

DESIGN DATA			
Traffic	Average Daily		
Current 2014	Pass: 1115	Trucks: 300	Total: 1415
Minor Rehabilitation			

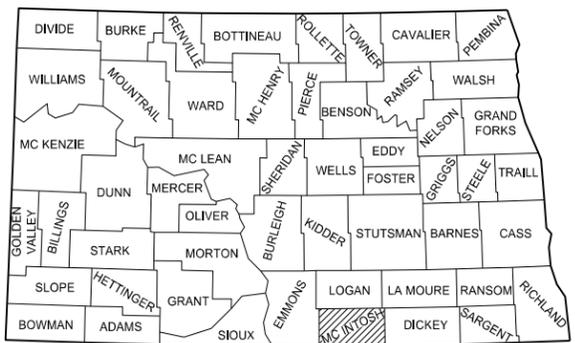
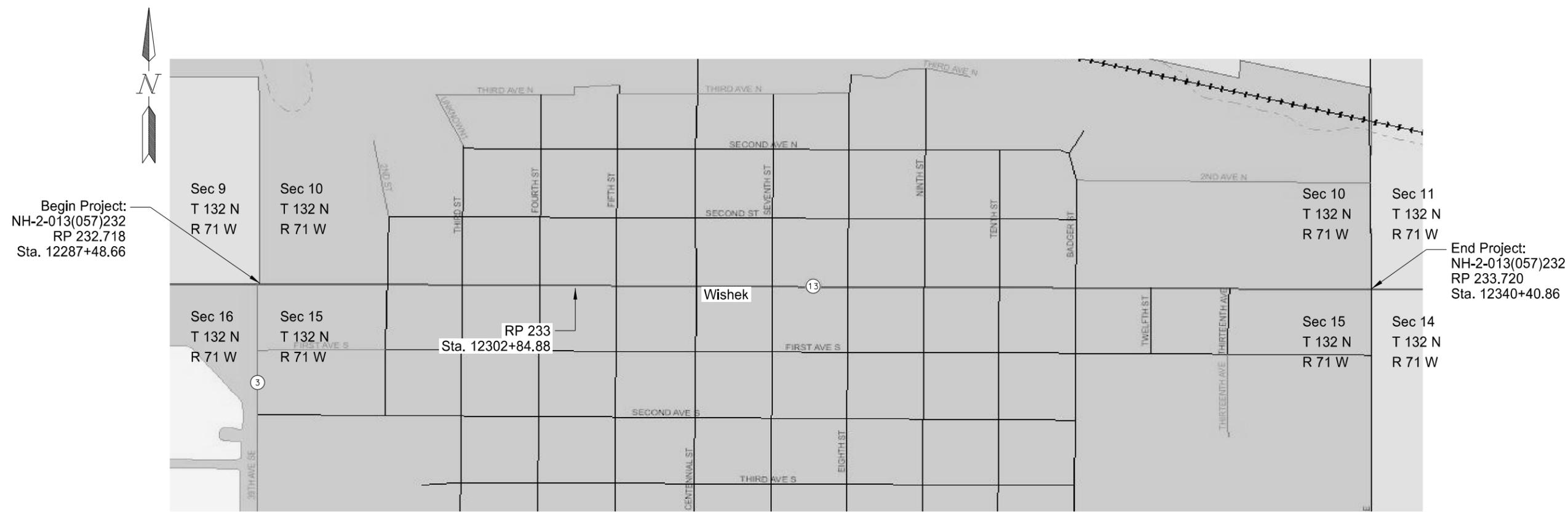
STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	21294	1	1

JOB # 18
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

NH-2-013(057)232
 McIntosh County
 City of Wishek
 ND 13 - Beaver Ave
 Curb & Gutter, Driveway, and Sidewalk

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 NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
NH-2-013(057)232	1.002	1.002



DESIGNERS
Tyler Peterson /s/
Adam McMahon /s/
Jesse Feldmeyer /s/

APPROVED DATE 3/15/2016
 Jay Praska /s/
 Valley City District Engineer
 ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.
 APPROVED DATE 3/14/2016
 Daniel R. Viau /s/
 NDDOT Valley City District

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

TABLE OF CONTENTS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-2-013(057)232	2	1

PLAN SECTIONS

Section	Page(s)	Description
1	1	Title Sheet
2	1	Table of Contents
6	1	Notes
8	1 - 2	Quantities
10	1	Basis of Estimate
20	1 - 7	General Details
30	1	Typical Sections
40	1 - 14	Removals
90	1 - 14	Paving Layouts
100	1 - 3	Work Zone Traffic Control
120	1 - 14	Pavement Marking

LIST OF STANDARD DRAWINGS

Number	Description
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-704-5	Construction Sign Detail
D-704-8	Breakaway Systems for Construction Zone Signs - U-Channel Post
D-704-9	Construction Sign Details - Terminal and Guide Signs
D-704-10	Construction Sign Details - Regulatory 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-704-22	Construction Truck and Temporary Detour 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-754-23	Perforated Tube Assembly Details
D-754-24	Mounting Details Perforated Tube
D-754-24A	Breakaway Coupler System for Perforated Tubes
D-762-1	Pavement Marking Message Details
D-762-4	Pavement Marking
D-766-1	Mailbox Location Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	6	1

NOTES

100-P01 NOISE/WORK RESTRICTIONS: To prevent disrupting or disturbing any persons in nearby residences, all work must occur between the hours of 7:00 AM to 8:00 PM.

Use the street closure layout during the installation of valley gutters, see detailed layout in section 100 sheet 2. Complete all work to install the valley gutter and re-open to traffic in no more than 10 calendar days from the start of closure.

100-P02 WORK SITE LIMITATIONS: Work will be limited to a length no longer than 2 city blocks, which may include 2 intersections, during the removal and replacement of bituminous surfacing, curb & gutter, sidewalks, driveways, and valley gutters. Work will not advance until all work in the preceding block is finished. Temporary aggregate will not be measured or paid for, and will be included the price in the contract unit price for other items.

Maintain at least one lane for traffic at all times when installing mainline patching, at the 9th street intersection.

Maintain access to all business within the work zone.

100-P03 COORDINATION OF PROJECTS: Another project in the vicinity of this project is under contract during the 2016 construction season. This project is NH-2-013(058)233, located at the East end of Wishek (project limits) and goes East to Lehr.

704-P02 FLAGGING: Use flaggers and tubular markers to guide traffic around the work.

748-P01 CURB & GUTTER – TYPE I: Use Aggregate Base Course Class 5 to grade the base under the new Curb and Gutter. Include the cost of furnishing, placing and compacting the aggregate in the contract unit price for “Curb & Gutter – Type I”.

107-700 HAUL ROADS: The Engineer will not designate paved roads off the state system as haul roads.

Maintain existing flow lines during the installation of new concrete.

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".

750-P01 SIDEWALK & DRIVEWAY CONCRETE: Use Aggregate Base Course Class 5 to grade the base under the new sidewalk and driveway concrete. Include the cost of furnishing, placing, and compacting the aggregate in the contract unit price for “Sidewalk Concrete” and “Driveway Concrete.”

202-P01 SAW BITUMINOUS SURFACING – FULL DEPTH: Where curb and gutter removal is specified in the plans, saw the asphalt surface 2 feet parallel to the concrete to allow for the placement of concrete forms.

750-P02 TOPSOIL, SEEDING, AND MULCHING: Salvage and reuse topsoil along sidewalks, driveways, and curb & gutter after forms have been removed. Provide additional topsoil due to loss during removal, and replace at no expense to the department. Include the cost associated with the placement and landscaping of topsoil in the contract unit price for “Sidewalk Concrete” and “Driveway Concrete.”

202-P02 REMOVAL OF BITUMINOUS SURFACING: Include all cost to remove existing aggregate base in the contract unit price for “Removal of Bituminous Surfacing”.

Restore all disturbed areas with class II seed and hydraulic mulch according to sections 251 and 253 of the NDDOT Standard Specifications. Include the cost associated with the installation of seeding and mulching in the contract unit price for “Sidewalk Concrete” and “Driveway Concrete.”

430-P01 COMMERCIAL GRADE HOT MIX ASPHALT: Use Commercial Grade Hot Mix Asphalt to repair all patched areas. Include the PG oil in the contract unit price for “Commercial Grade Hot Mix Asphalt”.

There are existing underground sprinklers near the sidewalk at location 9G. Include the cost associated with removing and resetting the sprinklers at this location in the contract unit price for “Sidewalk Concrete”

704-P01 TRAFFIC CONTROL DEVICES: Provide traffic control devices that comply with the following Standard Drawings:

1. D-704-15, Layout type A
2. D-704-22, Layout type K and L
3. D-704-26, Layout type BB and EE

752-P01 TEMPORARY SAFETY FENCE: Use the Temporary Safety Fence for pedestrian safety. The fence will be measured and paid for only by the maximum amount installed at any time.

Where Curb & Gutter is removed, use tubular markers to mark the edge of the pavement until the area has been patched.

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	8	1

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	-----	-----	-----
103	0100 CONTRACT BOND	L SUM	1	1
202	0114 REMOVAL OF CONCRETE PAVEMENT	SY	1,872	1,872
202	0119 SAW CONCRETE	LF	2,390	2,390
202	0130 REMOVAL OF CURB & GUTTER	LF	3,351	3,351
202	0131 REMOVAL OF CURB-TYPE 1	LF	191	191
202	0132 REMOVAL OF BITUMINOUS SURFACING	SY	994	994
202	0153 SAW BITUMINOUS SURFACING-FULL DEPTH	LF	4,225	4,225
302	0120 AGGREGATE BASE COURSE CL 5	TON	35	35
401	0050 TACK COAT	GAL	52	52
411	0105 MILLING PAVEMENT SURFACE	SY	86	86
430	0500 COMMERCIAL GRADE HOT MIX ASPHALT	TON	372	372
702	0100 MOBILIZATION	L SUM	1	1
704	0100 FLAGGING	MHR	400	400
704	1000 TRAFFIC CONTROL SIGNS	UNIT	1,199	1,199
704	1050 TYPE I BARRICADE	EA	18	18
704	1052 TYPE III BARRICADE	EA	20	20
704	1060 DELINEATOR DRUMS	EA	54	54
704	1067 TUBULAR MARKERS	EA	150	150
709	0151 GEOSYNTHETIC MATERIAL TYPE R1	SY	95	95
722	6240 ADJUST UTILITY APPURTENANCE	EA	1	1
748	0140 CURB & GUTTER-TYPE I	LF	3,272	3,272
748	0520 CURB-TYPE I	LF	33	33
748	1020 VALLEY GUTTER 36IN	SY	15	15
748	1030 VALLEY GUTTER 72IN	SY	88	88
750	0100 SIDEWALK CONCRETE	SY	934	934
750	1000 DRIVEWAY CONCRETE	SY	817	817
750	2115 DETECTABLE WARNING PANELS	SF	560	560
752	0911 TEMPORARY SAFETY FENCE	LF	1,250	1,250
754	0592 RESET SIGN PANEL	EA	5	5
754	0593 RESET SIGN SUPPORT	EA	5	5
762	1104 PVMT MK PAINTED 4IN LINE	LF	8,825	8,825
762	1106 PVMT MK PAINTED 6IN LINE	LF	3,288	3,288
762	1124 PVMT MK PAINTED 24IN LINE	LF	542	542

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	8	2

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	-----	-----	-----
766	0120 RESET MAILBOX	EA	3	3

BASIS OF ESTIMATE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	10	1

Commercial Grade Hot Mix Asphalt

Estimated at 2 Ton per Cubic Yard

PG 58-28 Asphalt Cement @ 6% of HMA (include in price of HMA)

Tack Coat @ 0.05 Gal per Square Yard (include in price of HMA)

Reset Sign Support and Sign Panel

Stop Sign – Single Telespar:

Sta. 12301+28.82 – 34.66 Rt

Sta. 12304+39.65 – 36.27 Lt

Sta. 12304+99.55 – 34.92 Rt

Sta. 12308+69.58 – 34.82 Rt

Sta. 12308+09.14 – 34.88 Lt

Reset Mailbox

Sta. 12302+73 – 20 Rt

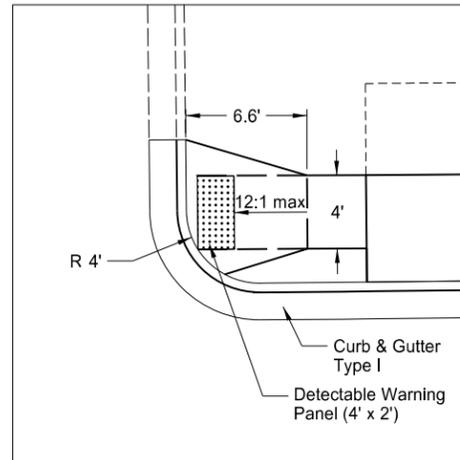
Sta. 12325+53 – 20 Rt

Sta. 12327+15 – 23 Lt

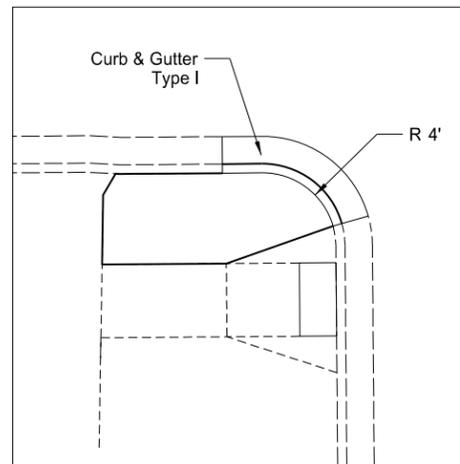
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	20	1

Second Street Intersection

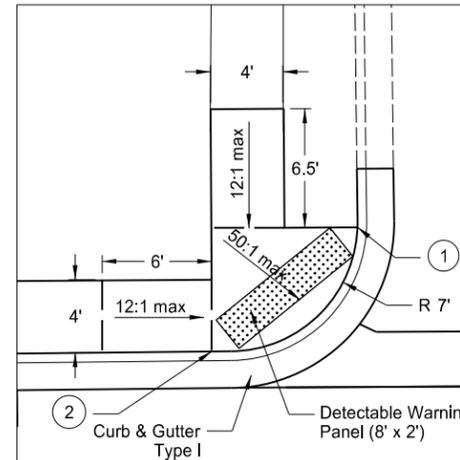


Second Street NE Corner

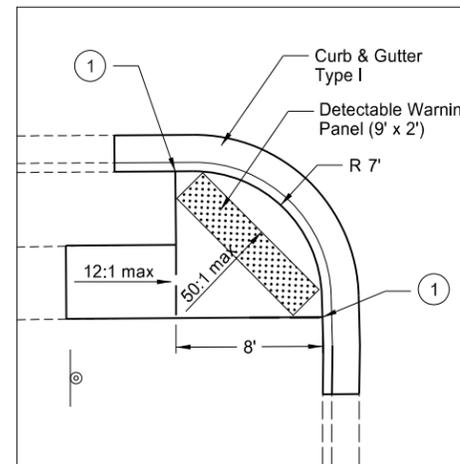


Second Street SW Corner

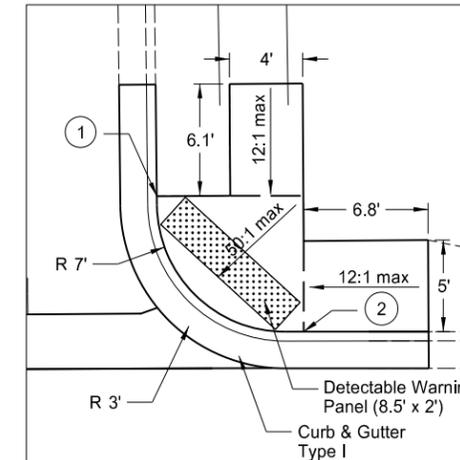
Third Street Intersection



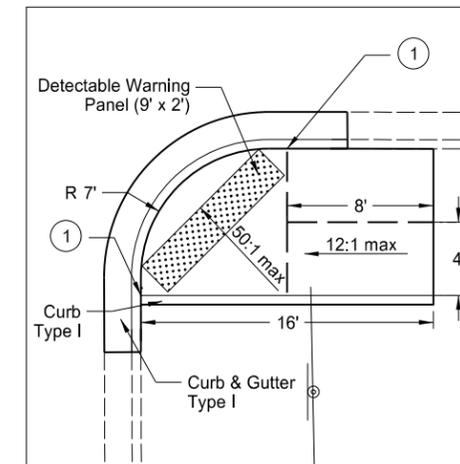
Third Street NW Corner



Third Street SW Corner



Third Street NE Corner



Third Street SE Corner

Notes:

1. Taper curb to 0" within 2' to 6'
2. Taper curb to match sidewalk.

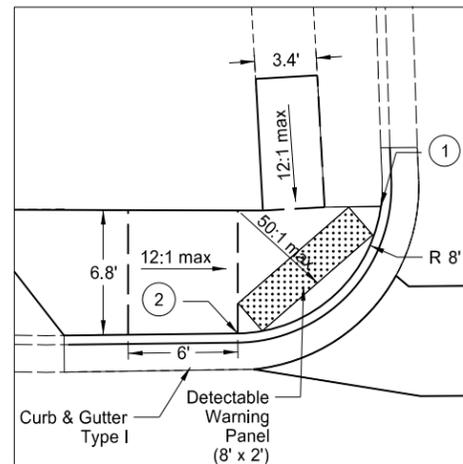


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

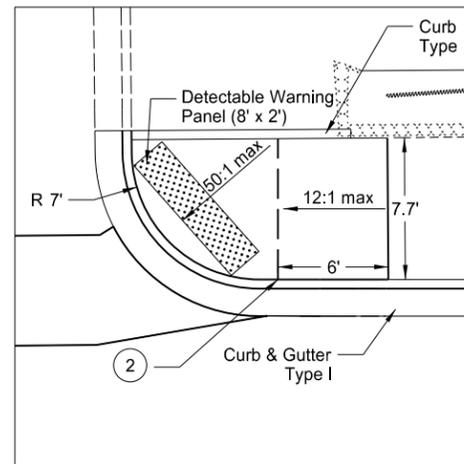
ADA Curb Ramp Details
2nd St. & 3rd St.
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	20	2

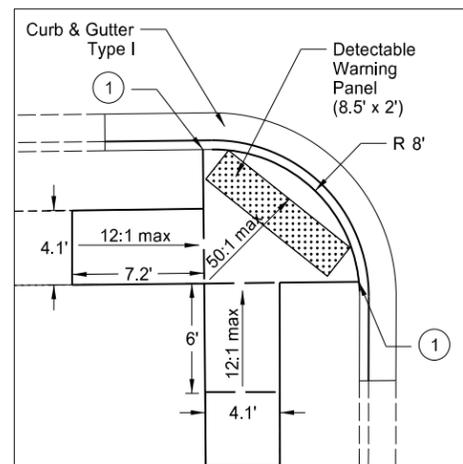
Fourth Street Intersection



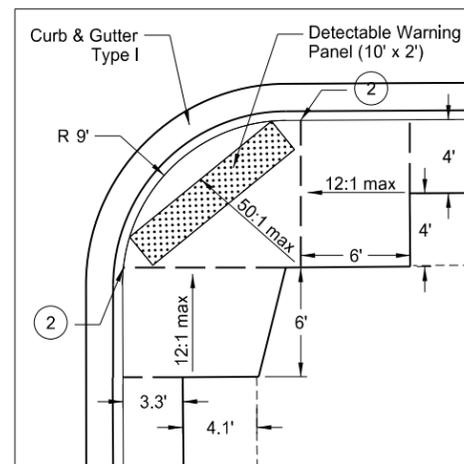
Fourth Street NW Corner



Fourth Street NE Corner

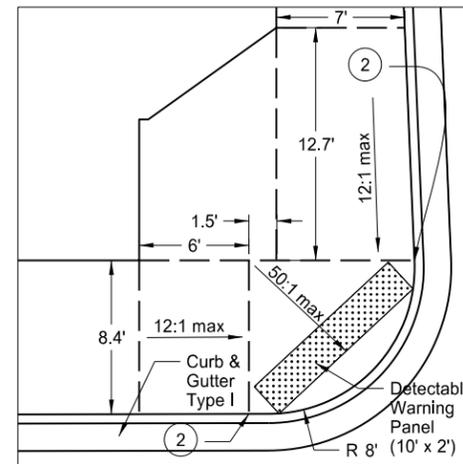


Fourth Street SW Corner

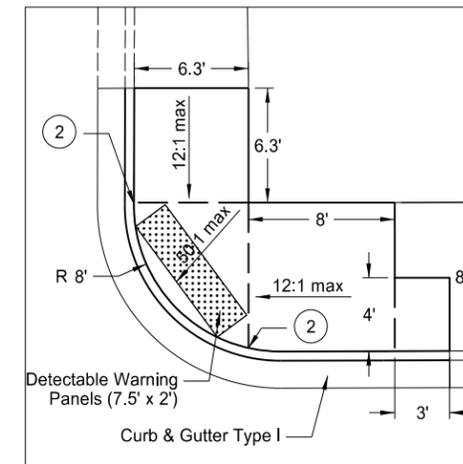


Fourth Street SE Corner

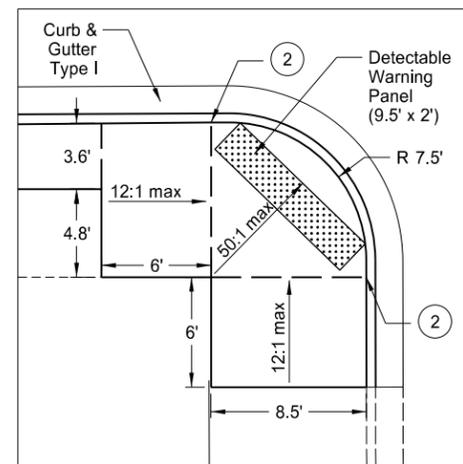
Fifth Street Intersection



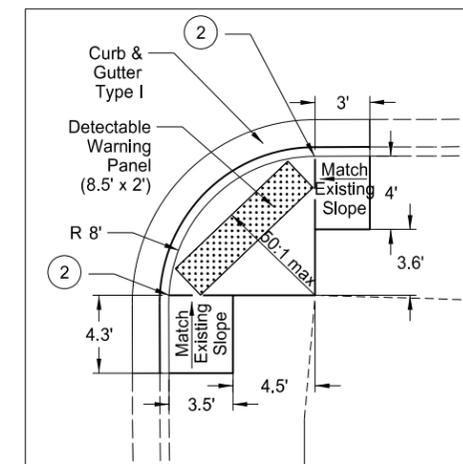
Fifth Street NW Corner



Fifth Street NE Corner



Fifth Street SW Corner



Fifth Street SE Corner

- Notes:
1. Taper curb to 0" within 2' to 6'
 2. Taper curb to match sidewalk

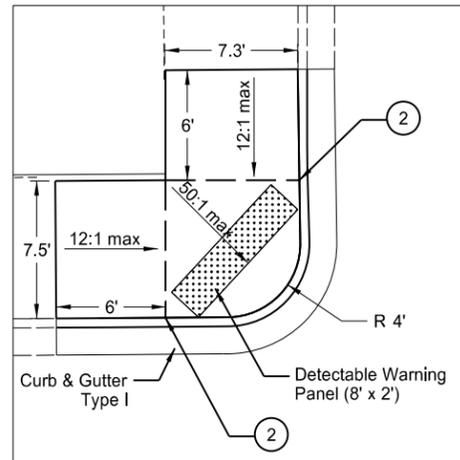


This document was originally issued and sealed by Daniel R. Viau Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

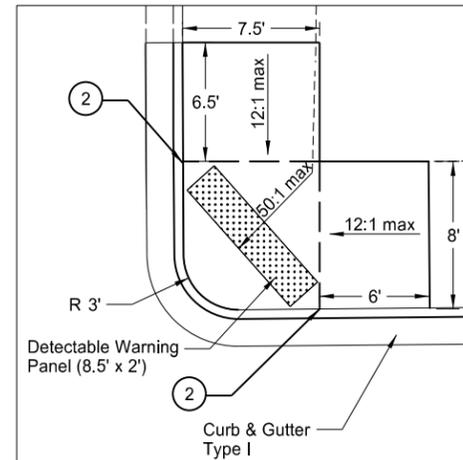
ADA Curb Ramp Details
4th St. & 5th St.
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	20	3

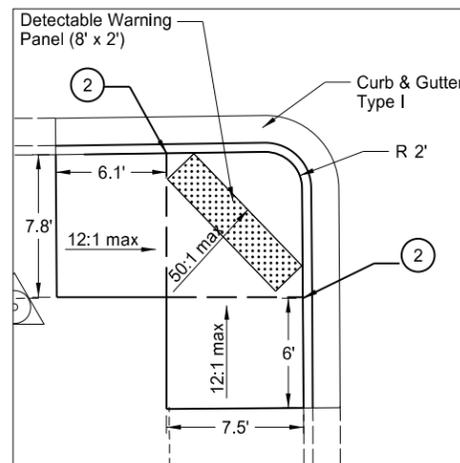
Centenial Street Intersection



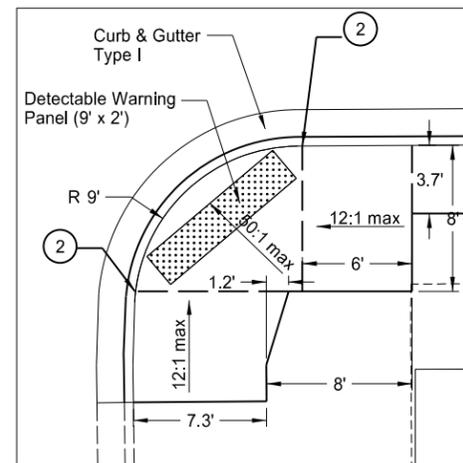
Centenial Street NW Corner



Centenial Street NE Corner

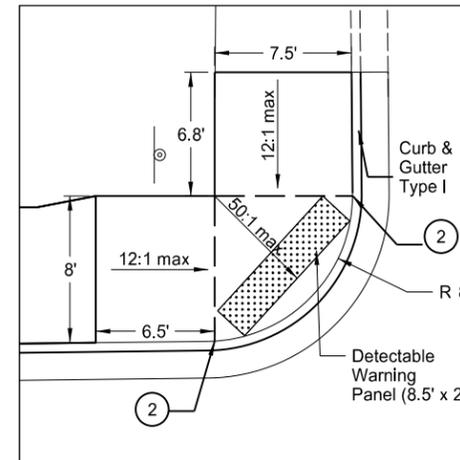


Centenial Street SW Corner

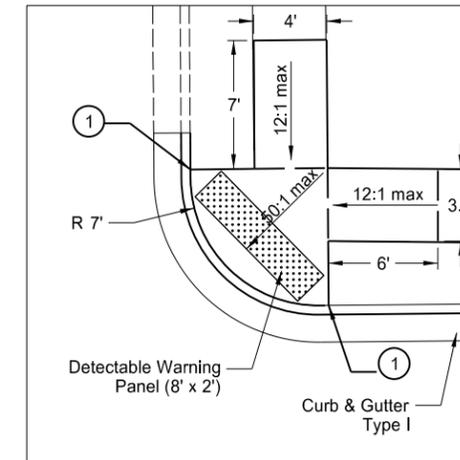


Centenial Street SE Corner

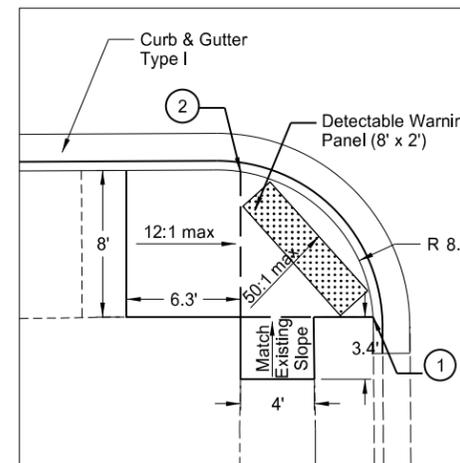
Seventh Street Intersection



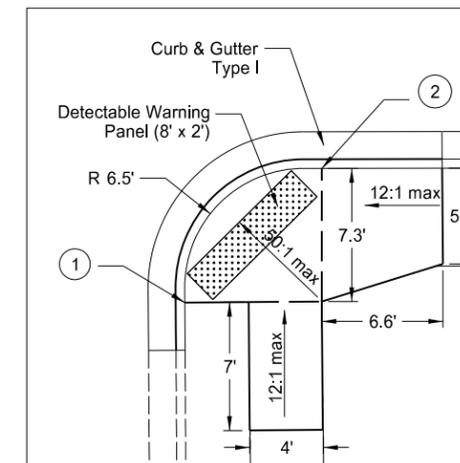
Seventh Street NW Corner



Seventh Street NE Corner



Seventh Street SW Corner



Seventh Street SE Corner

Notes:

1. Taper curb to 0" within 2' to 6'
2. Taper curb to match sidewalk

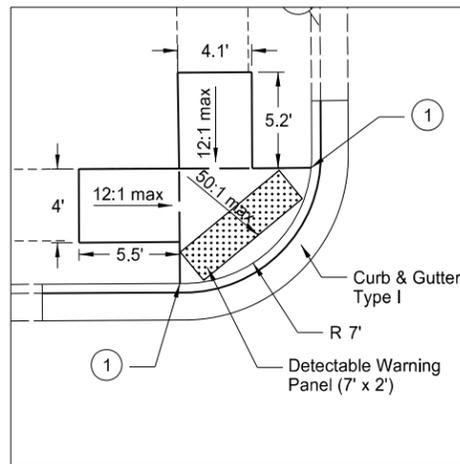


This document was originally issued and sealed by Daniel R. Viau Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

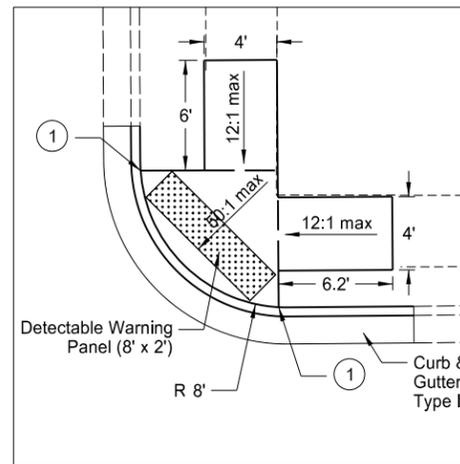
ADA Curb Ramp Details
Centenial St. & 7th St.
North Dakota Highway 13
City of Wishek

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-2-013(057)232	20	4

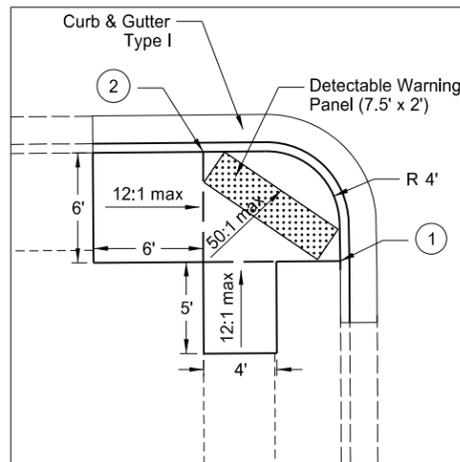
Eighth Street Intersection



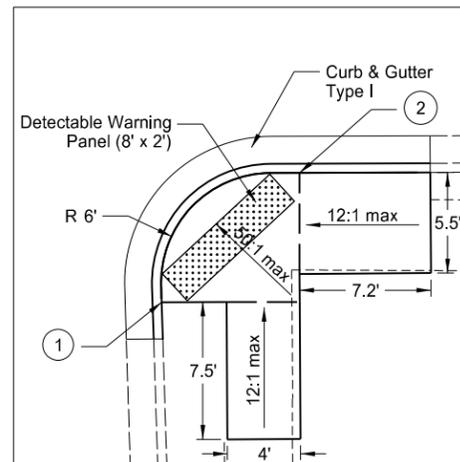
Eighth Street NW Corner



Eighth Street NE Corner

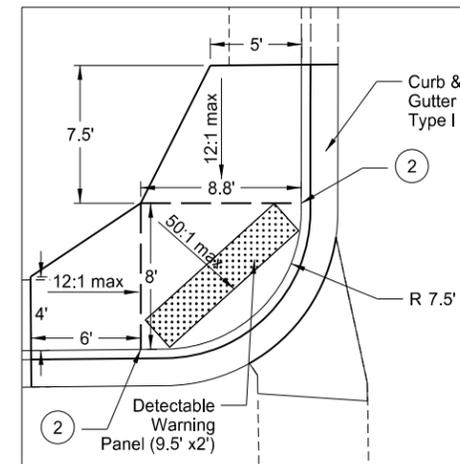


Eighth Street SW Corner

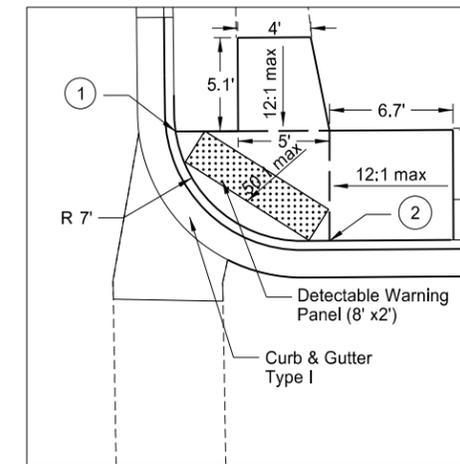


Eighth Street SE Corner

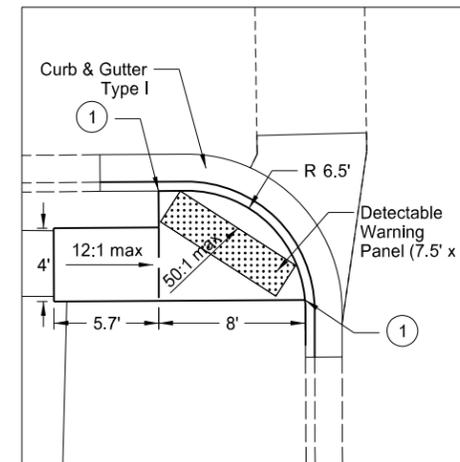
Ninth Street Intersection



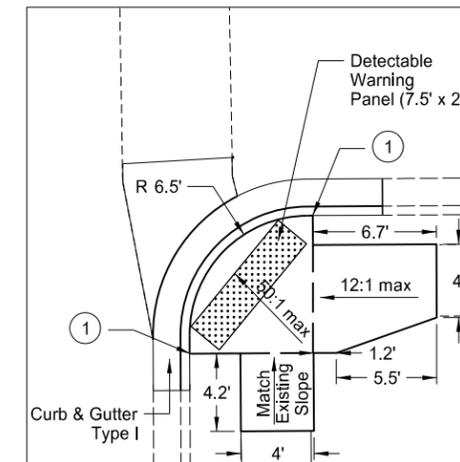
Ninth Street NW Corner



Ninth Street NE Corner



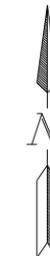
Ninth Street SW Corner



Ninth Street SE Corner

Notes:

1. Taper curb to 0" within 2' to 6'
2. Taper curb to match sidewalk

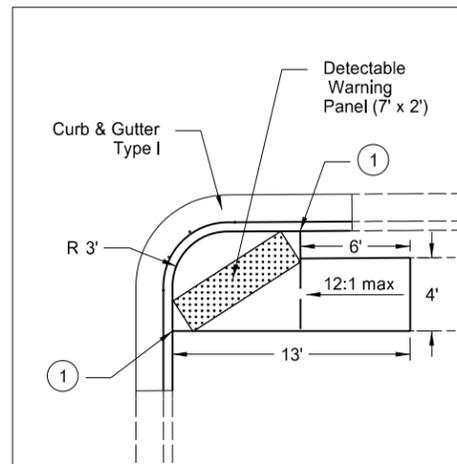


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

ADA Curb Ramp Details
8th St. & 9th St.
North Dakota Highway 13
City of Wishek

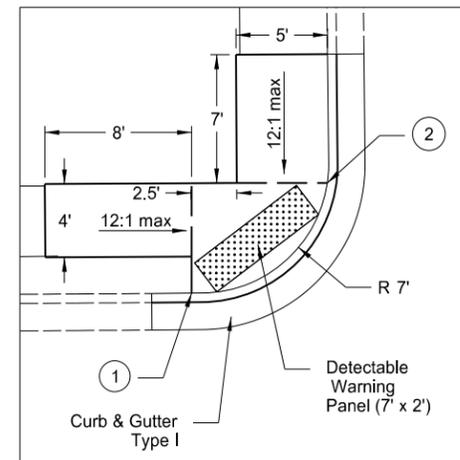
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	20	5

Tenth Street Intersection

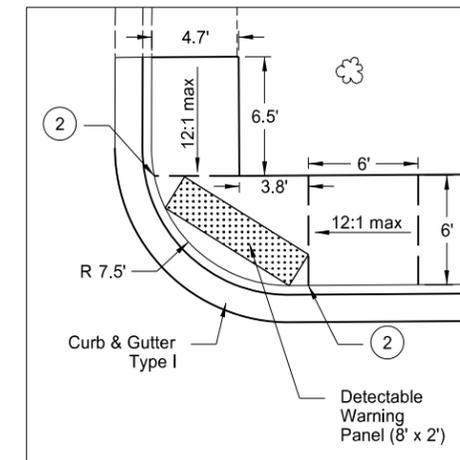


Tenth Street SE Corner

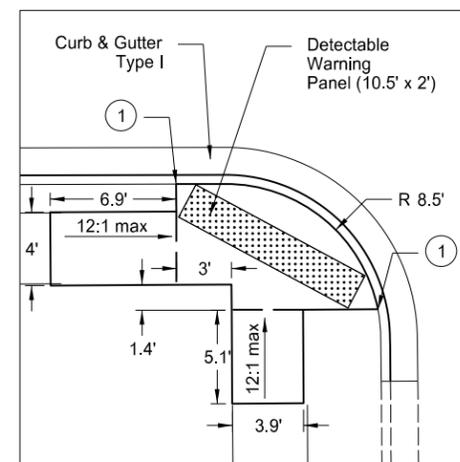
Badger Street Intersection



Badger Street NW Corner



Badger Street NE Corner



Badger Street SW Corner

Notes:

1. Taper curb to 0" within 2' to 6'
2. Taper curb to match sidewalk

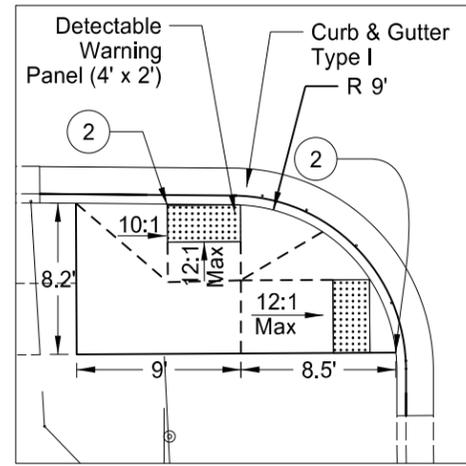


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

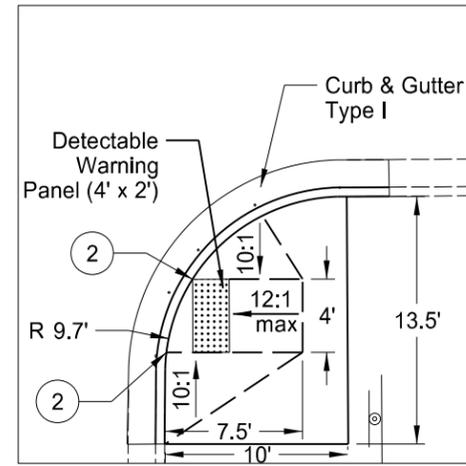
ADA Curb Ramp Details
10th St. & Badger St.
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	20	6

Twelfth Street Intersection



Twelfth Street SW Corner



Twelfth Street SE Corner



Notes:

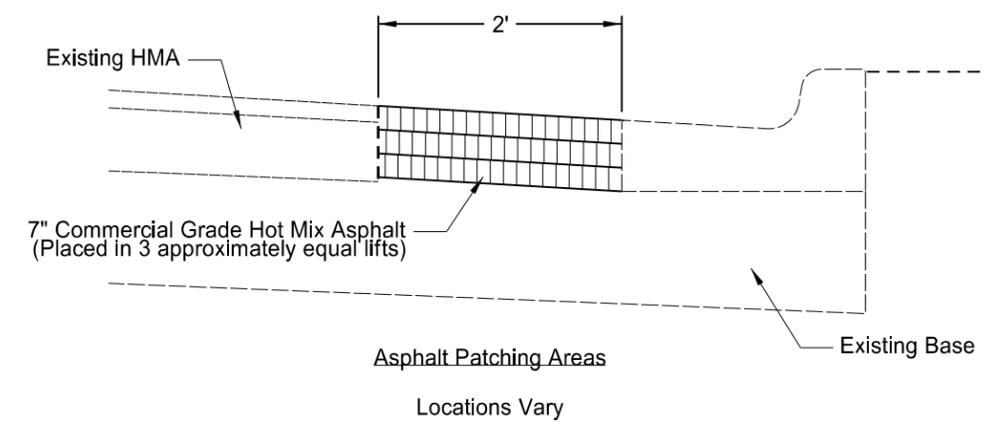
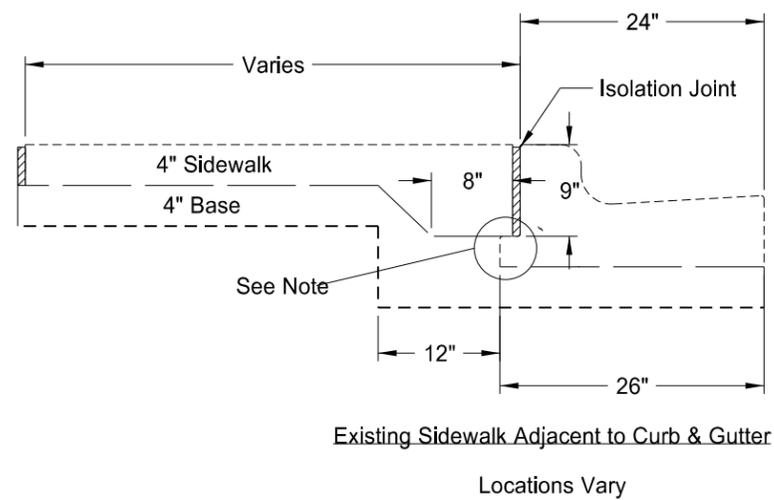
1. Taper curb to 0" within 2' to 6'
2. Taper curb to match sidewalk

This document was originally issued and sealed by Daniel R. Viau Registration Number PE-6329 on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

ADA Curb Ramp Details
12th Street
North Dakota Highway 13
City of Wishek

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-2-013(057)232	20	7

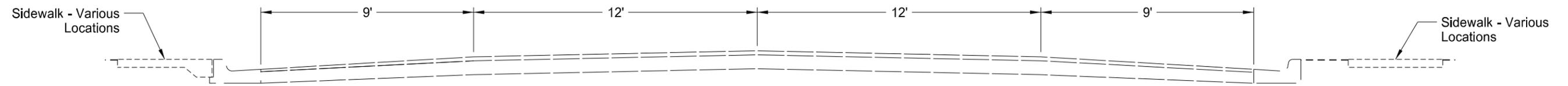
Note: Where the sidewalk is not designated to be removed, use care not to damage the sidewalk. Any cost to repair the damaged sidewalk will be the contractors responsibility.



