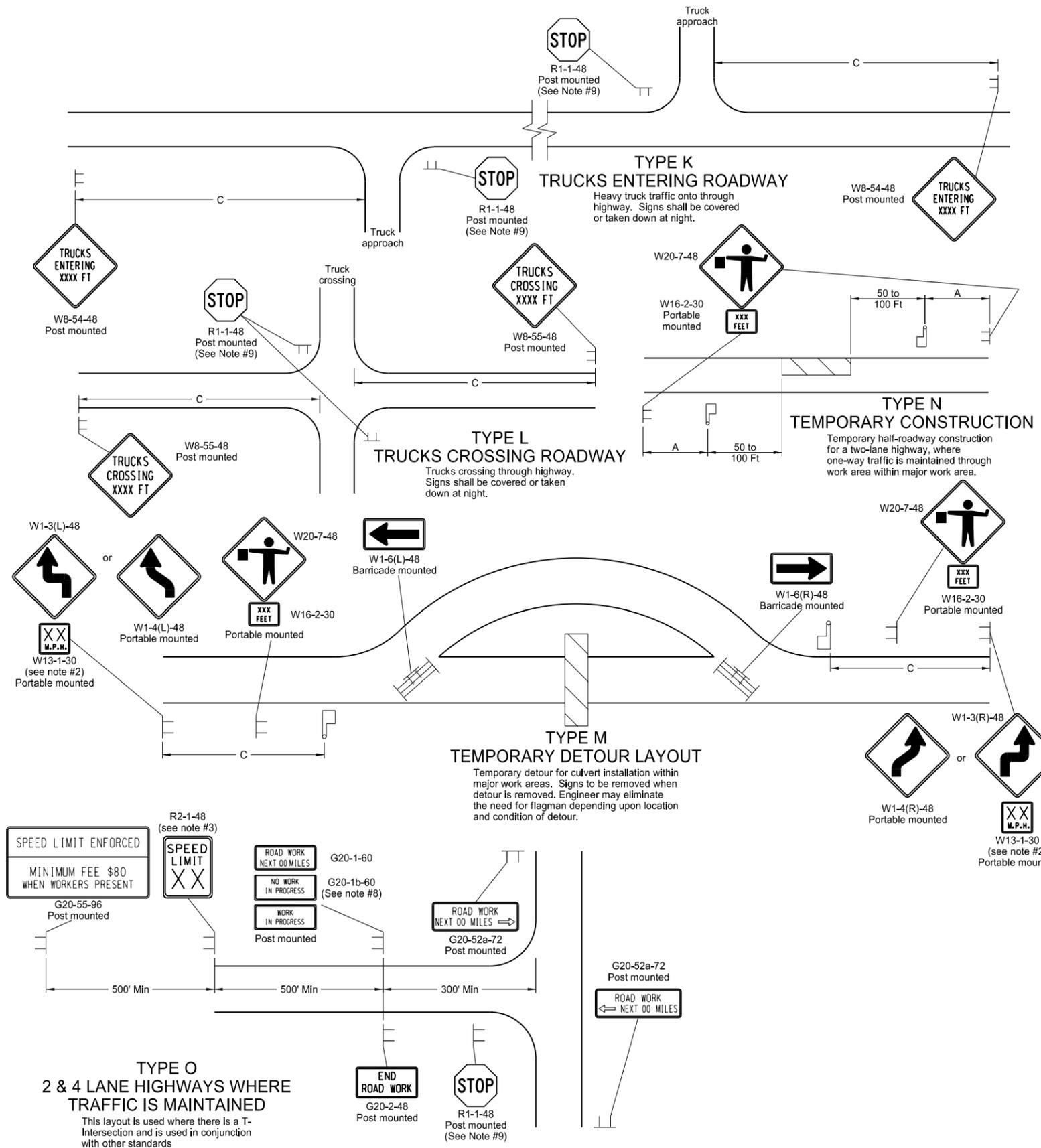
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 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

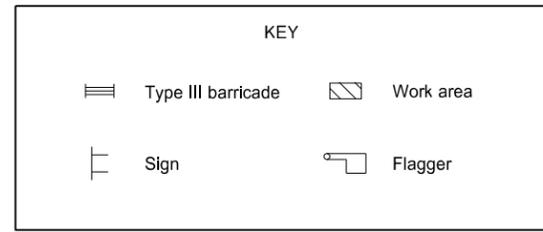
This document was originally issued and sealed by Roger Weigel Registration Number PE-2930, on 09/27/13 and the original document is stored at the North Dakota Department of Transportation

# CONSTRUCTION TRUCK AND TEMPORARY DETOUR LAYOUTS

D-704-22



- Notes
- Barricades placed on roadway shall be on a moveable assembly. Signs placed on the roadway shall be placed on skid mounted assemblies. Where necessary, safe speed to be determined by the Engineer.
  - The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 mph. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
  - When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
  - Existing speed limit signs within a reduced speed zone shall be covered. Obliterated or covered pavement marking shall be paid for as Obliteration of Pavement Marking. The covering shall be approved by the engineer.
  - The contractor has the option of using portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Specifications.
  - The contractor shall install the G20-1b-60 sign when work is suspended for winter.
  - If existing stop sign is in place, a 48" stop sign is not required.
  - G20-55-96 sign is not required if this standard is part of other traffic control layouts with this sign or the work is less than 15 days.



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 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

