

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	24661	1	1

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

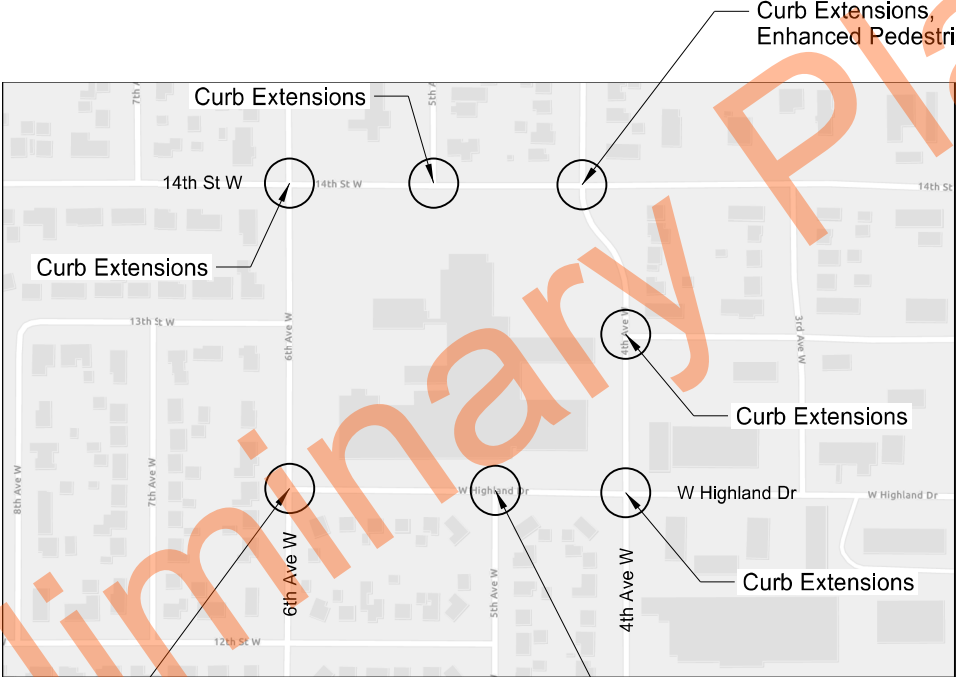
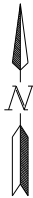
TAU-7-993(068)

Williams County
Williston Middle School Central Campus

Curb Extensions
Enhanced Pedestrian Crossings

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

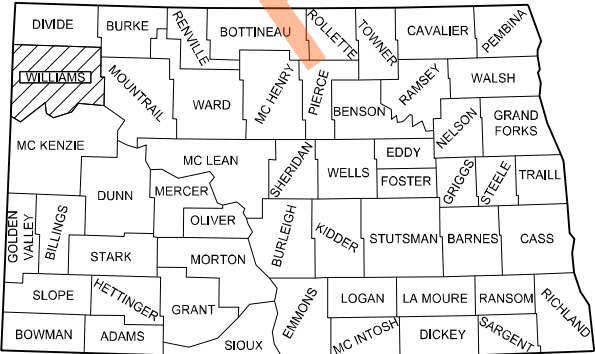
PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
TAU-7-993(068)	N/A	N/A



Note:
All coordinates on this project are Williams County
ground coordinates. They are derived from
NAD83(2011) reference frame; North Dakota North Zone

Curb Extensions,
Enhanced Pedestrian Crossings

Curb Extensions,
Enhanced Pedestrian Crossings



STATE COUNTY MAP

DESIGNER Adrian Potter
DESIGNER Zach Thelen
DESIGNER Trey Haberlock

CITY OF WILLISTON
David Juma 8/25/2026
City Engineer

SRF CONSULTING GROUP INC.

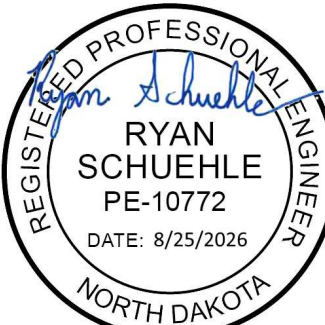


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			D-770-1	Concrete Foundations (Traffic Signals & Highway Lighting)					
			D-772-2	Traffic Signal Standards					
SPECIAL PROVISIONS									
Number	Description								
556(25)	Commercial Grade Hot Mix Asphalt Without Density								



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LEGEND

- Pedestrian Improvements
- Roadway Profile Improvements
- Rectangular Rapid Flashing Beacon

Scope of Work

Enhanced Pedestrian Crossings
Williston Central Campus

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NOTES

GENERAL NOTES

- 105-P01 COMPLETION DATE: The project will be complete by August 11, 2027.
- 202-P01 REMOVAL OF BITUMINOUS SURFACING: Removal of bituminous surfacing quantity includes removal of the existing bituminous at all intersections excluding the intersection of W Highland Dr and 6th Ave W. At the intersection of W Highland Dr and 6th Ave W, removal of bituminous surfacing includes the removal of the asphalt pavement, removal of aggregate base and trim the embankment to grade prior to placing new aggregate base. Include the cost for removal of materials, equipment, labor, embankment trimming and incidentals in the contract price for "Removal of Bituminous Surfacing".
- 203-P01 COMMON EXCVATION-TYPE C: 150 CY of common excavation is included for the grade preparation and shaping of subgrade of the bump-outs, sidewalk, and curb ramp locations.
- 230-P01 SUBGRADE PREPARATION TYPE-A-12IN: Perform 12" subgrade preparation compacted to 95% plus 2 minus 3 of an ASTM 1557 modified proctor.
- 430-P01 COMMERCIAL GRADE HOT MIX ASPHALT: Tack all curb faces prior to paving and maintain a curb reveal of up to ¼".
- 704-P01 TRAFFIC CONTROL DEVICES: The Traffic Control Devices List has been developed using the following Standard Drawing layouts:

D-704-22 Type K, Trucks Entering Roadway
D-704-22 Type L, Trucks Crossing Roadway
D-704-25 Type V, W and X, Lane Closures on urban streets

Traffic control device quantities are provided for each layout to have work done on 3 intersections.

Additional traffic control devices are included for the following:

 - For the reconstruction at the intersection of 6th Ave W and W Highland Dr road/sidewalk closure signage, Type III barricades, and pedestrian barricades are included.
 - Where road width allows during lane closures, additional tubular markers, delineator drums, and traffic movement arrows to be mounted on delineator drums are included to delineate the centerline to accommodate short term head-to-head traffic in lieu of flagging.

Approval must be obtained from Engineer if more than 3 intersections are to be worked on simultaneously. If approved, the City of Williston will pay for all necessary deployed devices to accommodate additional setups of the listed layouts.

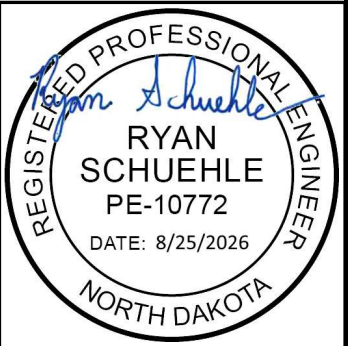
- 722-P01 ADJUST GATE VALVE: Gate valves affected by project improvements will be adjusted by the City of Williston. Contact the City of Williston two (2) working days prior to required revisions to gate valves. Affected gate valves are shown in Section 90; verify all locations in the field.

Contact:
Wayne Wiedrich
Phone: 701-577-6368
Email: waynew@ci.williston.nd.us
- 722-P02 ADJUST MANHOLE: Remove existing casting and install new adjustment rings and casting. Provide Neenah Foundry No. R1733 manhole casting and Neenah Foundry Type C lid with two open pick holes, EJ Model 1205 solid assembly with type 2 open pick holes lid or approved equal. Include all materials, equipment, labor, and incidentals to remove the existing casting, replace adjustment rings, and place manhole casting to finished sidewalk elevation in the contact unit price for "Adjust Manhole".
- 762-P01 OBLITERATION OF PAVEMENT MARKING: Remove existing pedestrian crossing pavement markings at all crosswalk locations prior to placement of proposed pavement markings. Include the cost for materials, equipment, labor, and incidentals in the contract price for "PVMT MK Painted 6IN Line".
- 772-P01 FLASHING BEACON-POST MOUNTED-SCHOOL: Use a Rectangular Rapid Flashing Beacon (RRFB) for the flashing beacon. Meet the conditions set forth by the FHWA for interim approval for optional use of RRFBs as well as all current FHWA interpretations for the RRFB. Include two fluorescent yellow-green S1-1 signs and two W16-7P plaques mounted back to back for each direction of travel and a single-sided LED-array-based light source for each RRFB assembly. Mount flashing beacons and signs on a Type II signal standard as shown in the detail.

Program the RRFB to normally be dark, with operations initiated only upon pedestrian actuation, and operations ceasing at a predetermined, but an adjustable time of at least 22 seconds after the pedestrian actuation. All RRFBs associated with a given crosswalk will, when activated, simultaneously commence operation of their alternating rapid flashing indications and cease operation simultaneously. Assemblies will flash according to MUTCD specifications.

Install solar-powered/wireless flashing beacons and control enclosures as shown on the plans. Use one control enclosure to power each RRFB pedestal assembly or as required by the manufacturer.

Include two SAE J595 class 1 certified, rectangular array, yellow LED light sources with side-mounted LEDs for



NOTES

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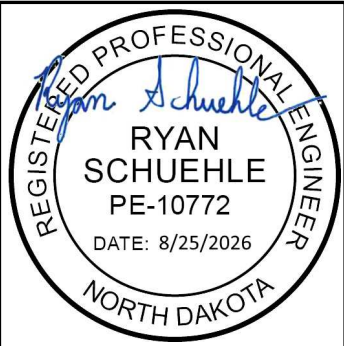
indication to pedestrians for each beacon light bar. The LEDs will not allow for dimming.

Include wires only for the pedestrian pushbuttons - the rest of the system must operate wirelessly. Provide pedestrian pushbutton cable as required by the manufacturer; consider this as incidental. Mount equipment as recommended by the manufacturer. Ensure all enclosures and equipment meet the standards for being considered as outdoor rated.

Measure and pay for each flashing beacon assembly as individual systems (four total). Include Type II signal standards and foundations, flasher controller cabinets, solar panels, LED flashers, pedestrian pushbuttons, signs, and any other material and labor needed to complete the RRFB installations. Include all costs for labor, equipment, and materials associated with supplying and installing functional flashing beacon assemblies in the unit bid price for "FLASHING BEACON-POST MOUNTED".

970-P01 LANDSCAPE PERPARATION: Grading will be required adjacent to the locations designated for sidewalk and curb & gutter replacement. Blend the existing topsoil adjacent to the sidewalk and or curb & gutter to eliminate any steep slopes or vertical edges. Any excess topsoil will become property of the Contractor and must be removed from the project site. Any needed topsoil shall be imported to the project if necessary.

Preliminary Plans



Estimated Quantities						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	TAU-7-993(068)	8	1
SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline	TOTAL				
103	0100	CONTRACT BOND	L SUM	1	1				
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	556	556				
202	0130	REMOVAL OF CURB & GUTTER	LF	1287	1287				
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	1751	1751				
203	0103	COMMON EXCAVATION-TYPE C	CY	150	150				
216	0100	WATER	M GAL	10	10				
230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	2.1	2.1				
252	0100	SOD	SY	82	82				
302	0120	AGGREGATE BASE COURSE CL 5	TON	580	580				
411	0114	MILLING PAVEMENT SURFACE - 2 INCH	SY	75	75				
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	296	296				
702	0100	MOBILIZATION	L SUM	1	1				
704	0100	FLAGGING	MHR	1400	1400				
704	1000	TRAFFIC CONTROL SIGNS	UNIT	1289	1289				
704	1052	TYPE III BARRICADE	EA	6	6				
704	1054	SIDEWALK BARRICADE	EA	12	12				
704	1060	DELINEATOR DRUMS	EA	6	6				
704	1067	TUBULAR MARKERS	EA	21	21				
708	1540	INLET PROTECTION-SPECIAL	EA	16	16				
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	16	16				
709	0161	GEOSYNTHETIC MATERIAL TYPE S1	SY	914	914				
722	6200	ADJUST MANHOLE	EA	1	1				
748	0100	CURB & GUTTER	LF	1456	1456				
750	0140	SIDEWALK CONCRETE 6IN	SY	917	917				
750	2115	DETECTABLE WARNING PANELS	SF	417	417				
754	0170	FLEXIBLE DELINEATORS	EA	121	121				
754	0592	RESET SIGN PANEL	EA	10	10				
754	0593	RESET SIGN SUPPORT	EA	10	10				
762	1106	PVMT MK PAINTED 6IN LINE	LF	1166	1166				
762	1124	PVMT MK PAINTED 24IN LINE	LF	234	234				
772	2120	FLASHING BEACON-POST MOUNTED-SCHOOL	EA	8	8				
970	0008	LANDSCAPE PREPARATION	SY	82	82				

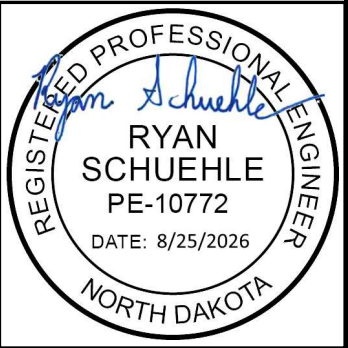
BASIS OF ESTIMATE

Basis of Estimate
Commercial Grade Hot Mix Asphalt @ 2 Ton/CY
Aggregate @ 1.875 Ton/CY
Tack Coat @ 0.05 GAL/SY

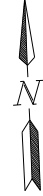
Water		
Material	Basis	Quantity
Aggregates	20 Gal/Ton	8
Watering	5.58 Gal/SY/Week	2

Spec	Code	Bid Item	Quantity	Unit
216	0100	Water	10	MGal

Preliminary Plans



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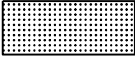


14th St W

14th St W

6th Ave W

Legend



: Detectable Warning Panel



: Pedestrian Access Route



: Transitional tie-in to nearest joint, if needed.



: 4' long x width of Existing Pedestrian Facility (EPF) or
4' minimum Clear space outside the traffic lanes of travel
1.5% preferred cross slope
2% maximum cross slope
4.7% preferred running and counter slope
5% maximum running and counter slope



: Turning Space
Use at top of ramp or when changing directions
1.5% preferred slope (2% maximum) all directions.



: Preferred Ramp Grade = 5% to 7.5%.
Maximum Constructed Grade = 8.3%.
Preferred Cross Slope = 1.5%.
Maximum Constructed Slope = 2%.



: 1.5% preferred cross slope
2% maximum constructed cross slope
running slope consistent with the EPF
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: 10:1 maximum constructed slope



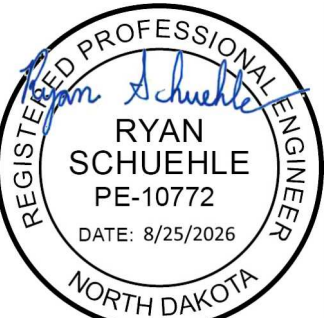
: 4:1 maximum constructed slope

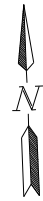
0", 3", or 6" : Curb Height.

ADA Ramp Detail Sheets

Enhanced Pedestrian Crossings
Williston Central Campus

14th St W & 6th Ave W
South Quadrant



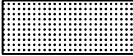
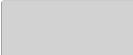
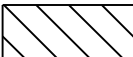


5th Ave W

14th St W

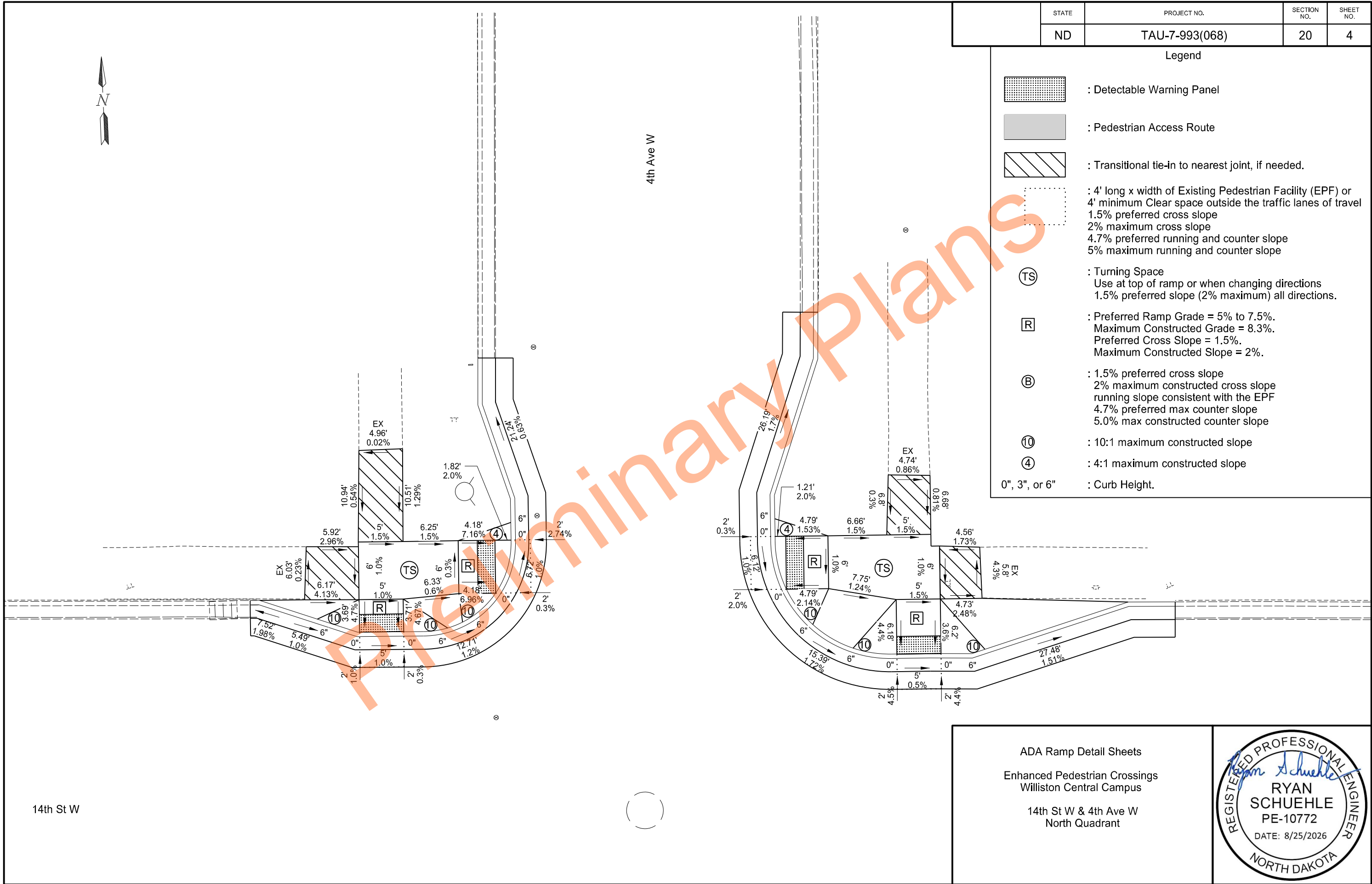
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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Legend

-  : Detectable Warning Panel
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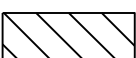
ADA Ramp Detail Sheets
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W





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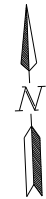
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ADA Ramp Detail Sheets
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 4th Ave W
North Quadrant

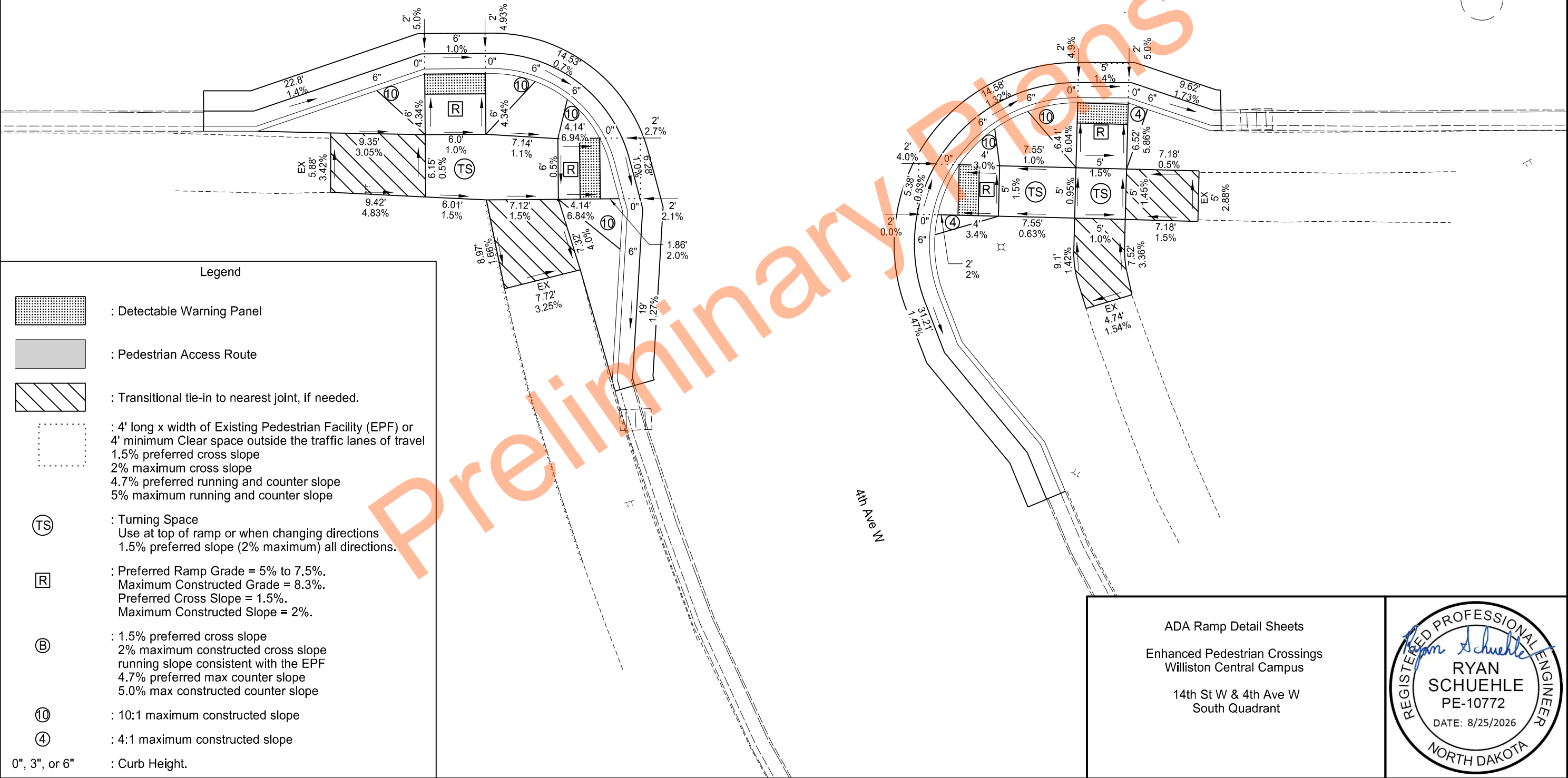


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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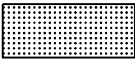


14th St W

14th St W



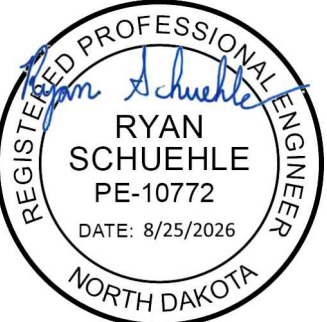
Legend

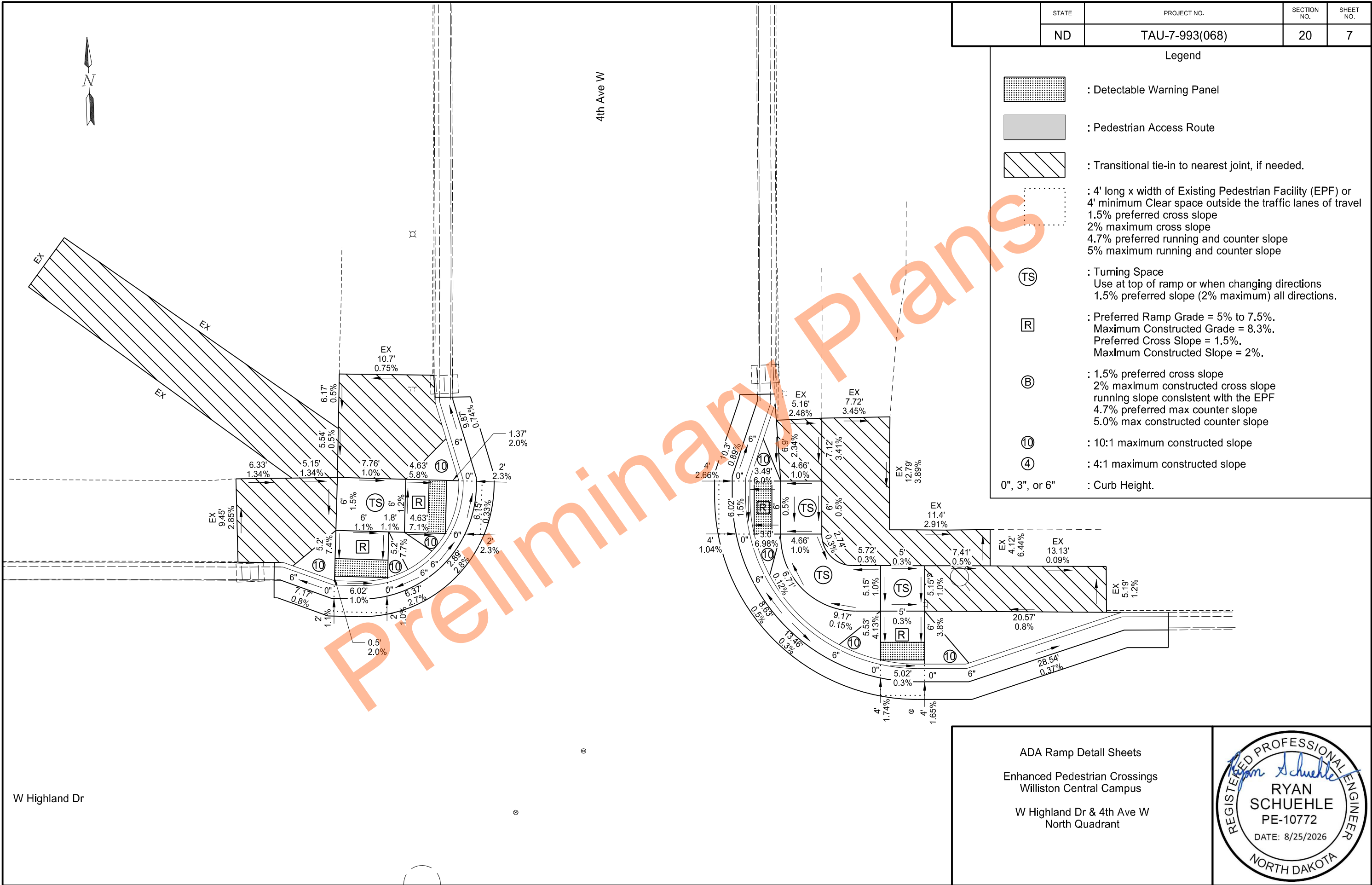
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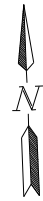
ADA Ramp Detail Sheets

Enhanced Pedestrian Crossings
Williston Central Campus

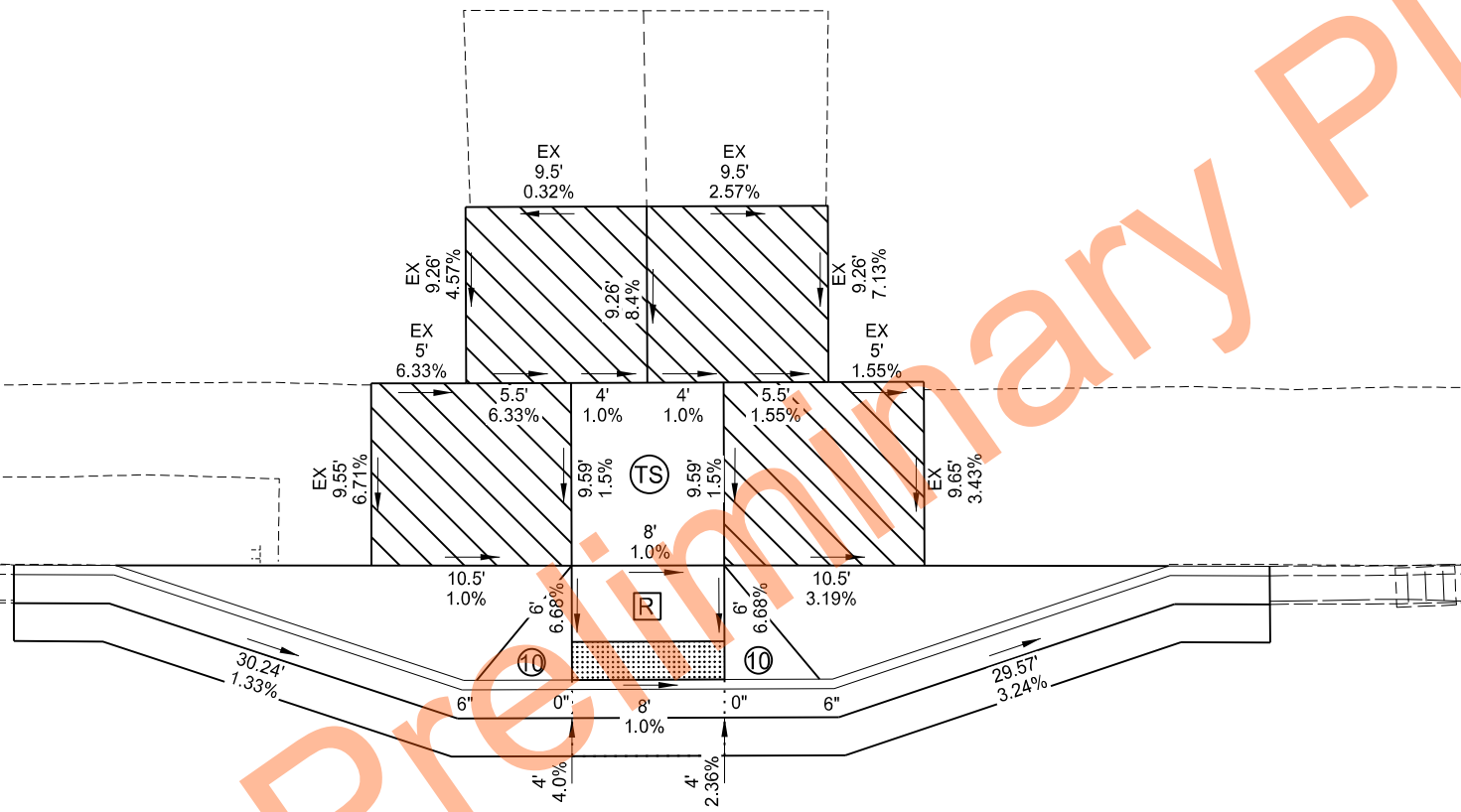
14th St W & 4th Ave W
South Quadrant



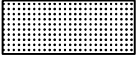




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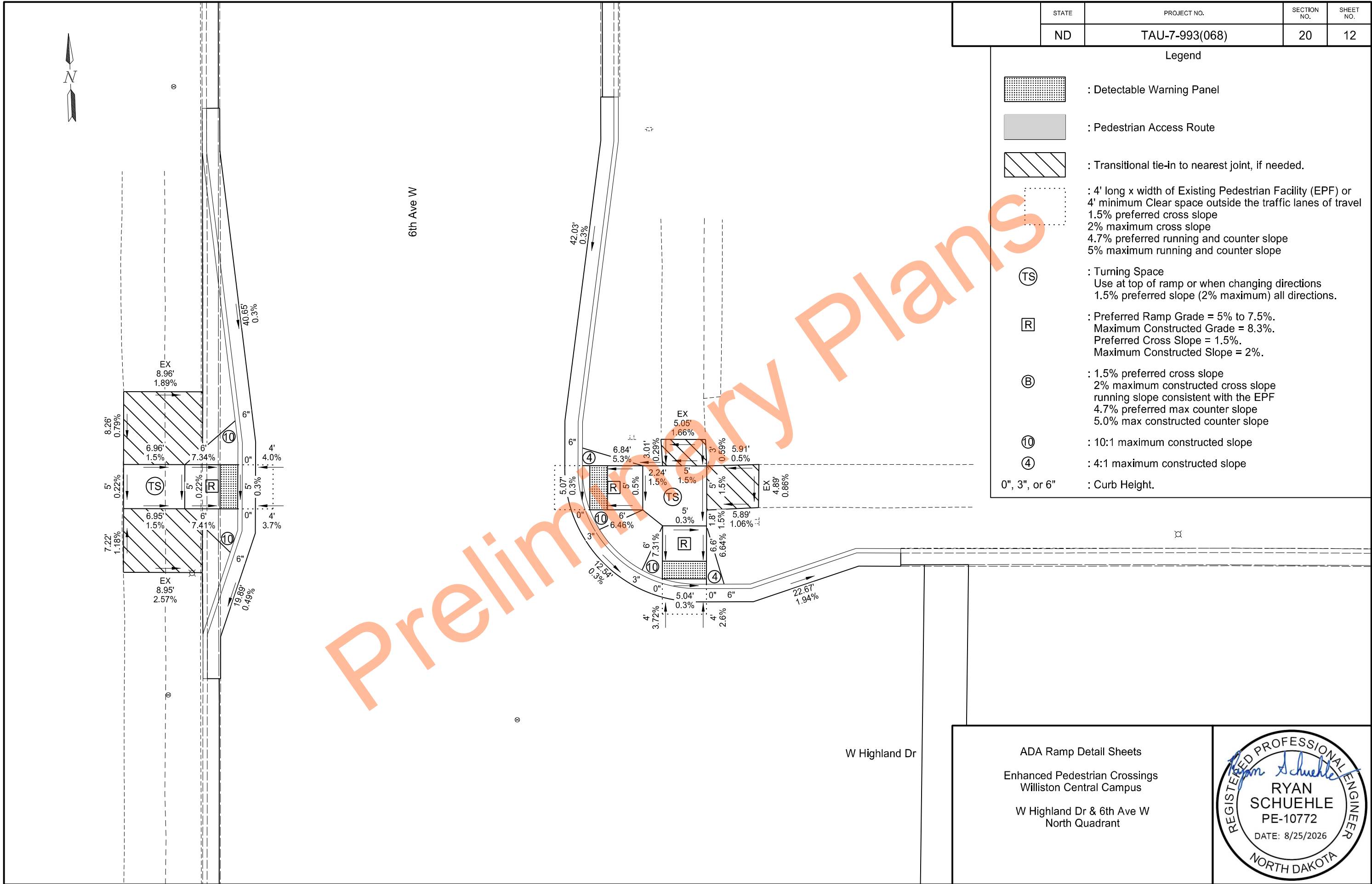
Legend

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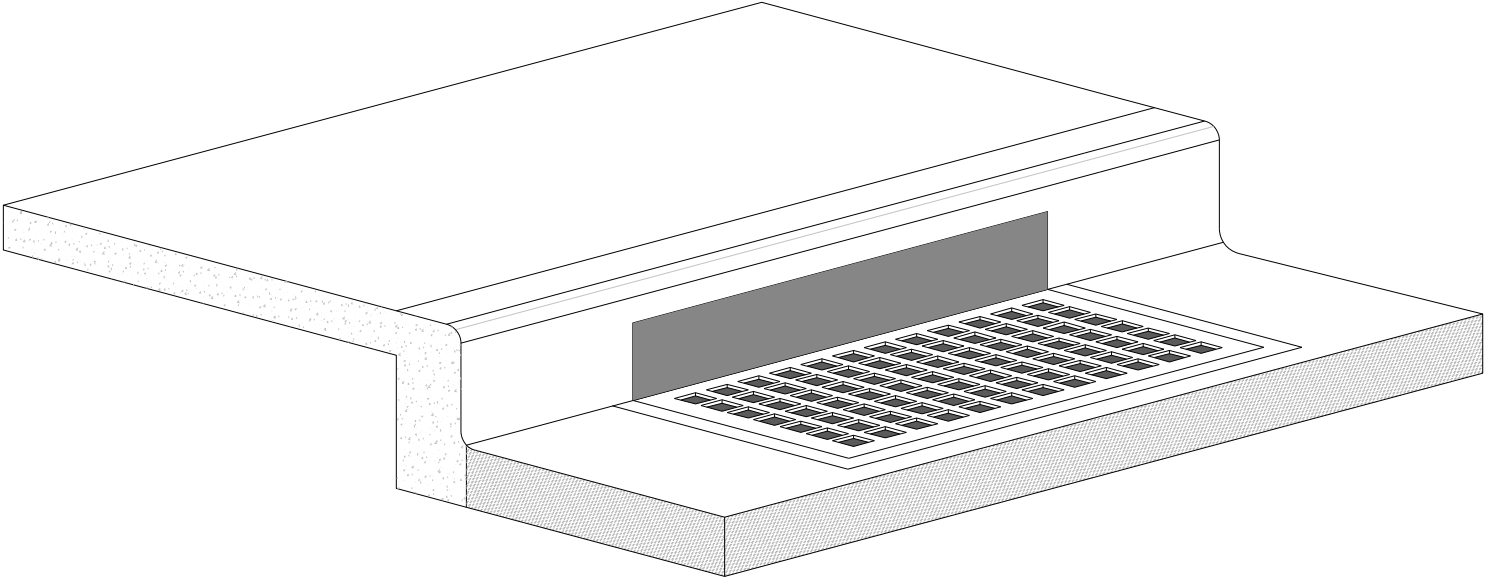
W Highland Dr

ADA Ramp Detail Sheets
Enhanced Pedestrian Crossings
Williston Central Campus
W Highland Dr & 5th Ave W
North Quadrant





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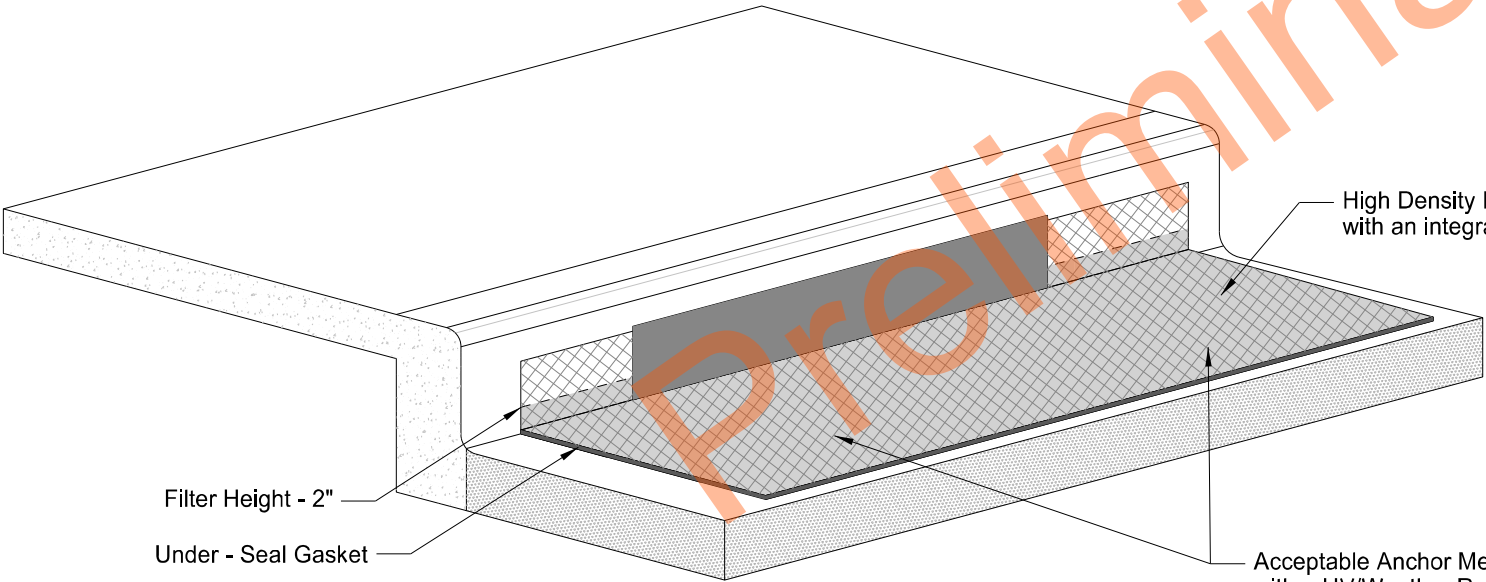
Inlet Protection Device

Installation Notes:

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

General Notes:

1. Remove material that falls into the inlet during maintenance or removal of the device.



High Density Polyethylene (HDPE) high flow jacket filter (8,000 opening per SY) with an integrated 425 um (micron meter) fine filter particle mesh

Filter Height - 2"

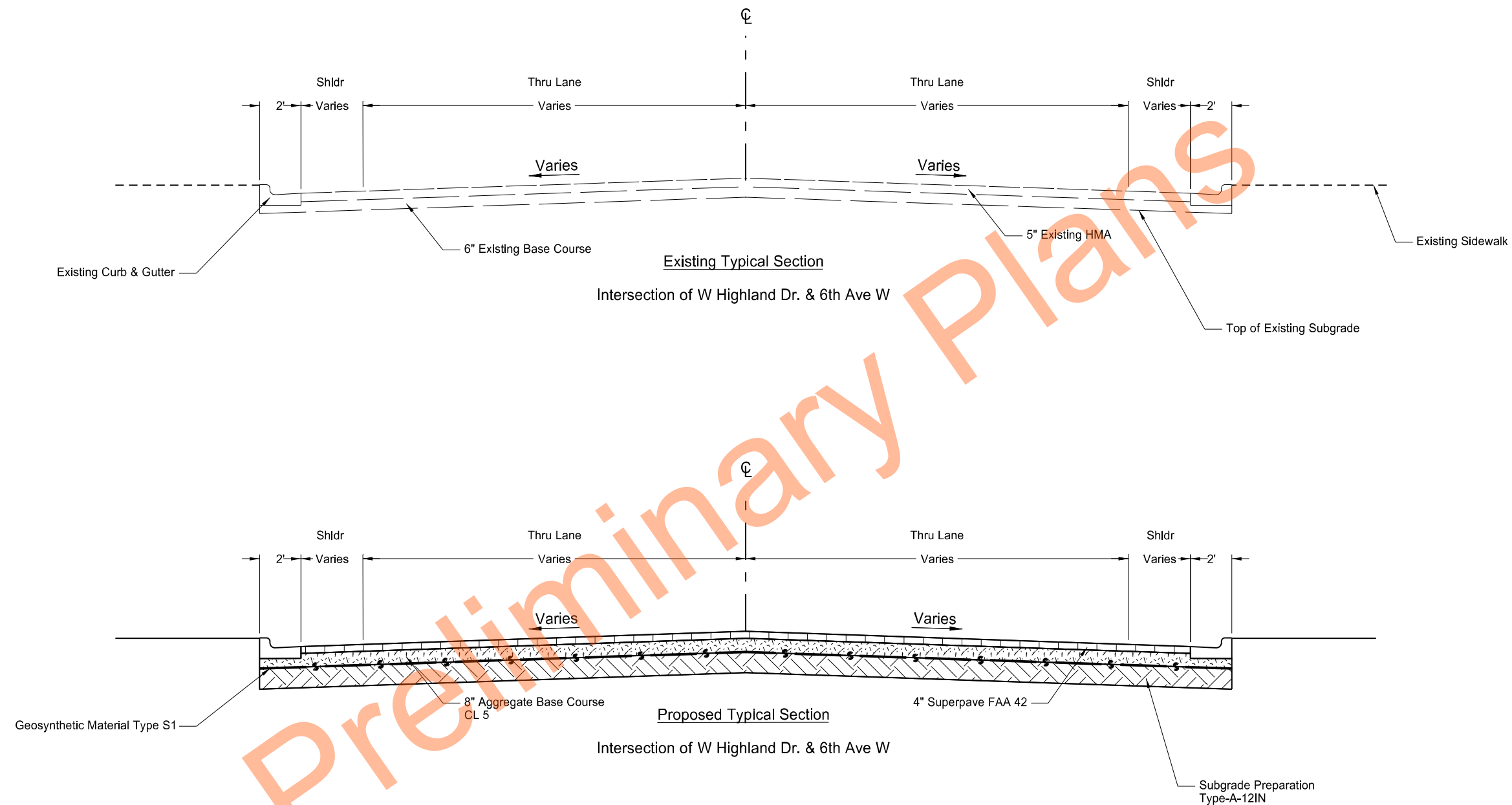
Under - Seal Gasket

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

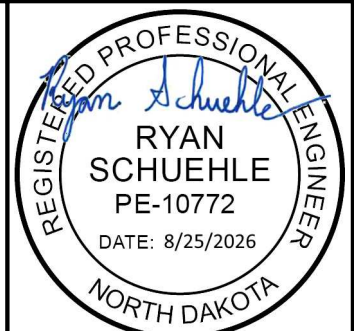
Inlet Protection Device
Enhanced Pedestrian Crossings
Williston Central Campus

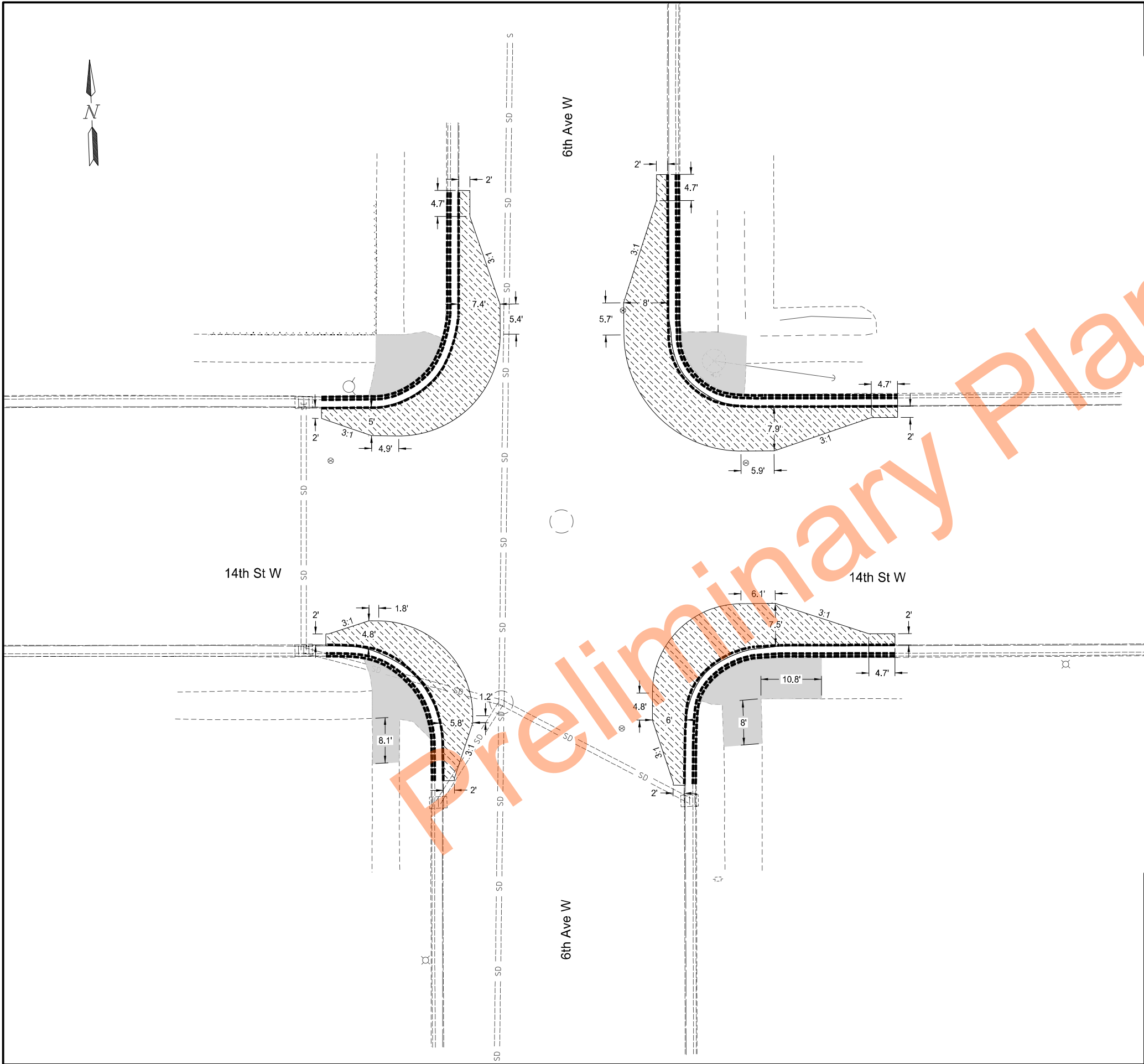


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Typical Sections
Enhanced Pedestrian Crossings
Williston Central Campus
W Highland Dr & 6th Ave W