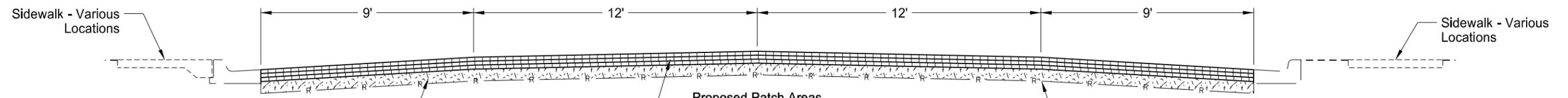
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Sidewalk, Curb & Gutter, and Asphalt Patching Details
North Dakota Highway 13
City of Wishek

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-2-013(057)232	30	1



Existing Typical Section
 39th Avenue SE to 40th Avenue SE
 Sta. 12287+48.66 to Sta 12340+40.86
 RP 232.739 to RP 233.741



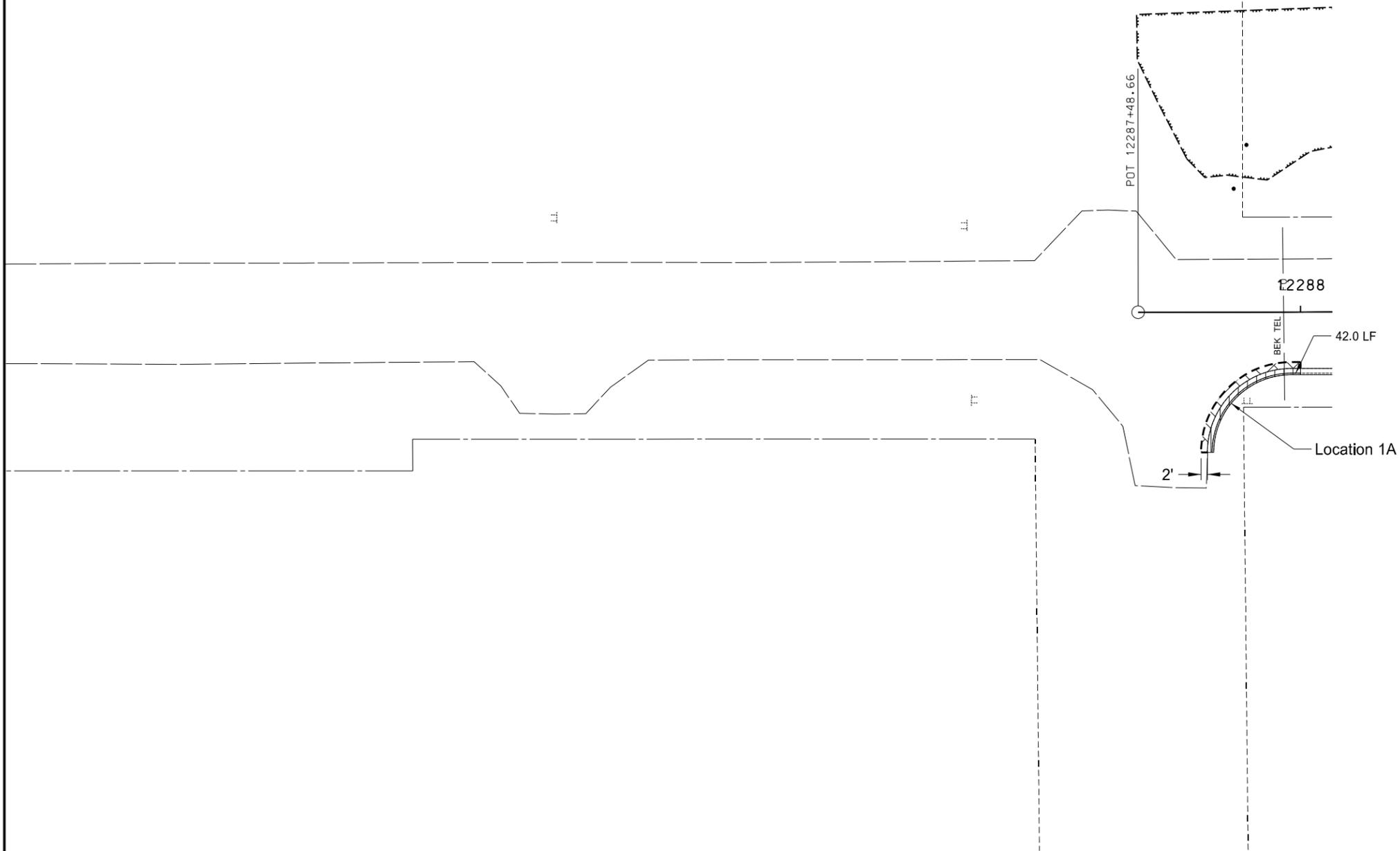
Proposed Patch Areas
 6" Aggregate Base Course CL 5
 6" Commercial Grade HMA @ 3 separate equal lifts
 Paving Layout Locations 9J-9M
 Geotextile Fabric Type - R1

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Typical Sections
 North Dakota Highway 13
 City of Wishek



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	1



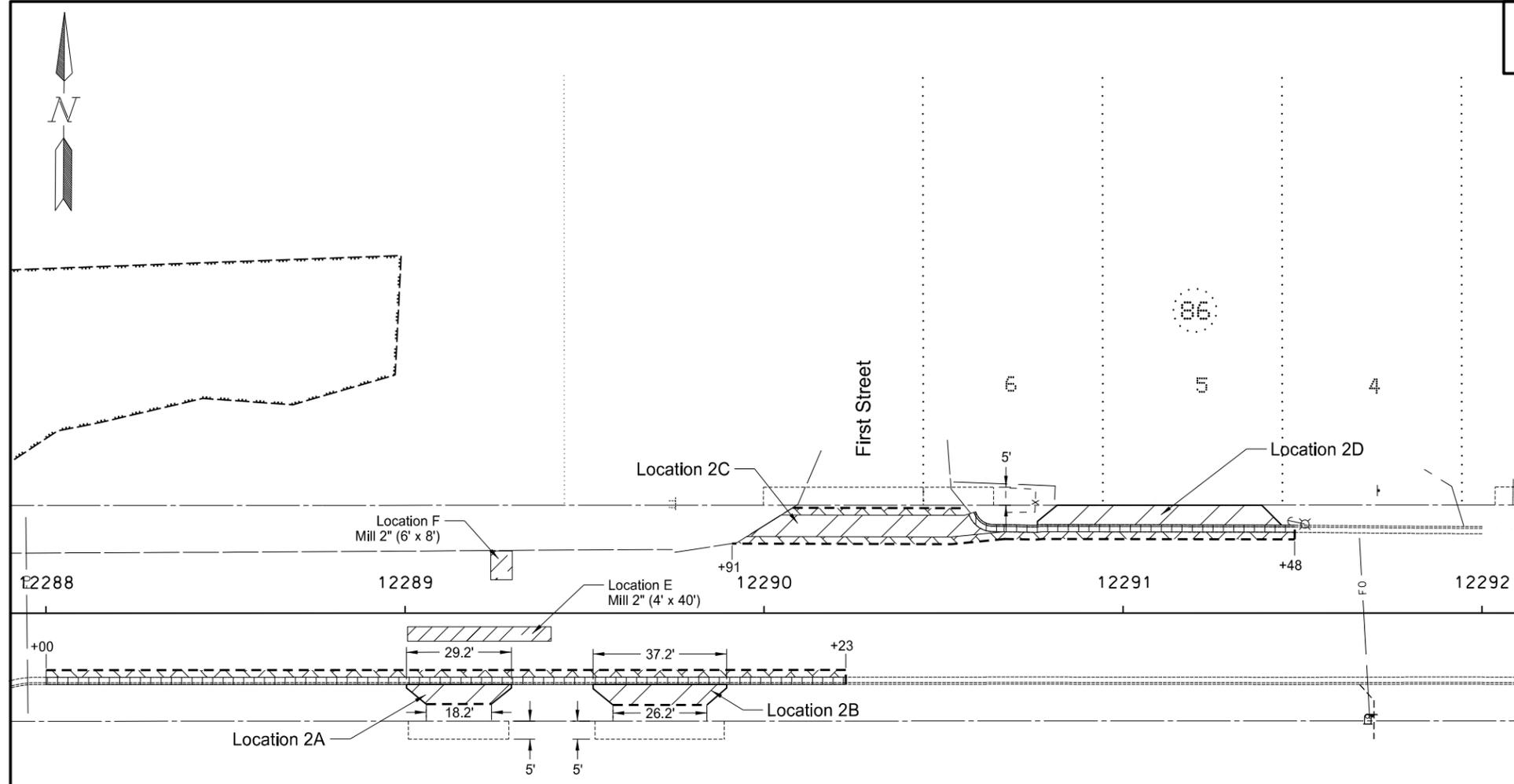
- Legend
- Removal of Curb & Gutter
 - Removal of Bituminous Surfacing - Full Depth

Location	202-0112 Removal of Concrete SY	202-0119 Saw Concrete LF	202-0130 Removal of Curb & Gutter LF	202-0131 Removal of Curb - Type 1 LF	202-0132 Removal of Bituminous Surfacing SY	202-0153 Saw Bituminous Surfacing - Full Depth LF	411-0105 Milling Pavement Surface SY
1A	-	-	42.3	-	10.3	50.0	-
Total	-	-	42.3	-	10.3	50.0	-

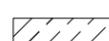
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12287+49 to Sta 12288+00

North Dakota Highway 13
City of Wishek



Legend

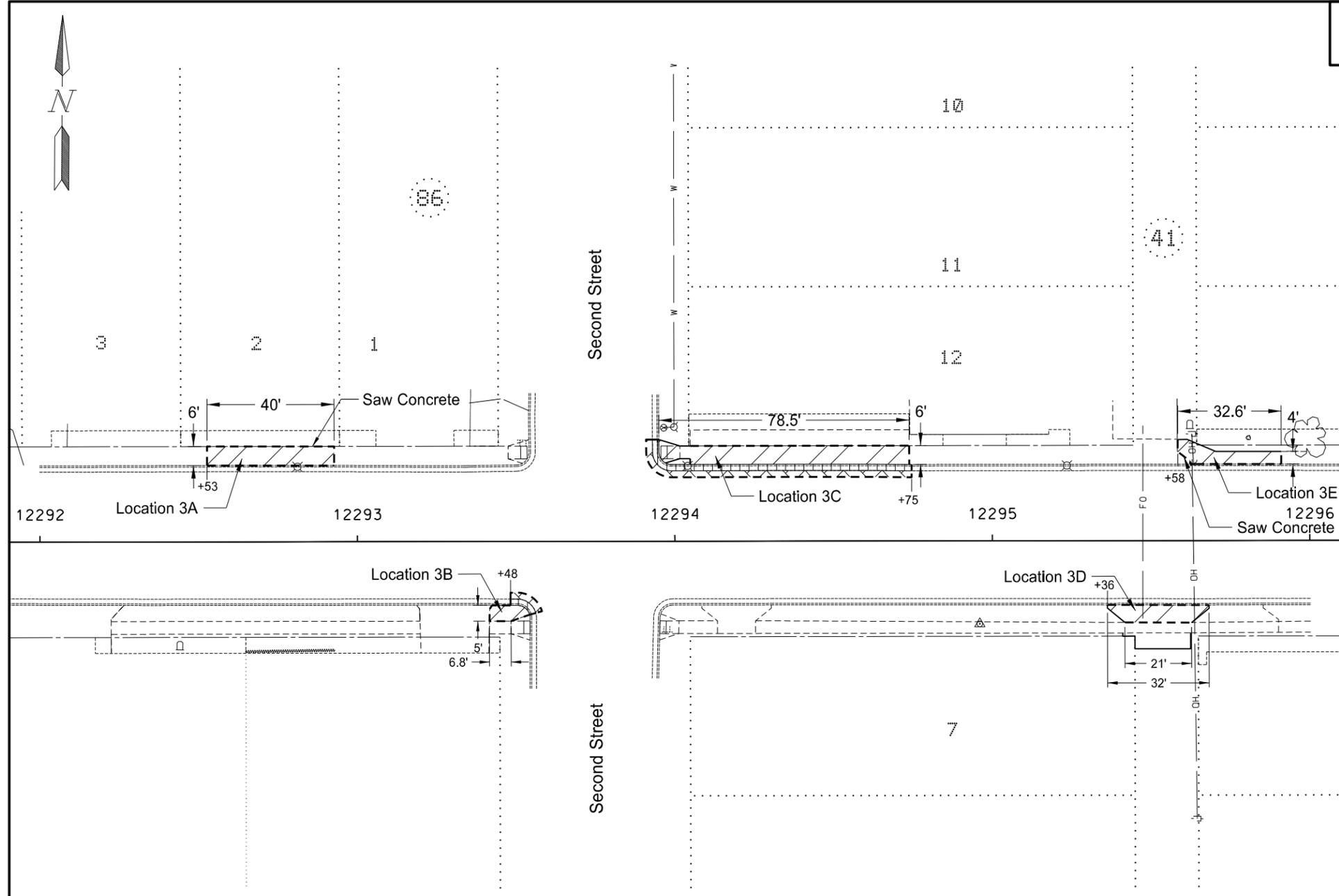
-  Removal of Bituminous Surfacing - Full Depth
-  Remove Curb & Gutter
-  Removal of Concrete
-  Milling Pavement Surface
-  Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
2A	15.0	18.2	222.7	-	49.5	224.7	-
2B	20.8	26.2	-	-	-	-	-
2C	39.4	-	6.0	-	11.2	48.2	-
2D	38.0	2.0	81.0	-	34.3	159.0	-
2E	-	-	-	-	-	-	17.8
2F	-	-	-	-	-	-	5.3
Total	113.2	46.4	309.7	-	95.0	431.9	23.1
Running Total	113.2	46.4	352.0	-	105.3	481.9	23.1

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12288+00 to Sta 12292+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	3

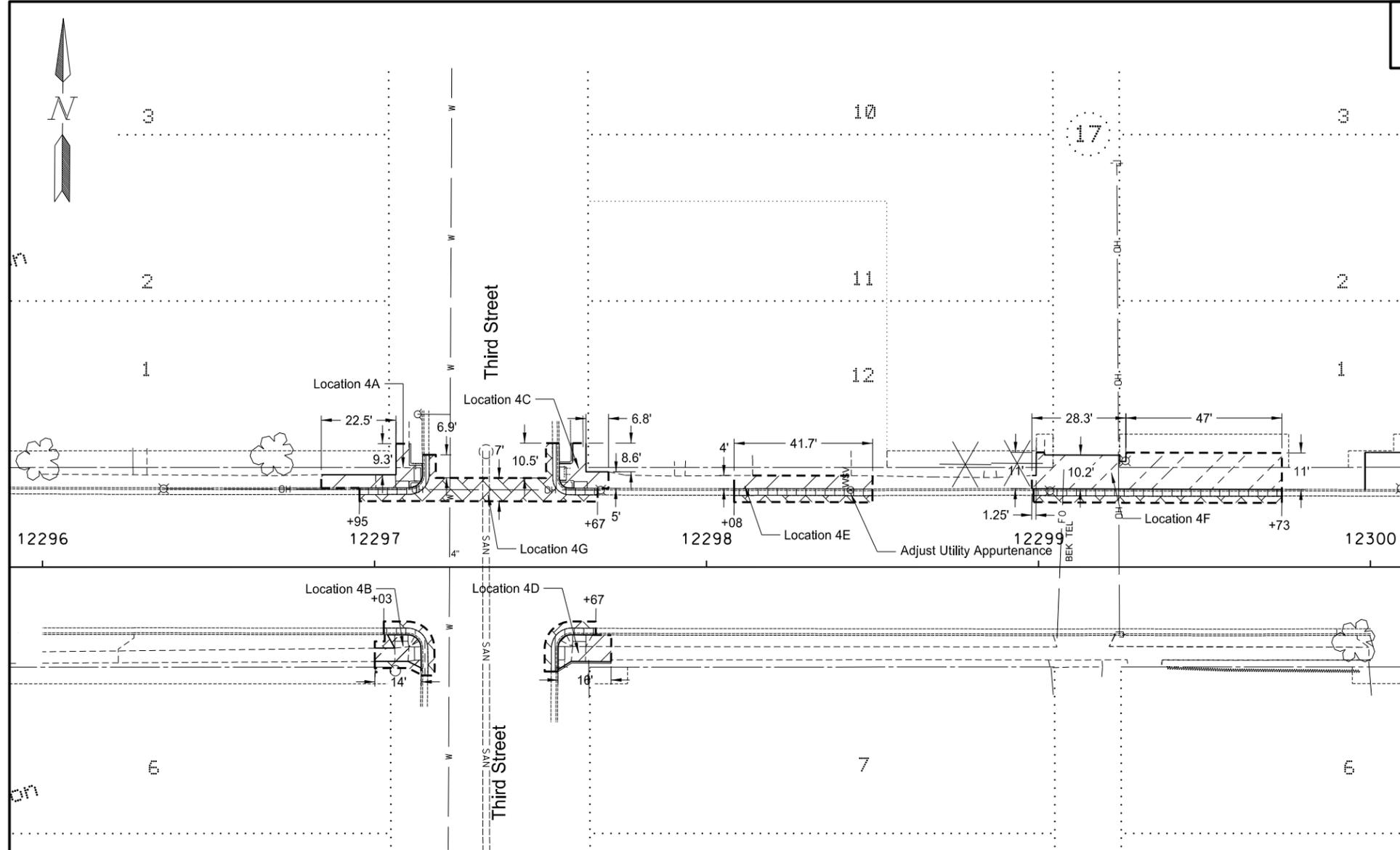


- Legend**
- Removal of Bit. Surfacing - Full Depth
 - Remove Curb & Gutter
 - Removal of Concrete
 - Temporary Easement

Location	202-0112 Removal of Concrete SY	202-0119 Saw Concrete LF	202-0130 Removal of Curb & Gutter LF	202-0131 Removal of Curb - Type 1 LF	202-0132 Removal of Bituminous Surfacing SY	202-0153 Saw Bituminous Surfacing - Full Depth LF	411-0105 Milling Pavement Surface SY
3A	26.7	92.0	-	-	-	-	-
3B	5.9	28.0	8.0	-	2.5	16.6	-
3C	50.1	79.0	86.5	-	20.1	96.0	-
3D	16.8	53.0	-	-	-	-	-
3E	16.4	42.4	-	-	-	-	-
Total	115.9	294.4	94.5	-	22.6	112.6	-
Running Total	229.1	340.8	446.5	-	127.9	594.5	23.1

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
12292+00 to Sta 12296+00
North Dakota Highway 13
City of Wishek

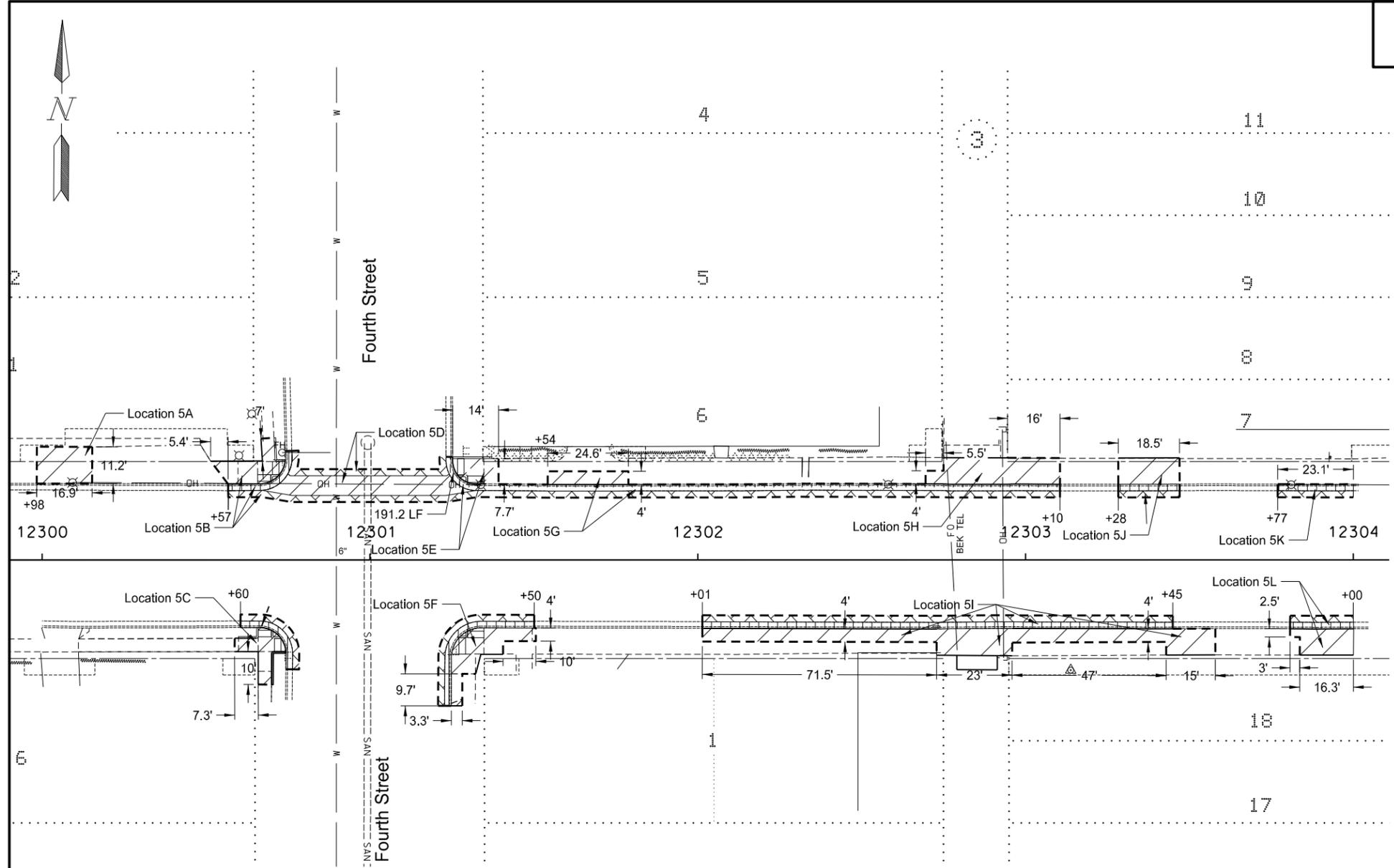


- Legend**
- Removal of Bituminous Surfacing - Full Depth
 - Remove Curb & Gutter
 - Removal of Concrete
 - Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
4A	18.4	22.0	28.0	11.0	-	-	-
4B	10.3	8.0	22.5	-	10.5	55.4	-
4C	12.9	16.0	24.5	10.5	-	-	-
4D	14.4	18.0	21.5	16.5	5.7	31.0	-
4E	18.5	42.0	41.7	-	9.3	45.7	-
4F	88.5	68.5	74.8	-	16.6	78.8	-
4G	-	-	-	-	41.9	130.4	-
Total	163.0	174.5	213.0	38.0	84.0	341.3	-
Running Total	392.1	515.3	659.5	38.0	211.9	935.8	23.1

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12296+00 to Sta 12300+00
North Dakota Highway 13
City of Wishek

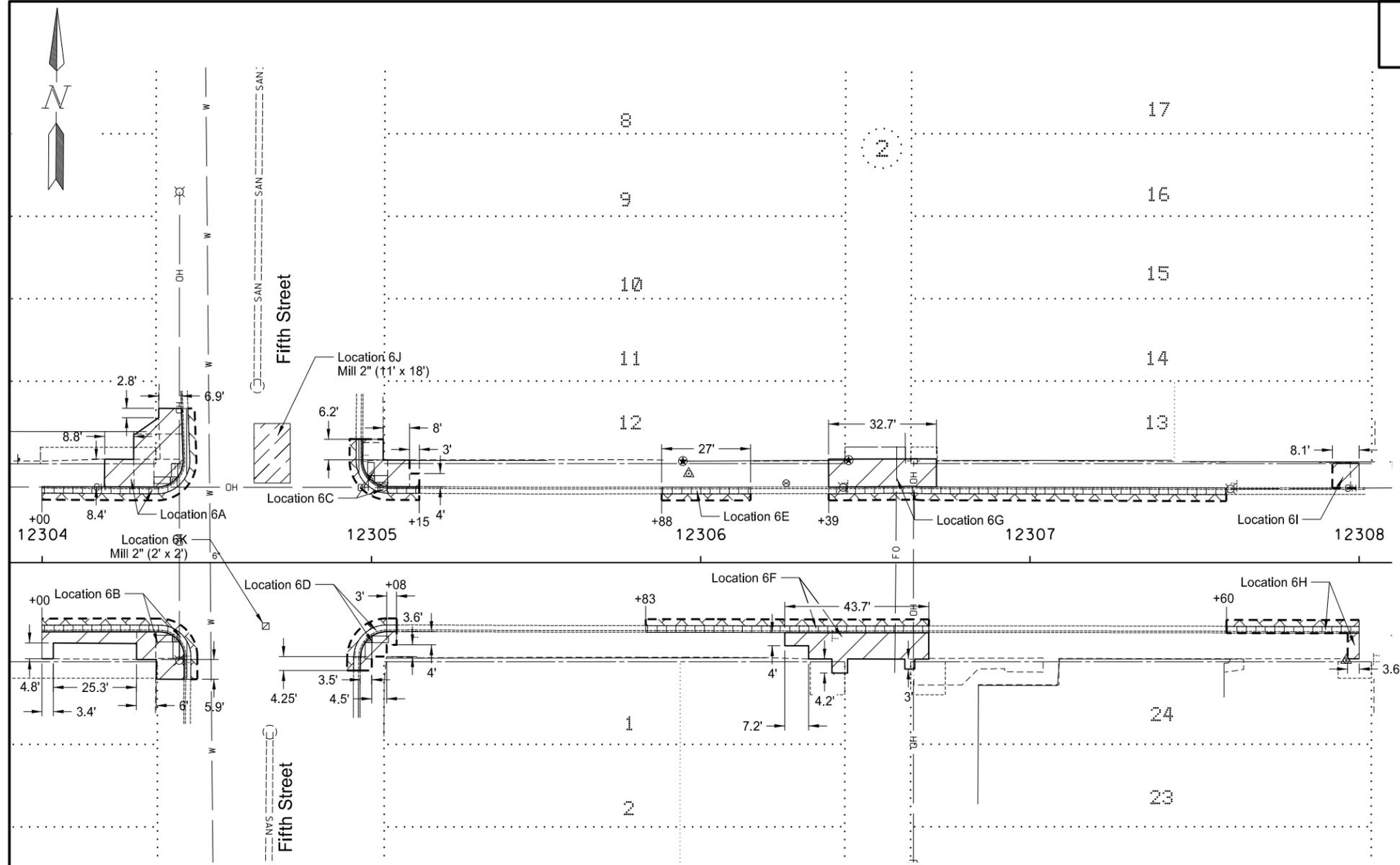


- Legend**
- Removal of Bituminous Surfacing - Full Depth
 - Remove Curb & Gutter
 - Removal of Concrete
 - Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
5A	21.0	56.2	-	-	-	-	-
5B	17.1	16.8	25.0	10.0	17.6	82.9	-
5C	13.2	12.0	24.0	25.0	6.2	33.5	-
5D	36.7	-	-	-	12.9	57.2	-
5E	10.8	15.3	16.2	12.0	-	-	-
5F	25.6	32.4	46.0	-	11.1	55.4	-
5G	11.0	36.6	171.4	-	38.1	175.4	-
5H	33.9	37.5	-	-	-	-	-
5I	87.8	159.5	143.0	-	31.8	147.0	-
5J	16.6	20.0	18.5	-	4.1	22.5	-
5K	-	25.0	23.0	-	5.1	25.0	-
5L	15.4	11.0	19.3	-	4.3	21.3	-
Total	289.1	422.3	486.4	47.0	131.1	620.2	-
Running Total	681.2	937.6	1,145.9	85.0	343.0	1,556.0	23.1

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12300+00 to Sta 12304+00
North Dakota Highway 13
City of Wishek

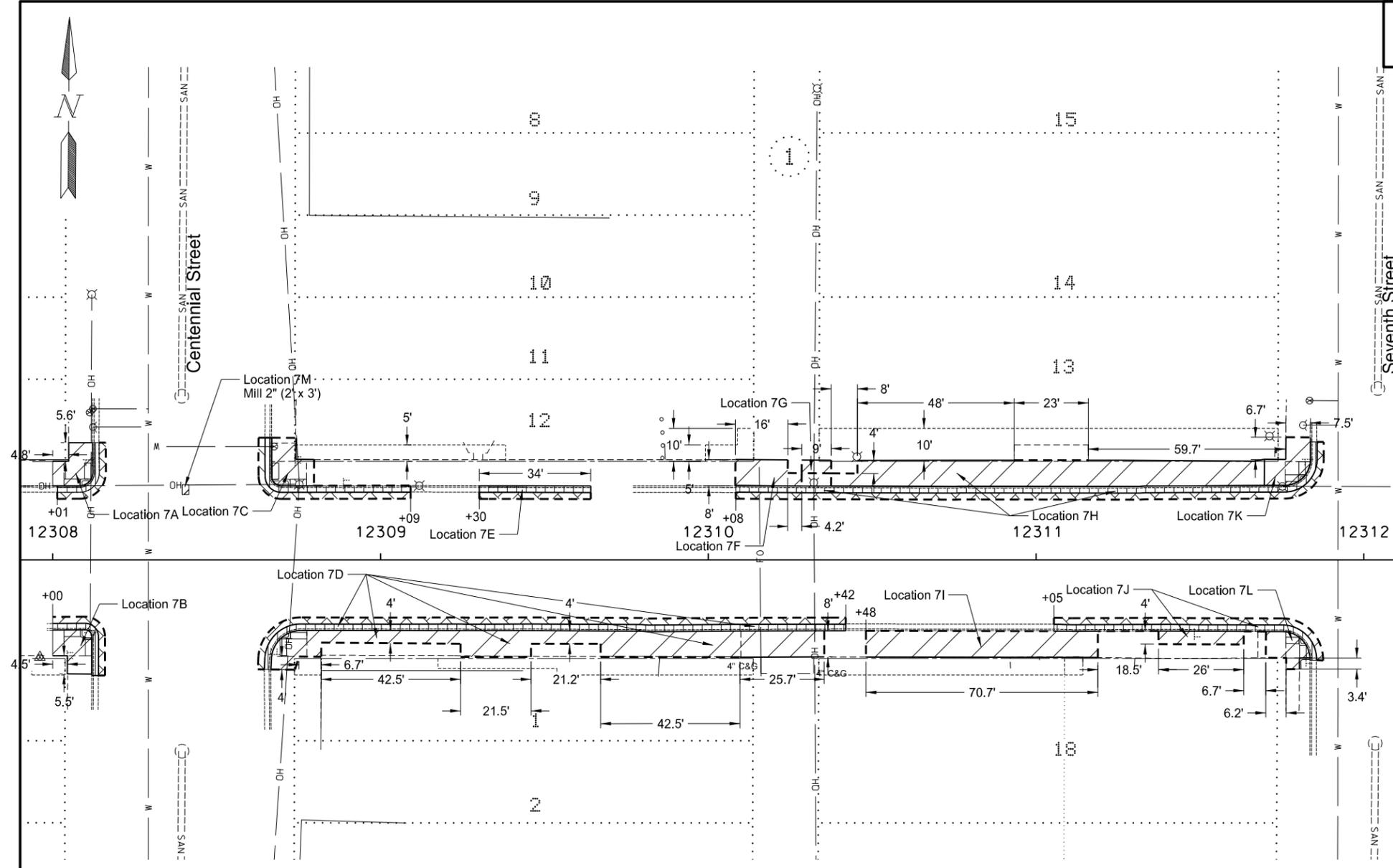


- Legend**
- Removal of Bituminous Surfacing - Full Depth
 - Remove Curb & Gutter
 - Removal of Concrete
 - Milling Pavement Surface
 - Temporary Easement

Location	202-0112 Removal of Concrete SY	202-0119 Saw Concrete LF	202-0130 Removal of Curb & Gutter LF	202-0131 Removal of Curb - Type 1 LF	202-0132 Removal of Bituminous Surfacing SY	202-0153 Saw Bituminous Surfacing - Full Depth LF	411-0105 Milling Pavement Surface SY
6A	41.6	45.7	64.5	-	15.1	71.7	-
6B	30.8	45.4	55.3	-	26.3	62.6	-
6C	17.0	21.4	26.5	-	14.6	38.5	-
6D	8.2	26.9	33.7	-	5.4	29.7	-
6E	-	4.0	27.0	-	6.0	31.0	-
6F	38.9	31.0	86.8	-	19.3	90.8	-
6G	30.6	21.0	120.0	-	26.7	124.0	-
6h	3.1	46.6	40.2	-	8.9	42.2	-
6I	6.8	15.7	-	-	-	-	-
6J	-	-	-	-	-	-	22.0
6K	-	-	-	-	-	-	0.4
Total	177.0	257.6	454.0	-	122.3	490.5	22.4
Running Total	858.1	1,195.2	1,599.9	85.0	465.2	2,046.5	45.6

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12304+00 to Sta 12308+00
North Dakota Highway 13
City of Wishek



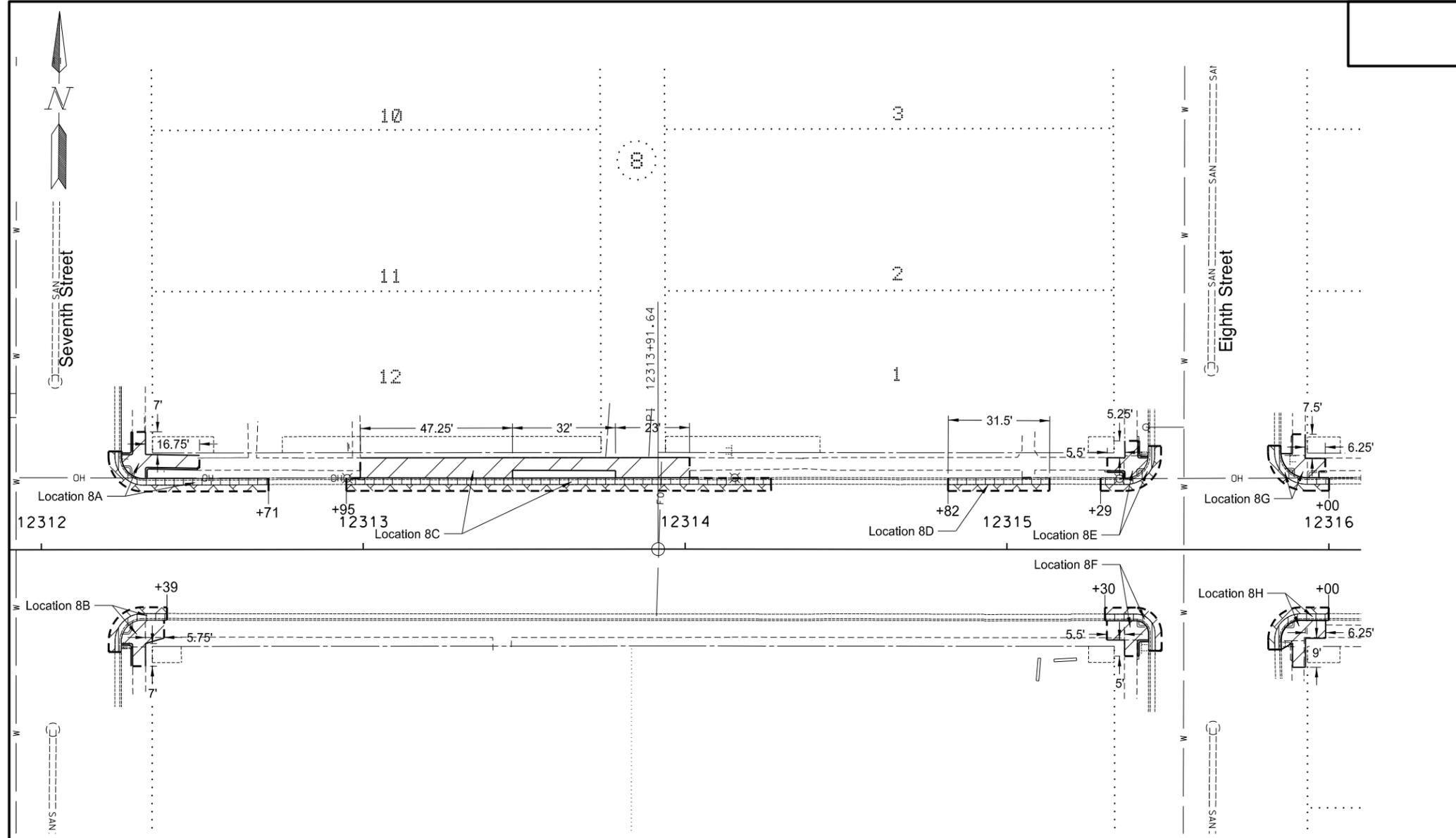
- Legend**
- Removal of Bituminous Surfacing - Full Depth
 - Remove Curb & Gutter
 - Removal of Concrete
 - Milling Pavement Surface
 - Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
7A	14.3	18.8	23.0	-	6.0	32.5	-
7B	14.9	9.5	25.8	-	6.6	33.2	-
7C	16.8	48.7	56.5	-	13.4	66.0	-
7D	122.1	174.0	183.0	-	41.8	193.5	-
7E	-	4.0	34.0	-	7.6	38.0	-
7F	16.0	20.3	-	-	-	-	-
7G	4.0	17.0	-	-	-	-	-
7H	111.9	43.0	186.0	-	42.2	195.5	-
7I	62.9	73.3	-	-	-	-	-
7J	11.6	63.3	84.0	-	19.5	93.7	-
7K	16.5	7.5	-	-	-	-	-
7L	11.8	24.7	-	7.5	-	-	-
7M	-	-	-	-	-	-	0.7
Total	402.8	504.0	592.3	7.5	137.1	652.4	0.7
Running Total	1,260.9	1,699.2	2,192.2	92.5	602.3	2,698.9	46.2

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE-pe_#, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12308+00 to Sta 12312+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	8



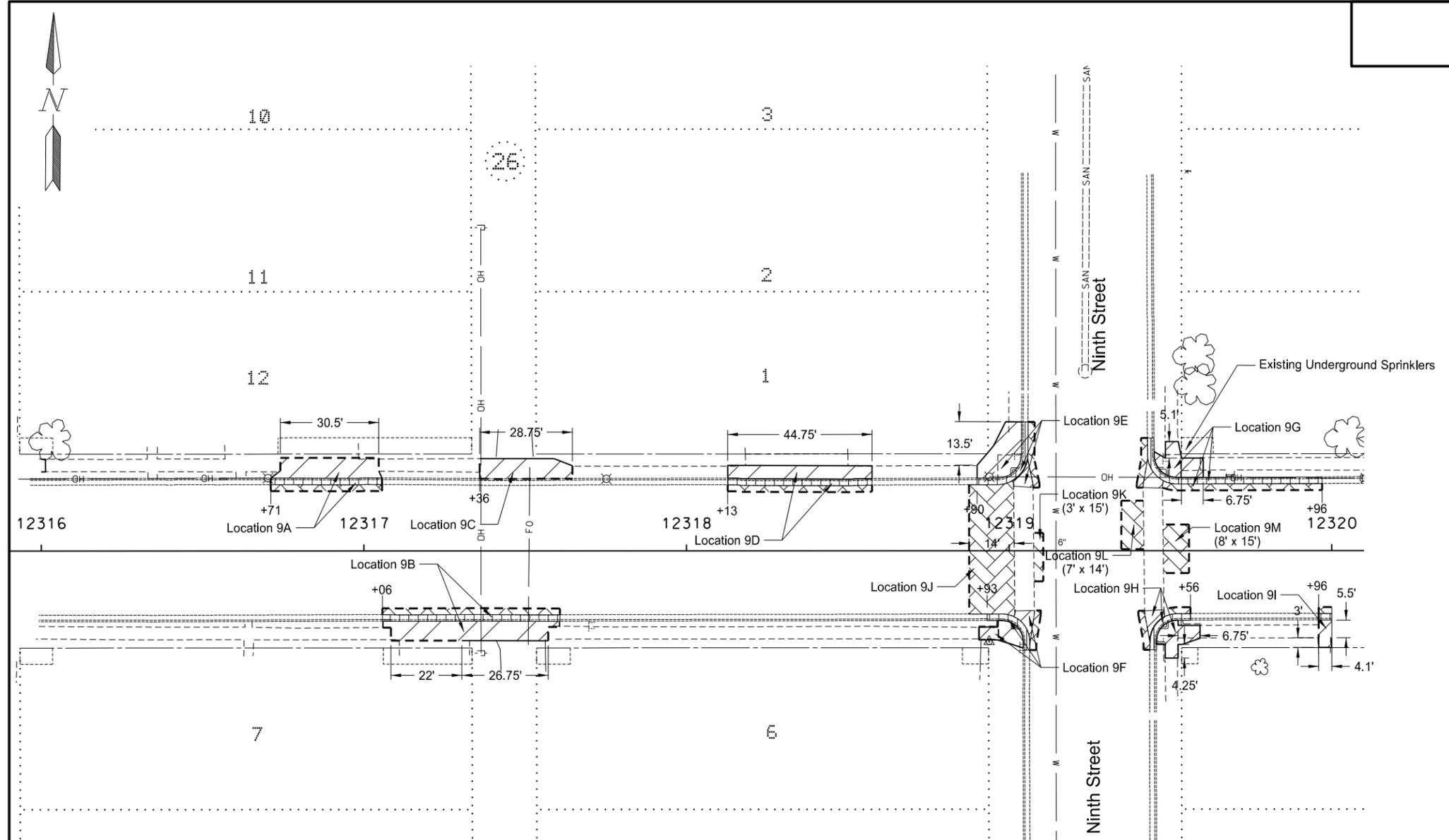
Legend

	Removal of Bituminous Surfacing - Full Depth
	Remove Curb & Gutter
	Removal of Concrete
	Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
8A	15.6	12.0	52.0	30.5	12.4	61.5	-
8B	12.3	13.5	22.0	10.5	5.8	31.5	-
8C	63.0	41.6	132.0	-	29.3	136.0	-
8D	-	8.0	31.5	-	7.0	35.5	-
8E	8.7	12.0	22.5	17.8	5.9	32.0	-
8F	10.5	14.0	22.0	8.5	5.8	31.5	-
8G	11.1	12.0	22.2	-	28.0	31.7	-
8H	12.6	12.0	22.0	-	5.8	31.6	-
Total	133.9	125.1	326.2	67.3	100.0	391.3	-
Running Total	1,394.8	1,824.3	2,518.4	159.8	702.3	3,090.2	46.2

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Removal Layouts
Sta 12312+00 to Sta 12316+00
North Dakota Highway 13
City of Wishek



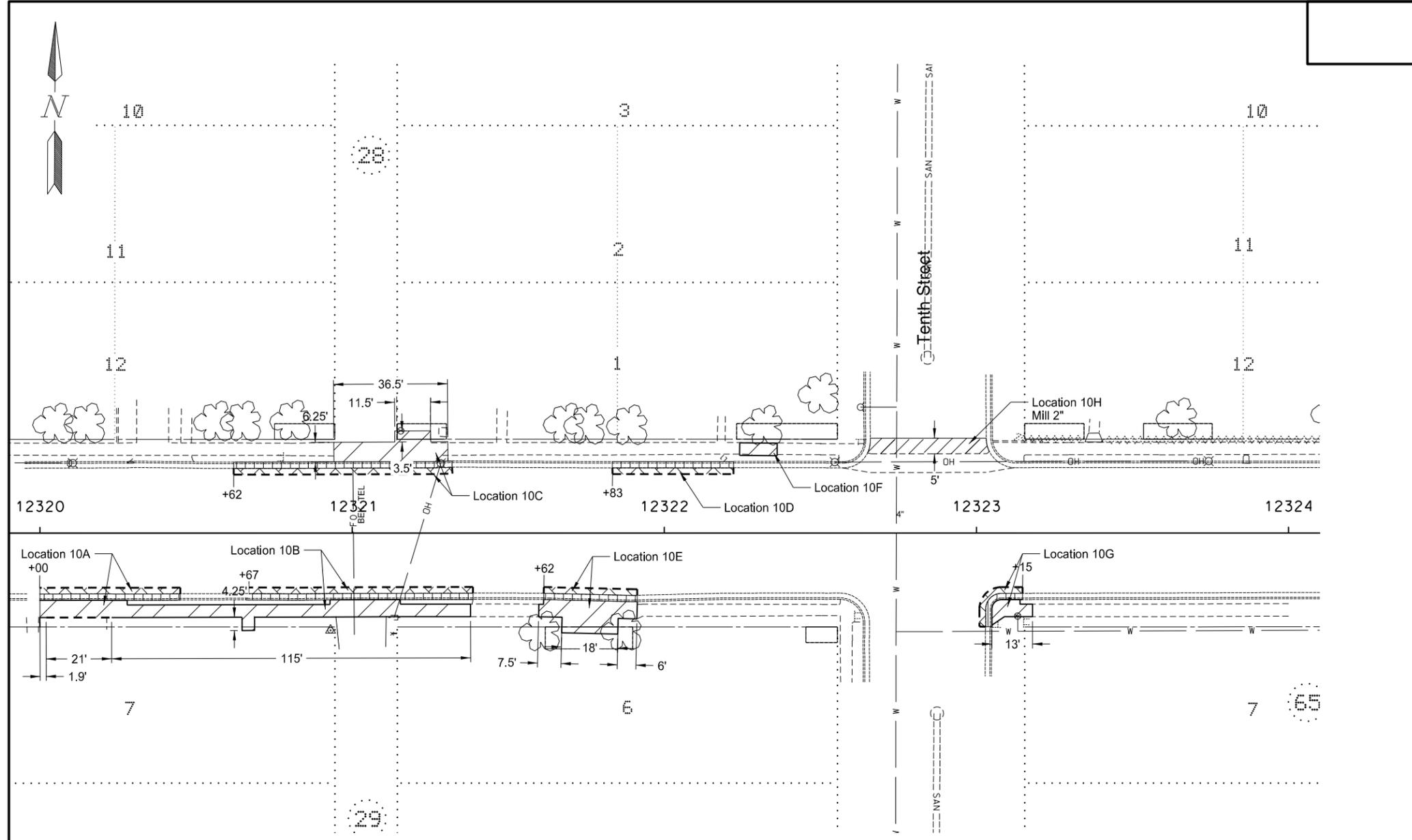
Legend

-  Removal of Bituminous Surfacing - Full Depth
-  Remove Curb & Gutter
-  Removal of Concrete
-  Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
9A	21.85	42.50	34.50	-	7.67	38.50	-
9B	33.81	36.25	55.00	-	12.22	59.00	-
9C	19.35	36.75	-	-	-	-	-
9D	20.54	12.00	44.75	-	9.94	48.75	-
9E	20.94	19.00	27.00	-	7.09	24.40	-
9F	11.03	14.00	12.40	5.75	4.66	16.30	-
9G	15.10	20.00	62.00	10.00	14.45	71.00	-
9H	13.42	18.00	18.70	15.00	4.54	26.50	-
9I	3.83	6.00	4.00	-	0.89	6.00	-
9J	-	-	-	-	62.65	40.00	-
9K	-	-	-	-	4.00	21.00	-
9L	-	-	-	-	11.52	28.80	-
9M	-	-	-	-	13.33	31.00	-
Total	159.9	204.5	258.4	30.8	153.0	411.3	-
Running Total	1,554.6	2,028.8	2,776.8	190.6	855.2	3,501.5	46.2

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12316+00 to Sta 12320+00
North Dakota Highway 13
City of Wishek



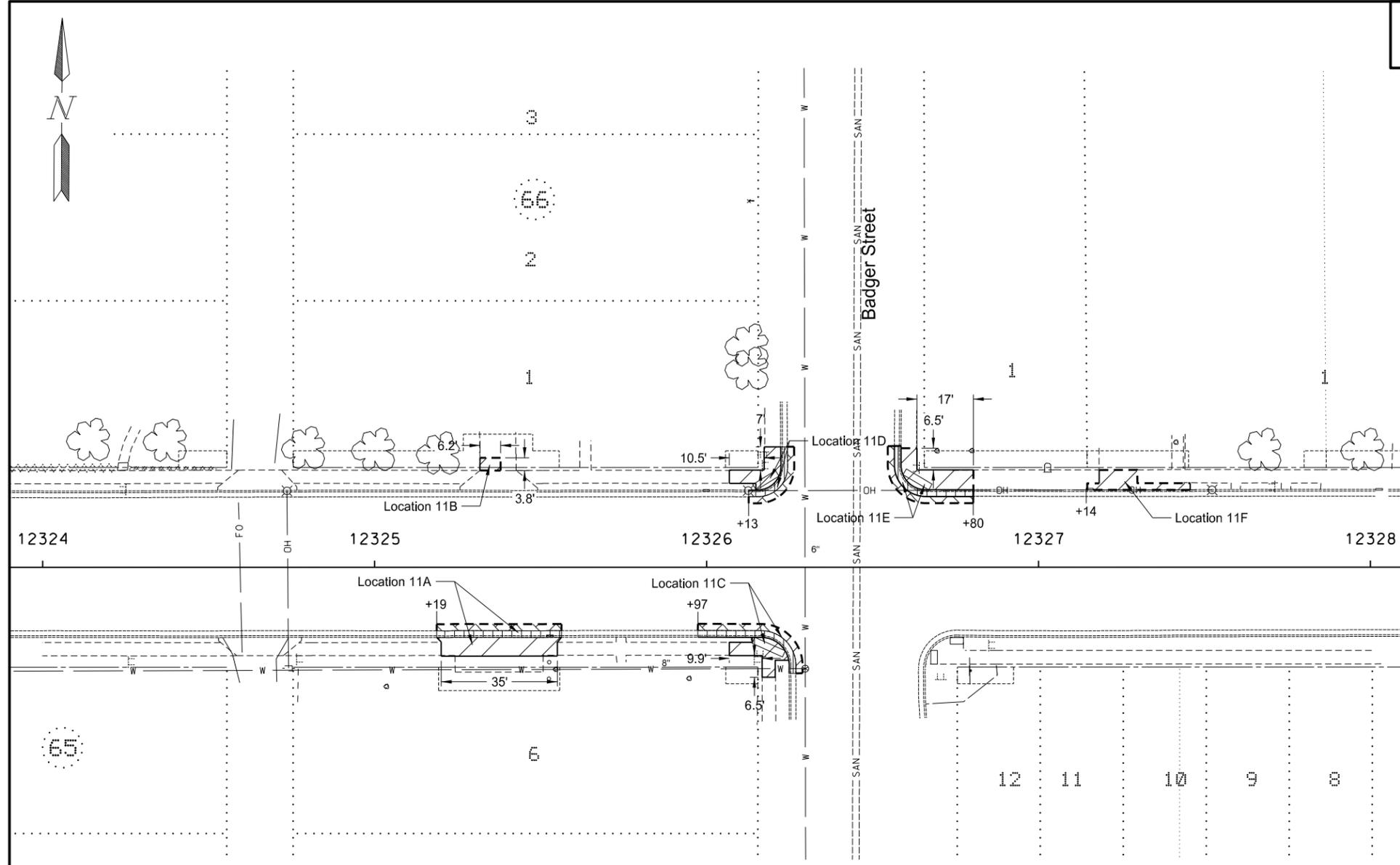
- Legend**
-  Removal of Bituminous Surfacing - Full Depth
 -  Remove Curb & Gutter
 -  Removal of Concrete
 -  Milling Pavement Surface
 -  Temporary Easement