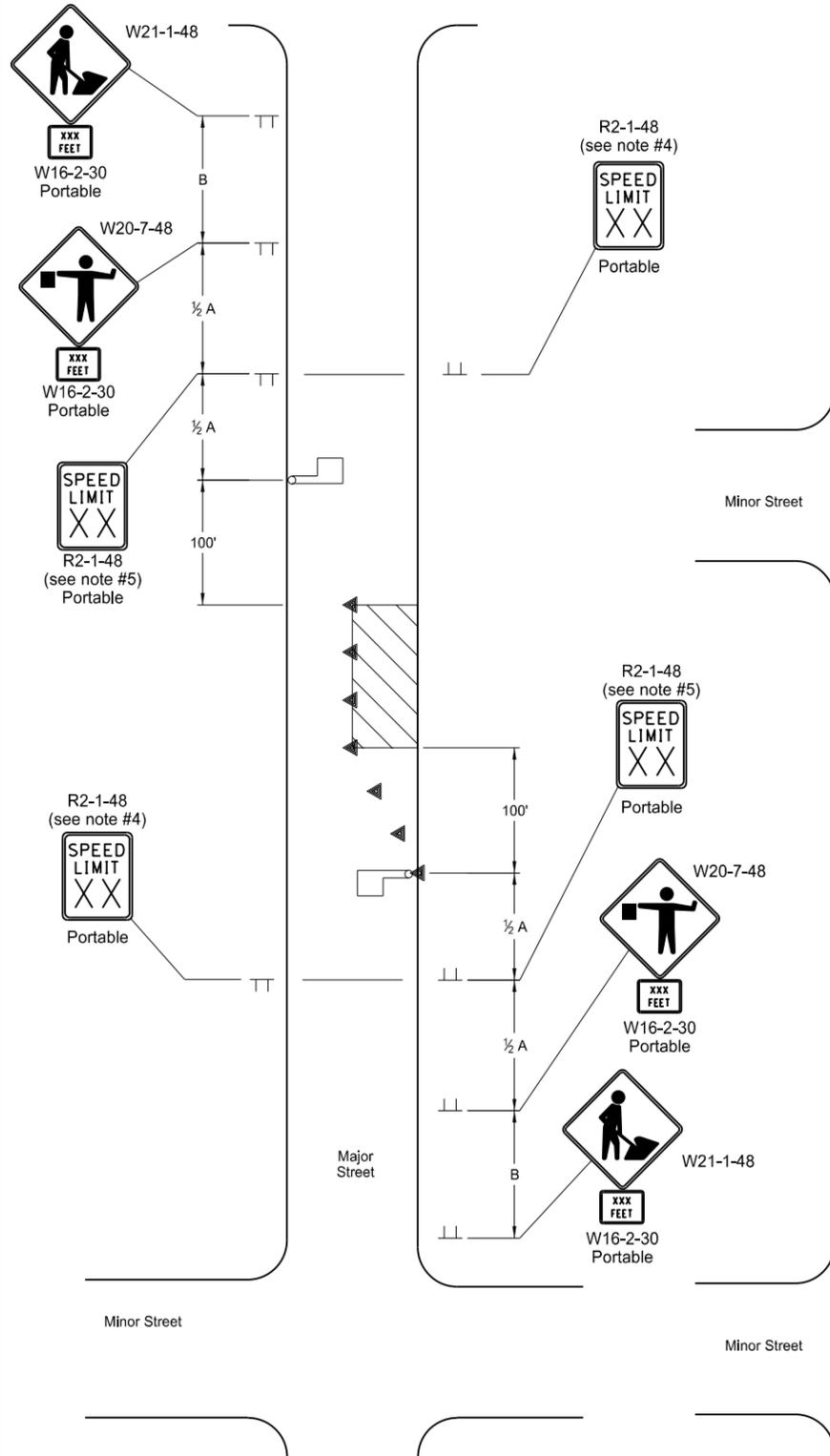
REVISIONS

DATE	CHANGE

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

# LANE CLOSURES ON URBAN STREETS LAYOUTS

D-704-25

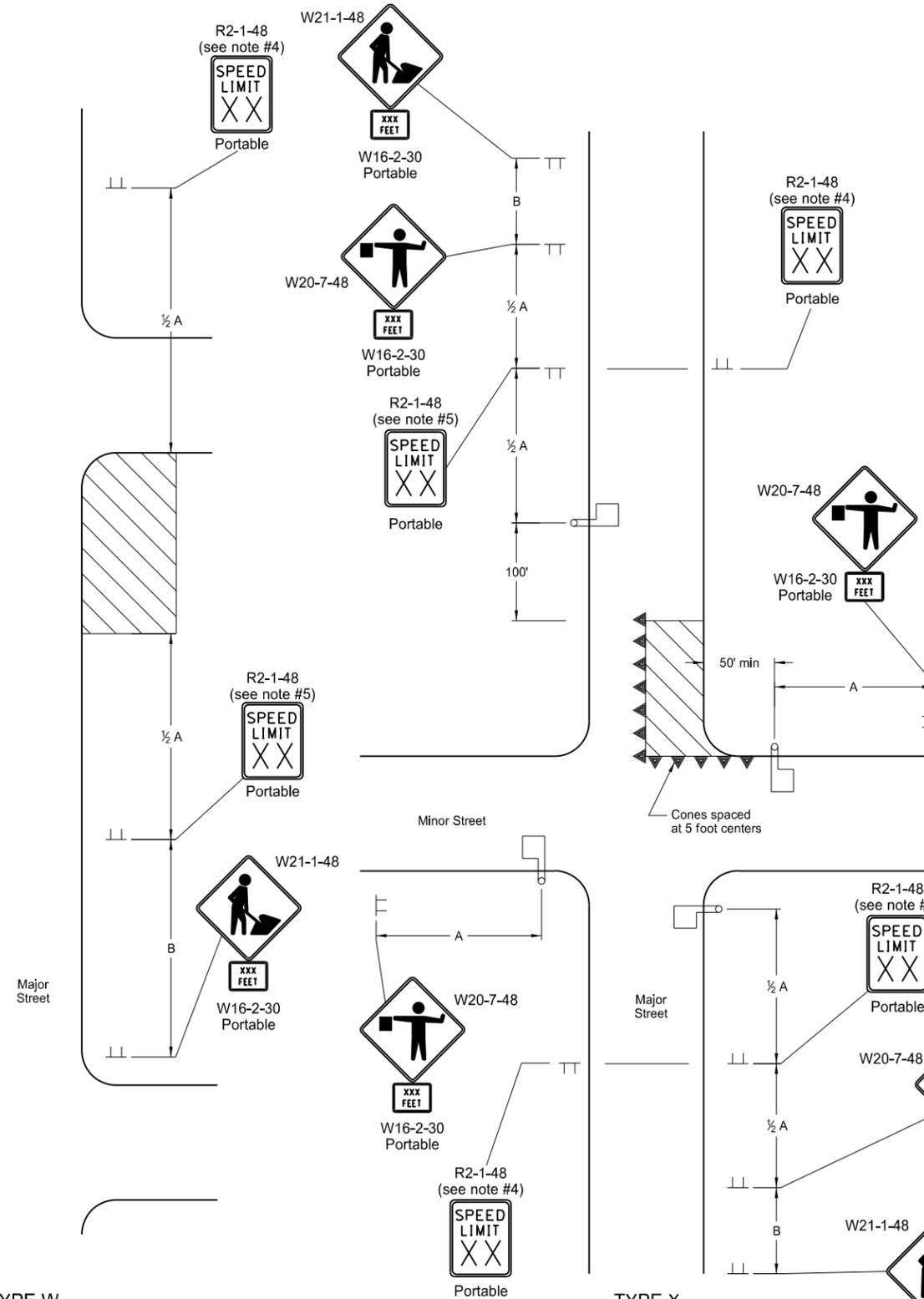


**TYPE V**  
LANE CLOSURE ON URBAN STREET

When portion of roadway is closed to traffic only during daylight hours (mid block location).

**TYPE W**  
WORK BEYOND CURB ON URBAN STREET

When work area is outside of driving lane and no closure is necessary

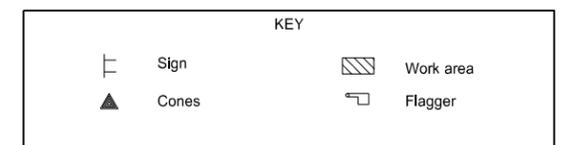


**TYPE X**  
LANE CLOSURE NEAR INTERSECTION ON URBAN STREET

When portion of roadway is closed to traffic only during daylight hours (end block location).

- Notes
1. For Type V: The contractor will be allowed to work only on one side of the roadway at a time so as not to block off any more than one lane of traffic.
  2. When parking is present, the signs shall be placed so they are entirely visible above the parked vehicles or placed at the edge of the parking area so they are visible to oncoming traffic. These signs may be skid mounted when placed on the roadway surface.
  3. Delineator cones used for tapering traffic shall be placed at 3 equal spaces. Delineator cones for tangents shall be spaced at dimension "S". "S" = the numerical value of speed limit.
  4. The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
  5. The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 mph. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
  6. When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
  7. Existing speed limit signs within a reduced speed zone shall be covered.
  8. Where necessary, safe speed to be determined by the Engineer.
  9. The contractor has the option of using portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Specifications.
  10. Urban projects do not need the G20-55-96 and R2-1a-24 signs.

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

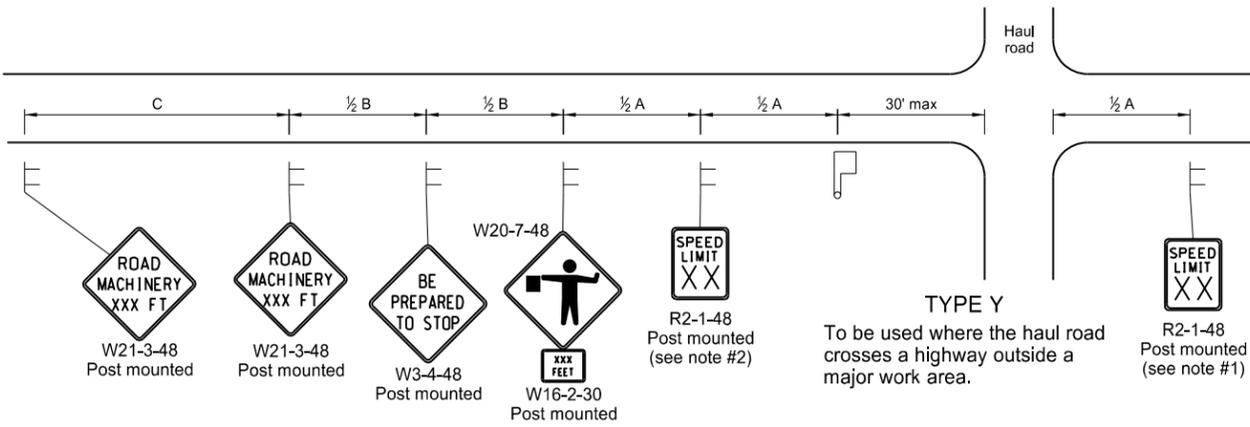


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION 9-27-13	
REVISIONS	
DATE	CHANGE

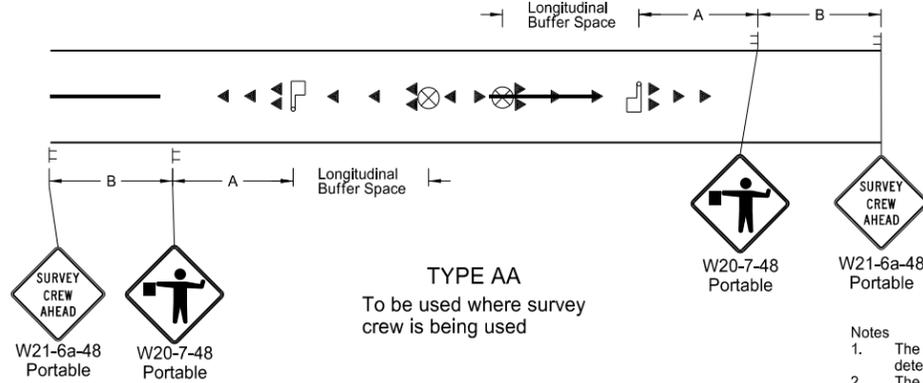
This document was originally issued and sealed by  
 Roger Weigel  
 Registration Number  
 PE- 2930,  
 on 09/27/13 and the original document is stored at the  
 North Dakota Department  
 of Transportation