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	40	1
Spec	Code	Item Description		QTY	Unit
202	0114	Removal of Concrete Pavement			
		Southwest Quadrant		13	SY
		Northwest Quadrant		12	SY
		Southeast Quadrant		22	SY
		Northeast Quadrant		12	SY
202	0130	Removal of Curb & Gutter			
		Southwest Quadrant		36	LF
		Northwest Quadrant		55	LF
		Southeast Quadrant		55	LF
		Northeast Quadrant		75	LF
202	0132	Removal of Bituminous Surfacing			
		Southwest Quadrant		26	SY
		Northwest Quadrant		41	SY
		Southeast Quadrant		42	SY
		Northeast Quadrant		58	SY

LEGEND

Removal of Bituminous Surfacing

Removal of Concrete Pavement

Removal of Curb & Gutter

Milling Pavement Surface - 2 Inch

Removal Layouts

Enhanced Pedestrian Crossings

Williston Central Campus

14th St W & 6th Ave W

REGISTERED PROFESSIONAL ENGINEER

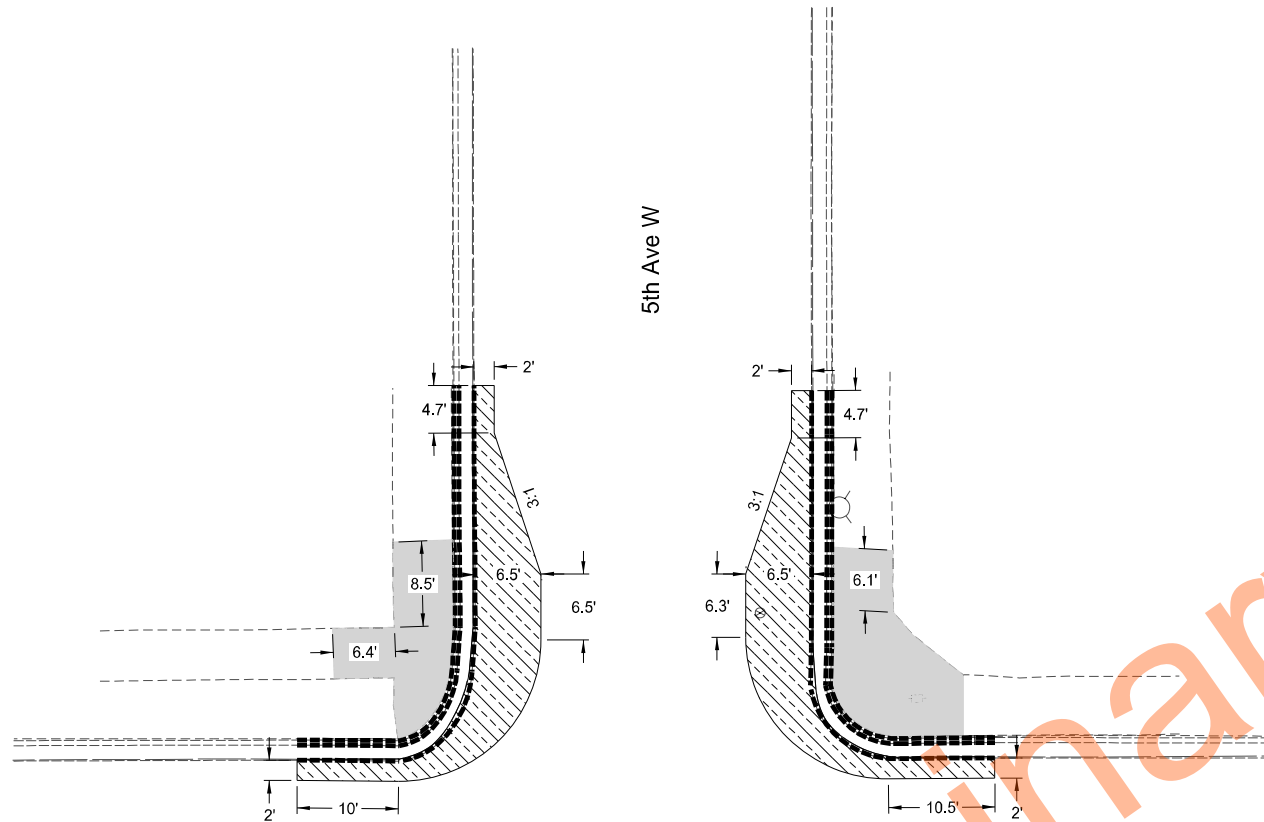
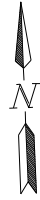
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



5th Ave W

14th St W

STATE
ND

PROJECT NO.
TAU-7-993(068)

SECTION NO.
40

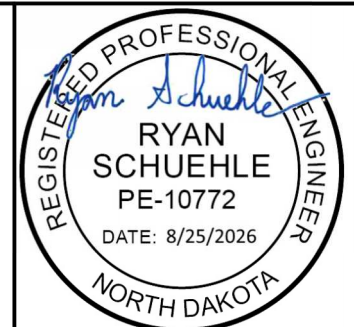
SHEET NO.
2

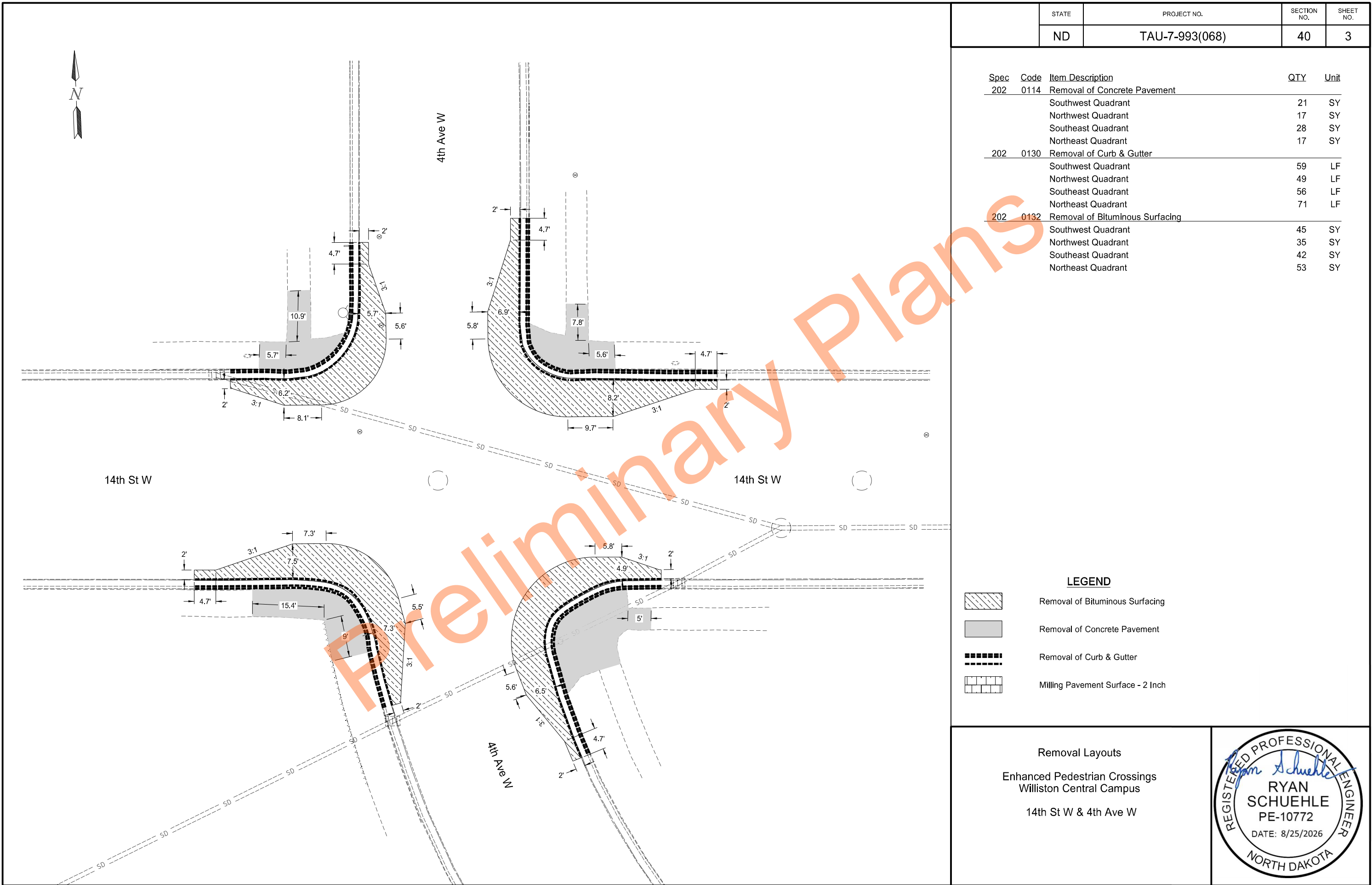
Spec	Code	Item Description	QTY	Unit
202	0114	Removal of Concrete Pavement		
		Northwest Quadrant	15	SY
		Northeast Quadrant	19	SY
202	0130	Removal of Curb & Gutter		
		Northwest Quadrant	49	LF
		Northeast Quadrant	49	LF
202	0132	Removal of Bituminous Surfacing		
		Northwest Quadrant	26	SY
		Northeast Quadrant	24	SY

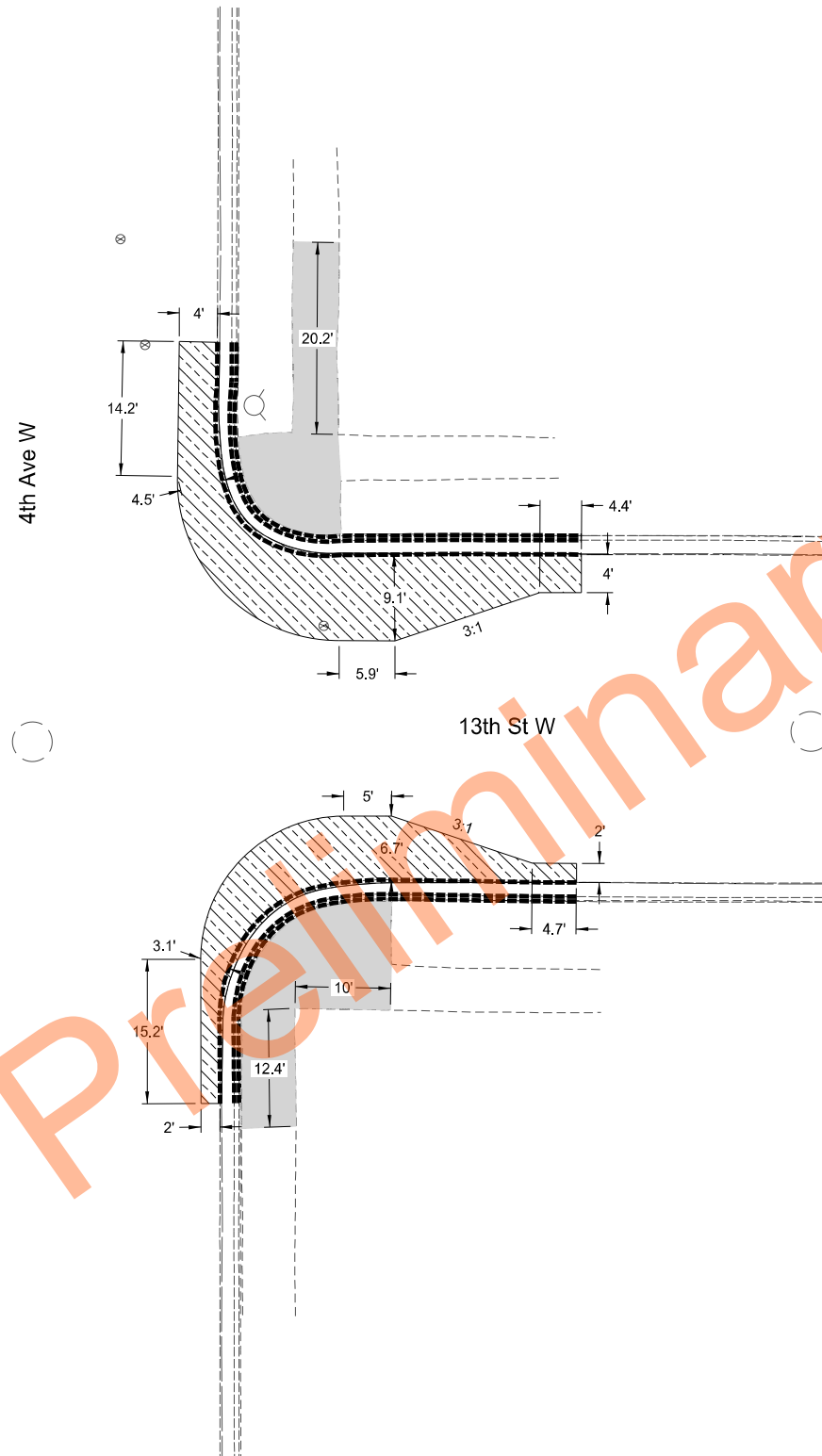
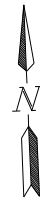
LEGEND

	Removal of Bituminous Surfacing
	Removal of Concrete Pavement
	Removal of Curb & Gutter
	Milling Pavement Surface - 2 Inch

Removal Layouts
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W





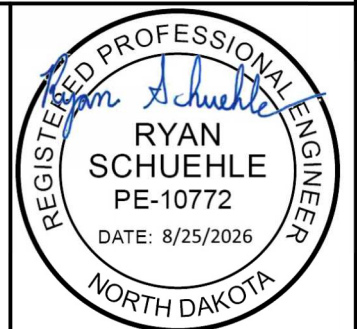


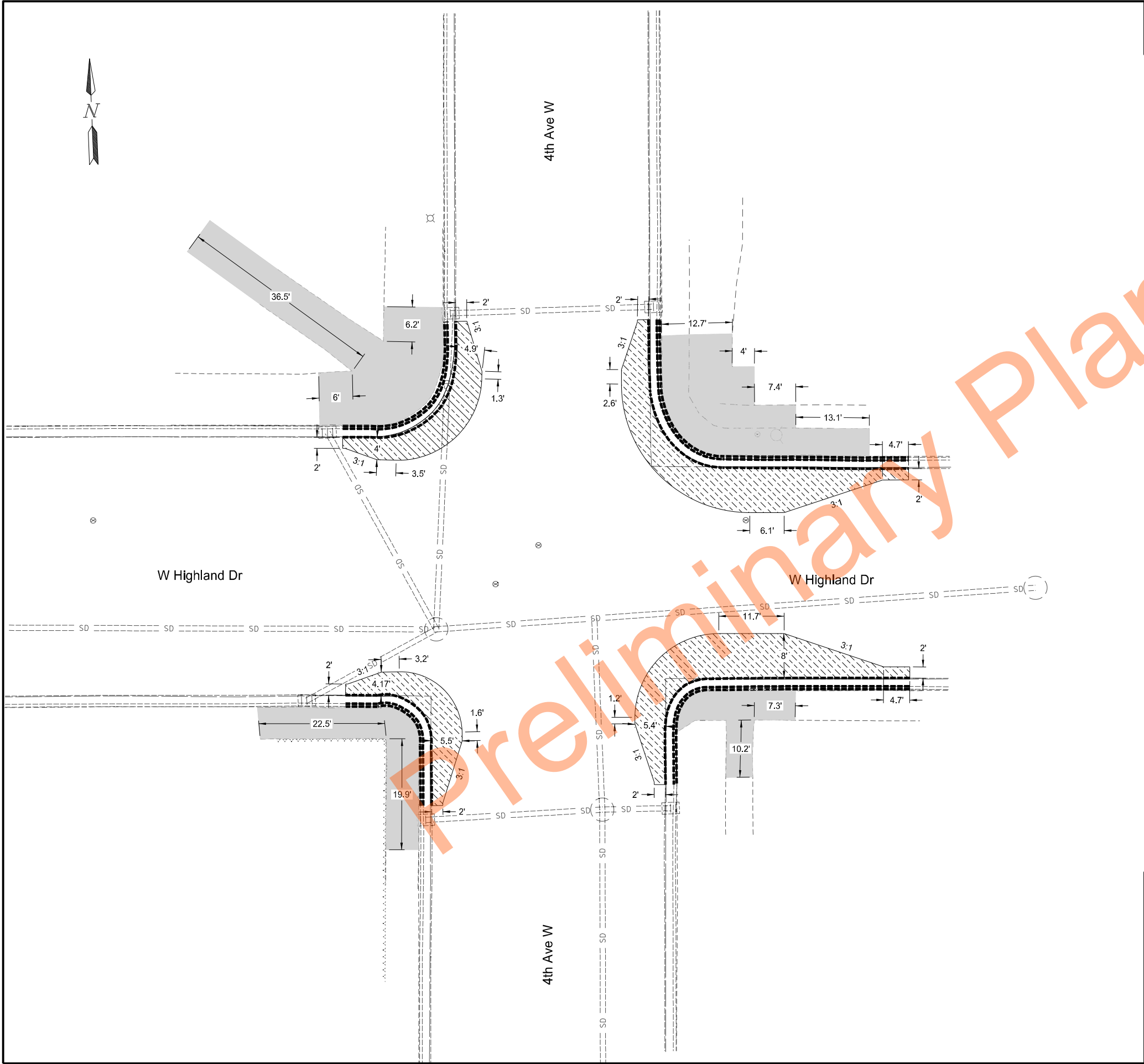
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	40	4

Spec	Code	Item Description	QTY	Unit
202	0114	Removal of Concrete Pavement		
		Southeast Quadrant	25	SY
		Northeast Quadrant	22	SY
202	0130	Removal of Curb & Gutter		
		Southeast Quadrant	53	LF
		Northeast Quadrant	54	LF
202	0132	Removal of Bituminous Surfacing		
		Southeast Quadrant	30	SY
		Northeast Quadrant	44	SY

LEGEND	
	Removal of Bituminous Surfacing
	Removal of Concrete Pavement
	Removal of Curb & Gutter
	Milling Pavement Surface - 2 Inch

Removal Layouts
Enhanced Pedestrian Crossings
Williston Central Campus
13th St W & 4th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	40	5
Spec	Code	Item Description	QTY	Unit
202	0114	Removal of Concrete Pavement		
		Southwest Quadrant	31	SY
		Northwest Quadrant	65	SY
		Southeast Quadrant	18	SY
		Northeast Quadrant	49	SY
202	0130	Removal of Curb & Gutter		
		Southwest Quadrant	30	LF
		Northwest Quadrant	33	LF
		Southeast Quadrant	57	LF
		Northeast Quadrant	65	LF
202	0132	Removal of Bituminous Surfacing		
		Southwest Quadrant	18	SY
		Northwest Quadrant	21	SY
		Southeast Quadrant	41	SY
		Northeast Quadrant	44	SY

LEGEND

Removal of Bituminous Surfacing

Removal of Concrete Pavement

Removal of Curb & Gutter

Milling Pavement Surface - 2 Inch

Removal Layouts

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 4th Ave W

REGISTERED PROFESSIONAL ENGINEER

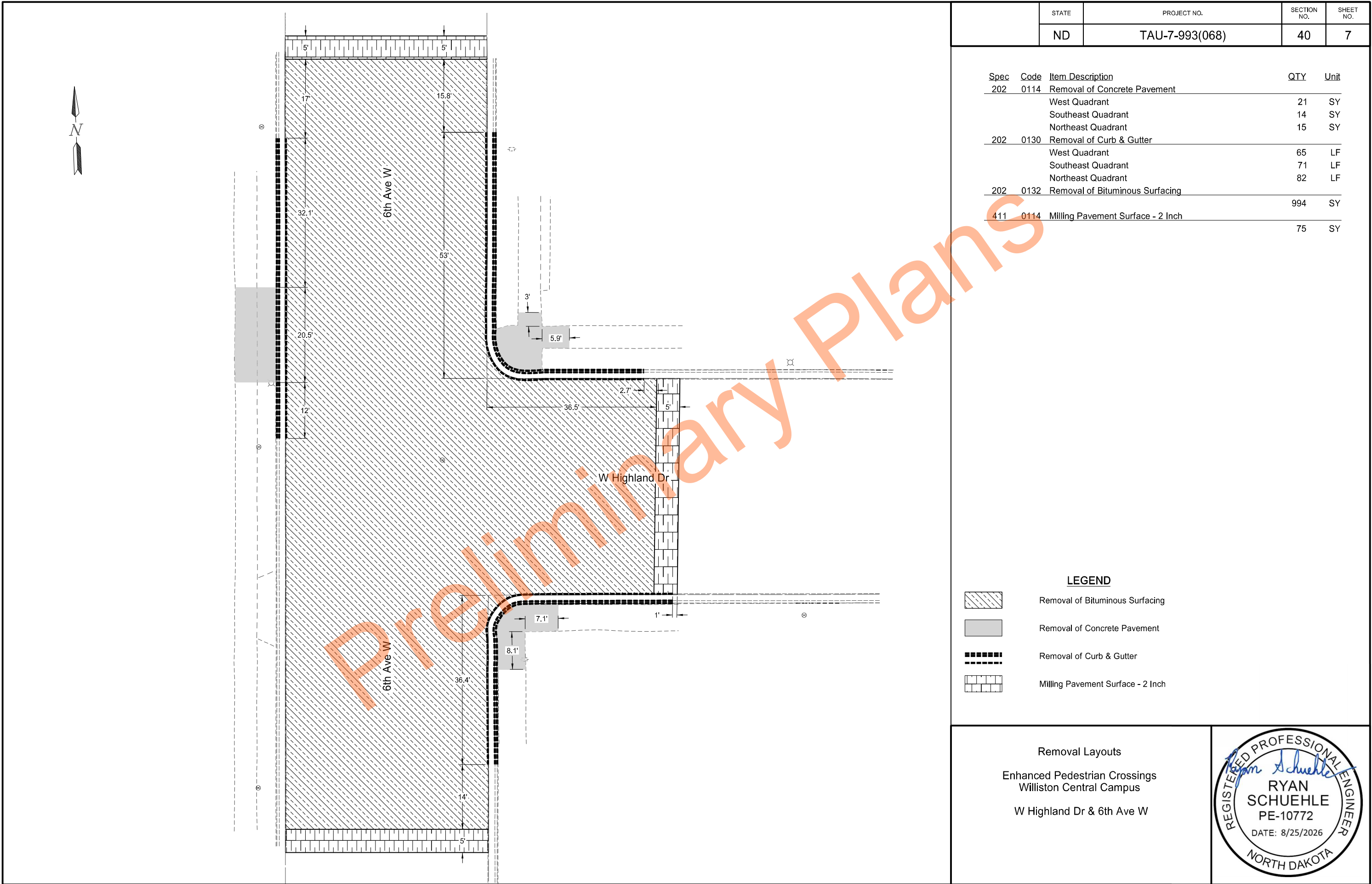
Ryan Schuehle

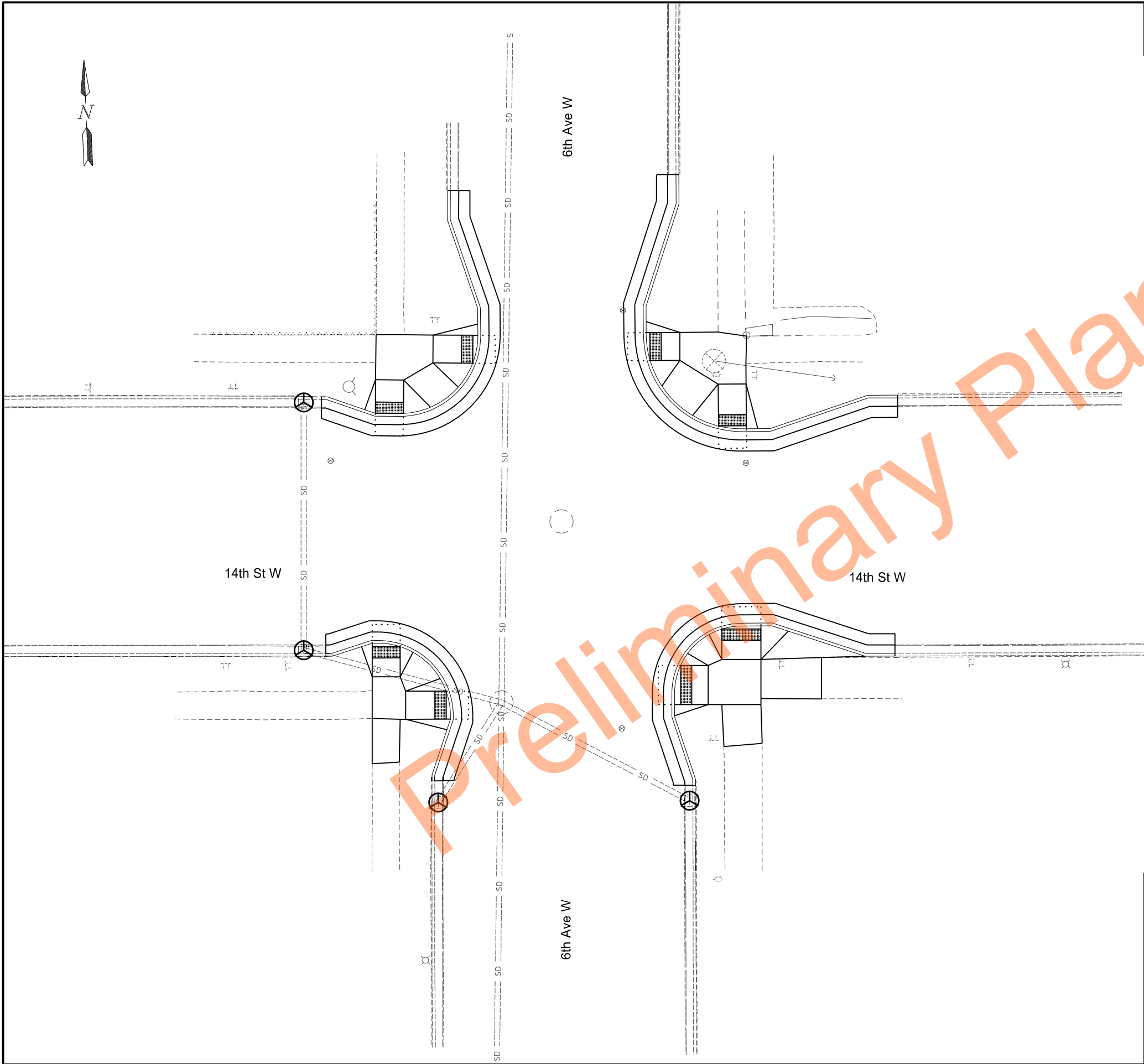
RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA





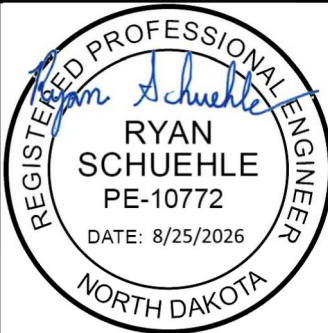
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	ND	TAU-7-993(068)	76	1

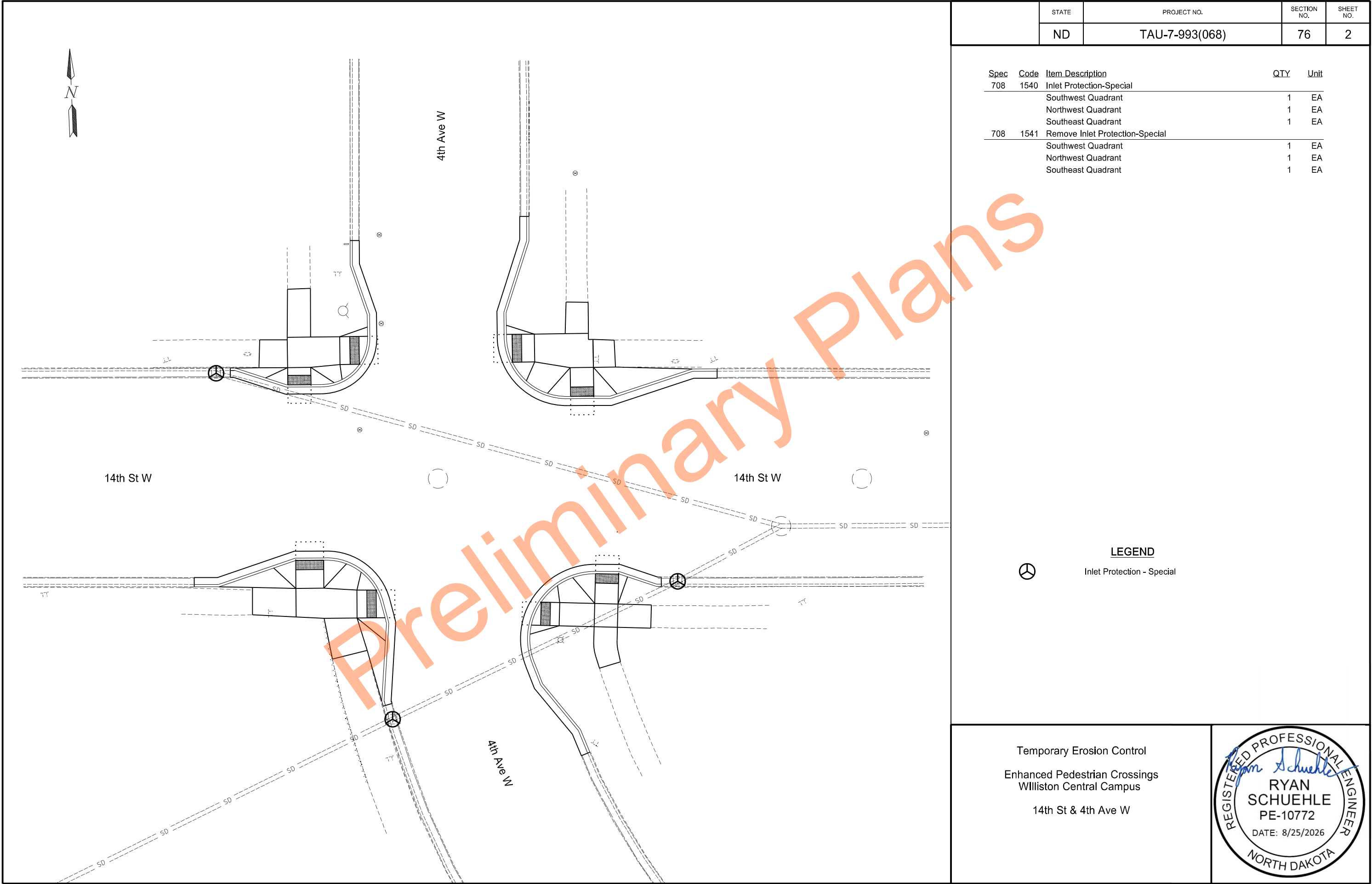
Spec	Code	Item Description	QTY	Unit
708	1540	Inlet Protection-Special		
		Southwest Quadrant	2	EA
		Northwest Quadrant	1	EA
		Southeast Quadrant	1	EA
708	1541	Remove Inlet Protection-Special		
		Southwest Quadrant	2	EA
		Northwest Quadrant	1	EA
		Southeast Quadrant	1	EA

LEGEND

 Inlet Protection - Special

Temporary Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 6th Ave W





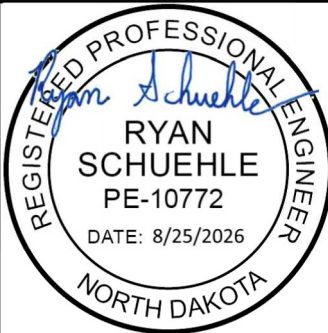
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	ND	TAU-7-993(068)	76	2

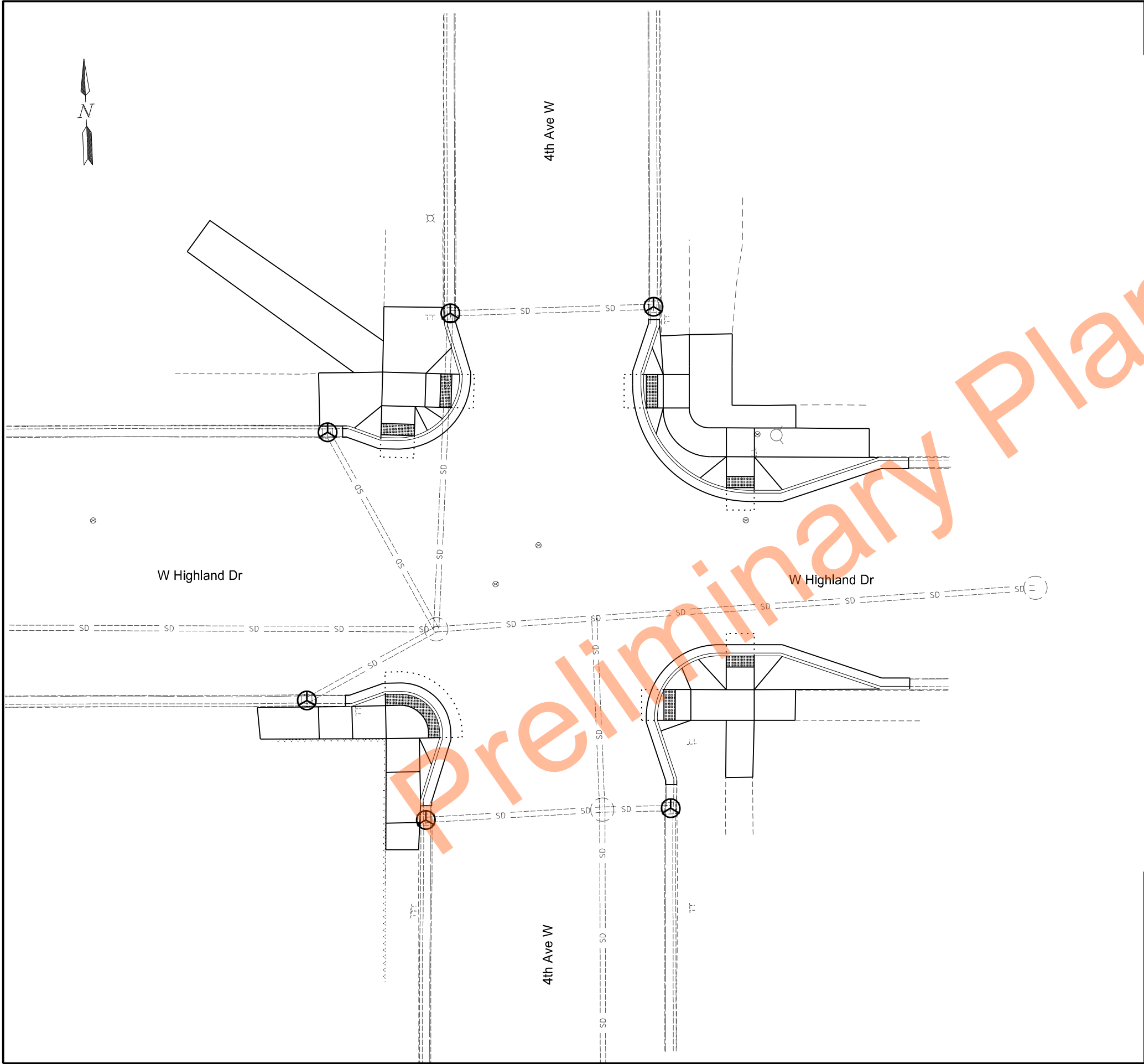
Spec	Code	Item Description	QTY	Unit
708	1540	Inlet Protection-Special		
		Southwest Quadrant	1	EA
		Northwest Quadrant	1	EA
		Southeast Quadrant	1	EA
708	1541	Remove Inlet Protection-Special		
		Southwest Quadrant	1	EA
		Northwest Quadrant	1	EA
		Southeast Quadrant	1	EA

LEGEND

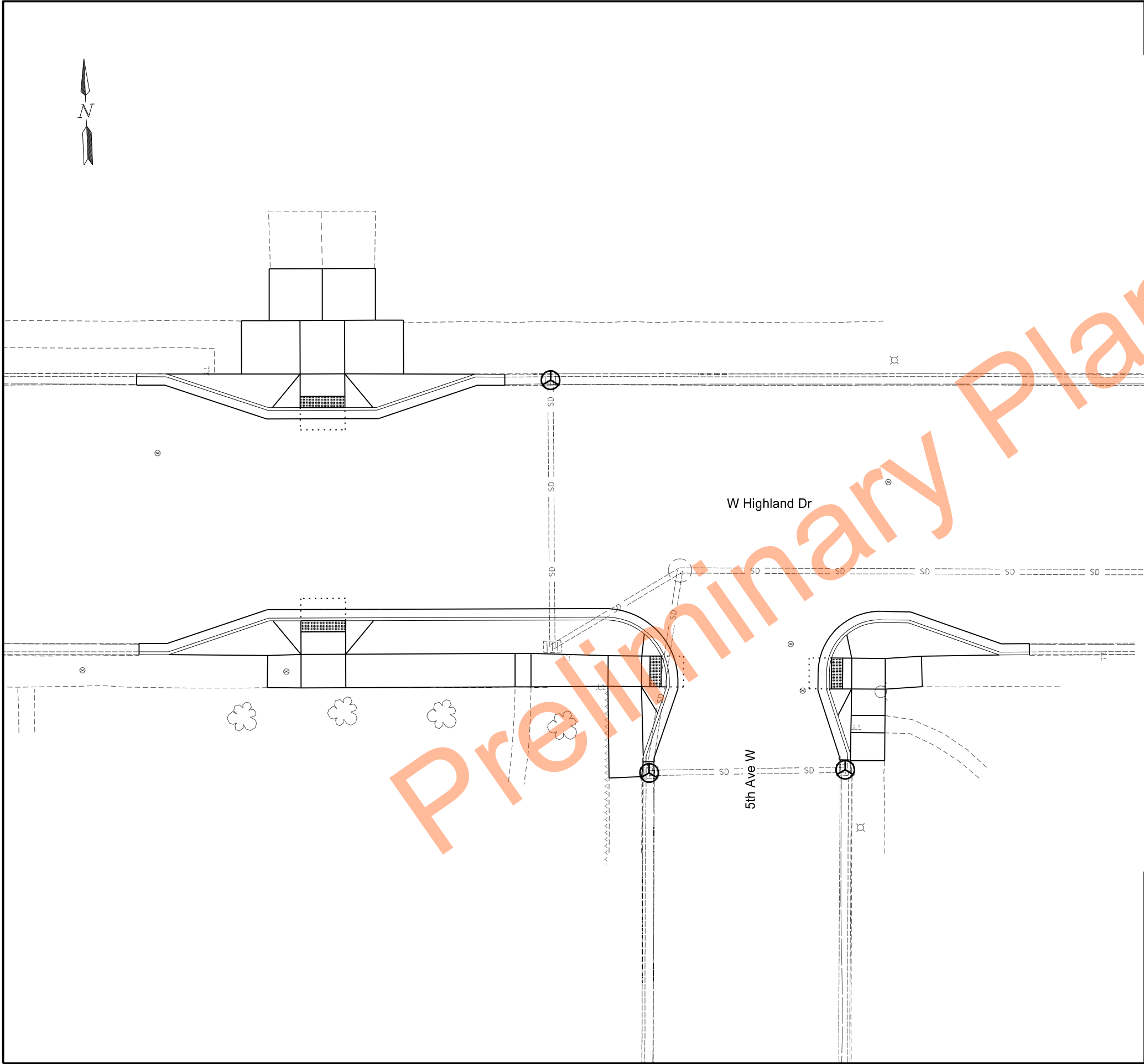
 Inlet Protection - Special

Temporary Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
14th St & 4th Ave W





		STATE	PROJECT NO.		SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)		76	3
Spec	Code	Item Description			QTY	Unit
708	1540	Inlet Protection-Special				
		Southwest Quadrant			2	EA
		Northwest Quadrant			2	EA
		Southeast Quadrant			1	EA
		Northeast Quadrant			1	EA
708	1541	Remove Inlet Protection-Special				
		Southwest Quadrant			2	EA
		Northwest Quadrant			2	EA
		Southeast Quadrant			1	EA
		Northeast Quadrant			1	EA
 LEGEND Inlet Protection - Special						
Temporary Erosion Control Enhanced Pedestrian Crossings Williston Central Campus W Highland Dr & 4th Ave W					REGISTERED PROFESSIONAL ENGINEER  RYAN SCHUEHLE PE-10772 DATE: 8/25/2026 NORTH DAKOTA	



STATE		PROJECT NO.	SECTION NO.	SHEET NO.
ND		TAU-7-993(068)	76	4

Spec	Code	Item Description	QTY	Unit
708	1540	Inlet Protection-Special		
		Southwest Quadrant	1	EA
		North Quadrant	1	EA
		Southeast Quadrant	1	EA
708	1541	Remove Inlet Protection-Special		
		Southwest Quadrant	1	EA
		North Quadrant	1	EA
		Southeast Quadrant	1	EA

LEGEND

⊗ Inlet Protection - Special

Temporary Erosion Control

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 5th Ave W

REGISTERED PROFESSIONAL ENGINEER

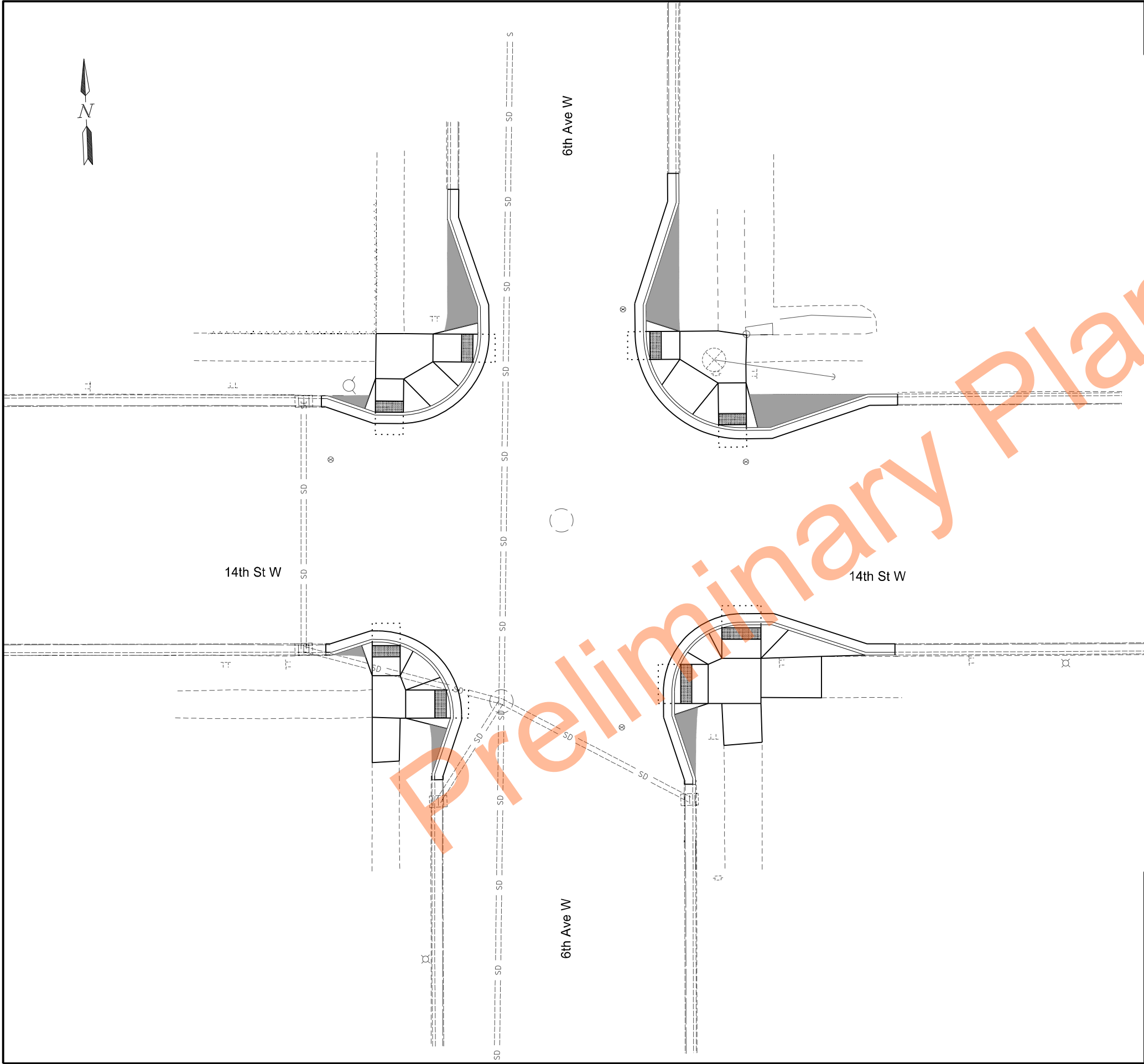
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



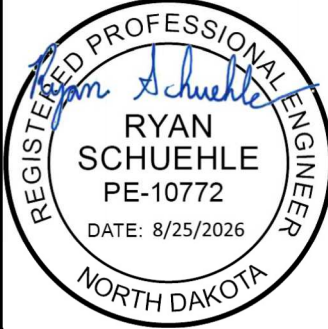
STATE		PROJECT NO.	SECTION NO.	SHEET NO.
ND		TAU-7-993(068)	77	1

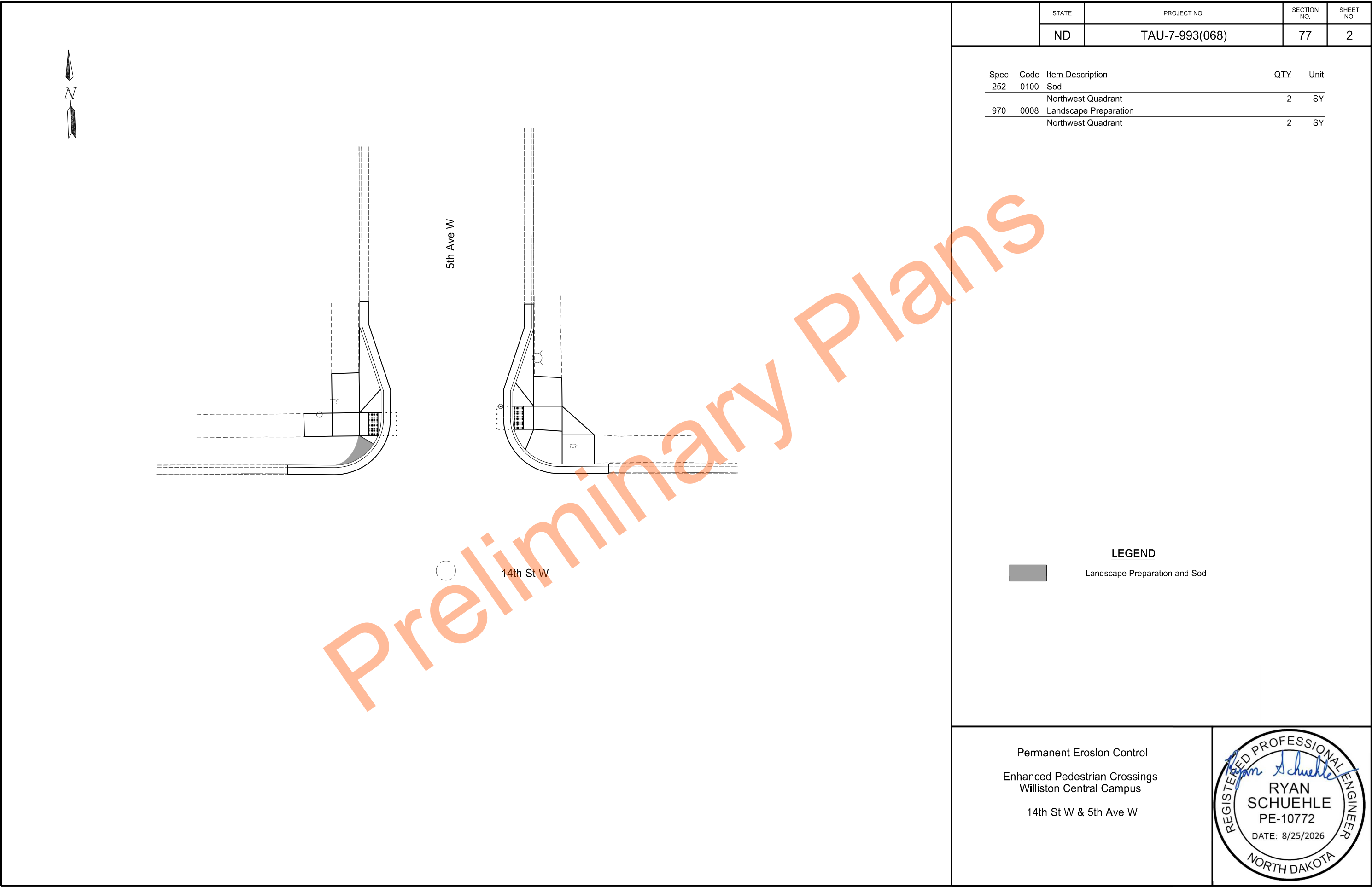
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Southwest Quadrant	3	SY
		Northwest Quadrant	8	SY
		Southeast Quadrant	3	SY
		Northeast Quadrant	17	SY
970	0008	Landscape Preparation		
		Southwest Quadrant	3	SY
		Northwest Quadrant	8	SY
		Southeast Quadrant	3	SY
		Northeast Quadrant	17	SY

LEGEND

 Landscape Preparation and Sod

Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 6th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	77	2