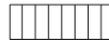
Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
10A	71.7	31.0	45.0	-	10.0	47.0	-
10B	-	4.0	72.8	-	16.2	76.8	-
10C	30.1	23.5	70.0	-	15.6	74.0	-
10D	29.0	30.0	30.0	-	6.7	34.0	-
10E	-	-	38.8	-	8.6	42.8	-
10F	5.3	8.0	-	-	-	-	-
10G	7.6	8.0	18.0	-	4.9	27.5	-
10H	-	-	-	-	-	-	21.0
Total	143.6	104.5	274.6	-	61.9	302.1	21.0
Running Total	1,698.3	2,133.3	3,051.3	190.6	917.1	3,803.5	67.2

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12320+00 to Sta 12324+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	11



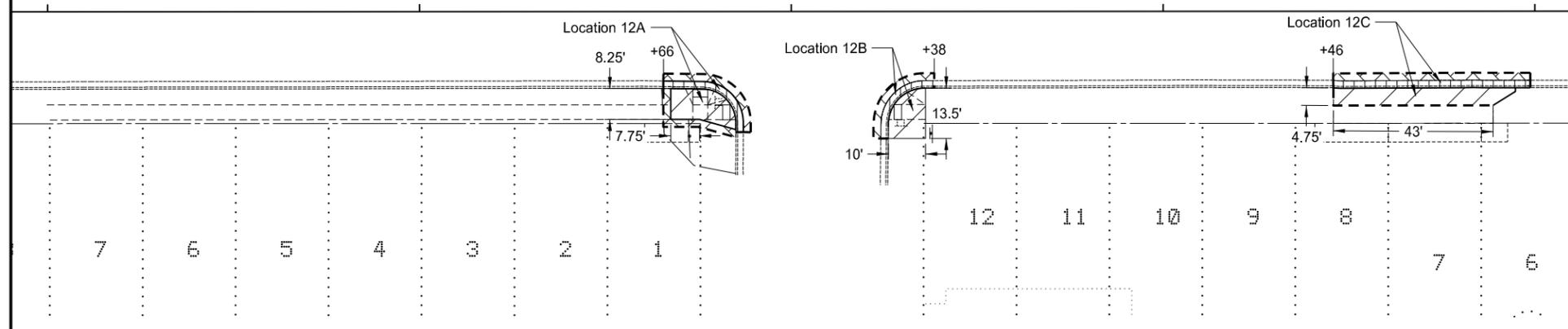
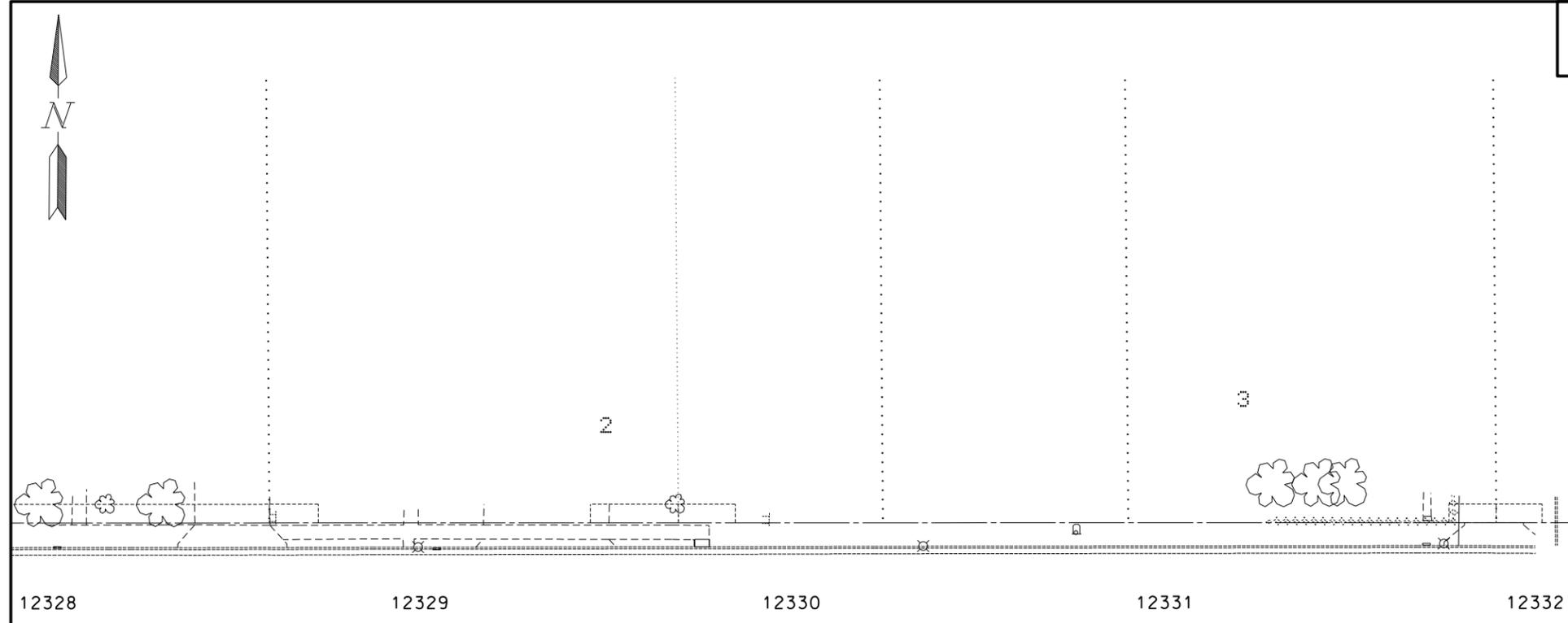
- Legend**
-  Removal of Bituminous Surfacing - Full Depth
 -  Remove Curb & Gutter
 -  Removal of Concrete
 -  Temporary Easement

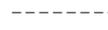
Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
11A	22.1	12.4	37.0	-	8.2	41.0	-
11B	2.6	16.2	-	-	-	-	-
11C	11.6	11.9	35.5	-	8.8	45.0	-
11D	11.3	13.0	20.5	-	5.4	30.0	-
11E	16.7	14.8	32.5	-	8.1	42.0	-
11F	11.9	68.0	-	-	-	-	-
Total	76.2	136.3	125.5	-	30.5	158.0	-
Running Total	1,774.5	2,269.5	3,176.8	190.6	947.6	3,961.5	67.2

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12324+00 to Sta 12328+00
North Dakota State Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	12



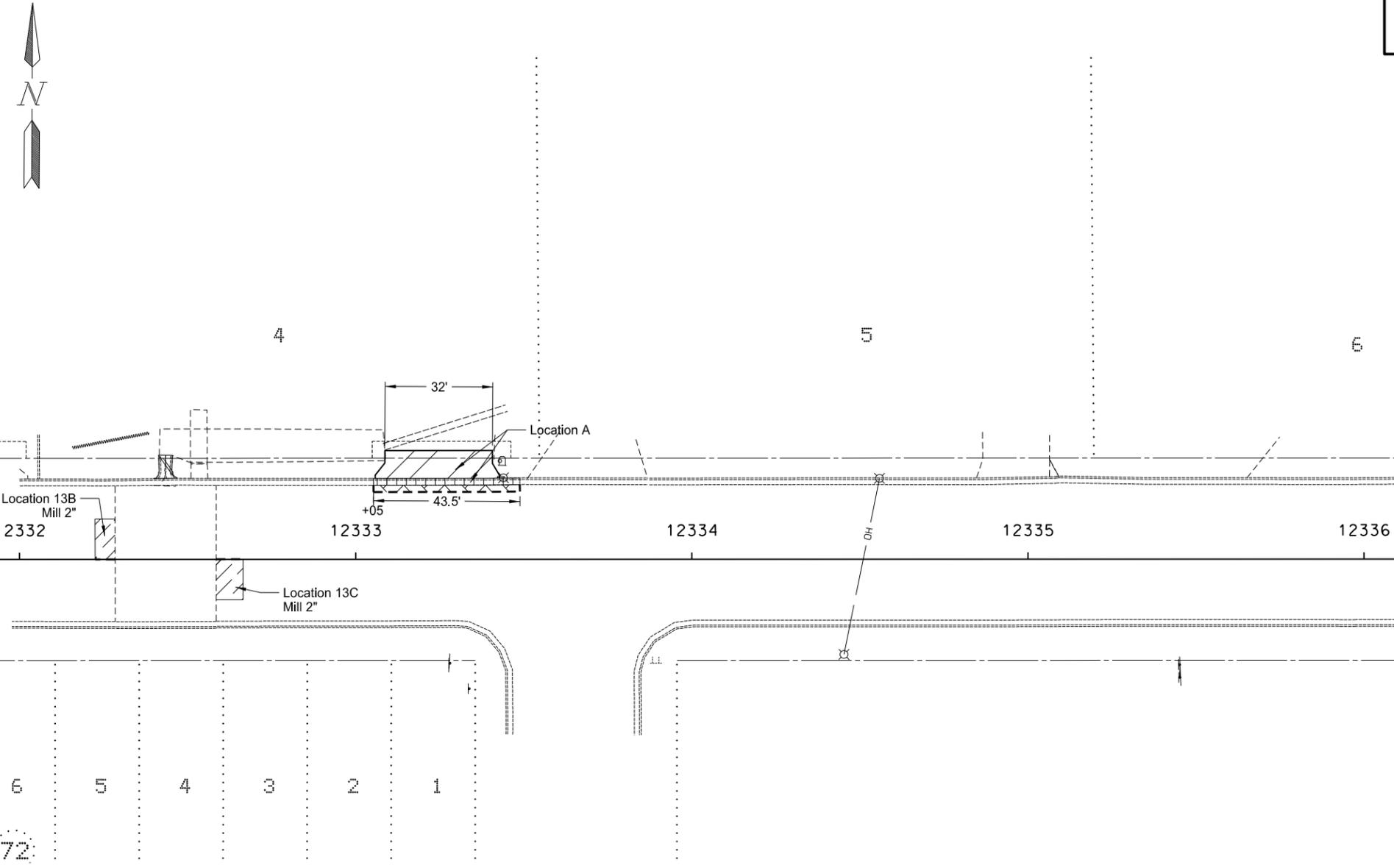
- Legend**
-  Removal of Bituminous Surfacing - Full Depth
 -  Remove Curb & Gutter
 -  Removal of Concrete
 -  Temporary Easement

Location	202-0112 Removal of Concrete SY	202-0119 Saw Concrete LF	202-0130 Removal of Curb & Gutter LF	202-0131 Removal of Curb - Type 1 LF	202-0132 Removal of Bituminous Surfacing SY	202-0153 Saw Bituminous Surfacing - Full Depth LF	411-0105 Milling Pavement Surface SY
12A	15.4	4.0	28.0	-	13.3	67.7	-
12B	12.8	24.5	22.5	-	5.9	32.0	-
12C	24.4	51.8	53.0	-	11.8	57.0	-
Total	52.6	80.3	103.5	-	31.0	156.7	-
Running Total	1,827.1	2,349.8	3,280.3	190.6	978.6	4,118.2	67.2

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Locations
Sta 12328+00 to Sta 12332+00
North Dakota State Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	40	13

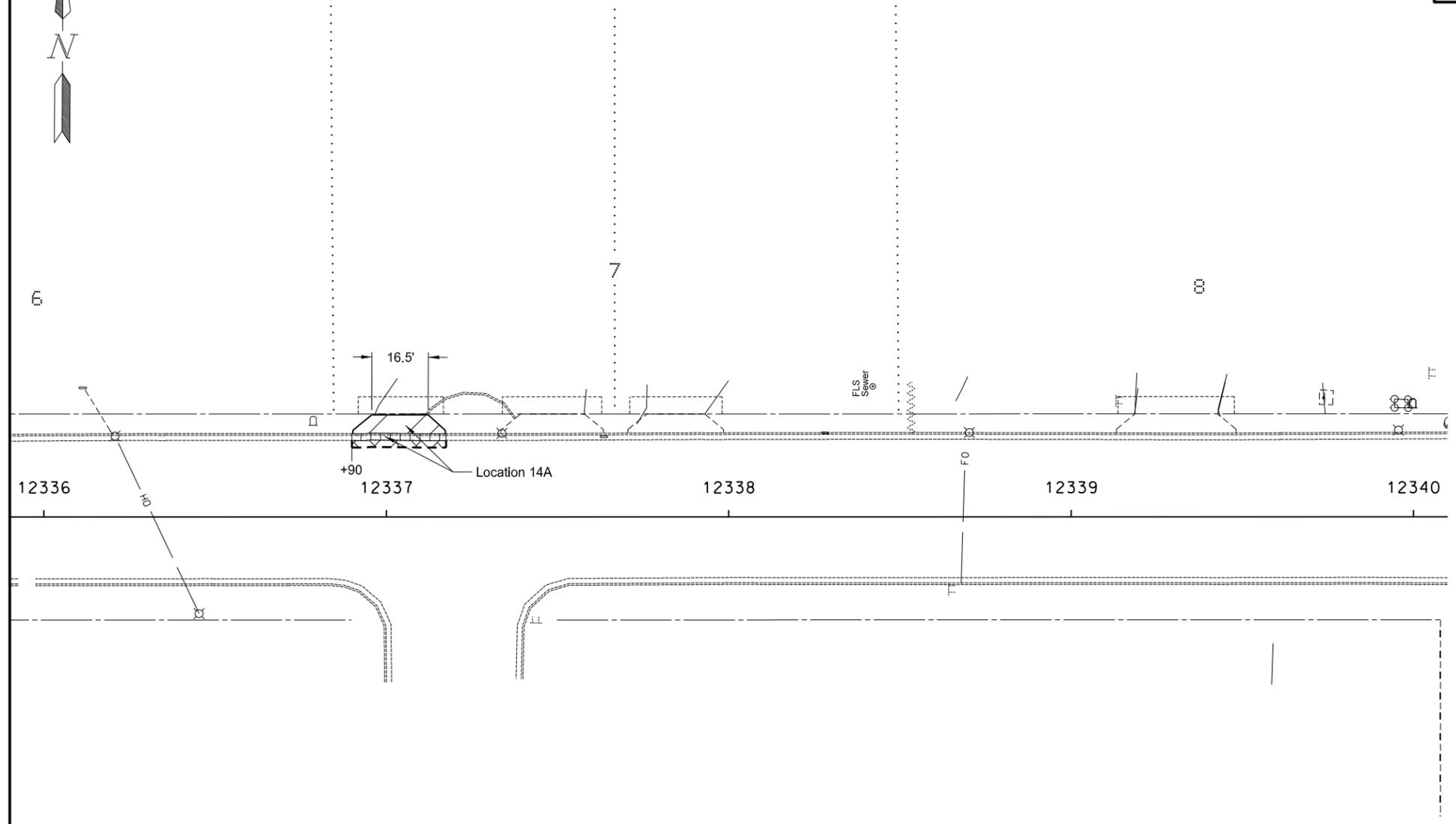


- Legend**
-  Removal of Bituminous Surfacing - Full Depth
 -  Remove Curb & Gutter
 -  Removal of Concrete
 -  Milling Pavement Surface
 -  Temporary Easement

Location	202-0112	202-0119	202-0130	202-0131	202-0132	202-0153	411-0105
	Removal of Concrete SY	Saw Concrete LF	Removal of Curb & Gutter LF	Removal of Curb - Type 1 LF	Removal of Bituminous Surfacing SY	Saw Bituminous Surfacing - Full Depth LF	Milling Pavement Surface SY
13A	31.0	36.0	43.5	-	9.7	47.5	-
13B	-	-	-	-	-	-	8.0
13C	-	-	-	-	-	-	10.7
Total	31.0	36.0	43.5	-	9.7	47.5	18.7
Running Total	1,858.0	2,385.8	3,323.8	190.6	988.3	4,165.7	85.9

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Layouts
Sta 12332+00 to Sta 12336+00
North Dakota Highway 13
City of Wishek



- Legend**
-  Removal of Bituminous Surfacing - Full Depth
 -  Remove Curb & Gutter
 -  Removal of Concrete
 -  Temporary Easement

Location	202-0112 Removal of Concrete SY	202-0119 Saw Concrete LF	202-0130 Removal of Curb & Gutter LF	202-0131 Removal of Curb - Type 1 LF	202-0132 Removal of Bituminous Surfacing SY	202-0153 Saw Bituminous Surfacing - Full Depth LF	411-0105 Milling Pavement Surface SY
14A	13.7	4.0	27.5	-	6.1	59.0	-
Total	13.7	4.0	27.5	-	6.1	59.0	-
Running Total	1,871.8	2,389.8	3,351.3	190.6	994.4	4,224.7	85.9

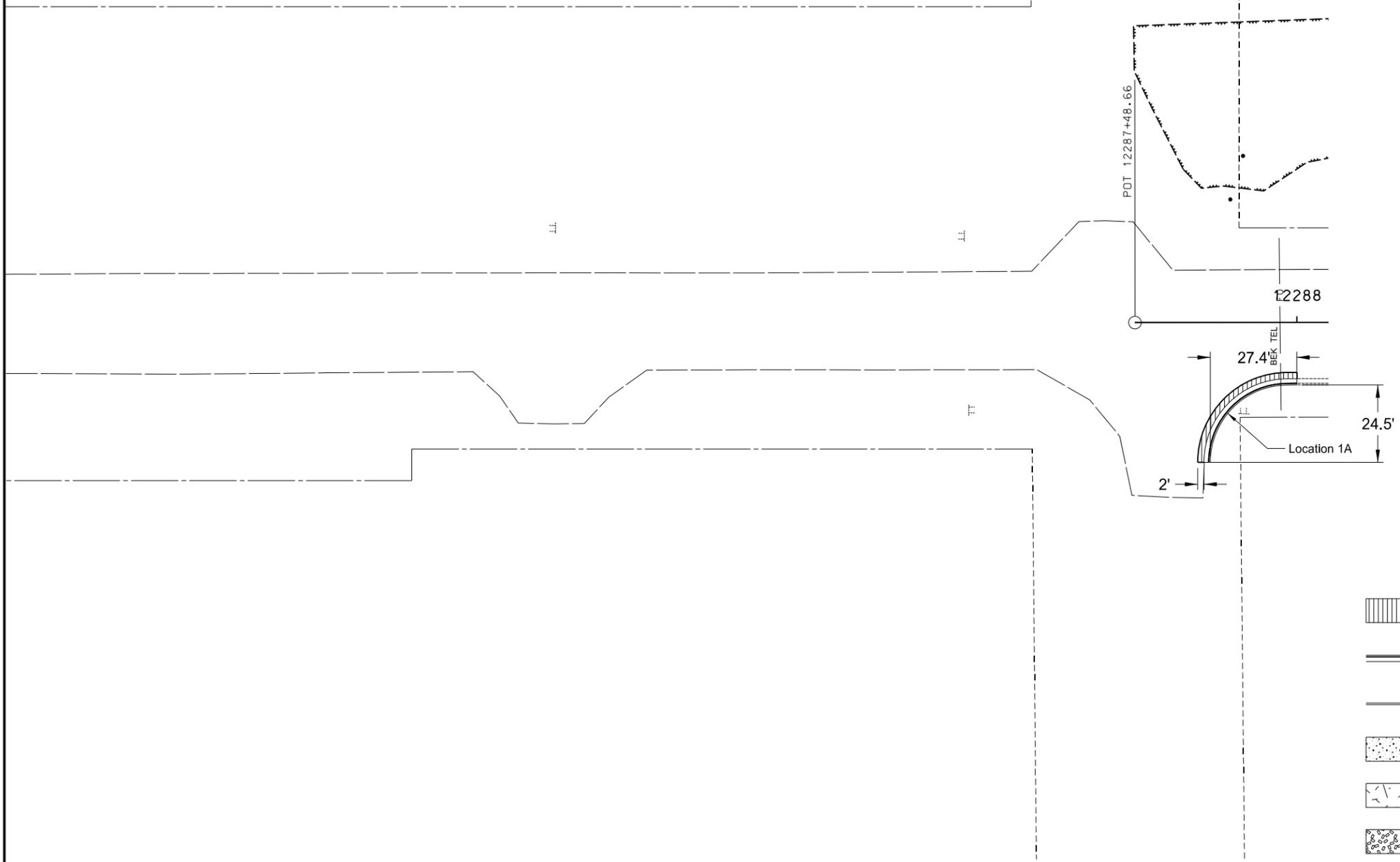
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Removal Locations
Sta 12336+00 to Sta 12340+00

North Dakota Highway 13
City of Wishek



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	90	1



Legend

-  Commercial Grade HMA
-  Curb & Gutter - Type I
-  6" Curb
-  Sidewalk Concrete
-  Driveway Concrete
-  Valley Gutter 72IN

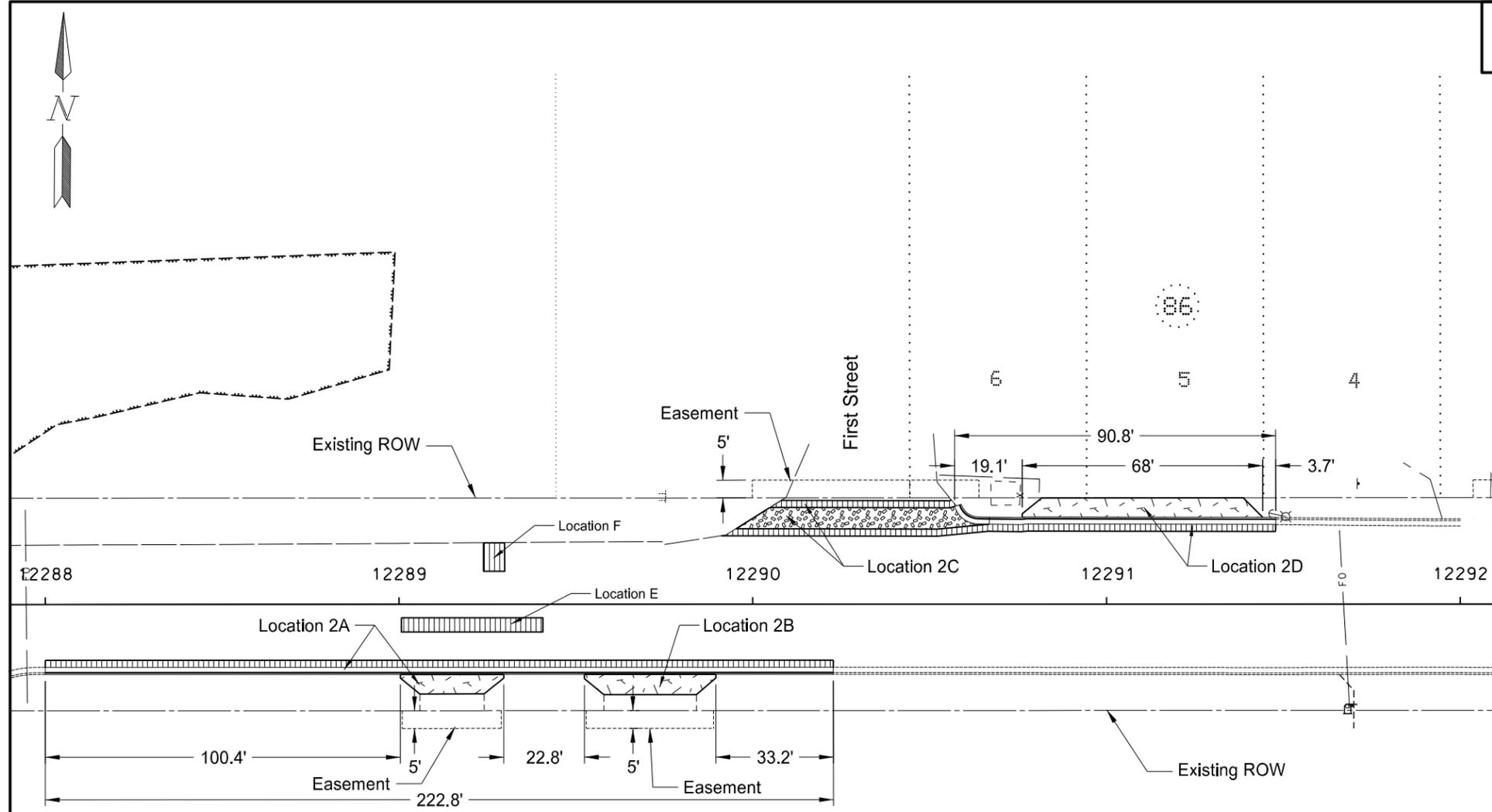
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Location	401-0050 Tack Coat	430-0500 Commercial Grade HMA	748-0140 Curb & Gutter - Type I	748-0520 Curb - Type I	748-1030 Valley Gutter - 72IN	750-0100 Sidewalk Concrete	750-1000 Driveway Concrete	750-2115 Detectable Warning Panels
	GAL	TON	LF	LF	SY	SY	SY	SF
1A	0.5	4.0	42.3	-	-	-	-	-
Total	0.5	4.0	42.3	-	-	-	-	-

Paving Layouts
Sta 12287+49 to Sta 12288+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	90	2

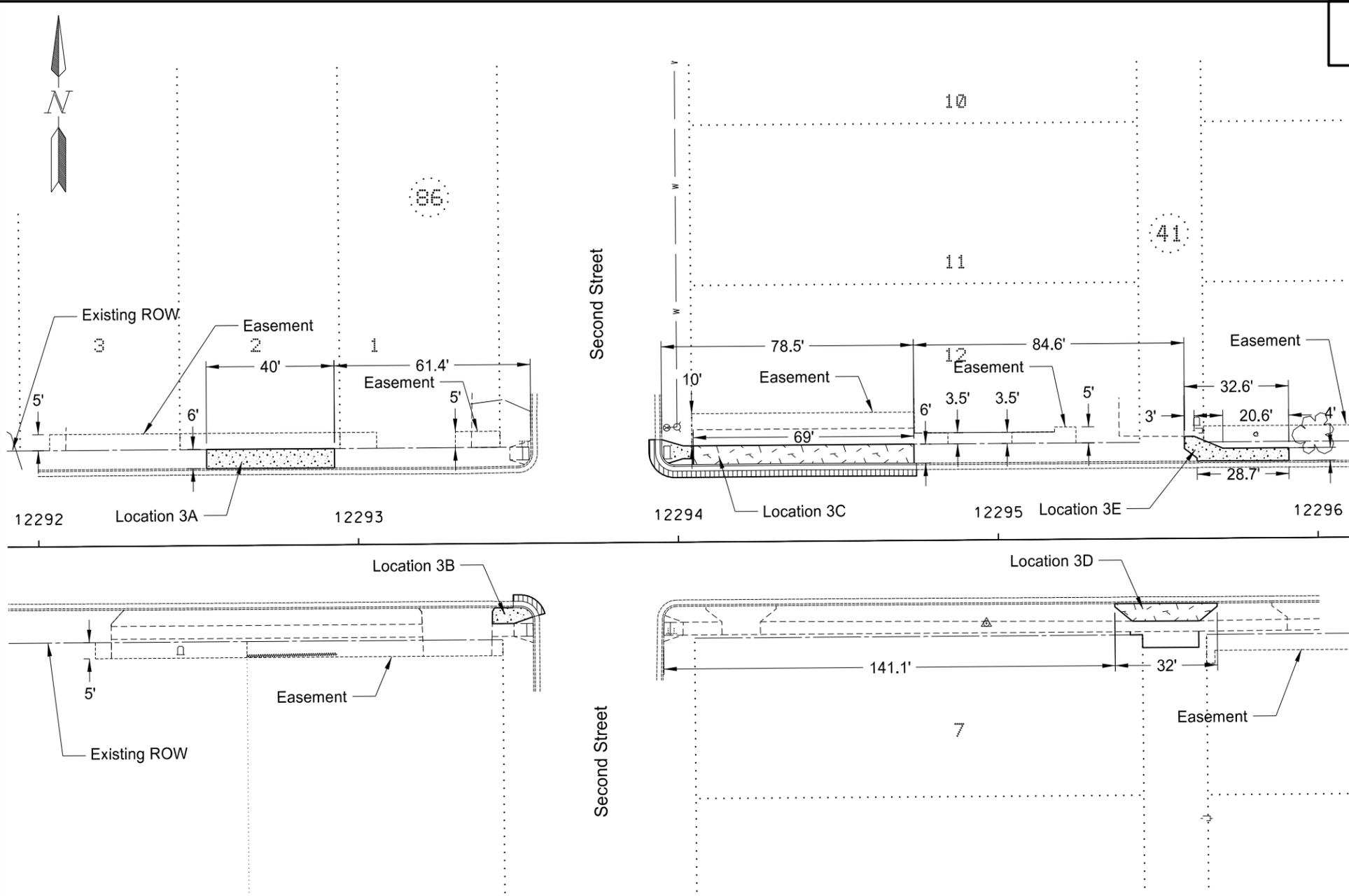


Location	401-0050	430-0500	748-0140	748-0520	748-1030	750-0100	750-1000	750-2115
	Tack Coat	Commercial Grade HMA	Curb & Gutter - Type I	Curb - Type I	Valley Gutter - 72IN	Sidewalk Concrete	Driveway Concrete	Detectable Warning Panels
	GAL	TON	LF	LF	SY	SY	SY	SF
2A	2.5	19.3	222.8	-	-	-	15.0	-
2B	-	-	-	-	-	-	20.8	-
2C	0.6	4.4	-	-	39.4	-	-	-
2D	1.7	13.4	-	-	-	-	38.0	-
2E	0.9	2.0	-	-	-	-	-	-
2F	0.3	0.6	-	-	-	-	-	-
Total	5.9	39.6	222.8	-	39.4	-	73.8	-
Running Total	6.4	43.6	265.1	-	39.4	-	73.8	-

- Legend**
- Commercial Grade HMA
 - Curb & Gutter - Type I
 - 6" Curb
 - Sidewalk Concrete
 - Driveway Concrete
 - Valley Gutter 72IN

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Paving Layouts
Sta 12288+00 to Sta 12292+00
North Dakota Highway 13
City of Wishek



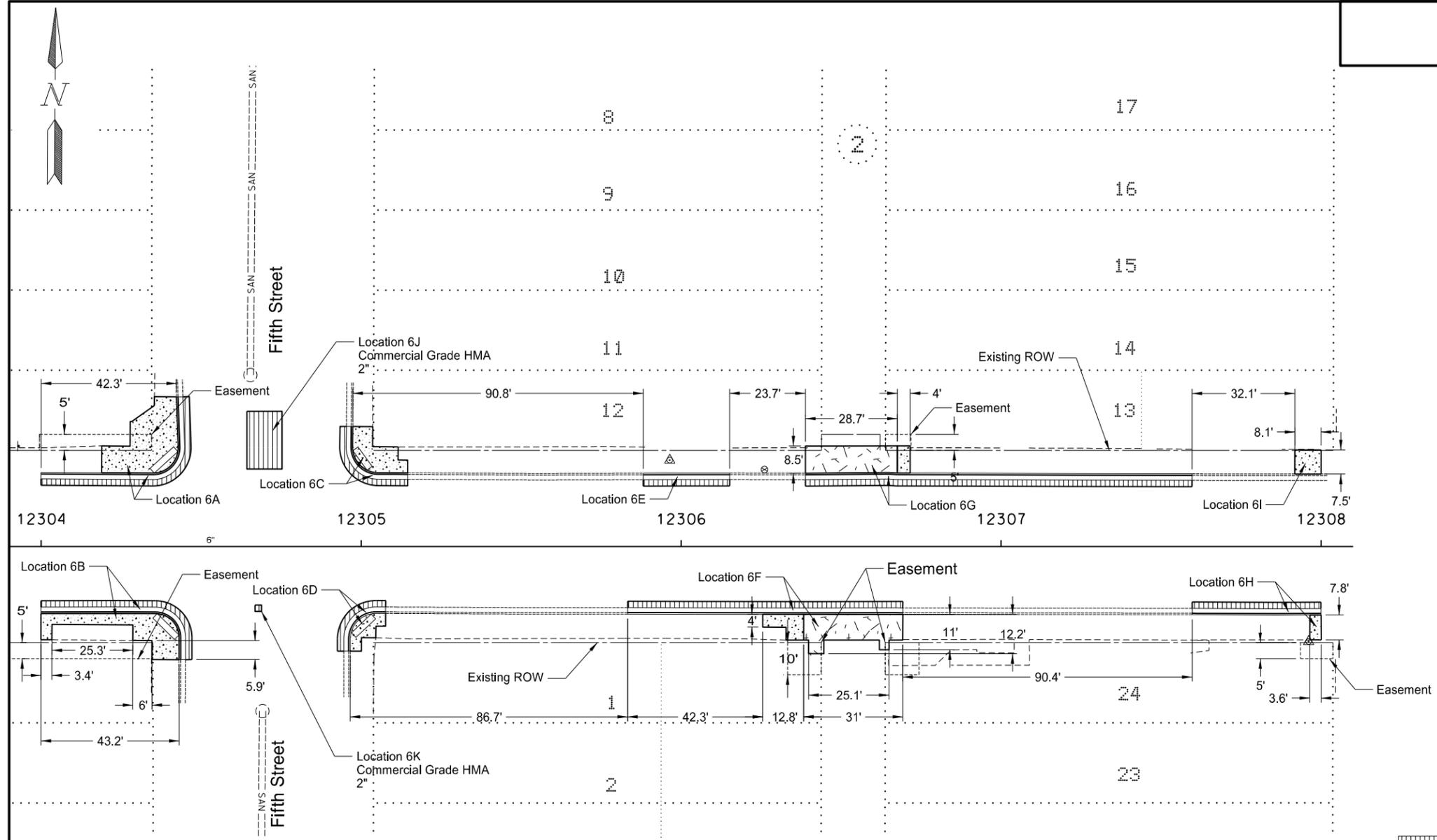
- Legend**
- Commercial Grade HMA
 - Curb & Gutter - Type I
 - 6" Curb
 - Sidewalk Concrete
 - Driveway Concrete
 - Valley Gutter 72IN

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
3A	-	-	-	-	-	26.6	-	-
3B	0.1	1.0	8.0	-	-	5.9	-	-
3C	1.0	7.8	87.3	-	-	5.6	44.6	8.0
3D	-	-	-	-	-	16.3	16.8	-
3E	-	-	-	-	-	16.3	-	-
Total	1.1	8.8	95.3	-	-	27.8	61.3	8.0
Running Total	7.5	52.4	360.4	-	39.4	27.8	135.1	8.0

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12292+00 to Sta 12296+00

North Dakota Highway 13
City of Wishek



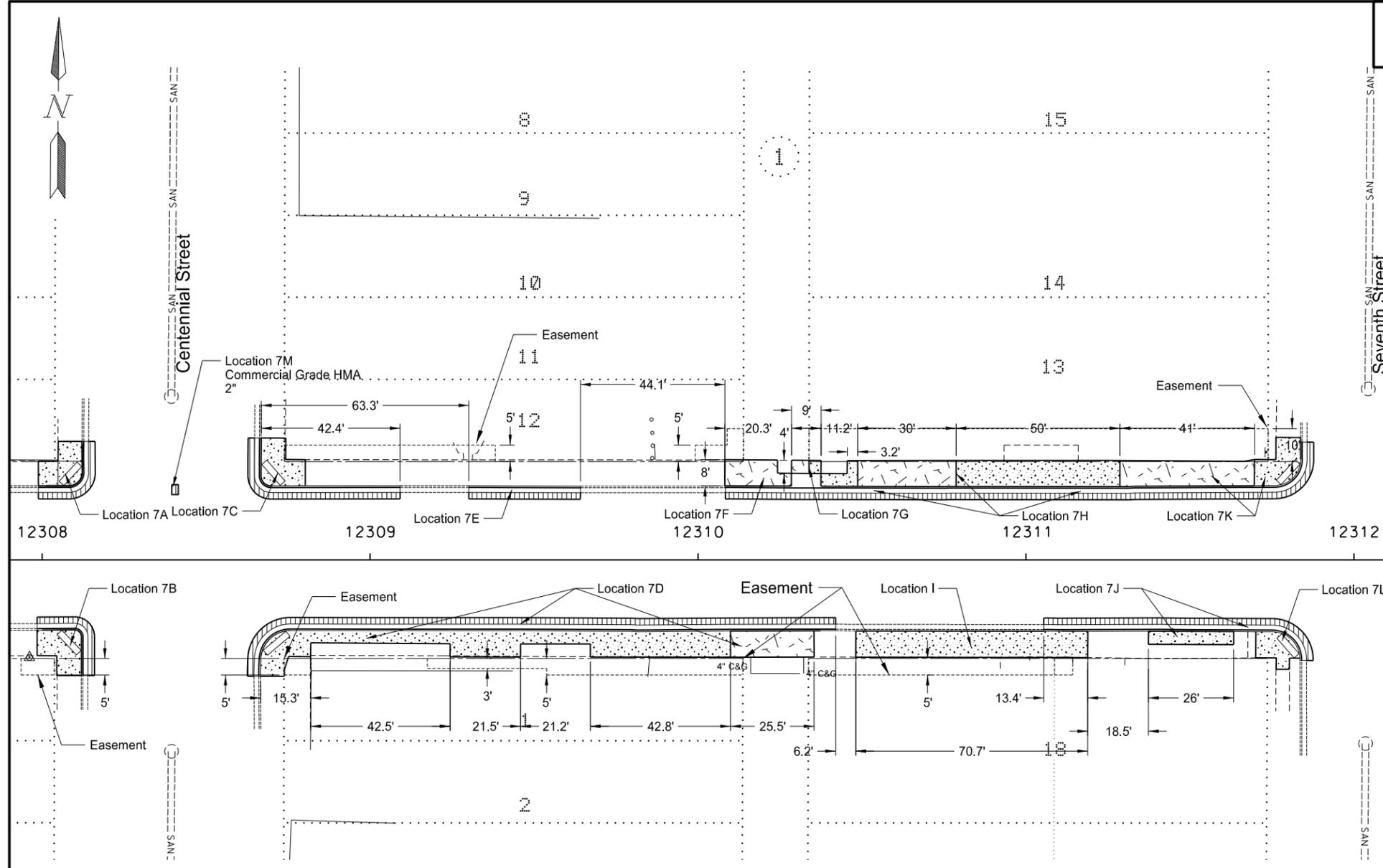
- Legend**
- Commercial Grade HMA
 - Curb & Gutter - Type I
 - 6" Curb
 - Sidewalk Concrete
 - Driveway Concrete
 - Valley Gutter 72IN

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
6A	0.8	5.9	64.0	-	-	41.6	-	20.0
6B	0.7	5.1	55.1	-	-	30.8	-	19.0
6C	0.4	2.8	29.0	-	-	17.0	-	15.0
6D	0.3	2.1	20.2	-	-	8.2	-	17.0
6E	0.3	2.3	27.0	-	-	-	-	-
6F	1.0	7.4	86.0	-	-	8.1	30.8	-
6G	1.3	10.4	120.8	-	-	3.8	26.8	-
6H	0.4	3.5	40.3	-	-	3.1	-	-
6I	-	-	-	-	-	6.8	-	-
6J	1.1	2.4	-	-	-	-	-	-
JK	0.0	0.0	-	-	-	-	-	-
Total	6.2	42.1	442.4	-	-	119.3	57.6	71.0
Running Total	24.0	174.2	1,504.3	33.0	76.1	375.8	374.8	213.0

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12304+00 to Sta 12308+00

North Dakota Highway 13
City of Wishek



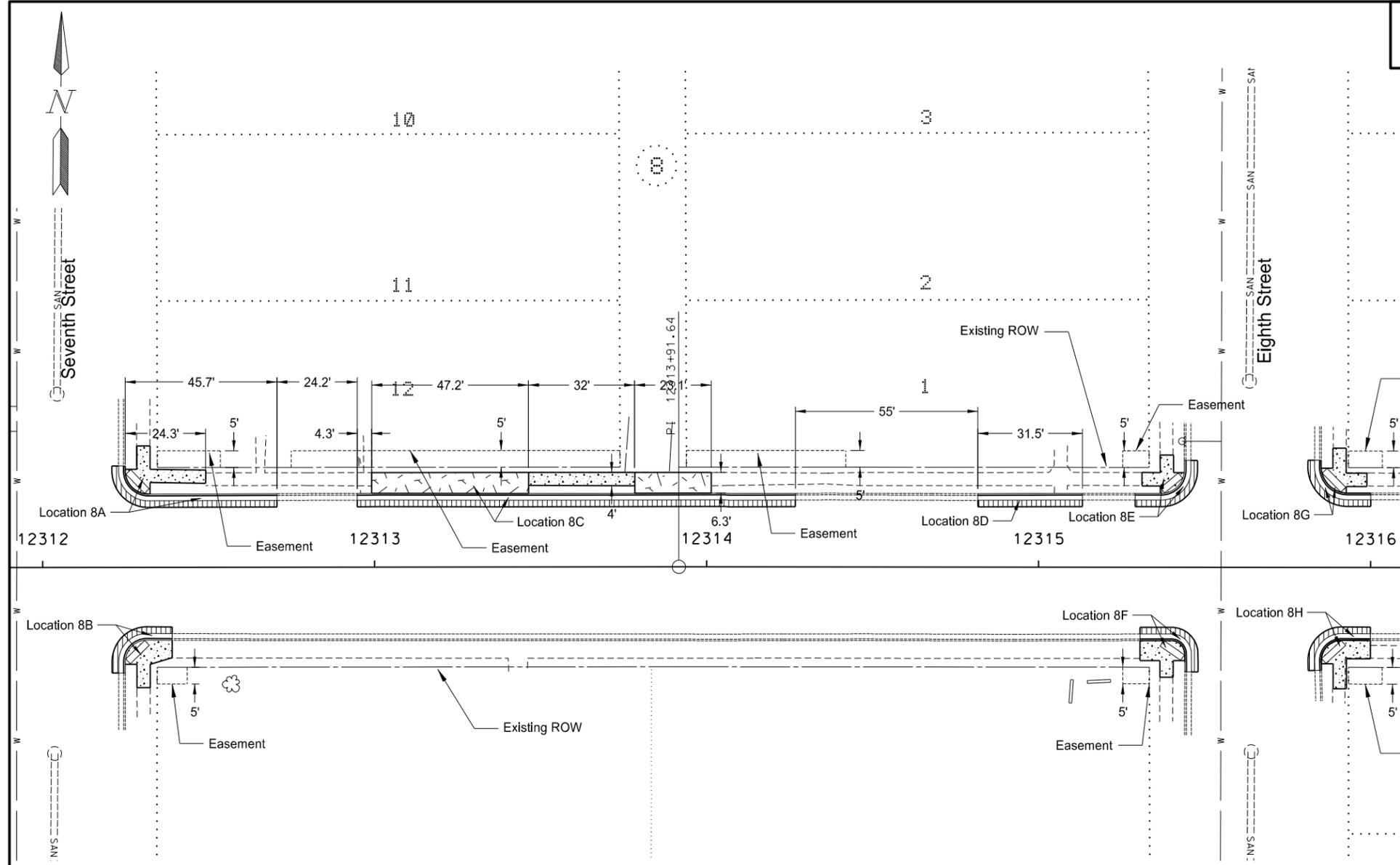
Legend

- Commercial Grade HMA
- Curb & Gutter - Type I
- 6" Curb
- Sidewalk Concrete
- Driveway Concrete
- Valley Gutter 72IN

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
7A	0.3	2.6	25.9	-	-	15.6	-	16.0
7B	0.3	2.7	27.3	-	-	16.6	-	16.0
7C	0.7	5.2	56.5	-	-	17.1	-	17.0
7D	2.1	16.4	186.1	-	-	100.6	22.6	18.0
7E	0.4	2.9	34.0	-	-	-	-	-
7F	-	-	-	-	-	-	16.0	-
7G	-	-	-	-	-	1.5	2.4	-
7H	2.1	16.4	186.0	-	-	50.5	26.5	-
7I	-	-	-	-	-	62.7	-	-
7J	1.0	7.6	84.0	-	-	11.5	-	-
7K	-	-	-	-	-	16.5	35.0	17.0
7L	-	-	-	-	-	11.8	-	16.0
7M	0.0	0.1	-	-	-	-	-	-
Total	7.0	53.9	599.8	-	-	304.4	102.4	100.0
Running Total	31.0	228.2	2,104.1	33.0	76.1	680.3	477.2	313.0

Paving Layouts
Sta 12308+00 to Sta 12312+00
North Dakota Highway 13
City of Wishek



Legend

	Commercial Grade HMA
	Curb & Gutter - Type I
	6" Curb
	Sidewalk Concrete
	Driveway Concrete
	Valley Gutter 72IN

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Location	401-0050 Tack Coat	430-0500 Commercial Grade HMA	748-0140 Curb & Gutter - Type I	748-0520 Curb - Type I	748-1030 Valley Gutter - 72IN	750-0100 Sidewalk Concrete	750-1000 Driveway Concrete	750-2115 Detectable Warning Panels
	GAL	TON	LF	LF	SY	SY	SY	SF
8A	0.6	4.8	52.0	-	-	15.6	-	16.0
8B	0.3	2.2	22.0	-	-	12.8	-	16.0
8C	1.5	11.4	132.0	-	-	14.0	49.0	-
8D	0.4	2.7	31.5	-	-	-	-	-
8E	0.3	2.3	22.5	-	-	8.7	-	14.0
8F	0.3	2.2	21.9	-	-	10.8	-	15.0
8G	0.3	2.3	22.2	-	-	10.2	-	16.0
8H	0.3	2.2	22.0	-	-	12.8	-	16.0
Total	3.9	30.2	326.1	-	-	84.8	49.0	93.0
Running Total	34.9	258.4	2,430.2	33.0	76.1	765.1	526.2	406.0

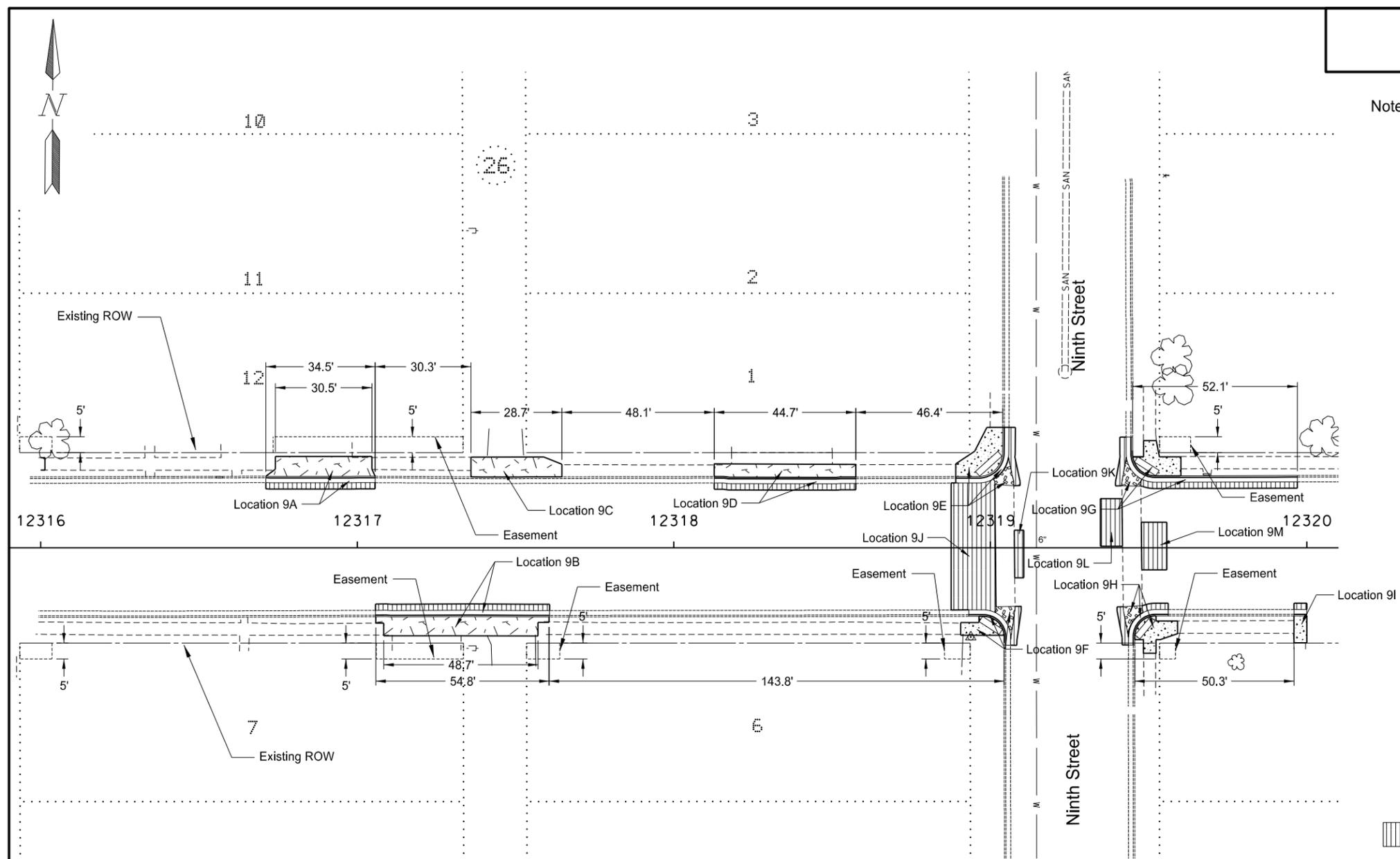
Paving Layouts
Sta 12312+00 to Sta 12316+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	90	9