MISCELLANEOUS SIGN LAYOUTS

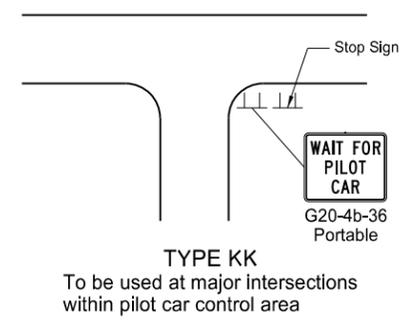
D-704-26



**TYPE Y**  
To be used where the haul road crosses a highway outside a major work area.

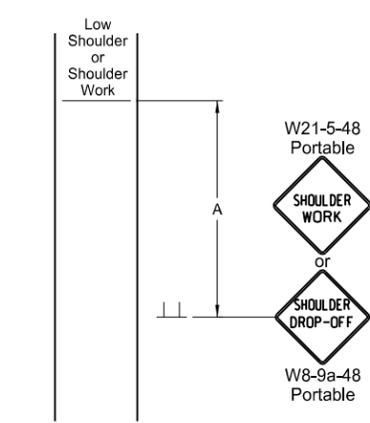


**TYPE AA**  
To be used where survey crew is being used

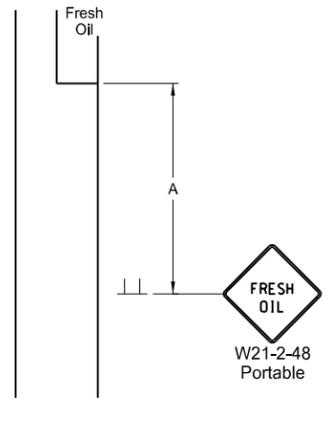


**TYPE KK**  
To be used at major intersections within pilot car control area

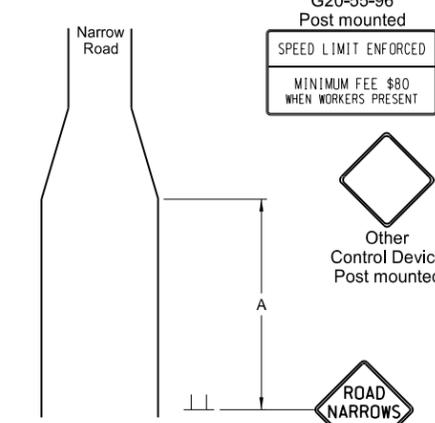
- Notes
1. The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
  2. The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 mph. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
  3. When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
  4. Existing speed limit signs within a reduced speed zone shall be covered.
  5. The contractor has the option of using portable sign supports in lieu of post mounted signs in accordance with the NDDOT Standard Specifications.
  6. G20-55-96 signs are not required if this standard is part of other traffic control layouts, or the work is less than 15 days.
  7. When a pilot car operation is used, place a G20-4b-36 "Wait For Pilot Car" sign at major intersections within pilot car control area.



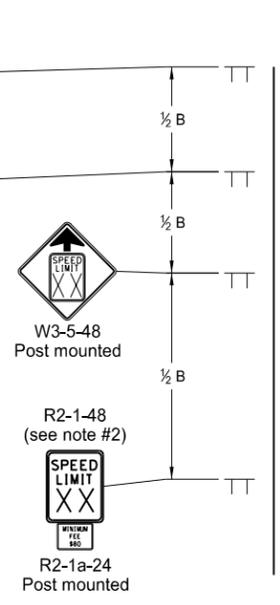
**TYPE BB**  
To be used within a major work area where the sign conditions exist



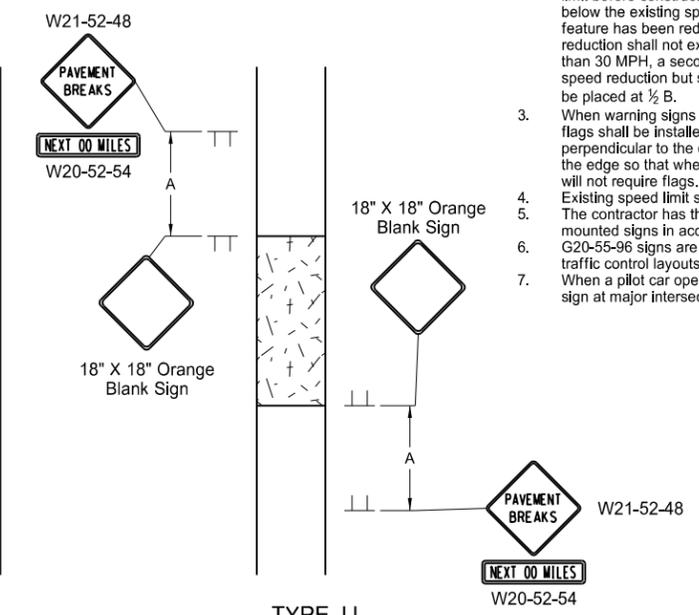
**TYPE CC**  
To be used where the sign conditions exist



**TYPE DD**  
To be used where the sign conditions exist



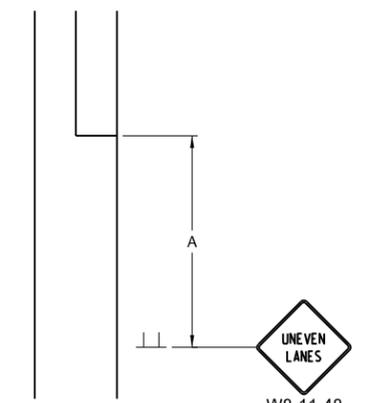
**TYPE Z**  
To be used where speed zone is needed



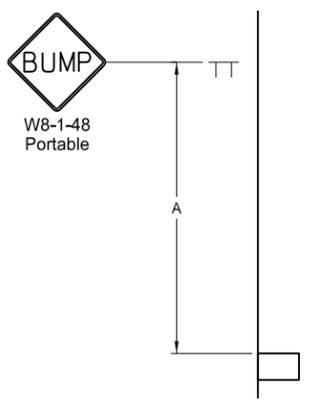
**TYPE JJ**  
To be used where there is a break in the pavement. These signs may be skid mounted or post mounted and shall be installed when conditions exist and removed when not applicable.

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

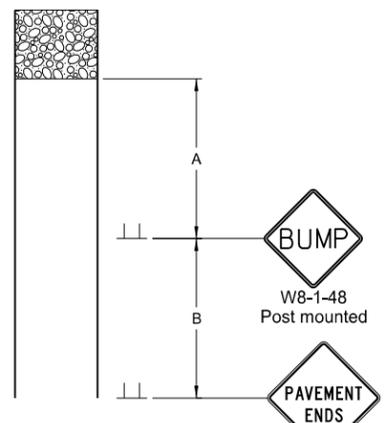
\* Posted speed, off-peak 85th percentile speed prior to work starting, or the anticipated operating speed in mph.



**TYPE GG**  
To be used where a difference of elevation between lanes exist



**TYPE EE**  
To be used where the sign conditions exist



**TYPE FF**  
To be used where the sign conditions exist

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

**KEY**

Sign (represented by a vertical line with a horizontal bar)

Flagger (represented by a square with a diagonal line)