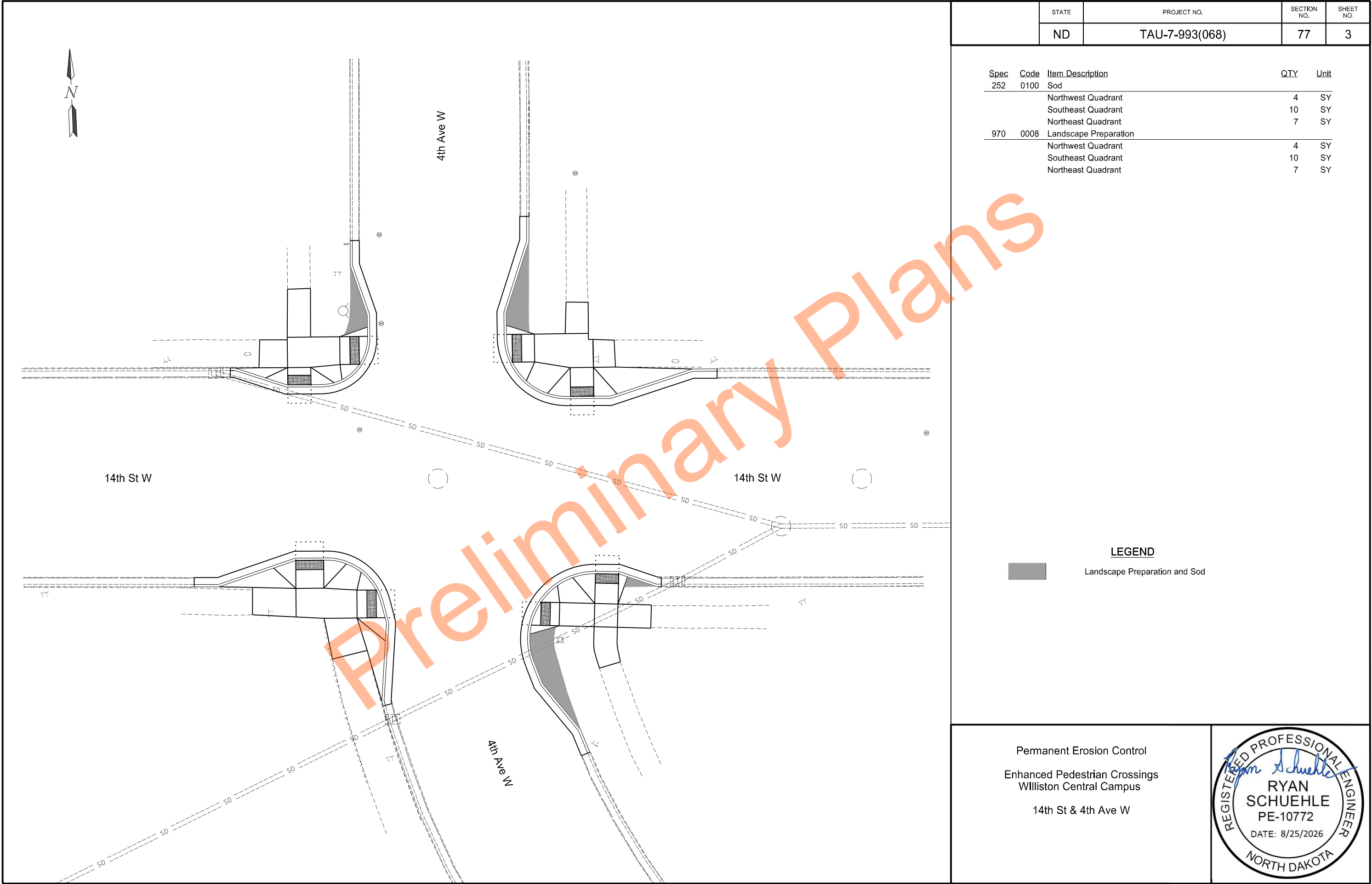
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Northwest Quadrant	2	SY
970	0008	Landscape Preparation		
		Northwest Quadrant	2	SY

LEGEND

 Landscape Preparation and Sod

Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	77	3

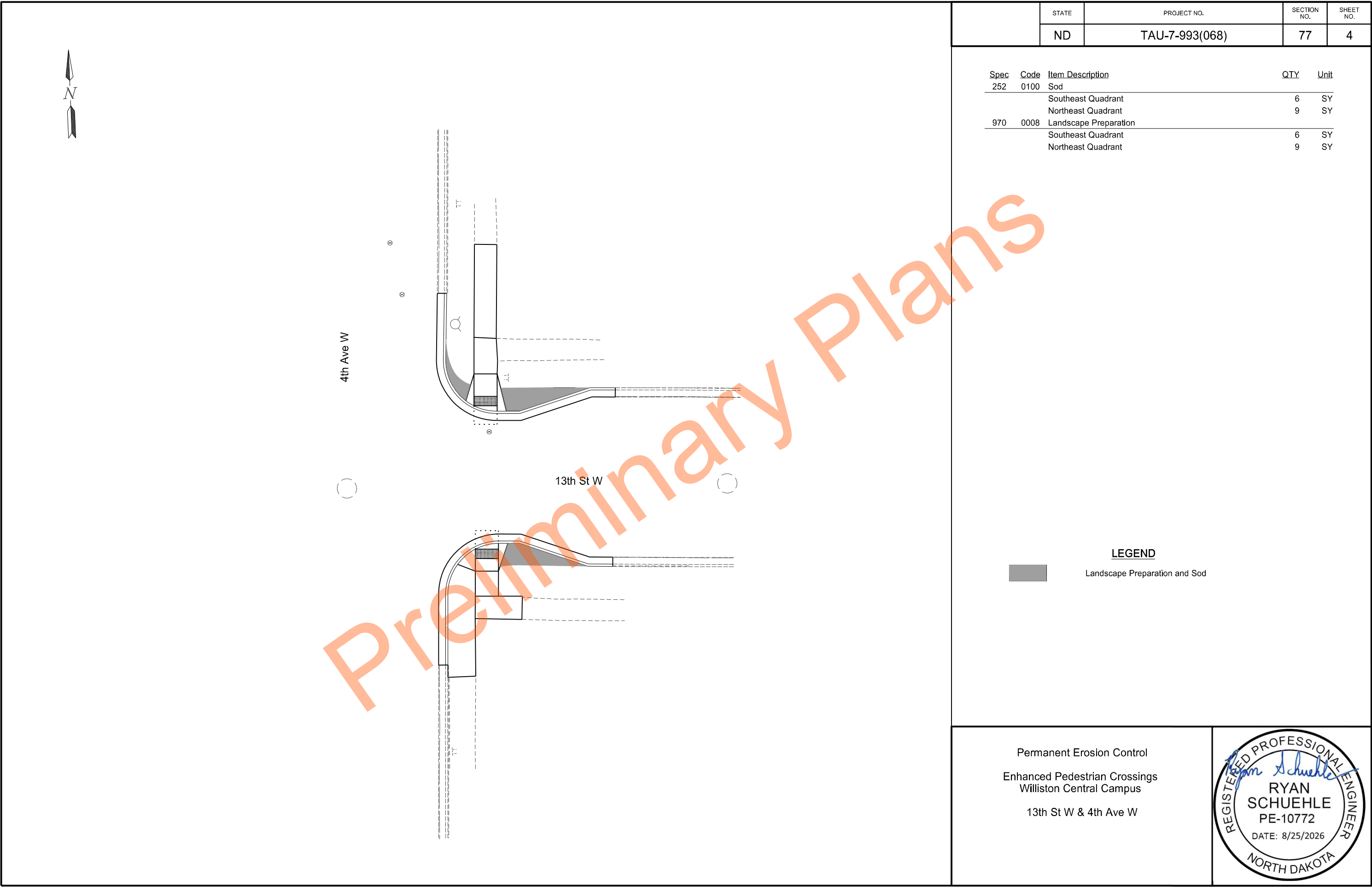
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Northwest Quadrant	4	SY
		Southeast Quadrant	10	SY
		Northeast Quadrant	7	SY
970	0008	Landscape Preparation		
		Northwest Quadrant	4	SY
		Southeast Quadrant	10	SY
		Northeast Quadrant	7	SY

LEGEND

 Landscape Preparation and Sod

Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
14th St & 4th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	77	4

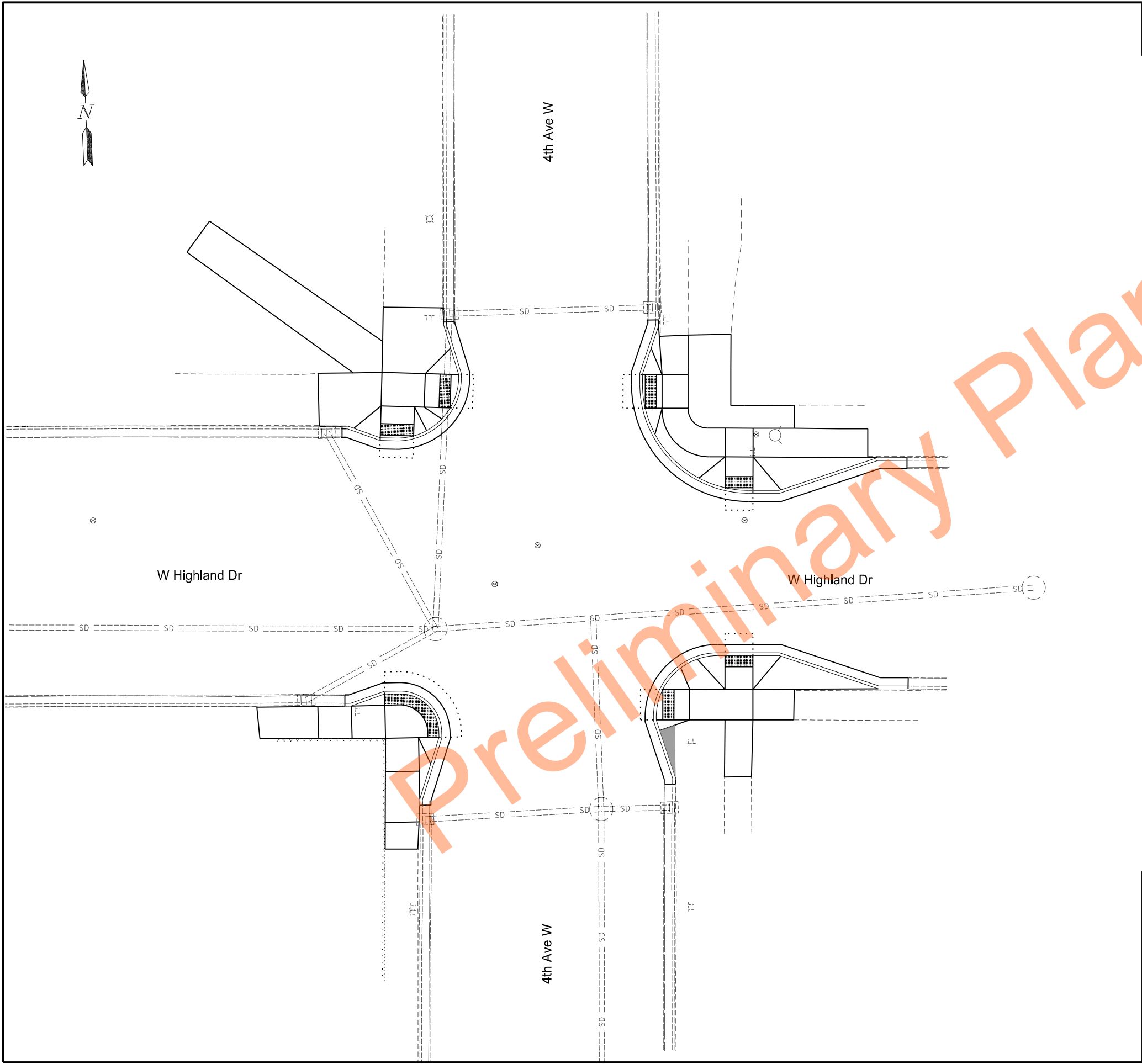
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Southeast Quadrant	6	SY
		Northeast Quadrant	9	SY
970	0008	Landscape Preparation		
		Southeast Quadrant	6	SY
		Northeast Quadrant	9	SY

LEGEND

Landscape Preparation and Sod

Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
13th St W & 4th Ave W





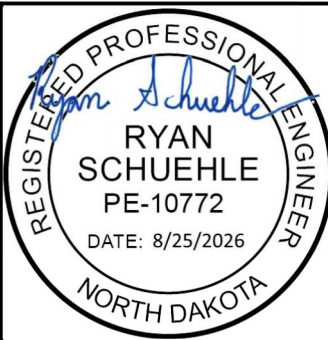
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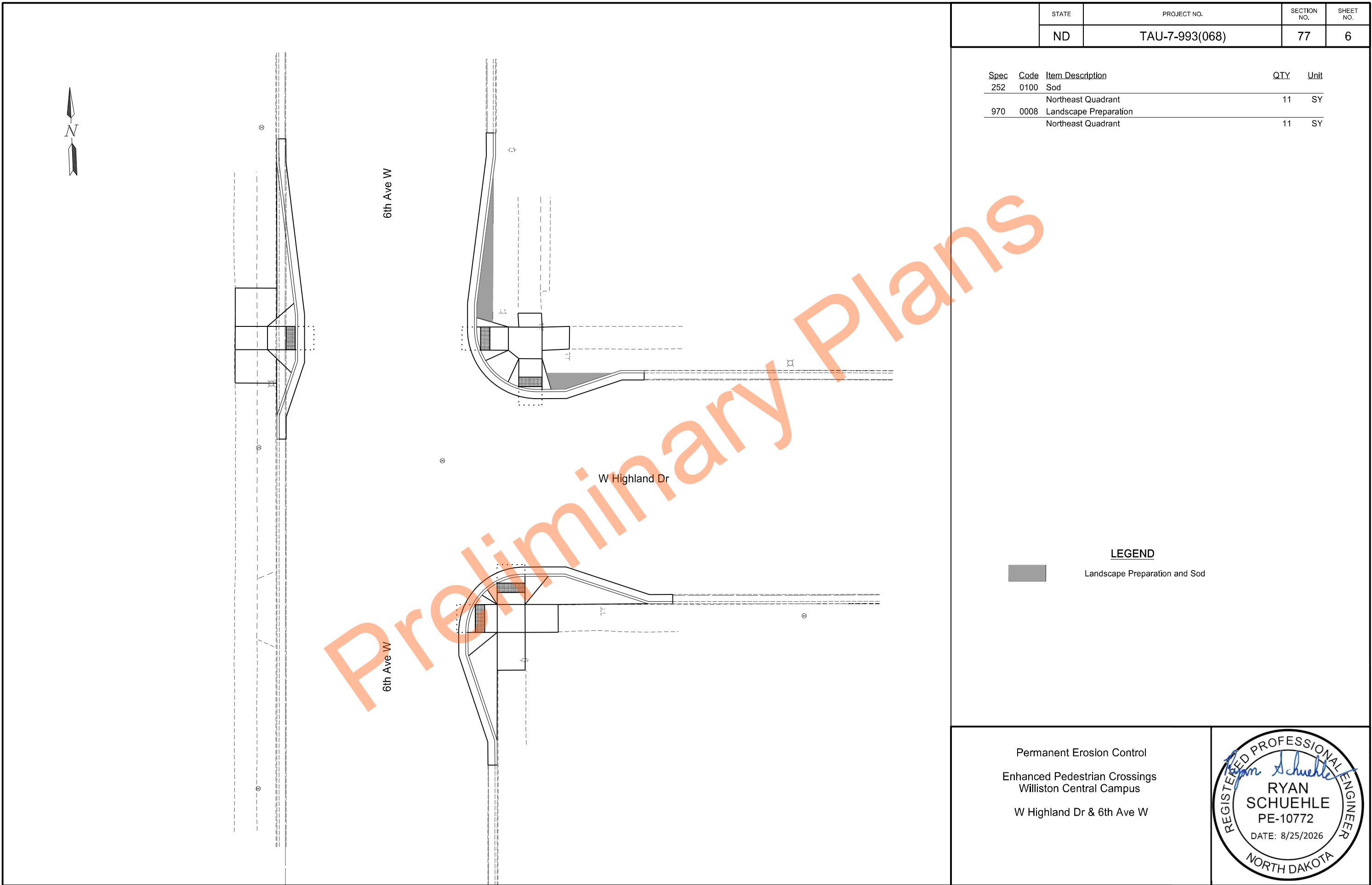
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Southeast Quadrant	2	SY
970	0008	Landscape Preparation		
		Southeast Quadrant	2	SY

LEGEND

 Landscape Preparation and Sod

Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
W Highland Dr & 4th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	77	6

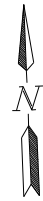
Spec	Code	Item Description	QTY	Unit
252	0100	Sod		
		Northeast Quadrant	11	SY
970	0008	Landscape Preparation		
		Northeast Quadrant	11	SY

LEGEND

 Landscape Preparation and Sod

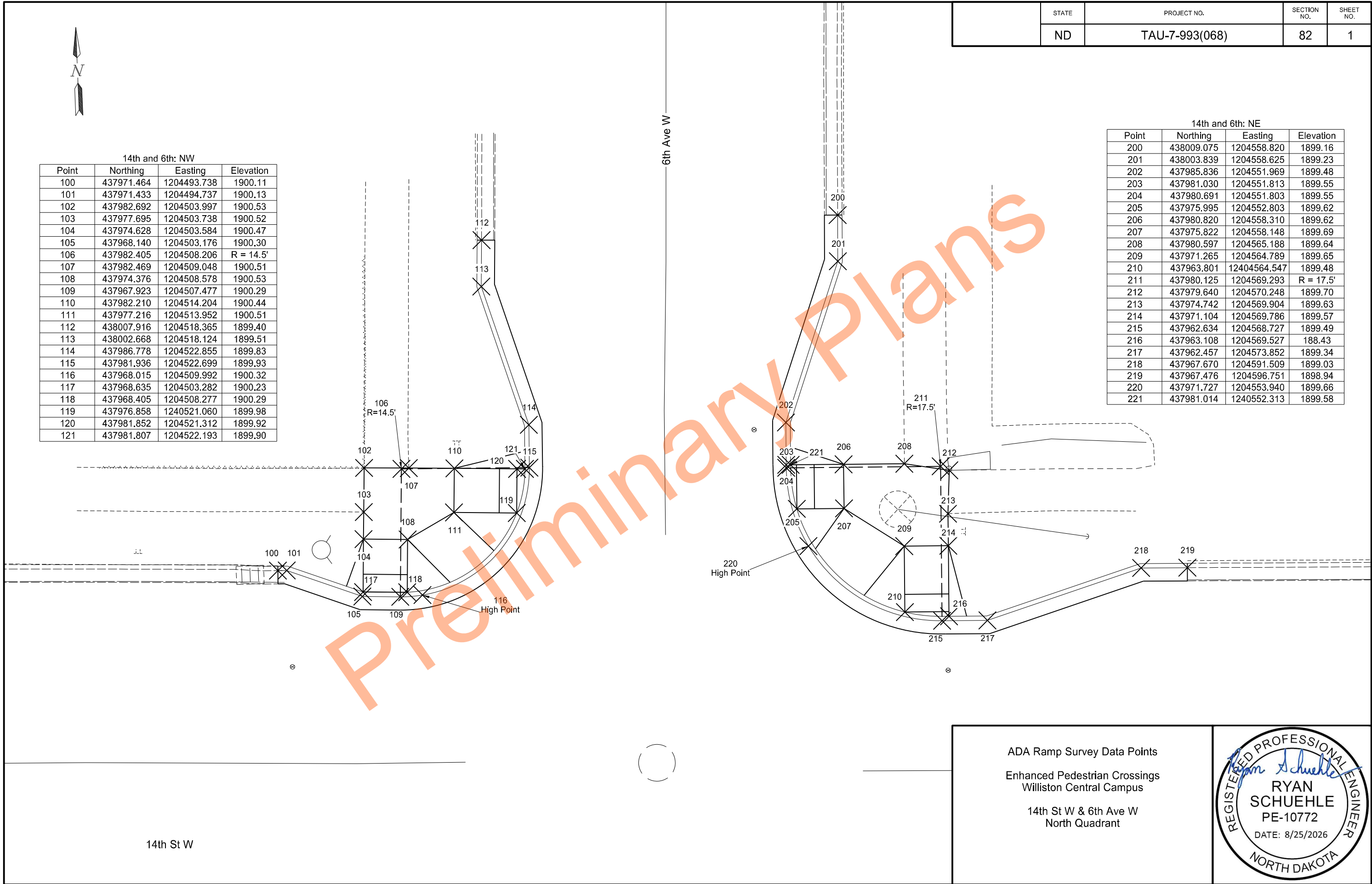
Permanent Erosion Control
Enhanced Pedestrian Crossings
Williston Central Campus
W Highland Dr & 6th Ave W





14th and 6th: NW			
Point	Northing	Easting	Elevation
100	437971.464	1204493.738	1900.11
101	437971.433	1204494.737	1900.13
102	437982.692	1204503.997	1900.53
103	437977.695	1204503.738	1900.52
104	437974.628	1204503.584	1900.47
105	437968.140	1204503.176	1900.30
106	437982.405	1204508.206	R = 14.5'
107	437982.469	1204509.048	1900.51
108	437974.376	1204508.578	1900.53
109	437967.923	1204507.477	1900.29
110	437982.210	1204514.204	1900.44
111	437977.216	1204513.952	1900.51
112	438007.916	1204518.365	1899.40
113	438002.668	1204518.124	1899.51
114	437986.778	1204522.855	1899.83
115	437981.936	1204522.699	1899.93
116	437968.015	1204509.992	1900.32
117	437968.635	1204503.282	1900.23
118	437968.405	1204508.277	1900.29
119	437976.858	1240521.060	1899.98
120	437981.852	1204521.312	1899.92
121	437981.807	1204522.193	1899.90

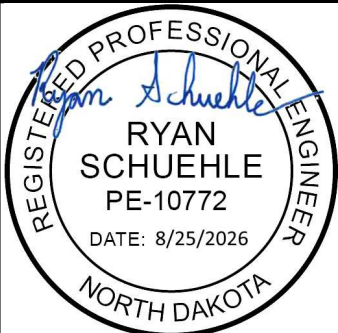
14th and 6th: NE			
Point	Northing	Easting	Elevation
200	438009.075	1204558.820	1899.16
201	438003.839	1204558.625	1899.23
202	437985.836	1204551.969	1899.48
203	437981.030	1204551.813	1899.55
204	437980.691	1204551.803	1899.55
205	437975.995	1204552.803	1899.62
206	437980.820	1204558.310	1899.62
207	437975.822	1204558.148	1899.69
208	437980.597	1204565.188	1899.64
209	437971.265	1204564.789	1899.65
210	437963.801	12404564.547	1899.48
211	437980.125	1204569.293	R = 17.5'
212	437979.640	1204570.248	1899.70
213	437974.742	1204569.904	1899.63
214	437971.104	1204569.786	1899.57
215	437962.634	1204568.727	1899.49
216	437963.108	1204569.527	188.43
217	437962.457	1204573.852	1899.34
218	437967.670	1204591.509	1899.03
219	437967.476	1204596.751	1898.94
220	437971.727	1204553.940	1899.66
221	437981.014	1240552.313	1899.58

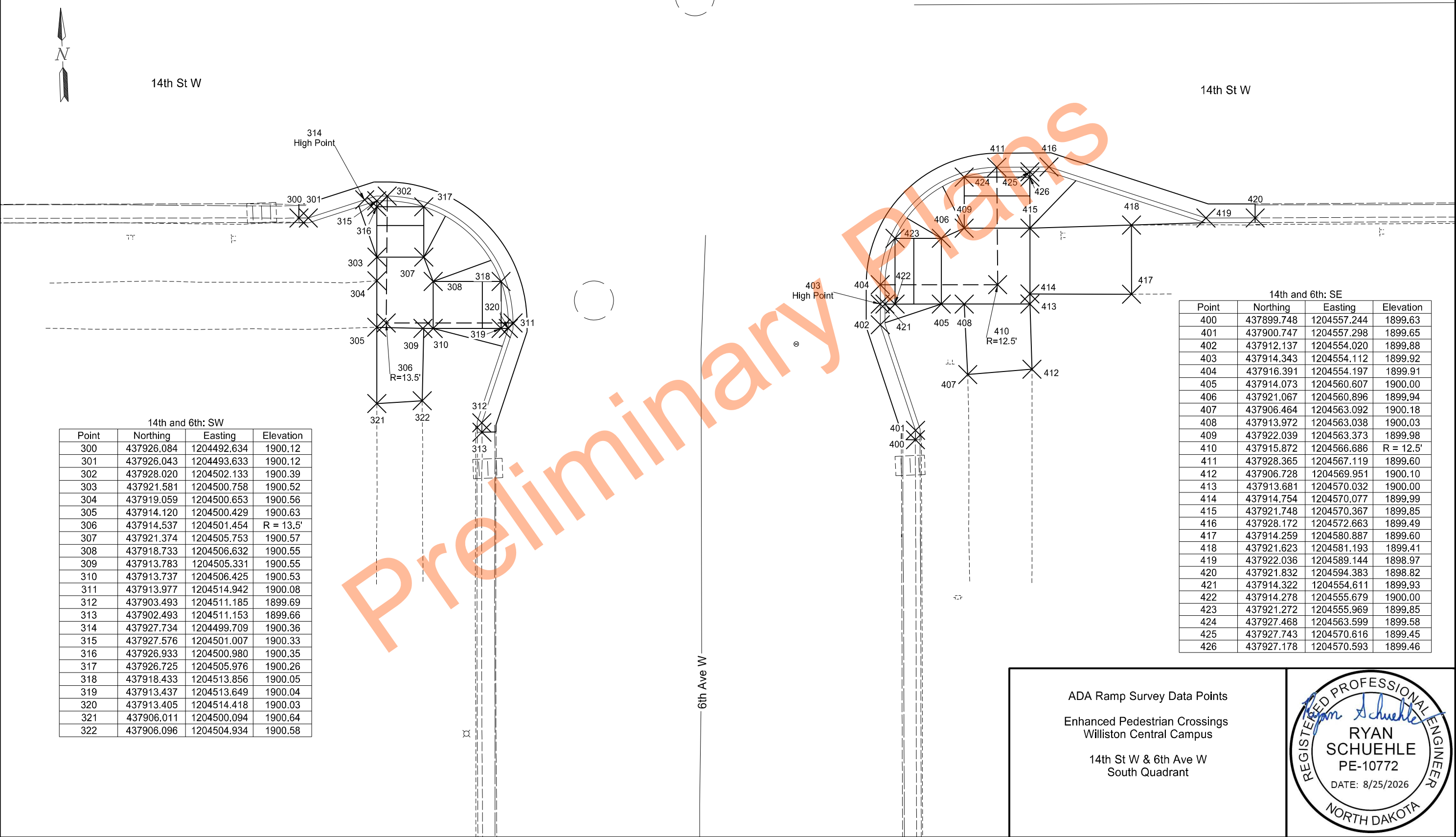


ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

14th St W & 6th Ave W
North Quadrant





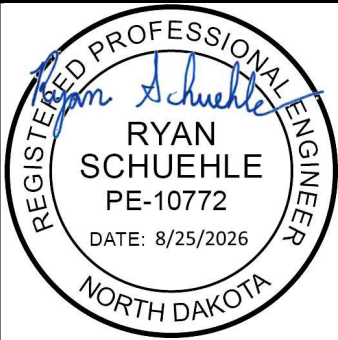
14th and 6th: SW				
Point	Northing	Easting	Elevation	
300	437926.084	1204492.634	1900.12	
301	437926.043	1204493.633	1900.12	
302	437928.020	1204502.133	1900.39	
303	437921.581	1204500.758	1900.52	
304	437919.059	1204500.653	1900.56	
305	437914.120	1204500.429	1900.63	
306	437914.537	1204501.454	R = 13.5'	
307	437921.374	1204505.753	1900.57	
308	437918.733	1204506.632	1900.55	
309	437913.783	1204505.331	1900.55	
310	437913.737	1204506.425	1900.53	
311	437913.977	1204514.942	1900.08	
312	437903.493	1204511.185	1899.69	
313	437902.493	1204511.153	1899.66	
314	437927.734	1204499.709	1900.36	
315	437927.576	1204501.007	1900.33	
316	437926.933	1204500.980	1900.35	
317	437926.725	1204505.976	1900.26	
318	437918.433	1204513.856	1900.05	
319	437913.437	1204513.649	1900.04	
320	437913.405	1204514.418	1900.03	
321	437906.011	1204500.094	1900.64	
322	437906.096	1204504.934	1900.58	

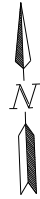
14th and 6th: SE			
Point	Northing	Easting	Elevation
400	437899.748	1204557.244	1899.63
401	437900.747	1204557.298	1899.65
402	437912.137	1204554.020	1899.88
403	437914.343	1204554.112	1899.92
404	437916.391	1204554.197	1899.91
405	437914.073	1204560.607	1900.00
406	437921.067	1204560.896	1899.94
407	437906.464	1204563.092	1900.18
408	437913.972	1204563.038	1900.03
409	437922.039	1204563.373	1899.98
410	437915.872	1204566.686	R = 12.5'
411	437928.365	1204567.119	1899.60
412	437906.728	1204569.951	1900.10
413	437913.681	1204570.032	1900.00
414	437914.754	1204570.077	1899.99
415	437921.748	1204570.367	1899.85
416	437928.172	1204572.663	1899.49
417	437914.259	1204580.887	1899.60
418	437921.623	1204581.193	1899.41
419	437922.036	1204589.144	1898.97
420	437921.832	1204594.383	1898.82
421	437914.322	1204554.611	1899.93
422	437914.278	1204555.679	1900.00
423	437921.272	1204555.969	1899.85
424	437927.468	1204563.599	1899.58
425	437927.743	1204570.616	1899.45
426	437927.178	1204570.593	1899.46

ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

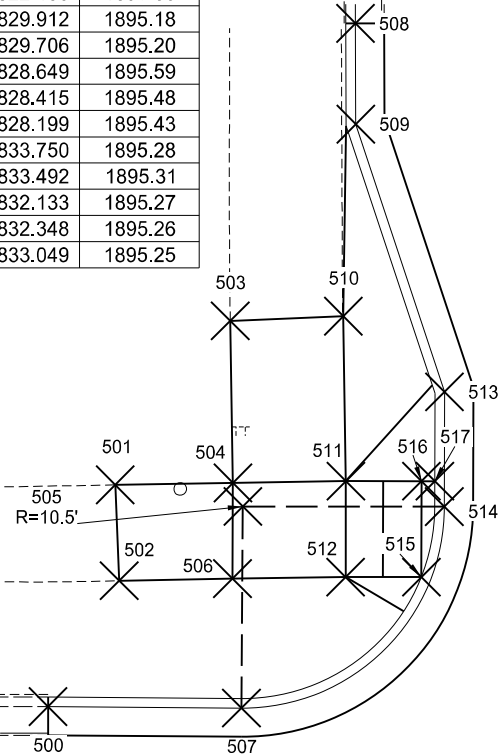
14th St W & 6th Ave W
South Quadrant





14th and 5th: NW

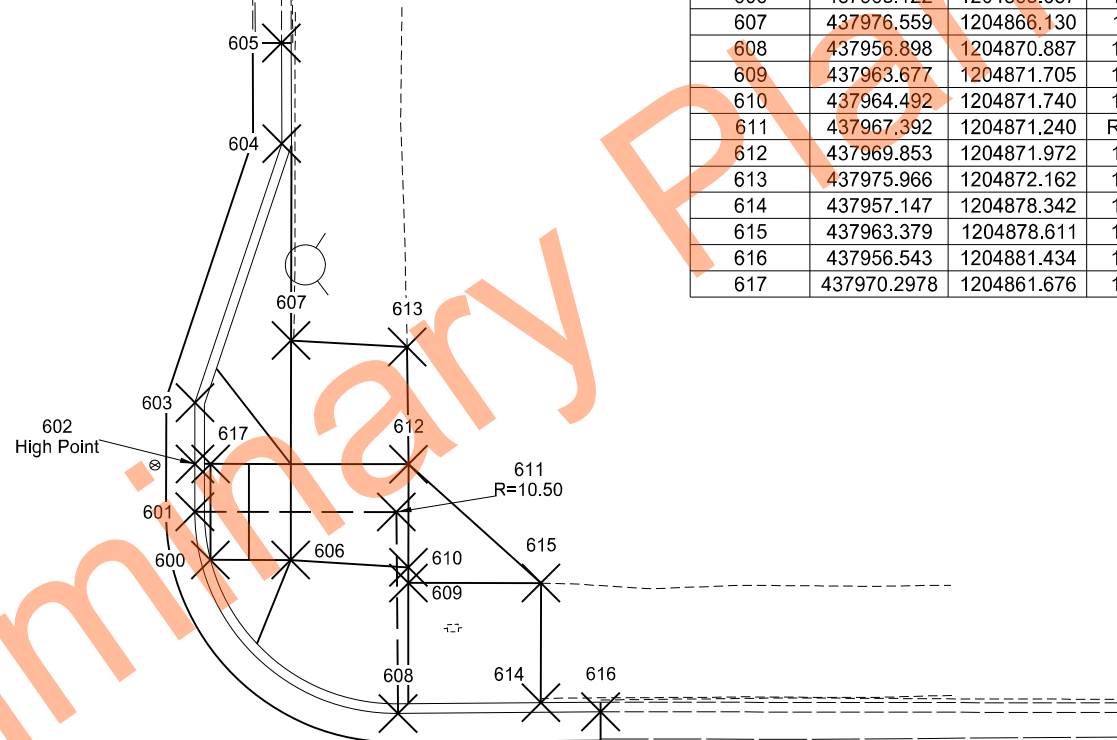
Point	Northing	Easting	Elevation
500	437959.196	1204812.422	1895.45
501	437970.589	1204816.408	1895.82
502	437965.590	1204816.394	1895.69
503	437978.882	1204822.750	1895.73
504	437970.429	1204822.541	1895.56
505	437969.191	1204823.002	R = 10.5'
506	437965.461	1204822.299	1895.49
507	437958.703	1204822.488	1895.66
508	437994.080	1204829.912	1895.18
509	437988.844	1204829.706	1895.20
510	437978.864	1204828.649	1895.59
511	437970.277	1204828.415	1895.48
512	437965.282	1204828.199	1895.43
513	437974.707	1204833.750	1895.28
514	437968.737	1204833.492	1895.31
515	437965.112	1204832.133	1895.27
516	437970.108	1204832.348	1895.26
517	437970.077	1204833.049	1895.25



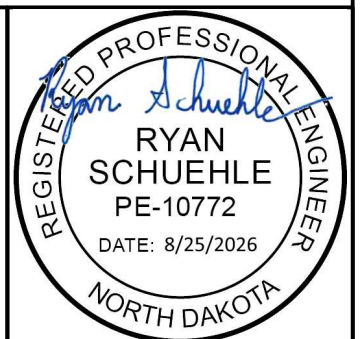
5th Ave W

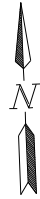
14th and 5th: NE

Point	Northing	Easting	Elevation
600	437965.302	1204861.461	1985.00
601	437967.844	1204860.750	1895.10
602	437970.333	1204860.857	1895.14
603	437973.531	1204860.995	1895.10
604	437986.826	1204866.074	1894.95
605	437992.068	1204866.285	1894.88
606	437965.122	1204865.637	1895.23
607	437976.559	1204866.130	1895.31
608	437956.898	1204870.887	1984.84
609	437963.677	1204871.705	1895.28
610	437964.492	1204871.740	1895.29
611	437967.392	1204871.240	R = 10.5'
612	437969.853	1204871.972	1895.37
613	437975.966	1204872.162	1895.53
614	437957.147	1204878.342	1895.07
615	437963.379	1204878.611	1895.18
616	437956.543	1204881.434	1894.69
617	437970.2978	1204861.676	1895.08



ADA Ramp Survey Data Points
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W

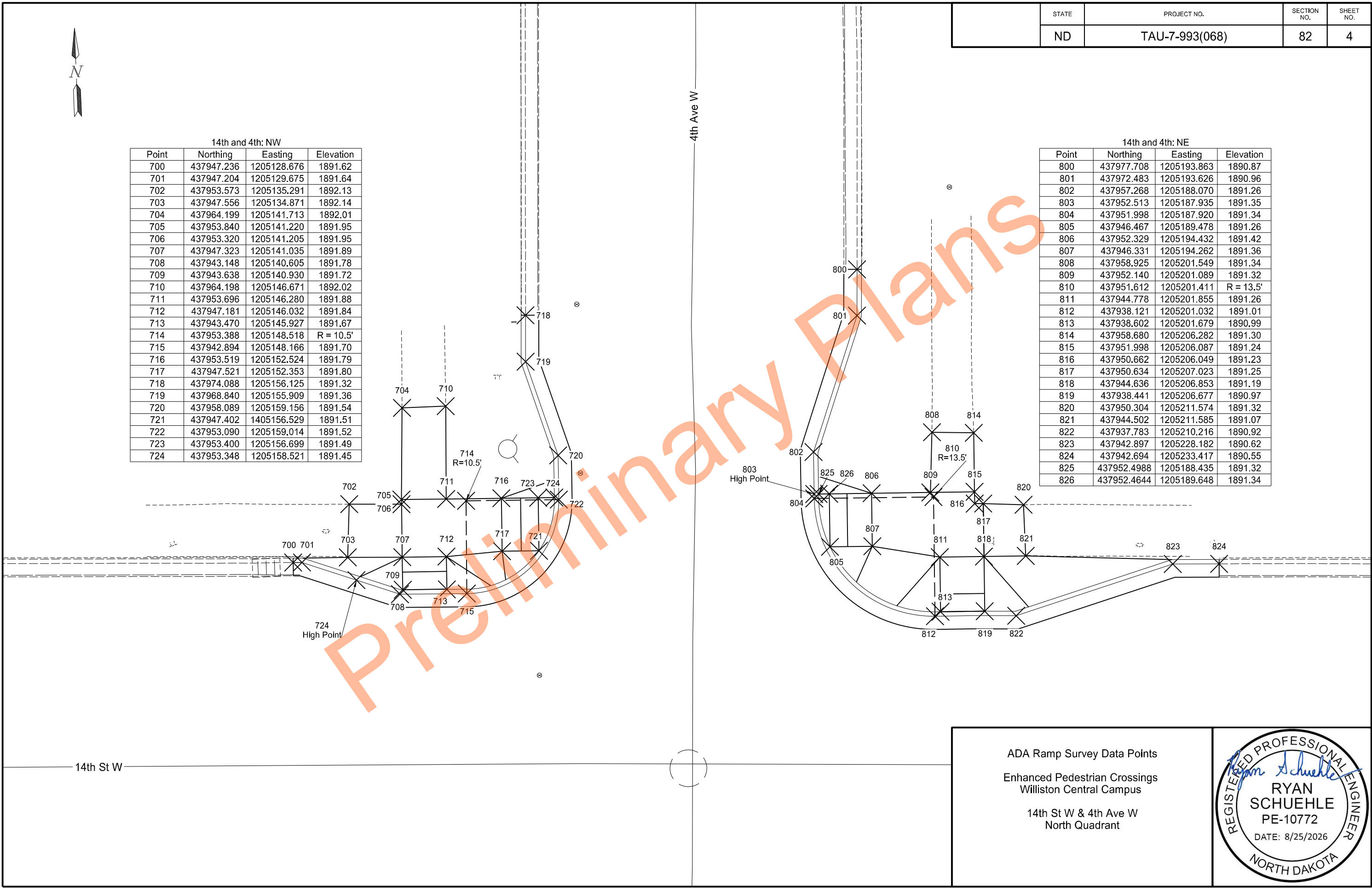




	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	4

14th and 4th: NW			
Point	Northing	Easting	Elevation
700	437947.236	1205128.676	1891.62
701	437947.204	1205129.675	1891.64
702	437953.573	1205135.291	1892.13
703	437947.556	1205134.871	1892.14
704	437964.199	1205141.713	1892.01
705	437953.840	1205141.220	1891.95
706	437953.320	1205141.205	1891.95
707	437947.323	1205141.035	1891.89
708	437943.148	1205140.605	1891.78
709	437943.638	1205140.930	1891.72
710	437964.198	1205146.671	1892.02
711	437953.696	1205146.280	1891.88
712	437947.181	1205146.032	1891.84
713	437943.470	1205145.927	1891.67
714	437953.388	1205148.518	R = 10.5'
715	437942.894	1205148.166	1891.70
716	437953.519	1205152.524	1891.79
717	437947.521	1205152.353	1891.80
718	437974.088	1205156.125	1891.32
719	437968.840	1205155.909	1891.36
720	437958.089	1205159.156	1891.54
721	437947.402	1405156.529	1891.51
722	437953.090	1205159.014	1891.52
723	437953.400	1205156.699	1891.49
724	437953.348	1205158.521	1891.45

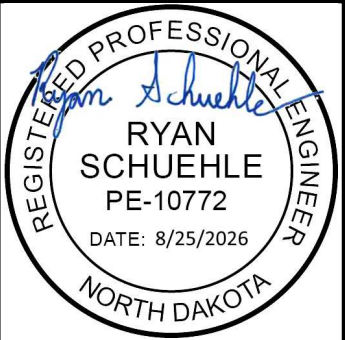
14th and 4th: NE			
Point	Northing	Easting	Elevation
800	437977.708	1205193.863	1890.87
801	437972.483	1205193.626	1890.96
802	437957.268	1205188.070	1891.26
803	437952.513	1205187.935	1891.35
804	437951.998	1205187.920	1891.34
805	437946.467	1205189.478	1891.26
806	437952.329	1205194.432	1891.42
807	437946.331	1205194.262	1891.36
808	437958.925	1205201.549	1891.34
809	437952.140	1205201.089	1891.32
810	437951.612	1205201.411	R = 13.5'
811	437944.778	1205201.855	1891.26
812	437938.121	1205201.032	1891.01
813	437938.602	1205201.679	1890.99
814	437958.680	1205206.282	1891.30
815	437951.998	1205206.087	1891.24
816	437950.662	1205206.049	1891.23
817	437950.634	1205207.023	1891.25
818	437944.636	1205206.853	1891.19
819	437938.441	1205206.677	1890.97
820	437950.304	1205211.574	1891.32
821	437944.502	1205211.585	1891.07
822	437937.783	1205210.216	1890.92
823	437942.897	1205228.182	1890.62
824	437942.694	1205233.417	1890.55
825	437952.4988	1205188.435	1891.32
826	437952.4644	1205189.648	1891.34

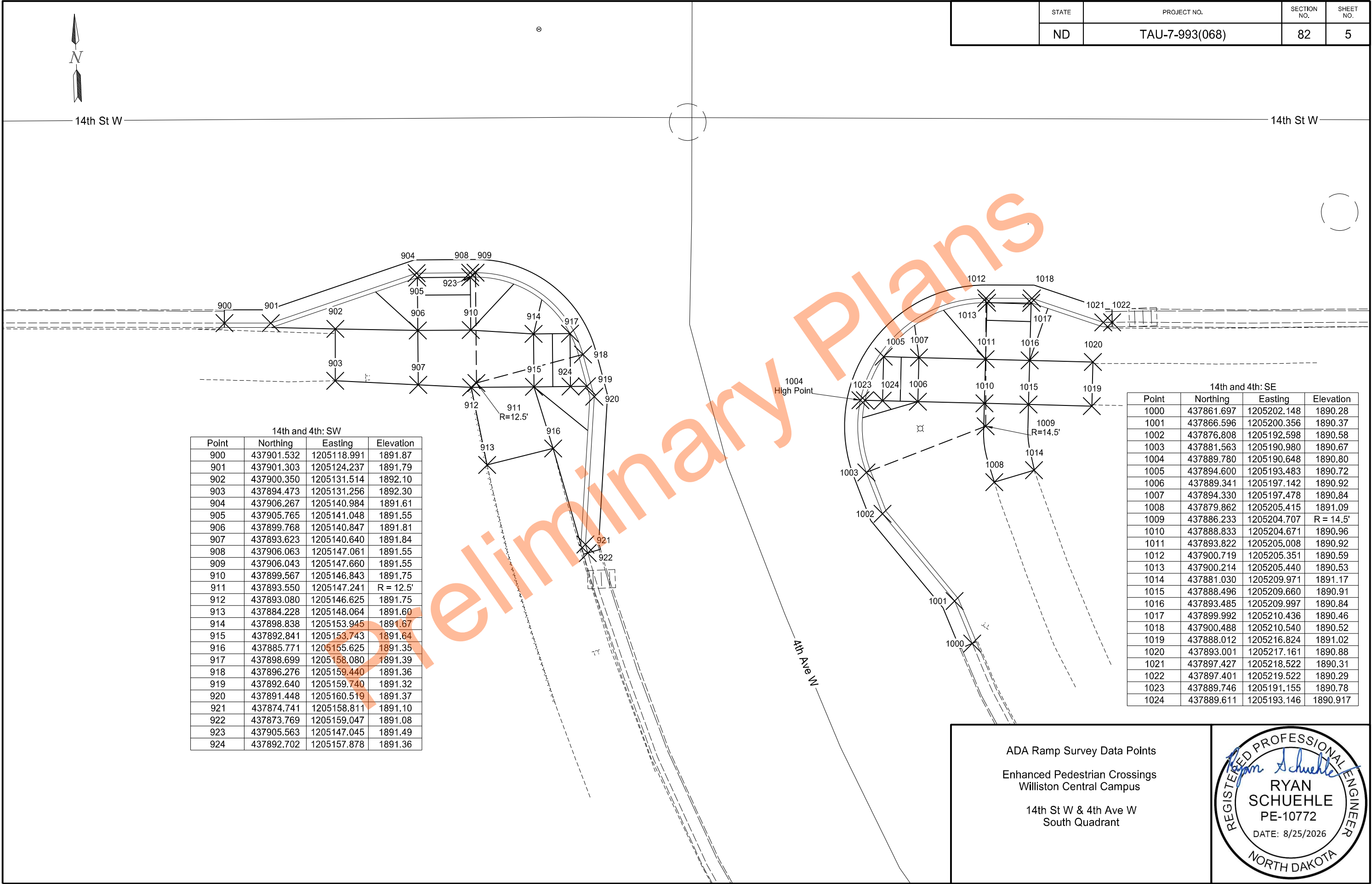


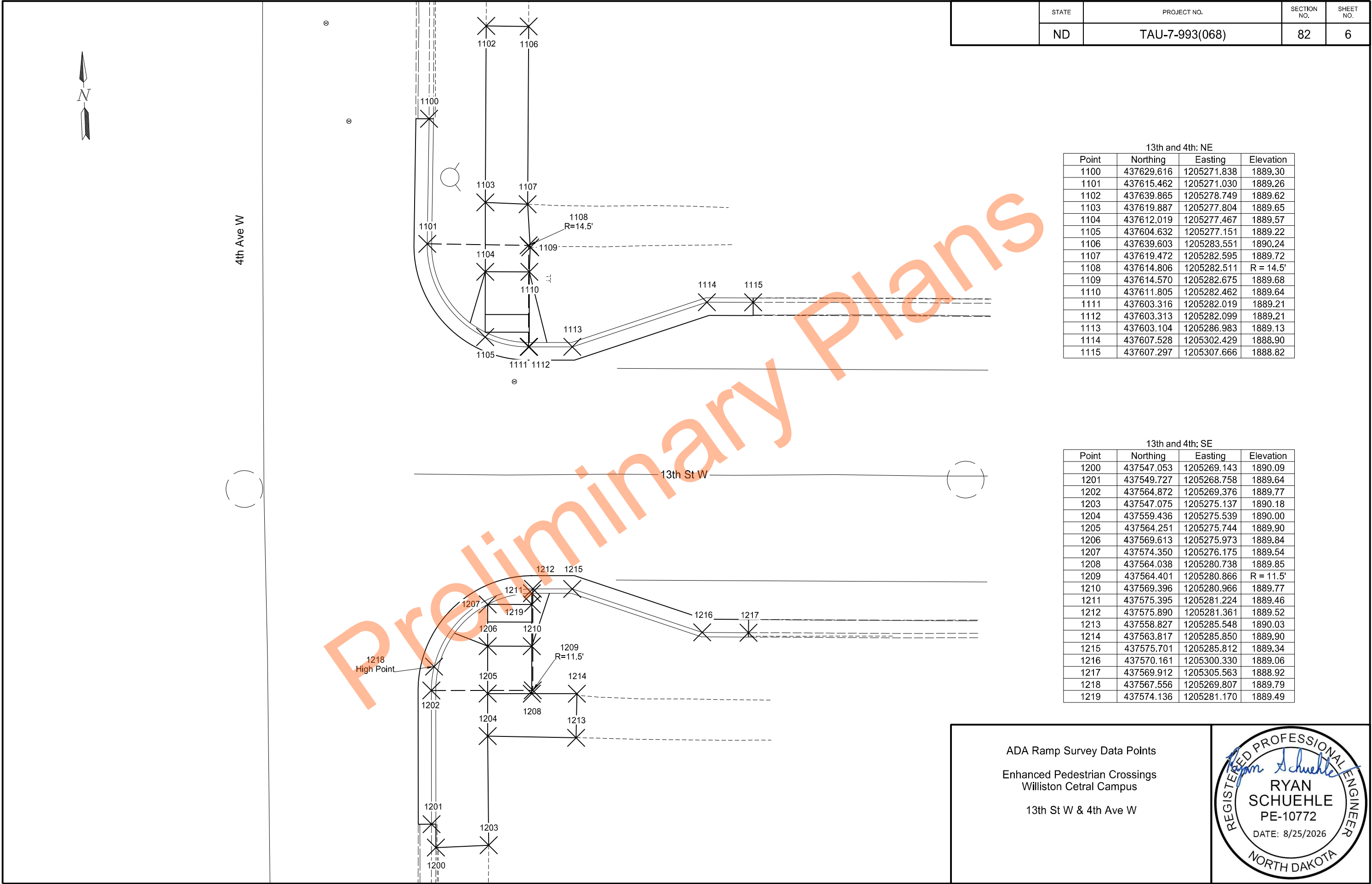
ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