Note: Provide the following material for subgrade repair locations 9J - 9M:

- 302-0120 Aggregate Base Course CL 5 35 TON
- 709-0151 Geosynthetic Material Type R1 95 SY

Material quantities to be used at the discretion of the engineer



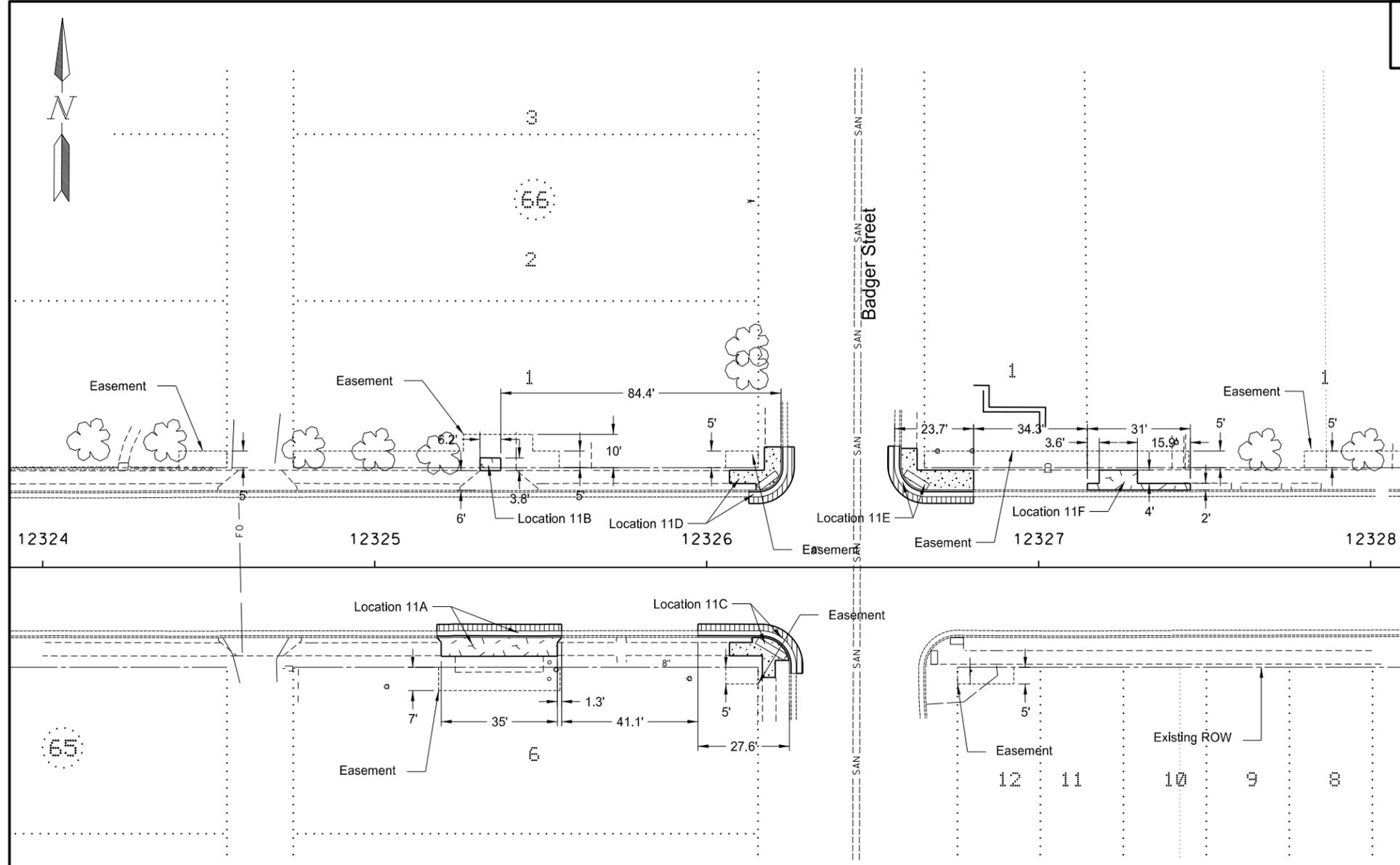
Legend

- Commercial Grade HMA
- Curb & Gutter - Type I
- 6" Curb
- Sidewalk Concrete
- Driveway Concrete
- Valley Gutter 72IN

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
9A	0.4	3.0	34.5	-	-	-	21.6	-
9B	0.6	4.8	54.9	-	-	-	33.7	-
9C	-	-	-	-	-	-	19.3	-
9D	0.5	3.9	44.8	-	-	-	20.5	-
9E	0.3	2.7	28.8	-	3.0	16.2	-	19.0
9F	0.2	1.8	18.3	-	3.0	8.2	-	15.0
9G	0.7	5.6	62.1	-	3.1	11.6	-	16.0
9H	0.2	1.8	17.7	-	3.1	10.4	-	15.0
9I	0.0	0.4	4.1	-	-	3.9	-	-
9J	3.1	20.9	-	-	-	-	-	-
9K	0.2	1.7	-	-	-	-	-	-
9L	0.6	3.8	-	-	-	-	-	-
9M	0.7	4.4	-	-	-	-	-	-
Total	7.7	54.6	265.2	-	12.2	50.1	95.2	65.0
Running Total	42.5	313.0	2,695.4	33.0	88.4	815.2	621.4	471.0

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12316+00 to Sta 12320+00
North Dakota Highway 13
City of Wishek



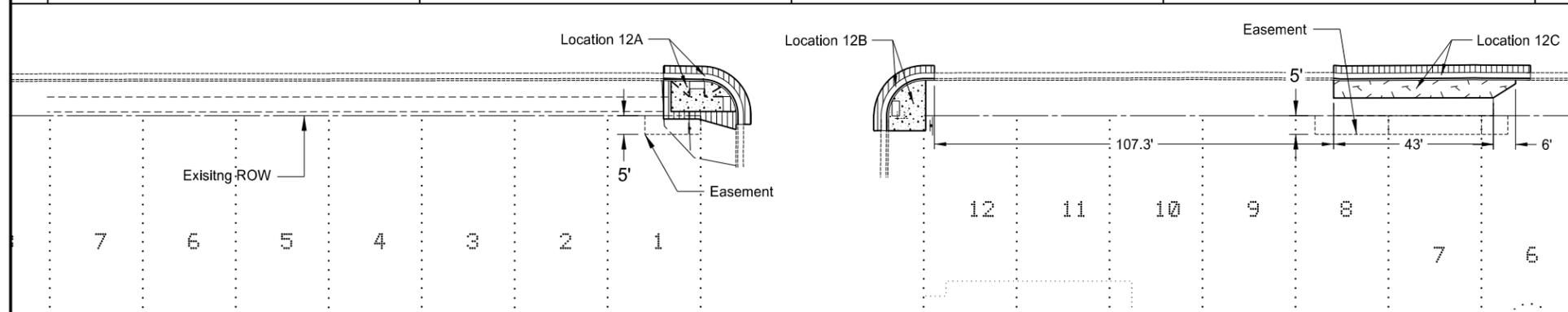
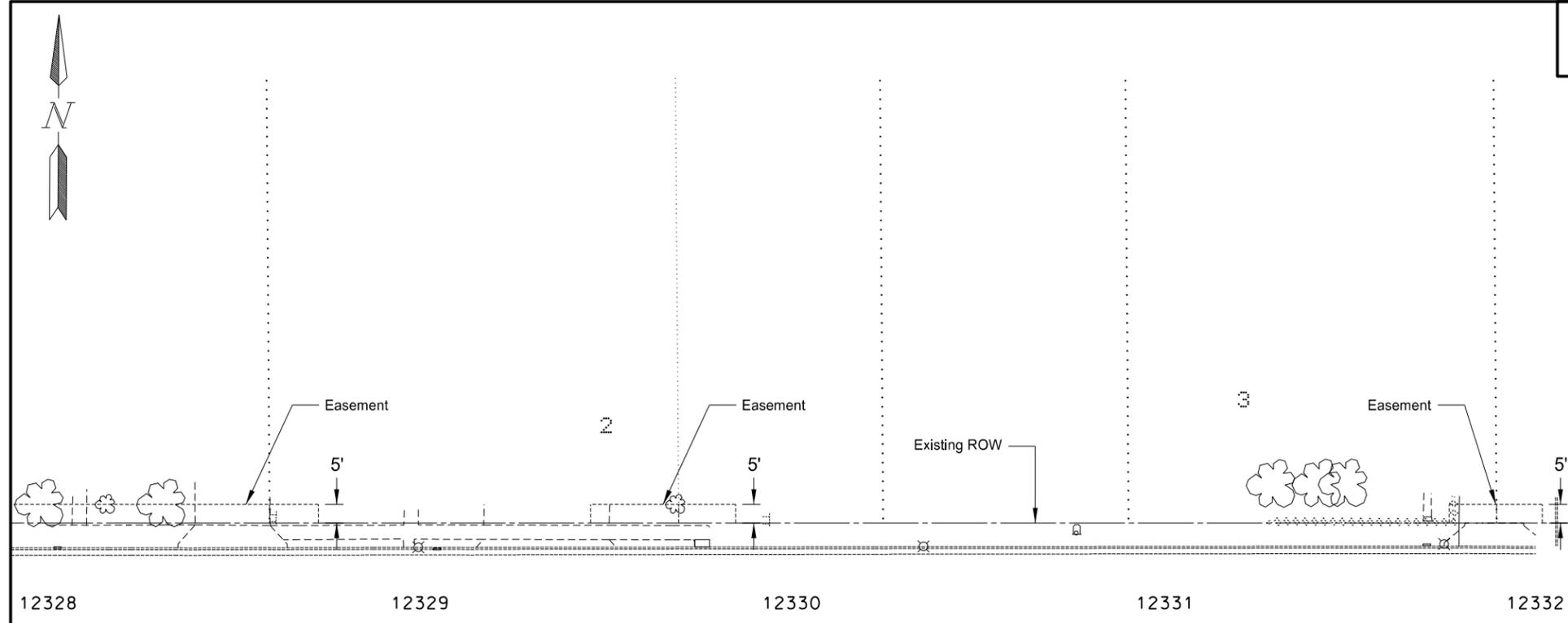
- Legend**
- Commercial Grade HMA
 - Curb & Gutter - Type I
 - 6" Curb
 - Sidewalk Concrete
 - Driveway Concrete
 - Valley Gutter 72IN

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
11A	0.4	3.2	37.6	-	-	-	22.1	-
11B	-	-	-	-	-	-	2.6	-
11C	0.4	3.4	35.5	-	-	11.6	-	21.0
11D	0.3	2.1	20.5	-	-	11.3	-	14.0
11E	0.4	3.1	32.5	-	-	16.7	-	16.0
11F	-	-	-	-	-	-	11.9	-
Total	1.5	11.9	126.1	-	-	39.6	36.6	51.0
Running Total	48.2	351.3	3,096.1	33.0	88.4	907.6	747.9	536.0

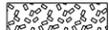
This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12324+00 to Sta 12328+00

North Dakota Highway 13
City of Wishek



Legend

-  Commercial Grade HMA
-  Curb & Gutter - Type I
-  6" Curb
-  Sidewalk Concrete
-  Driveway Concrete
-  Valley Gutter 72IN

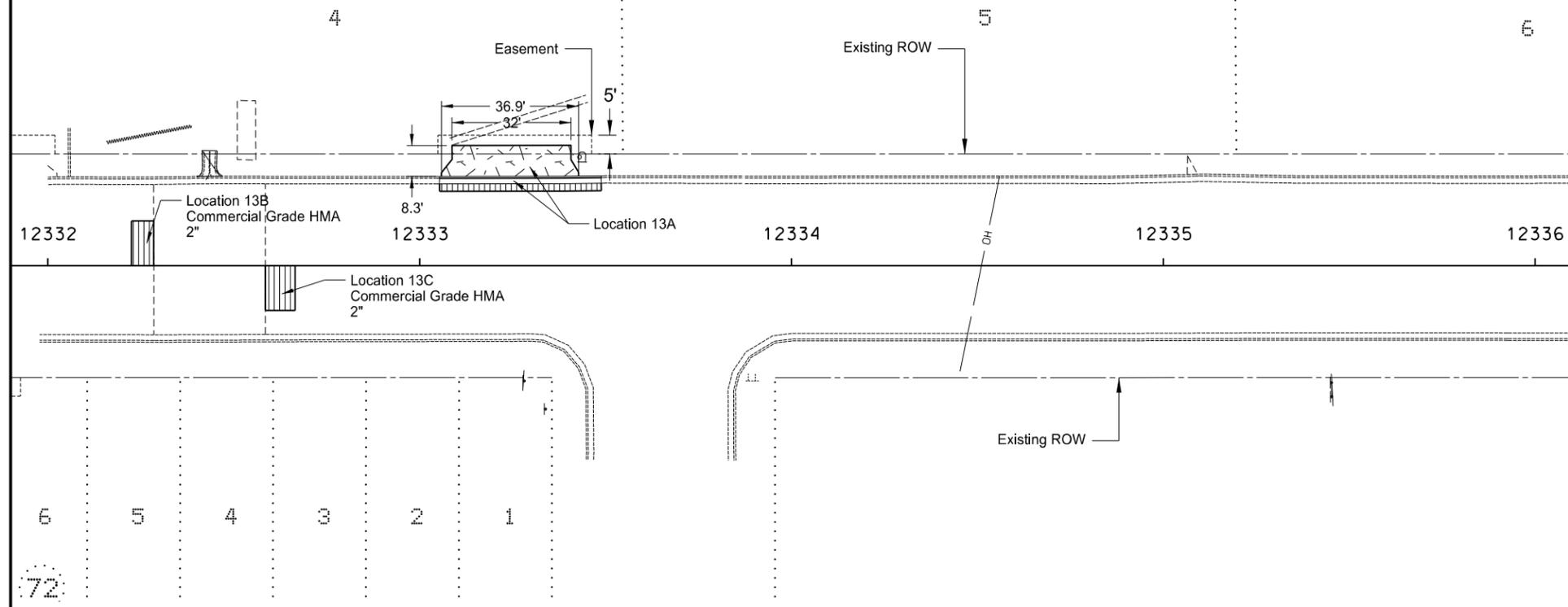
Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
12A	0.7	5.8	28.9	-	-	13.9	-	16.0
12B	0.3	2.3	22.5	-	-	12.8	-	8.0
12C	0.6	4.6	53.0	-	-	-	24.4	-
Total	1.6	12.6	104.4	-	-	26.7	24.4	24.0
Running Total	49.8	364.0	3,200.5	33.0	88.4	934.3	772.3	560.0

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12328+00 to Sta 12332+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	90	13



Legend

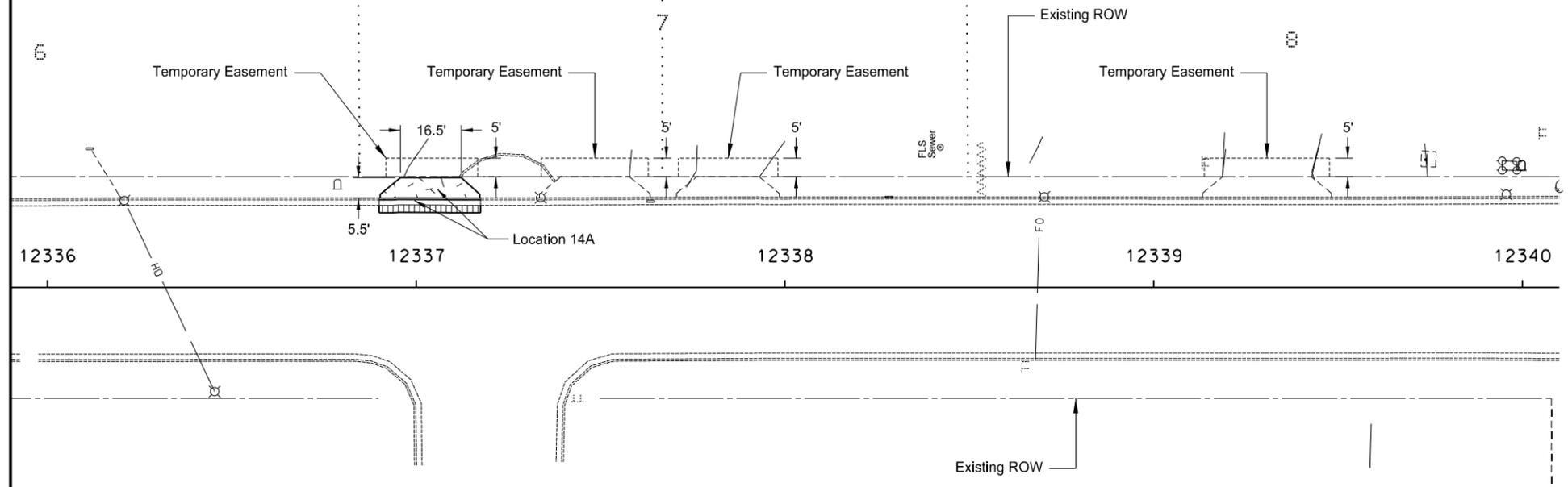
	Commercial Grade HMA
	Curb & Gutter - Type I
	6" Curb
	Sidewalk Concrete
	Driveway Concrete
	Valley Gutter 72IN

Location	401-0050 Tack Coat GAL	430-0500 Commercial Grade HMA TON	748-0140 Curb & Gutter - Type I LF	748-0520 Curb - Type I LF	748-1030 Valley Gutter - 72IN SY	750-0100 Sidewalk Concrete SY	750-1000 Driveway Concrete SY	750-2115 Detectable Warning Panels SF
13A	0.5	3.8	43.5	-	-	-	31.0	-
13B	0.4	0.9	-	-	-	-	-	-
13C	0.5	1.2	-	-	-	-	-	-
Total	1.4	5.8	43.5	-	-	-	31.0	-
Running Total	51.3	369.8	3,244.0	33.0	88.4	934.3	803.2	560.0

This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Paving Layouts
Sta 12332+00 to Sta 12336+00

North Dakota Highway 13
City of Wishek



Legend

- Commercial Grade HMA
- Curb & Gutter - Type I
- 6" Curb
- Sidewalk Concrete
- Driveway Concrete
- Valley Gutter 72IN

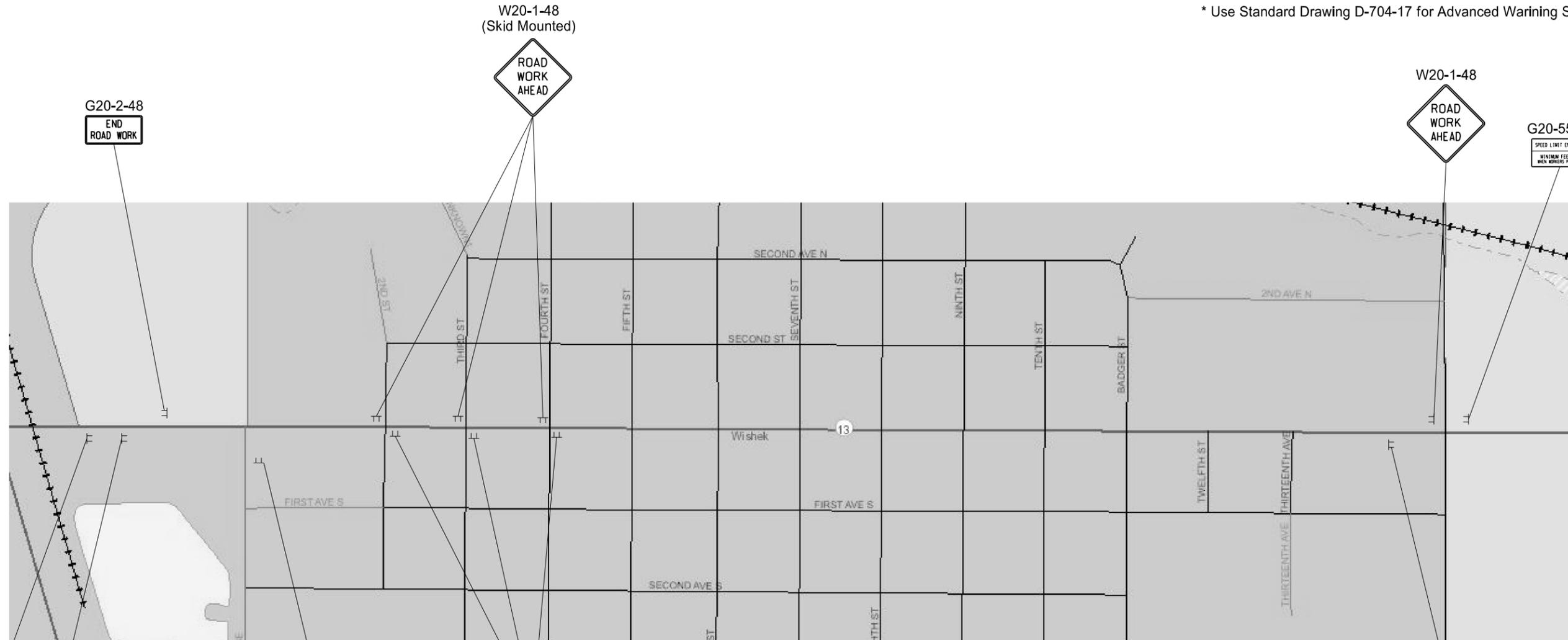
Location	401-0050	430-0500	748-0140	748-0520	748-1030	750-0100	750-1000	750-2115
	Tack Coat	Commercial Grade HMA	Curb & Gutter - Type I	Curb - Type I	Valley Gutter - 72IN	Sidewalk Concrete	Driveway Concrete	Detectable Warning Panels
	GAL	TON	LF	LF	SY	SY	SF	SF
14A	0.3	2.4	27.6	-	-	-	13.7	-
Total	0.3	2.4	27.6	-	-	-	13.7	-
Running Total	51.6	372.2	3,271.6	33.0	88.4	934.3	817.0	560.0

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Paving Layouts
Sta 12336+00 to Sta 12340+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	100	2

* Use Standard Drawing D-704-17 for Advanced Warning Spacing



G20-55-96
SPEED LIMIT ENFORCED
MINIMUM FEE \$80
WHEN WORKERS PRESENT

ROAD WORK AHEAD
W20-1-48

ROAD WORK AHEAD
W20-1-48

ROAD WORK AHEAD
W20-1-48
(Skid Mounted)

END ROAD WORK
G20-2-48

G20-55-96
SPEED LIMIT ENFORCED
MINIMUM FEE \$80
WHEN WORKERS PRESENT

W20-1-48
ROAD WORK AHEAD

W20-1-48
(Skid Mounted)
ROAD WORK AHEAD

G20-2-48
END ROAD WORK

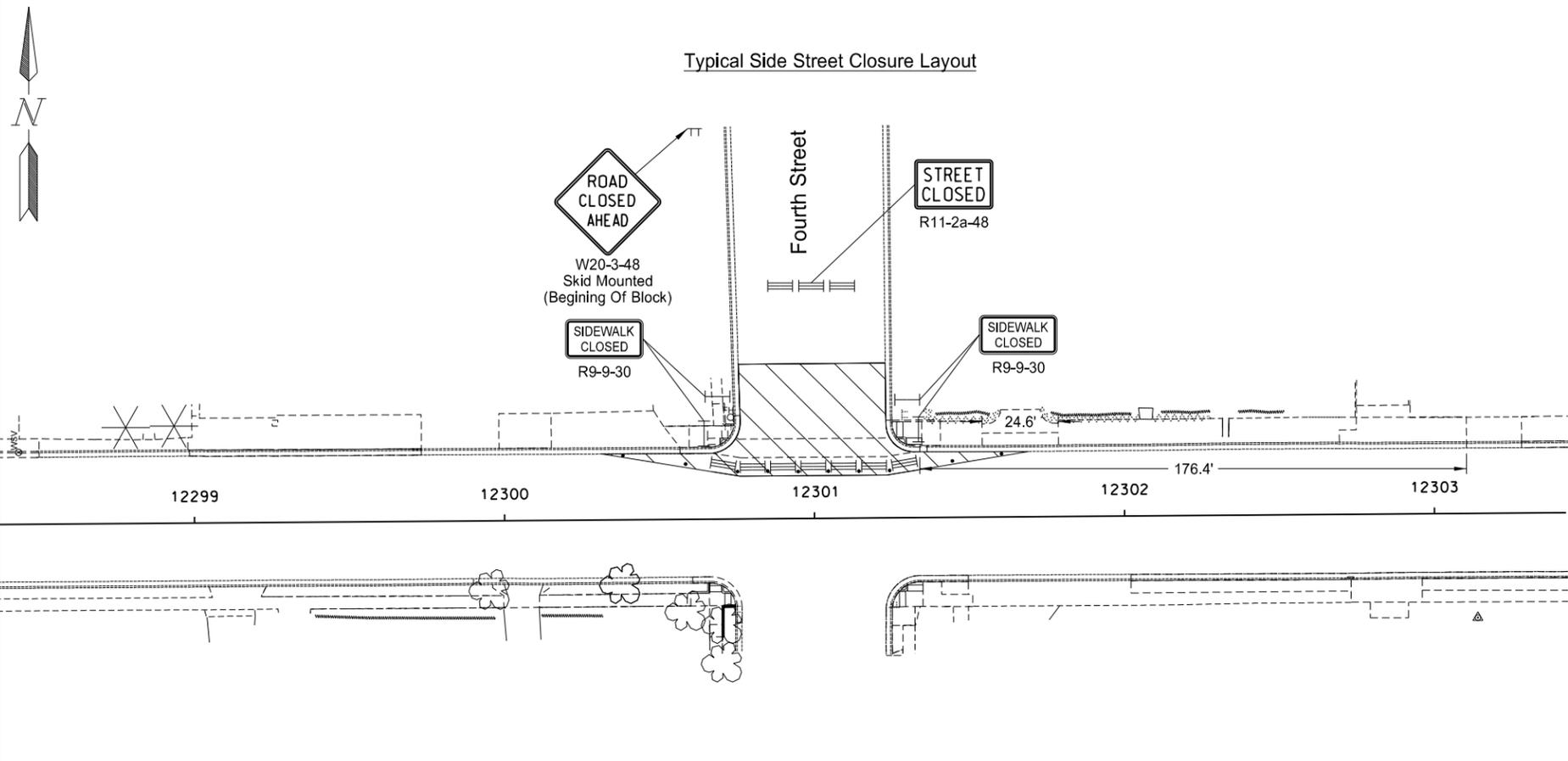
* Use Standard Drawing D-704-17 for Advanced Warning Spacing

* Move the skid mounted W20-1-48 signs as work progresses so they are surrounding the blocks where work is taking place.

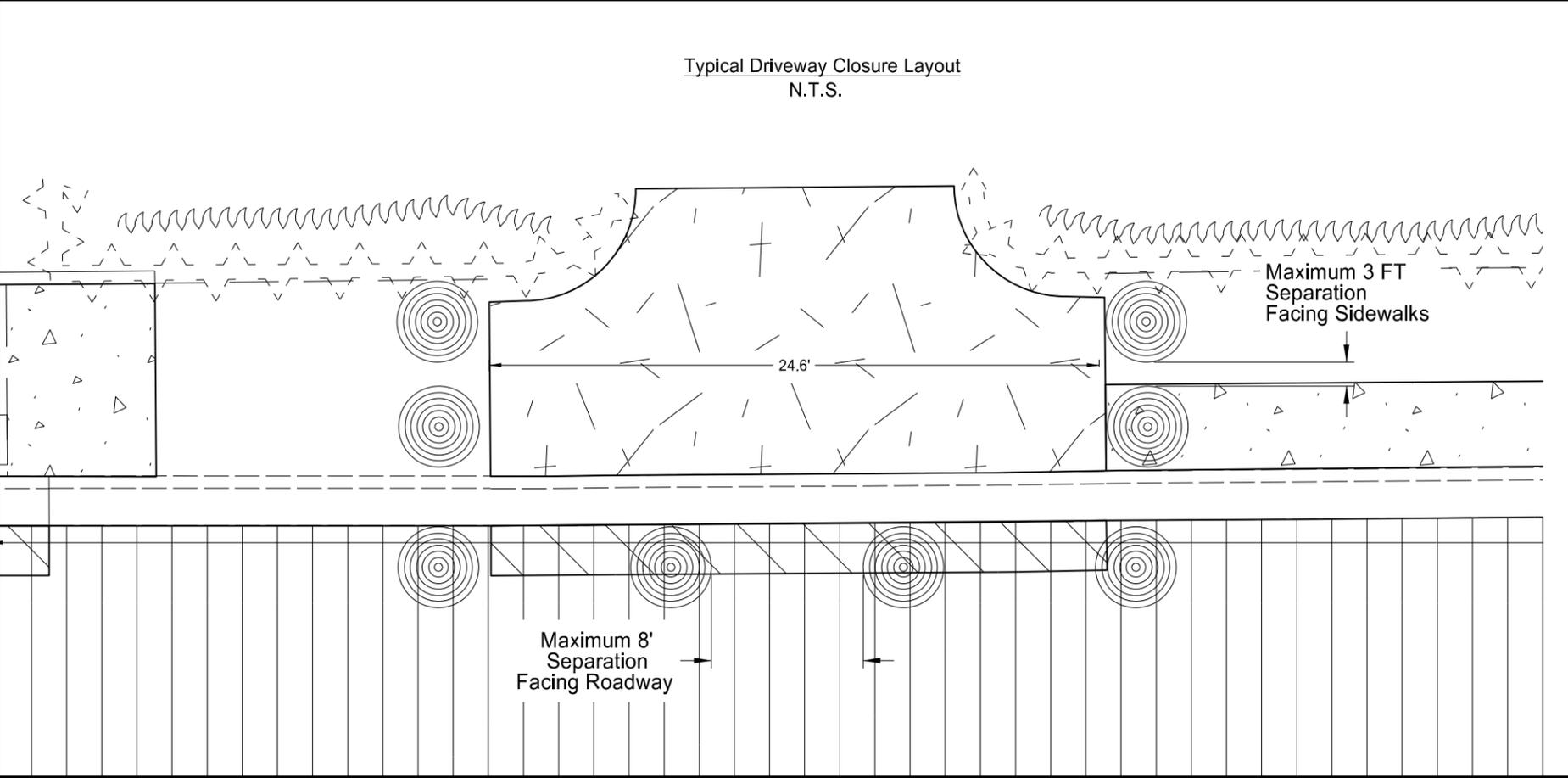
This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Work Zone Traffic Control
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	100	3



- Legend**
- Sign
 - Type I Barricade
 - Type III Barricade
 - Work Zone



- Legend**
- Delineator Drum

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

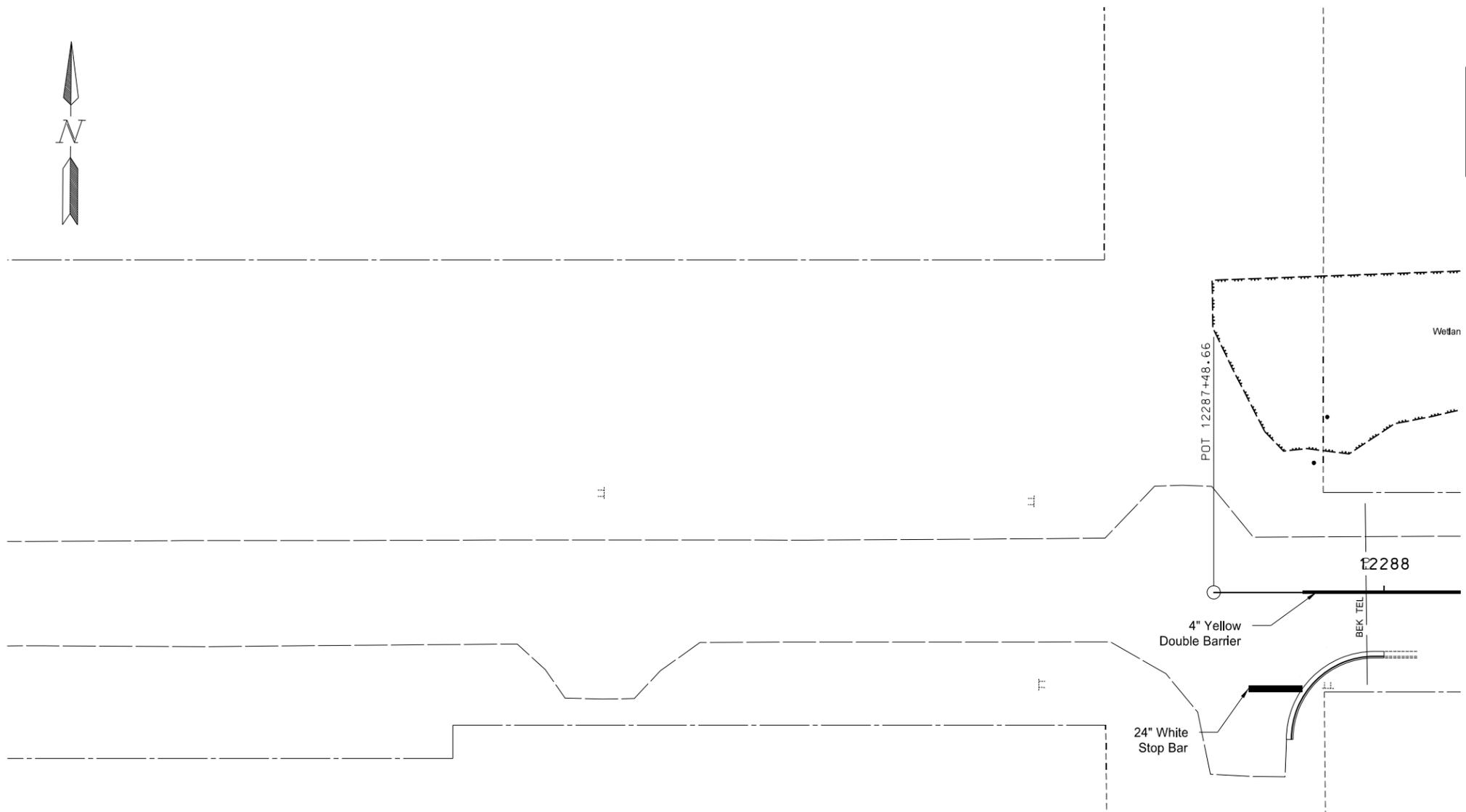
Work Zone Traffic Control
 Typical Side Street Closure
 1st St N, 3rd St N, and 4th St N
 & Typical Driveway Closure

 North Dakota Highway 13
 City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	1



	762-1104 PVMT MK PAINTED 4IN	762-1106 PVMT MK PAINTED 6IN	762-1124 PVMT MK PAINTED 24IN
	LF	LF	LF
Total	49.0	-	16.0



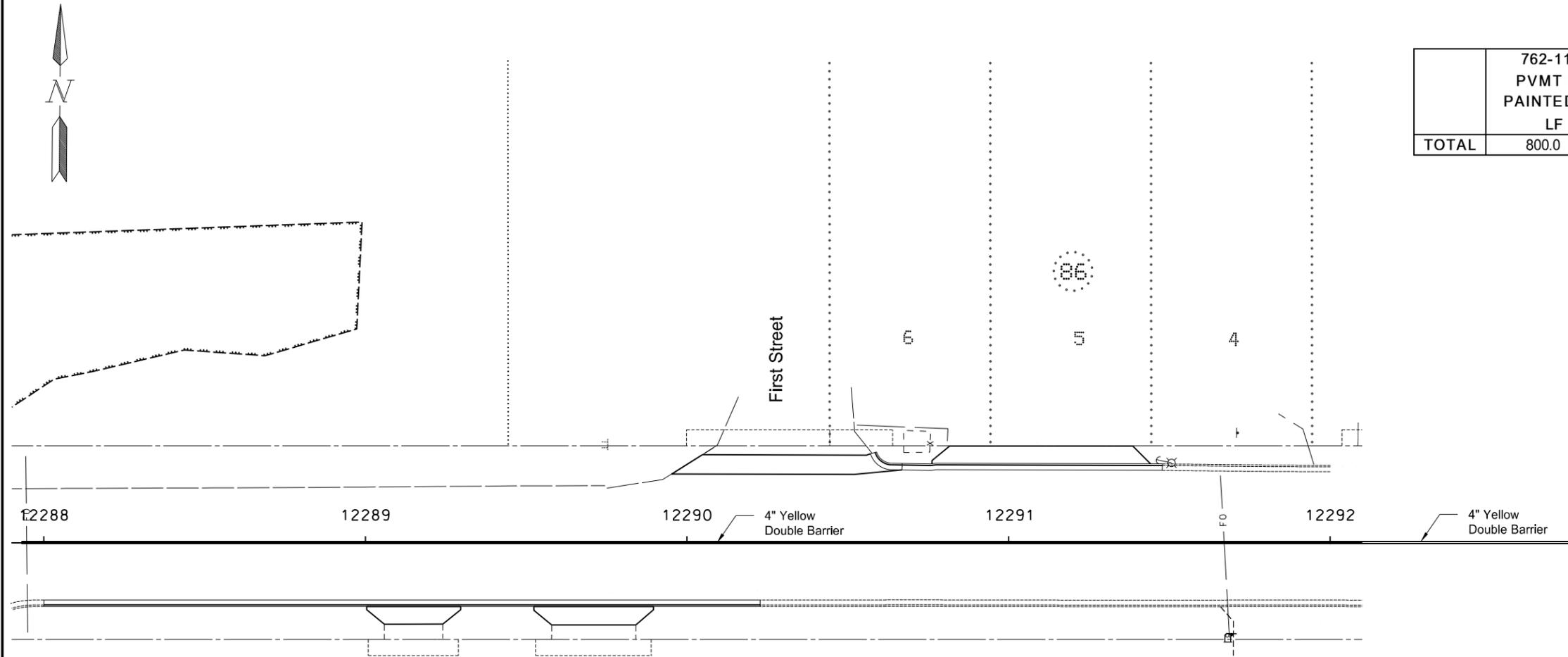
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12287+49 to Sta 12288+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	2

	762-1104 PVMT MK PAINTED 4IN LF	762-1106 PVMT MK PAINTED 6IN LF	762-1124 PVMT MK PAINTED 24 IN LF
TOTAL	800.0	-	-



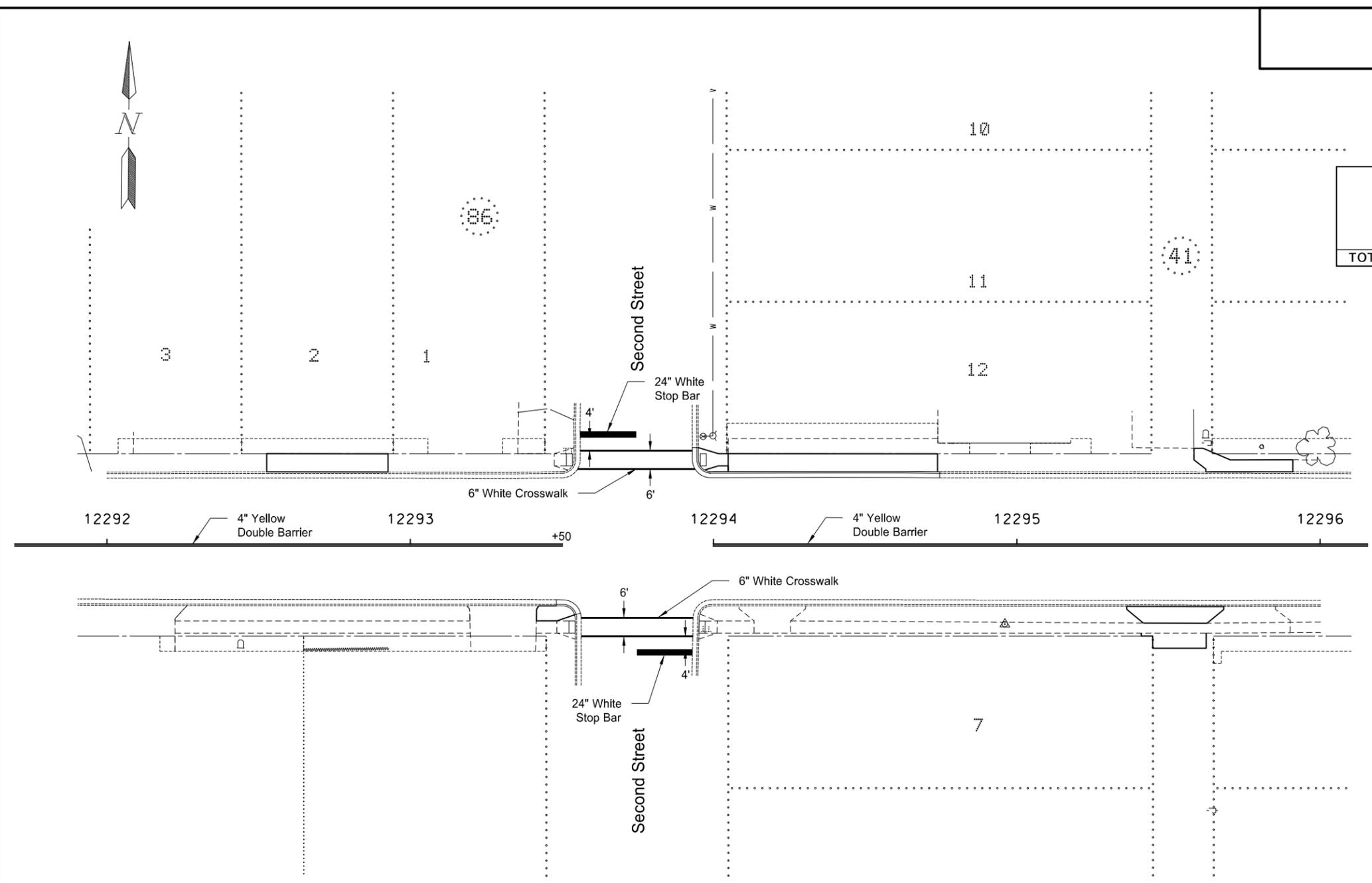
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12288+00 to Sta 12292+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	3

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	700.0	150.0	36.0

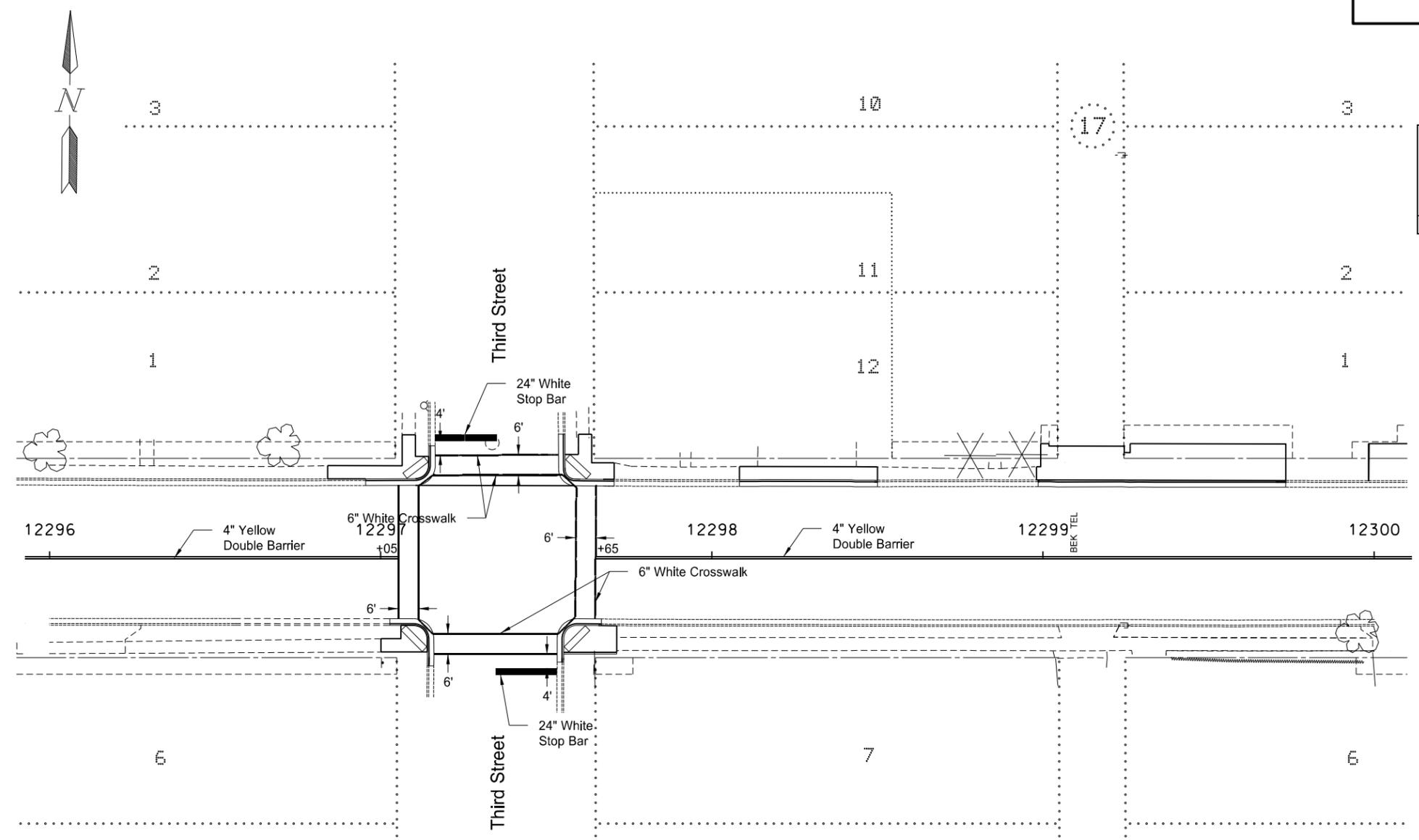


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12292+00 to Sta 12296+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	4