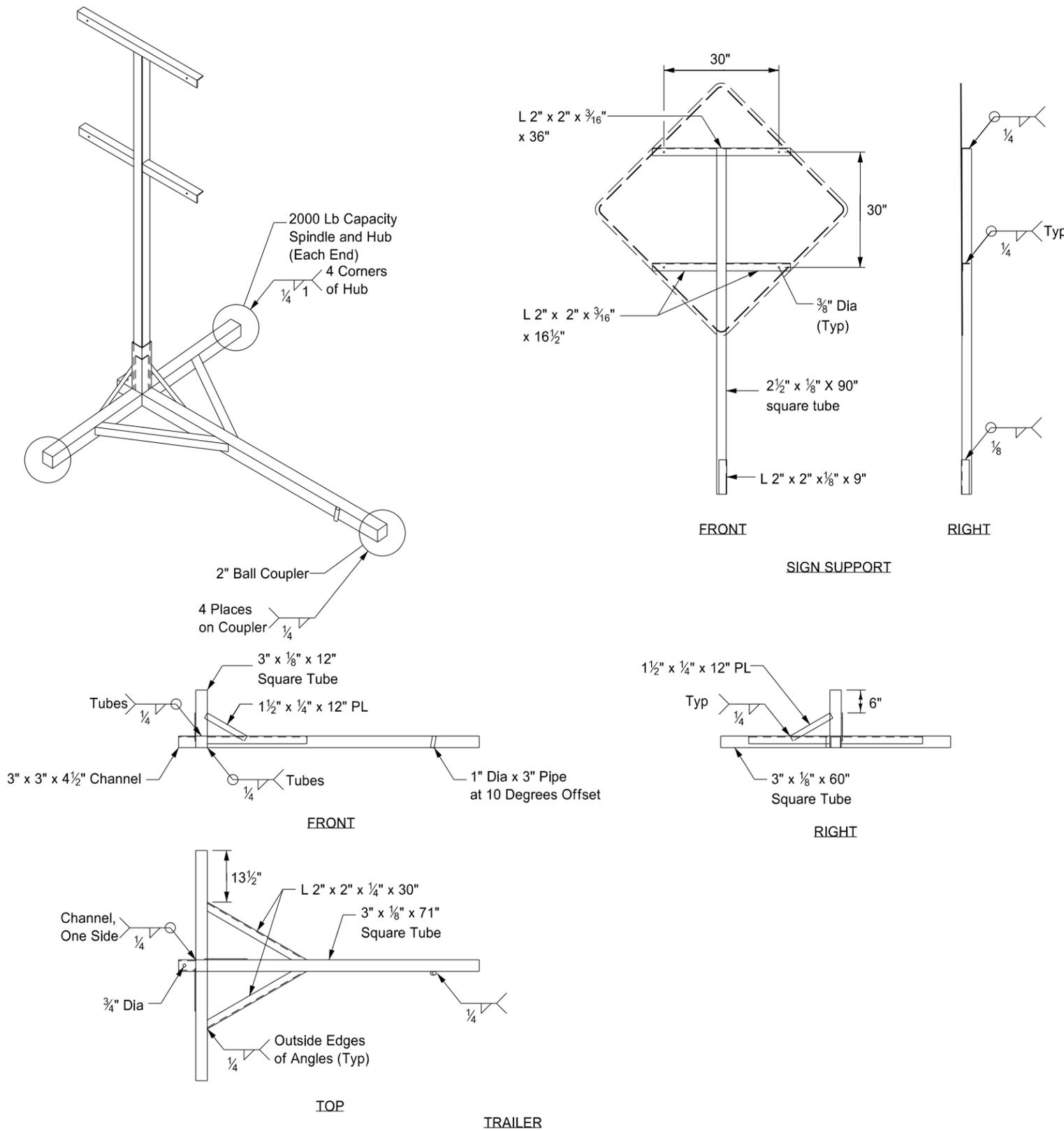
Cones (represented by a triangle)

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

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

PORTABLE SIGN SUPPORT ASSEMBLY

D-704-50



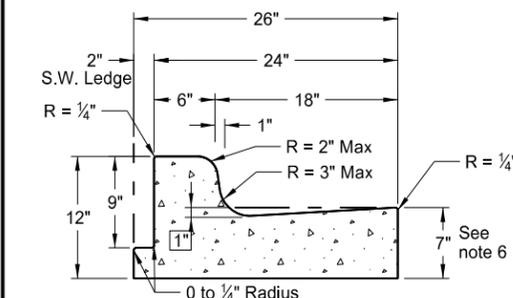
Notes:

- ① The maximum weight of the assembly is 250 pounds.
- ② Use a 14" wheel and tire.
- ③ Automotive and equipment axle assemblies may not be used for trailer-mounted sign supports.
- ④ Other NCHRP 350 crash tested assemblies are acceptable.

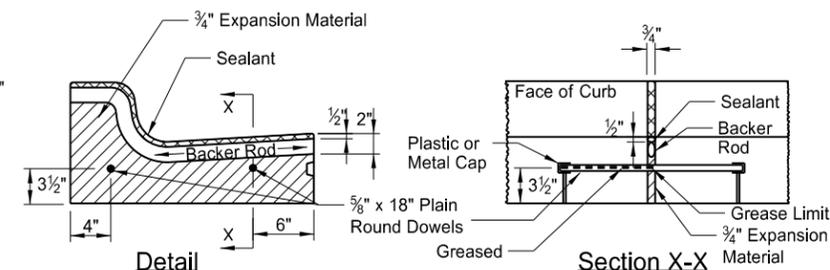
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/23/10 and the original document is stored at the North Dakota Department of Transportation.

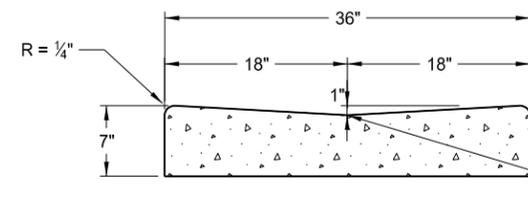
Curb & Gutter and Valley Gutter



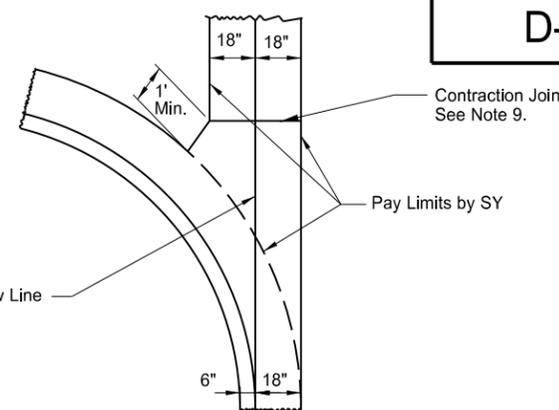
**Curb & Gutter Type 1 (Sec. A & B)**  
Adjacent to Concrete Sidewalk,  
Median, or Parking Lot.  
(Sec. A shown. See Sec B for  
additional details.)



**Isolation Joint**



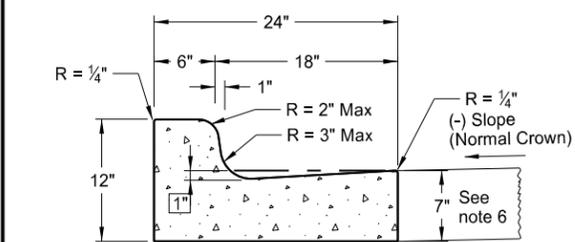
**36" Concrete Valley Gutter Detail**



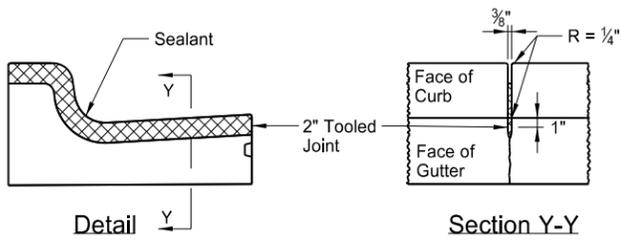
**36" Concrete Valley Gutter Plan**

**NOTES:**

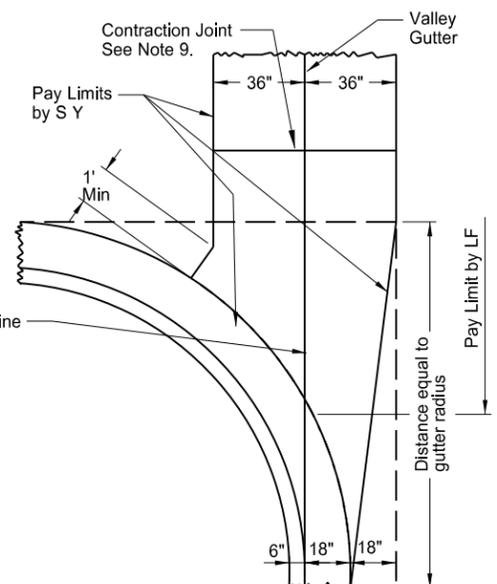
1. Curb and Gutter Type 1 (Sec. A & B) to be used. Section "A" to be used with (-) pavement slopes and section "B" to be used with (+) pavement slopes.
2. Contraction Joints: Tool the Curb & Gutter 2" as shown on the contraction joint details.
3. Isolation Joints: Isolation joint material shall be 3/4" preformed expansion joint filler conforming to the standard specifications. The opening for the backer rod and joint sealant shall be formed by a pre-cut piece of wood or other material approved by the engineer. Dowel supports are not required on the second pour at a cold joint, plastic or metal caps and greased dowels shall be installed in the cold joint for the second pour.
4. Joint Spacing: For hot bituminous pavements the joint spacing for the curb and gutter shall be 10' max. with the panels on each side of the inlets. For concrete pavements the joint spacing for the curb and gutter shall match the pavement joint on PCC Pavements of approximately 15' spacing.
5. Joint sealing: All contraction and isolation joints shall be sealed as shown in the details. The joint sealant for contraction joints shall conform to section 826.02B. The sealant for expansion joints shall be as specified in note 3 above. The sealant shall be tooled and installed in accordance with the manufacturer's recommendations.
6. Depth of Face of Gutter: For hot bituminous pavement the depth of gutter shall be 7" as shown. For PCC pavements, the Contractor has the option to match the depth of gutter to the depth of the adjacent PCC pavement or to construct a 7" depth as shown.
7. When the curb and gutter abuts PCC pavement, it shall be tied to the PCC pavement. The tie bar shall consist of a No. 3 bar, 1'-6" in length spaced 4' center to center.
8. On street returns and other locations where the new curb and gutter ends and does not abut existing curb and gutter, the end two (2) feet of the curb shall be tapered from 6" in height to 0". A 1/2" preformed isolation joint which is full depth and the same shape as the curb and gutter shall be installed just ahead of the taper. An 18" tie bar shall be installed across the joint.
9. Valley Gutter Joints: Contraction joints are required at approx. 10' intervals. The contraction joints shall be 1/8" min. to 3/8" max. in width. The joints shall be formed by sawing or scoring to a minimum depth of 2". The joint sealant shall be a hot poured elastic type joint sealer in accordance with Section 826.02A.2 of the Standard Specifications. The joint and sealant shall be included in the price bid for Valley Gutter.