14th St W & 4th Ave W
North Quadrant







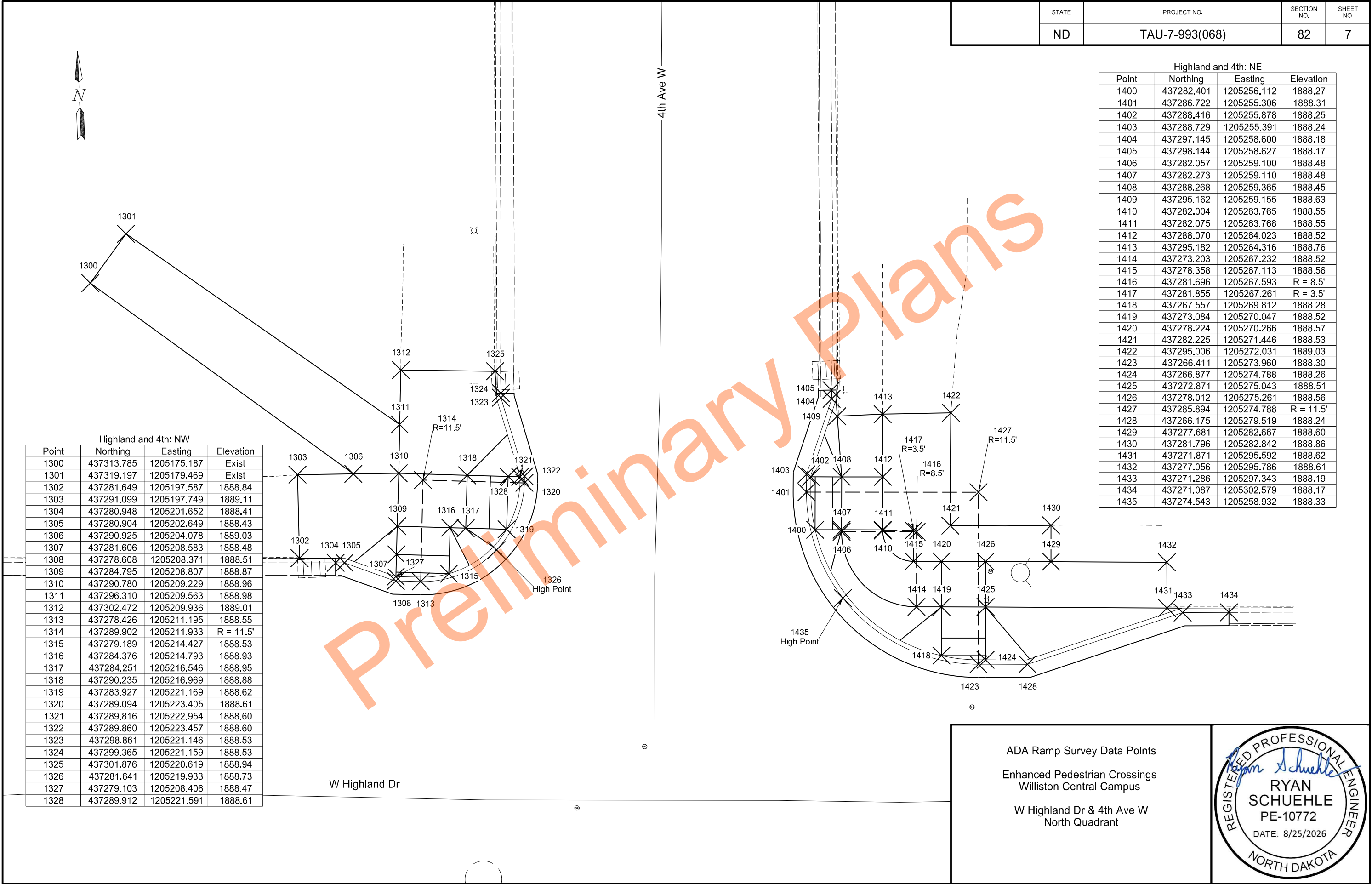
STATE	PROJECT NO.		SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	6

13th and 4th: NE			
Point	Northing	Easting	Elevation
1100	437629.616	1205271.838	1889.30
1101	437615.462	1205271.030	1889.26
1102	437639.865	1205278.749	1889.62
1103	437619.887	1205277.804	1889.65
1104	437612.019	1205277.467	1889.57
1105	437604.632	1205277.151	1889.22
1106	437639.603	1205283.551	1890.24
1107	437619.472	1205282.595	1889.72
1108	437614.806	1205282.511	R = 14.5'
1109	437614.570	1205282.675	1889.68
1110	437611.805	1205282.462	1889.64
1111	437603.316	1205282.019	1889.21
1112	437603.313	1205282.099	1889.21
1113	437603.104	1205286.983	1889.13
1114	437607.528	1205302.429	1888.90
1115	437607.297	1205307.666	1888.82

13th and 4th: SE			
Point	Northing	Easting	Elevation
1200	437547.053	1205269.143	1890.09
1201	437549.727	1205268.758	1889.64
1202	437564.872	1205269.376	1889.77
1203	437547.075	1205275.137	1890.18
1204	437559.436	1205275.539	1890.00
1205	437564.251	1205275.744	1889.90
1206	437569.613	1205275.973	1889.84
1207	437574.350	1205276.175	1889.54
1208	437564.038	1205280.738	1889.85
1209	437564.401	1205280.866	R = 11.5'
1210	437569.396	1205280.966	1889.77
1211	437575.395	1205281.224	1889.46
1212	437575.890	1205281.361	1889.52
1213	437558.827	1205285.548	1890.03
1214	437563.817	1205285.850	1889.90
1215	437575.701	1205285.812	1889.34
1216	437570.161	1205300.330	1889.06
1217	437569.912	1205305.563	1888.92
1218	437567.556	1205269.807	1889.79
1219	437574.136	1205281.170	1889.49

ADA Ramp Survey Data Points
Enhanced Pedestrian Crossings
Williston Cetral Campus
13th St W & 4th Ave W





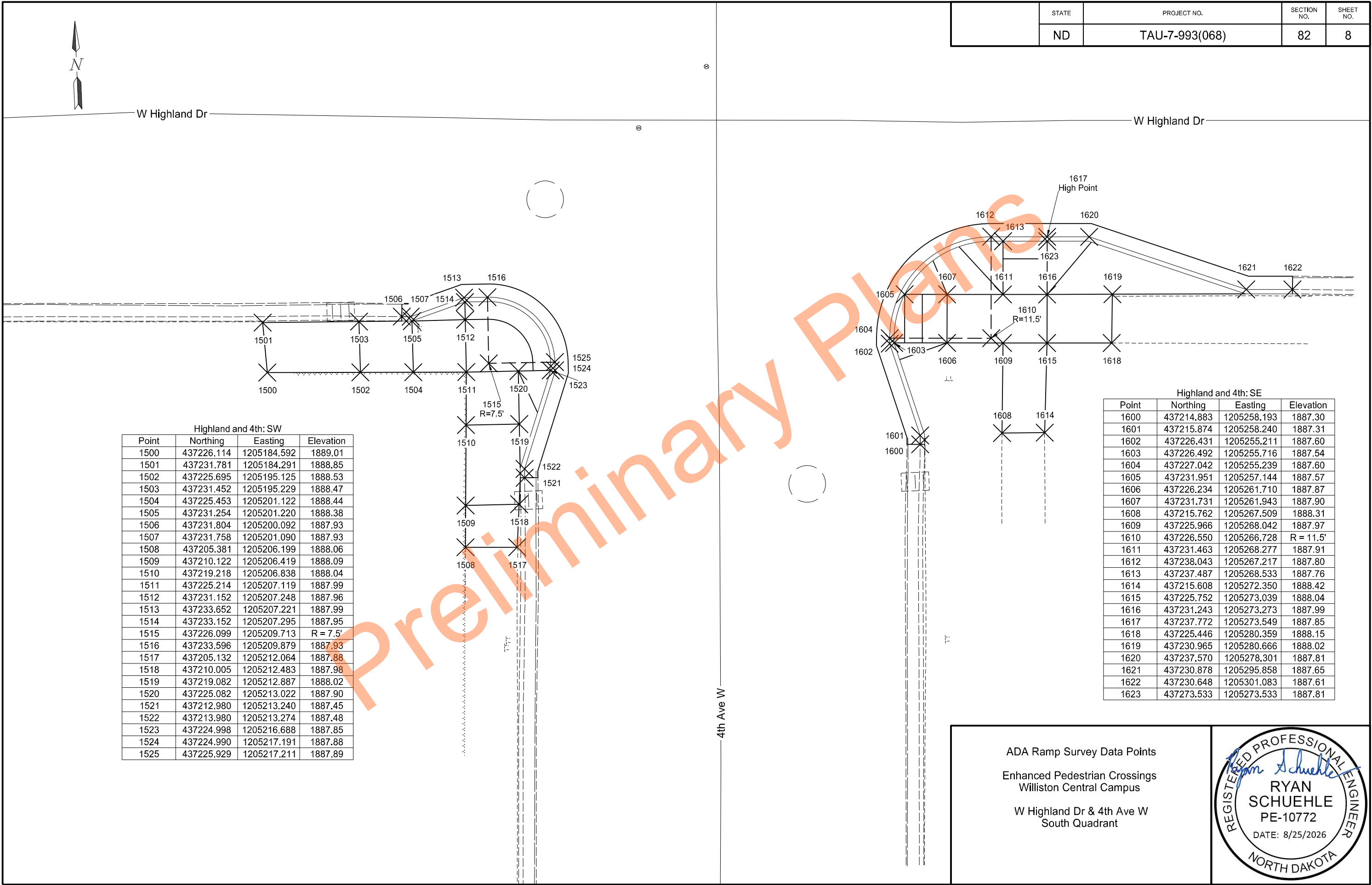
Highland and 4th: NE			
Point	Northing	Easting	Elevation
1400	437282.401	1205256.112	1888.27
1401	437286.722	1205255.306	1888.31
1402	437288.416	1205255.878	1888.25
1403	437288.729	1205255.391	1888.24
1404	437297.145	1205258.600	1888.18
1405	437298.144	1205258.627	1888.17
1406	437282.057	1205259.100	1888.48
1407	437282.273	1205259.110	1888.48
1408	437288.268	1205259.365	1888.45
1409	437295.162	1205259.155	1888.63
1410	437282.004	1205263.765	1888.55
1411	437282.075	1205263.768	1888.55
1412	437288.070	1205264.023	1888.52
1413	437295.182	1205264.316	1888.76
1414	437273.203	1205267.232	1888.52
1415	437278.358	1205267.113	1888.56
1416	437281.696	1205267.593	R = 8.5'
1417	437281.855	1205267.261	R = 3.5'
1418	437267.557	1205269.812	1888.28
1419	437273.084	1205270.047	1888.52
1420	437278.224	1205270.266	1888.57
1421	437282.225	1205271.446	1888.53
1422	437295.006	1205272.031	1889.03
1423	437266.411	1205273.960	1888.30
1424	437266.877	1205274.788	1888.26
1425	437272.871	1205275.043	1888.51
1426	437278.012	1205275.261	1888.56
1427	437285.894	1205274.788	R = 11.5'
1428	437266.175	1205279.519	1888.24
1429	437277.681	1205282.667	1888.60
1430	437281.796	1205282.842	1888.86
1431	437271.871	1205295.592	1888.62
1432	437277.056	1205295.786	1888.61
1433	437271.286	1205297.343	1888.19
1434	437271.087	1205302.579	1888.17
1435	437274.543	1205258.932	1888.33

ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 4th Ave W
North Quadrant





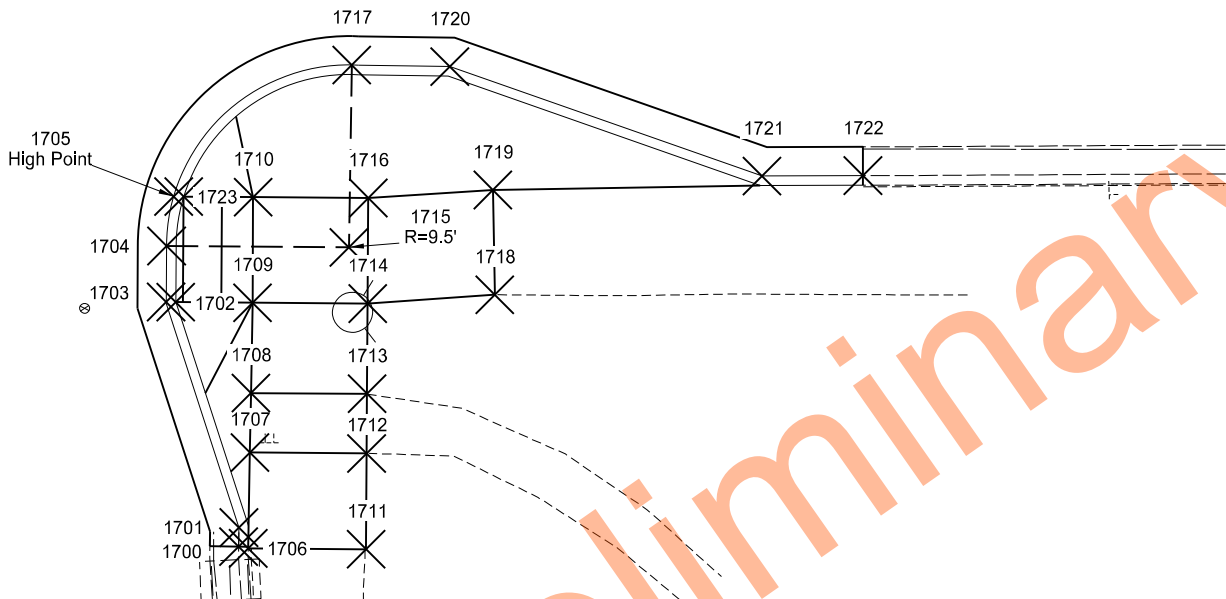
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	9



W Highland Dr



5th Ave W



Highland and 5th: SE

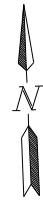
Point	Northing	Easting	Elevation
1700	437221.779	1204971.677	1892.96
1701	437222.777	1204971.737	1892.96
1702	437234.445	1204972.929	1893.28
1703	437234.664	1204968.434	1893.34
1704	437237.586	1204968.577	1893.37
1705	437240.140	1204969.057	1893.38
1706	437221.661	1204972.171	1893.53
1707	437226.650	1204972.471	1893.56
1708	437229.748	1204972.650	1893.50
1709	437234.445	1204972.929	1893.47
1710	437239.939	1204973.197	1893.45
1711	437221.362	1204978.299	1893.68
1712	437226.355	1204978.542	1893.78
1713	437229.453	1204978.693	1893.60
1714	437234.153	1204978.922	1893.56
1715	437237.124	1204978.066	R = 9.5'
1716	437239.647	1204979.190	1893.48
1717	437246.608	1204978.612	1893.11
1718	437234.330	1204985.566	1893.37
1719	437239.782	1204985.685	1893.21
1720	437246.314	1204983.712	1893.00
1721	437239.928	1204999.731	1892.56
1722	437239.730	1205004.987	1892.45
1723	437240.115	1204969.577	1893.32

ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 5th Ave W
South East Quadrant





STATE

PROJECT NO.

SECTION NO.

SHEET NO.

ND

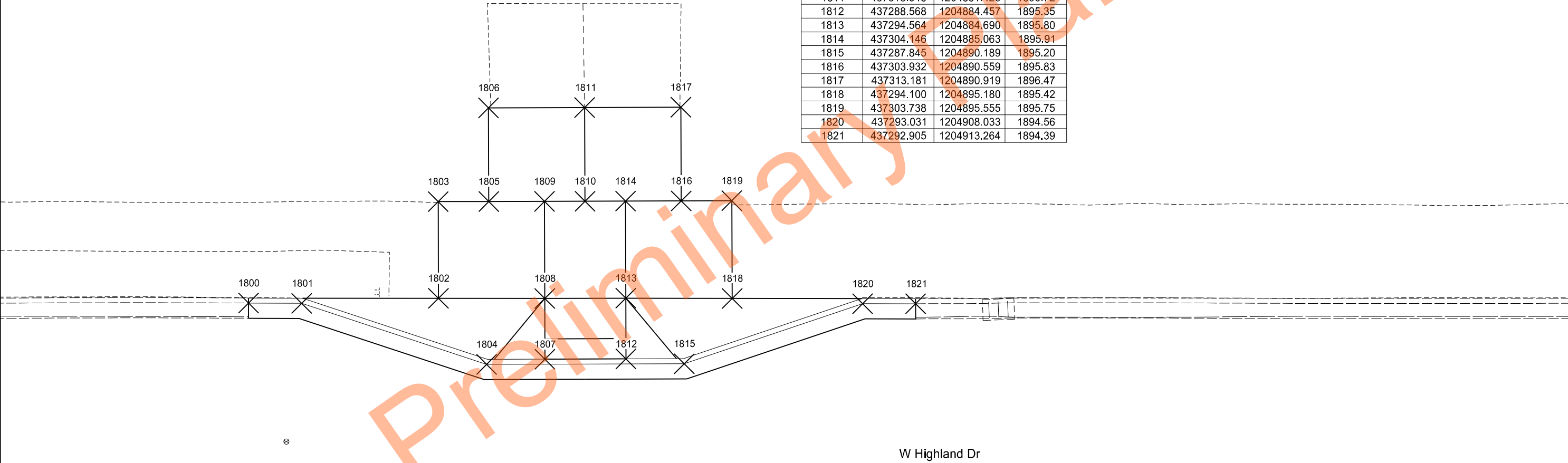
TAU-7-993(068)

82

10

Highland and 5th: N

Point	Northing	Easting	Elevation
1800	437295.639	1204847.454	1895.83
1801	437295.394	1204852.686	1895.76
1802	437295.320	1204866.206	1895.94
1803	437304.866	1204866.577	1896.58
1804	437288.603	1204870.691	1895.59
1805	437304.671	1204871.574	1896.34
1806	437313.920	1204871.933	1896.69
1807	437288.879	1204876.463	1895.47
1808	437294.875	1204876.696	1895.90
1809	437304.457	1204877.069	1896.03
1810	437304.302	1204881.066	1895.97
1811	437313.548	1204881.426	1896.72
1812	437288.568	1204884.457	1895.35
1813	437294.564	1204884.690	1895.80
1814	437304.146	1204885.063	1895.91
1815	437287.845	1204890.189	1895.20
1816	437303.932	1204890.559	1895.83
1817	437313.181	1204890.919	1896.47
1818	437294.100	1204895.180	1895.42
1819	437303.738	1204895.555	1895.75
1820	437293.031	1204908.033	1894.56
1821	437292.905	1204913.264	1894.39



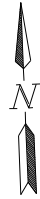
W Highland Dr

ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 5th Ave W
North Quadrant





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	11

W Highland Dr

5th Ave W

Highland and 5th: SW			
Point	Northing	Easting	Elevation
1900	437246.427	1204845.833	1895.94
1901	437246.215	1204851.075	1895.84
1902	437239.078	1204868.463	1895.88
1903	437244.807	1204868.792	1895.62
1904	437251.496	1204869.247	1895.46
1905	437238.782	1204874.513	1895.68
1906	437244.777	1204874.746	1895.59
1907	437250.773	1204874.979	1895.34
1908	437238.471	1204882.507	1895.60
1909	437244.466	1204882.740	1895.51
1910	437250.461	1204882.973	1895.22
1911	437237.348	1204912.775	1894.42
1912	437243.344	1204913.008	1894.36
1913	437237.239	1204915.624	1894.35
1914	437243.233	1204915.856	1894.29
1915	437220.364	1204928.887	1893.84
1916	437236.729	1204929.387	1893.89
1917	437237.664	1204928.932	R = 11.5'
1918	437242.223	1204929.655	1893.84
1919	437249.156	1204929.379	1894.04
1920	437220.373	1204934.714	1893.69
1921	437236.437	1204935.380	1893.86
1922	437241.931	1204935.648	1893.81
1923	437222.972	1204935.615	1893.19
1924	437223.972	1204935.655	1893.22
1925	437236.218	1204939.875	1893.65
1926	437236.194	1204940.374	1893.70
1927	437237.104	1204940.418	1893.71
1928	437241.761	1204939.141	1893.70

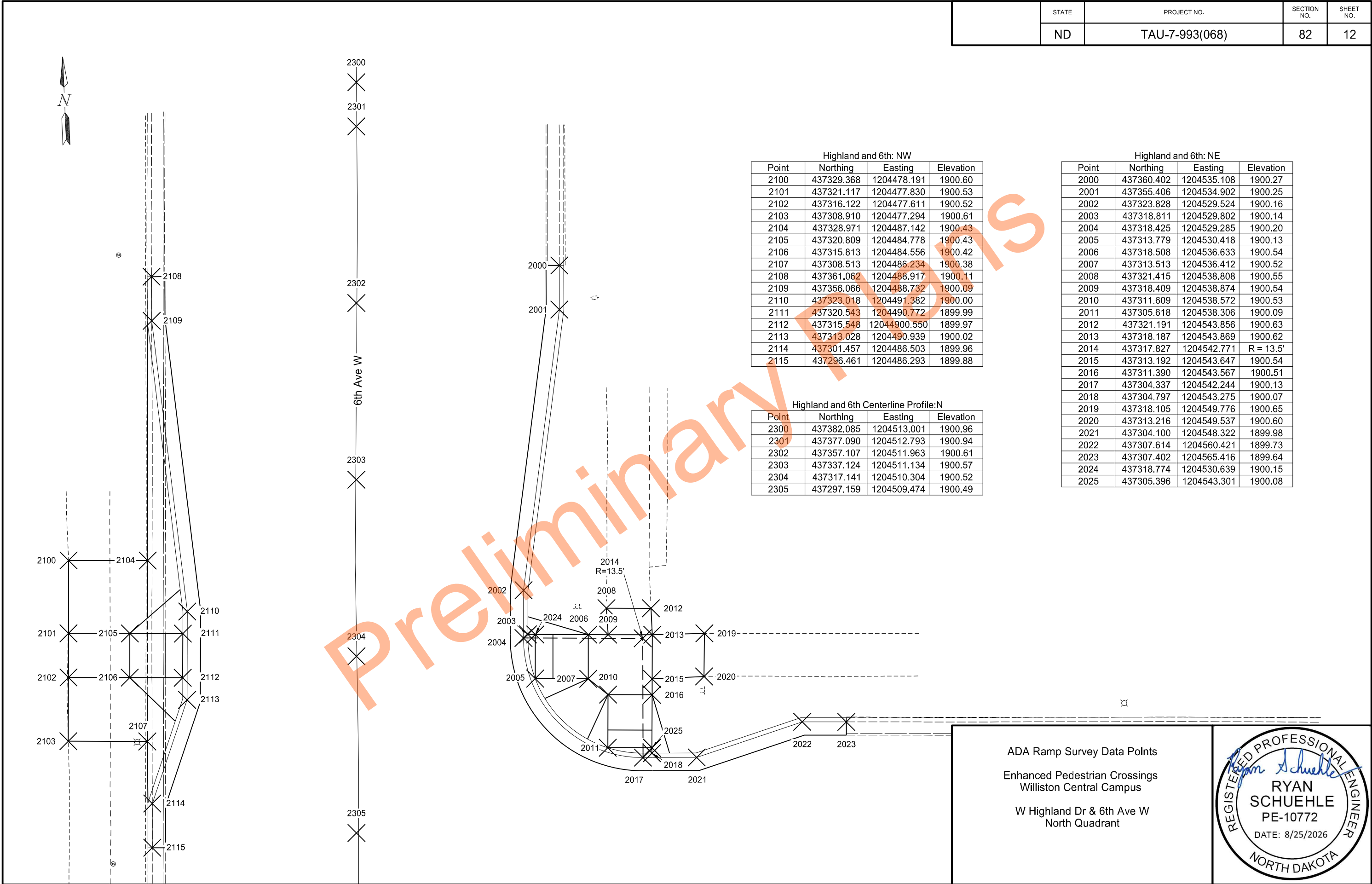
ADA Ramp Survey Data Points

Enhanced Pedestrian Crossings
Williston Central Campus

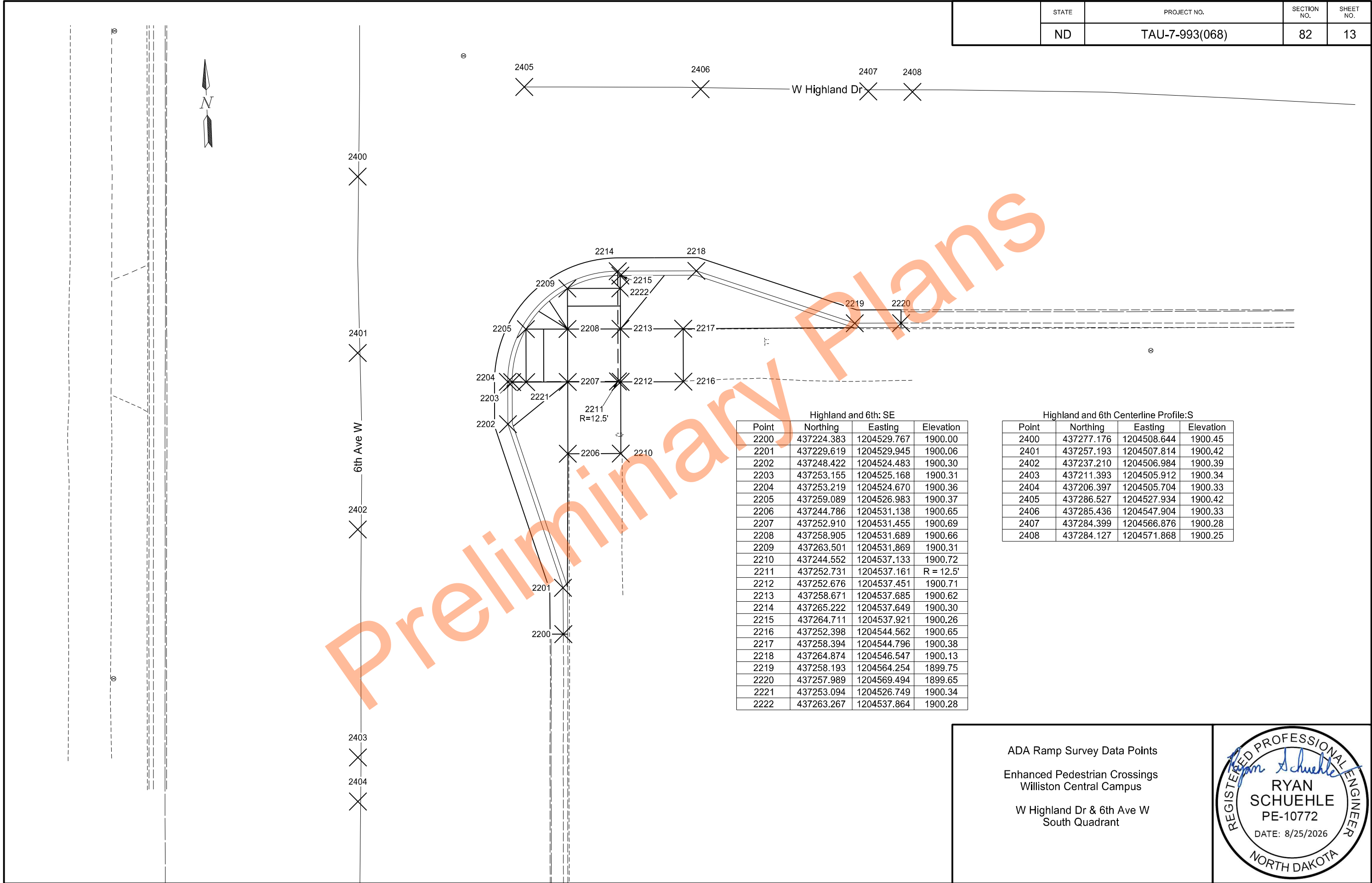
W Highland Dr & 5th Ave W
South Quadrant



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	12



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	82	13

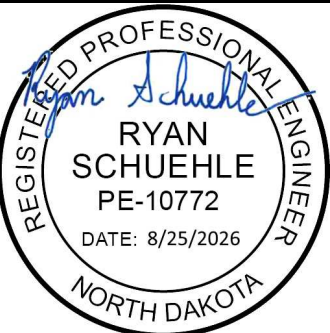


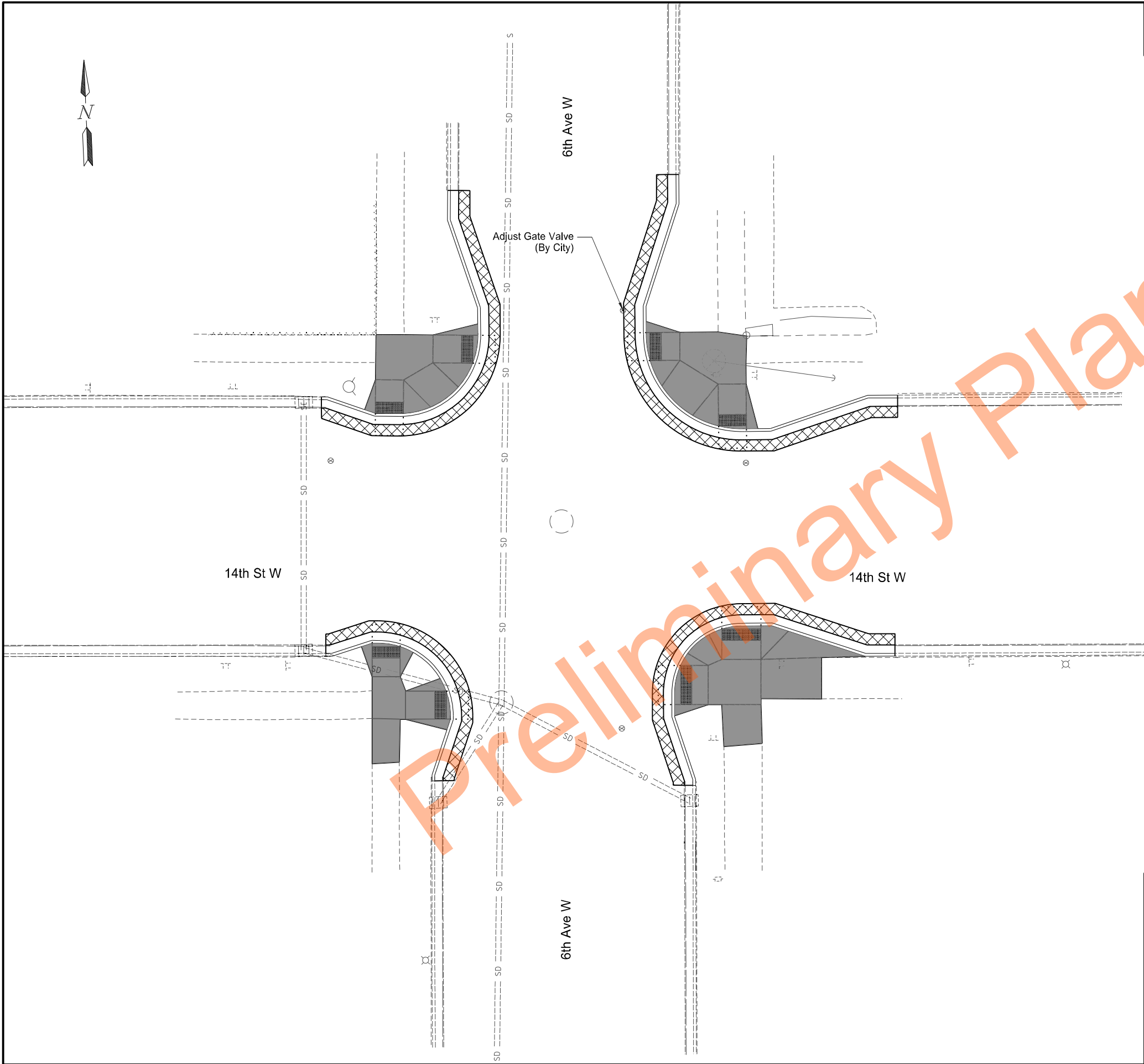
Highland and 6th: SE			
Point	Northing	Easting	Elevation
2200	437224.383	1204529.767	1900.00
2201	437229.619	1204529.945	1900.06
2202	437248.422	1204524.483	1900.30
2203	437253.155	1204525.168	1900.31
2204	437253.219	1204524.670	1900.36
2205	437259.089	1204526.983	1900.37
2206	437244.786	1204531.138	1900.65
2207	437252.910	1204531.455	1900.69
2208	437258.905	1204531.689	1900.66
2209	437263.501	1204531.869	1900.31
2210	437244.552	1204537.133	1900.72
2211	437252.731	1204537.161	R = 12.5'
2212	437252.676	1204537.451	1900.71
2213	437258.671	1204537.685	1900.62
2214	437265.222	1204537.649	1900.30
2215	437264.711	1204537.921	1900.26
2216	437252.398	1204544.562	1900.65
2217	437258.394	1204544.796	1900.38
2218	437264.874	1204546.547	1900.13
2219	437258.193	1204564.254	1899.75
2220	437257.989	1204569.494	1899.65
2221	437253.094	1204526.749	1900.34
2222	437263.267	1204537.864	1900.28

Highland and 6th Centerline Profile:S			
Point	Northing	Easting	Elevation
2400	437277.176	1204508.644	1900.45
2401	437257.193	1204507.814	1900.42
2402	437237.210	1204506.984	1900.39
2403	437211.393	1204505.912	1900.34
2404	437206.397	1204505.704	1900.33
2405	437286.527	1204527.934	1900.42
2406	437285.436	1204547.904	1900.33
2407	437284.399	1204566.876	1900.28
2408	437284.127	1204571.868	1900.25

ADA Ramp Survey Data Points
Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 6th Ave W
South Quadrant





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	90	1

Spec	Code	Item Description	QTY	Unit
302	0120	Aggregate Base Course CL 5		
		Southwest Quadrant	5	TON
		Northwest Quadrant	6	TON
		Southeast Quadrant	9	TON
		Northeast Quadrant	6	TON
430	0500	Commercial Grade Hot Mix Asphalt		
		Southwest Quadrant	2.9	TON
		Northwest Quadrant	4.2	TON
		Southeast Quadrant	4.3	TON
		Northeast Quadrant	5.6	TON
748	0100	Curb & Gutter		
		Southwest Quadrant	44	LF
		Northwest Quadrant	65	LF
		Southeast Quadrant	66	LF
		Northeast Quadrant	86	LF
750	0140	Sidewalk Concrete 6IN		
		Southwest Quadrant	20	SY
		Northwest Quadrant	26	SY
		Southeast Quadrant	43	SY
		Northeast Quadrant	29	SY
750	2115	Detectable Warning Panels		
		Southwest Quadrant	20	SF
		Northwest Quadrant	20	SF
		Southeast Quadrant	28	SF
		Northeast Quadrant	20	SF

LEGEND

- Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5
- 2" Commercial Grade Hot Mix Asphalt
- 4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN
- 5" Commercial Grade Hot Mix Asphalt
- Detectable Warning Pannels
- Curb & Gutter

Paving Sheets

Enhanced Pedestrian Crossings

Williston Central Campus

14th St W & 6th Ave W

REGISTERED PROFESSIONAL ENGINEER

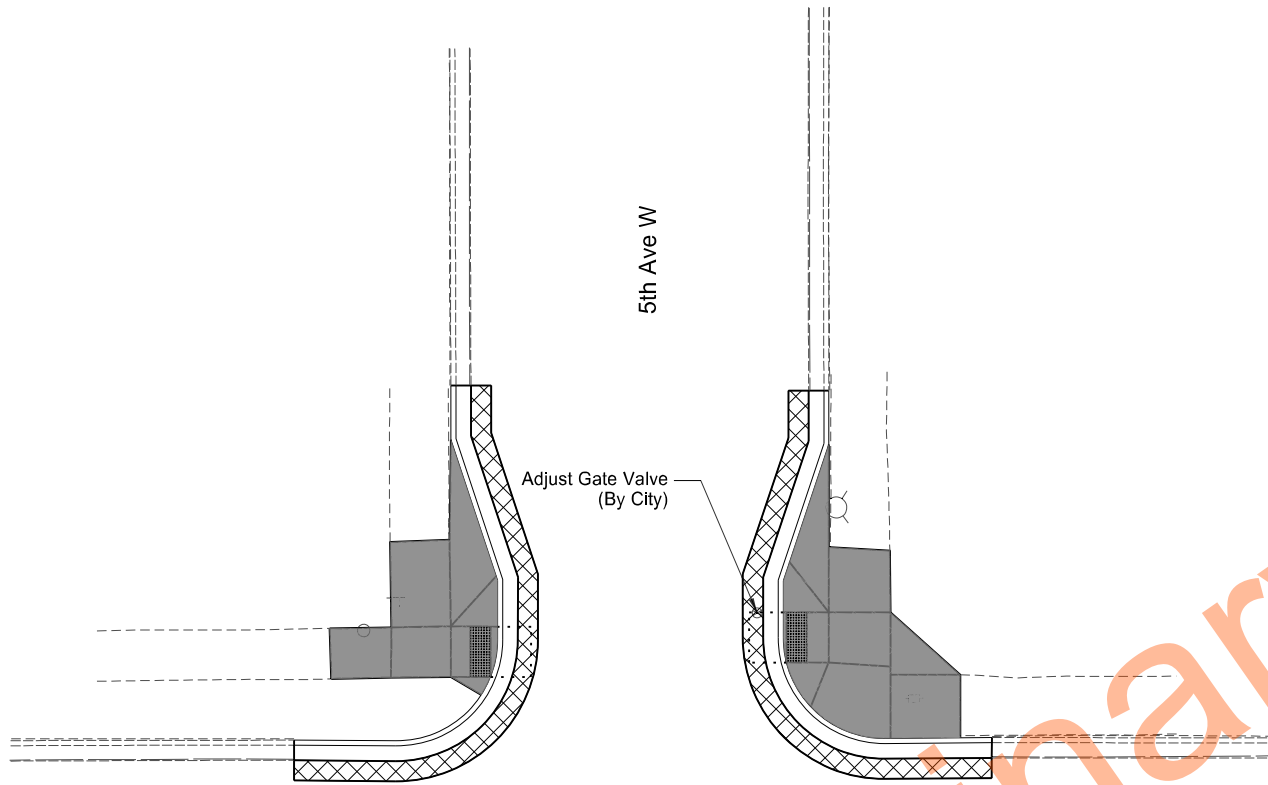
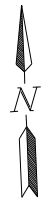
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	90	2

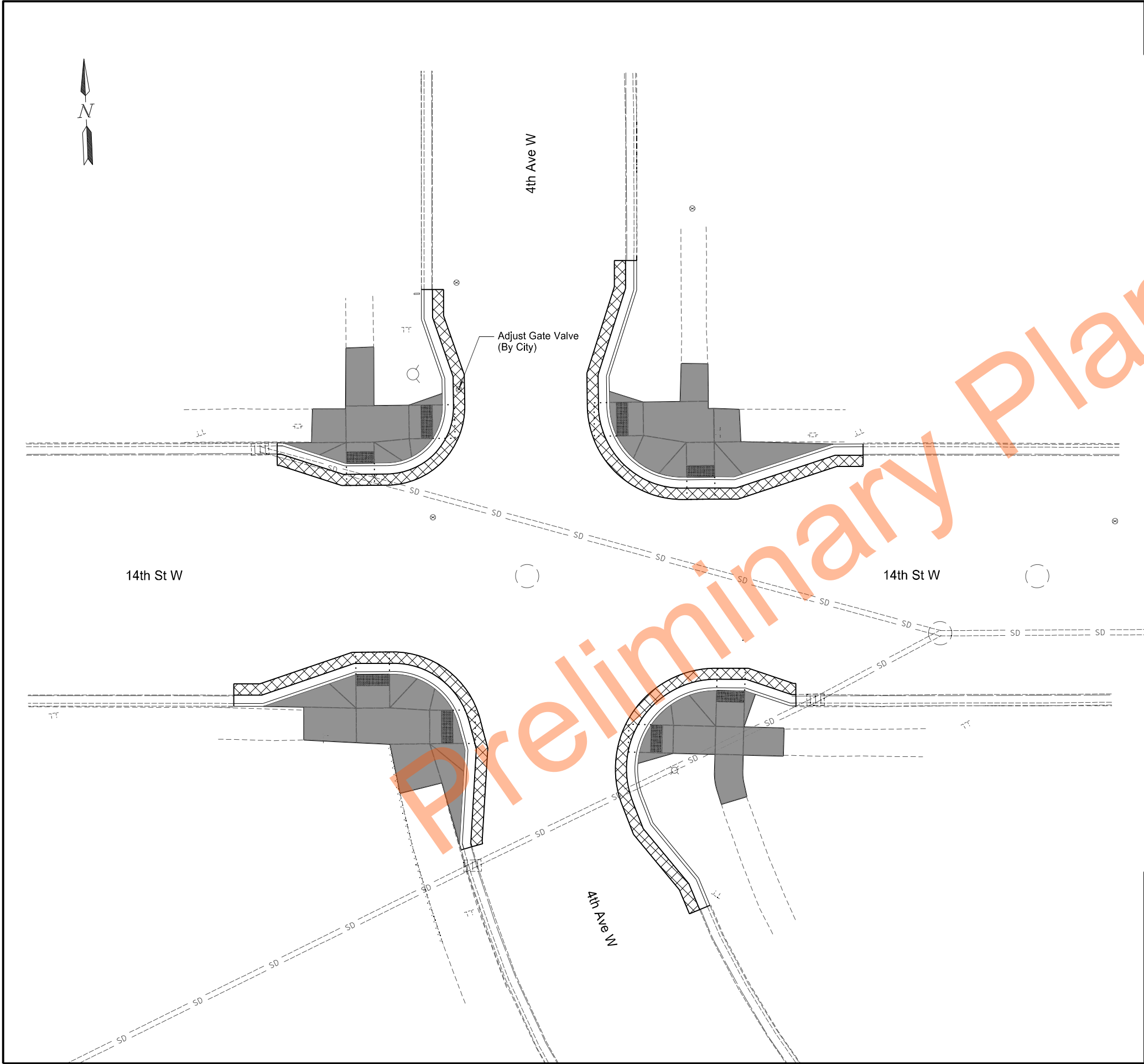
Spec	Code	Item Description	QTY	Unit
302	0120	Aggregate Base Course CL 5		
		Northwest Quadrant	5	TON
		Northeast Quadrant	6	TON
430	0500	Commercial Grade Hot Mix Asphalt		
		Northwest Quadrant	3.5	TON
		Northeast Quadrant	3.5	TON
748	0100	Curb & Gutter		
		Northwest Quadrant	53	LF
		Northeast Quadrant	53	LF
750	0140	Sidewalk Concrete 6IN		
		Northwest Quadrant	22	SY
		Northeast Quadrant	29	SY
750	2115	Detectable Warning Panels		
		Northwest Quadrant	10	SF
		Northeast Quadrant	10	SF

LEGEND

	Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5
	2" Commercial Grade Hot Mix Asphalt
	4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN
	5" Commercial Grade Hot Mix Asphalt
	Detectable Warning Pannels
	Curb & Gutter

Paving Sheets
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	90	3
Spec	Code	Item Description		QTY	Unit
302	0120	Aggregate Base Course CL 5			
		Southwest Quadrant		10	TON
		Northwest Quadrant		7	TON
		Southeast Quadrant		7	TON
		Northeast Quadrant		9	TON
430	0500	Commercial Grade Hot Mix Asphalt			
		Southwest Quadrant		4.5	TON
		Northwest Quadrant		3.9	TON
		Southeast Quadrant		4.4	TON
		Northeast Quadrant		5.3	TON
748	0100	Curb & Gutter			
		Southwest Quadrant		69	LF
		Northwest Quadrant		59	LF
		Southeast Quadrant		66	LF
		Northeast Quadrant		82	LF
750	0140	Sidewalk Concrete 6IN			
		Southwest Quadrant		47	SY
		Northwest Quadrant		31	SY
		Southeast Quadrant		30	SY
		Northeast Quadrant		40	SY
750	2115	Detectable Warning Panels			
		Southwest Quadrant		24	SF
		Northwest Quadrant		22	SF
		Southeast Quadrant		20	SF
		Northeast Quadrant		22	SF

LEGEND

Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5

2" Commercial Grade Hot Mix Asphalt

4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN

5" Commercial Grade Hot Mix Asphalt

Detectable Warning Pannels

Curb & Gutter

Paving Layout

Enhanced Pedestrian Crossings

Williston Central Campus

14th St & 4th Ave W

REGISTERED PROFESSIONAL ENGINEER

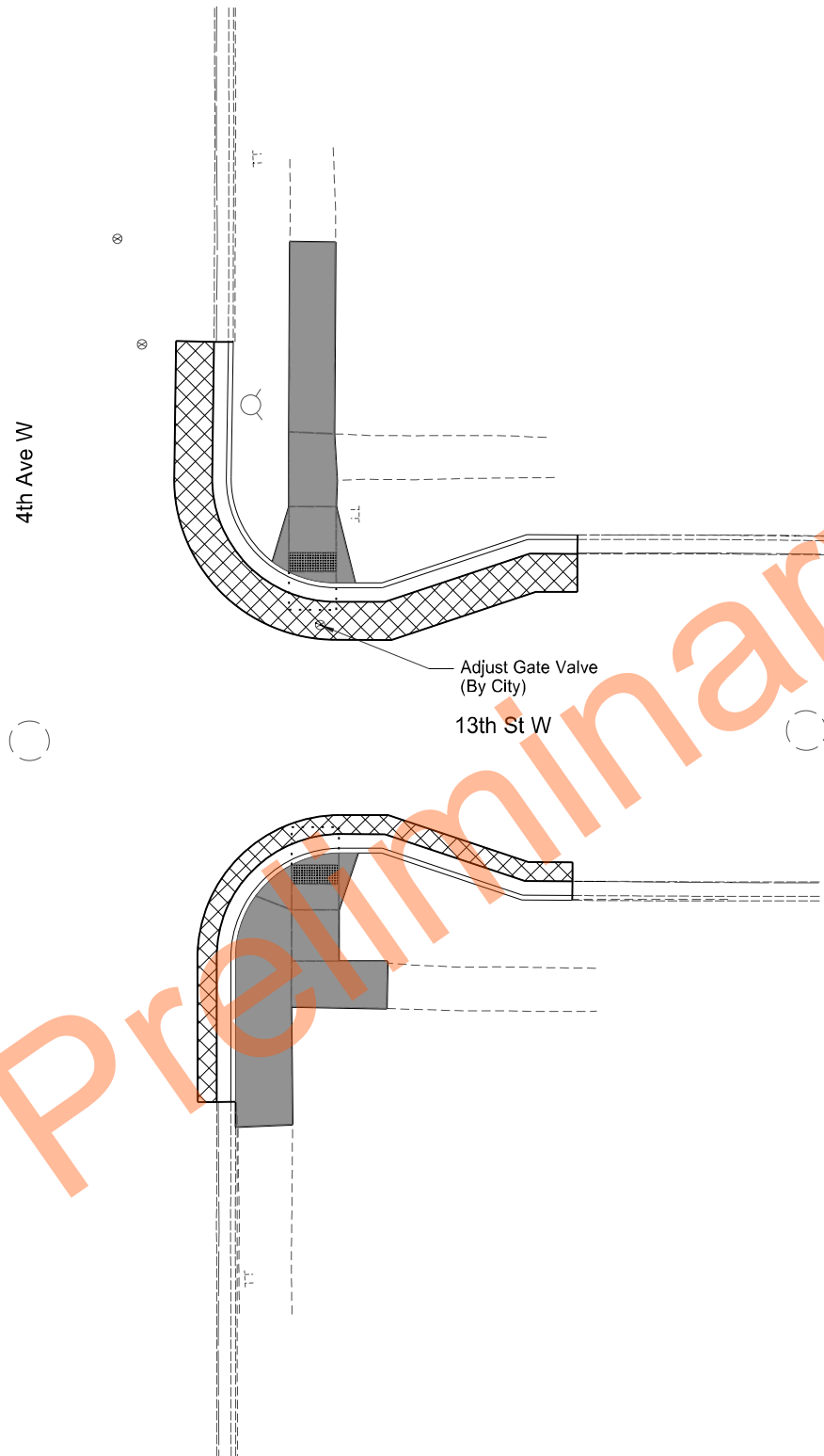
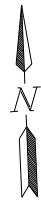
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	90	4