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	680.0	335.0	25.0



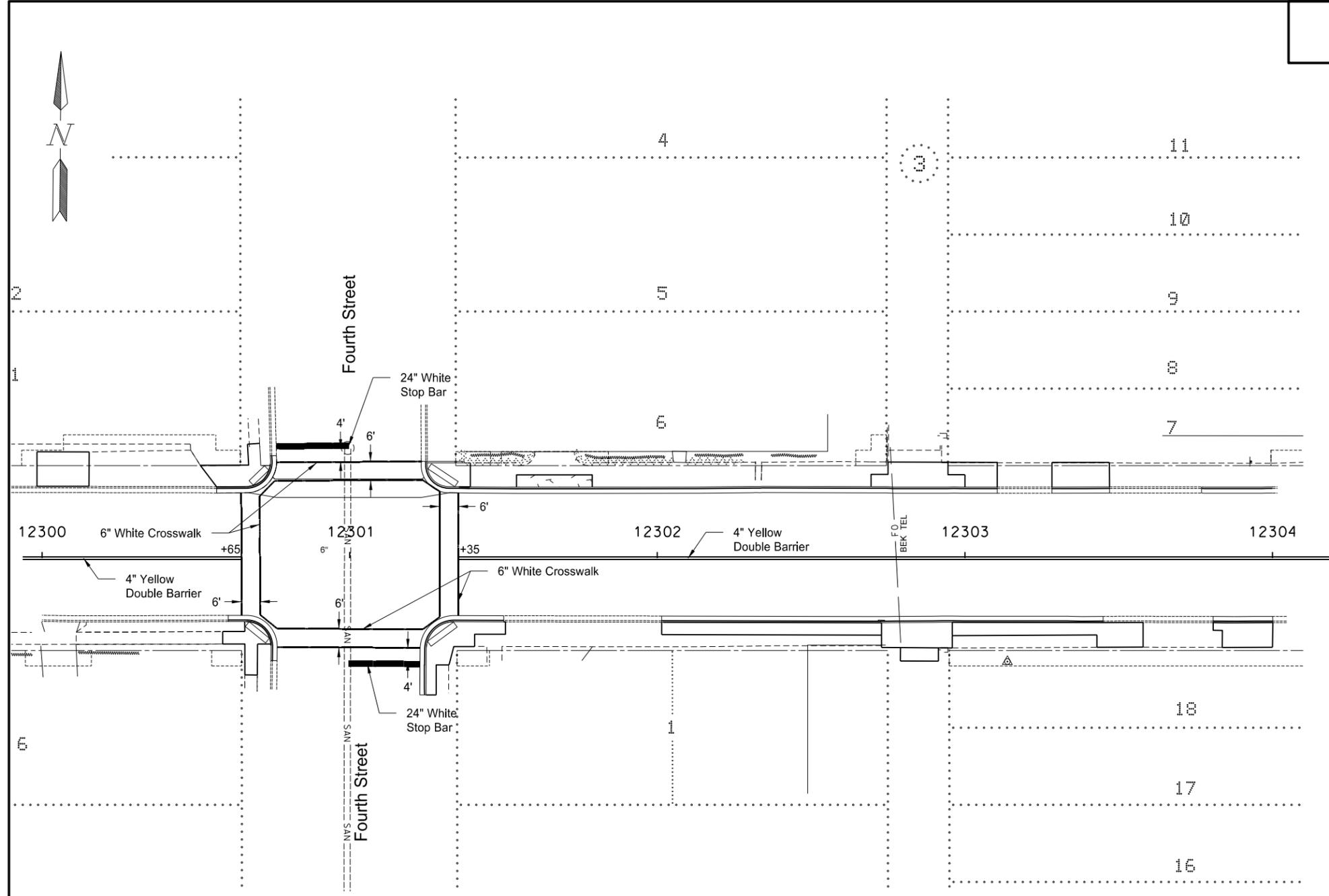
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12296+00 to Sta 12300+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	5

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	660.0	375.0	47.0

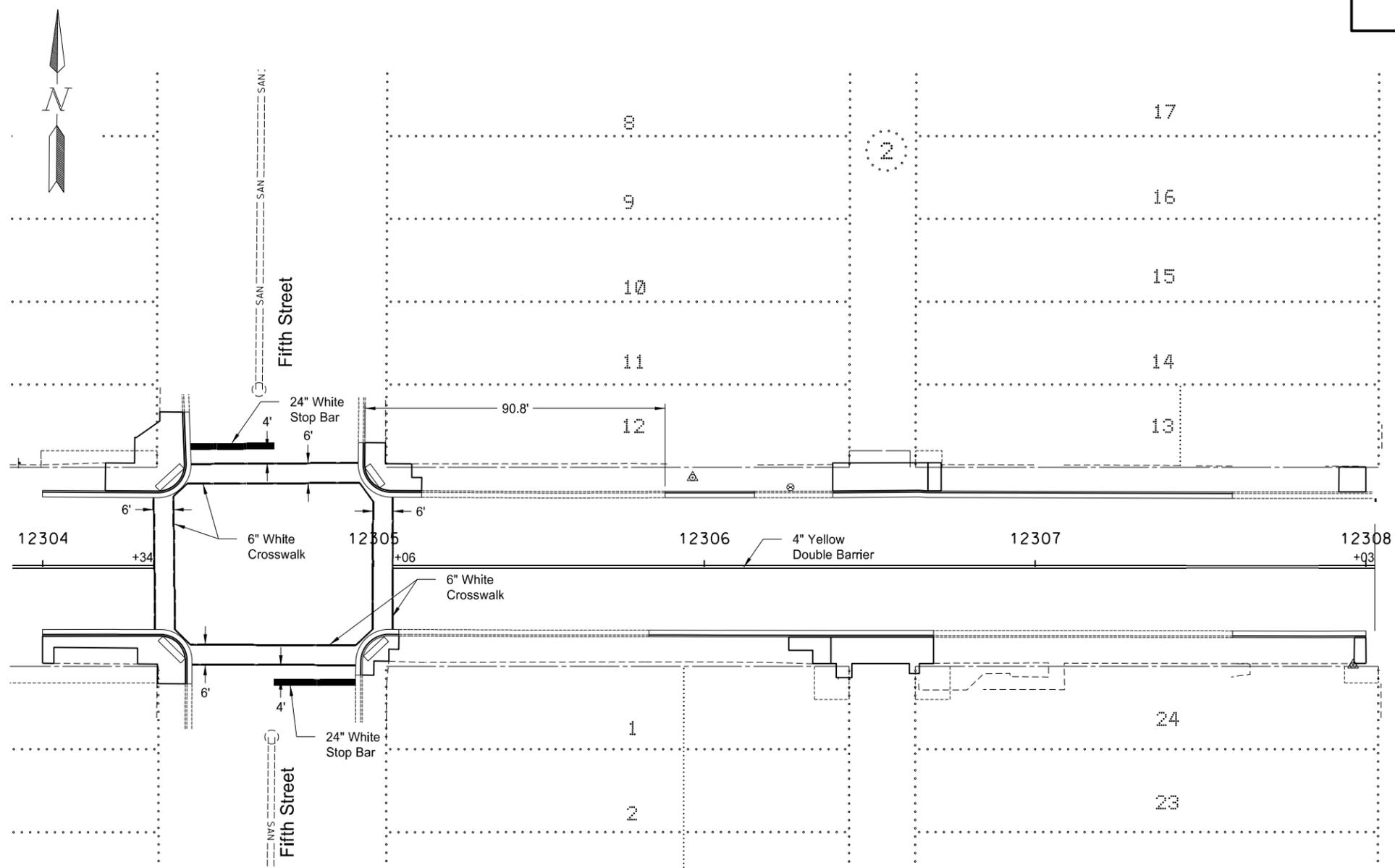


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12292+00 to Sta 12296+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	6

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	656.0	388.0	50.0



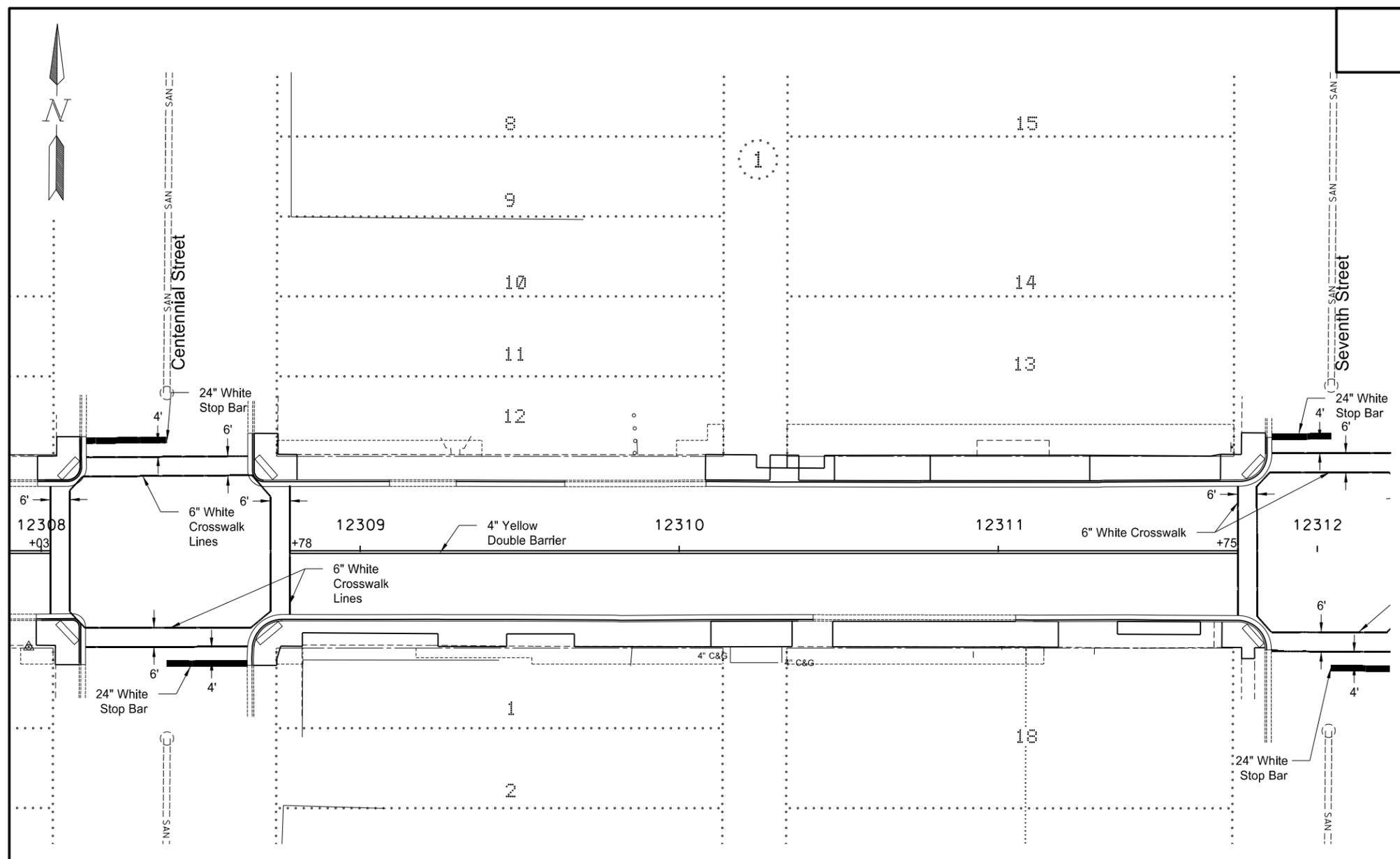
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12304+00 to Sta 12308+00

North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	7

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	600.0	391.0	50.0

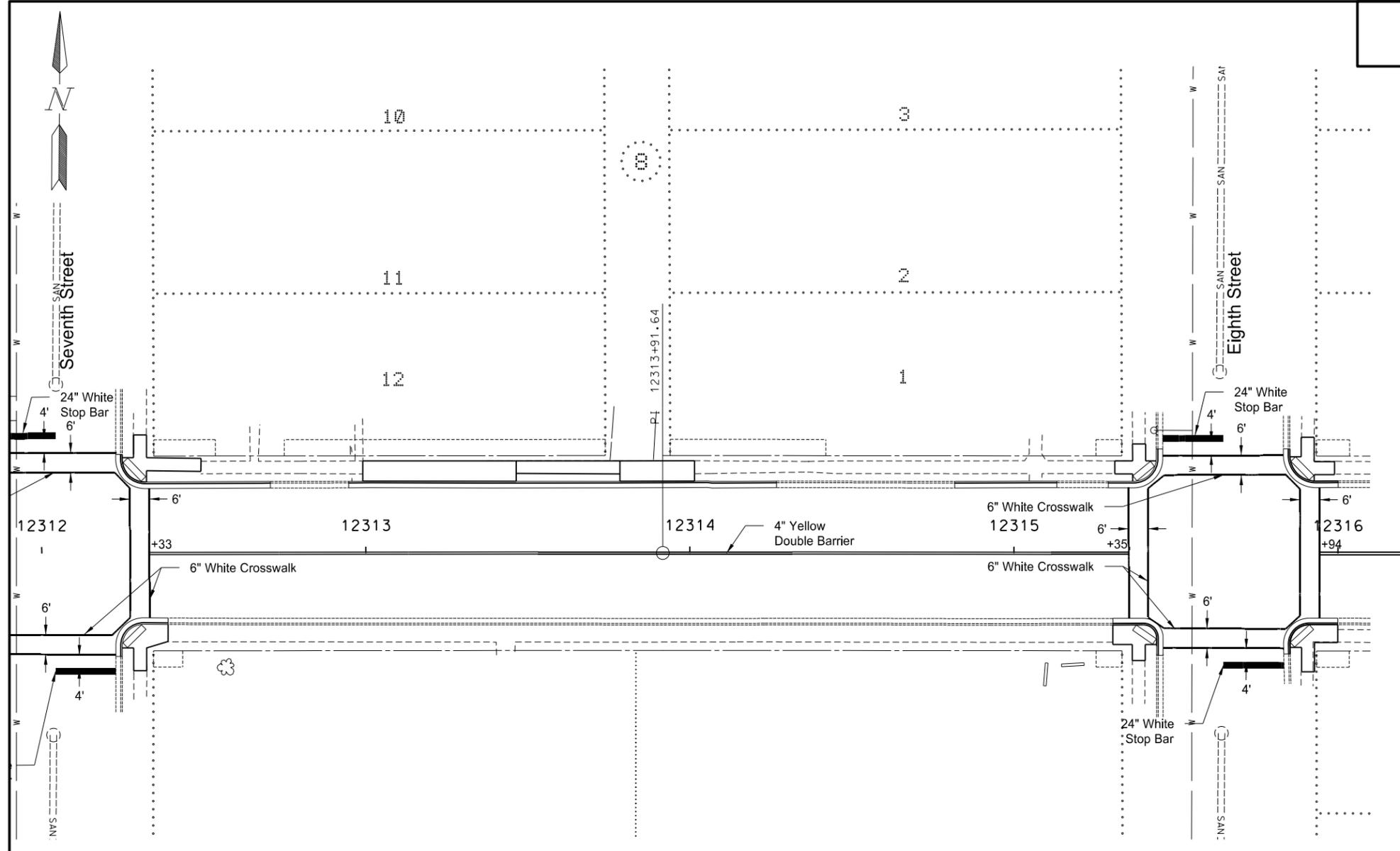


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Paving Layouts
Sta 12308+00 to Sta 12312+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	8

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	616.0	667.0	72.0

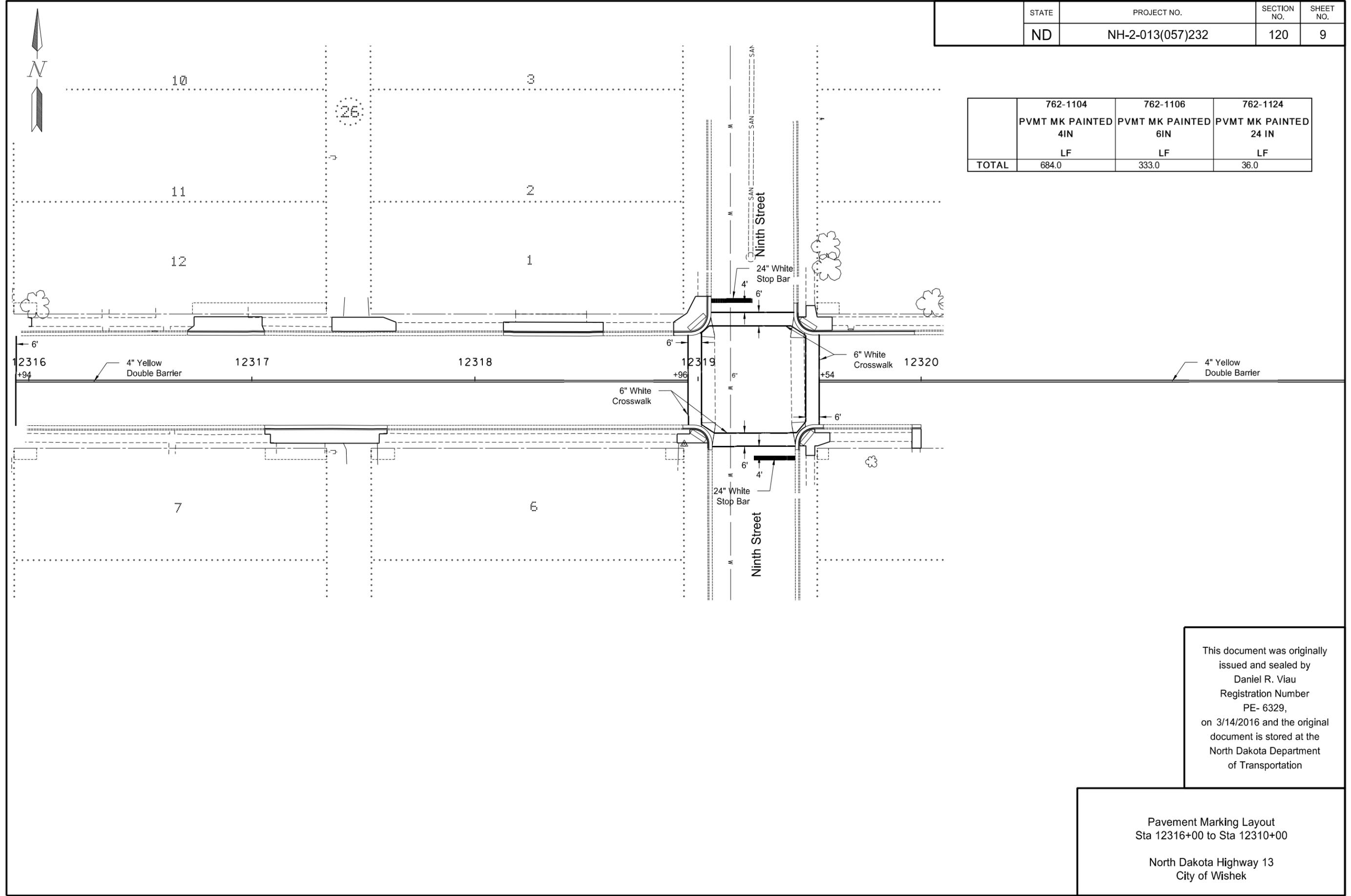


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12312+00 to Sta 12316+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	9

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	684.0	333.0	36.0

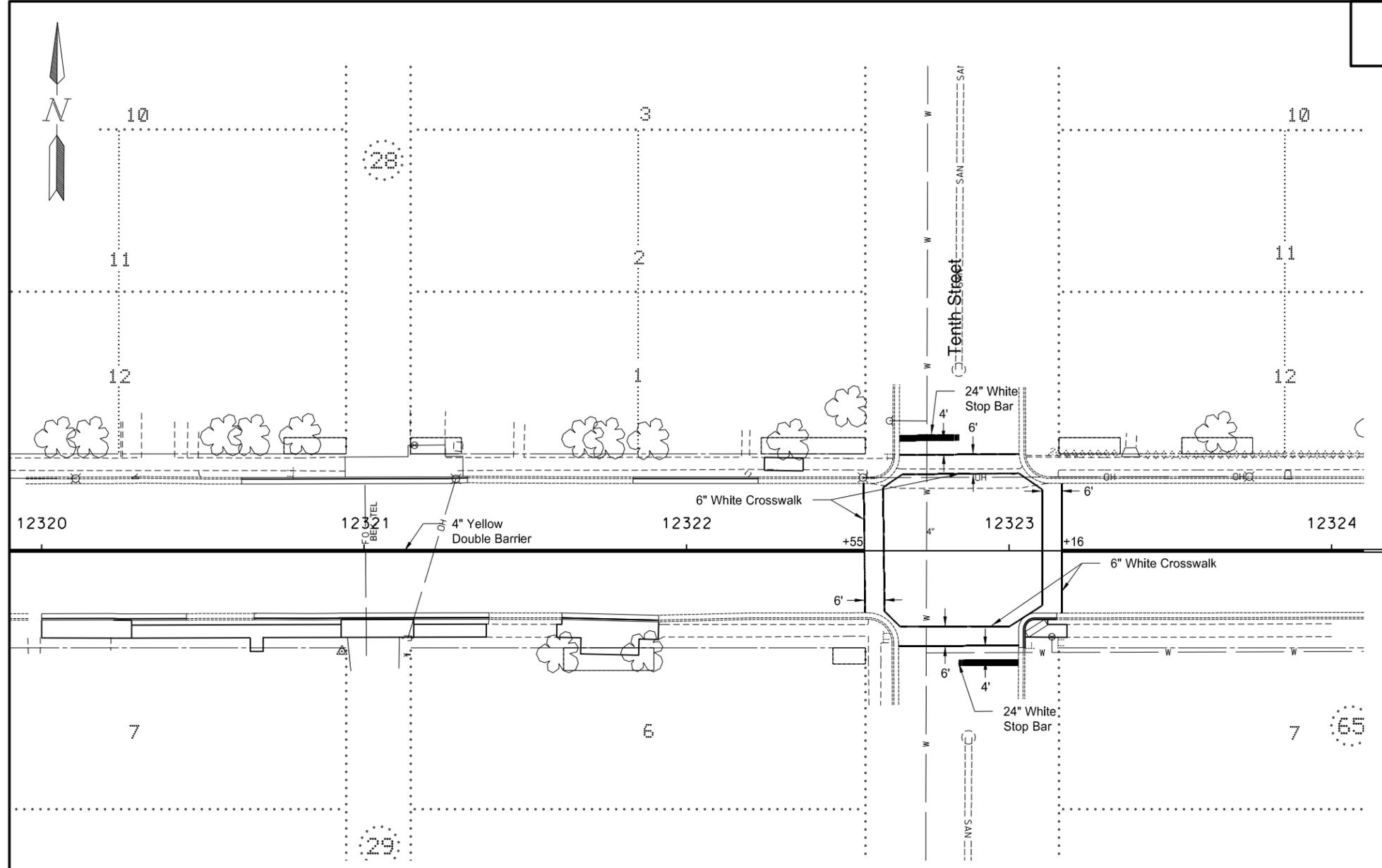


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12316+00 to Sta 12310+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	10

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	678.0	333.0	38.0



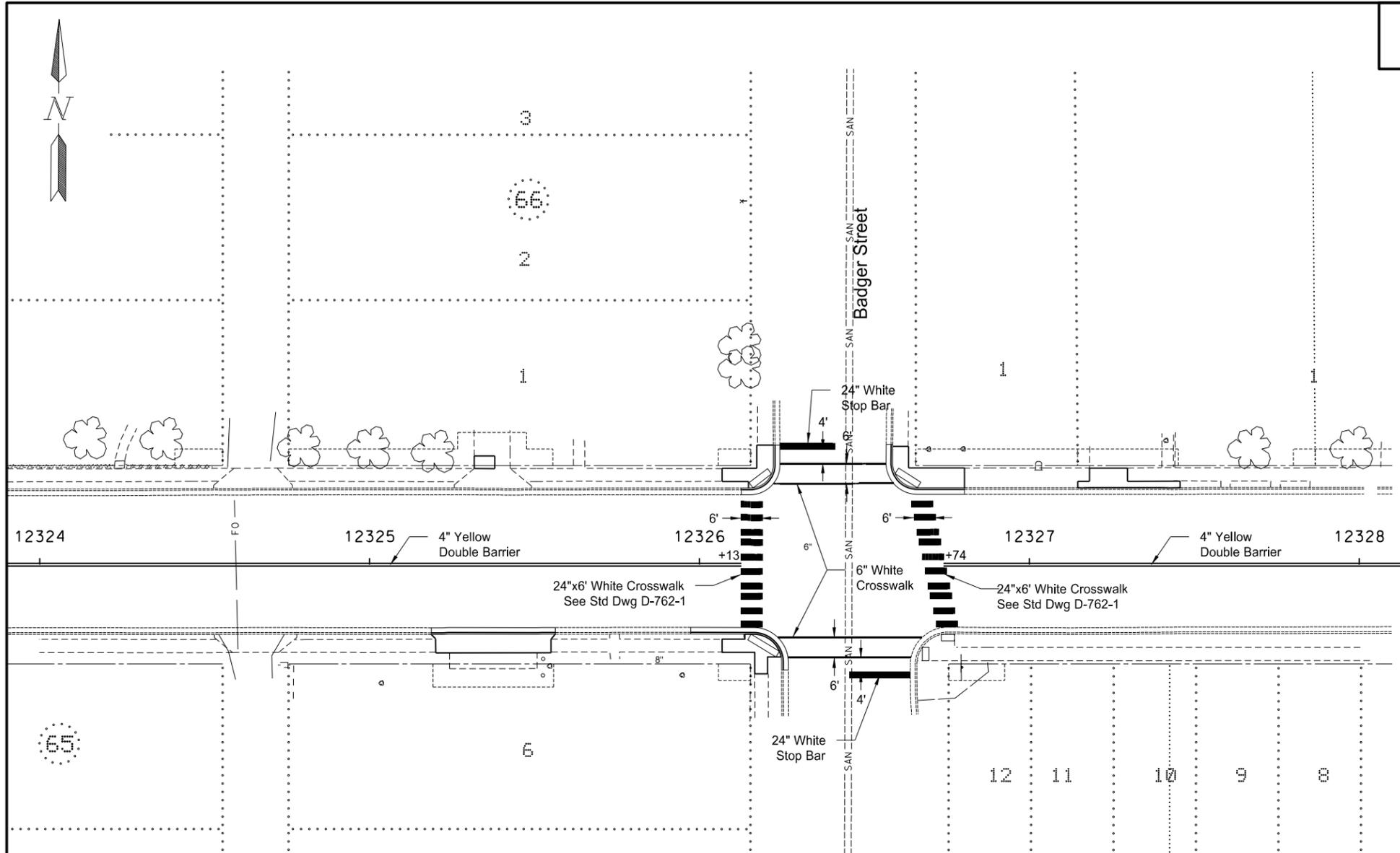
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavment Marking Layout
Sta 12320+00 to Sta 12324+00
North Dakota Highway 13
City of Wishek



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	11

	762-1104 PVMT MK PAINTED 4IN LF	762-1106 PVMT MK PAINTED 6IN LF	762-1124 PVMT MK PAINTED 24 IN LF
TOTAL	678.0	150.0	154.0



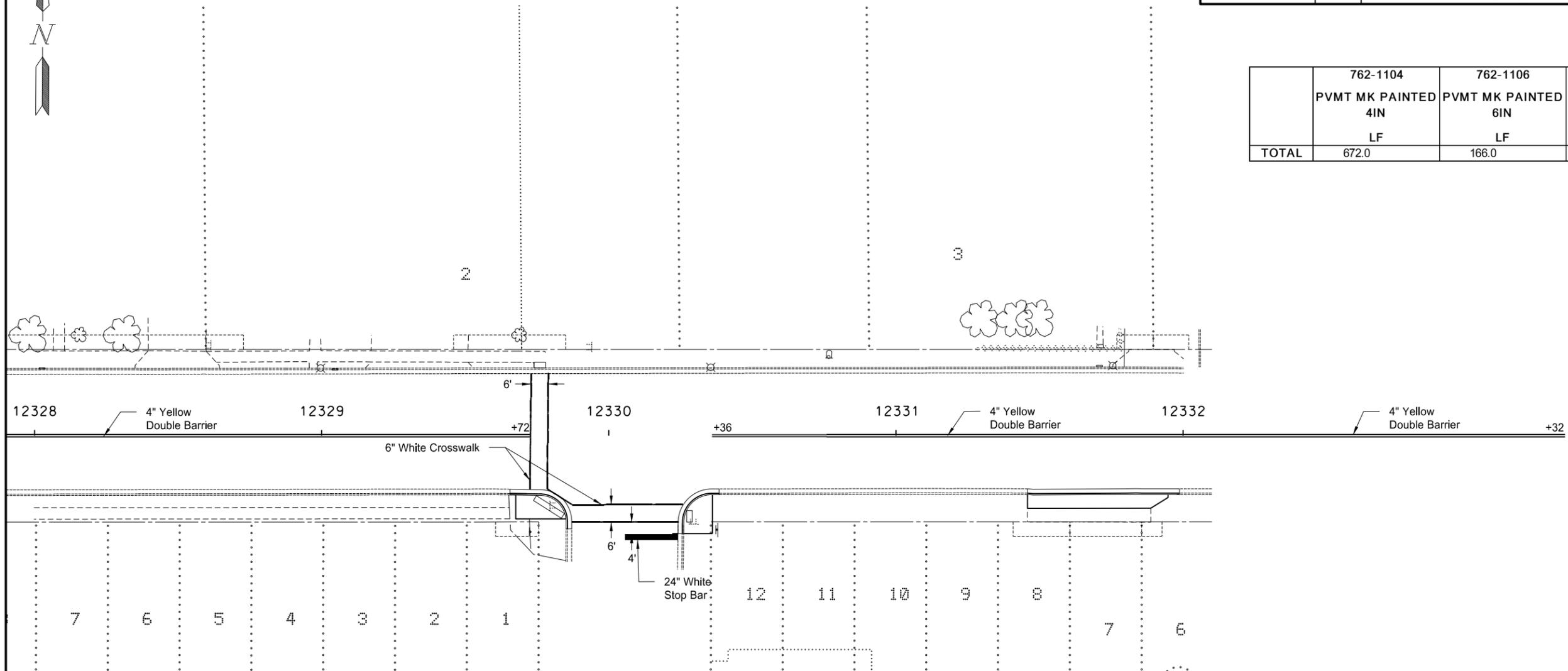
This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12324+00 to Sta 12328+00
North Dakota Highway 13
City of Wishek



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	12

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	672.0	166.0	18.0

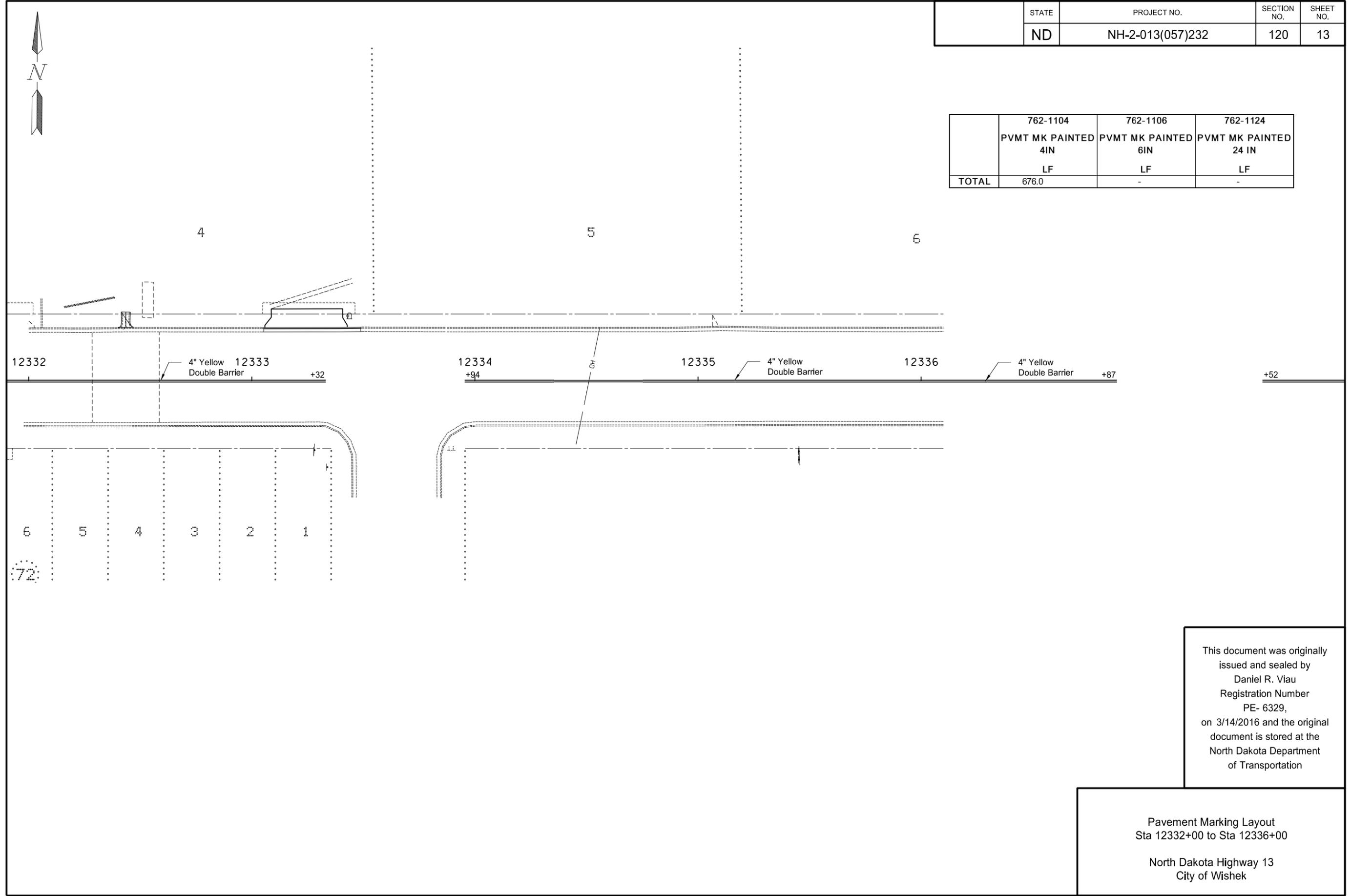


This document was originally issued and sealed by Daniel R. Viau Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout
Sta 12328+00 Sta 12332+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	13

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	676.0	-	-

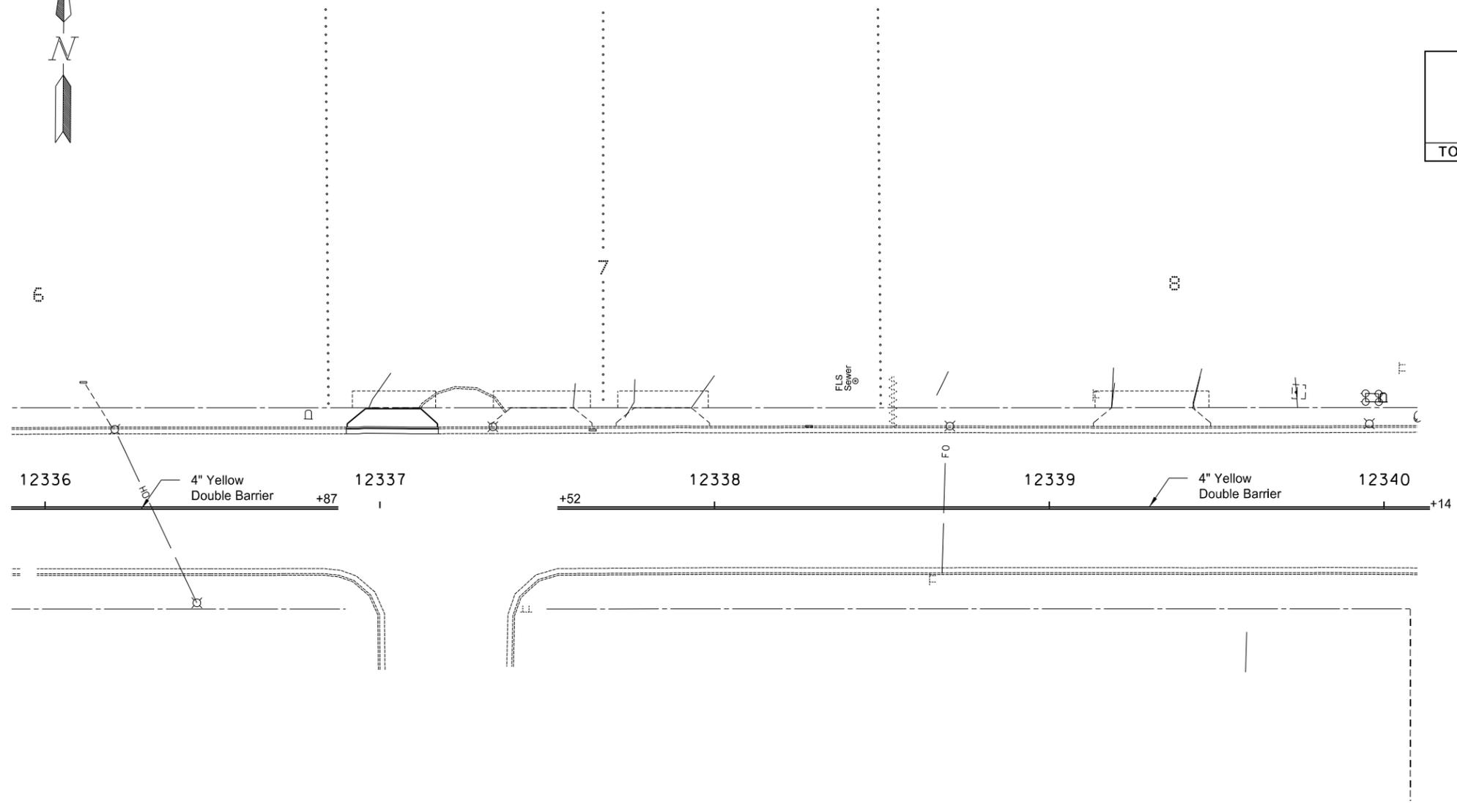


This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12332+00 to Sta 12336+00
North Dakota Highway 13
City of Wishek

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-2-013(057)232	120	14

	762-1104	762-1106	762-1124
	PVMT MK PAINTED 4IN	PVMT MK PAINTED 6IN	PVMT MK PAINTED 24 IN
	LF	LF	LF
TOTAL	676.0	-	-



This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/14/2016 and the original document is stored at the North Dakota Department of Transportation.

Pavement Marking Layout
Sta 12336+00 to Sta 12340+00
North Dakota Highway 13
City of Wishek

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

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

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
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

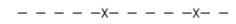
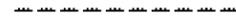
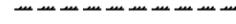
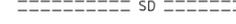
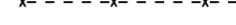
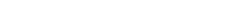
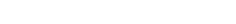
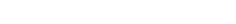
Line Styles

.....	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
—— ——— Geo —— Geo ——	Geogrid	- - - - -	Stripe 8 IN Dotted Extension White	—— ——— ———	Existing Asphalt (Cross Section View)	- - - - -	Excavation Limits
—— ——— OH ——	Existing Overhead Utility Line	- - - - -	Stripe 8 IN Lane Drop	—— ——— ———	Existing Reinforcement Rebar	——	Existing Government Lot Line
—— ——— P ——	Existing Power	—— ——— ———	Wetland Mitigation	—— ——— ———	Existing Tie Point Line	Existing Adjacent Block Lines
—— ——— PL ——	Existing Fuel Pipeline	- - - - -	Existing Box Culvert Bridge	—— ——— ———	Existing State or International Line	Existing Adjacent Lot Lines
—— ——— PL ——	Existing Undefined Above Ground Pipe Line	- - - - -	Existing Concrete Surface	—— ——— ———	Existing Quarter Section Line	Existing Adjacent Property Line
—— ——— R —— R ——	Geotextile Fabric Type R	- - - - -	Existing Drainage Structure	—— ——— ———	Existing County	Existing Adjacent Subdivision Lines
—— ——— R —— R ——	Geotextile Fabric Type R1	- - - - -	Easement	—— ——— ———	Existing Section Line		
—— REMOVE —— REMOVE ——	Remove Line	- - - - -	Existing Concrete	—— ——— ———	Existing Township		
—— ——— RR —— RR ——	Geotextile Fabric Type RR	- - - - -	Existing Easement	—— ——— ———	Existing Railroad Centerline		
—— ——— S —— S ——	Geotextile Fabric Type S	—— ——— ———	Existing Gravel Surface	—— ——— ———	Centerline		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
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

CONSTRUCTION SIGN DETAIL

D-704-5

SIGN NUMBER	G20-10-108	STATION(S):	AREA: 36.0 Sq.Ft.	
WIDTH x HEIGHT	9'-0" x 4'-0"			
BORDER WIDTH	1.25" (Inset 0.75")			
CORNER RADIUS	3"			
MOUNTING	Ground			
BACKGROUND	TYPE: IV Reflective COLOR: Fluorescent Orange			
LEGEND/BORDER	TYPE: Non-Refl COLOR: Black			

Dimensions are in inches.tenths Letter locations are panel edge to lower left corner

LETTER POSITION (X)														LENGTH	SIZE	SERIES
C	O	N	S	T	R	U	C	T	E	D	B	Y		69.7	6	D 2000
19.2	24.5	30	35.1	39.7	44.3	49.4	54.8	59.7	64.3	69	73.1	79.1	83.7			
Y	O	U	R		C	O	M	P	A	N	Y		N	A	M	E
8.3	14.2	19.8	25.3	29.4	35.4	40.7	46.2	52.4	56.8	62.8	67.8	72.9	78.9	83.9	89.9	96
Y	O	U	R		T	O	W	N				N	D			
21.7	27.6	33.2	38.7	42.8	48.8	53.3	58.4	64.6	69.6	70.7	76.7	82.2				

Notes:

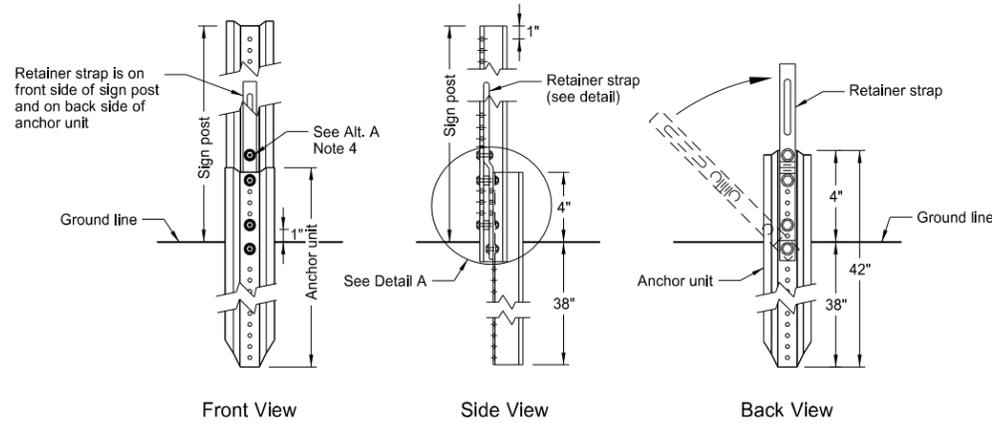
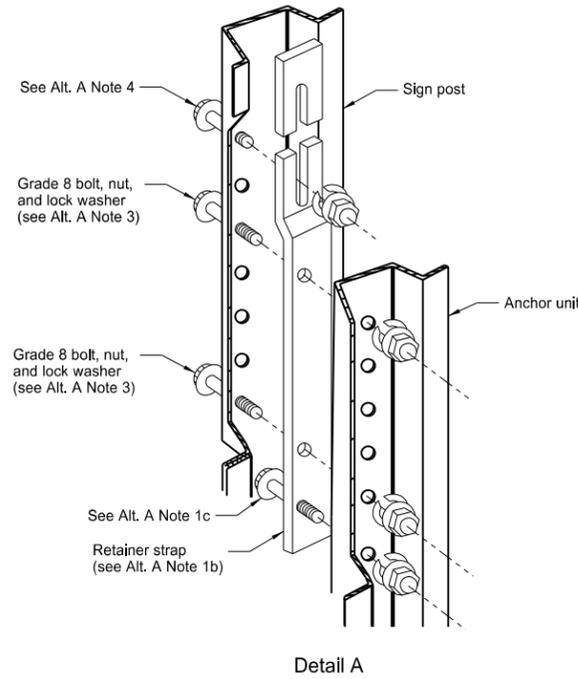
1. Sign shall be placed a distance of 1/2A following the End Road Work (G20-2a-48) sign. There shall be a maximum of 2 signs per project.
2. Sign shall be post mounted.
3. Sign required on rural projects with a 30 day or longer duration and it is not required on seal coat projects or other short duration projects.
4. Sign shall not be placed in urban areas or within city limits.