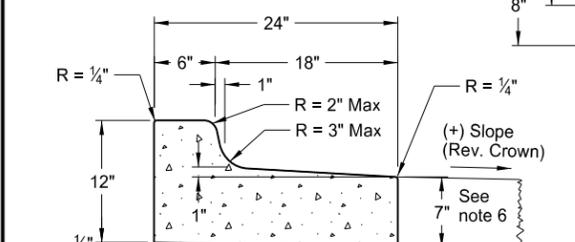
**Curb & Gutter Type 1 (Sec. A)**



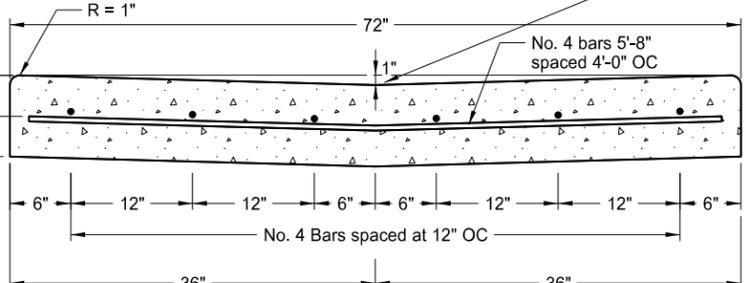
**Contraction Joint**  
(10' Max Spacing)



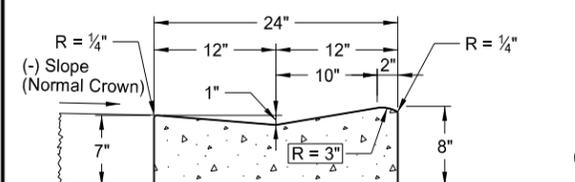
**72" Concrete Valley Gutter Detail**



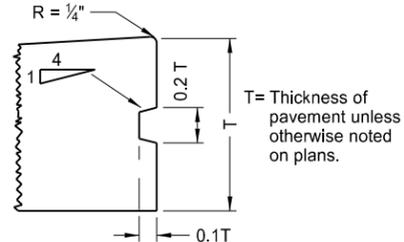
**Curb & Gutter Type 1 (Sec. B)**



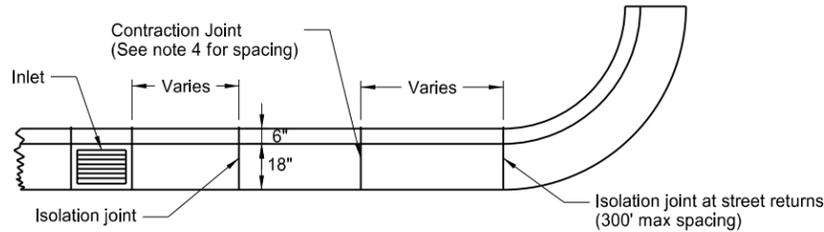
**72" Concrete Valley Gutter Plan**



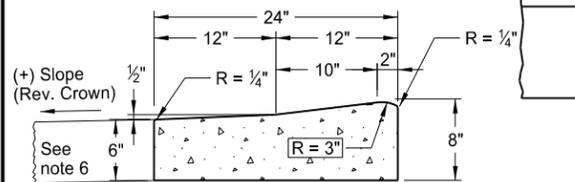
**Mountable Curb & Gutter Type 1 (Sec. A)**



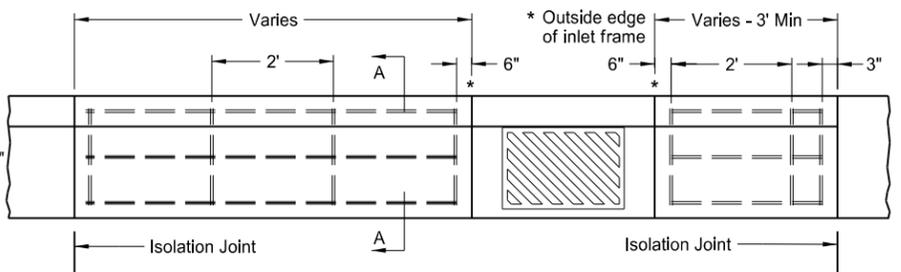
**Keyway Detail for Curb & Gutter**  
(To be used with PCC Pavement and Drives)



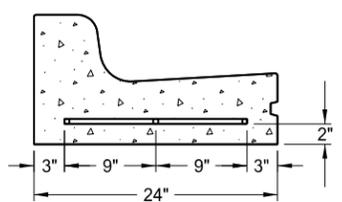
**Joint Location Detail**



**Mountable Curb & Gutter Type 1 (Sec. B)**



**Curb & Gutter Reinforcing at Inlets**



**Section A-A**

NOTE: All bars shall be #4 deformed reinforcing bars. Splices will not be permitted. Reinforcing bars at inlet locations will not be paid for separately, but shall be included in the price bid for "Curb and Gutter - Type 1." This includes inlets located on radii. The reinforcement shall be extended to the second joint (rebar placed through the first joint) in cases where the 3' min. panel length cannot be obtained.