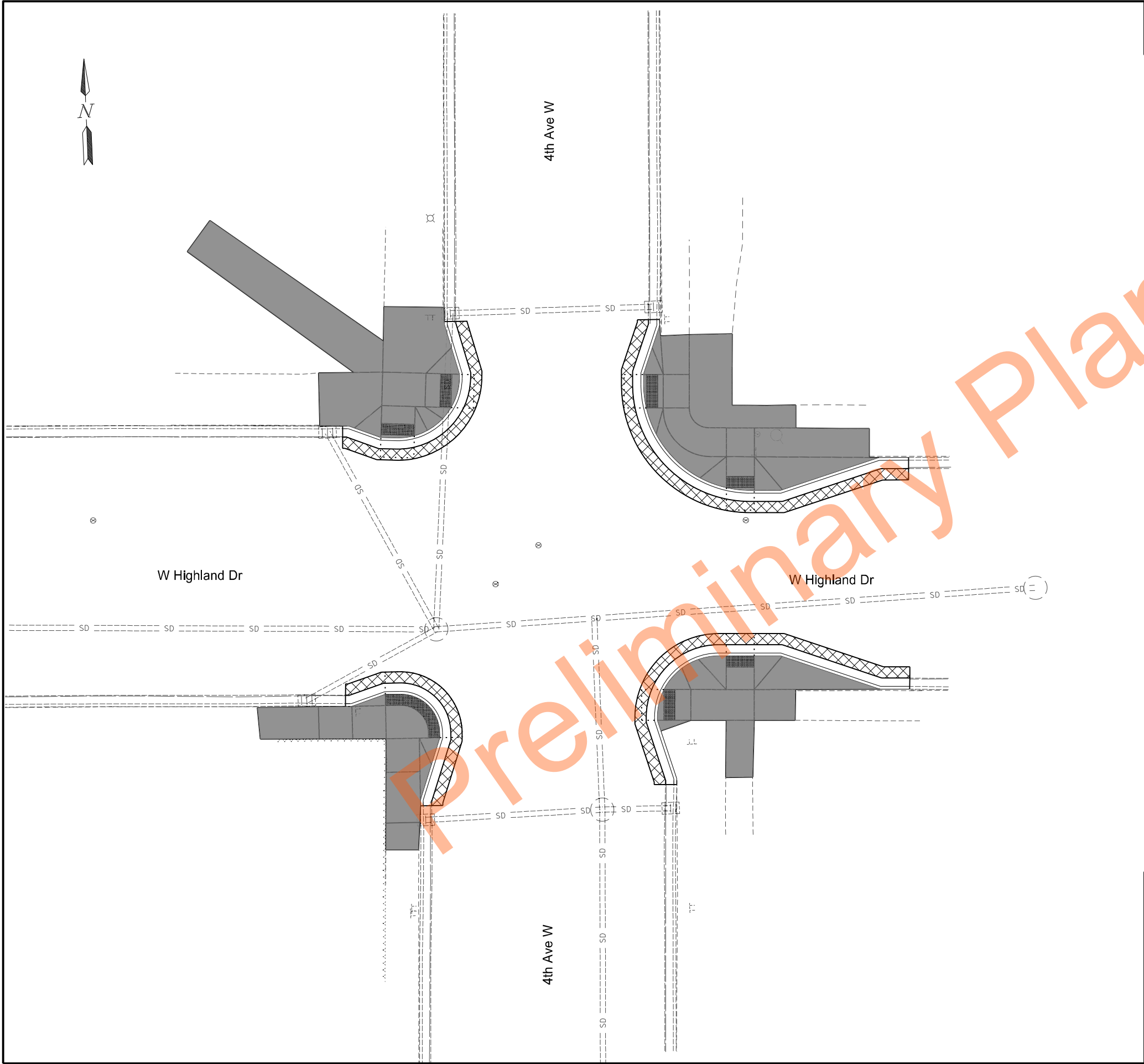
Spec	Code	Item Description	QTY	Unit
302	0120	Aggregate Base Course CL 5		
		Southeast Quadrant	6	TON
430	0500	Commercial Grade Hot Mix Asphalt		
		Northeast Quadrant	5	TON
748	0100	Curb & Gutter		
		Southeast Quadrant	3.9	TON
750	0140	Sidewalk Concrete 6IN		
		Northeast Quadrant	8	TON
750	2115	Detectable Warning Panels		
		Southeast Quadrant	59	LF
750	2115	Detectable Warning Panels		
		Northeast Quadrant	59	LF
750	2115	Detectable Warning Panels		
		Southeast Quadrant	29	SY
750	2115	Detectable Warning Panels		
		Northeast Quadrant	21	SY
750	2115	Detectable Warning Panels		
		Southeast Quadrant	10	SF
750	2115	Detectable Warning Panels		
		Northeast Quadrant	10	SF

LEGEND

	Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5
	2" Commercial Grade Hot Mix Asphalt
	4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN
	5" Commercial Grade Hot Mix Asphalt
	Detectable Warning Pannels
	Curb & Gutter

Paving Layout
Enhanced Pedestrian Crossings
Williston Central Campus
13th St W & 4th Ave W





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	90	5
Spec	Code	Item Description		QTY	Unit
302	0120	Aggregate Base Course CL 5			
		Southwest Quadrant		8	TON
		Northwest Quadrant		15	TON
		Southeast Quadrant		9	TON
		Northeast Quadrant		15	TON
430	0500	Commercial Grade Hot Mix Asphalt			
		Southwest Quadrant		2.5	TON
		Northwest Quadrant		2.7	TON
		Southeast Quadrant		4.4	TON
		Northeast Quadrant		4.7	TON
748	0100	Curb & Gutter			
		Southwest Quadrant		36	LF
		Northwest Quadrant		39	LF
		Southeast Quadrant		66	LF
		Northeast Quadrant		72	LF
750	0140	Sidewalk Concrete 6IN			
		Southwest Quadrant		39	SY
		Northwest Quadrant		72	SY
		Southeast Quadrant		40	SY
		Northeast Quadrant		71	SY
750	2115	Detectable Warning Panels			
		Southwest Quadrant		26	SF
		Northwest Quadrant		24	SF
		Southeast Quadrant		21	SF
		Northeast Quadrant		22	SF

LEGEND

Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5

2" Commercial Grade Hot Mix Asphalt

4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN

5" Commercial Grade Hot Mix Asphalt

Detectable Warning Pannels

Curb & Gutter

Paving Layout

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 4th Ave W

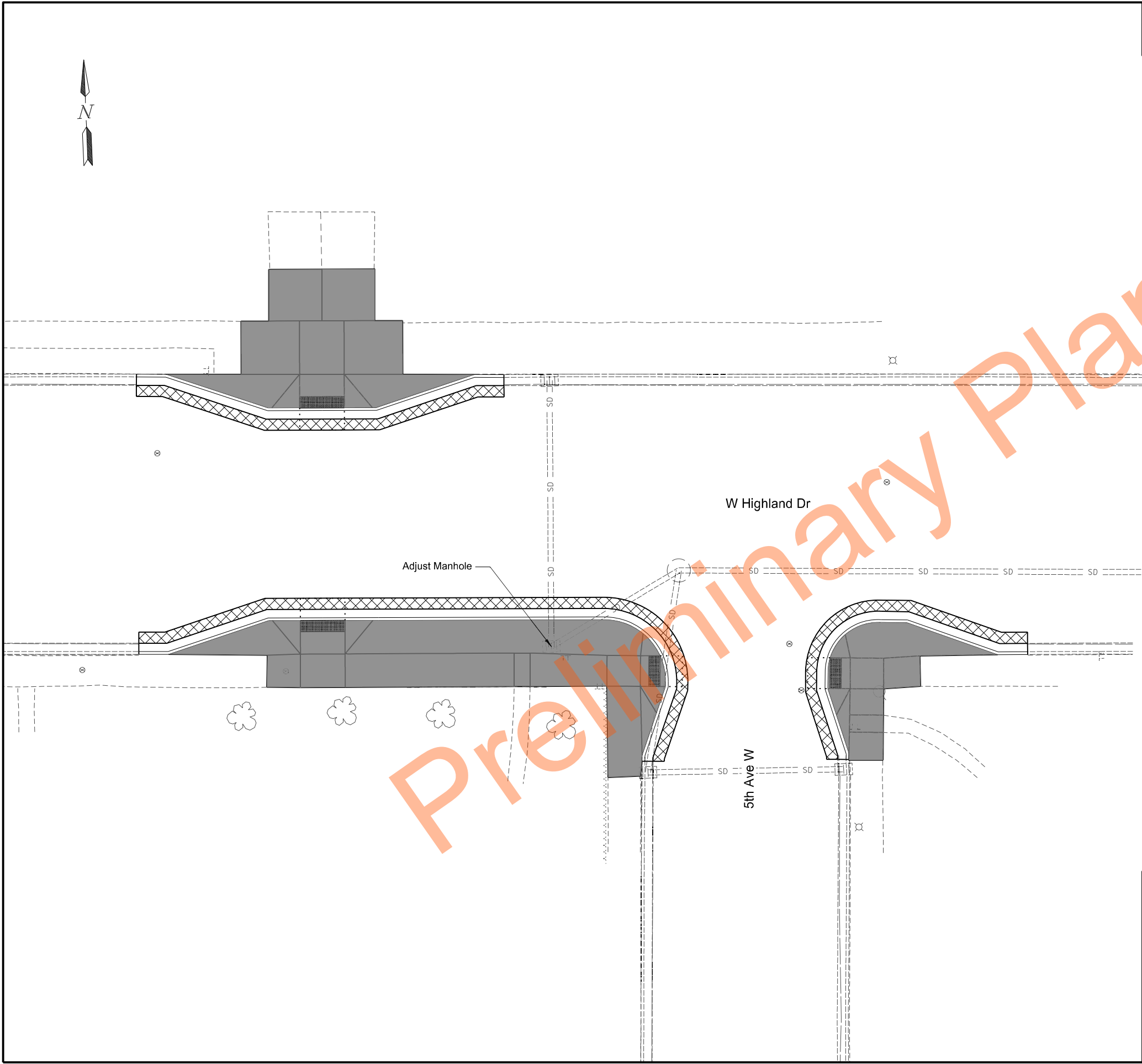
REGISTERED PROFESSIONAL ENGINEER

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	90	6
Spec	Code	Item Description		QTY	Unit
302	0120	Aggregate Base Course CL 5			
		Southwest Quadrant		24	TON
		North Quadrant		16	TON
430	0500	Commercial Grade Hot Mix Asphalt			
		Southwest Quadrant		7.5	TON
		North Quadrant		4.2	TON
722	6200	Adjust Manhole			
		Southwest Quadrant		1	EA
		Southwest Quadrant		118	LF
748	0100	Curb & Gutter			
		North Quadrant		68	LF
		Southwest Quadrant		59	LF
750	0140	Sidewalk Concrete 6IN			
		Southwest Quadrant		113	SY
		North Quadrant		76	SY
750	2115	Detectable Warning Pannels			
		Southwest Quadrant		27	SF
		North Quadrant		16	SF
		Southwest Quadrant		11	SF

LEGEND

Sidewalk Concrete 6IN, 4" Aggregate Base Course CL 5

2" Commercial Grade Hot Mix Asphalt

4" Commercial Grade Hot Mix Asphalt, 8" Aggregate Base Course CL 5, Geosynthetic Material Type S1, Subgrade Preparation-Type-A-12IN

5" Commercial Grade Hot Mix Asphalt

Detectable Warning Pannels

Curb & Gutter

Paving Layout

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 5th Ave W

REGISTERED PROFESSIONAL ENGINEER

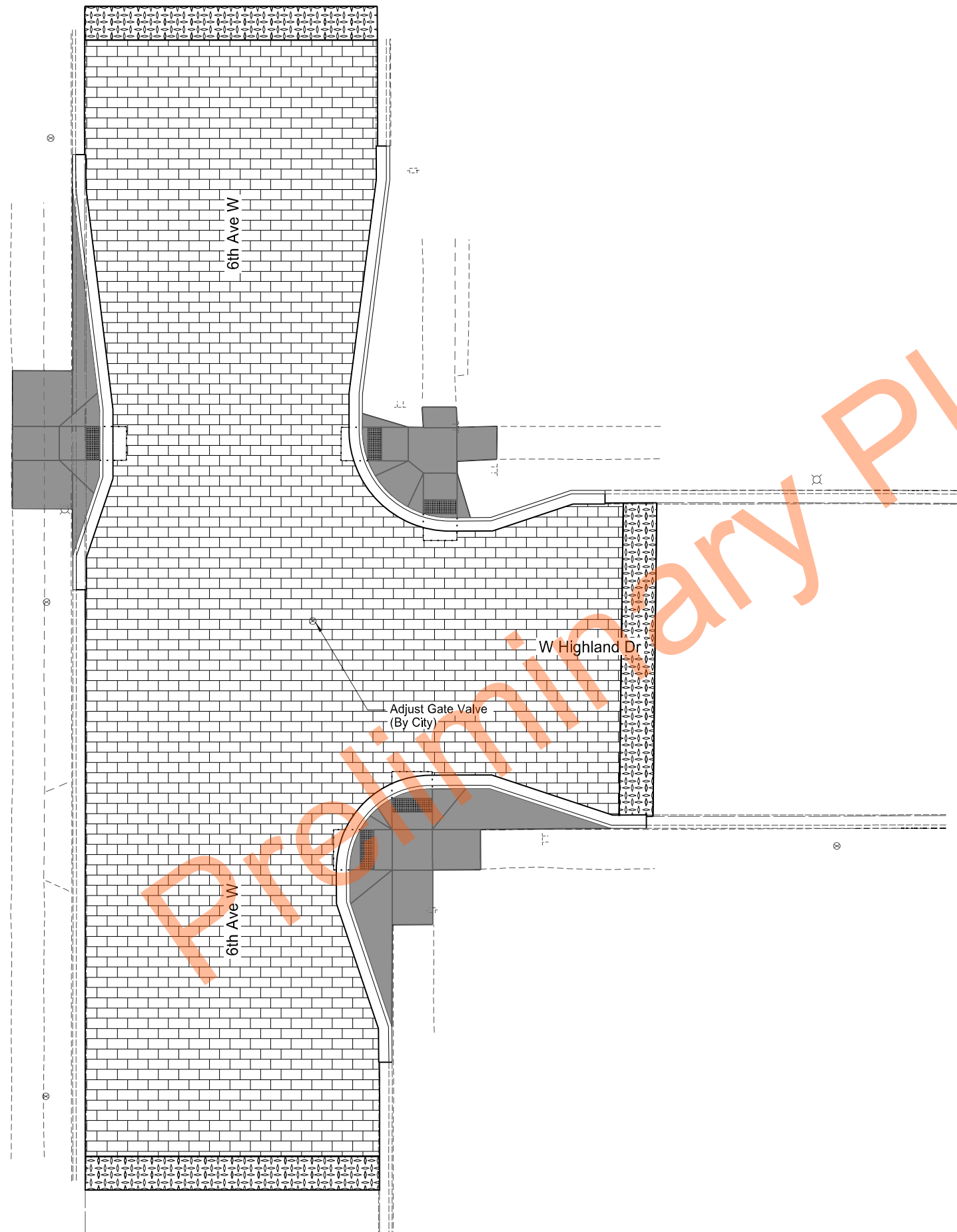
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	90	7

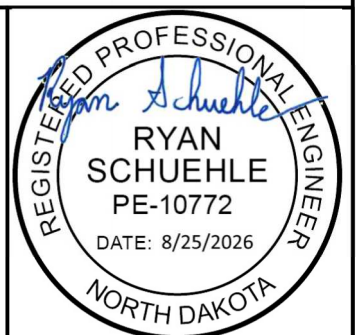
<u>Spec</u>	<u>Code</u>	<u>Item Description</u>	<u>QTY</u>	<u>Unit</u>
230	0165	Subgrade Preparation-Type-A-12IN		
		6th Ave W	1.7	STA
		W Highland Dr	0.4	STA
302	0120	Aggregate Base Course CL 5		
			381	TON
		West Quadrant	8	TON
		Southeast Quadrant	10	TON
		Northeast Quadrant	5	TON
430	0500	Commercial Grade Hot Mix Asphalt		
			212	TON
709	0161	Geosynthetic Material Type S1		
			914	SY
748	0100	Curb & Gutter		
		West Quadrant	66	LF
		Southeast Quadrant	83	LF
		Northeast Quadrant	88	LF
750	0140	Sidewalk Concrete 6IN		
		West Quadrant	35	SY
		Southeast Quadrant	45	SY
		Northeast Quadrant	24	SY
750	2115	Detectable Warning Panels		
		West Quadrant	10	SF
		Southeast Quadrant	24	SF
		Northeast Quadrant	20	SF

LEGEND

Paving Layout

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 6th Ave W



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	TAU-7-993(068)	100	1

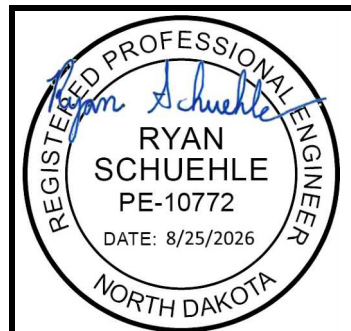
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT ____ MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	48"x24"	END ROAD WORK	7	26	182
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT ____ MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT ____ MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$150 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)	6	7	42
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP	2	32	64
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT ____ (Portable only)	4	30	120
R2-1-48	48"x60"	SPEED LIMIT ____		39	
R2-1aP-24	24"x18"	MINIMUM FEE \$150 (Mounted on Speed Limit post)	2	10	20
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R9-10-24	24"x12"	SIDEWALK CLOSED	12	13	156
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)		12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)	6	15	90
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT		35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD		35	
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ____ FT or ____ MILE	2	35	70
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ____ FT or ____ MILE	2	35	70
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	____ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)		14	
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	____ FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	48"x48"	ROAD WORK AHEAD or ____ FT or ____ MILE	7	35	245
W20-2-48	48"x48"	DETOUR AHEAD or ____ FT or ____ MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ____ FT or ____ MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ____ FT or ____ MILE		35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or ____ FT or ____ MILE		35	
W20-7-48	48"x48"	FLAGGER	4	35	140
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	4	5	20
W20-52P-54	54"x12"	NEXT ____ MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS	2	35	70
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ____ FT or ____ MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	

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SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	128

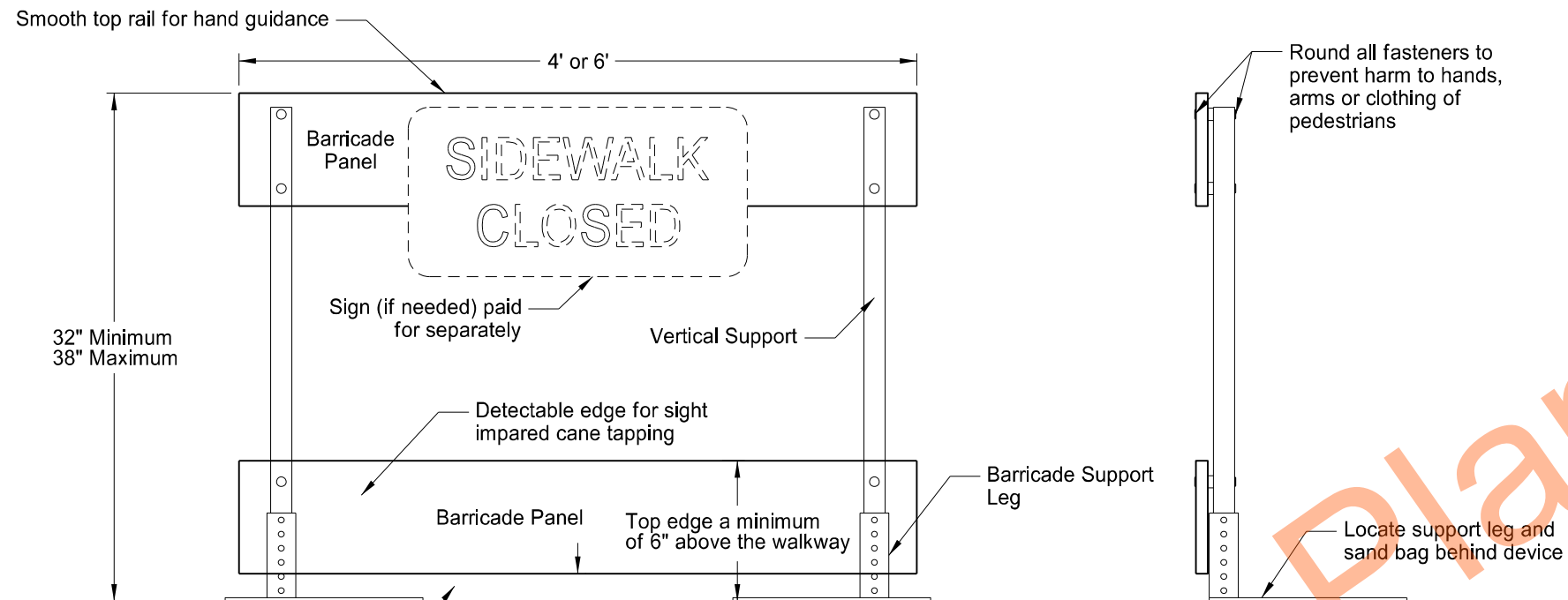
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NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List

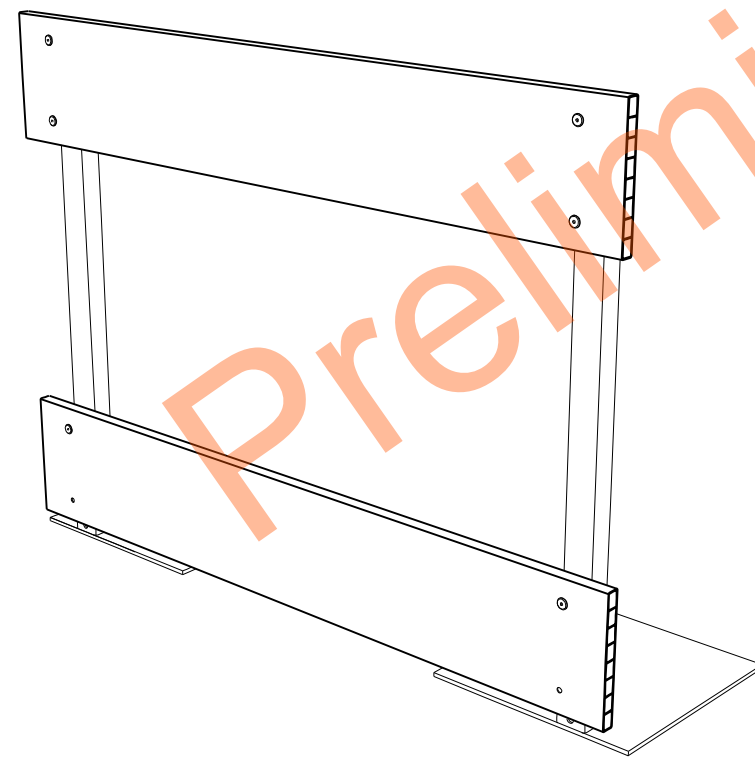
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	100	2



NOTES:

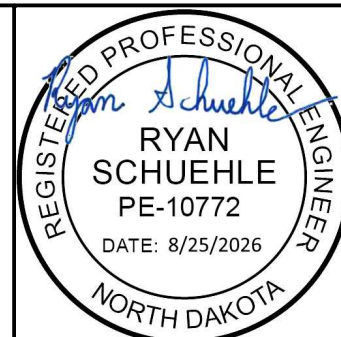
Sidewalk Barricades

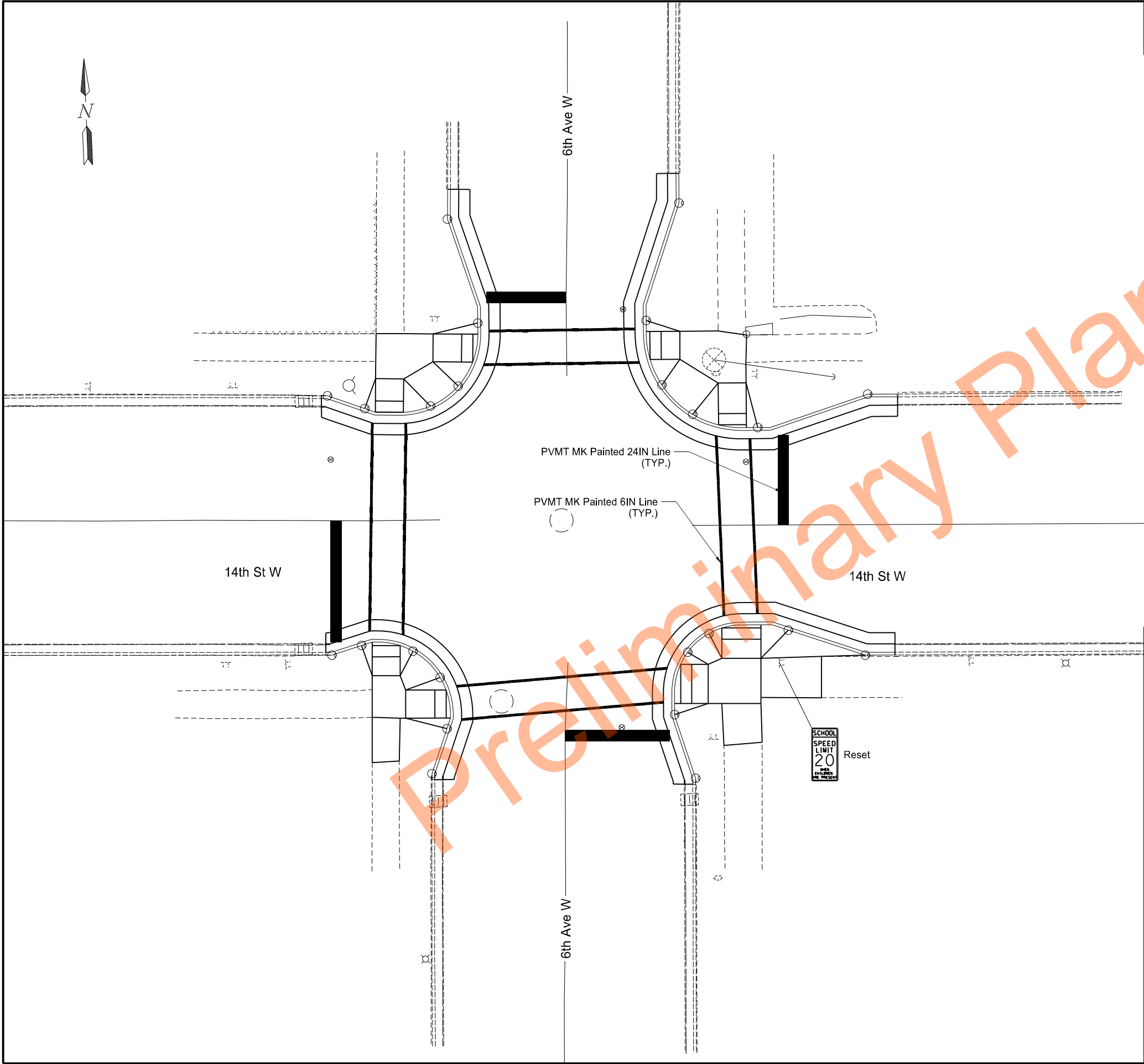
1. Provide self standing sidewalk barricade with no supports extending into the pedestrians path.
2. Use orange or orange and white diagonal striped barricade panels contrasting with the walkway surface.
3. Provide ADA compliant and NCHRP 350 or Mash Test Level 3 (TL3) approved sidewalk barricades.
4. Include all costs to furnish, maintain and remove sidewalk barricades in the price bid for "Sidewalk Barricade".



Perspective View

Sidewalk Barricade
Enhanced Pedestrian Crossings
Williston Central Campus





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	120	1

Spec	Code	Item Description	QTY	Unit
754	0170	Flexible Delineators		
		Southwest Quadrant	6	EA
		Northwest Quadrant	6	EA
		Southeast Quadrant	6	EA
		Northeast Quadrant	6	EA
754	0952	Reset Sign Panel		
		Southeast Quadrant	1	EA
754	0953	Reset Sign Support		
		Southeast Quadrant	1	EA
762	1106	PVT MK Painted 6IN Line		
		West Approach	76	LF
		North Approach	54	LF
		East Approach	64	LF
		South Approach	75	LF
762	1124	PVT MK Painted 24IN Line		
		West Approach	22	LF
		North Approach	15	LF
		East Approach	17	LF
		South Approach	19	LF

LEGEND

○ Flexible Delineators

2 1/4" OD (min)

2" 3"

2" to 6"

3"

28" min

See DETAIL A

ELEVATION

PLAN

Galvanized steel anchor (see INSTALLATION NOTES)

White retroreflective band

Yellow

Surface mountable base

Flexible delineator

3/8" ø x 3" anchor

Surface mountable base

Installation hole

DETAIL A

Flexible Delineator Details

INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.

Marking and Signing Layout

Enhanced Pedestrian Crossings

Williston Central Campus

14th St W & 6th Ave W

REGISTERED PROFESSIONAL ENGINEER

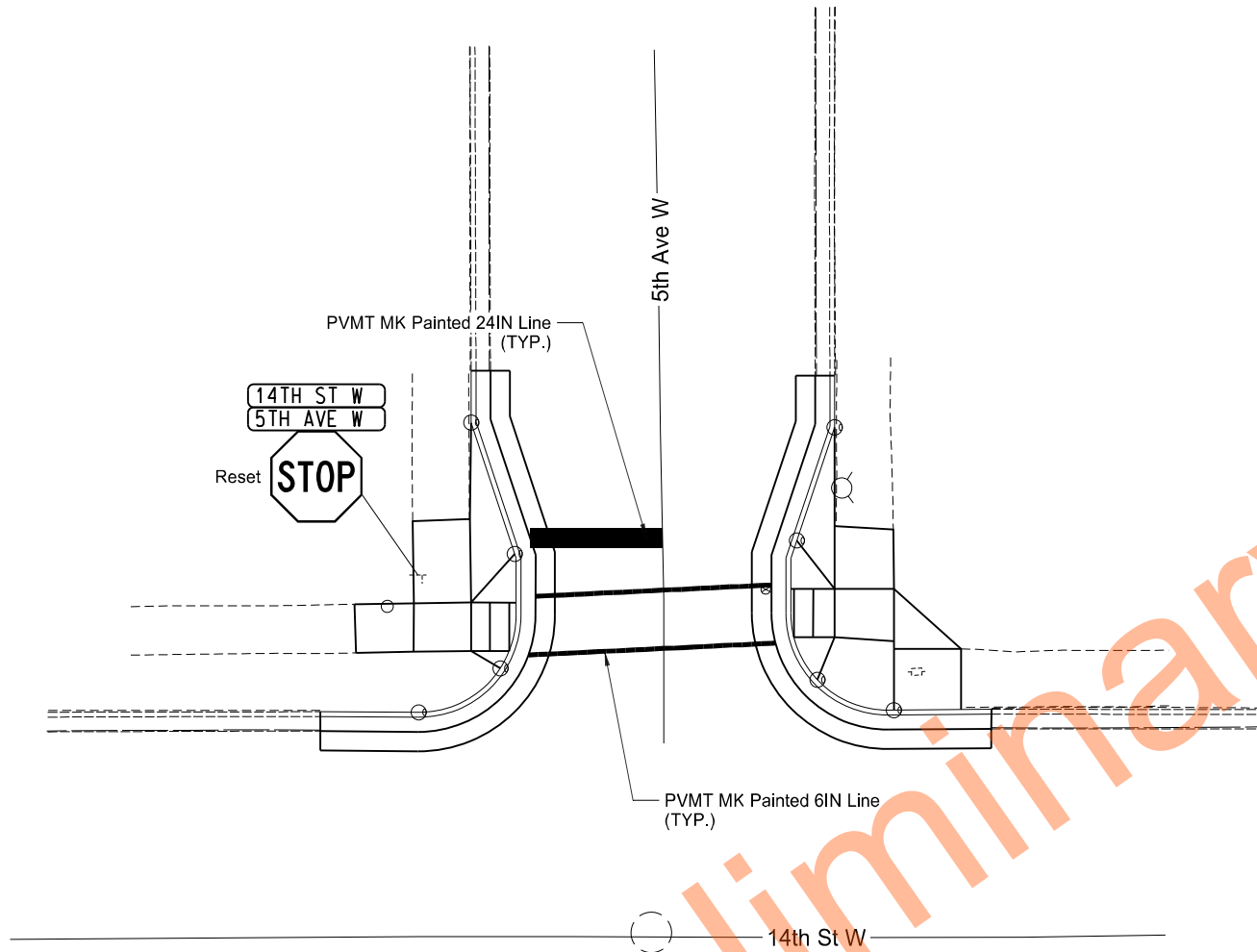
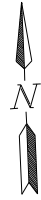
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA

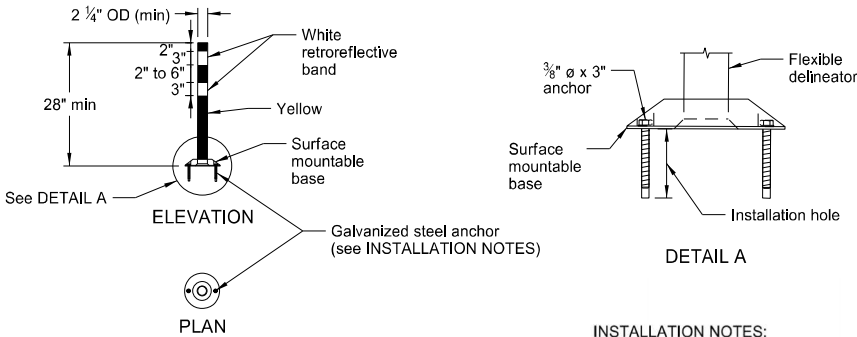


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	120	2

Spec	Code	Item Description	QTY	Unit
754	0170	Flexible Delineators		
		Northwest Quadrant	4	EA
754	0952	Reset Sign Panel	4	EA
		Northwest Quadrant	1	EA
754	0953	Reset Sign Support	1	EA
		Northwest Quadrant	1	EA
762	1106	PVMT MK Painted 6IN Line		
762	1124	PVMT MK Painted 24IN Line	50	LF
		North Approach	14	LF

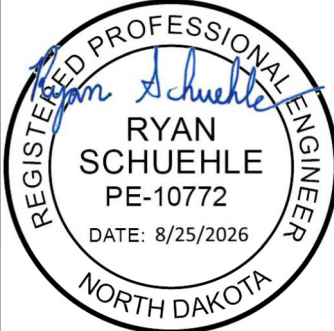
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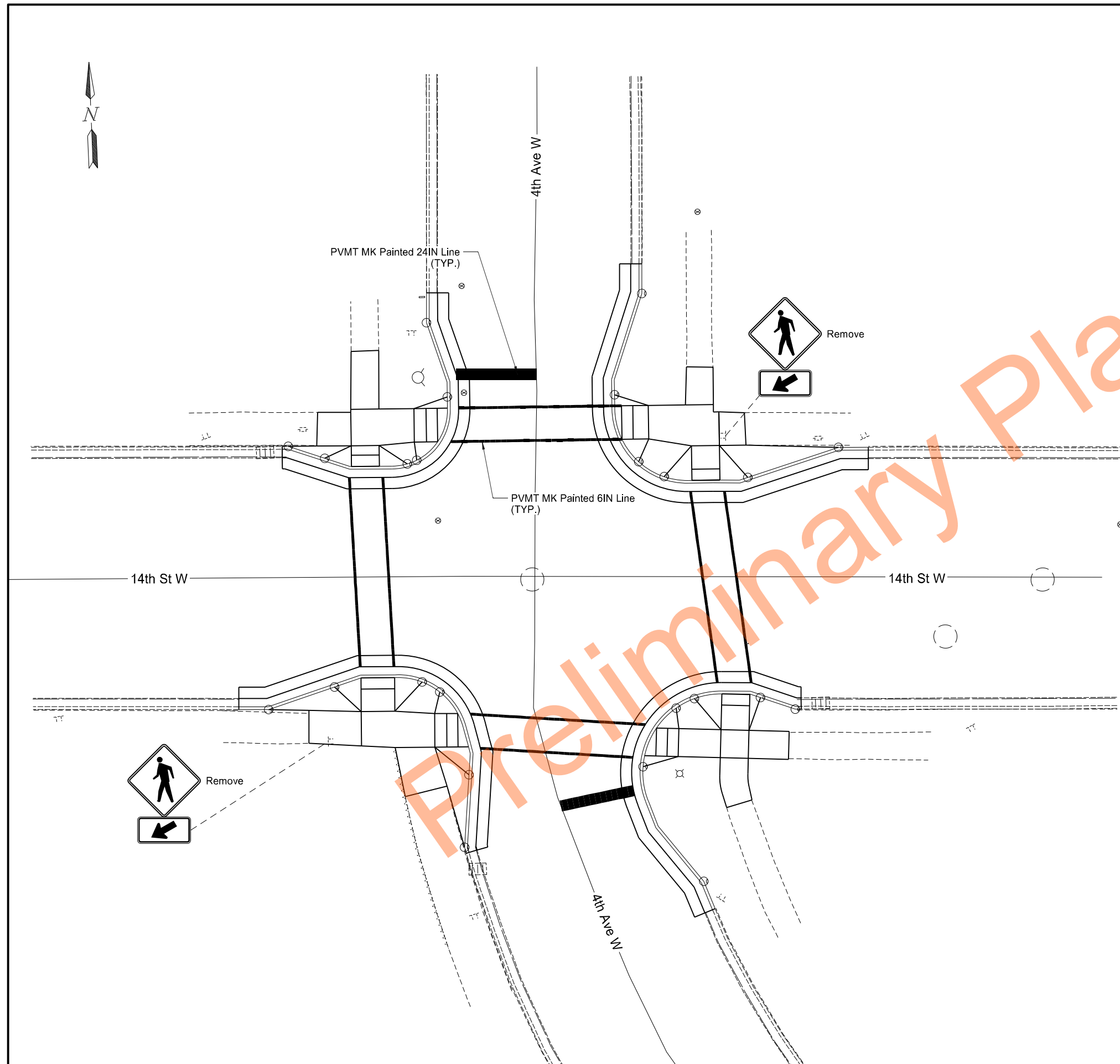
Flexible Delineators



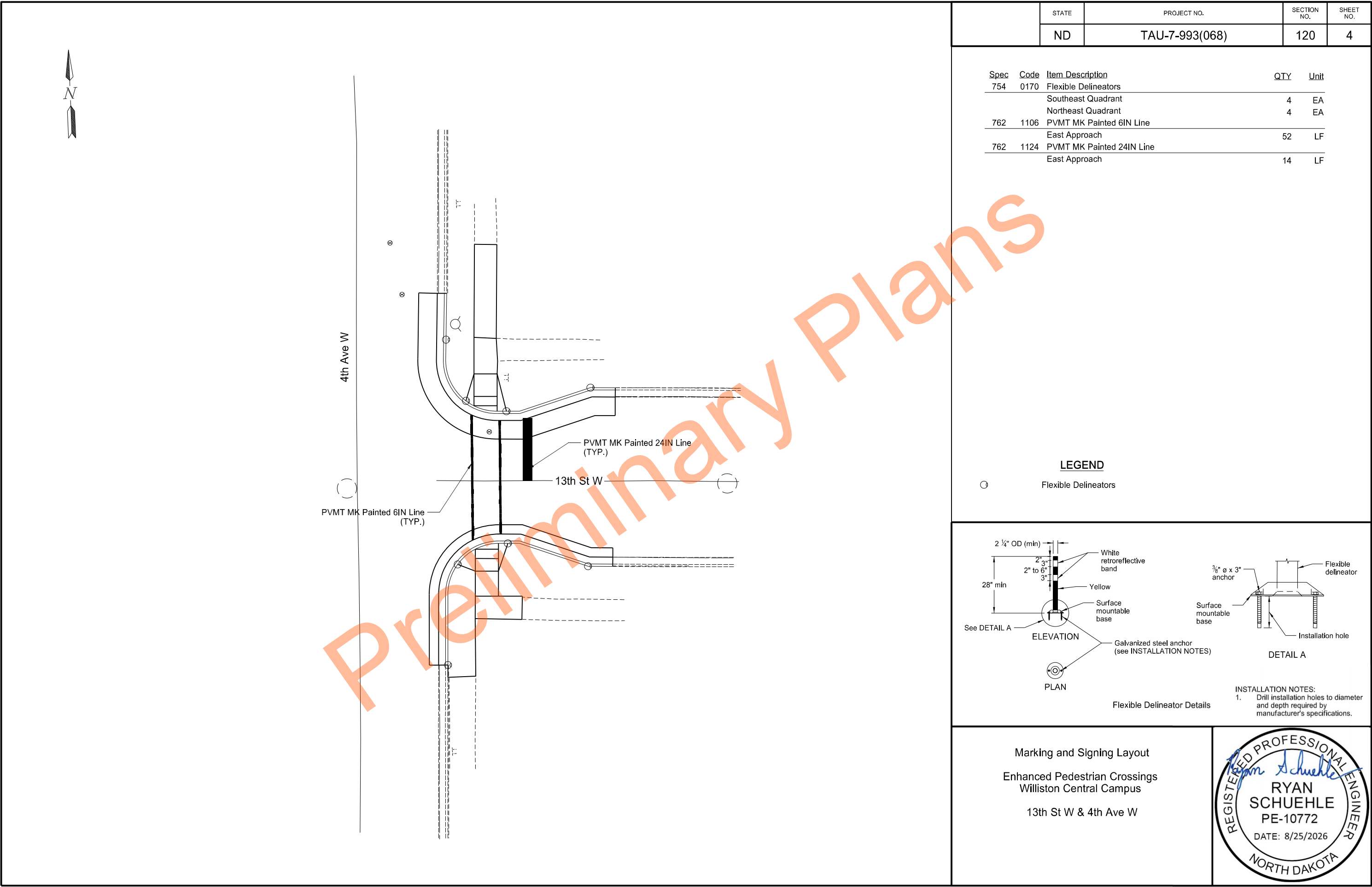
INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.

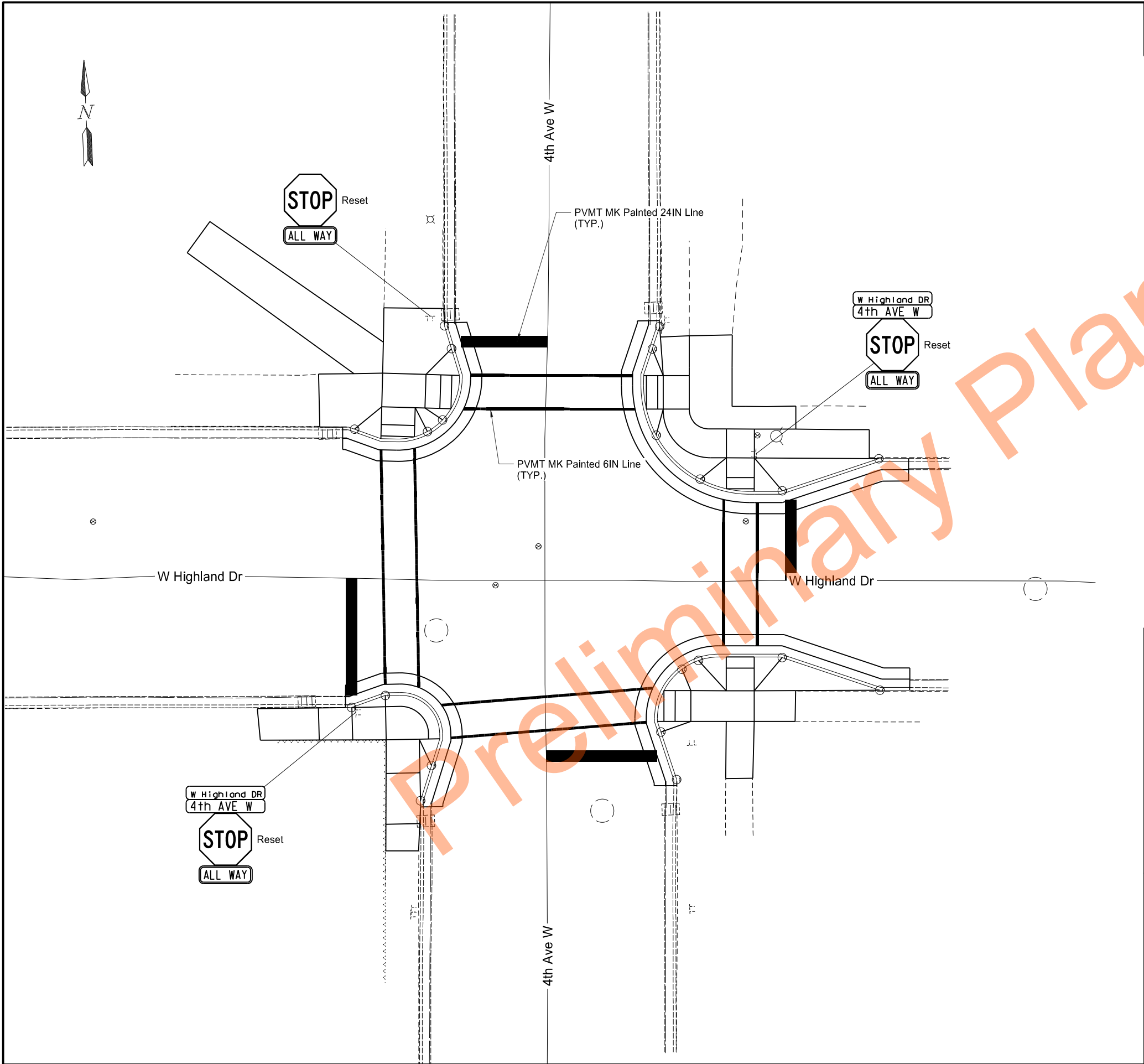
Marking and Signing Layout
Enhanced Pedestrian Crossings
Williston Central Campus
14th St W & 5th Ave W





<u>Spec</u>	<u>Code</u>	<u>Item Description</u>	<u>QTY</u>	<u>Unit</u>
754	0170	Flexible Delineators		
		Southwest Quadrant	6	EA
		Northwest Quadrant	6	EA
		Southeast Quadrant	6	EA
		Northeast Quadrant	6	EA
762	1106	PVMT MK Painted 6IN Line		
		West Approach	68	LF
		North Approach	60	LF
		East Approach	70	LF
		South Approach	59	LF
762	1124	PVMT MK Painted 24IN Line		
		North Approach	15	LF
		South Approach	14	LF





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	120	5

Spec	Code	Item Description	QTY	Unit
754	0170	Flexible Delineators		
		Southwest Quadrant	4	EA
		Northwest Quadrant	5	EA
		Southeast Quadrant	6	EA
		Northeast Quadrant	6	EA
754	0952	Reset Sign Panel		
		Southwest Quadrant	1	EA
		Northwest Quadrant	1	EA
		Northeast Quadrant	1	EA
754	0953	Reset Sign Support		
		Southwest Quadrant	1	EA
		Northwest Quadrant	1	EA
		Northeast Quadrant	1	EA
762	1106	PVMT MK Painted 6IN Line		
		West Approach	85	LF
		North Approach	60	LF
		East Approach	52	LF
		South Approach	73	LF
762	1124	PVMT MK Painted 24IN Line		
		West Approach	21	LF
		North Approach	16	LF
		East Approach	15	LF
		South Approach	20	LF

LEGEND

○ Flexible Delineators

DETAIL A

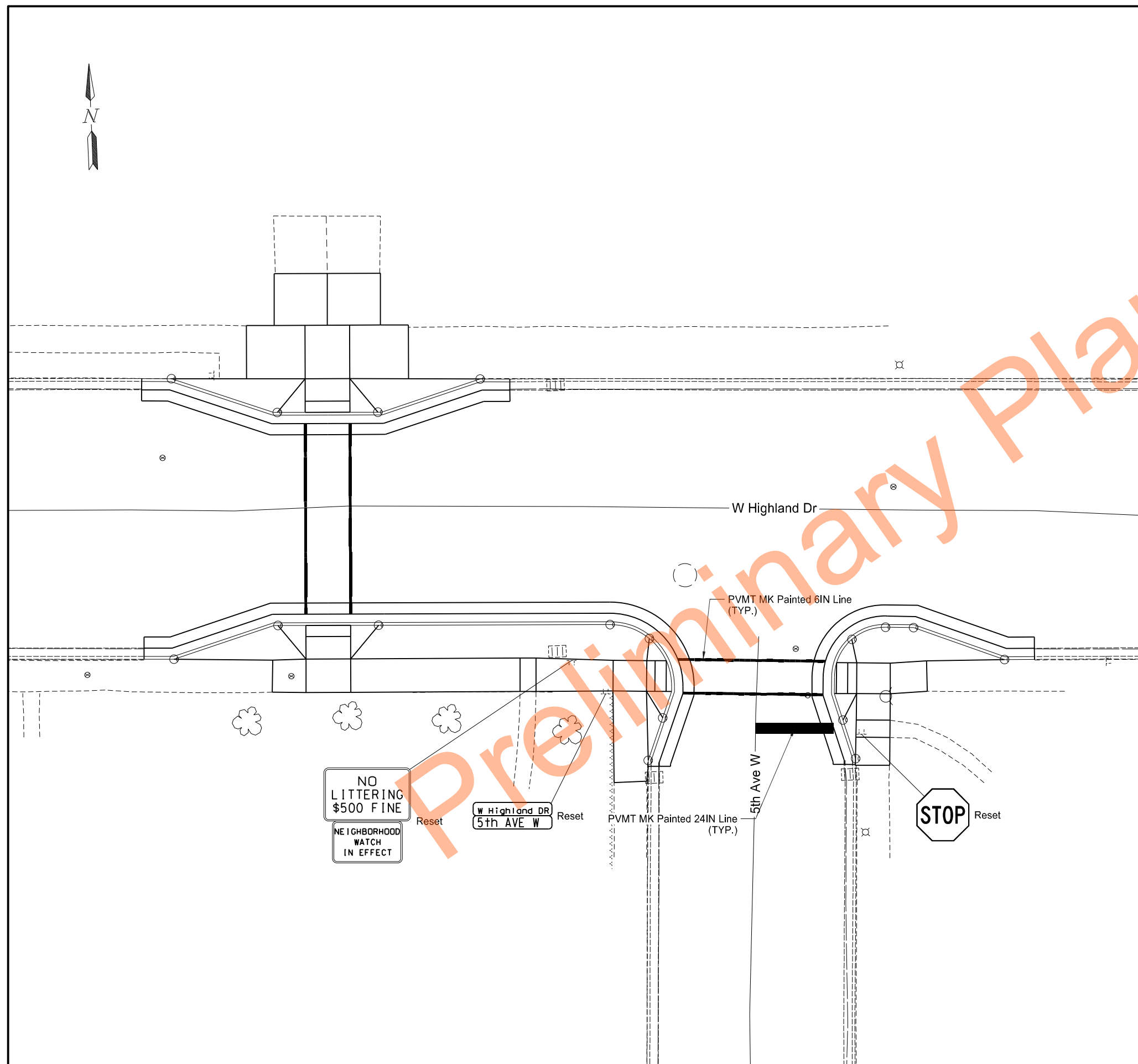
INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.