Advance Warning Sign Spacing (A)			
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	
8-22-12	
REVISIONS	
DATE	CHANGE
7-18-14	Revise sheeting to type IV

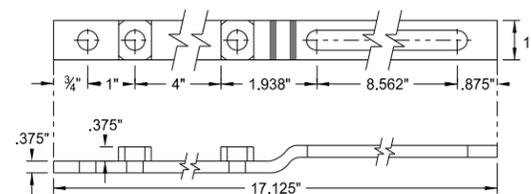
This document was originally issued and sealed by
Roger Weigel
 Registration Number
PE-2930,
 on **7/18/14** and the original document is stored at the
 North Dakota Department
 of Transportation

U-Channel Post

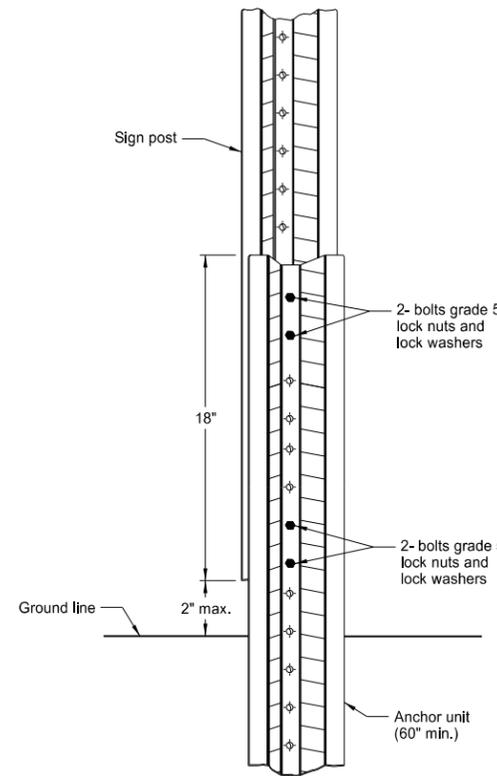


Breakaway U-Channel Detail Alternate A

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

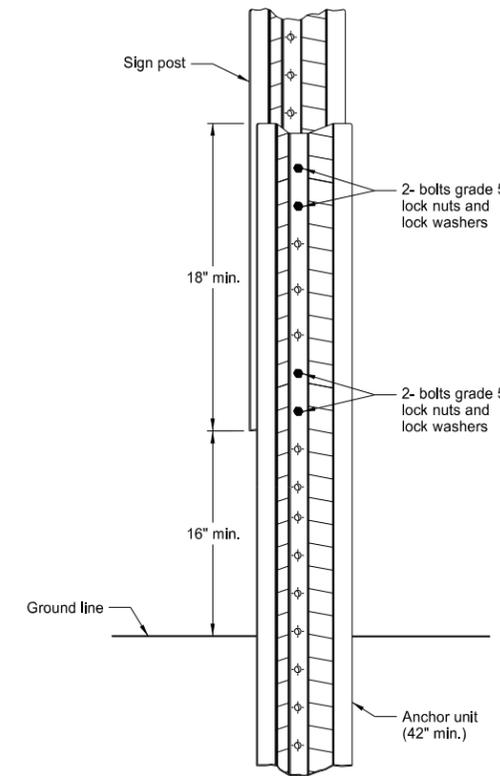


Retainer Strap Detail



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:

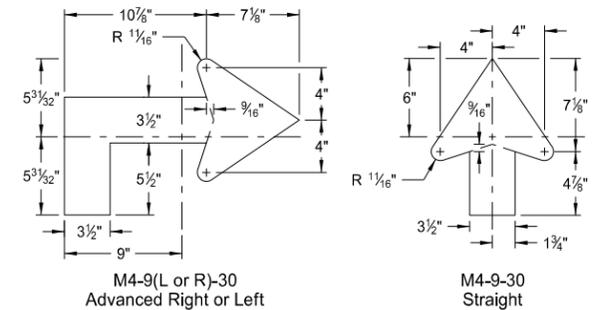
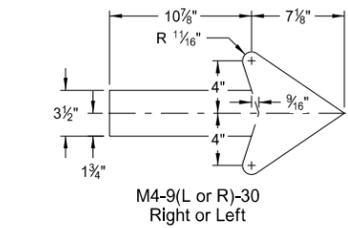
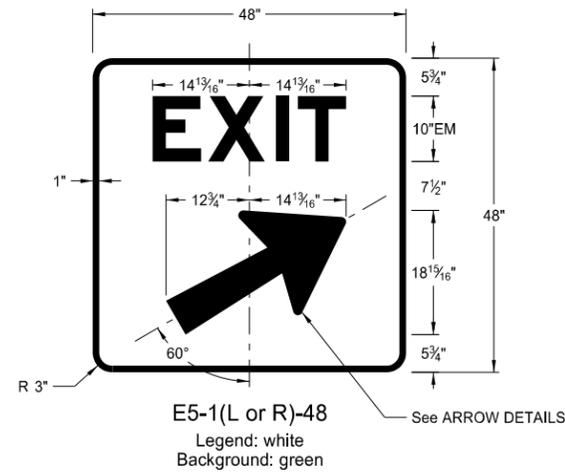
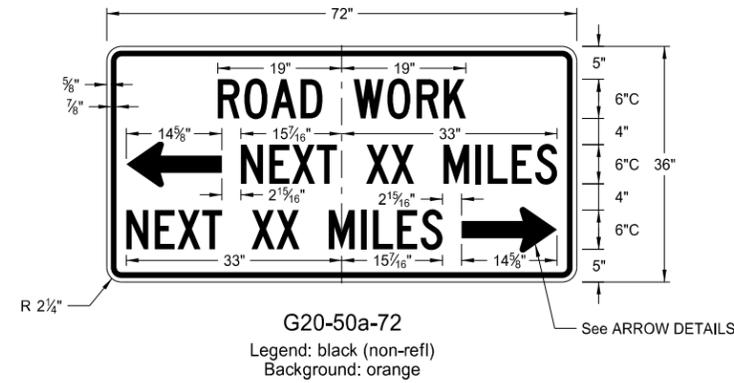
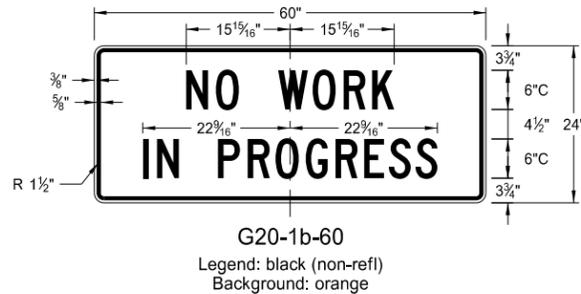
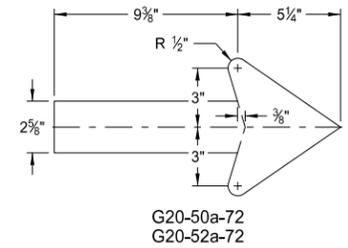
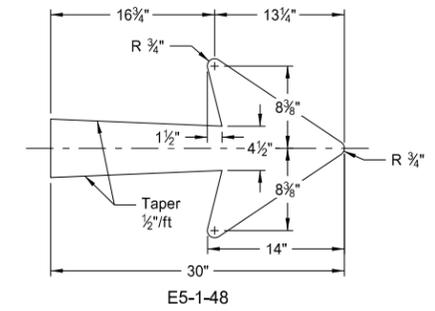
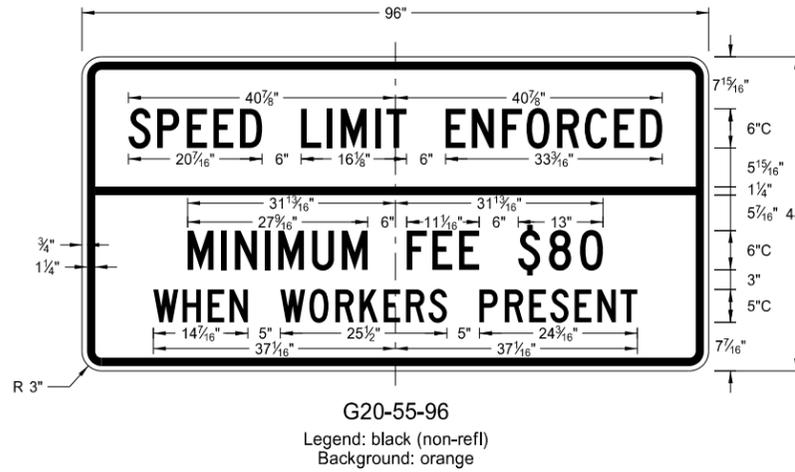
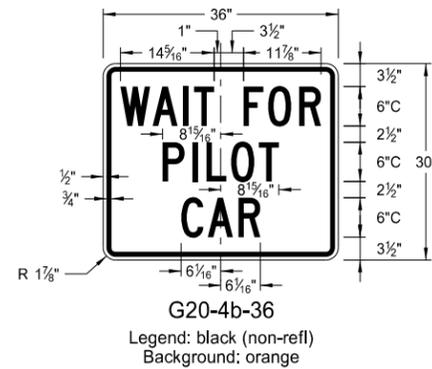
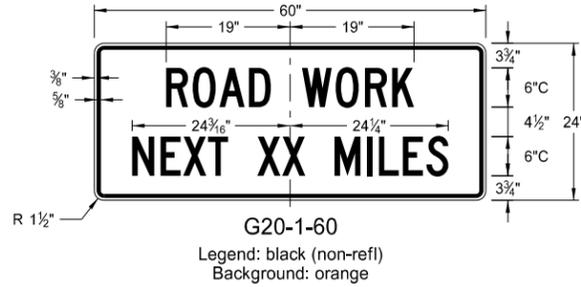
1. a) Drive anchor unit to within 12" of ground level.
b) Proper assembly established by lining up the bottom hole of retainer strap with the 6th hole from the top of the anchor unit.
c) Assemble strap to back of anchor unit using 5/16"x2" bolt, lock washer and nut.
d) Rotate strap 90° to left.
2. a)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

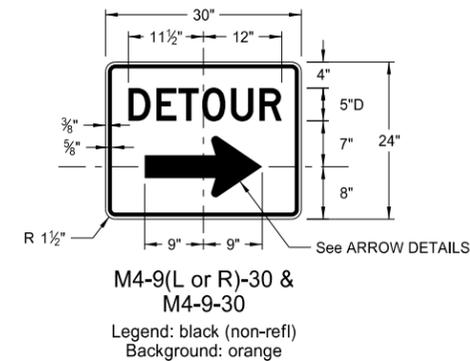
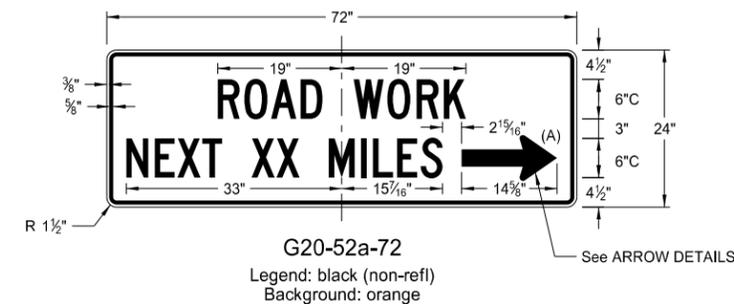
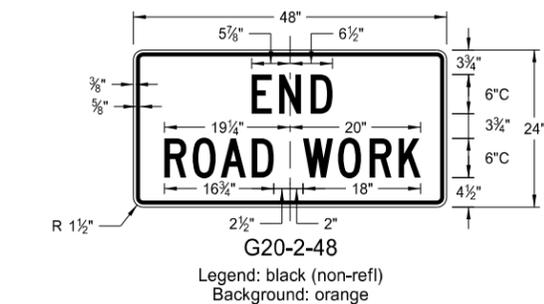
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 2/28/14 and the original document is stored at the North Dakota Department of Transportation

CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS

D-704-9



ARROW DETAILS



NOTES:

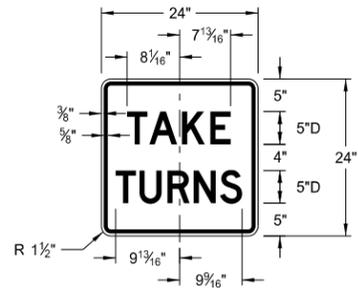
(A) Arrow may be right or left of the legend to indicate construction to the right or left.

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

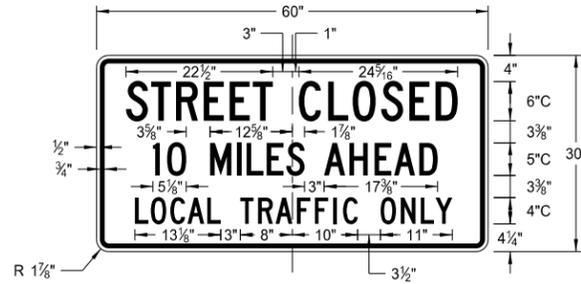
This document was originally issued and sealed by
Roger Weigel,
Registration Number
PE- 2930,
on 8/13/13 and the original document is stored at the
North Dakota Department
of Transportation

CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

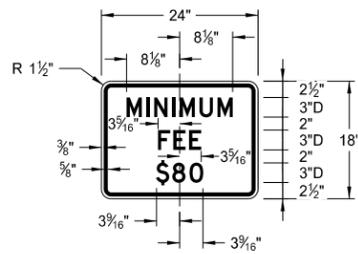
D-704-10



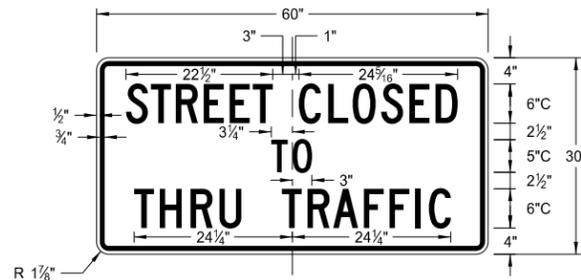
R1-50-24
Legend: black (non-refl)
Background: white



R11-3c-60
Legend: black (non-refl)
Background: white



R2-1a-24
Legend: black (non-refl)
Background: white



R11-4a-60
Legend: black (non-refl)
Background: white



R11-2a-48
Legend: black (non-refl)
Background: white

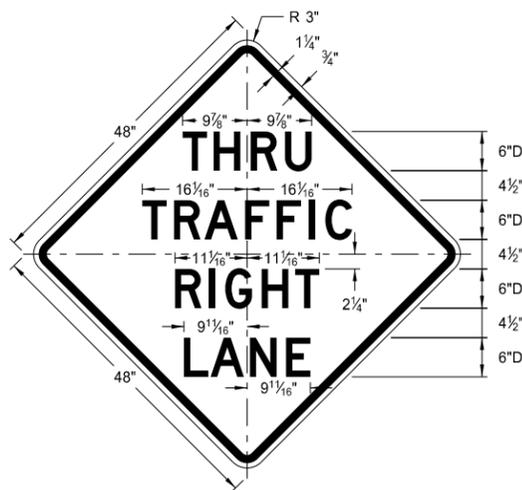
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE

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

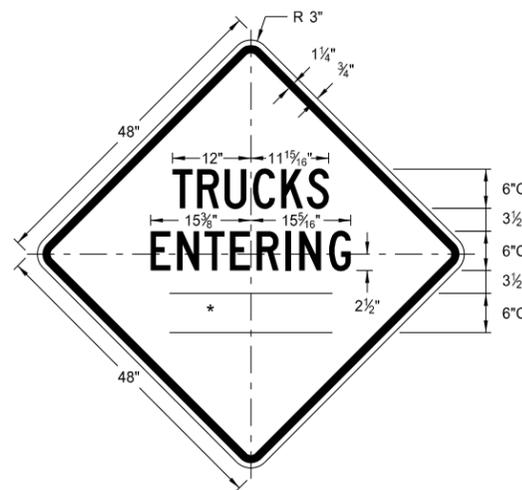
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

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

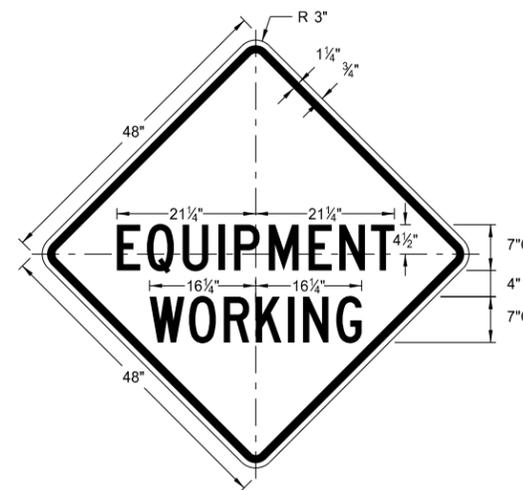
* DISTANCE MESSAGES



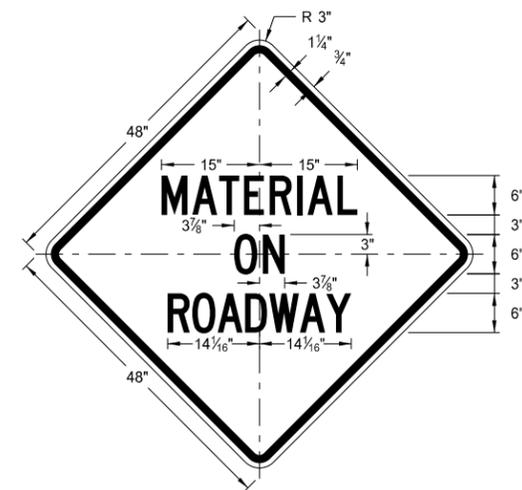
W5-8-48
Legend: black (non-refl)
Background: orange



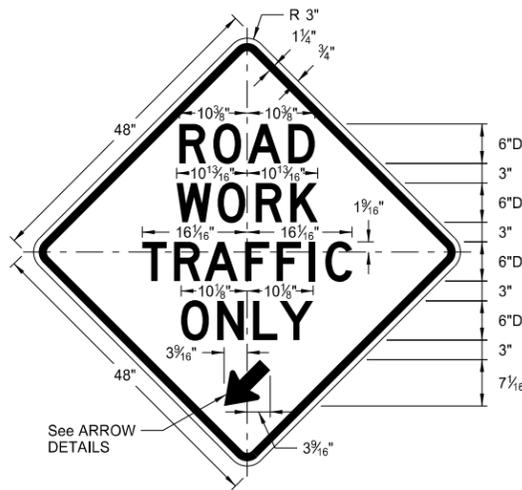
W8-54-48
Legend: black (non-refl)
Background: orange



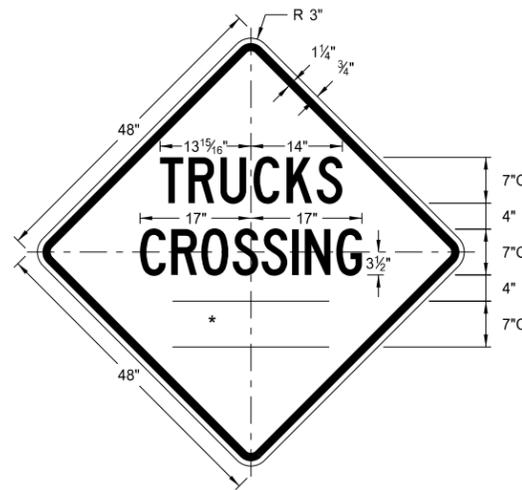
W20-51-48
Legend: black (non-refl)
Background: orange



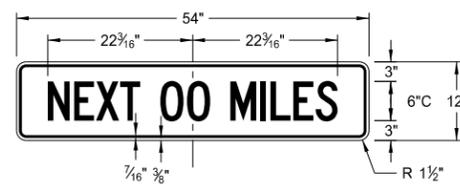
W21-51-48
Legend: black (non-refl)
Background: orange



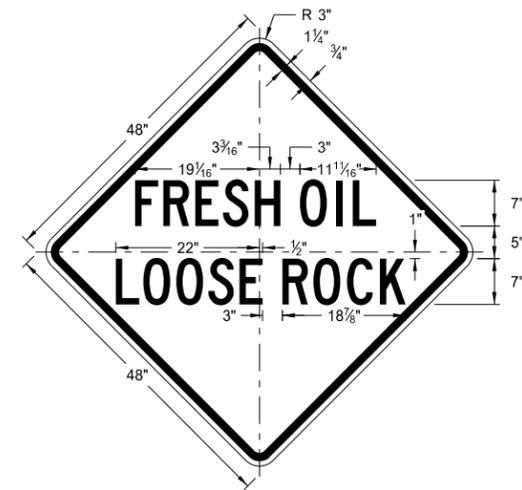
W5-9-48
Legend: black (non-refl)
Background: orange



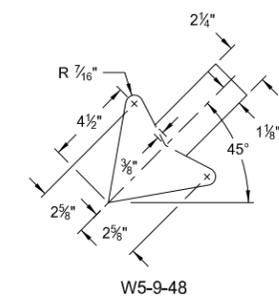
W8-55-48
Legend: black (non-refl)
Background: orange



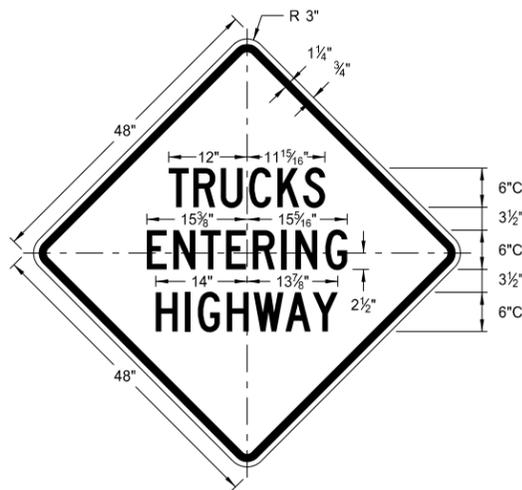
W20-52-54
Legend: black (non-refl)
Background: orange



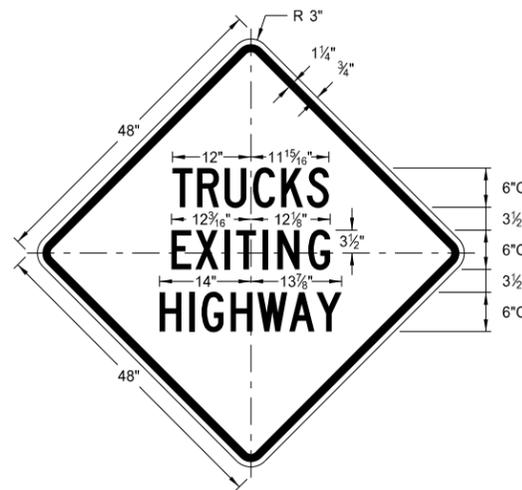
W22-8-48
Legend: black (non-refl)
Background: orange



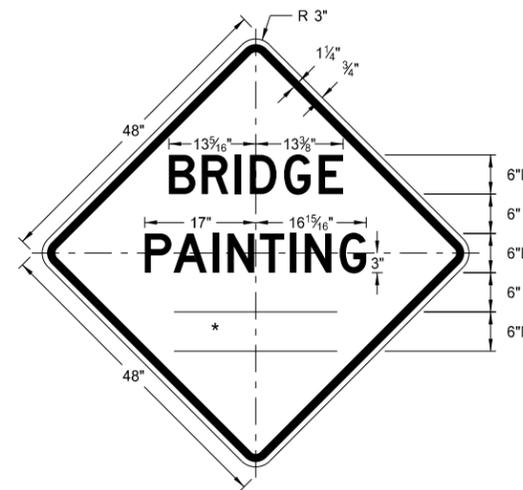
W5-9-48
ARROW DETAILS



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



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

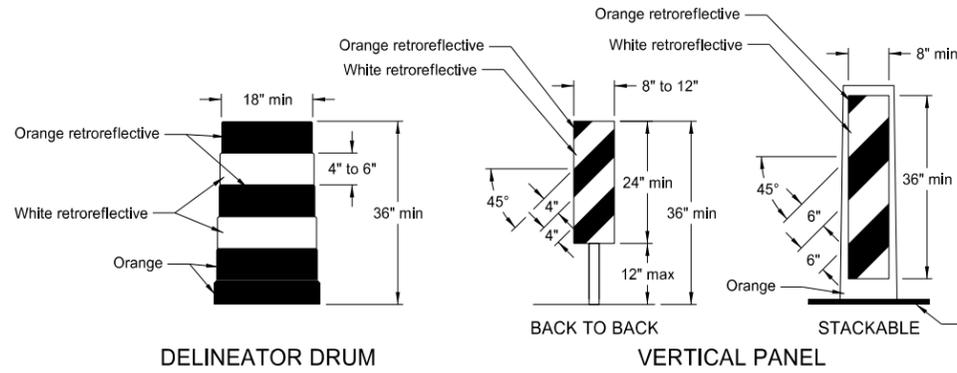


W21-50-48
Legend: black (non-refl)
Background: orange

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

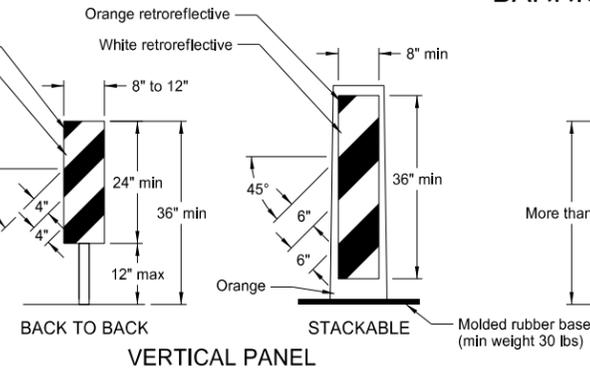
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 8/13/13 and the original document is stored at the North Dakota Department of Transportation

BARRICADE AND CHANNELIZING DEVICE DETAILS



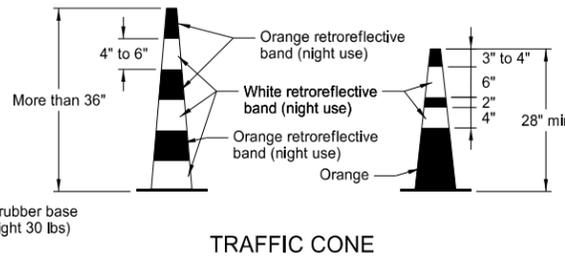
DELINEATOR DRUM

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 nonretroreflectORIZED 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.



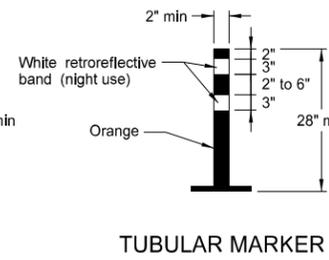
VERTICAL PANEL

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.



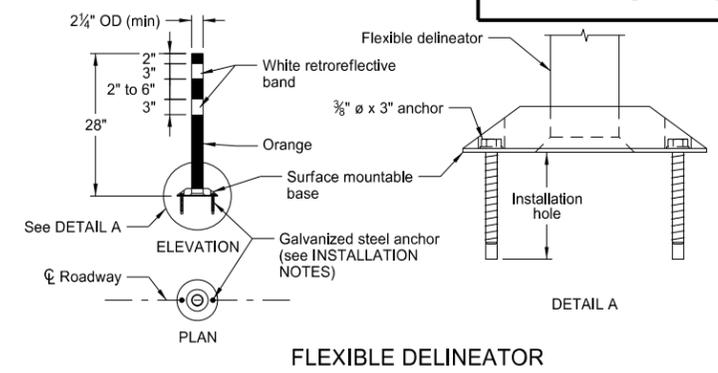
TRAFFIC CONE

RetroreflectORIZATION 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 nonretroreflectORIZED space between the orange and white stripes shall not exceed 3" wide.



TUBULAR MARKER

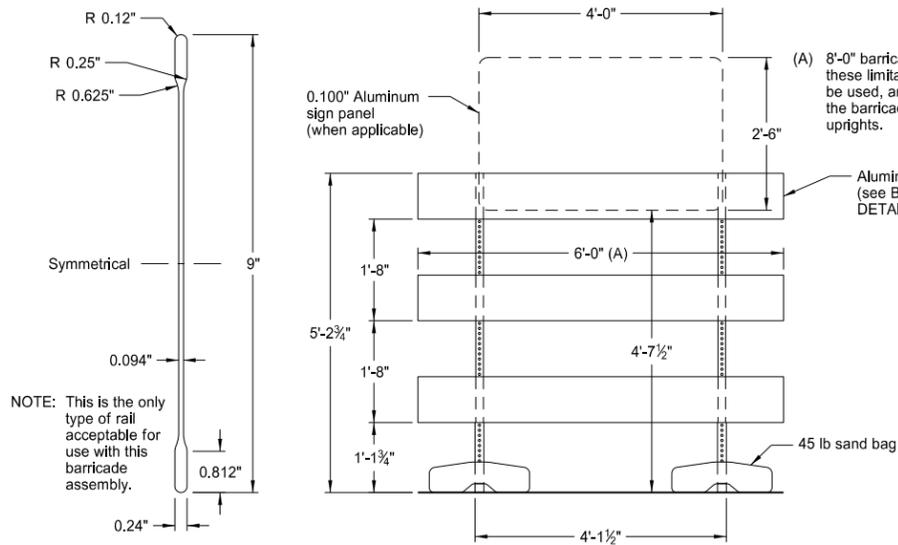
RetroreflectORIZATION of tubular markers more than 42" in height shall be provided by alternating four 4" to 6" wide orange and white stripes with the top stripe being orange.



FLEXIBLE DELINEATOR

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.

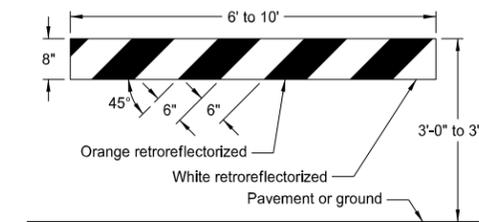


BARRICADE BLADE DETAIL

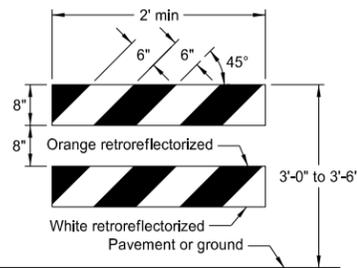
ELEVATION VIEW

BARRICADE ASSEMBLY DETAIL (Aluminum Barricade Rails)

NOTE: This is the only type of rail acceptable for use with this barricade assembly.

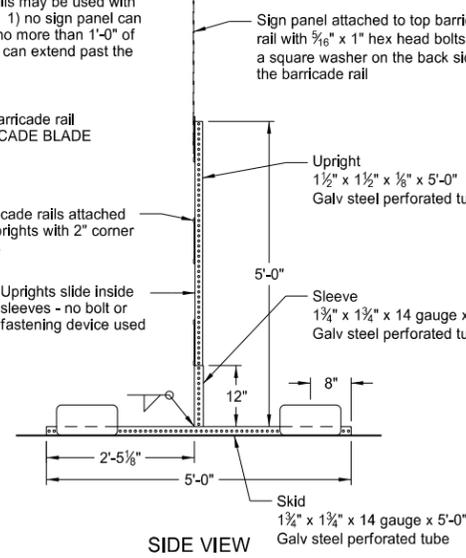


TYPE I BARRICADE



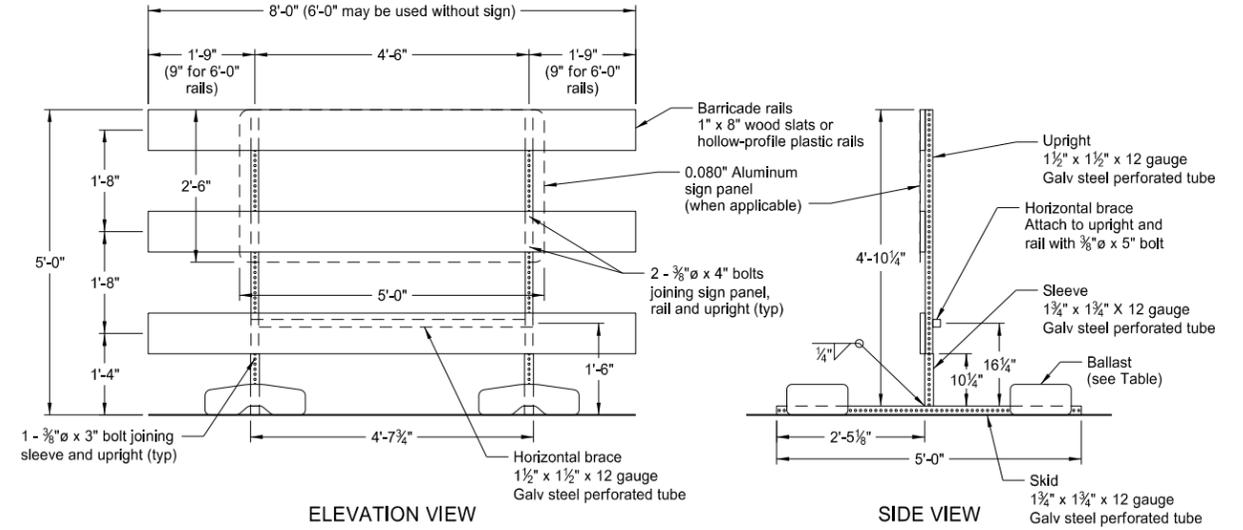
TYPE II BARRICADE

BARRICADE RAIL DETAILS



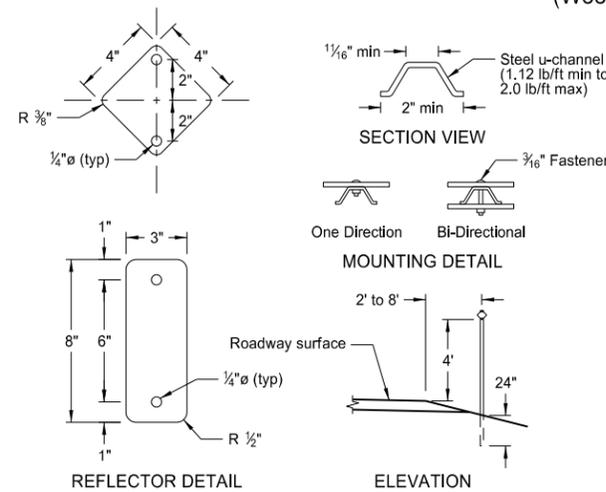
SIDE VIEW

BARRICADE ASSEMBLY DETAIL (Wood or Plastic Rails)



ELEVATION VIEW

SIDE VIEW



REFLECTOR DETAIL

DELINEATORS

MINIMUM BALLAST (For each side of barricade support)

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

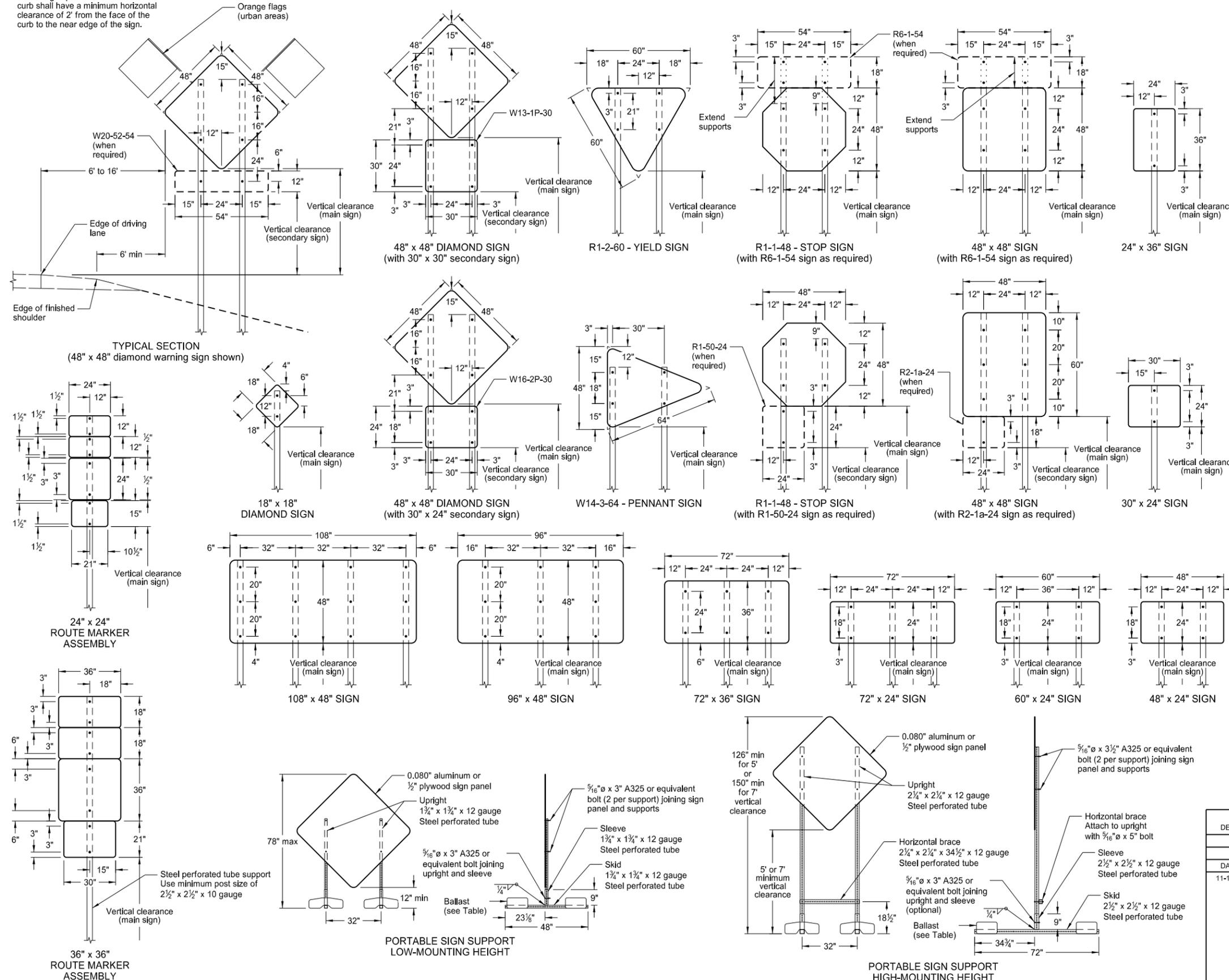
Note: The number of sandbags are based on a wind speed of 55 MPH. The sandbags are assumed to be placed at or near the ends of the skids.

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

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

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

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



- 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 2½" x 2½" 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, ½" plywood, or other approved material, except where noted. All holes to be punched round for ⅜" 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

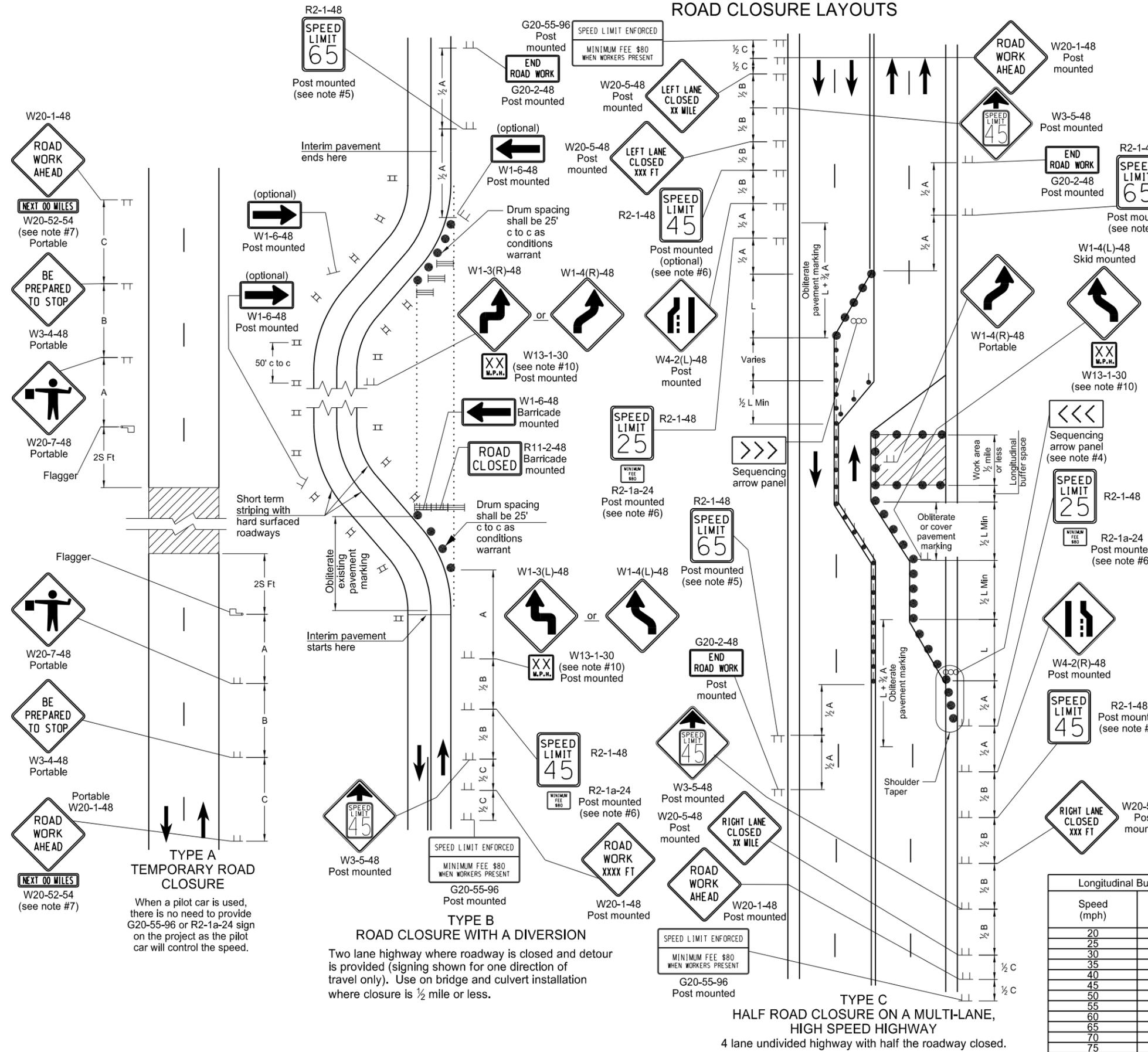
KEY

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

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



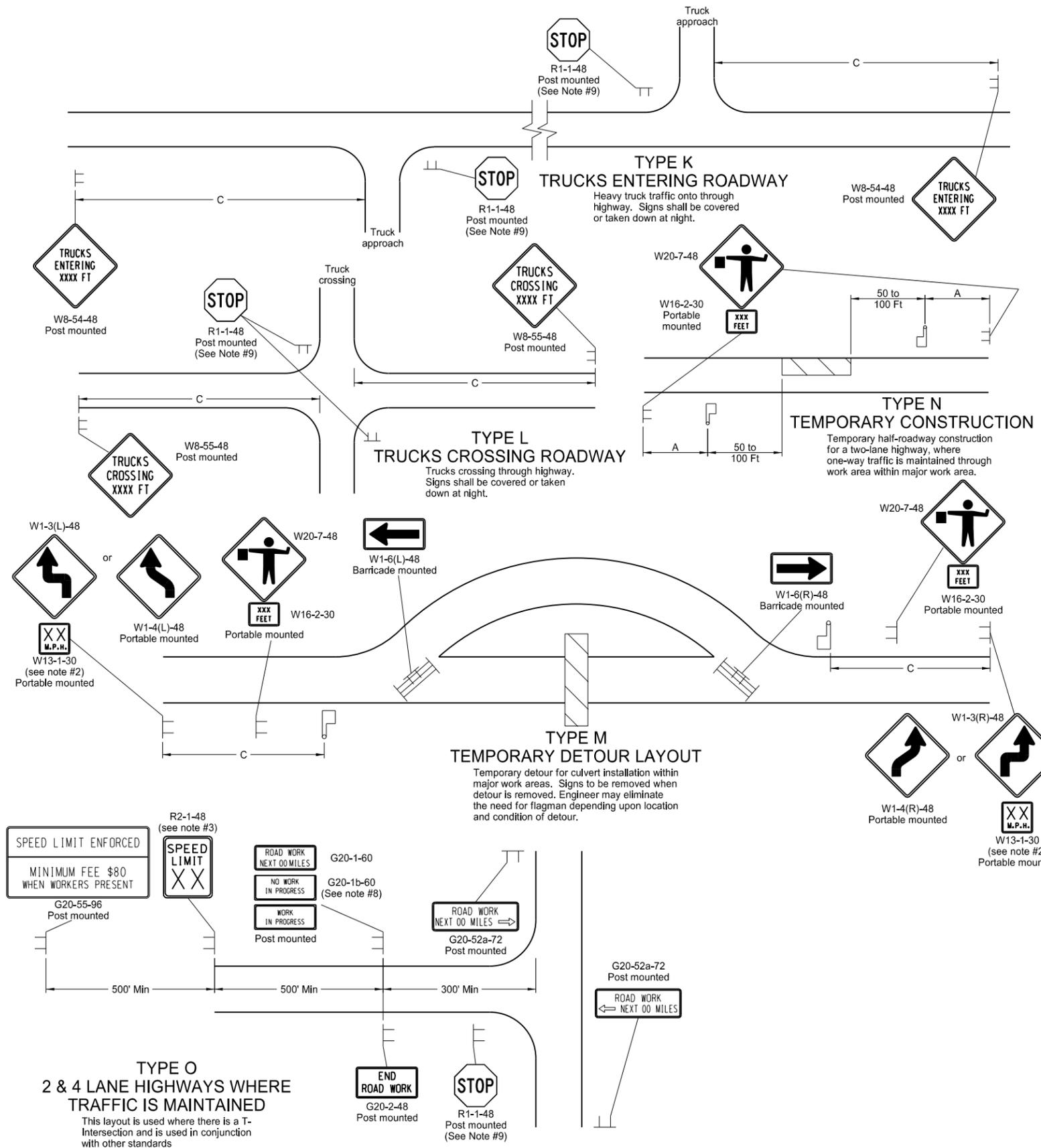
TYPE A TEMPORARY ROAD CLOSURE
 When a pilot car is used, there is no need to provide G20-55-96 or R2-1a-24 sign on the project as the pilot car will control the speed.

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.

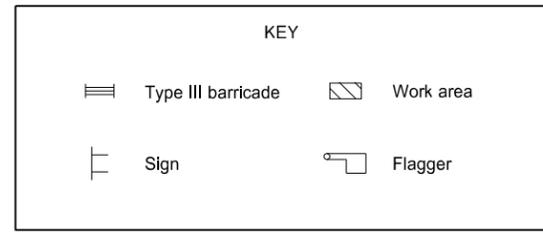
TYPE C HALF ROAD CLOSURE ON A MULTI-LANE, HIGH SPEED HIGHWAY
 4 lane undivided highway with half the roadway closed.

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

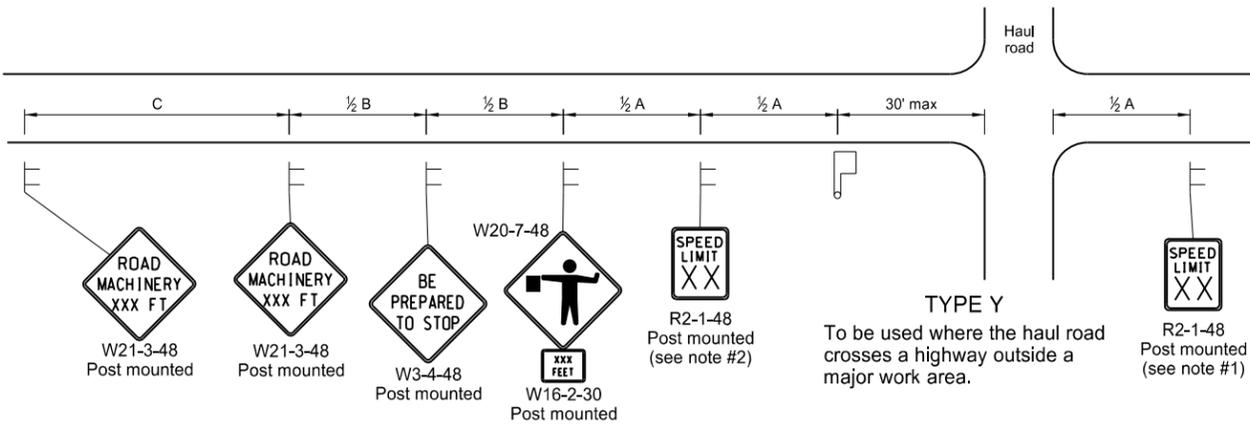
REVISIONS

DATE	CHANGE

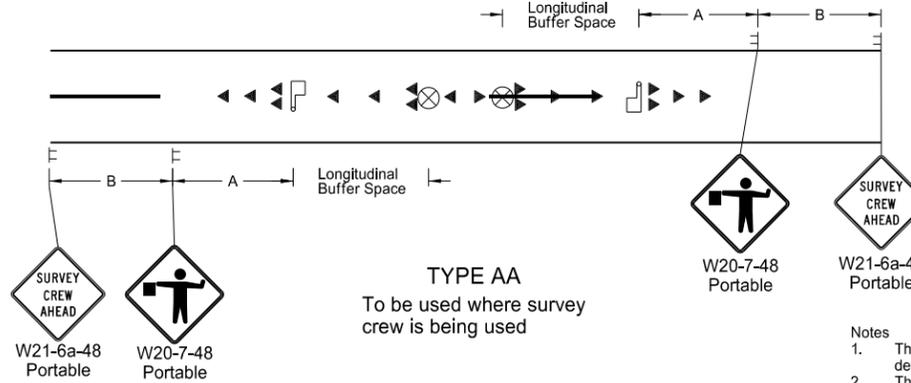
This document was originally issued and sealed by
 Roger Weigel
 Registration Number PE-2930,
 on 09/27/13 and the original document is stored at the North Dakota Department of Transportation

MISCELLANEOUS SIGN LAYOUTS

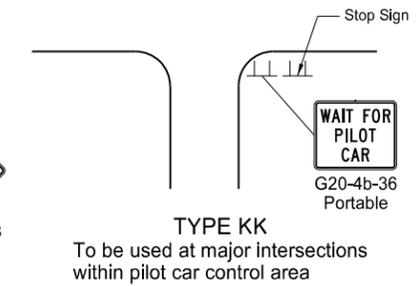
D-704-26



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

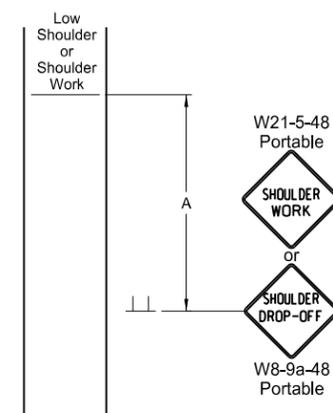


TYPE AA
To be used where survey crew is being used

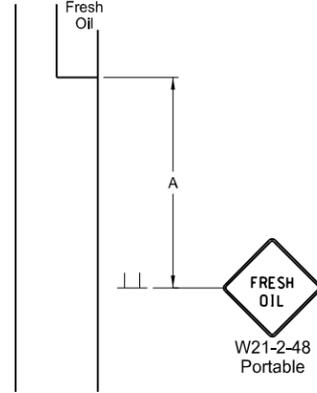


TYPE KK
To be used at major intersections within pilot car control area

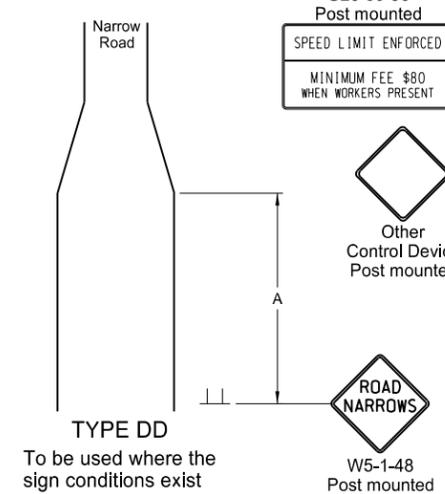
- Notes
- The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
 - The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph 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.
 - 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 signs are not required if this standard is part of other traffic control layouts, or the work is less than 15 days.
 - 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.