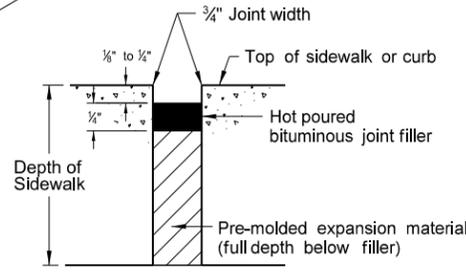
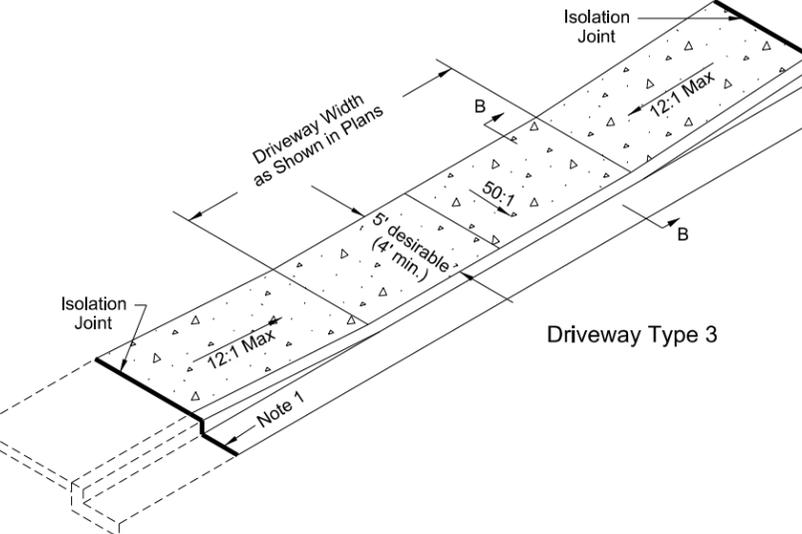
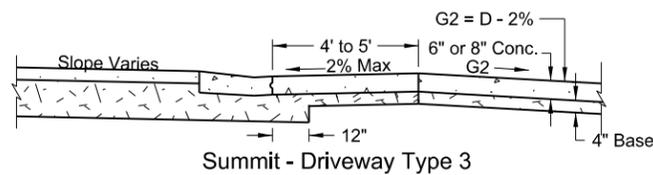
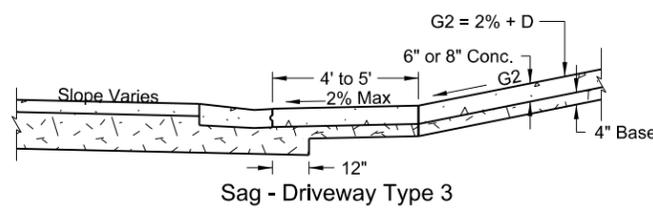
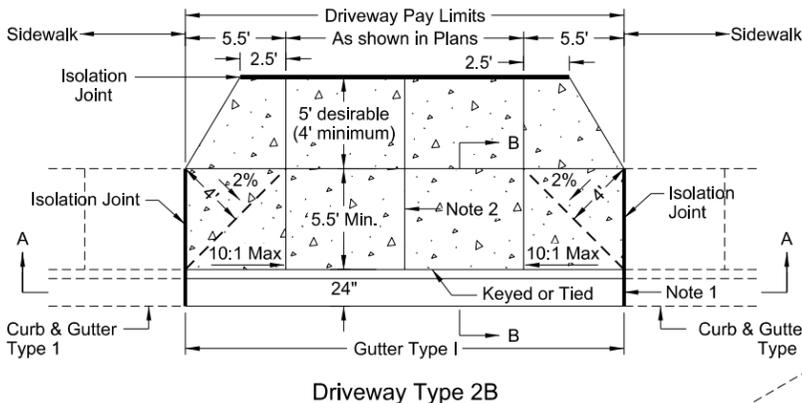
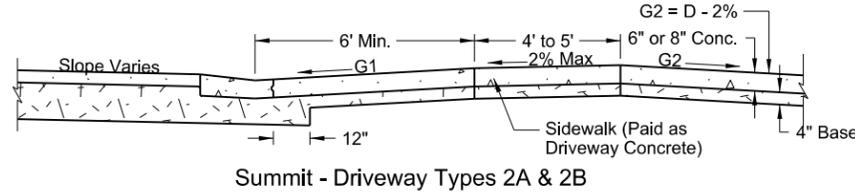
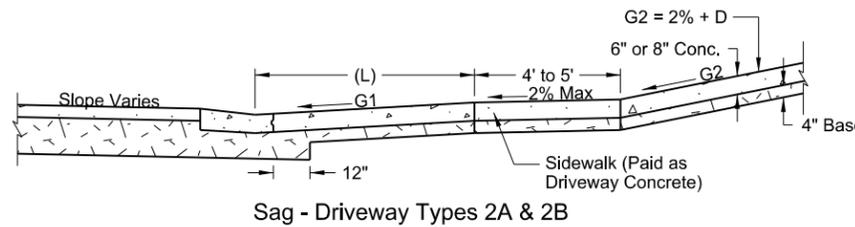
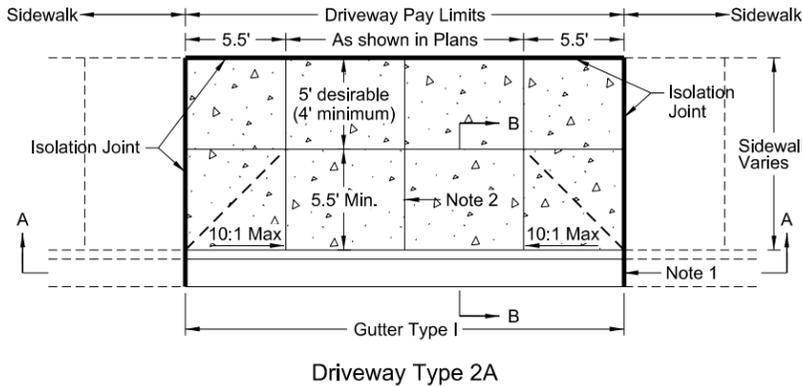
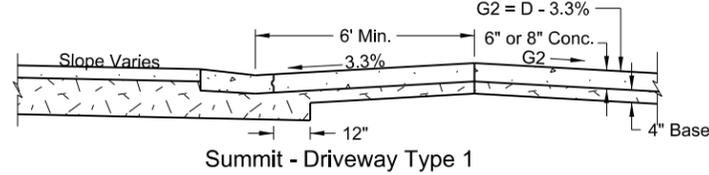
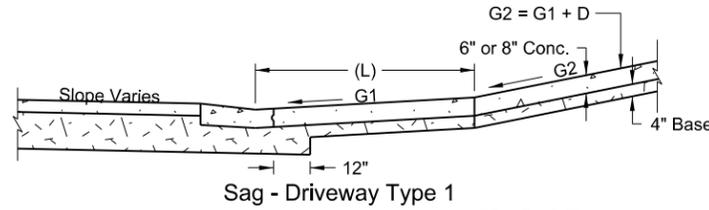
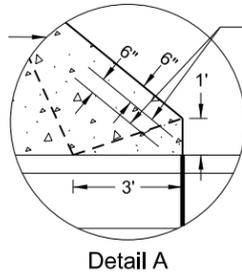
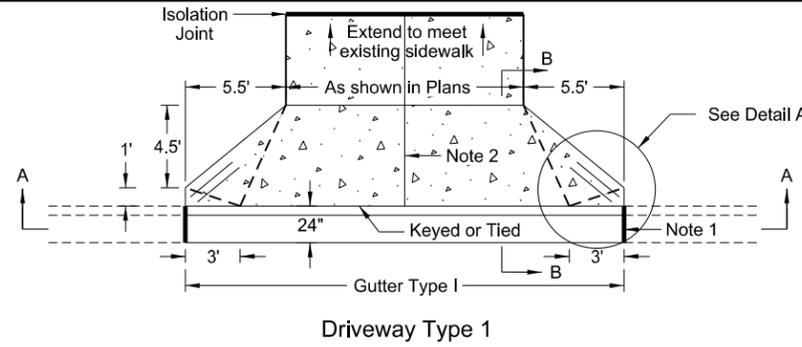
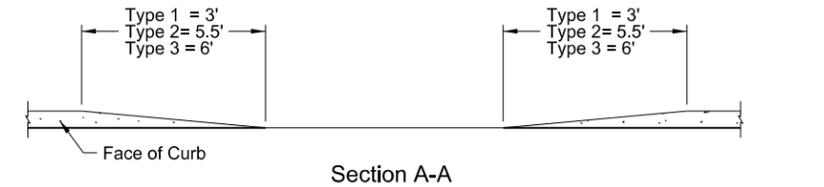
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-7-2013	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel Registration Number PE-2930, on 08/07/2013 and the original document is stored at the North Dakota Department of Transportation

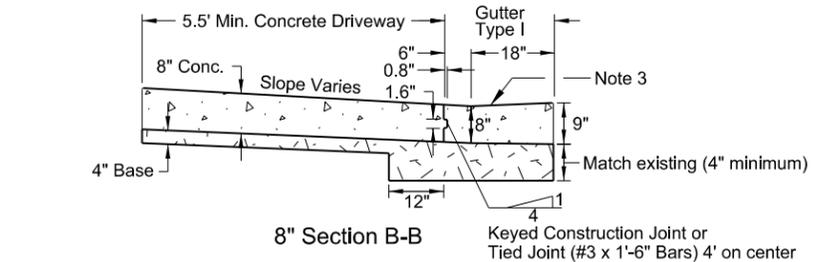
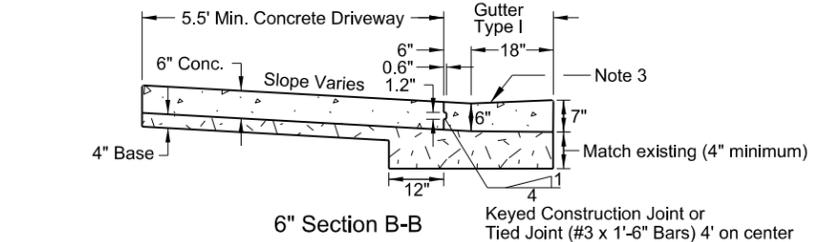
CONCRETE DRIVEWAY - URBAN

NOTES:

- See Standard D-748-1 for curb and gutter isolation joint detail. On PCC roadways, the curb and gutter joints should match those of the pavement as much as practical.
- Joint Spacing: 1 Center contraction joint to be used on all driveways 20' width or less, 2 center contraction joints for driveways > 20' to 30' width, and 3 center contraction joints for driveways greater than 30' width.  
The contraction joints may be sawed or a grooved joint, and shall be a minimum of 1/3 the depth of the concrete.  
Isolation joints should also be used between separately poured concretes, or between old and new concrete.  
All joints shall be sealed with hot pour bituminous filler or low modulus silicone. The sealant shall be installed and tooled in accordance with the manufacturer's recommendations.  
All costs for labor, equipment, and material necessary to construct and seal joints shall be included in the price bid for the driveway.
- Gutter-Type 1 shall be paid for at the unit price bid for "Curb and Gutter-Type 1".
- 6" Driveway to be used unless otherwise specified.
- 4" base material shall be placed under the concrete driveway. All labor and materials necessary to place the base material shall be included in the price bid for Salvage Base Course or Aggregate Base Course CL 5.
- Sidewalk that falls behind a driveway shall be constructed to the same thickness as the driveway and shall be paid for as driveway concrete.