Marking and Signing Layout

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 4th Ave W



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	120	6

Spec	Code	Item Description	QTY	Unit
754	0170	Flexible Delineators		
		Southwest Quadrant	7	EA
		North Quadrant	4	EA
		Southeast Quadrant	6	EA
754	0952	Reset Sign Panel		
		Southwest Quadrant	2	EA
		Southeast Quadrant	1	EA
754	0953	Reset Sign Support		
		Southwest Quadrant	2	EA
		Southeast Quadrant	1	EA
762	1106	PVMT MK Painted 6IN Line		
		West Approach	69	LF
		South Approach	52	LF
762	1124	PVMT MK Painted 24IN Line		
		South Approach	15	LF

LEGEND

○ Flexible Delineators

ELEVATION

PLAN

DETAIL A

Flexible Delineator Details

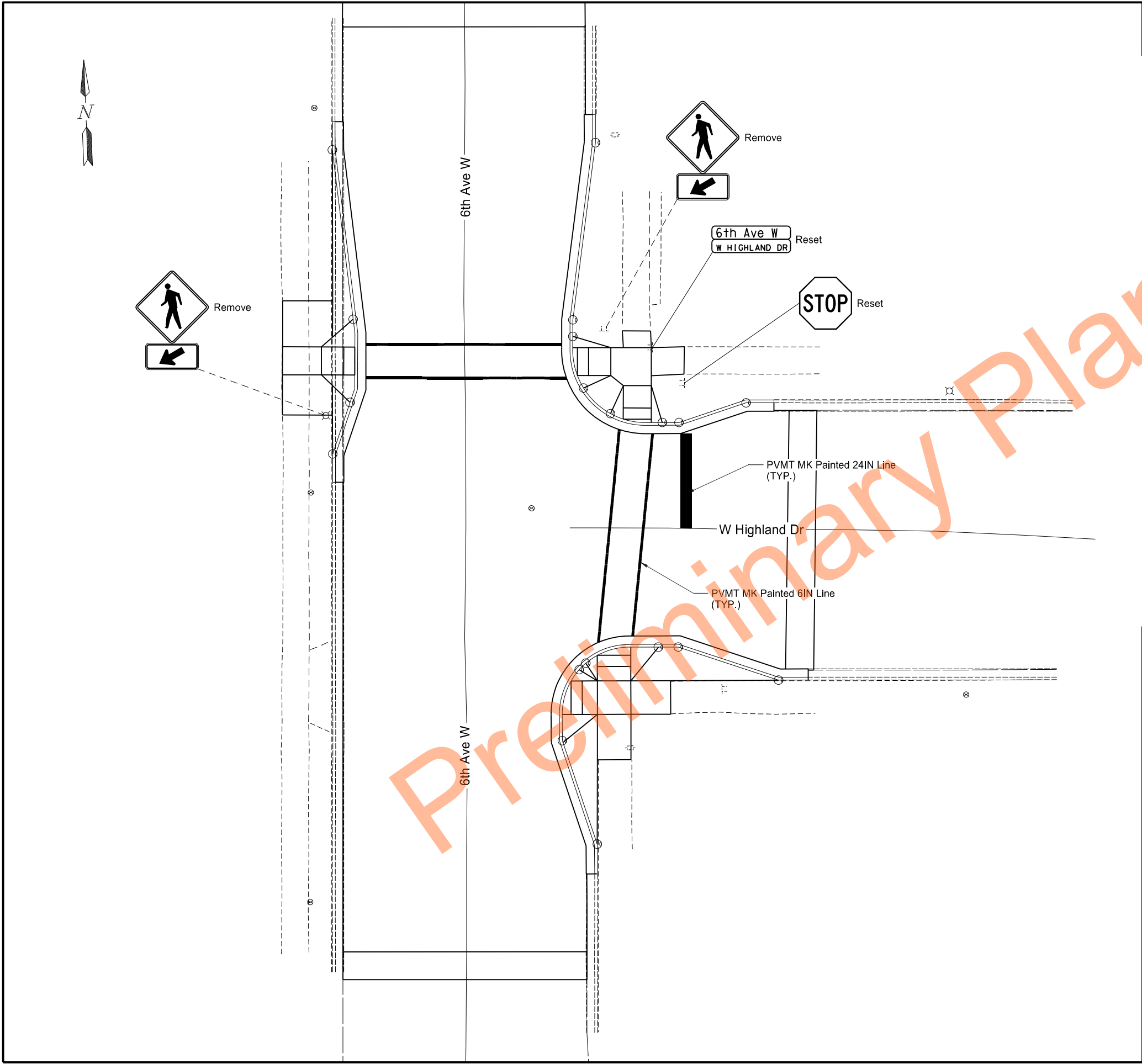
INSTALLATION NOTES:

- Drill installation holes to diameter and depth required by manufacturer's specifications.

Marking and Signing Layout

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 5th Ave W



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	TAU-7-993(068)	120	7

Spec	Code	Item Description	QTY	Unit
754	0170	Flexible Delineators		
		West Quadrant	4	EA
		Southeast Quadrant	7	EA
		Northeast Quadrant	8	EA
754	0952	Reset Sign Panel		
		Northeast Quadrant	2	EA
754	0953	Reset Sign Support		
		Northeast Quadrant	2	EA
762	1106	PVMT MK Painted 6IN Line		
		North Approach	72	LF
		East Approach	75	LF
762	1124	PVMT MK Painted 24IN Line		
		West Approach	17	LF

LEGEND

○ Flexible Delineators

2 1/4" OD (min)

2" 3"

2" to 6"

28" min

See DETAIL A

ELEVATION

PLAN

White retroreflective band

Yellow

Surface mountable base

Galvanized steel anchor (see INSTALLATION NOTES)

3/8" ø x 3" anchor

Flexible delineator

Surface mountable base

Installation hole

DETAIL A

Flexible Delineator Details

INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.

Marking and Signing Layout

Enhanced Pedestrian Crossings

Williston Central Campus

W Highland Dr & 6th Ave W

REGISTERED PROFESSIONAL ENGINEER

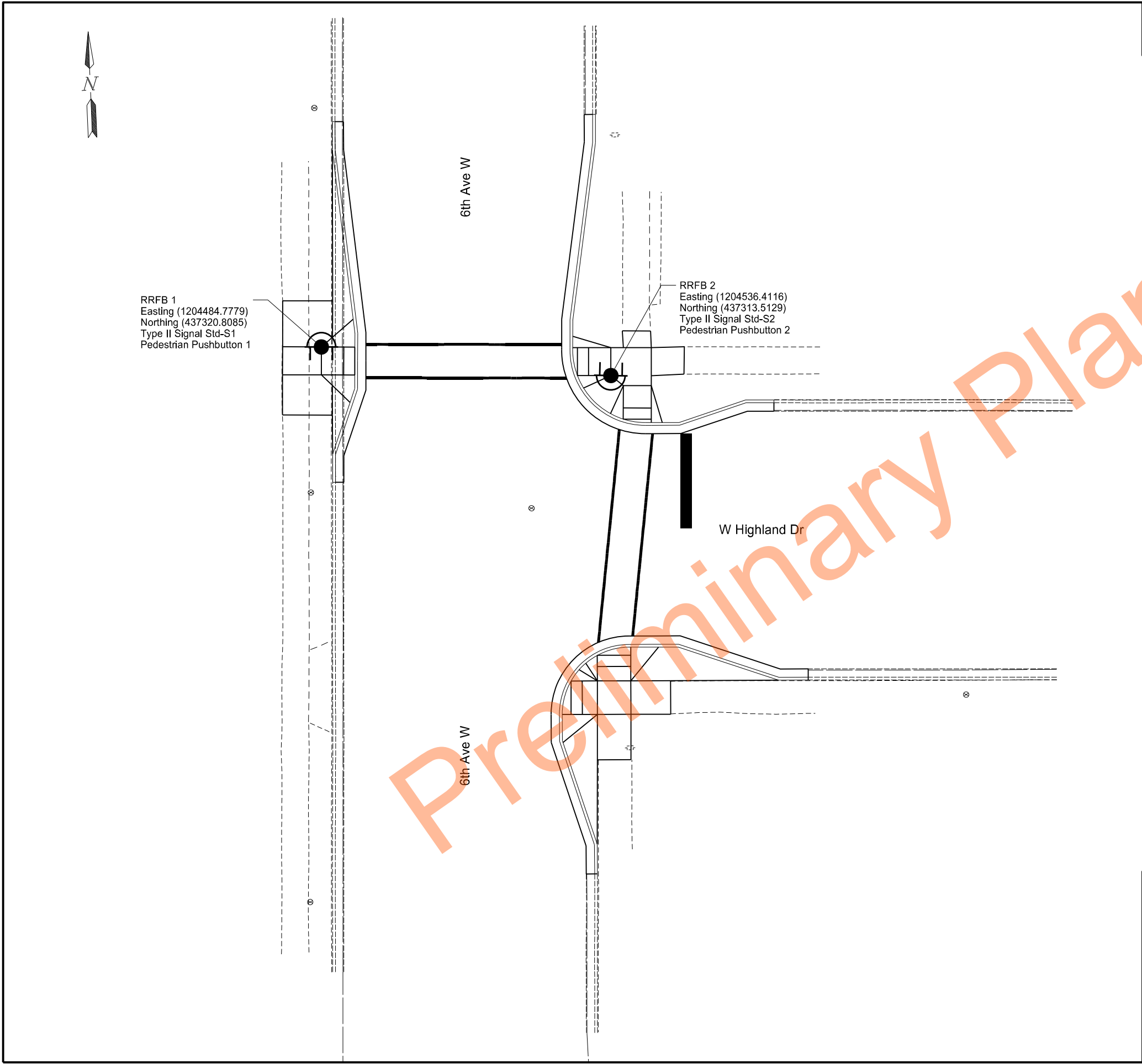
Ryan Schuehle

RYAN SCHUEHLE

PE-10772

DATE: 8/25/2026

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	150	1

- Notes:
1. See Sheet 4 for RRFB Detail.
 2. RRFBs and signing are single-sided.

Legend

 Pedestrian Flasher

SPEC CODE		QUANTITIES	UNIT	QUANTITY
		BID TIEM		
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING		
		EASTING (1204484.7779) & NORTHING (437320.8085)(6TH AVE W)	SF	8.75
		EASTING (1204536.4116) & NORTHING (437313.5129)(6TH AVE W)	SF	8.75
772	0003	SIGNAL STANDARD FOUNDATION	EA	2
772	0601	TYPE II SIGNAL STANDARD	EA	2
772	2215	PEDESTRIAN PUSHBUTTON & SIGN	EA	2
772		RRFB CONTROL EQUIPMENT & SOLAR PANEL	EA	2
772	2120	FLASHING BEACON-POST MOUNTED-SCHOOL	EA	2

ITEMS SHOWN ABOVE ARE FOR INFORMATION PURPOSES; CONTRACTOR SHALL PROVIDE ALL LABOR AND EQUIPMENT NECESSARY FOR THE FLASHING BEACON TO BE FULLY OPERATIONAL AS SHOWN IN THE PLANS. ITEMS SHALL BE INCLUDED IN THE CORRESPONDING PRICE BID FOR "FLASHING BEACON-POST MOUNTED-SCHOOL."

Flashing Beacon Post-Mounted - Site 1

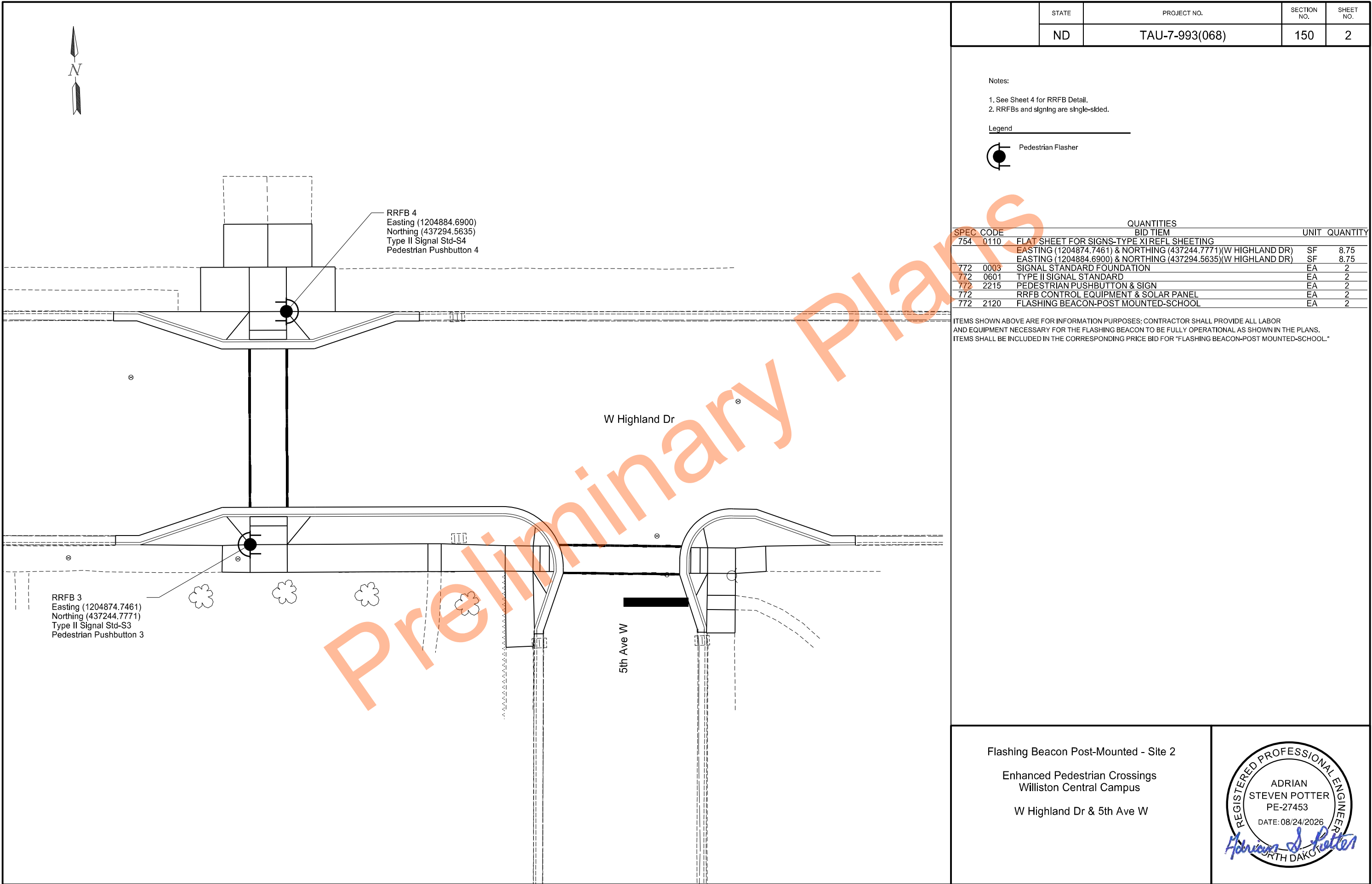
Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 6th Ave W

REGISTERED PROFESSIONAL ENGINEER

ADRIAN
STEVEN POTTER
PE-27453
DATE: 08/24/2026


NORTH DAKOTA



STATE

PROJECT NO.

SECTION NO.

SHEET NO.

ND

TAU-7-993(068)

150

2

Notes:

1. See Sheet 4 for RRFB Detail.
2. RRFBs and signing are single-sided.

Legend



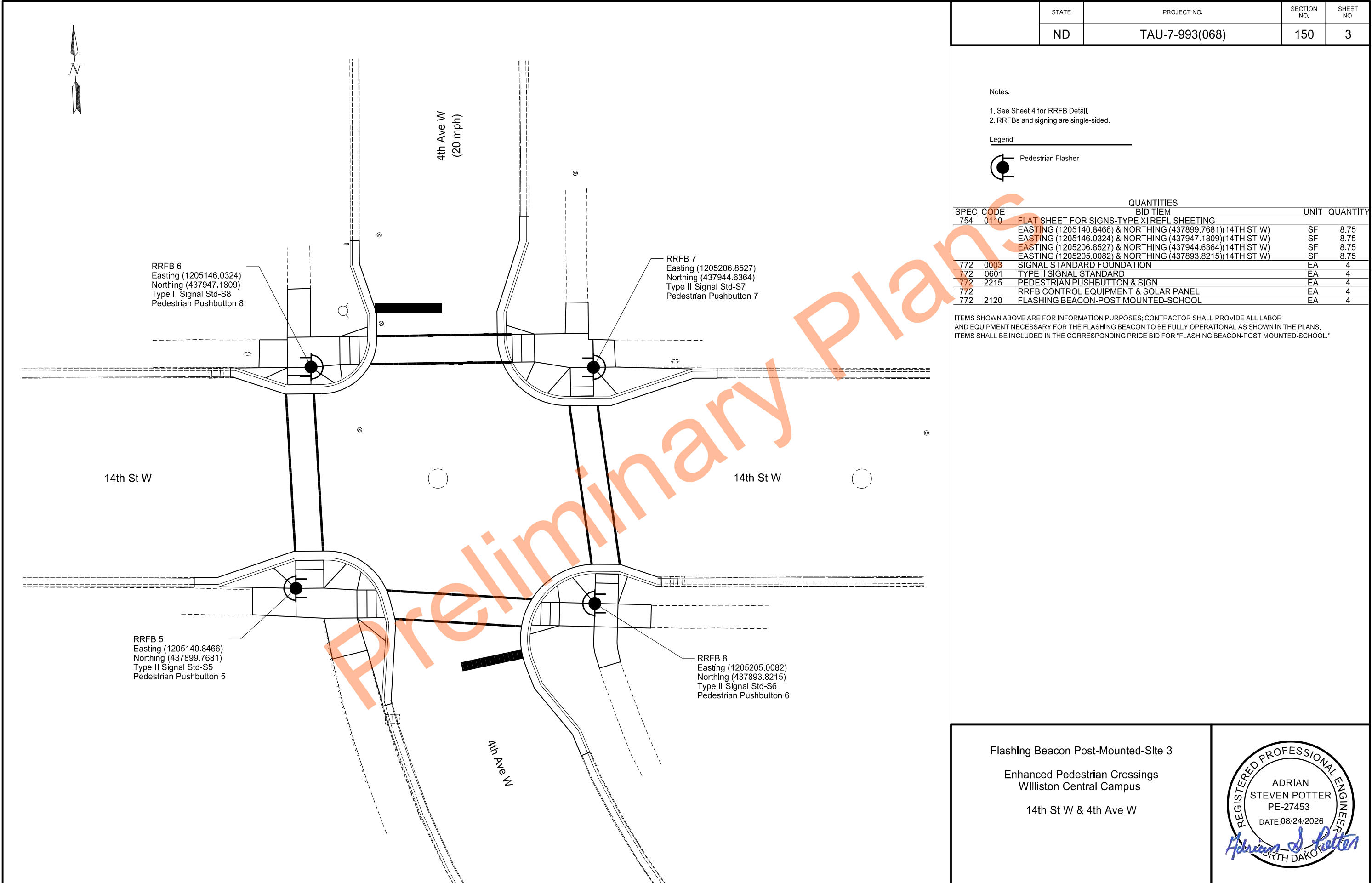
Pedestrian Flasher

Flashing Beacon Post-Mounted - Site 2

Enhanced Pedestrian Crossings
Williston Central Campus

W Highland Dr & 5th Ave W





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	TAU-7-993(068)	150	4

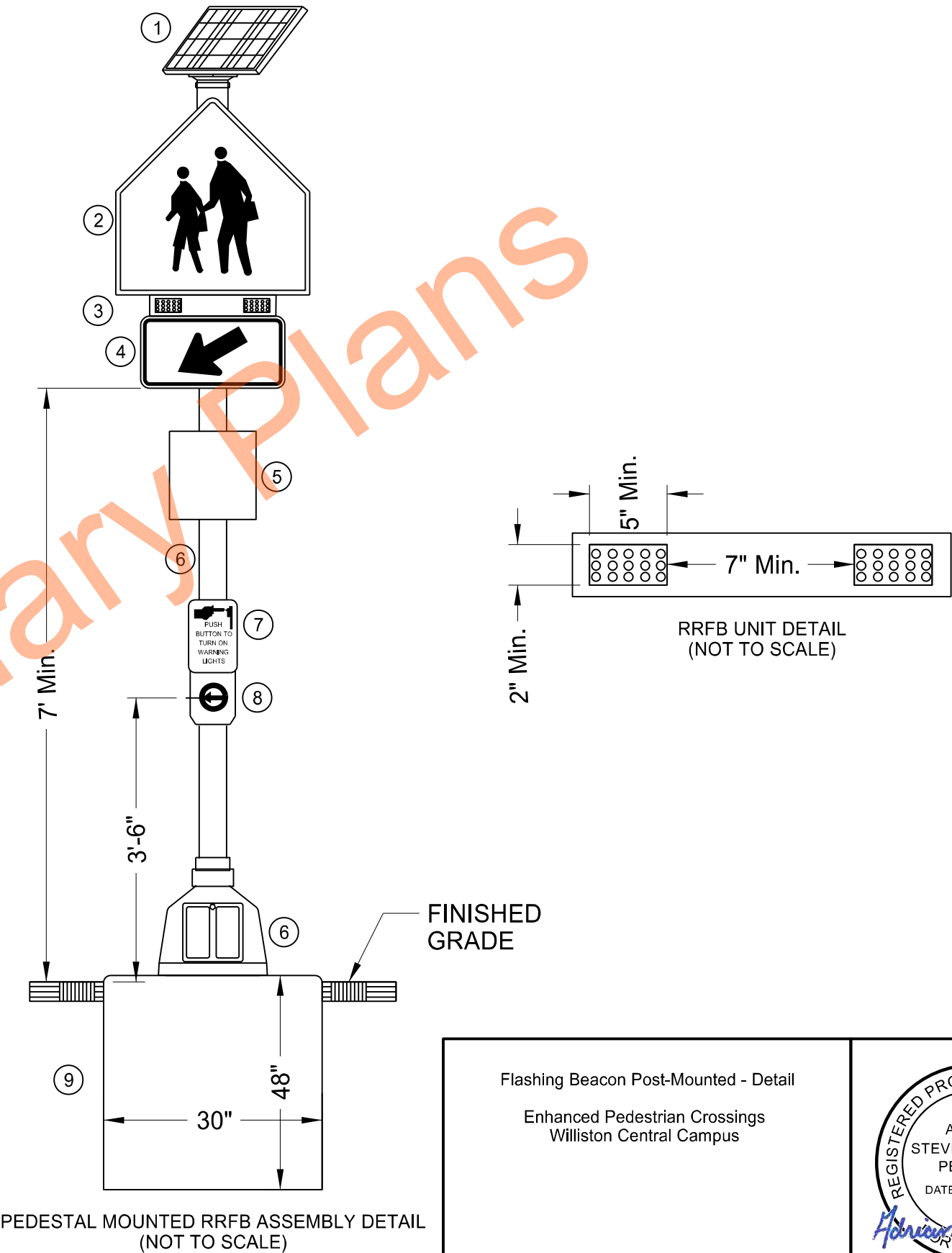
PEDESTAL MOUNTED
RECTANGULAR RAPID FLASHING BEACON

SPECIFIC NOTES

- ① SOLAR PANEL MOUNTED AT 45° AND 60°. SOLAR PANEL TO BE POSITIONED FACING SOUTH.
- ② 1-S1-1 FLUORESCENT YELLOW-GREEN (36"X36")
- ③ SINGLE-SIDED RECTANGULAR RAPID-FLASHING BEACON (RRFB) UNIT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SEE DETAIL.
- ④ 1-W16-7PR FLUORESCENT YELLOW-GREEN (24" X 12") (MOUNTED WITH ARROWS POINTING TOWARD CROSSWALK).
- ⑤ RRFB CONTROLLER CABINET. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- ⑥ SEE NDDOT STANDARD DRAWING D-772-2 TYPE II TRAFFIC SIGNAL STANDARD FOR PEDESTAL DETAILS.
- ⑦ R10-25 BLACK ON WHITE (9" X 12")
- ⑧ ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTON
- ⑨ SEE NDDOT STANDARD DRAWING D-770-1 "SIGNAL STANDARD FOUNDATION" FOR TYPE II SIGNAL STANDARD FOUNDATION DETAILS.

GENERAL NOTES

1. ALL WIRING SHALL BE KEPT INSIDE POLE. POLE OPENINGS SHALL BE MADE WATER TIGHT USING APPROVED GASKETS, GROMMETS & SEALANT.
2. PEDESTRIAN PUSHBUTTON & RRFB CONTROLLER CABINET SHALL BE MOUNTED PER MANUFACTURER SPECIFICATION USING VANDAL PROOF HARDWARE.
3. PAID FOR UNDER ITEM "FLASHING BEACON-POST MOUNTED-SCHOOL". ALL WIRING AND HARDWARE REQUIRED TO PROVIDE A FUNCTIONING SYSTEM SHALL BE INCIDENTAL.
4. EACH CROSSWALK SHALL OPERATE INDEPENDENTLY.
5. DURATION OF FLASHING WARNING INTERVAL DISPLAYED UPON PEDESTRIAN ACTIVATION SHALL BE AT LEAST 22 SECONDS.



Flashing Beacon Post-Mounted - Detail
Enhanced Pedestrian Crossings
Williston Central Campus



NDDOT ABBREVIATIONS

D-101-1

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

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



NORTH DAKOTA	
DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
08-03-15	General Revisions
04-23-18	General Revisions
12-18-20	General Revisions
08-16-22	General Revisions
04-14-25	General Revisions



NDDOT ABBREVIATIONS

D-101-3

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
09-03-15	General Revisions
04-23-18	General Revisions
12-18-20	General Revisions
08-16-22	General Revisions
04-14-25	General Revisions



NDDOT ABBREVIATIONS

D-101-4

MEASUREMENTS

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

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

SURVEY DESCRIPTIONS

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

SOIL TYPES

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

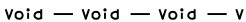
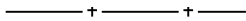
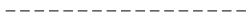
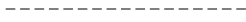
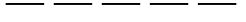
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	Sheet Added
4-14-25	- Continued from D-101-3 General Revisions

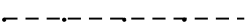
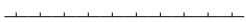
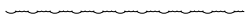
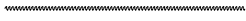
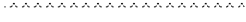
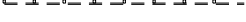
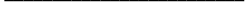


LINE STYLES

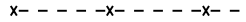
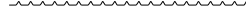
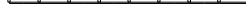
D-101-20

Existing Topography

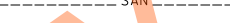
	Existing Ground Void
	Existing Cemetary Boundary
	Existing Box Culvert Bridge
	Existing Concrete Surface
	Existing Drainage Structure
	Existing Gravel Surface
	Existing Riprap
	Existing Dirt Surface
	Existing Asphalt Surface
	Existing Tie Point Line
	Existing Railroad Centerline
	Existing Guardrail Cable
	Existing Guardrail Metal
	Existing Edge of Water
	Existing Fence
	Existing Railroad
	Existing Field Line
	Exst Flow
	Existing Curb
	Existing Valley Gutter
	Existing Driveway Gutter
	Existing Curb and Gutter
	Existing Mountable Curb and Gutter

	Existing 3-Cable w Posts
	Site Boundary
	Existing Berm, Dike, Pit, or Earth Dam
	Existing Ditch Block
	Existing Tree Boundary
	Existing Brush or Shrub Boundary
	Existing Retaining Wall
	Existing Planter or Wall
	Existing W-Beam Guardrail with Posts
	Existing Railroad Switch
	Gravel Pit - Borrow Area
	Existing Wet Area-Vegetation Break
	Existing High Tension Cable Guardrail
	Existing High Tension Cable Guardrail with Posts

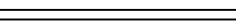
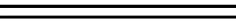
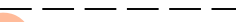
Proposed Topography

	3-Cable w Posts
	Flow
	Fence
	Remove Line
	Wall
	Retaining Wall (Plan View)
	W-Beam w Posts
	High Tension Cable Guardrail with Posts

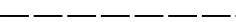
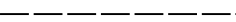
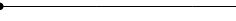
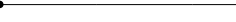
Existing Utilities

	Existing Electrical
	Existing Fiber Optic Line
	Existing TV Fiber Optic
	Existing Gas Pipe
	Existing Overhead Utility Line
	Existing Power
	Existing Fuel Pipeline
	Existing Undefined Above Ground Pipe Line
	Existing Sanitary Sewer
	Existing Sanitary Force Main
	Existing Storm Drain
	Existing Storm Drain Force Main
	Existing Culvert
	Existing Telephone Line
	Existing TV Line
	Existing Water or Steam Line
	Existing Under Drain
	Existing Slotted Drain
	Existing Conduit
	Existing Conductor
	Existing Down Guy Wire Down Guy
	Existing Underground Vault or Lift Station

Proposed Utilities

	24 Inch Pipe
	Reinforced Concrete Pipe
	Under Drain
	Edge Drain

Traffic Utilities

	Conductor
	Fiber Optic
	Existing Loop Detector
	Existing Double Micro Loop Detector
	Micro Loop Detector Double
	Existing Micro Loop Detector
	Micro Loop Detector
	Signal Head with Mast Arm
	Existing Signal Head with Mast Arm

Sign Structures

	Existing Overhead Sign Structure
	Existing Overhead Sign Structure Cantilever
	Overhead Sign Structure Cantilever

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14 REVISIONS	
DATE	CHANGE
09-23-16	Added and Revised Items, Organized by Functional Groups General Revisions
12-18-20	

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ENGINEER

NORTH DAKOTA

12 18 2020

LINE STYLES

D-101-21

Right Of Way

	Easement
	Existing Easement
	Right of Way
	Existing Right of Way
	Existing Right of Way Railroad
	Existing Right of Way Not State Owned
	Existing Government Lot Line
	Existing Adjacent Block Lines
	Existing Adjacent Lot Lines
	Existing Adjacent Property Line
	Existing Adjacent Subdivision Lines
	Sight Distance Triangle Line
	Dimension Leader

Boundary Control

	Existing City Corporate Limits or Reservation Boundary
	Existing State or International Line
	Existing Township
	Existing County
	Existing Section Line
	Existing Quarter Section Line
	Existing Sixteenth Section Line
	Existing Centerline
	Tangent Line

Cross Sections and Typicals

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

Geotechnical

	Geotextile Fabric Type D
	Geogrid
	Geotextile Fabric Type R
	Geotextile Fabric Type R1
	Geotextile Fabric Type RR
	Geotextile Fabric Type S
	Subgrade Reinforcement
	Failure Line

Countours

	Depression Contours
	Supplemental Contour

Profile

	Subgrade, Subcut or Ditch Grade
	Topsoil Profile

Striping

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

Pavement Joints

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

Bridge Details

	Small Hidden Object
	Large Hidden Object
	Phantom Object
	Existing Conditions Object
	Centerline Main
	Centerline Secondary
	Excavation Limits
	Proposed Ground
	Sheet Piling

Erosion Control

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

Environmental

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

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

07-01-14

REVISIONS

DATE	CHANGE
09-23-16	Added and Revised Items, Organized by Functional Groups
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SYMBOLS

D-101-30

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

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12 18 2020

SYMBOLS

D-101-31

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		
07-01-14		
REVISIONS		
DATE	CHANGE	
12-18-20	General Revisions	
		12 18 2020

SYMBOLS

D-101-32

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14 REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

12 18 2020

SYMBOLS

D-101-33

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

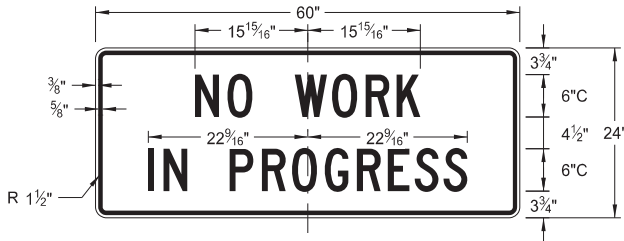
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions Sheet added - Continued from D-101-32

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12 18 2020

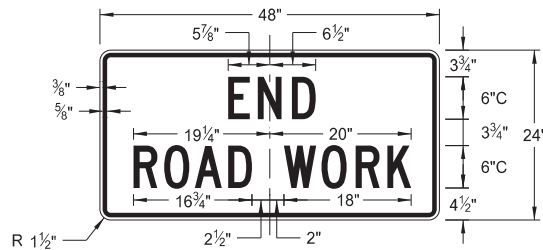
CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS



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



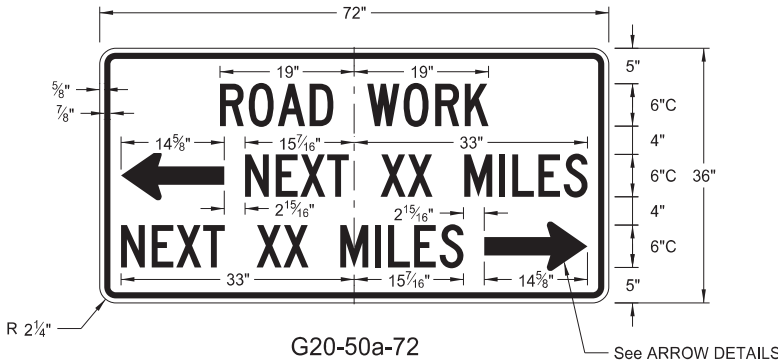
G20-1b-60
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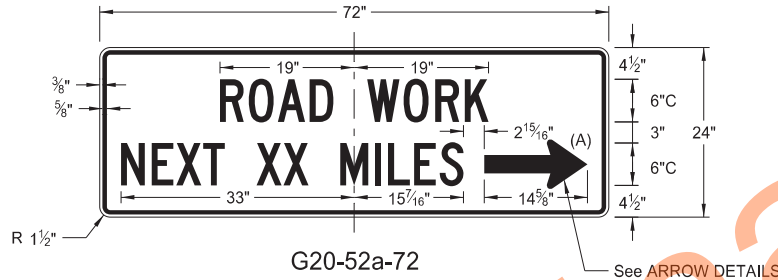
G20-2-48
Legend: black (non-refl)
Background: orange



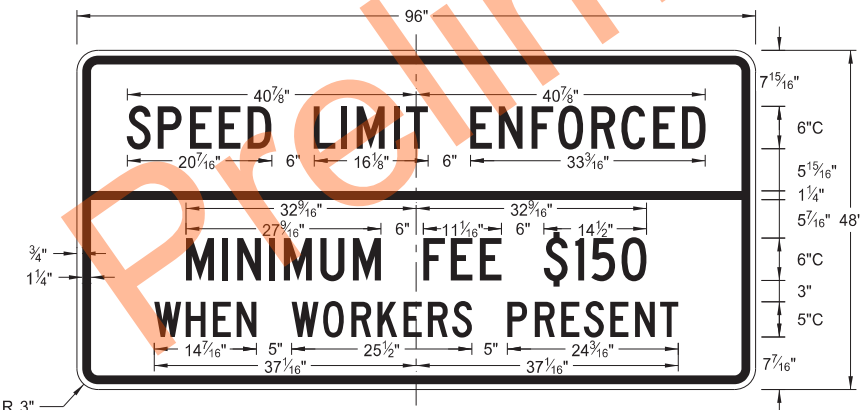
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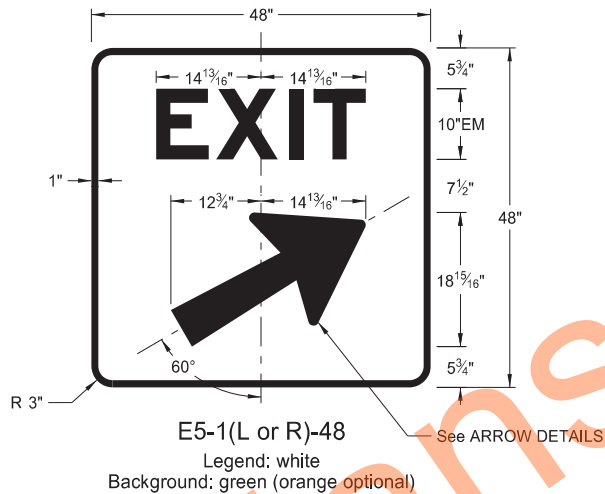
G20-50a-72
Legend: black (non-refl)
Background: orange



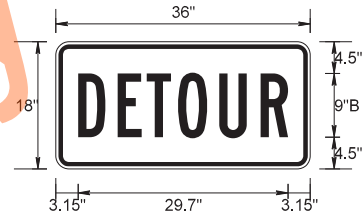
G20-52a-72
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Background: orange



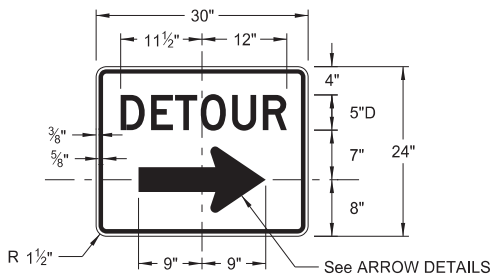
G20-55-96
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Background: orange



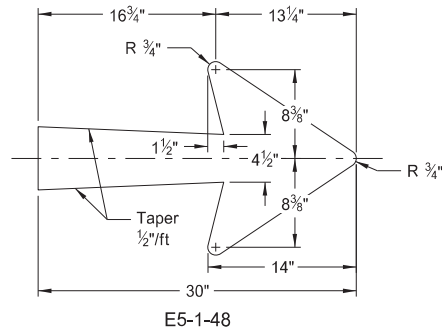
E5-1(L or R)-48
Legend: white
Background: green (orange optional)



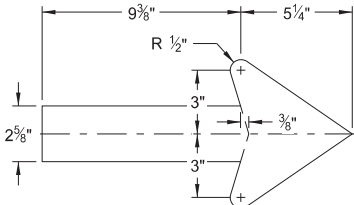
M4-8-36
Legend: black (non-refl)
Background: orange



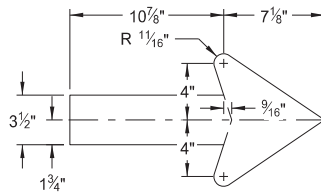
M4-9(L or R)-30 &
M4-9-30
Legend: black (non-refl)
Background: orange



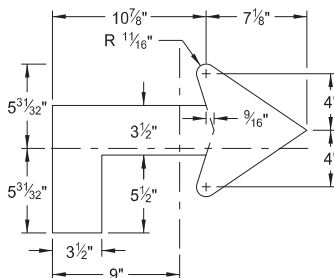
E5-1-48



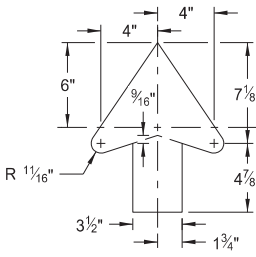
G20-50a-72
G20-52a-72



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



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



M4-9-30
Straight

ARROW DETAILS

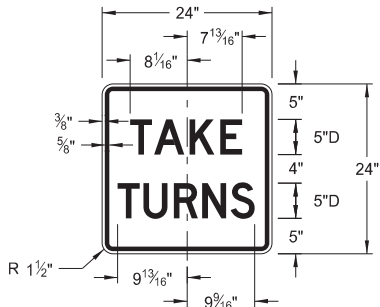
NOTES:

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

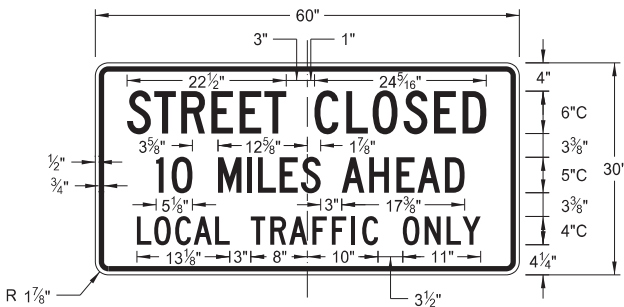
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17	Added sign & background color
10-03-19	New Design Engineer PE Stamp
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes



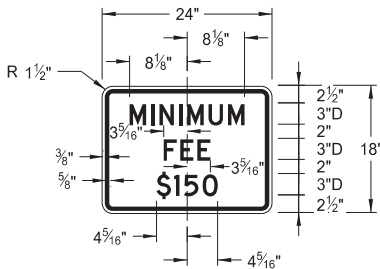
CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS



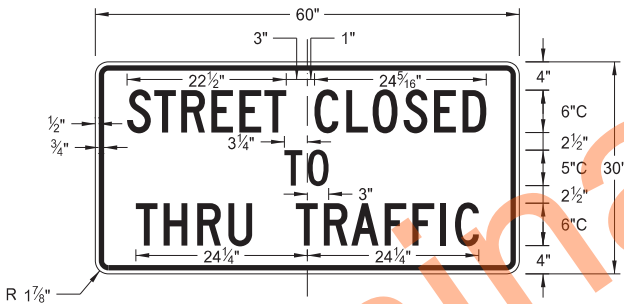
R1-50P-24
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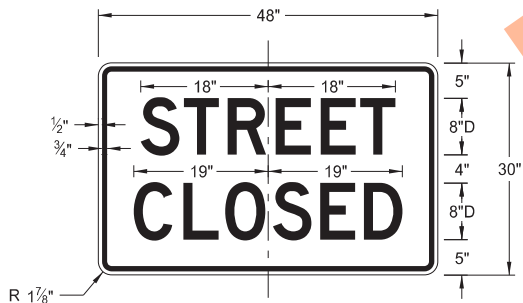
R11-3c-60
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Background: white



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



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



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

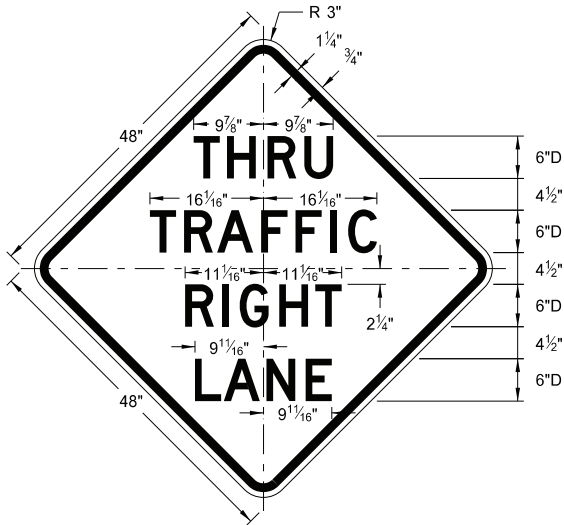
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17	Revised sign number
10-03-19	New Design Engineer PE Stamp
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes



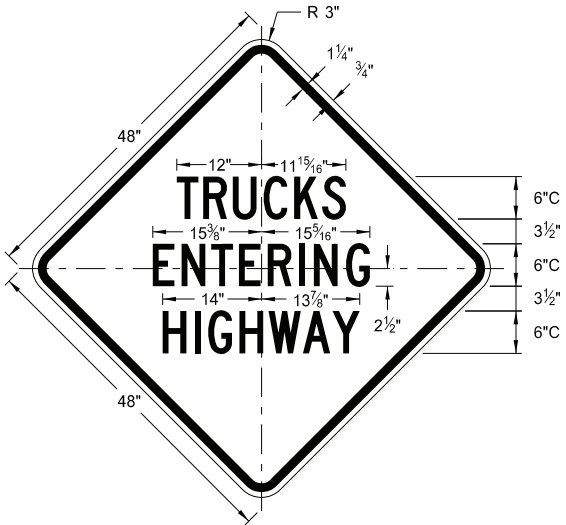
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

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

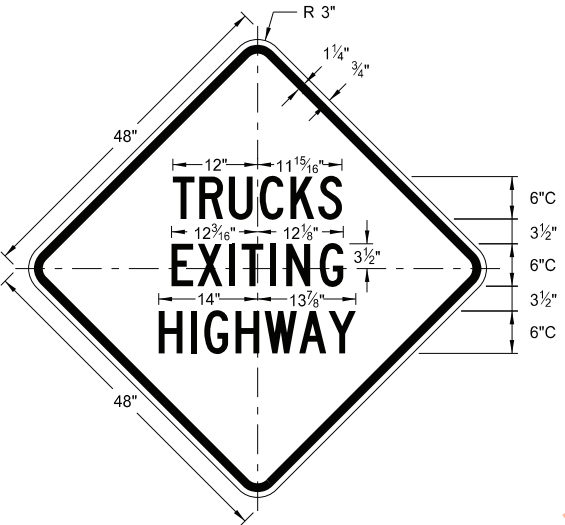
* DISTANCE MESSAGES



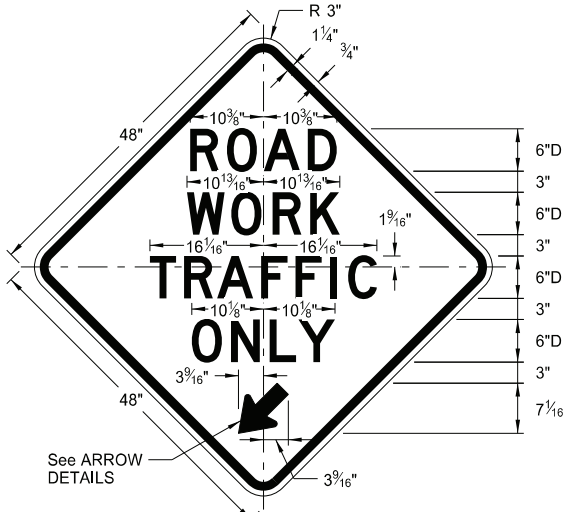
W5-8-48
Legend: black (non-refl)
Background: orange



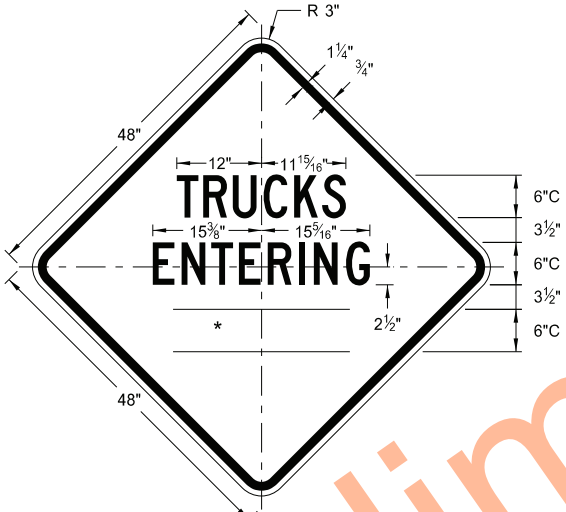
W8-53-48
Legend: black (non-refl)
Background: orange



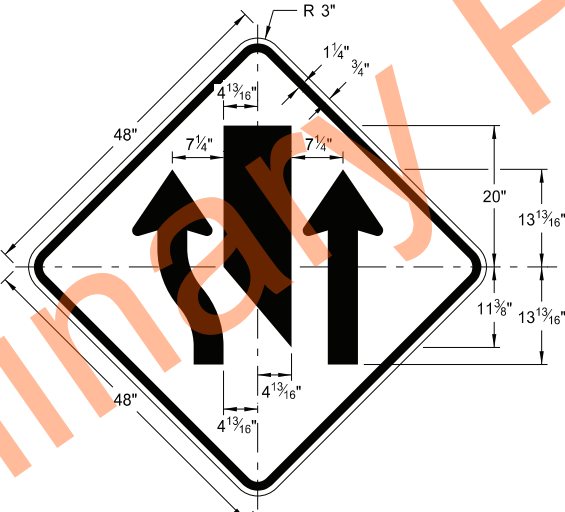
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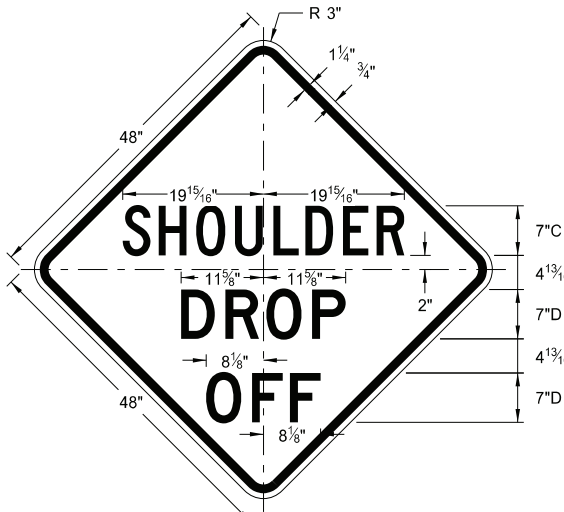
W5-9-48
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Background: orange