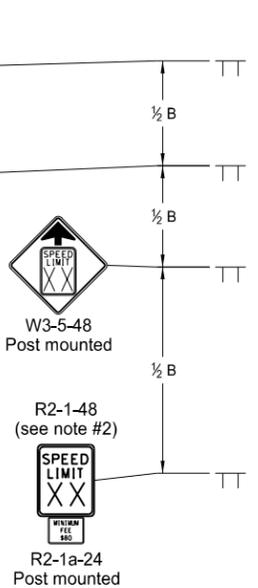
TYPE BB
To be used within a major work area where the sign conditions exist



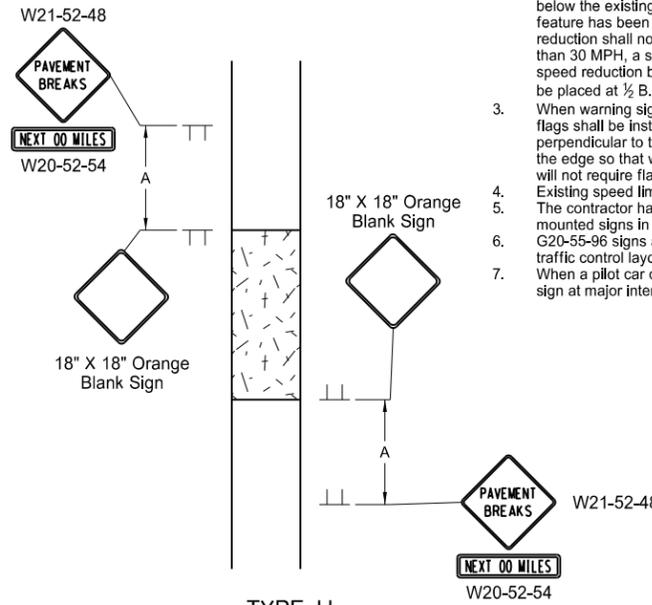
TYPE CC
To be used where the sign conditions exist



TYPE DD
To be used where the sign conditions exist



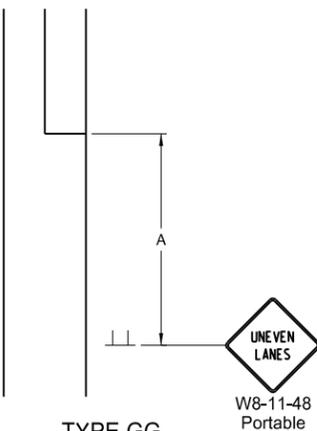
TYPE Z
To be used where speed zone is needed



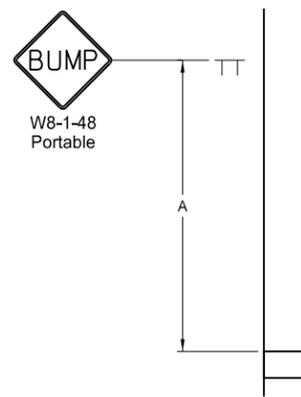
TYPE JJ
To be used where there is a break in the pavement. These signs may be skid mounted or post mounted and shall be installed when conditions exist and removed when not applicable.

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

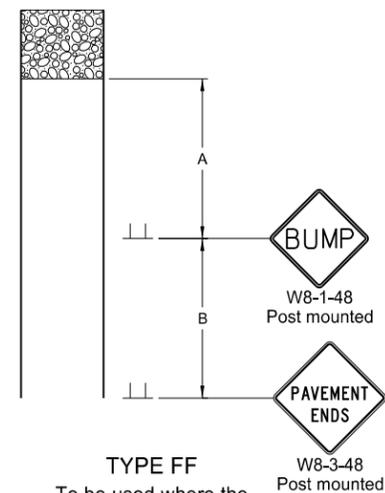
* Posted speed, off-peak 85th percentile speed prior to work starting, or the anticipated operating speed in mph.



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)

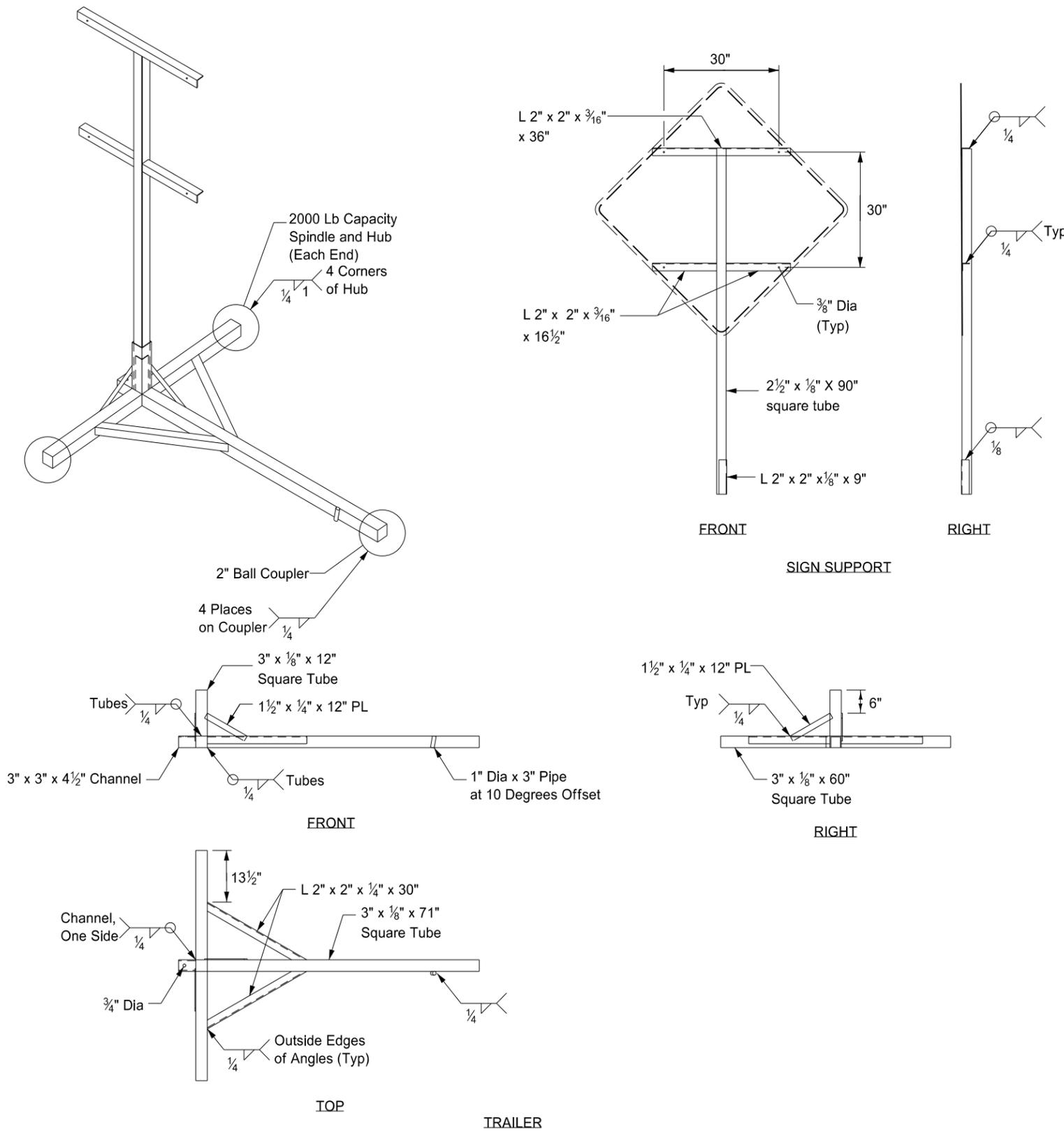
Cones (represented by a triangle)

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



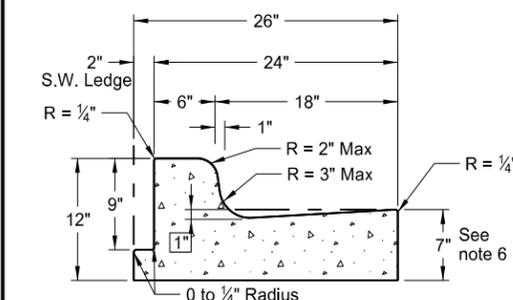
Notes:

- 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.

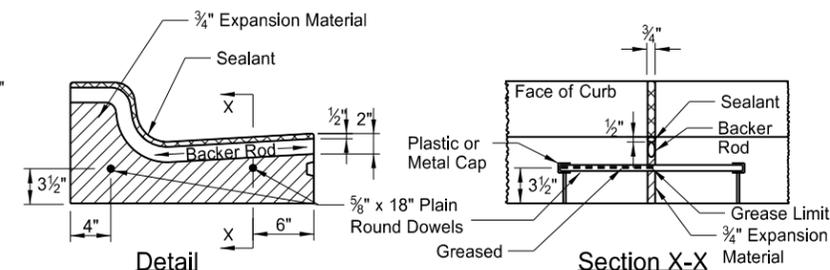
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE

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.

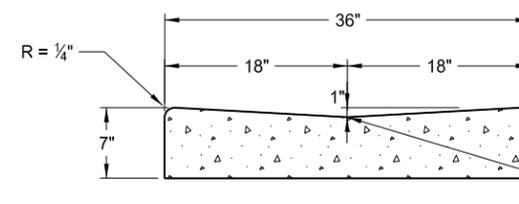
Curb & Gutter and Valley Gutter



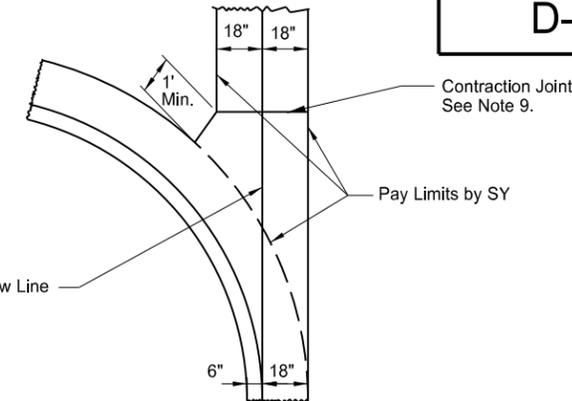
Curb & Gutter Type 1 (Sec. A & B)
Adjacent to Concrete Sidewalk,
Median, or Parking Lot.
(Sec. A shown. See Sec B for
additional details.)



Isolation Joint



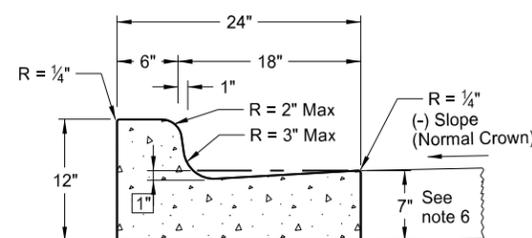
36" Concrete Valley Gutter Detail



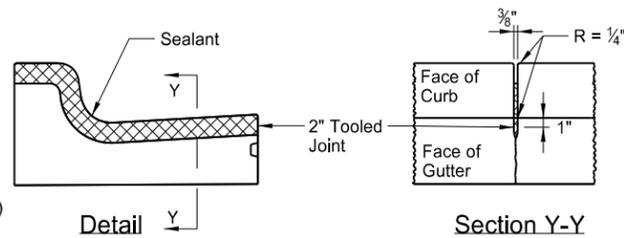
36" Concrete Valley Gutter Plan

NOTES:

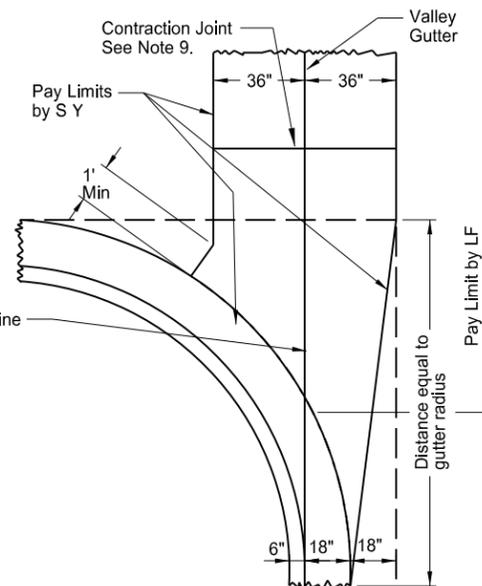
1. Curb and Gutter Type 1 (Sec. A & B) to be used. Section "A" to be used with (-) pavement slopes and section "B" to be used with (+) pavement slopes.
2. Contraction Joints: Tool the Curb & Gutter 2" as shown on the contraction joint details.
3. Isolation Joints: Isolation joint material shall be 3/4" 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.



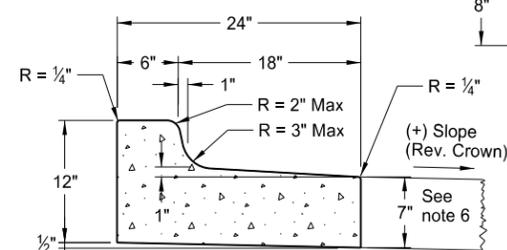
Curb & Gutter Type 1 (Sec. A)



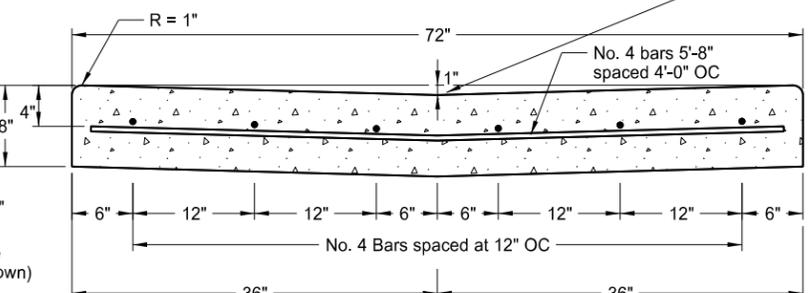
Contraction Joint
(10' Max Spacing)



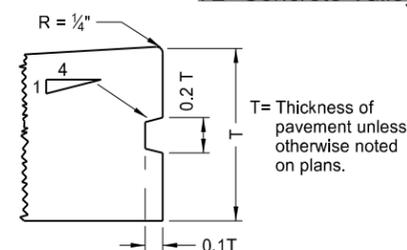
72" Concrete Valley Gutter Detail



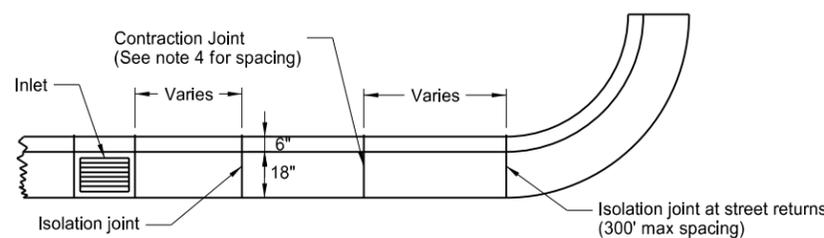
Curb & Gutter Type 1 (Sec. B)



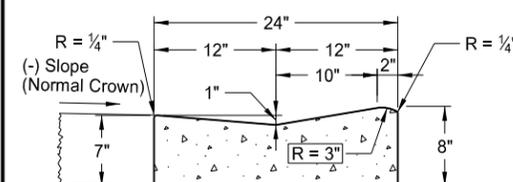
72" Concrete Valley Gutter Detail



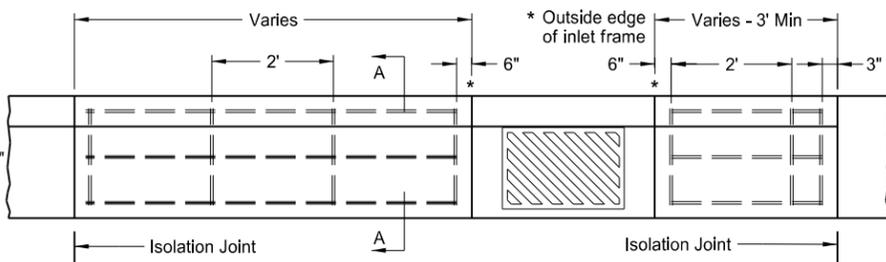
Keyway Detail for Curb & Gutter
(To be used with PCC Pavement and Drives)



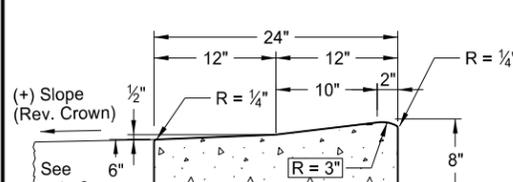
Joint Location Detail



Mountable Curb & Gutter Type 1 (Sec. A)

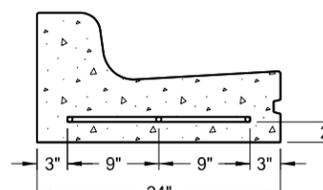


Curb & Gutter Reinforcing at Inlets



Mountable Curb & Gutter Type 1 (Sec. B)

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.



Section A-A

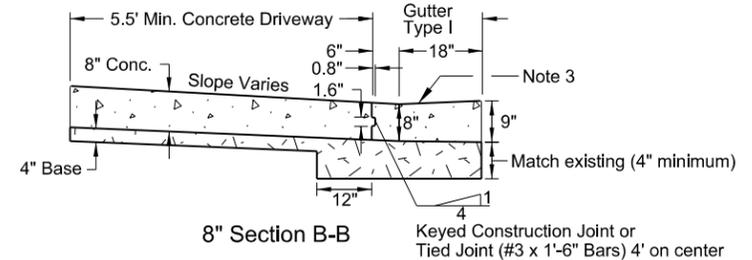
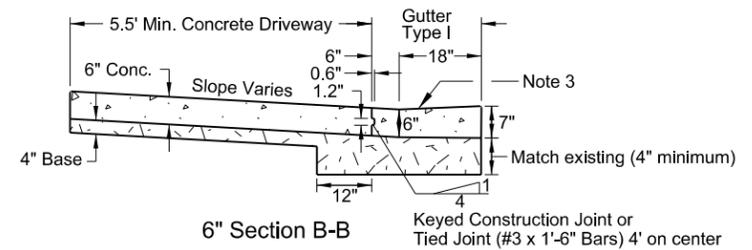
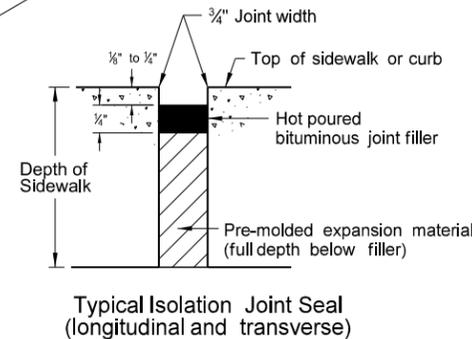
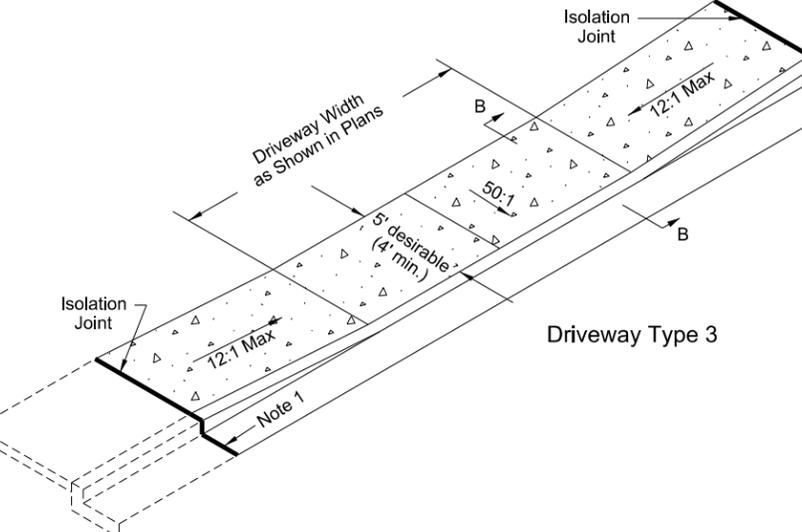
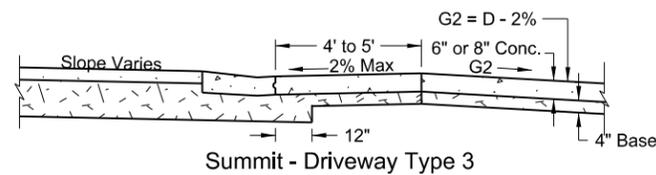
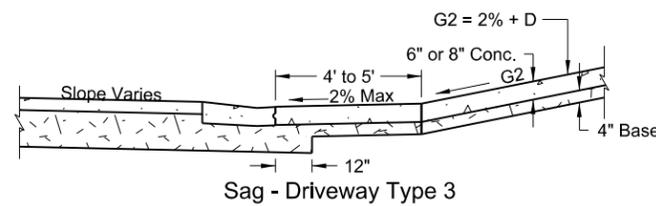
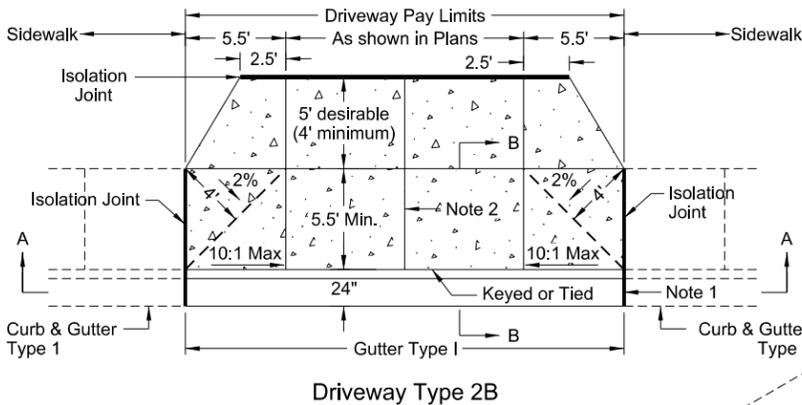
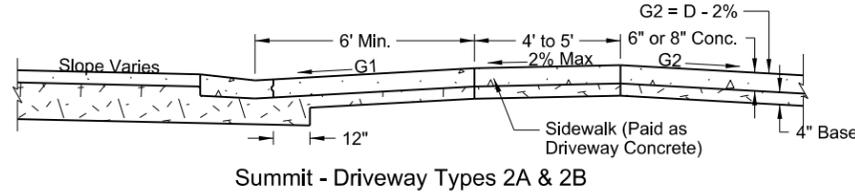
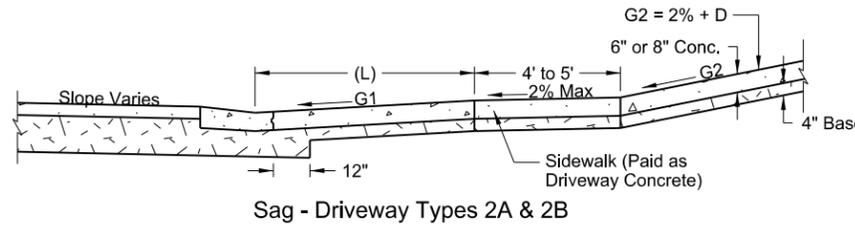
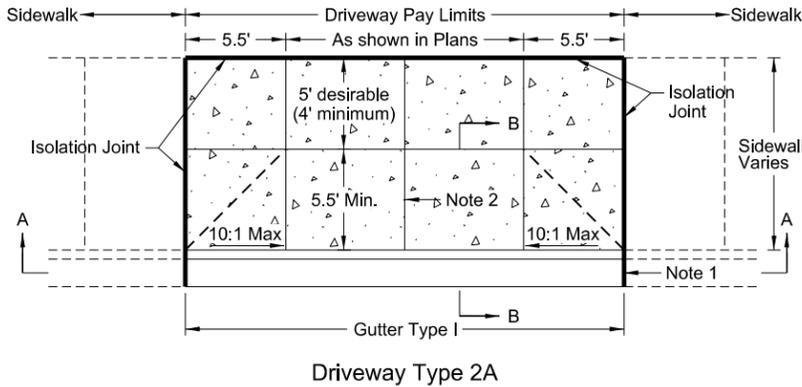
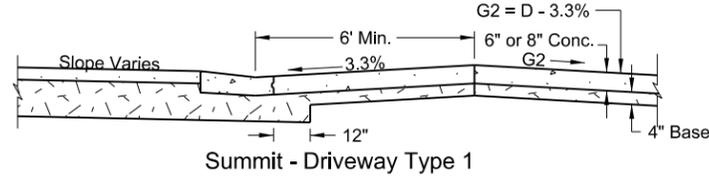
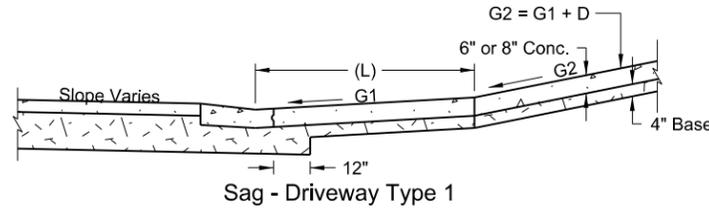
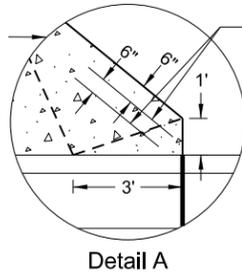
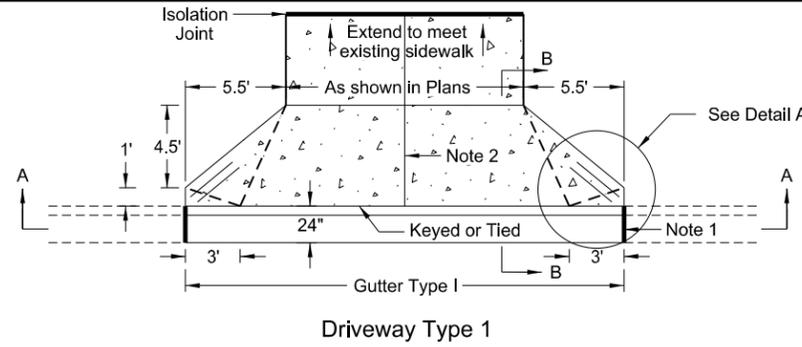
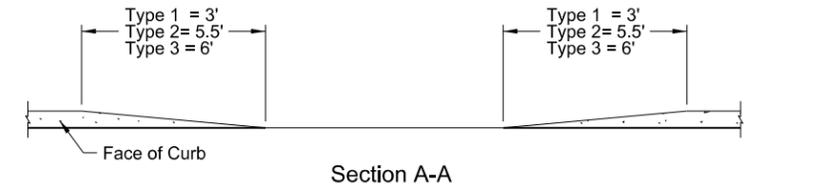
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-7-2013	
REVISIONS	
DATE	CHANGE

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.



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

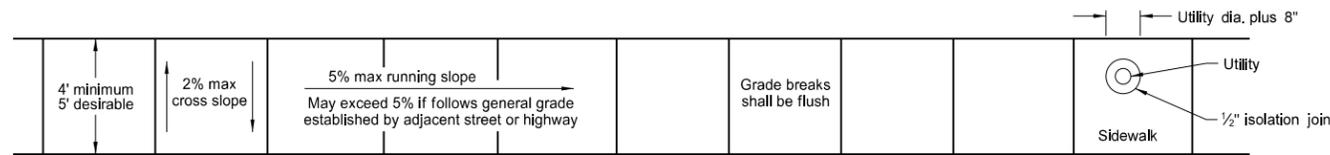
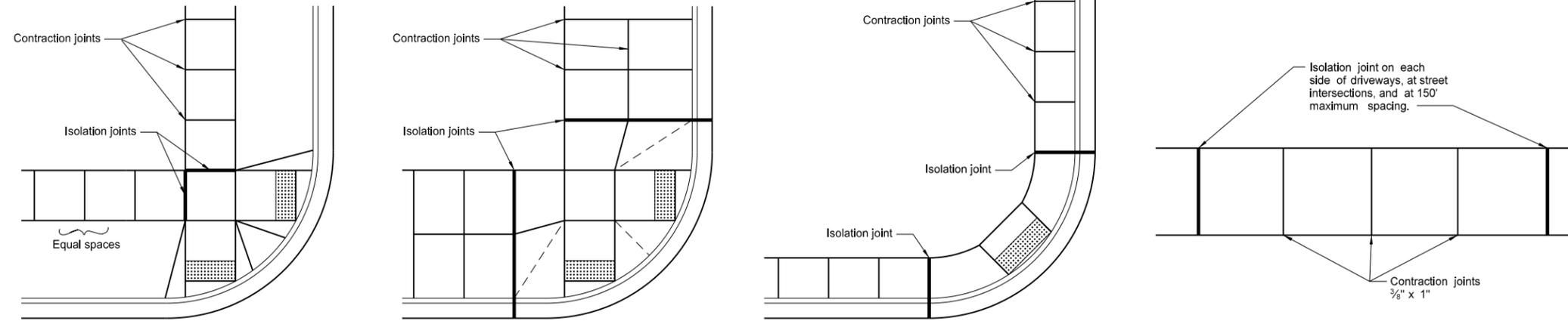
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 02/13/14 and the original document is stored at the North Dakota Department of Transportation.

SIDEWALK

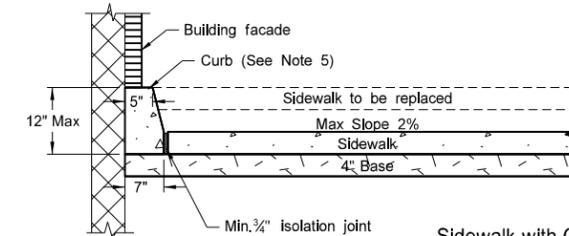
D-750-2

NOTES:

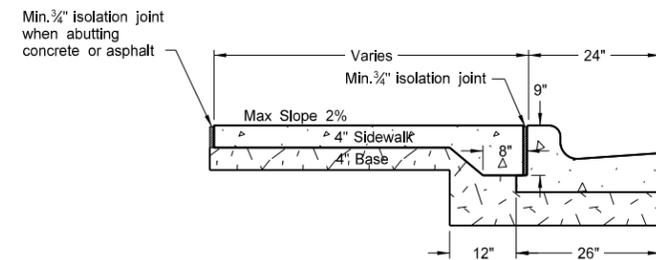
1. Curb ramp and detectable warning panel layouts are for informational purposes only. See Standard Drawing D-750-3 for curb ramp and detectable warning panel details.
2. Joint Spacing: Transverse contraction joint spacing shall vary from 4' to 6' to create approximate square panels. Longitudinal contraction 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.



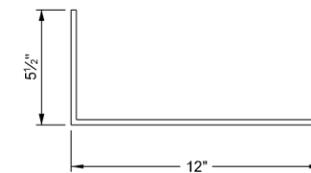
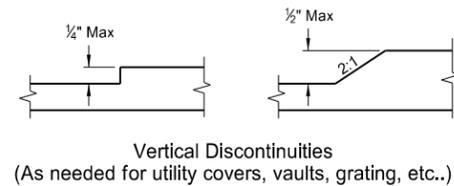
Utility Blockout



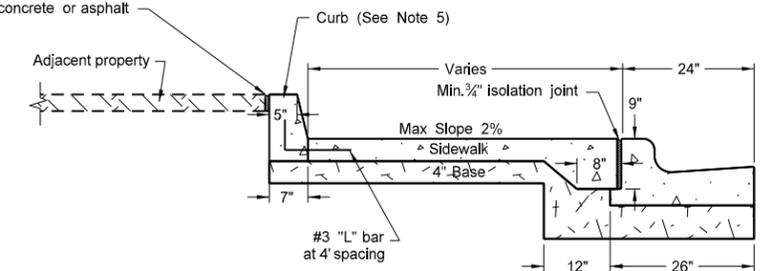
Sidewalk with Curb Detail (Building face application)



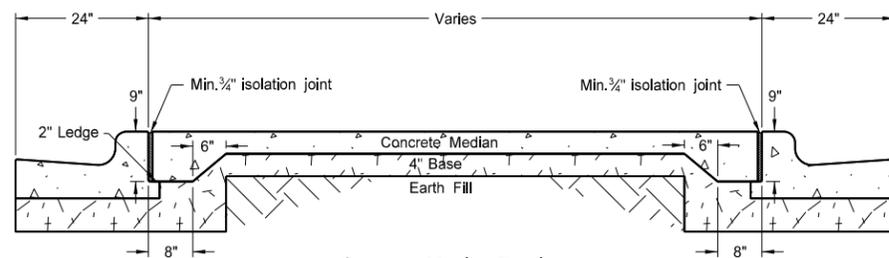
Sidewalk Detail (Installed adjacent to curb and gutter)



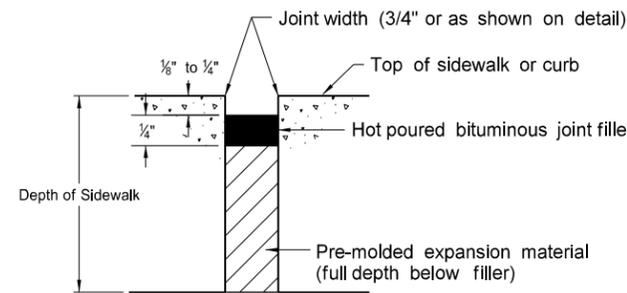
Min. 3/4" isolation joint when abutting concrete or asphalt



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

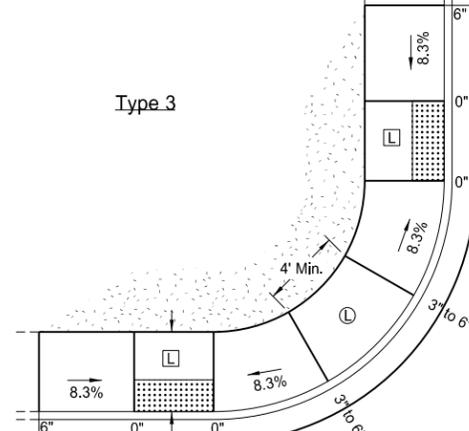
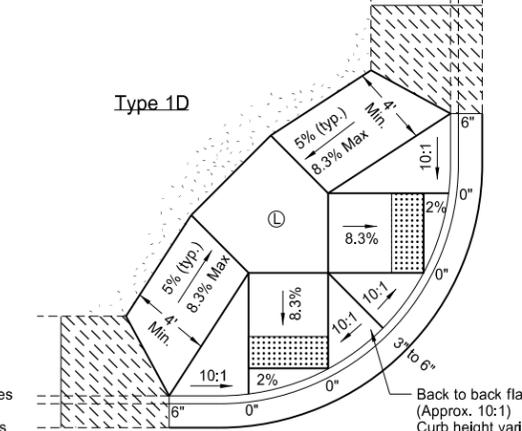
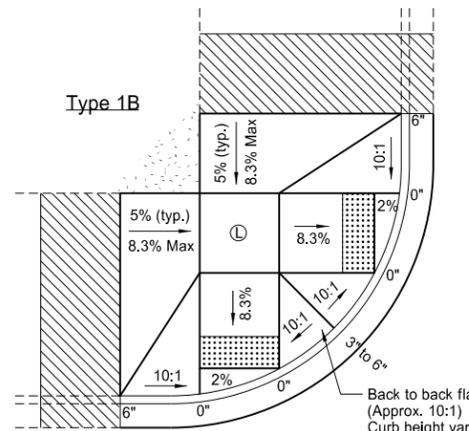
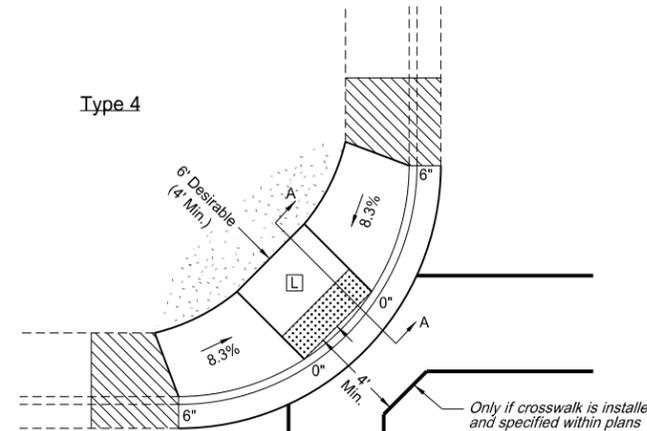
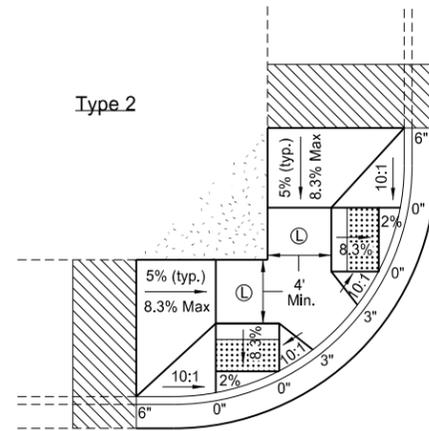
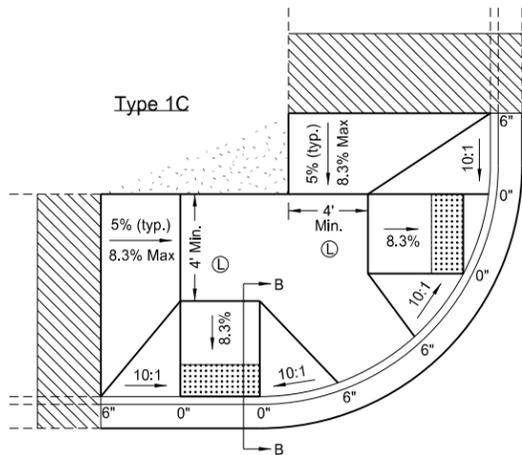
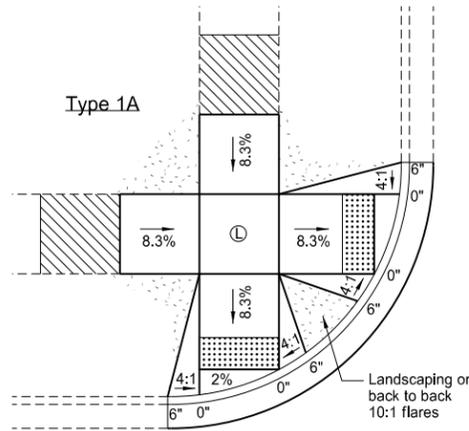
Less Right of Way

NOTES:

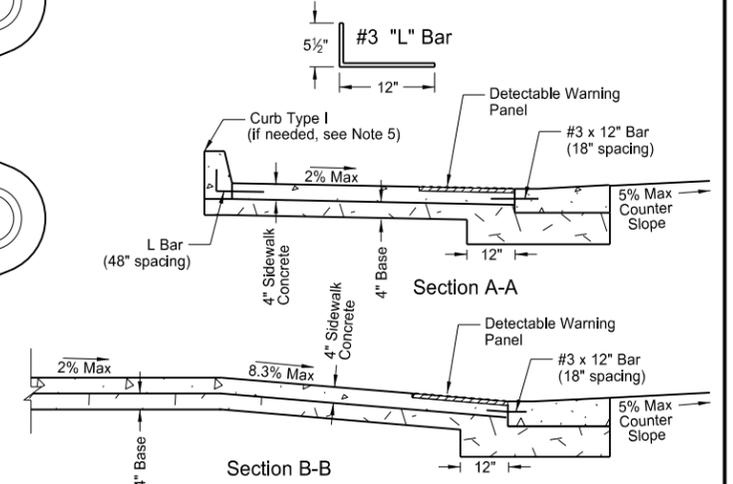
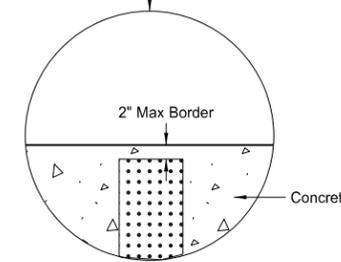
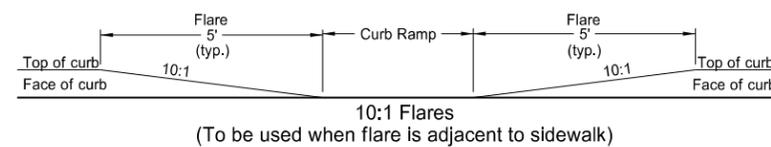
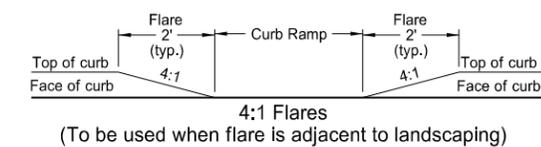
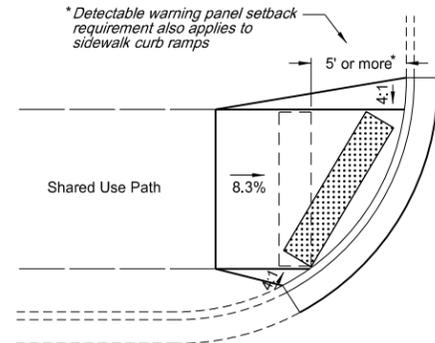
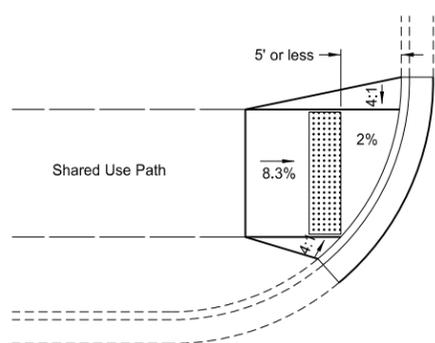
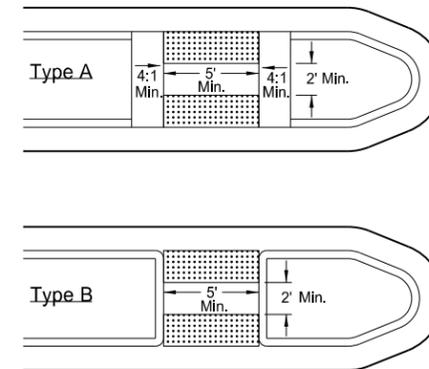
- Ramp width is defined as the useable portion of the ramp, excluding flares if used.
Curb ramp width should match the existing sidewalk width. 4' width minimum.
Ramp width for shared-use paths should match the existing shared use path width.
Ramp length shall be maximum of 15'.
- Landings shall be a 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

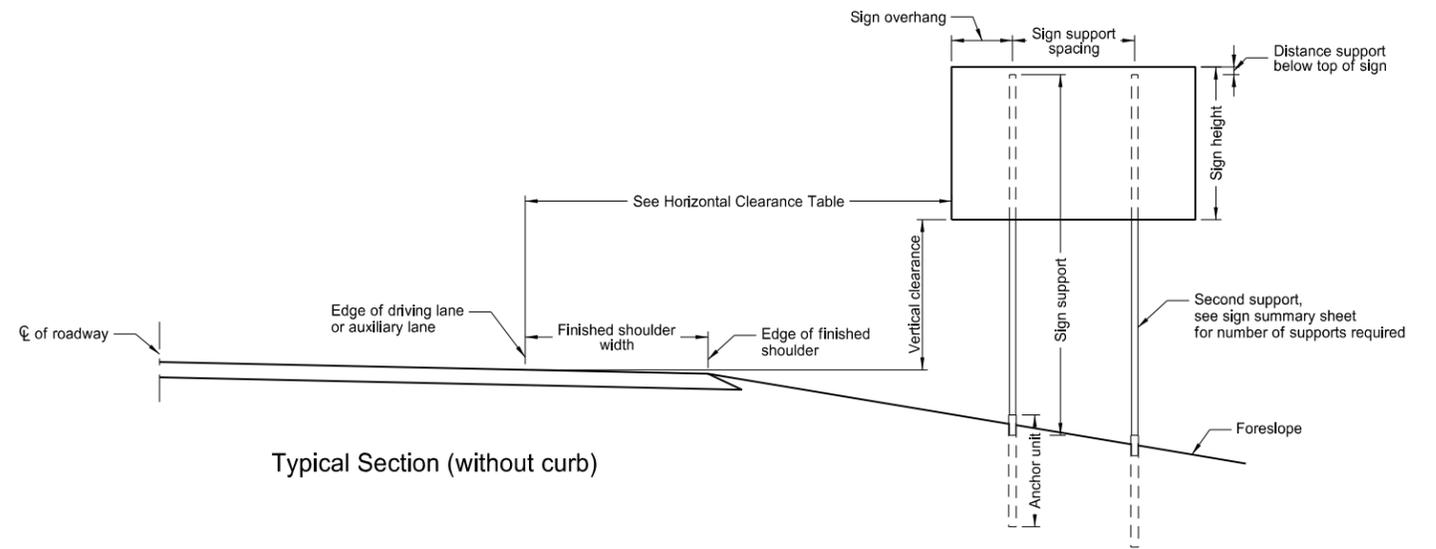
This document was originally issued and sealed by Roger Weigel, Registration Number PE-2930, on 11/26/13 and the original document is stored at the North Dakota Department of Transportation

PERFORATED TUBE ASSEMBLY DETAILS

D-754-23

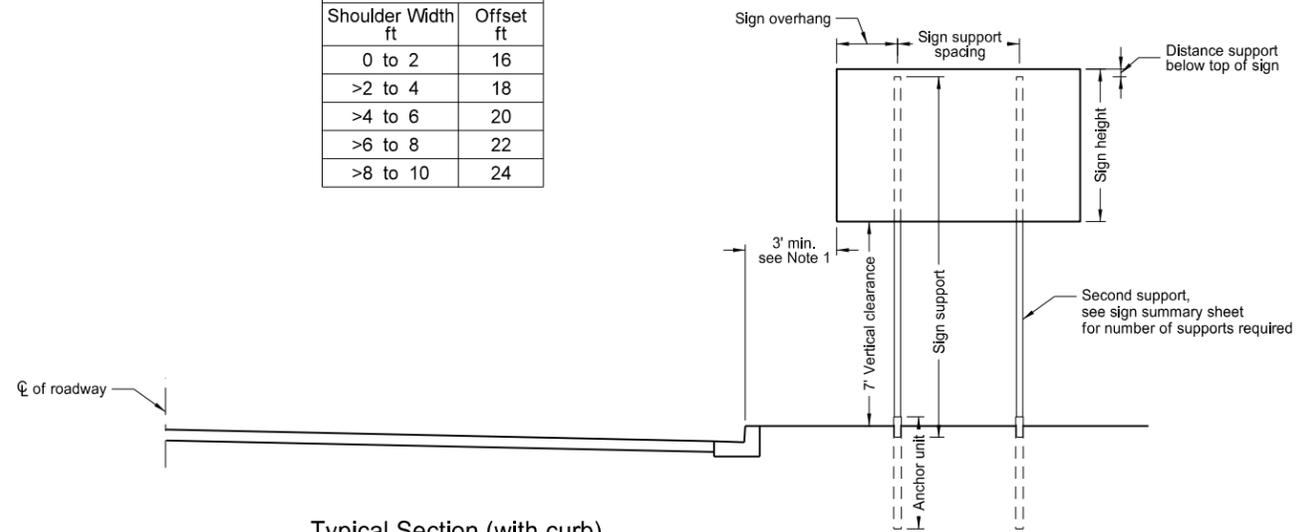
Notes:

1. Curbed Roadways: The clearance from the face of the curb should be 3' except where right of way or sidewalk width is limited, a minimum clearance of 2' shall be provided. The horizontal clearance may need to be increased to maintain a minimum sidewalk clear width of 4' from the sign support, not including any attached curb.
2. Minimum vertical clearance: Signs installed at the side of the road in rural districts shall be at least 5' measured from the bottom of the sign to the edge of the driving lane or auxiliary lane. Where parking or pedestrian movements occur, the clearance to the bottom of the sign shall be at least 7'.
- Signs on expressways shall be installed with a minimum height of 7'.
- Adopt-a-highway signs installed on Freeways shall be at least 7' above the edge of the driving lane.
- The vertical clearance shall have a maximum height of 6" above the vertical clearance specified above.
3. Offset signs: Where signs are placed at least 30 feet or more from the edge of the traveled way, the height to the bottom of such sign shall be 5' above the edge of the driving lane.
4. The clearance from edge of shared use path to edge of sign should be 3' except where width is limited, a minimum clearance of 2' shall be provided.