Typical Isolation Joint Seal (longitudinal and transverse)



Driveway ADT	Grade G1		Dimension (L) ft.		Grade Changes (D)	
	Desirable	Maximum	Desirable	Maximum	Desirable	Maximum
(0-500)	5%	12% or controlled by vehicle clearance	12	6	6%	15% or controlled by vehicle clearance
(500-1500)	3%	8%	20	20	3%	6%
(> 1500)	2%	5%	40	40	0%	3%

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-13-2014	
REVISIONS	
DATE	CHANGE

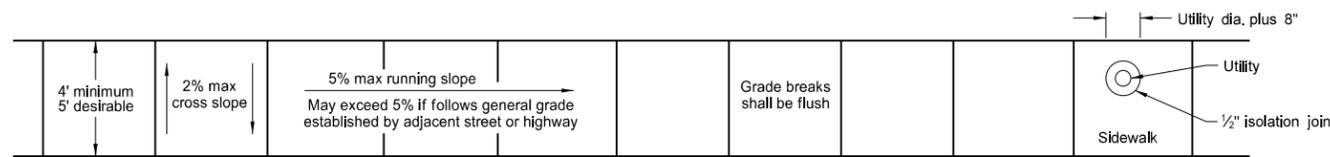
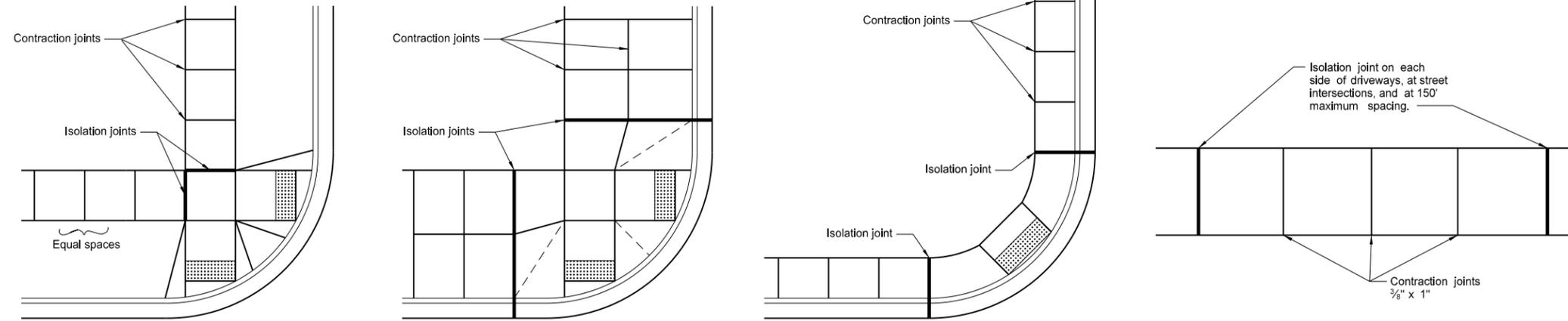
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 02/13/14 and the original document is stored at the North Dakota Department of Transportation

# SIDEWALK

D-750-2

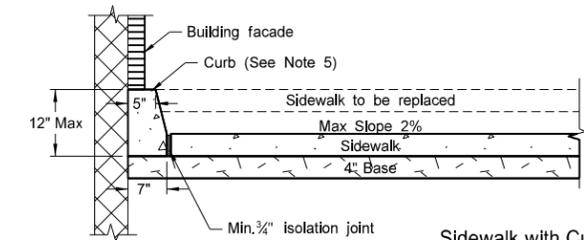
**NOTES:**

1. Curb ramp and detectable warning panel layouts are for informational purposes only. See Standard Drawing D-750-3 for curb ramp and detectable warning panel details.
2. Joint Spacing: Transverse contraction joint spacing shall vary from 4' to 6' to create approximate square panels. Longitudinal contraction joints shall be used where the sidewalk width is 8' or greater, and shall be spaced at half the sidewalk width. The contraction joints may be sawed or a grooved joint, and shall be a minimum of 1/3 the depth of the concrete. When the sidewalk is adjacent to the curb & gutter, the sidewalk joint spacing shall be varied to match up with the curb & gutter joints. Isolation joints should also be used between separately poured concretes, or between old and new concrete. The cost for all labor, equipment, and material necessary to construct contraction and isolation joints shall be included in the price bid for sidewalk concrete.
3. 4" sidewalk concrete thickness to be used unless otherwise specified in the plans.
4. 4" base material thickness to be used unless otherwise specified in the plans. All labor and materials necessary to place the base material shall be included in the price bid for "Salvage Base Course" or "Aggregate Base Course CL 5."
5. Landscaping is preferred to modify existing ground slope changes as needed. If not possible, such as adjacent buildings, a vertical curb may be used as shown in the detail below. The curb will be paid for at the unit price bid for the item "Curb - Type I" per lineal foot.

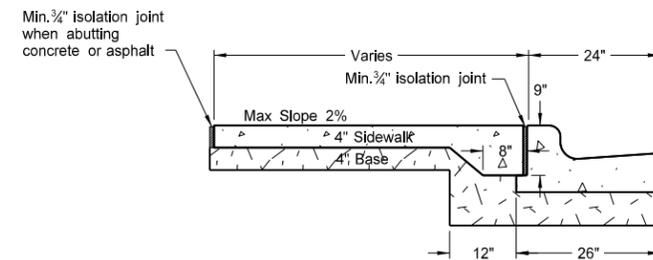


Sidewalk Width and Grade

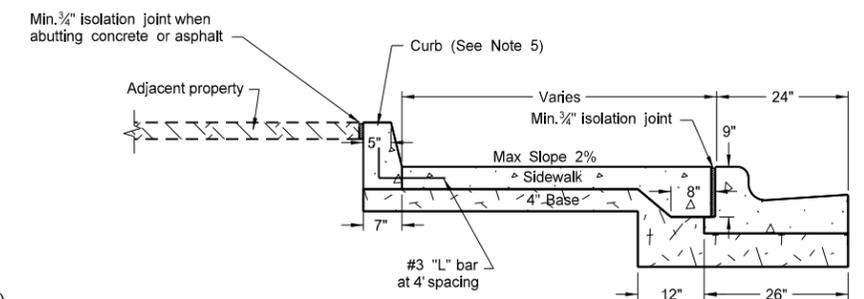
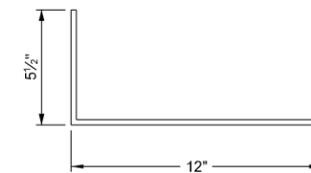
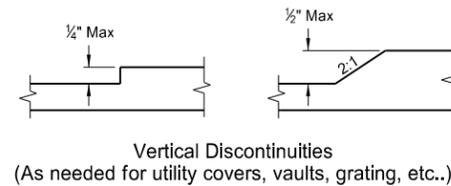
Utility Blockout



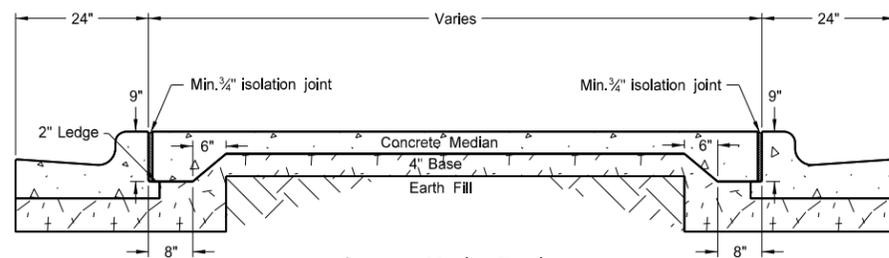
Sidewalk with Curb Detail (Building face application)



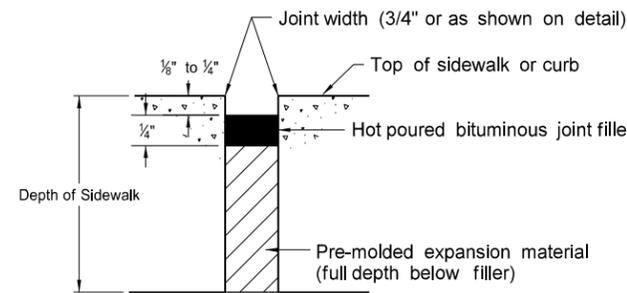
Sidewalk Detail (Installed adjacent to curb and gutter)



Sidewalk with Curb Detail (Adjacent property application)



Concrete Median Detail



Typical Isolation Joint Seal (longitudinal and transverse)

NORTH DAKOTA	
DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/26/13 and the original document is stored at the North Dakota Department of Transportation