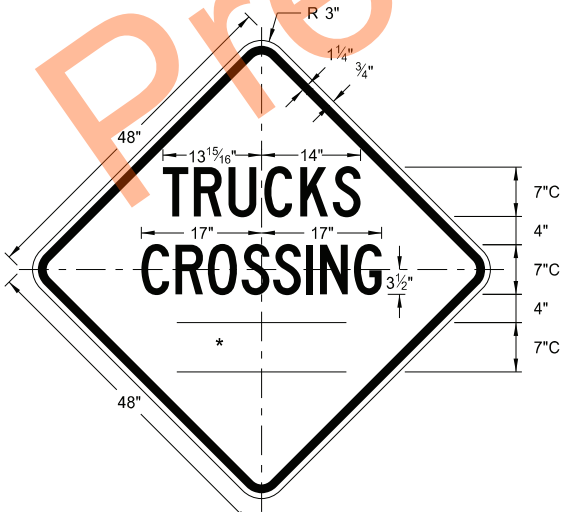
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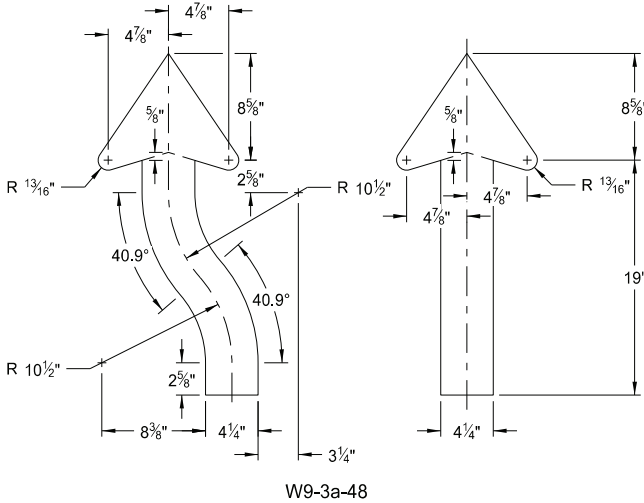
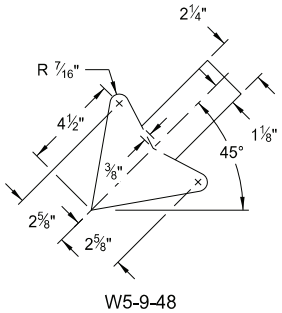
W9-3a-48
Legend: black (non-refl)
Background: orange



W8-9a-48
Legend: black (non-refl)
Background: orange



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



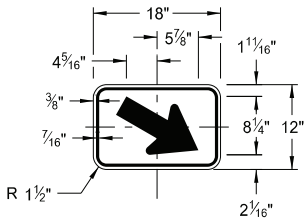
ARROW DETAILS

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17	Updated sign number
5-31-18	Revised sign and arrow details
10-03-19	New Design Engineer PE Stamp
8-01-24	Electronic Stamp/Signature

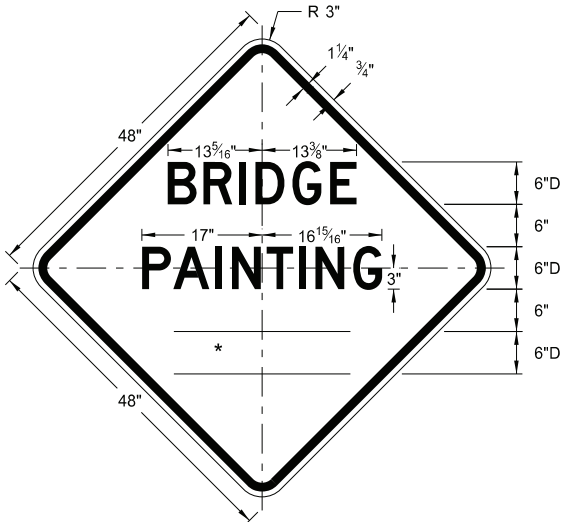


08/01/24

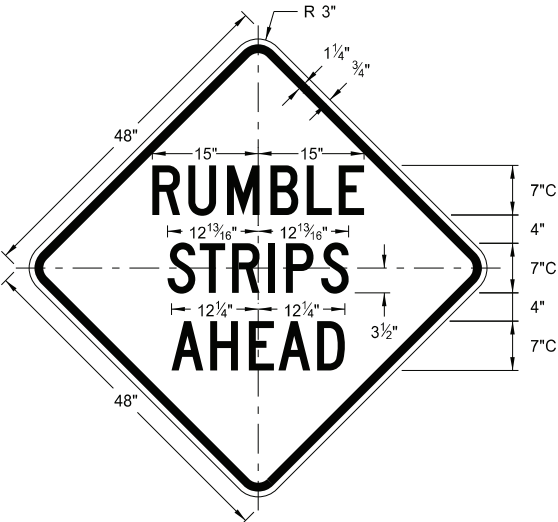
CONSTRUCTION SIGN DETAILS
WARNING SIGNS



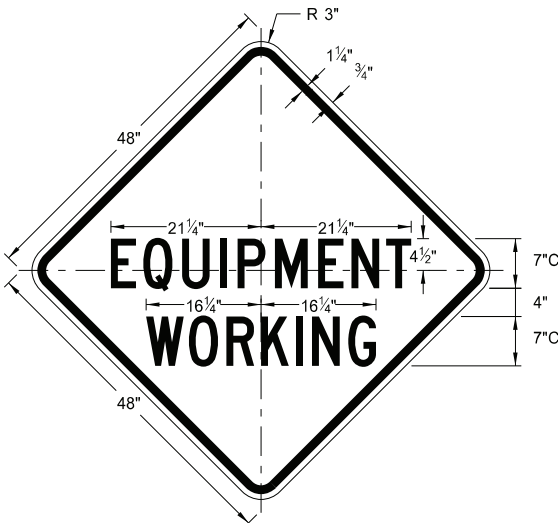
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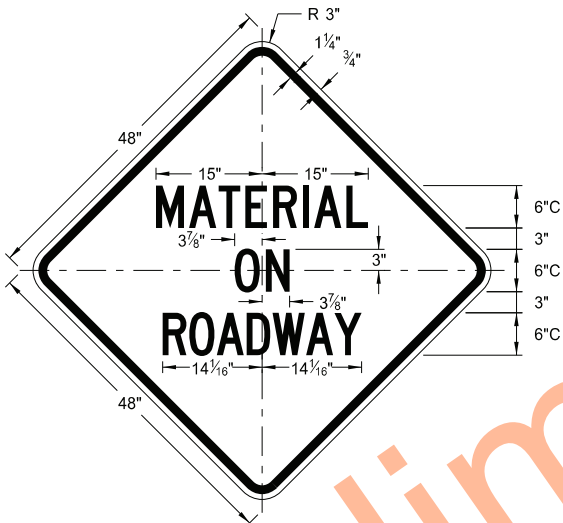
W21-50-48
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Background: orange



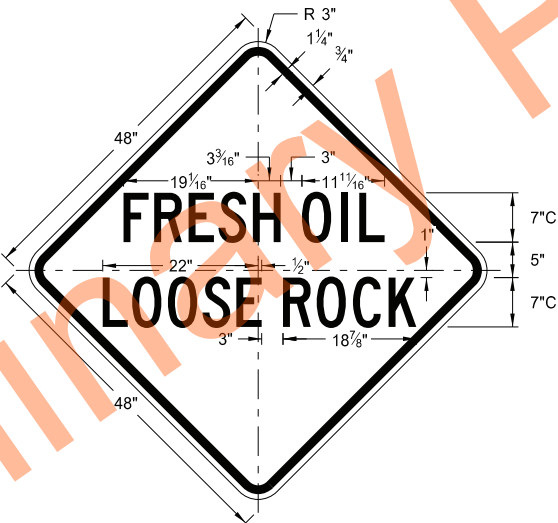
W21-53-48
Legend: black (non-refl)
Background: orange



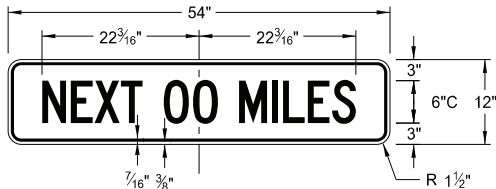
W20-51-48
Legend: black (non-refl)
Background: orange



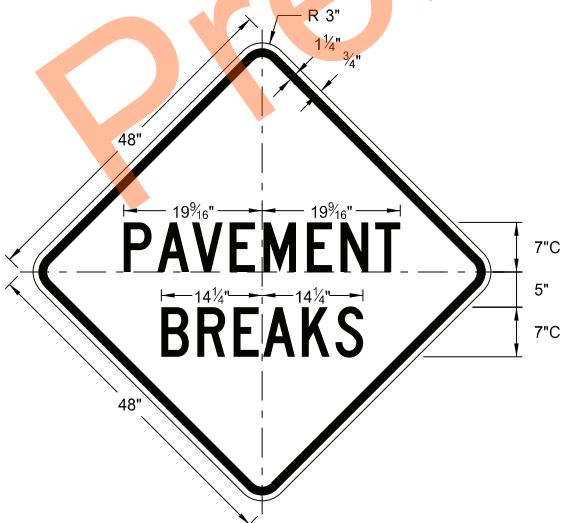
W21-51-48
Legend: black (non-refl)
Background: orange



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



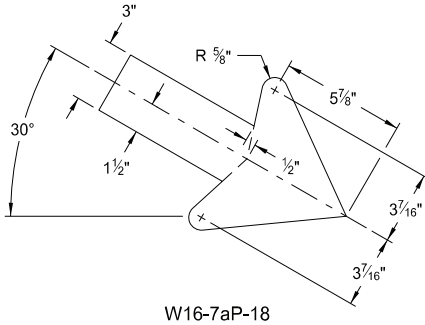
W20-52P-54
Legend: black (non-refl)
Background: orange



W21-52-48
Legend: black (non-refl)
Background: orange

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

* DISTANCE MESSAGES



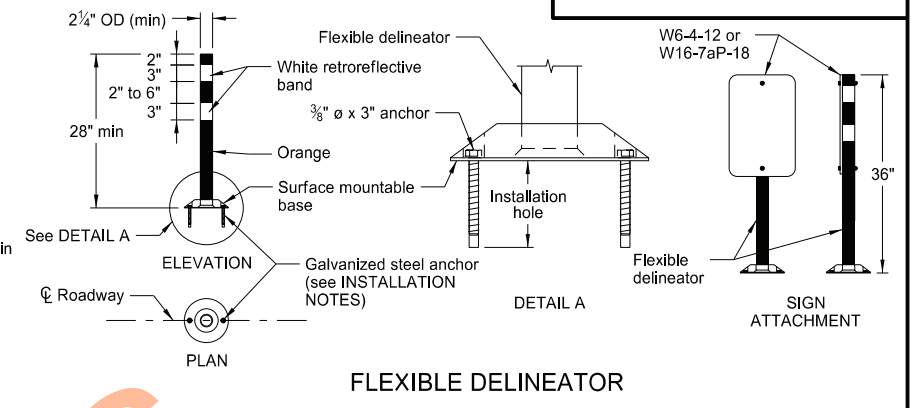
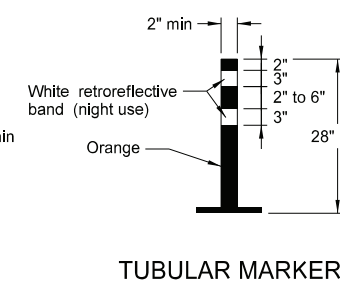
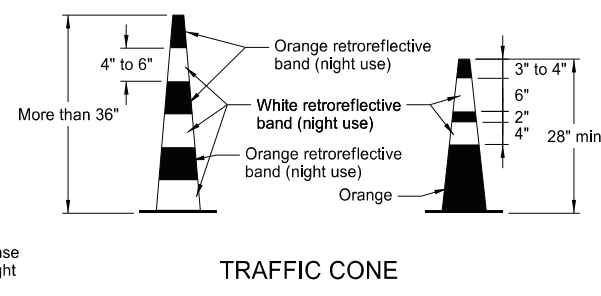
W16-7aP-18

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
5-31-18	
REVISIONS	
DATE	CHANGE
11-01-19	Added details for sign W16-7aP-18.
8-01-24	Electronic Stamp/Signature.



08/01/24

D-704-13

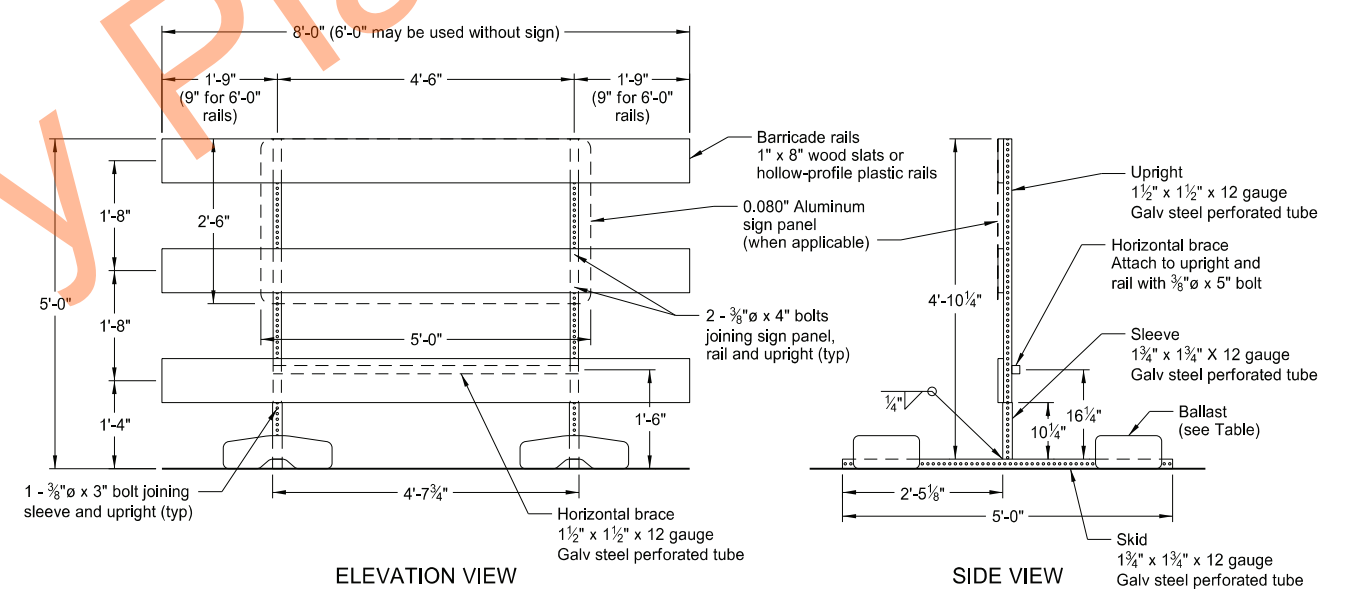
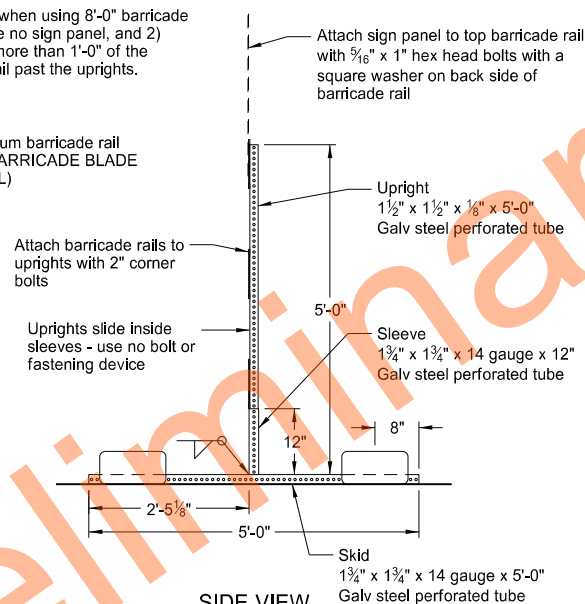


Provide alternating orange and white retroreflective stripes, sloping downward in direction vehicular traffic is to pass. Place retroreflective sheeting on both sides of panel with a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective material on the vertical panel is 36 inches or more, use a stripe width of 6 inches.

Provide retroreflectorization of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectorized space between the orange and white stripes.

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

1. Drill installation holes to diameter and depth 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, use an 8" x 8" butyl pad or hot melt butyl. Remove butyl as close as possible to pavement surface.

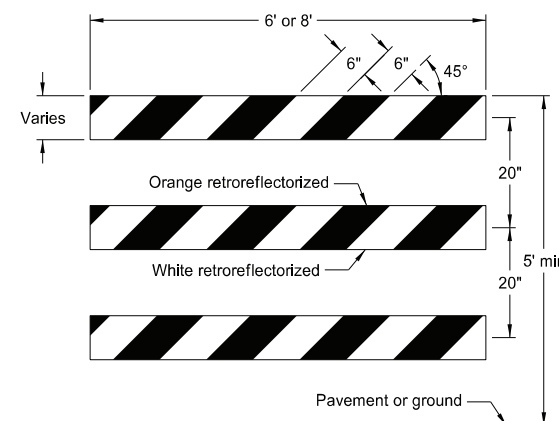


BARRICADE ASSEMBLY DETAIL (Aluminum Barricade Rails)

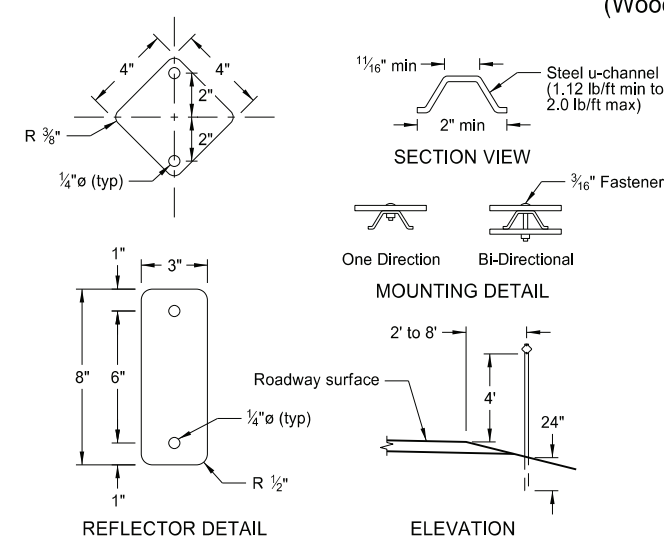
Diagram illustrating the dimensions and materials for a standard traffic warning sign:

- Overall width: 6' to 10'
- Overall height: 8"
- Sign face height: 3'-0" to 3'-6"
- Materials: Orange retroreflectORIZED and White retroreflectORIZED
- Angles: 45° and 6"
- Base: Pavement or ground

BARRICADE RAIL DETAILS



TYPE III BARRICADE



DELINEATORS

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

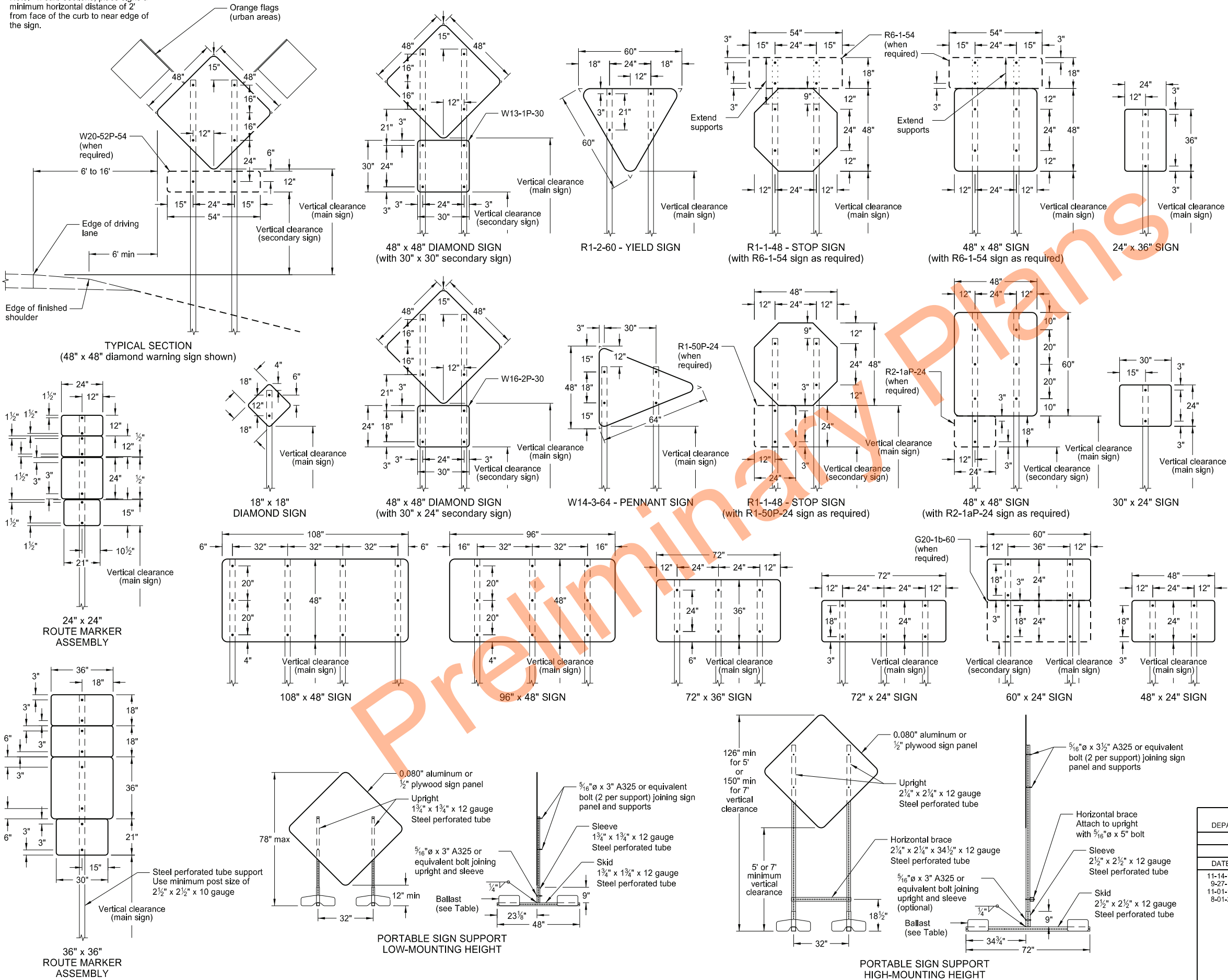
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
11-01-19	Revised details for Flexible Delineator
8-01-24	Electronic Stamp/Signature



08/01/24

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



NOTES:

1. Sign Supports: Galvanize or paint supports. Minimum post sizes are 2.5 lb/ft u-channel or 2" x 2" x 12 gauge steel perforated tube, except where noted. When installing signs on u-channel, minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes based on a wind speed of 55 MPH.

Place signs over 50 square feet on 2 1/2" x 2 1/2" perforated tube supports as a minimum.

Do not attach guy wires to sign supports. Attach wind beams behind sign panels when used with u-posts.
2. Sign Panels: Provide sign panels made of 0.100" aluminum, 1/2" plywood, or other approved material, except where noted. Punch all holes round for 3/8" bolts.
3. Alternate Messages: Install and remove alternate message signs on reflectorized plate (without borders) as required. (i.e. "Left" and "Right" message on lane closure sign)
4. 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

5. Vertical Clearance: Install signs with a vertical clearance of 5'-0" (see TYPICAL SECTION.) In areas where parking or pedestrian movements are likely or the view of the sign may be obstructed, install signs with a vertical clearance of 7'-0" from the top of the curb or from the near edge of the driving lane in absence of a curb.

The vertical clearance to secondary signs is 1'-0" less than the vertical clearance stated above.

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

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

Use of low-mounting height (minimum 12" vertical clearance) portable signs for 5 days or less, is allowed as long as the view of the sign is not obstructed. Time delays caused by unforeseen circumstances, such as equipment breakdown, rain, subgrade failures, etc., will not accrue towards the 5 day period. Use of R9-8 through R9-11a series, W1-6 through W1-8 series, M4-10, and E5-1 is allowed for longer than 5 days.

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

MINIMUM BALLAST
(For each side of sign support base)

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

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

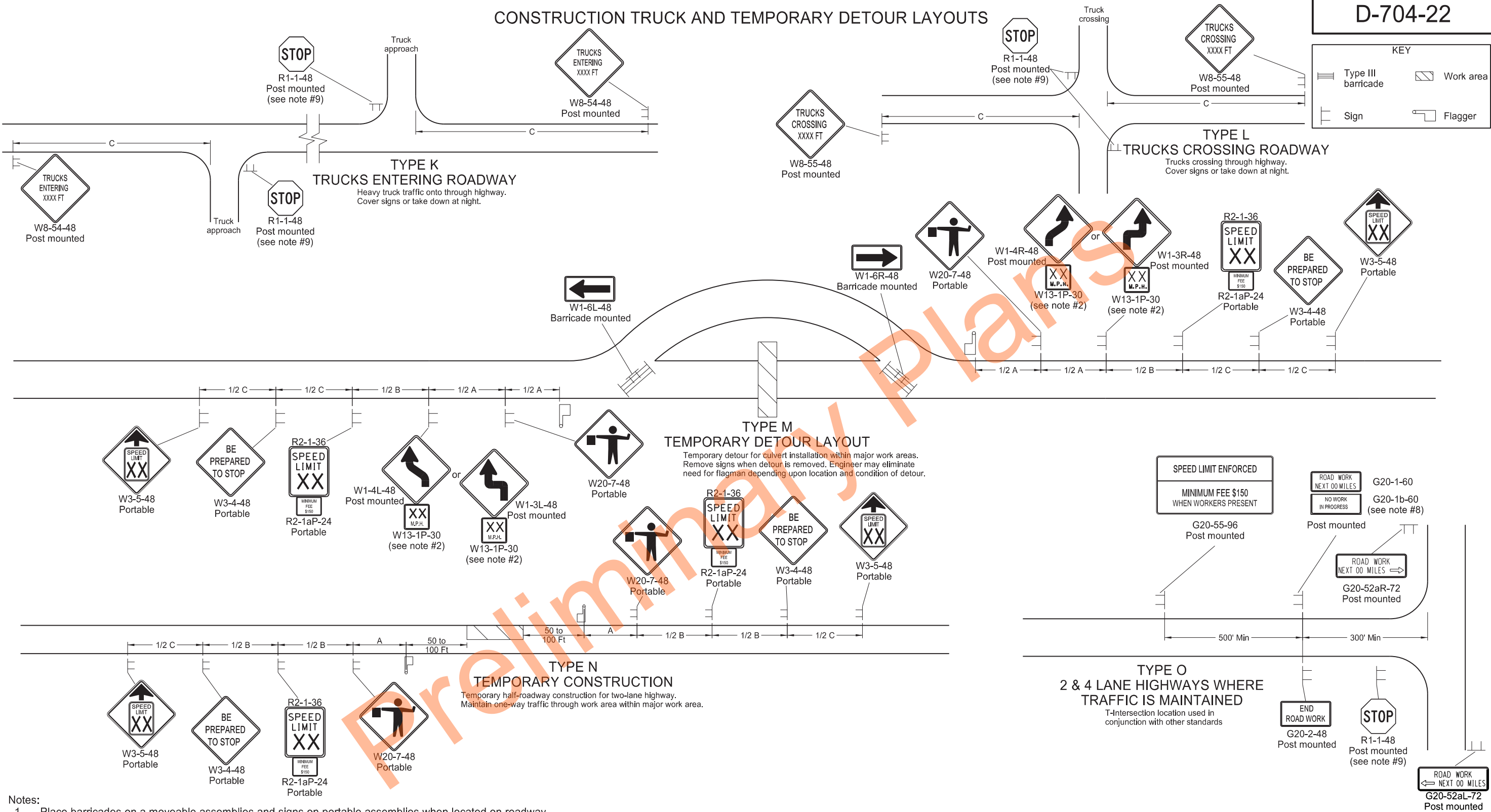
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	
REVISIONS	
DATE	CHANGE
11-14-13	Revised Note 6
9-27-17	Updated to active voice
11-01-19	Revised 60"x24" sign detail
8-01-24	Electronic Stamp/Signature



08/01/24

CONSTRUCTION TRUCK AND TEMPORARY DETOUR LAYOUTS

D-704-22



Notes:

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

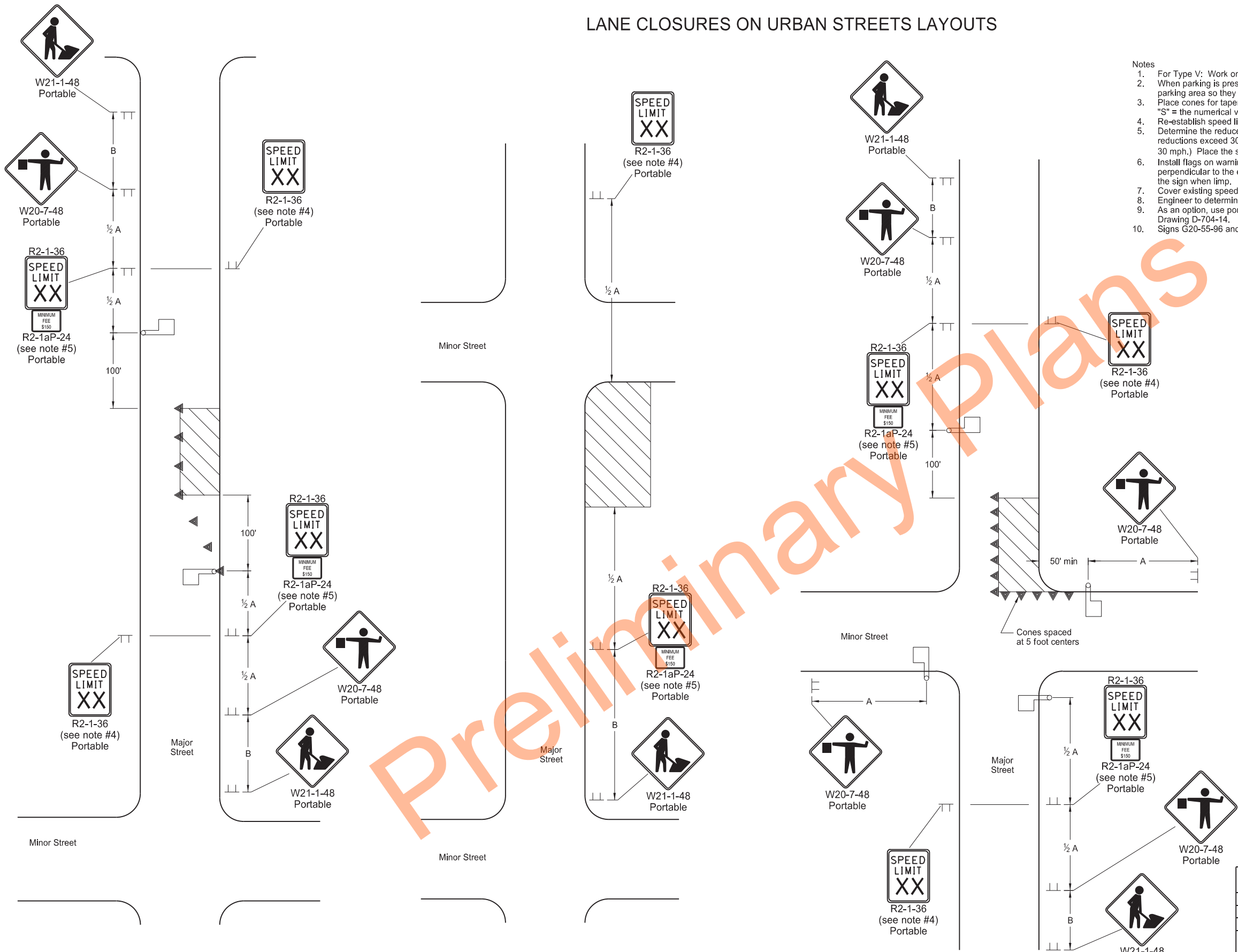
ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Update notes & sign numbers
11-01-19	Revised sign numbers & note 7
12-09-21	Added Speed Limit Enforced and Dollars At Work signs
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes



LANE CLOSURES ON URBAN STREETS LAYOUTS

D-704-25



- Notes
- For Type V: Work on one side of roadway at a time so as not to block off more than one lane of traffic.
 - When parking is present, place signs so they are entirely visible above parked vehicles or at the edge of the parking area so they are visible to oncoming traffic. Place signs on portable mounts when located on roadway.
 - Place cones for tapering traffic at 3 equal spaces and cones for tangents at dimension "S". "S" = the numerical value of speed limit.
 - Re-establish speed limit. Determine exact speed limit in the field, dependent on location and conditions.
 - Determine the reduced speed limit based on the in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at 1/2 B.
 - Install flags on warning signs in urban areas when signs are not portable. Mount 24 inches square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
 - Cover existing speed limit signs within reduced speed zones.
 - Engineer to determine safe speed, when necessary.
 - As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
 - Signs G20-55-96 and R2-1aP-24 are not required for urban projects.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

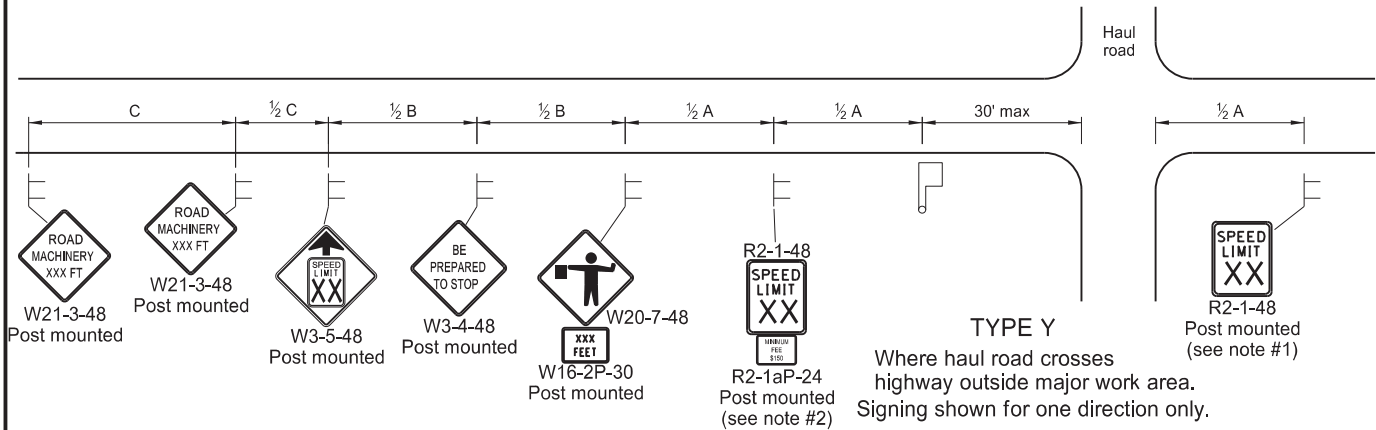
KEY	
	Sign
	Cones
	Work area
	Flagger

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Updated notes & removed signs
11-01-19	Revised note & added Min Fee sign
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes

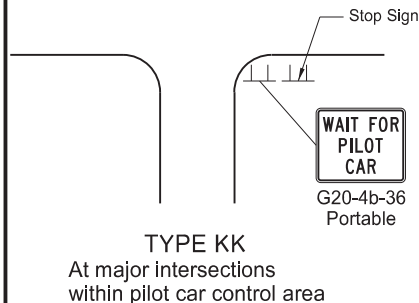
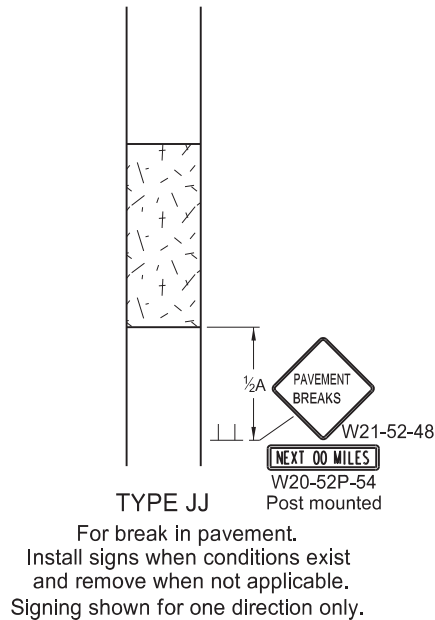
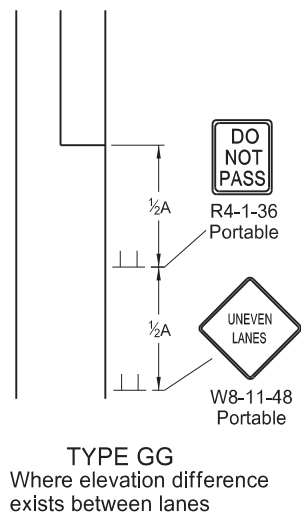
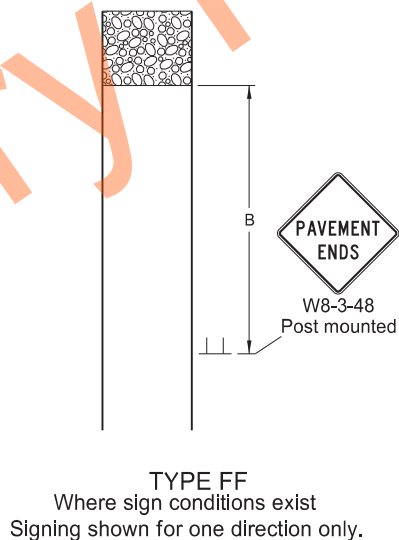
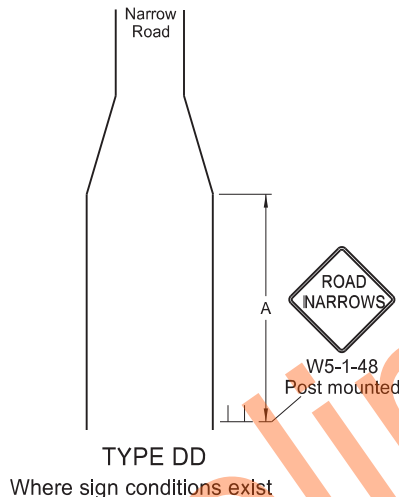
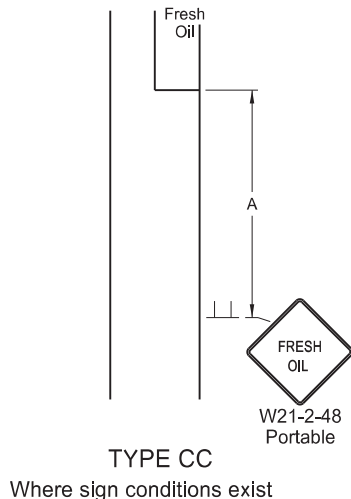
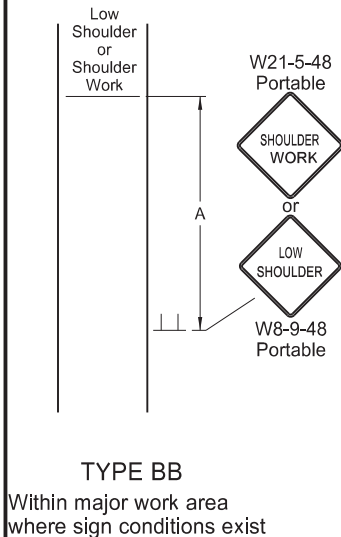
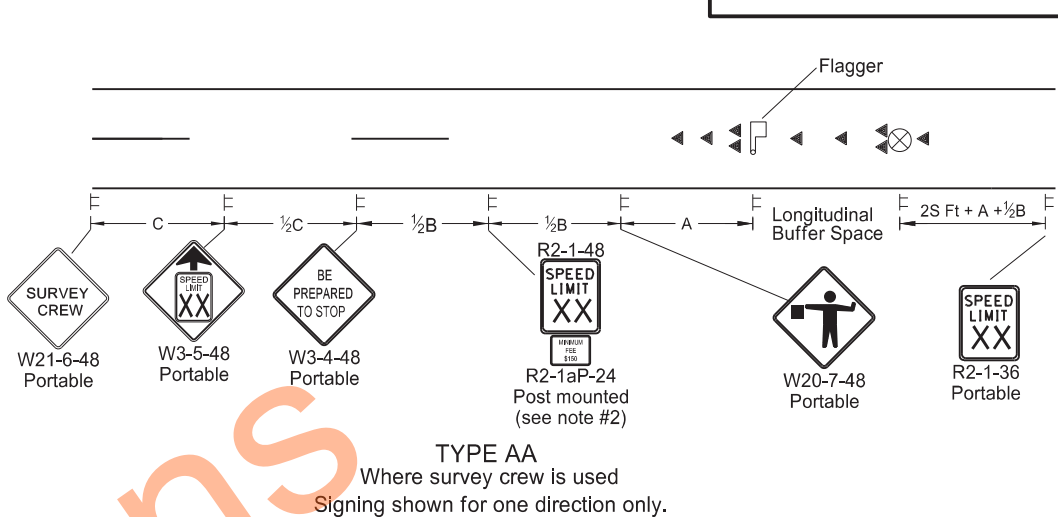


MISCELLANEOUS SIGN LAYOUTS

D-704-26



TYPE Z
Where speed zone is needed
Signing shown for one direction only.



- Notes
1. Re-establish speed limit. Determine exact speed limit in the field, dependent on location and conditions.
 2. Determine reduced speed limit based on in-place speed limit before construction. Where speed reductions exceed 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at 1/2 B.
 3. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
 4. Cover existing speed limit signs within reduced speed zones.
 5. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
 6. Sign G20-55-96 is not required if this standard is part of other traffic control layouts, or work is less than 15 days.
 7. When pilot car operation is used, place sign G20-4b-36 "Wait For Pilot Car" at major intersections within pilot car control area.
 8. Recommend 40 mph speed limit in vicinity of workers, unless location and conditions dictate otherwise.
 9. Layouts shown for one direction only.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 80 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

Longitudinal Buffer Space	
*Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

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

KEY

Flagger

Sign

Cones

Survey Equipment

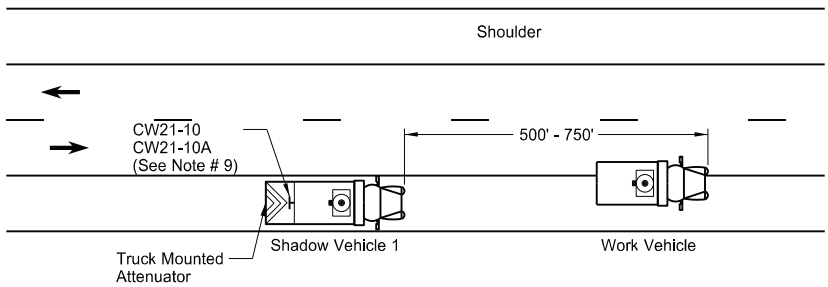
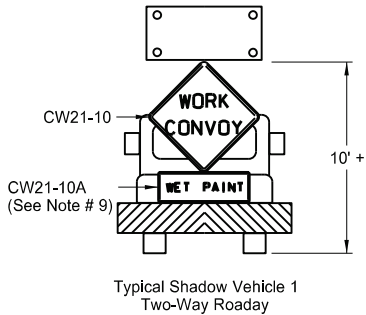
S = Numerical value of speed limit or 85th percentile.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Added speed limit signs. Updated notes & sign numbers
11-01-19	Revised note 5 & sign numbers
02-23-23	Revised distance & removed signs
06-30-25	Legislative Changes

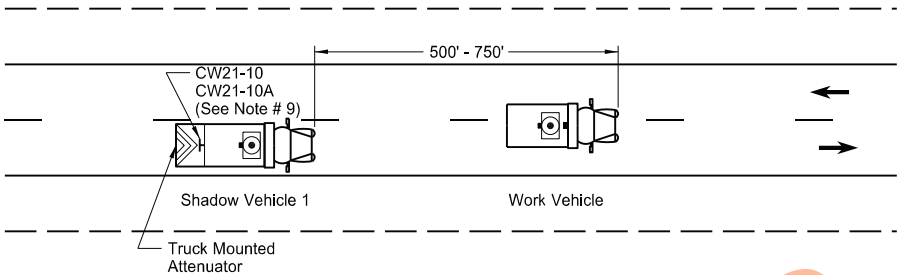


MOBILE OPERATION
(PAVEMENT MARKING)

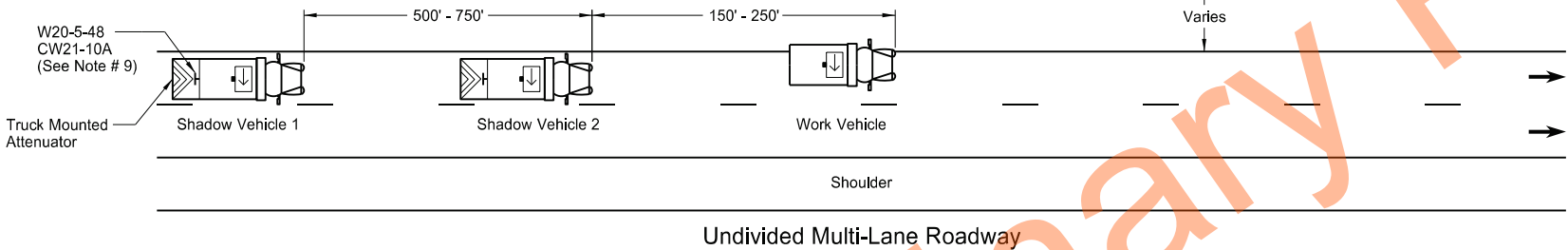
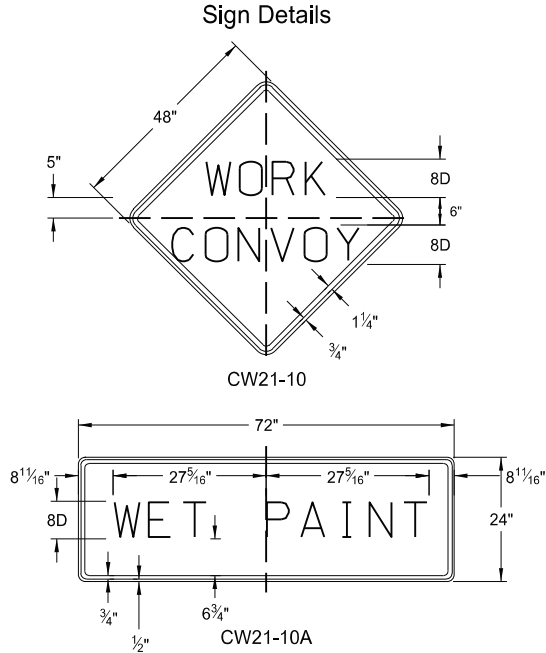
D-704-27



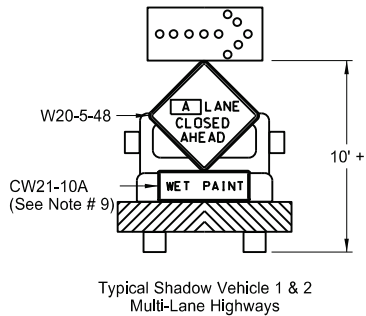
Two-Way Roadway with Paved Shoulders



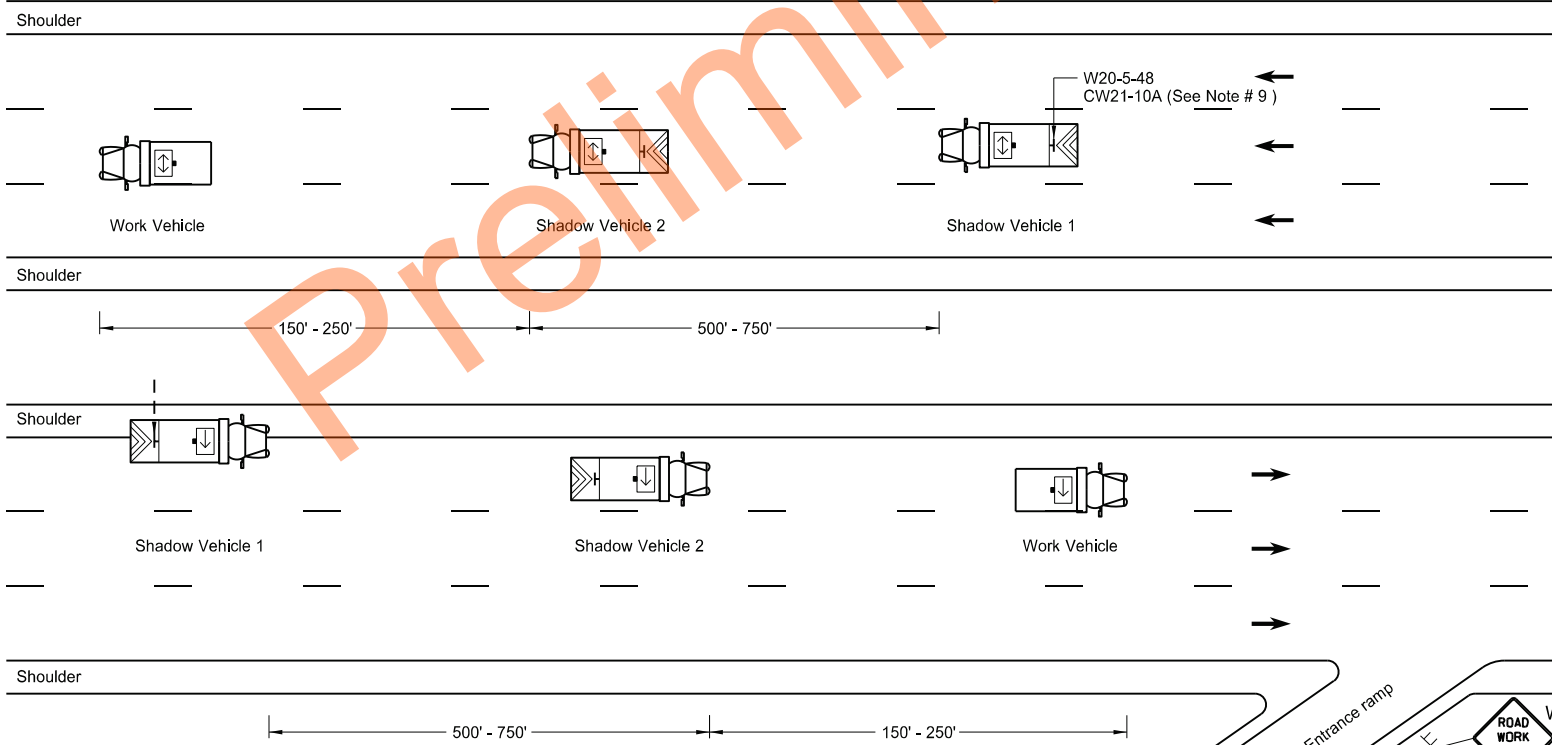
Two-Way Roadway without Paved Shoulders



Undivided Multi-Lane Roadway

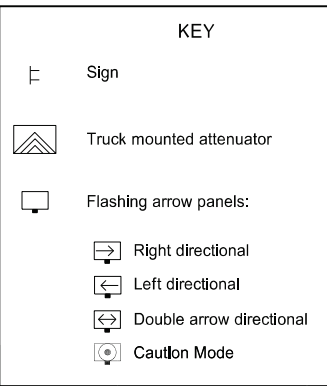


A = Left Right Center



Divided Multi-Lane Highway

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

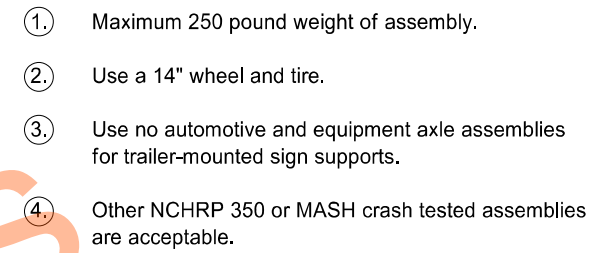


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
6-18-14	Removed shadow vehicle 2 on two lane roadways
9-27-17	Updated to active voice
11-08-19	Changed Standard Heading
6-02-24	Electronic Stamp/Signature.