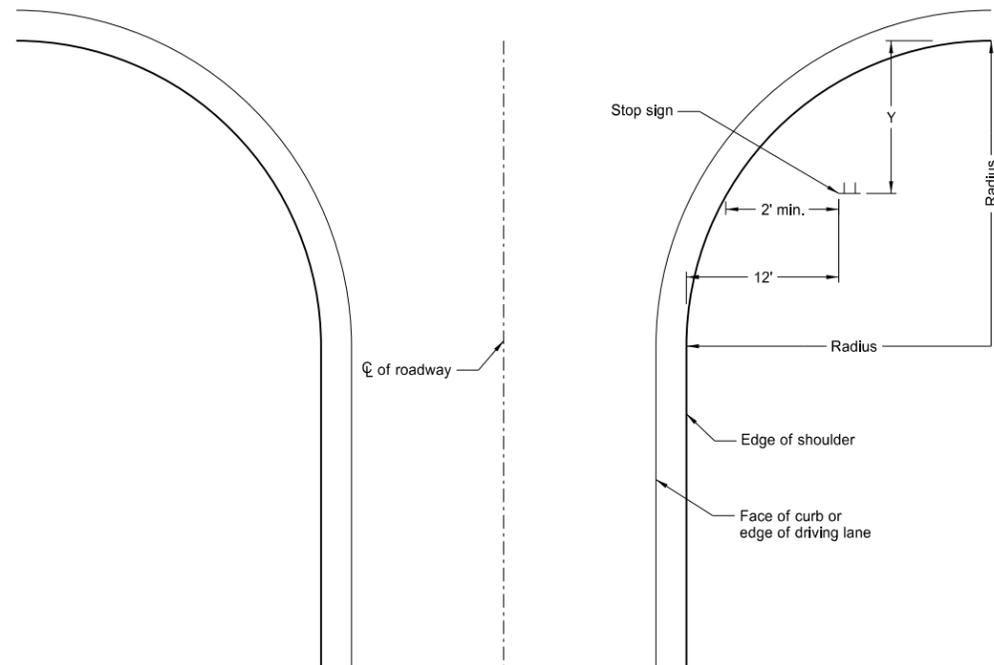


Typical Section (without curb)

Horizontal Clearance Table	
Shoulder Width ft	Offset ft
0 to 2	16
>2 to 4	18
>4 to 6	20
>6 to 8	22
>8 to 10	24



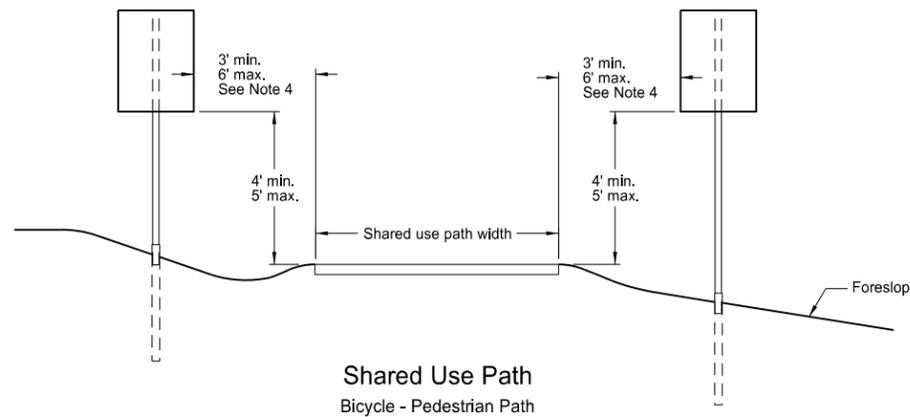
Typical Section (with curb)
Residential or Business District



Stop Sign Location
Wide Throat Intersection

This layout is to be used for the placement of "Stop" signs.

Radius ft.	Y-max. ft.	Y-min. ft.
40	50	15
45	50	18
50	50	21
55	50	25
60	50	28
65	50	32
70	50	35
75	50	39
80	50	43



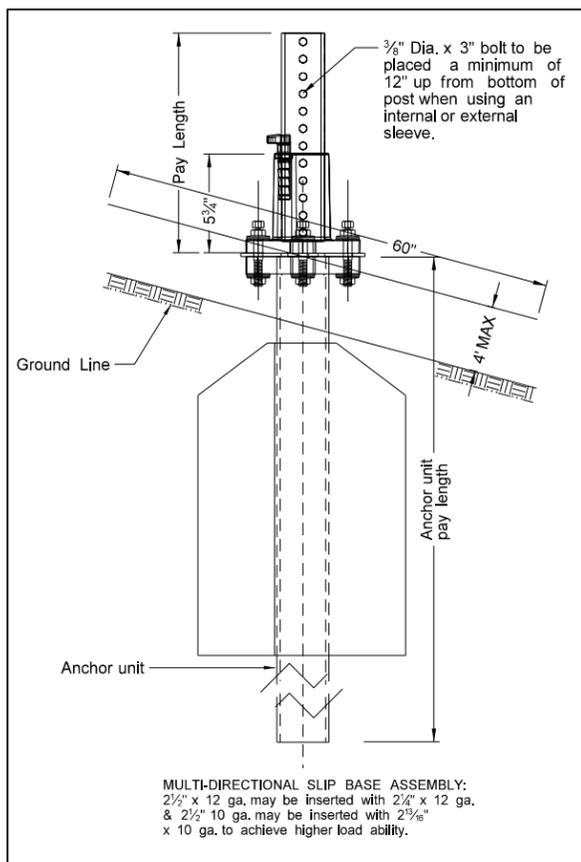
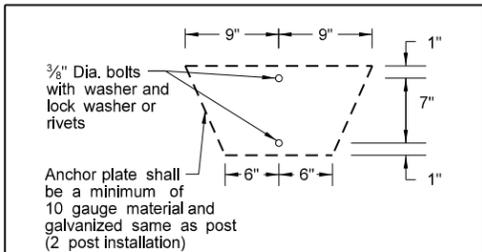
Shared Use Path
Bicycle - Pedestrian Path

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
7-8-14	Revised note 2, added note 4.

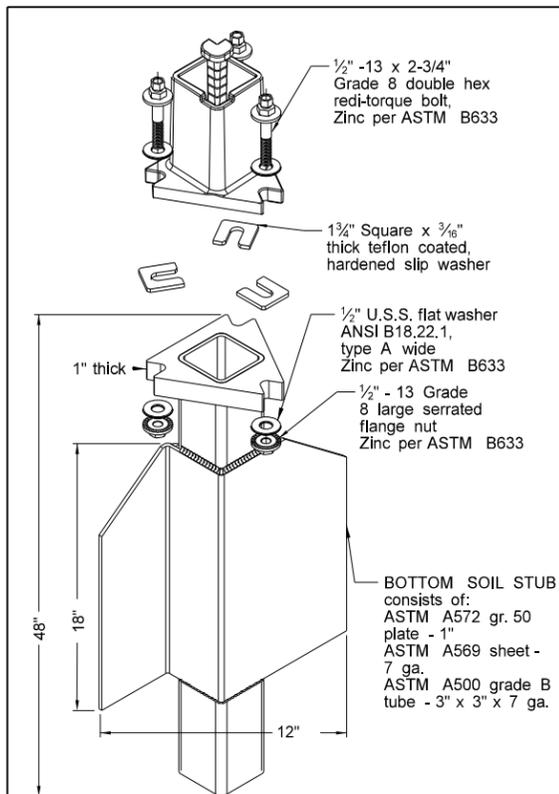
This document was originally issued and sealed by
Roger Weigel
 Registration Number
 PE-2930,
 on 7/8/14 and the original document is stored at the
 North Dakota Department
 of Transportation

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.	Anchor Wall Thickness Gauge
1	2	12			No	2 1/4	12
1	2 1/4	12			No	2 1/2	12
1	2 1/2	12			(B)	3(C)	7
1	2 1/2	10			Yes		7
1	2 1/4	12	2 1/2(D)	12	Yes		7
1	2 1/2	12	2 1/4	12	Yes		7
2	2 1/2	10			Yes		7
2	2 1/4	12	2 1/2(D)	12	Yes		7
2	2 1/2	12	2 1/4	12	Yes		7
3 & 4	2 1/2	12			Yes		7
3 & 4	2 1/2	10			Yes		7
3 & 4	2 1/2	12	2 1/4	12	Yes		7
3 & 4	2 1/2	12	2 1/2(D)	12	Yes		7
3 & 4	2 1/2	10	2 1/8	10	Yes		7

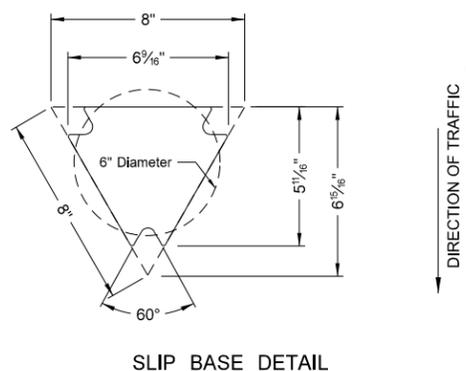
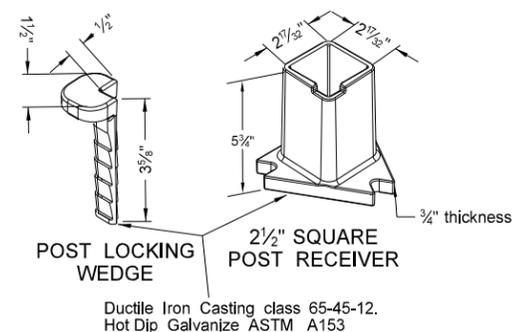
(B) - The 2 1/2", 12 gauge posts do not need breakaway bases when placed in standard soils, but require a shim as specified by the manufacturer. The breakaway base is required when the support is placed in weak soils. The Engineer shall determine if the soils are weak. Weak soils are classified as boggy, wet, or loose soil areas.
 (C) - 3" anchor unit
 (D) - 2 1/2" x 12 ga. x 18" minimum length external sleeve required.



Mounting Details Perforated Tube



SLIP BASE FOR 2 1/2" POST

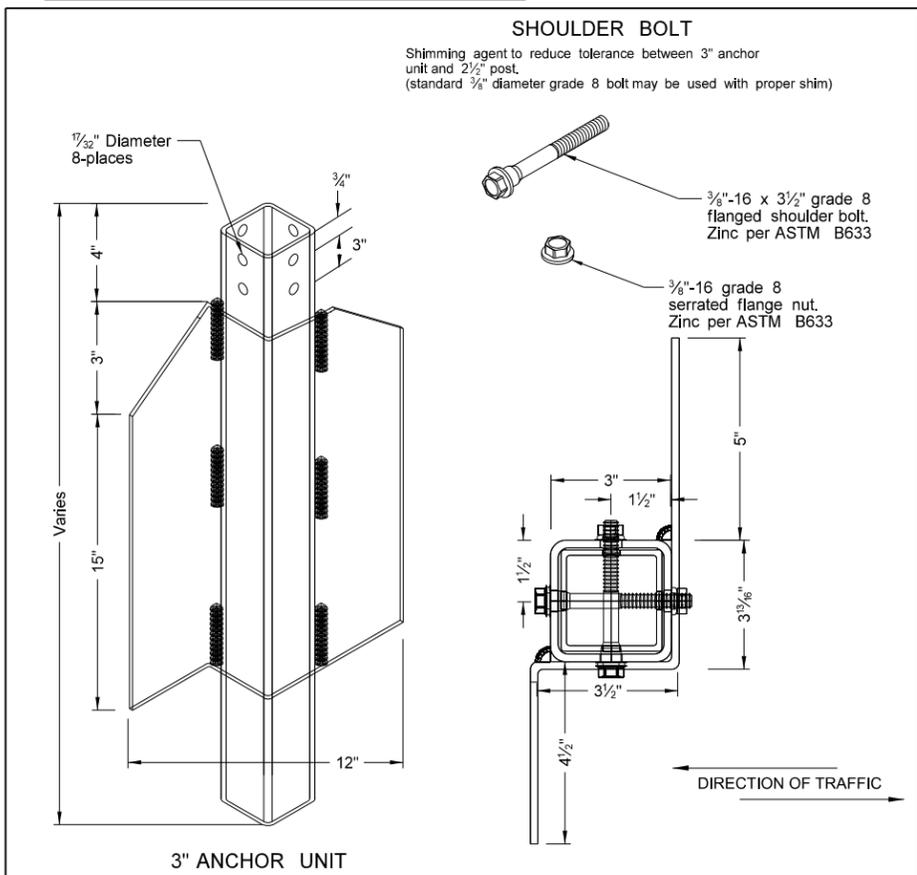
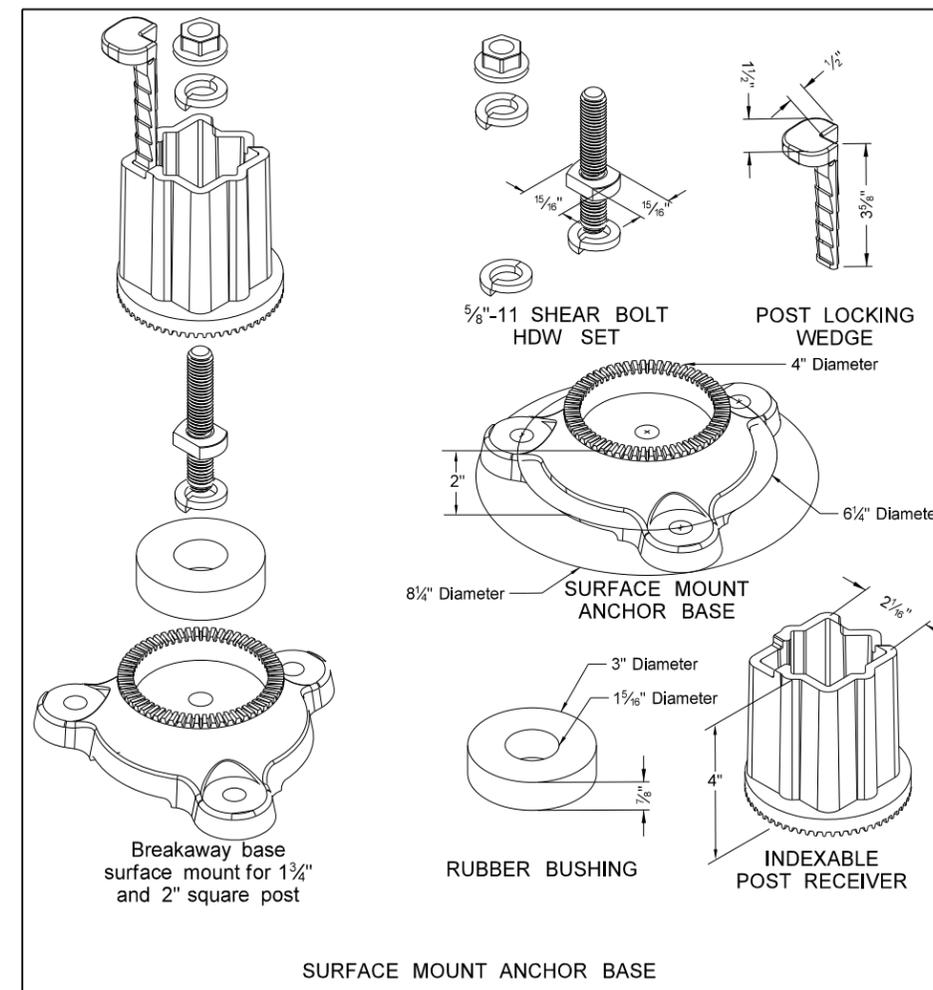


Properties of Telescoping Perforated Tubes							
Tube Size In.	Wall Thickness In.	U.S. Standard Gauge	Weight Per Foot Lbs.	Moment of Inertia In. ⁴	Cross Sect. Area In. ²	Section Modulus In. ³	
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172	
2 x 2	0.105	12	2.416	0.372	0.590	0.372	
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499	
2 3/8 x 2 3/8	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	0.783	

The 2 3/8" size 10 gauge is shown as 2.19" size on the plans; The 2 1/2" size is shown as 2.51" size on the plans.

NOTE:

- 4" Vertical clearance of anchor or breakaway base. The 4" x 60" measurement shall be made above and below post location and also back and ahead of post.
- Anchor material shall be 7 gauge H.R.P.O. Commercial quality ASTM A569 and 3" x 3" x 7" gauge ASTM A500 grade B. Anchor shall have a yield strength 43.9 KSI and tensile strength of 59.3 KSI. Anchor shall be hot dipped galvanized per ASTM A123/153. All tolerances on anchor unit and slip base bottom assembly are +/- 0.005" unless otherwise noted.
- When used in concrete sidewalk, anchor shall be the same concept without the wings.
- Four post signs shall have over 8" between the first and fourth posts.
- Installation procedures as per manufacturers recommendation.
- Concrete fasteners for surface mount breakaway base shall be a minimum 1/2" diameter x 4" grade 8.



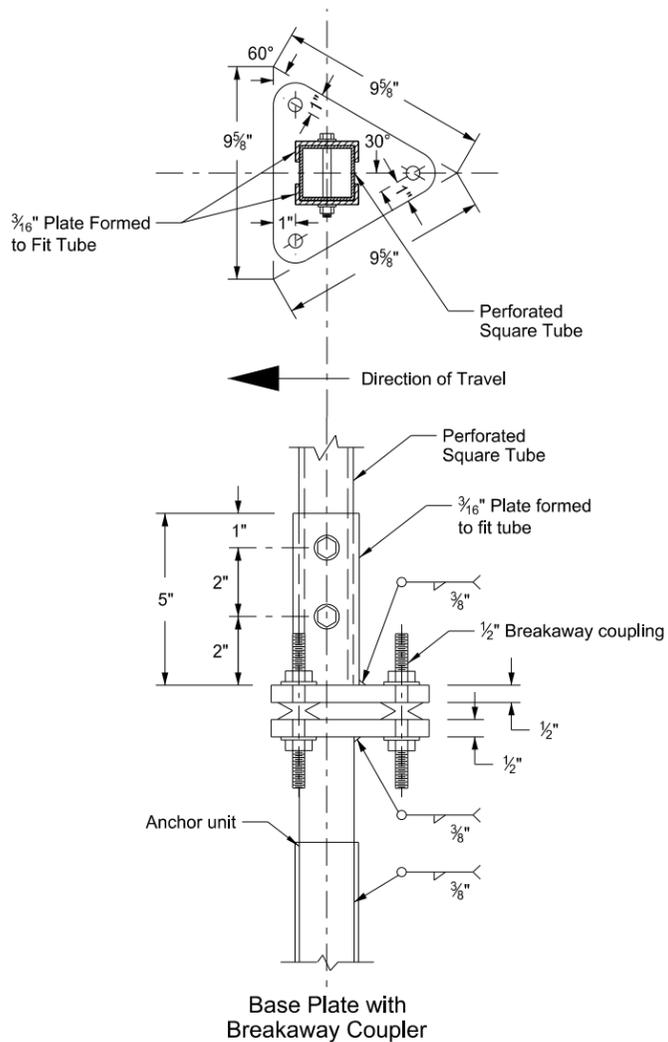
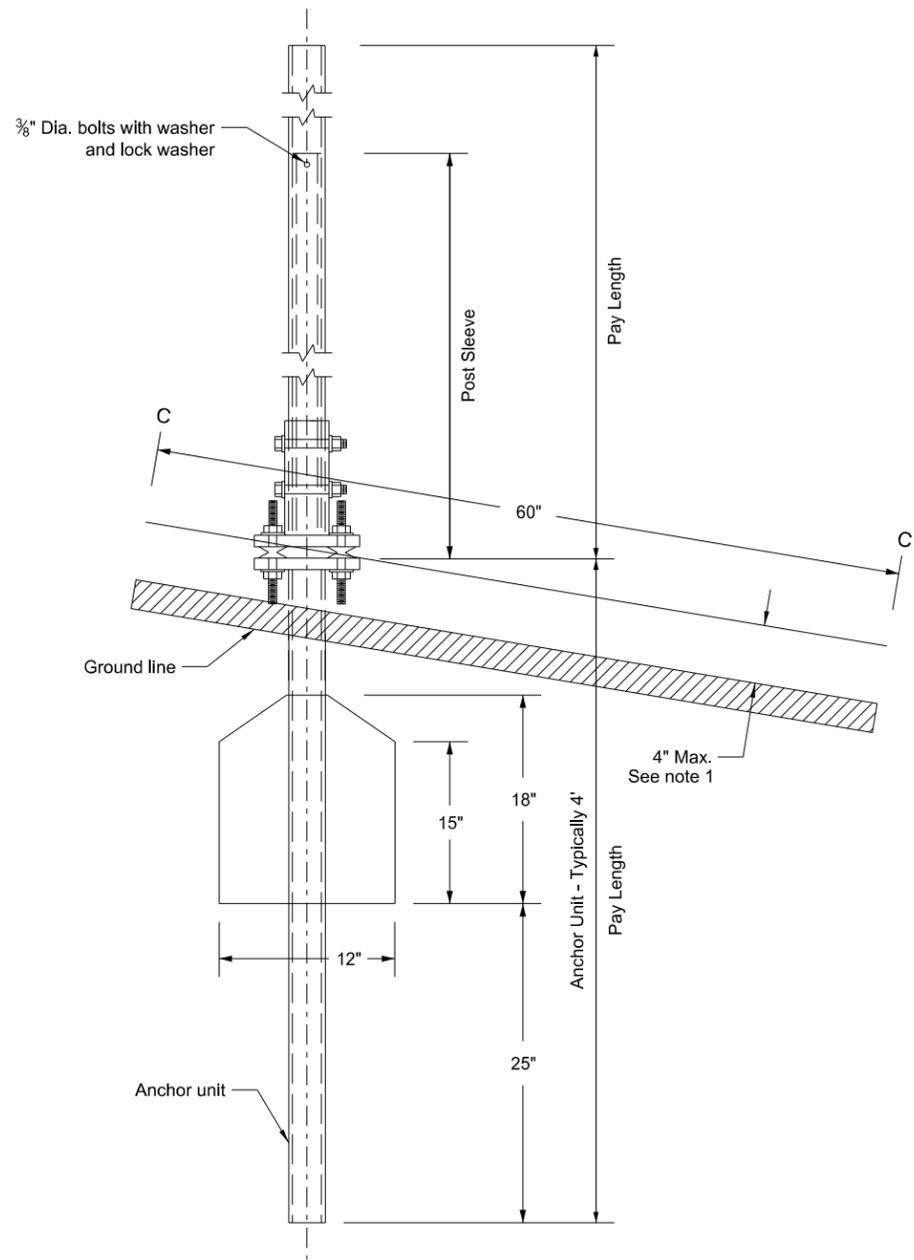
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-6-09	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE- 2930, on 08/06/09 and the original document is stored at the North Dakota Department of Transportation

Breakaway Coupler System for Perforated Tubes

Notes:

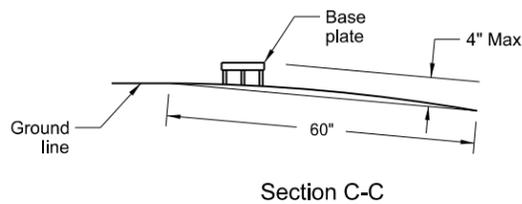
- 4" Vertical clearance of anchor or breakaway base. The 4" x 60" measurement shall be made above and below post location and also back and ahead of post.
- Anchor unit shall be the same size as the post and shall have the same specification as the post.
- Four post signs shall have over 8' between the first and fourth post.
- In lieu of the breakaway base system on standard D-754-24 the breakaway coupling system may be used. The breakaway coupler system shall be manufactured from material meeting the requirements of ASTM A325 fasteners with the special requirements as specified by DENT BREAKAWAY IND., INC. which meets the test requirements of NCHRP Report 350.



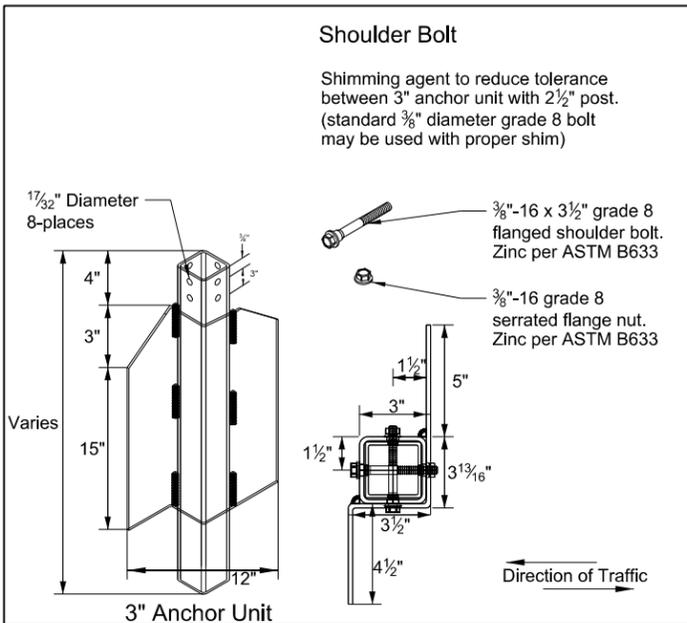
Number of Posts	Telescoping Perforated Tube						
	Post Size In.	Wall Thickness Gauge	Sleeve Size In.	Wall Thickness Gauge	Slip Base	Anchor Size Without Slip Base In.	Anchor Wall Thickness Gauge
1	2	12			No	2 1/4	12
1	2 1/4	12			No	2 1/2	12
1	2 1/2	12			(B)	3(C)	7
1	2 1/2	10			Yes		7
1	2 1/4	12	2	12	Yes		7
1	2 1/2	12	2 1/4	12	Yes		7
2	2 1/2	10			Yes		7
2	2 1/4	12	2	12	Yes		7
2	2 1/2	12	2 1/4	12	Yes		7
3 & 4	2 1/2	12			Yes		7
3 & 4	2 1/2	10			Yes		7
3 & 4	2 1/2	12	2 1/4	12	Yes		7
3 & 4	2 1/4	12	2	12	Yes		7
3 & 4	2 1/2	10	2 3/16	10	Yes		7

(B) - The 2 1/2" 12 gauge posts do not need breakaway bases when placed in standard soils. The breakaway base is required when the support is placed in weak soils. The Engineer shall determine if the soils are weak. Weak soils are classified as boggy, wet, or loose soil areas.

(C) - 3" anchor unit



Max. protection of the stub post is 4" above a 60" chord aligned radially to the center line of the highway and connecting any point, within the length of the chord, on the ground surface on one side of the support to a point in the ground surface on the other side.

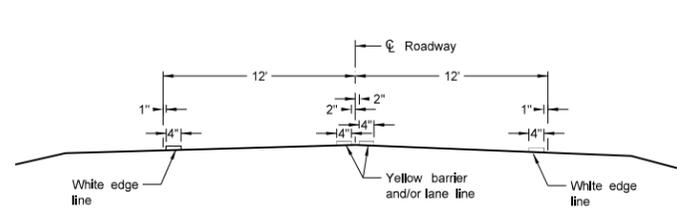


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION 10-3-2013	
REVISIONS	
DATE	CHANGE

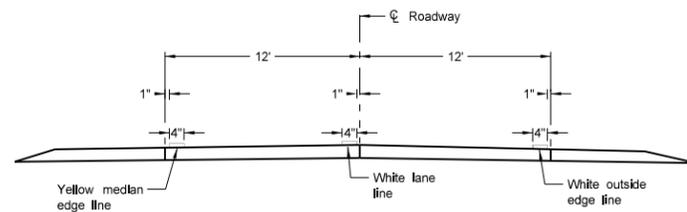
This document was originally issued and sealed by Roger Weigel Registration Number PE-2930, on 10/3/13 and the original document is stored at the North Dakota Department of Transportation

PAVEMENT MARKING

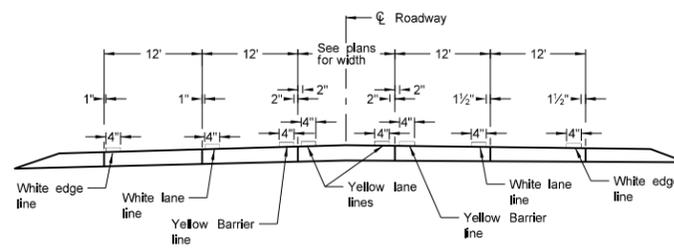
D-762-4



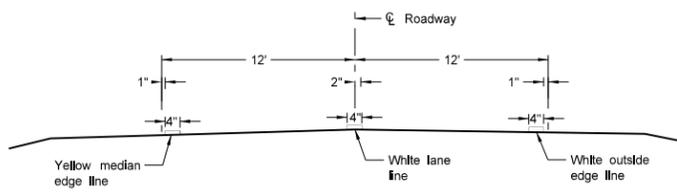
Two Lane Two Way
RURAL ROADWAY



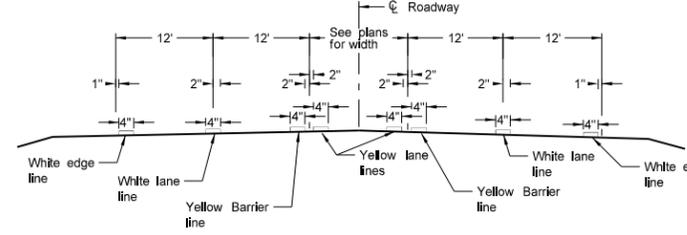
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



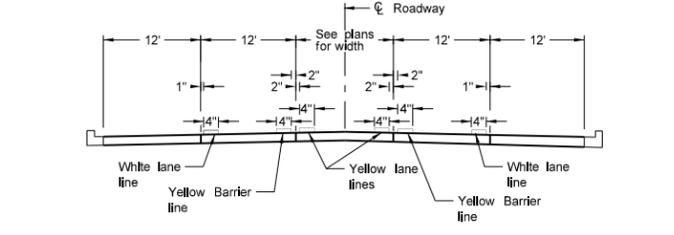
RURAL FIVE LANE ROADWAY
Concrete Section



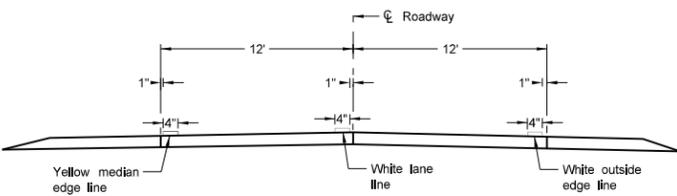
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



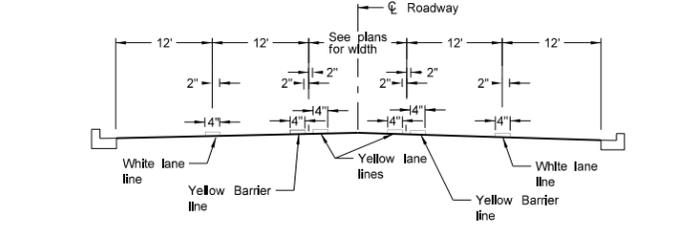
RURAL FIVE LANE ROADWAY
Asphalt Section



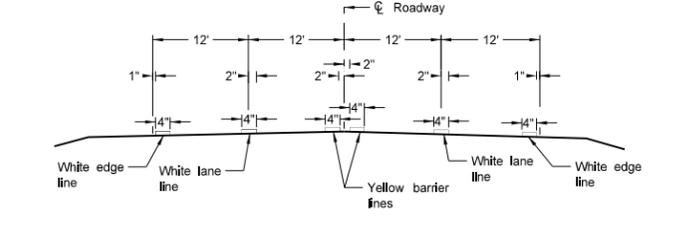
URBAN FIVE LANE SECTION
Concrete Section



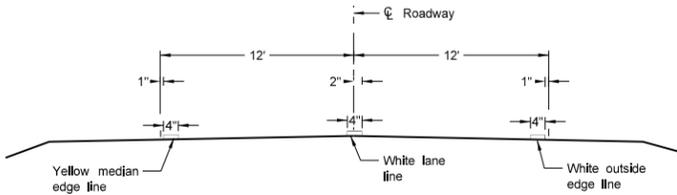
Two Lane Roadway
PRIMARY HIGHWAY
Concrete Section



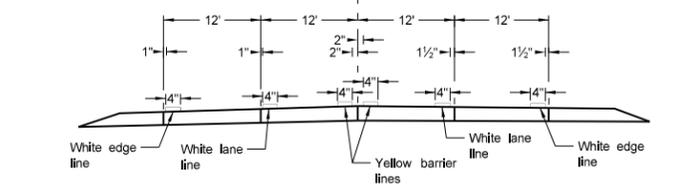
URBAN FIVE LANE SECTION
Asphalt Section



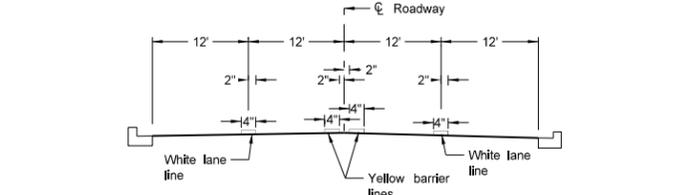
RURAL FOUR LANE ROADWAY
Asphalt Section



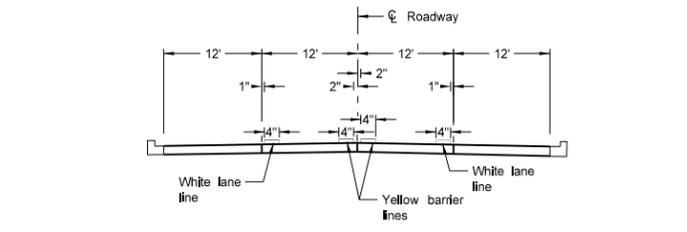
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



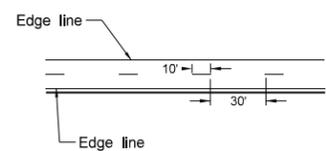
RURAL FOUR LANE ROADWAY
Concrete Section



URBAN FOUR LANE SECTION
Asphalt Section



URBAN FOUR LANE SECTION
Concrete Section



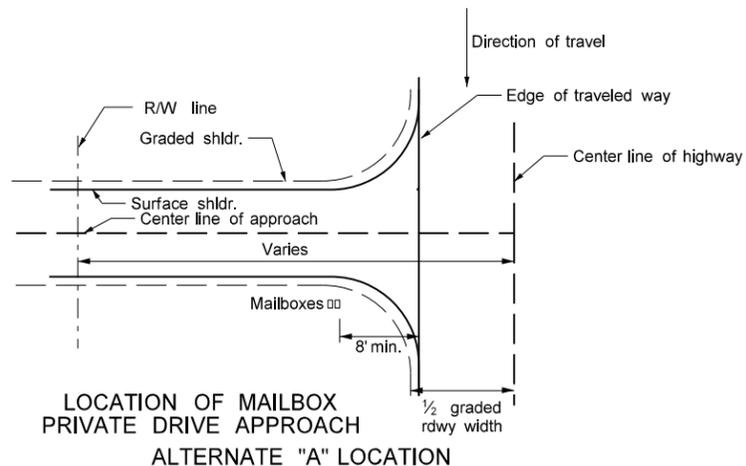
CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

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

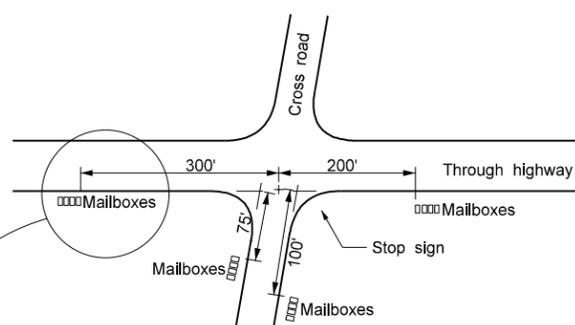
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-1-10	
REVISIONS	
DATE	CHANGE

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

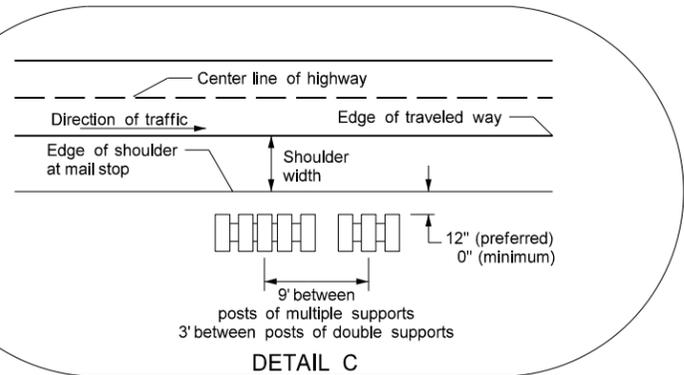
MAILBOX LOCATION DETAILS



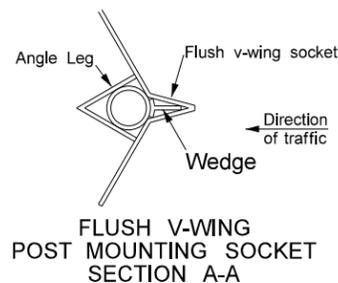
LOCATION OF MAILBOX PRIVATE DRIVE APPROACH ALTERNATE "A" LOCATION



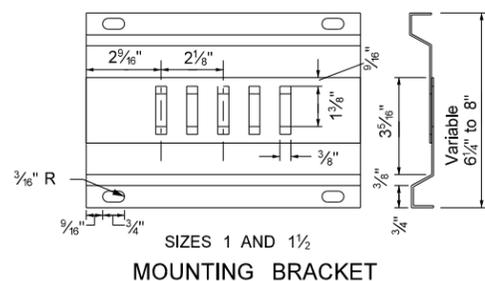
MINIMUM CLEARANCE DISTANCE TO NEAREST MAILBOX ALONG ROADWAY AT INTERSECTIONS ALTERNATE "B" LOCATION



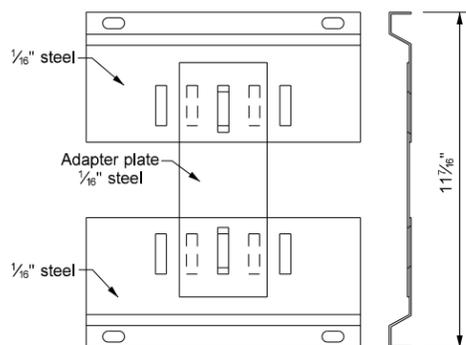
DETAIL C



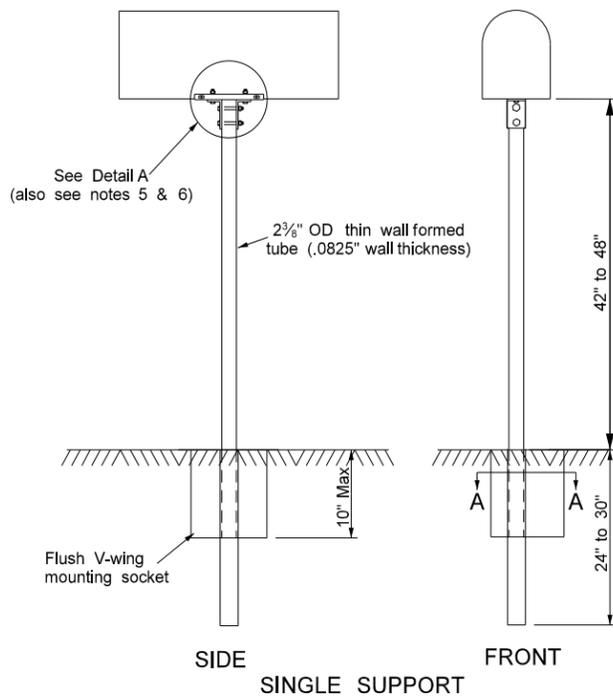
FLUSH V-WING POST MOUNTING SOCKET SECTION A-A



SIZES 1 AND 1/2 MOUNTING BRACKET



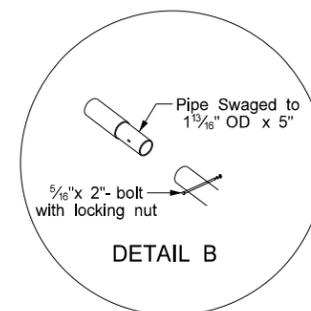
SIZE 2 WITH ADAPTOR PLATE MOUNTING BRACKET



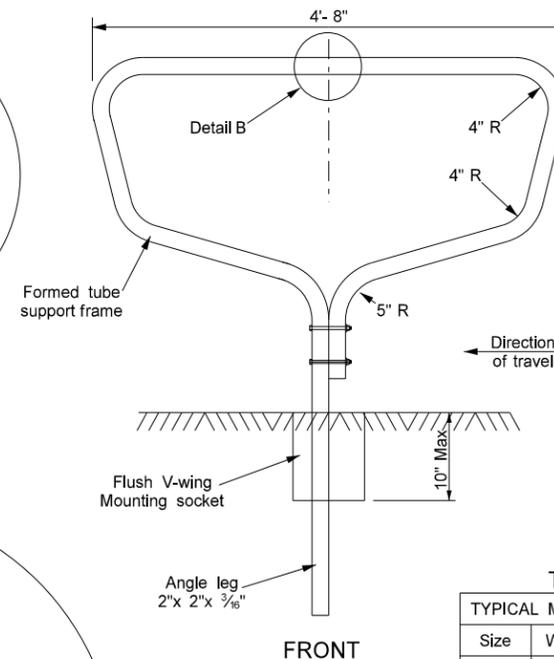
SIDE FRONT SINGLE SUPPORT

Notes:

- The mailbox support and hardware details shall consist of the "V-Loc Mailbox Support System" manufactured by: Tapco Traffic & Parking Control Co. Inc. Any other equal support system meeting the requirements of NCHRP Report 350, which has been crash tested, and approved by the Federal Highway Administration may be used. Approved alternate mailbox assemblies shall be installed in the manner and arrangement crash tested.
- The preferred location for all mailboxes is the Alternate "A" location. However, the Engineer may approve the Alternate "B" location if warranted by existing field conditions.
- Postal regulations require that mailboxes must be located on the right-hand side of the road in the direction traveled by the carrier. Therefore, the Engineer shall contact the local carrier or postmaster before installing new mailboxes to verify the direction of travel.
- Mailboxes installed on private drive approaches must always be located on the downstream side of the approach.
- Install angle connection parallel to traffic flow for size 2 mailbox mounted on single posts.
- Size 2 mailbox mounted on multiple support requires 2 each, 3/8" by 3/4" bolts with lock washers and nuts to attach the adaptor plate to mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
- Space multiple support frames a minimum of 4 feet apart. Space single support frames a minimum of 3 ft apart. Do not place more than five No. 1 mailboxes, three No. 2 mailboxes, or any combination of four No. 1-A and No. 2 mailboxes on multiple support frames.



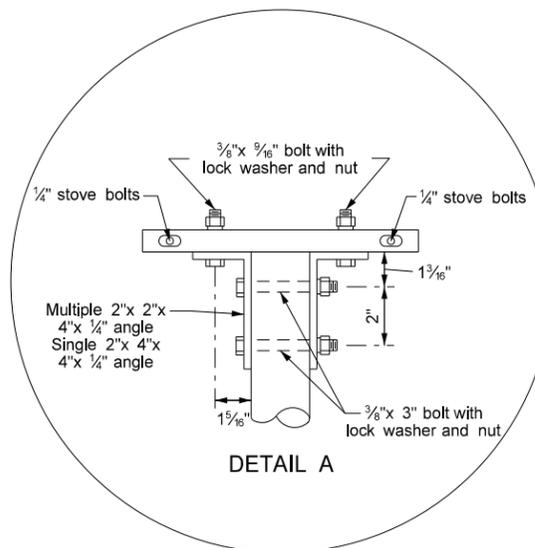
DETAIL B



FRONT

TABLE A

TYPICAL MAILBOX DIMENSIONS			
Size	Width	Height	Length
1	6.5"	8.5"	19"
1A	8"	10.5"	21"
2	11.5"	13.5"	23.5"



DETAIL A

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-2010	
REVISIONS	
DATE	CHANGE

This document was originally issued and sealed by Roger Weigel, Registration Number PE- 2930 , on 9/15/2010 and the original document is stored at the North Dakota Department of Transportation