# CURB RAMP DETAILS

D-750-3

+More Right of Way

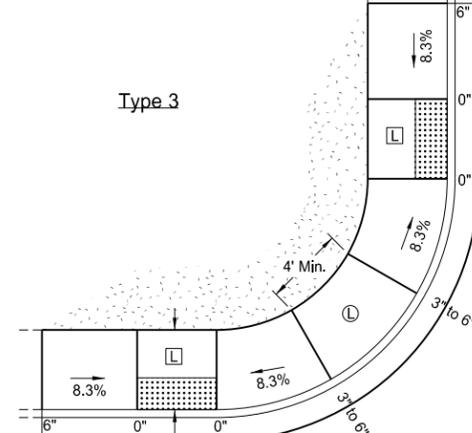
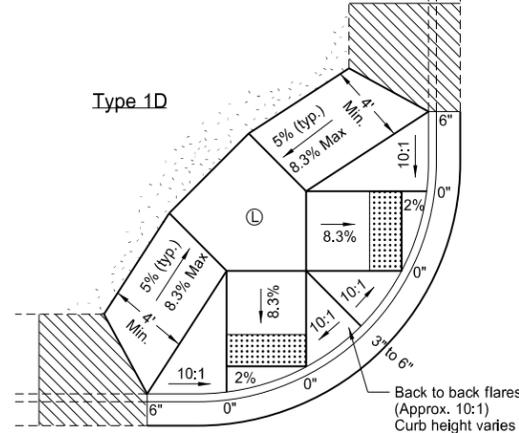
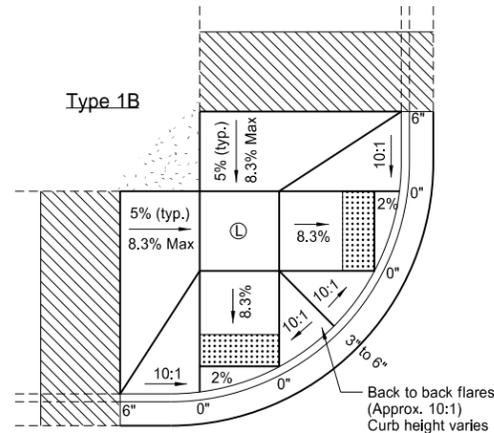
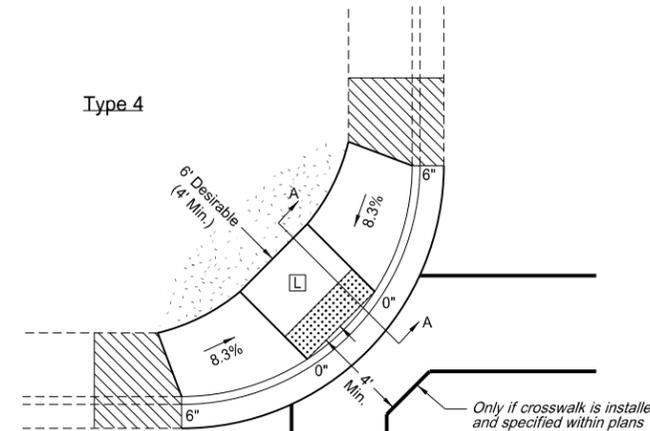
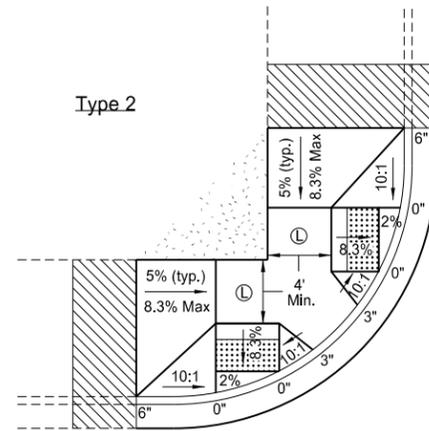
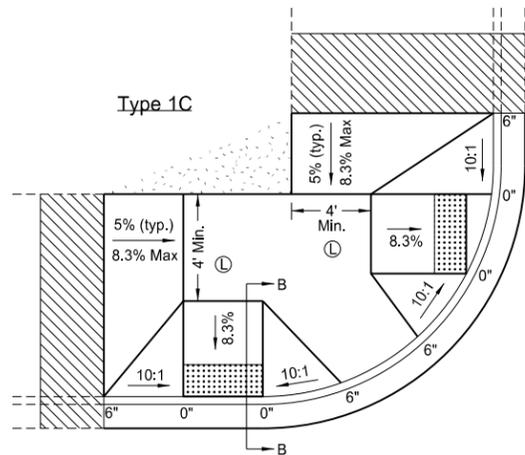
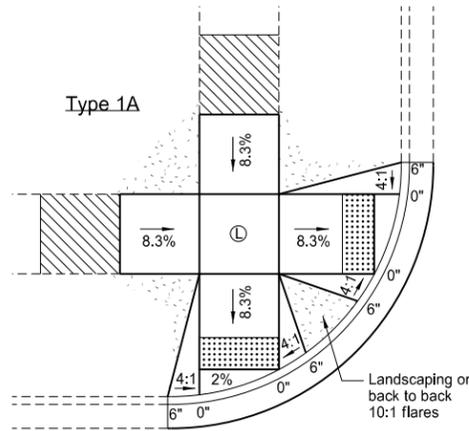
Less Right of Way

**NOTES:**

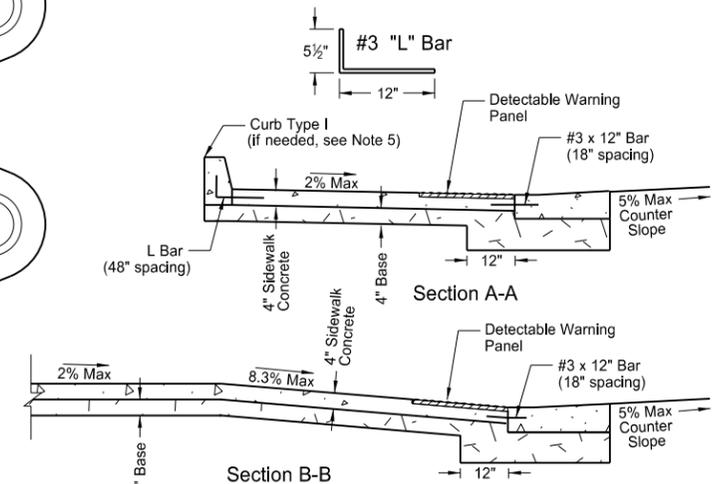
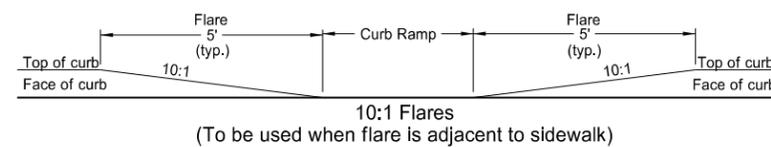
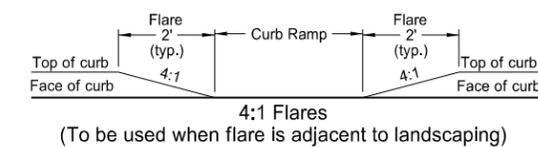
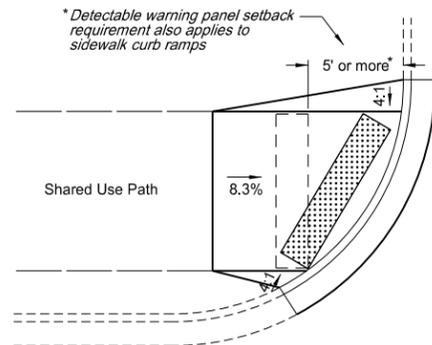
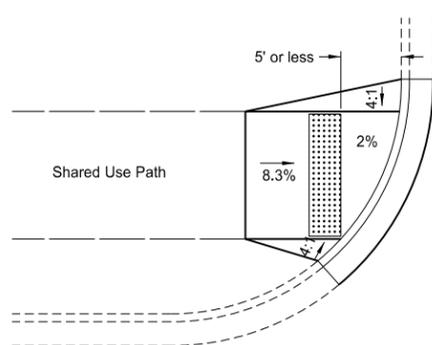
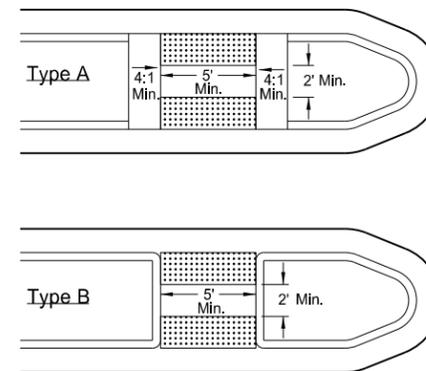
- Ramp width is defined as the useable portion of the ramp, excluding flares if used.  
Curb ramp width should match the existing sidewalk width. 4' width minimum.  
Ramp width for shared-use paths should match the existing shared use path width.  
Ramp length shall be maximum of 15'.
- Landings shall be a minimum of 4' x 4' and shall have a max 2% slope in any direction. Landings are desirably 5' x 5' or larger.
- Detectable warning panels shall match the ramp width. Radial panels may also be used. The detectable warning panel may be located within the lower landing.
- The pedestrian access route shall be continuous 4' min. width. Max 2% cross slope applies to all concrete, excluding flares.
- Landscaping is preferred to modify existing ground slope changes as needed. If not possible, such as adjacent buildings, a vertical curb may be used as shown in the detail below. The curb will be paid for at the unit price bid for the item "Curb - Type I" per lineal foot.

**LEGEND:**

- : Detectable Warning Panel
- : Landscaping
- : Transitional tie-in segment if needed for retrofits. Max grade slope 8.3%.
- : Upper Landing
- : Lower Landing
- 0", 3", or 6" : Curb Height
- 8.3% : All slopes shown are max grades. Flatter slopes may be used.



**Median Refuge Islands (Cut-Through)**



NORTH DAKOTA	
DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/26/13 and the original document is stored at the North Dakota Department of Transportation