08/02/24

D-704-50

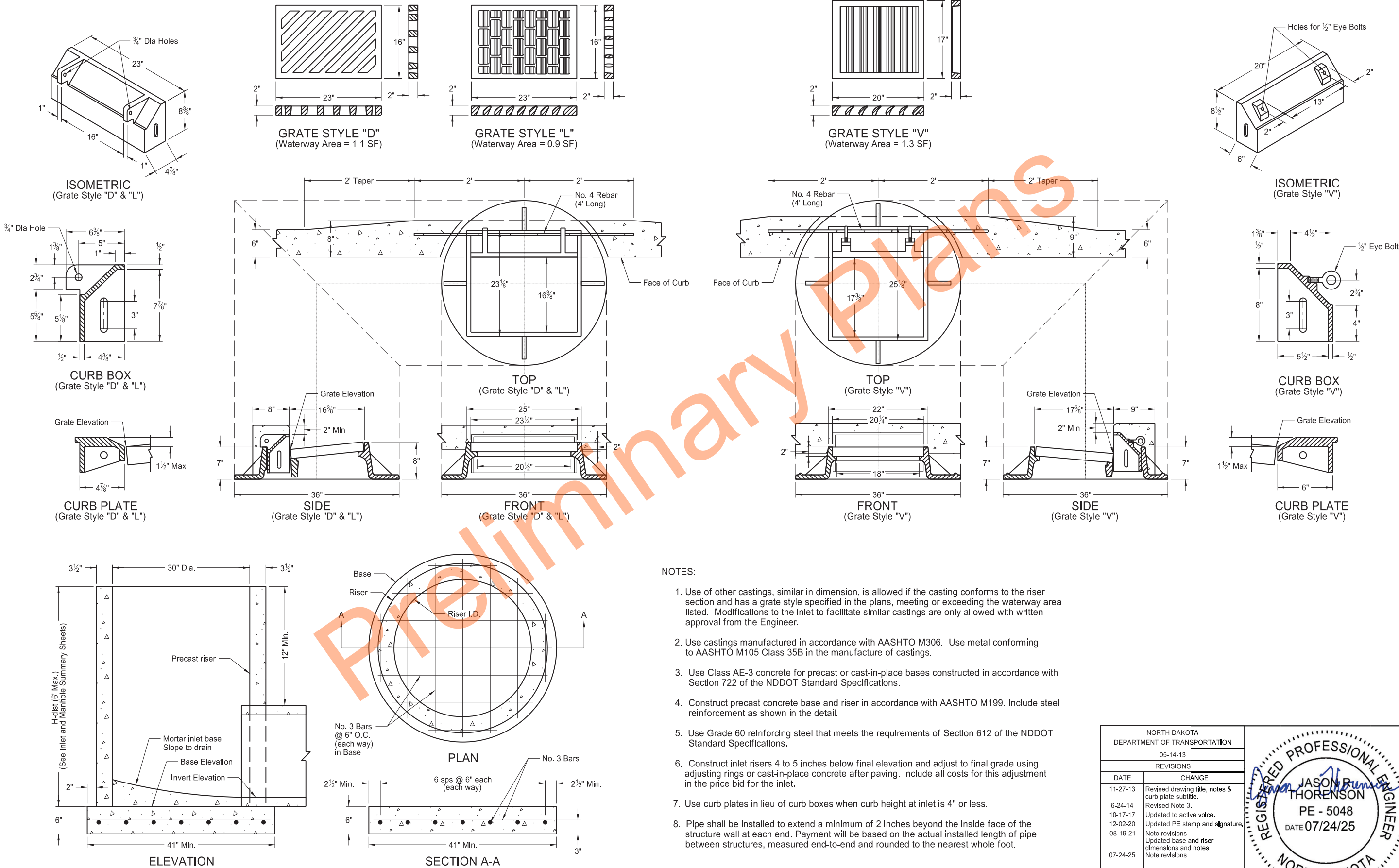


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE
12/02/2020	Updated Note to active voice.

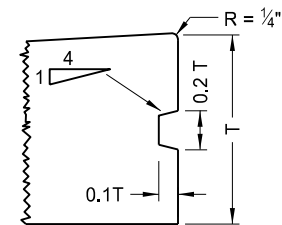
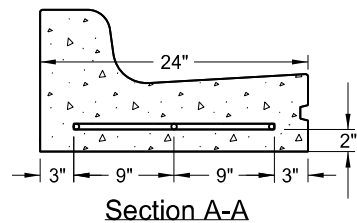
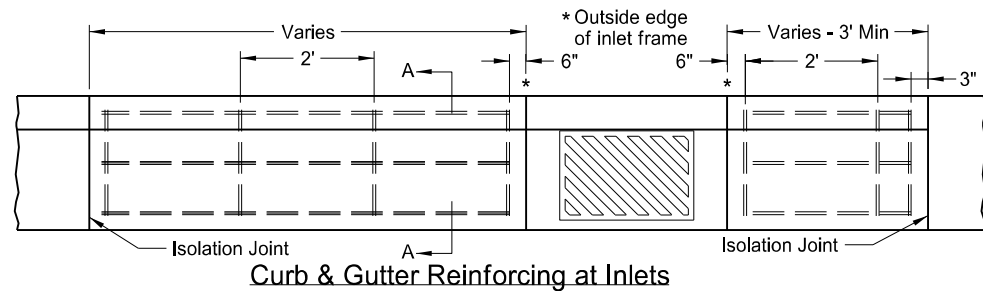


INLET - TYPE 1

D-722-1

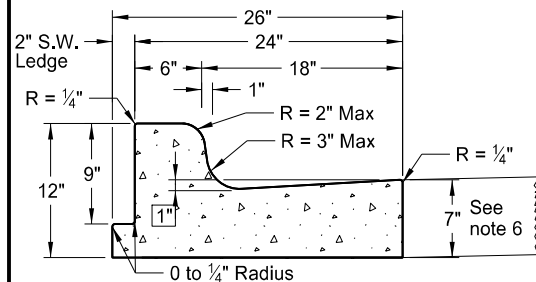


Curb & Gutter and Valley Gutter

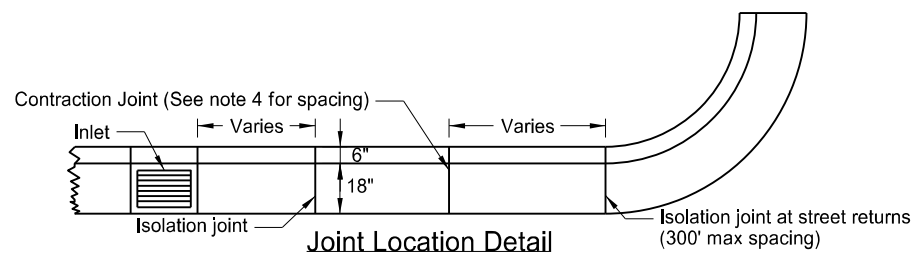


Keyway Detail for Curb & Gutter
(To be used with PCC Pavement and Drives)

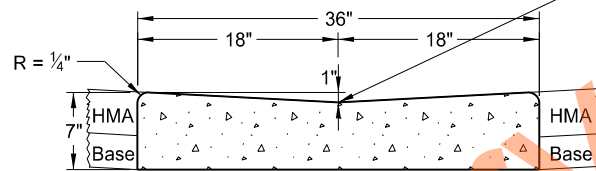
T= Thickness of pavement unless otherwise noted on plans.



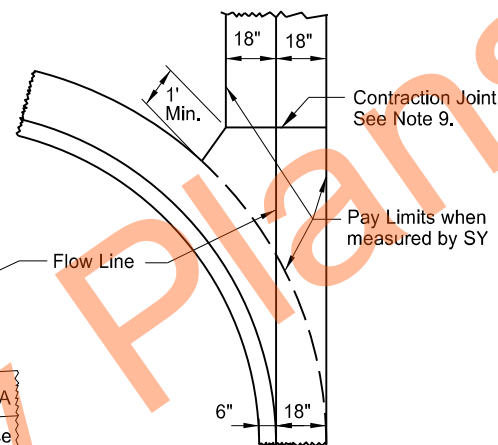
Curb & Gutter Type 1 (Sec. A & B)
Adjacent to Concrete Sidewalk, Median,
or Parking Lot. (Sec. A shown. See
Sec B for additional details.)



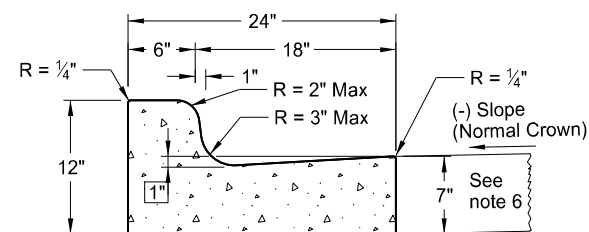
Joint Location Detail



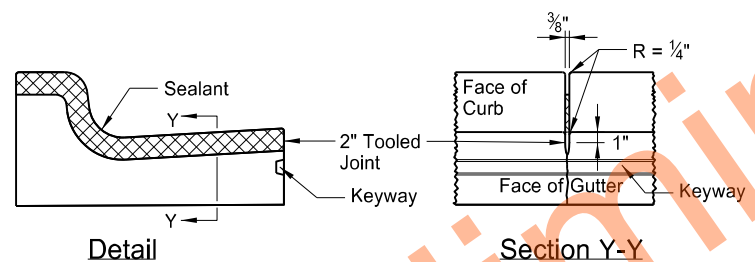
36" Concrete Valley Gutter Detail



36" Concrete Valley Gutter Plan



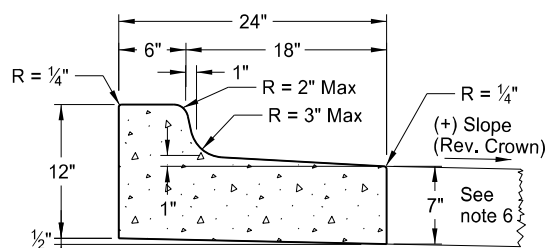
Curb & Gutter Type 1 (Sec. A)



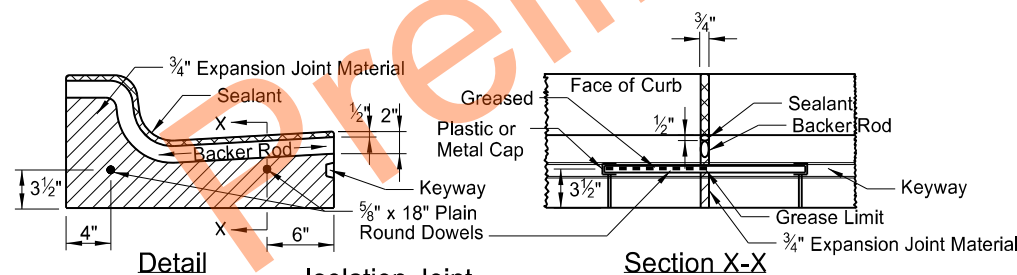
Detail

Section Y-Y

Contraction Joint



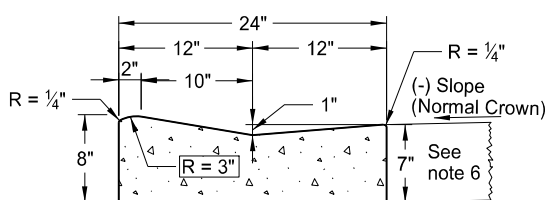
Curb & Gutter Type 1 (Sec. B)



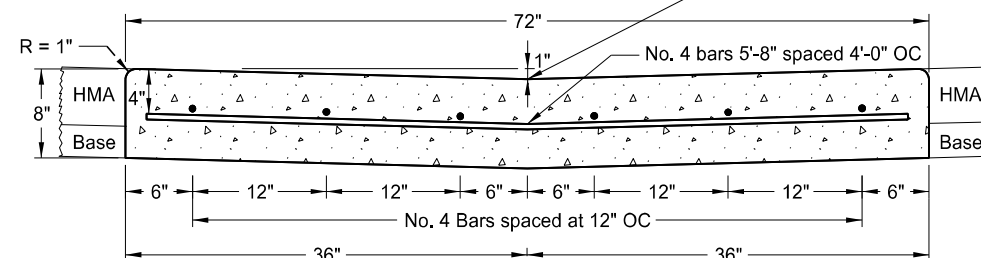
Detail

Isolation Joint

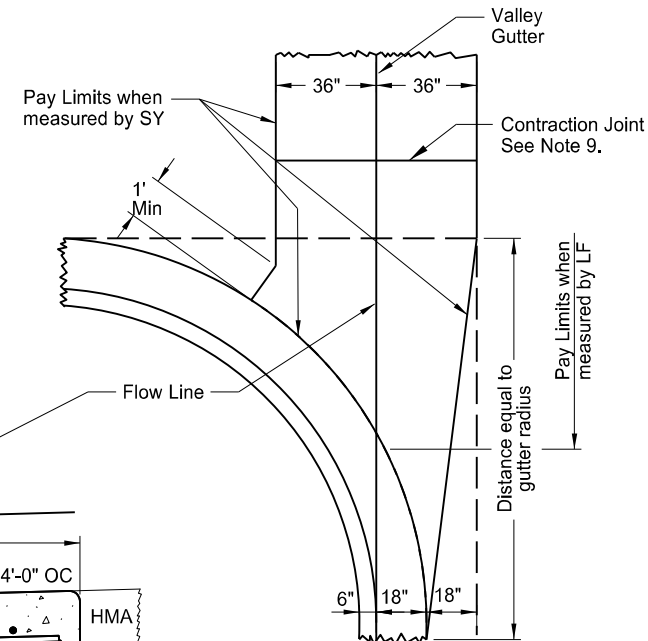
Section X-X



Mountable Curb & Gutter Type 1 (Sec. A)



72" Concrete Valley Gutter Detail



72" Concrete Valley Gutter Plan

NOTES:

1. Use Curb and Gutter Type 1 (Sec. A & B). Use section "A" with (-) pavement slopes and section "B" with (+) pavement slopes.
2. Contraction Joints: Tool the Curb & Gutter 2" as shown on the contraction joint details.
3. Isolation Joints: Use $\frac{3}{4}$ " expansion joint material for isolation joints. Form the backer rod and joint sealant opening with 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. Install plastic or metal caps and greased dowels in the cold joint for the second pour.
4. Joint Spacing: For hot mix asphalt pavements use a 10' max joint spacing for the curb and gutter with panels on each side of the inlets. For concrete pavements match the joint spacing for the curb and gutter to the pavement joint on PCC Pavements (approximately 15' spacing.)
5. Joint sealing: For contraction joint, use joint sealant that conforms to section 826.02B. Use sealant for expansion joints specified in note 3 above. Tool and install sealant in accordance with the manufacturer's recommendations.
6. Curb & Gutter-Pavement Interface: For hot mix asphalt pavement use gutter depth shown. For PCC pavements, either match gutter depth to adjacent pavement depth or construct gutter depth shown.
7. Tie curb and gutter to abutting PCC pavement with No. 4 bars, 2'-0" in length, spaced at 3'-9" centers for 15' joint spacing (maximum spacing of 4' centers).
8. On street returns and other locations where new curb and gutter ends and does not abut existing curb and gutter, taper the last two (2) feet of the curb from 6" in height to 0". Install a 1/2" premolded full depth isolation joint (the same shape as the curb and gutter just ahead of the taper) with an 18" plain round bar across the joint.
9. Valley Gutter Joints: Form, saw, or score $\frac{1}{8}$ " min. to $\frac{3}{8}$ " max. width contraction joints (a minimum 2" depth) at approx 10' intervals. Seal the joints with hot poured elastic type joint sealer (Section 826.02A.2 of the Standard Specifications.) Include all costs for the joint and sealant in the price bid for Valley Gutter.
10. Reinforcing at Inlets: Use #4 deformed reinforcing bars without splices. Include all costs for reinforcing bars at inlets (even inlets located on radii) in the price bid for "Curb & Gutter - Type 1" or "Curb & Gutter Mountable - Type 1." Extend reinforcement to the second joint (with rebar placed through the first joint) in cases where the 3' minimum panel length can't be obtained.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-7-2013	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice,
08-27-19	New Design Engr PE Stamp.
10-30-24	Revised bar size & notes,



10/30/24

SIDEWALK

D-750-2

NOTES:

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

Use longitudinal contraction joints when sidewalk width is 8' or greater, and space at half the sidewalk width.

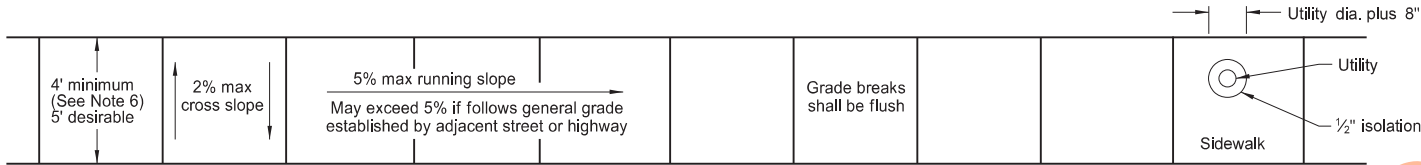
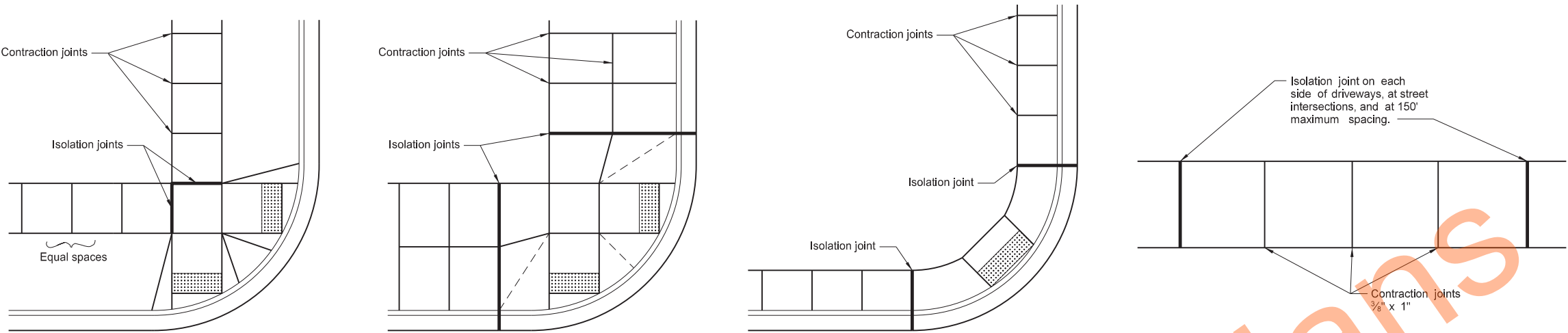
Saw or groove contraction joints to a minimum depth of 1/3 the depth of the concrete.

When sidewalk is adjacent to curb & gutter, vary the sidewalk joint spacing to match curb & gutter joints.

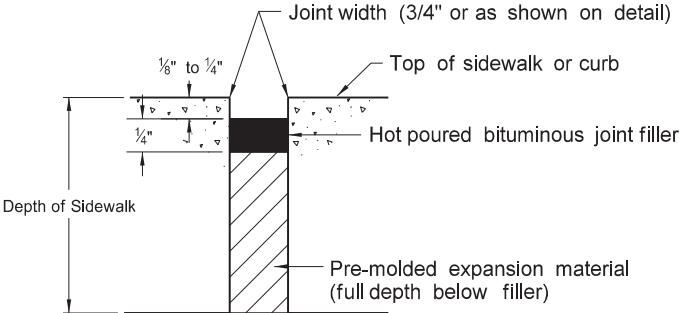
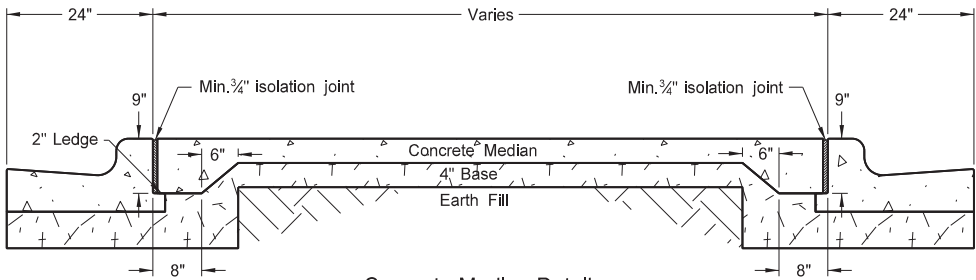
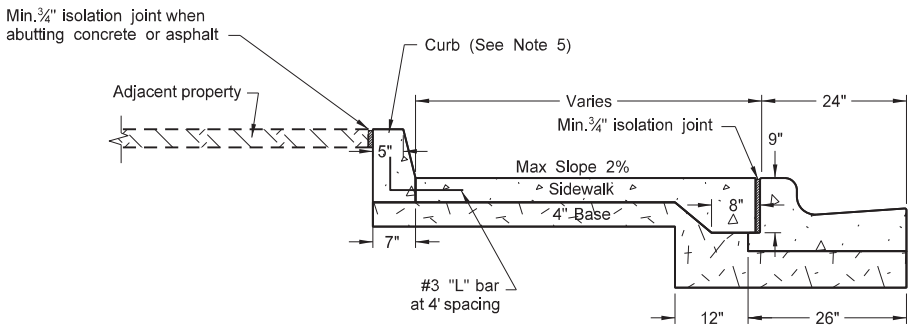
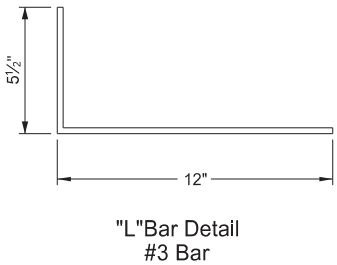
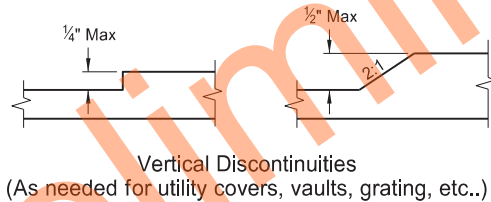
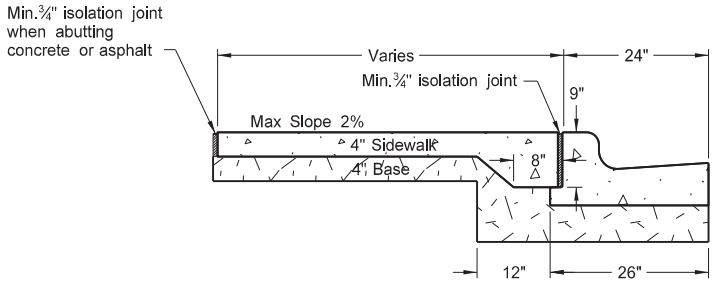
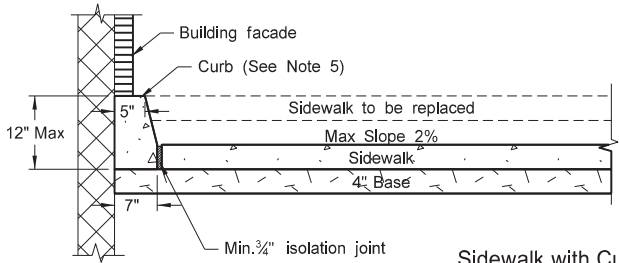
Use isolation joints between separate concrete pours, or between old and new concrete.
3. Include all costs for labor, equipment, and material necessary to construct contraction and isolation joints in the price bid for sidewalk concrete.
4. Use 4" sidewalk concrete thickness unless otherwise specified.
5. Use 4" base material thickness unless otherwise specified. Include all costs for labor and materials necessary to place the base material in the price bid for "Salvage Base Course" or "Aggregate Base Course CL 5."

Modify existing ground slope with landscaping as needed. If not possible, such as adjacent buildings, use a vertical curb as shown in the detail below. The Engineer will measure curb at the unit price bid for "Curb - Type I" per lineal foot.
6. Sidewalk Width & Grade: Provide a continuous 4' min clear width pedestrian access route with max 2% concrete cross slope, excluding flares. The width of the curb cannot be counted as part of the pedestrian access route.

When clear width of pedestrian access routes is less than 5.0', provide passing spaces at a maximum of 200' with a minimum size of 5.0' by 5.0'.



Utility Blockout



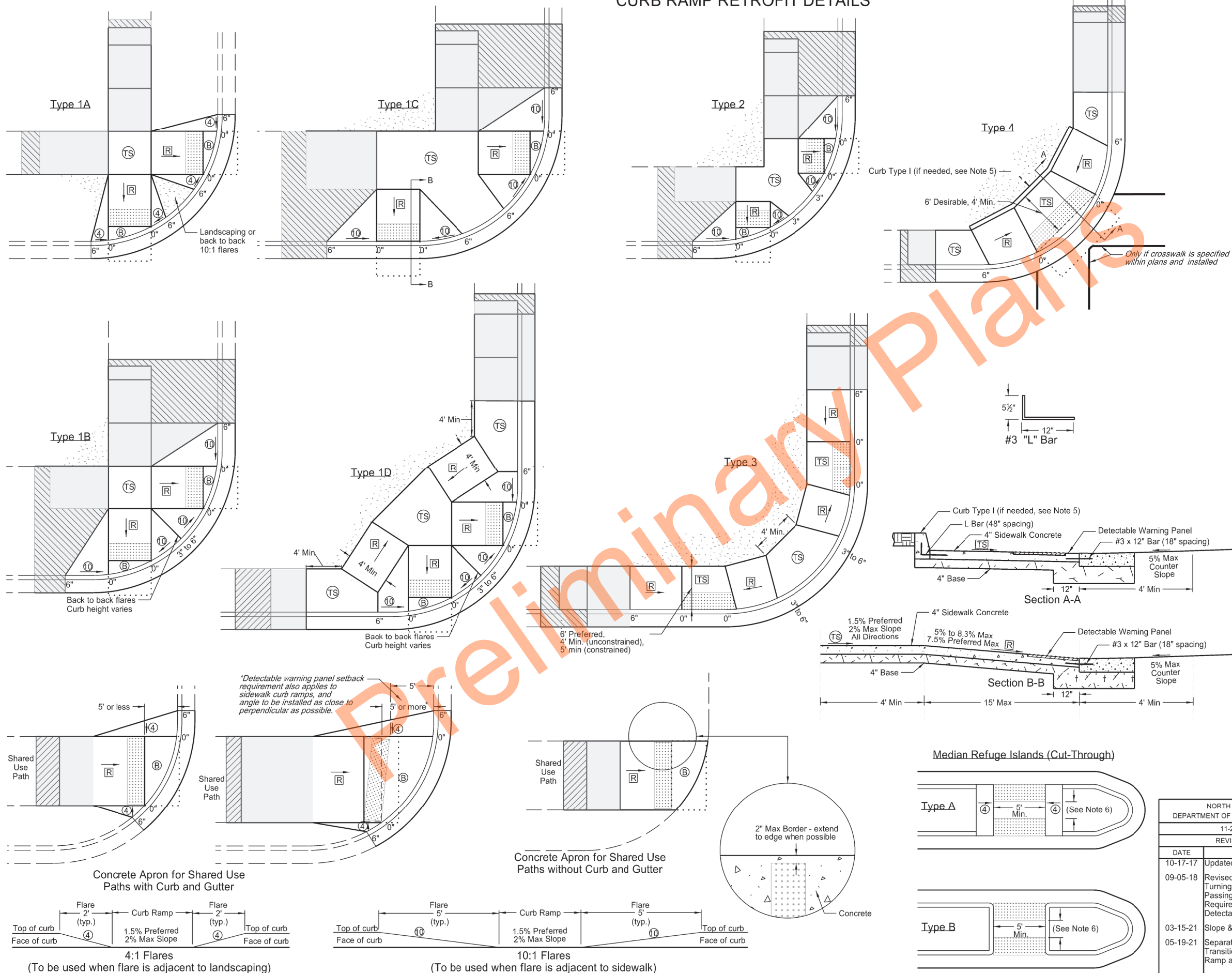
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
09-05-18	Added sidewalk details for width & grade & passing lane requirements.
08-27-19	New Design Engineer PE Stamp.
08-09-24	Electronic Stamp/Signature.



08/09/24

CURB RAMP RETROFIT DETAILS

D-750-3



- NOTES:
1. Ramp width is the useable portion of the ramp, excluding flares. Match curb ramp width to Existing Pedestrian Facility (EPF) width (4' minimum or 5' for island ramps.) Match ramp width to existing shared use path width. Maximum ramp length is 15'.
 2. Provide turning space with desirable 5' x 5' size or larger and minimum 4' x 4' unconstrained size, for any change of direction. Provide landing 5' long x width of path at the bottom and top of parallel ramps and at the top of perpendicular ramps. Turning spaces and Landings may overlap.
 3. Match detectable warning panel width to ramp width. Radial panels are allowed. Place detectable warning panel within the lower turning space.
 4. Provide a continuous 4' minimum width EPF with 1.5% preferred cross slope and max 2% constructed cross slope.
 5. Modify existing ground slope with landscaping, as needed. If not possible, use a vertical curb as detailed on Standard D-750-2. The Engineer will measure curb at the unit price bid for "Curb - Type 1" per lineal foot.
 6. Islands: If the profile of the island curb ramp is 2% or less, provide a minimum distance of 2' between warning panels. If the profile of the island curb ramp is steeper than 2%, provide a turning space between the ramps.
 7. Provide generally planar vertical alignments. Provide grade breaks, perpendicular to the direction of the pedestrian travel, at the top and bottom of curb ramps (1.5% preferred, 2% max constructed cross slope).
 8. See Curb Ramp Retrofit Transition Details Standard D-750-4 for additional information. Also See PROWAG for full compliance in the curb ramp area.
 9. Grade transitions shall be flush.

LEGEND:

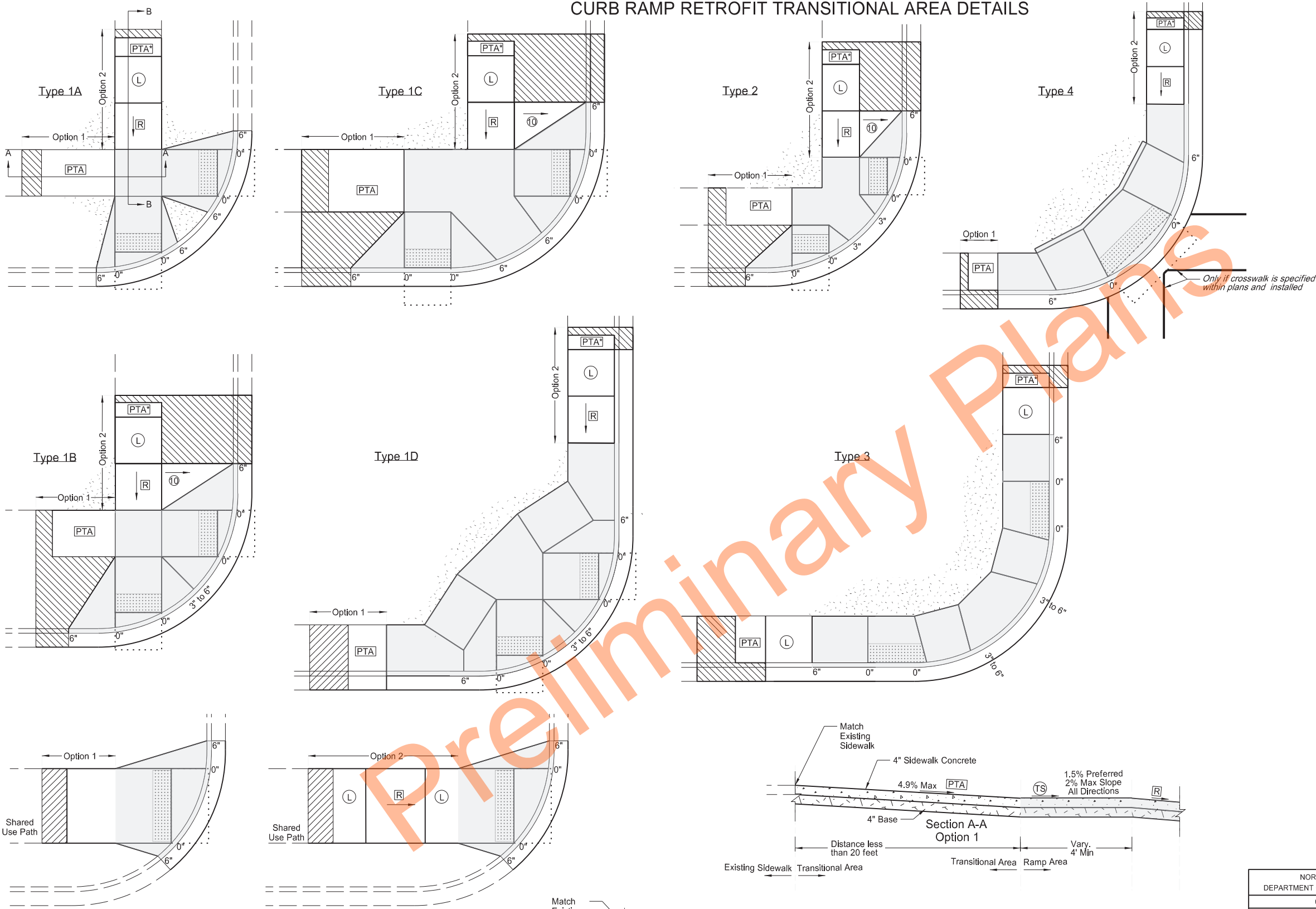
- Detectable Warning Panel.
- Landscaping.
- Transitional tie-in to nearest joint, if needed.
- Curb Ramp Retrofit Transitional Area (See Standard Drawing D750-4)
- 4' long x width of EPF or 4' minimum Clear space outside traffic lanes of travel. 1.5% preferred cross slope 2% maximum cross slope 4.7% preferred running and counter slope 5% maximum running and counter slope
- (TS) : Turning Space Use at top of ramp or when changing directions. 1.5% preferred slope (2% maximum) all directions.
- (R) : Preferred Ramp Grade = 5% to 7.5%. Maximum Constructed Grade = 8.3%. Preferred Cross Slope = 1.5%. Maximum Constructed Cross Slope = 2%.
- (B) : 1.5% preferred cross slope 2% maximum constructed cross slope running slope consistent with the EPF 4.7% preferred max counter slope 5.0% max constructed counter slope
- (10) : 10:1 maximum constructed slope.
- (4) : 4:1 maximum constructed slope.
- 0", 3", or 6" : Curb Height.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
09-05-18	Revised Notes, Revision for Turning Space, Added Passing Space Requirements, Turned Detectable Warning Panel
03-15-21	Slope & other clarifications.
05-19-21	Separate Curb Ramp Transition Area from Curb Ramp area

KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
ENGINEER
NORTH DAKOTA
05 19 2021

CURB RAMP RETROFIT TRANSITIONAL AREA DETAILS

D-750-4



- NOTES:
1. Curb Ramp Transitional Areas are to transition from the Curb Ramp area into the Existing Pedestrian Facility (EPF). Each layout shows example transitions. Use any combination for transitions from the Ramp Area into the EPF that allows for similar or gentler slopes to that of the existing condition, yet transitions in the shortest distance possible. In some cases, if grades allow, the Ramp area can immediately transition into the EPF and no transitional area is needed.
 2. Option 1: Use this transition when existing running slope grades are less than 5%. Transition from the ramp area to the EPF using the Pedestrian Access Transition Area (PTA) transition rates and in less than 20 feet.
 3. Option 2: Use this transition when existing running slopes are greater than 5% and option 1 is not able to be met.
- Add a ramp and a landing immediately after the ramp area. Then transition from the compliant landing into the EPF using the PTA rates (preferred), or in less than 15 feet (which ever is shorter).
4. Transitional Areas for Shared Use Paths can be concrete or asphalt.
 5. See Curb Ramp Retrofit Details Standard D-750-3 for additional information.

- LEGEND:
- [Pattern] : Detectable Warning Panel.
 - [Pattern] : Landscaping.
 - [Pattern] : Transitional tie-in to nearest joint, if needed.
 - [Pattern] : Curb Ramp Retrofit Area (See Standard Drawing D750-3)
 - [Pattern] : 4' long x width of EPF or 4' minimum Clear space outside traffic lanes of travel. 1.5% preferred cross slope 2% maximum cross slope 4.7% preferred running slope 5% maximum running slope
 - [PTA] : Pedestrian Access Transition Area Running Slope less than 4.9%. Transition Cross Section at 1/2 percent per foot from the from Ramp Area to EPF.
 - [L] [TS] : Turning Space/Landing Use at top of ramp or when changing directions. 1.5% preferred slope (2% maximum) all directions.
 - [R] : Preferred Ramp Grade = 5% to 7.5%. Maximum Constructed Grade = 8.3%. Preferred Cross Slope = 1.5%. Maximum Constructed Cross Slope = 2% Maximum Length = 15 feet
 - [10] : 10:1 maximum constructed slope.
 - [4] : 4:1 maximum constructed slope.
 - 0", 3", or 6" : Curb Height.

Transition Areas for Shared Use Paths

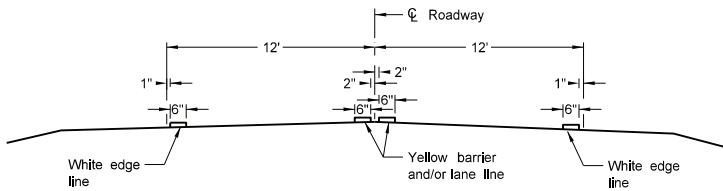
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
05-19-21	
REVISIONS	
DATE	CHANGE



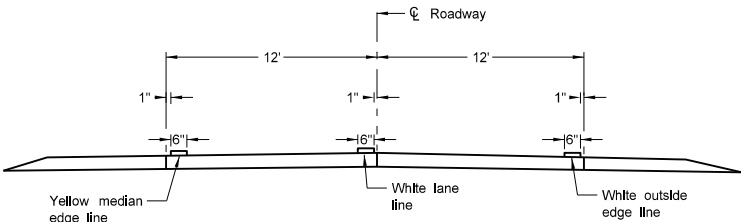
05 19 2021

PAVEMENT MARKING

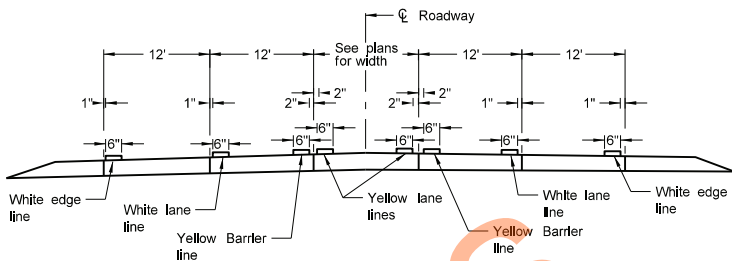
D-762-4



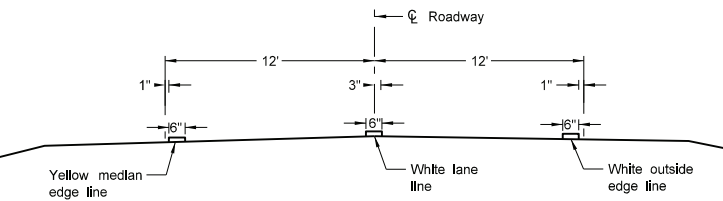
Two Lane Two Way
RURAL ROADWAY



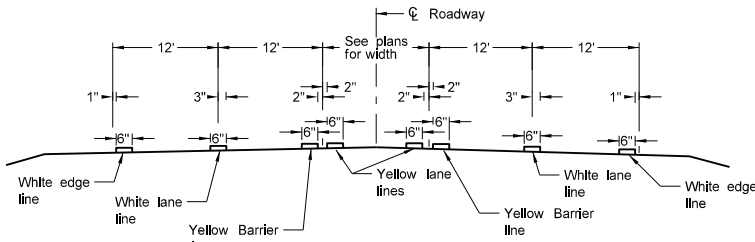
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



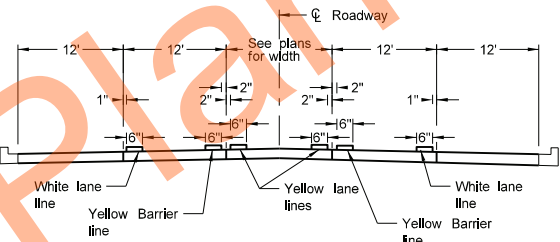
RURAL FIVE LANE ROADWAY
Concrete Section



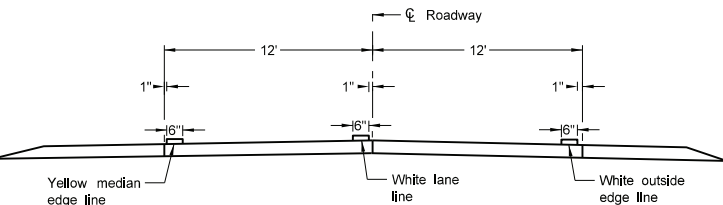
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



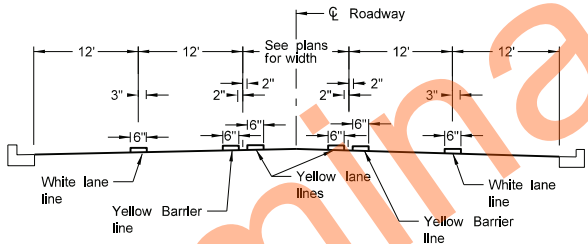
RURAL FIVE LANE ROADWAY
Asphalt Section



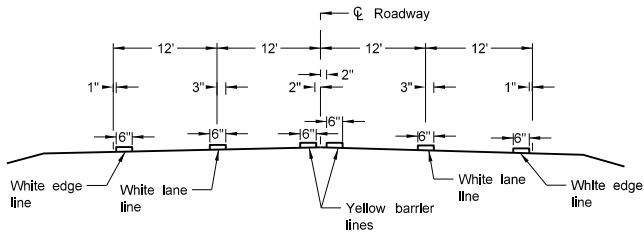
URBAN FIVE LANE SECTION
Concrete Section



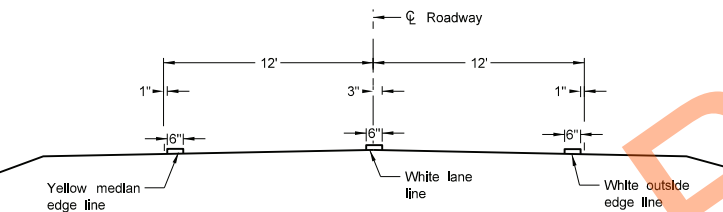
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Concrete Section



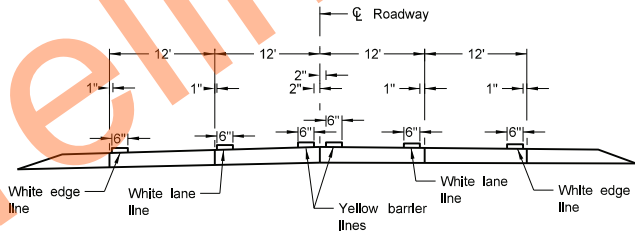
URBAN FIVE LANE SECTION
Asphalt Section



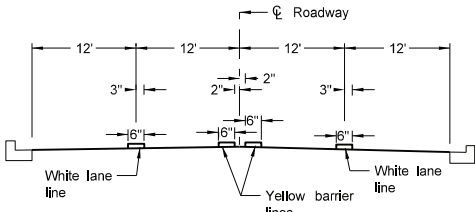
RURAL FOUR LANE ROADWAY
Asphalt Section



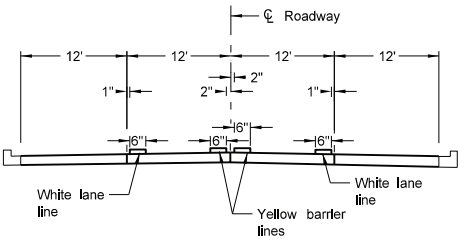
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



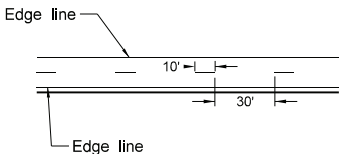
RURAL FOUR LANE ROADWAY
Concrete Section



URBAN FOUR LANE SECTION
Asphalt Section



URBAN FOUR LANE SECTION
Concrete Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

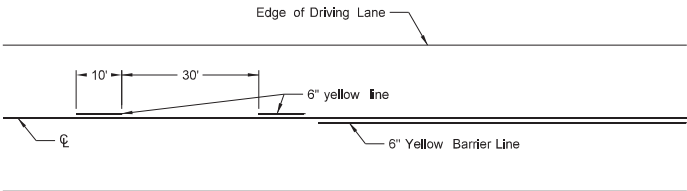
- NOTES:
1. Continue edge lines through private drives and field drives. Break edge lines for intersections.
For section lines, county roads, and street approaches, stripe the radii and edge lines of the paved surface within the right of way except where curb and gutter is present.
 2. Normal width line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph.
 3. Use 4 or 6 inch wide pavement marking for all other roadways with speed limits < 40 mph.

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

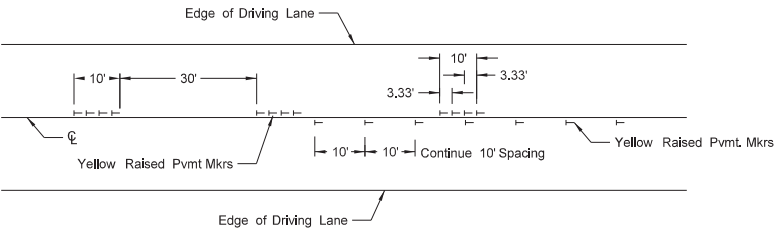


SHORT-TERM PAVEMENT MARKING

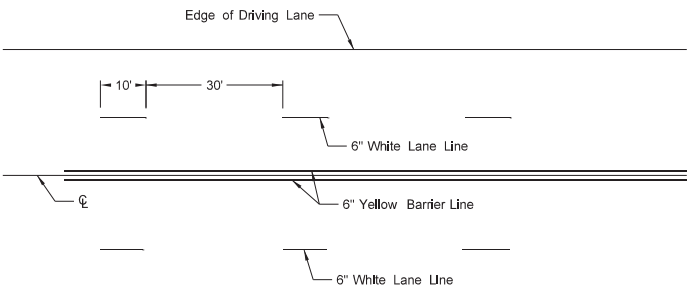
D-762-11



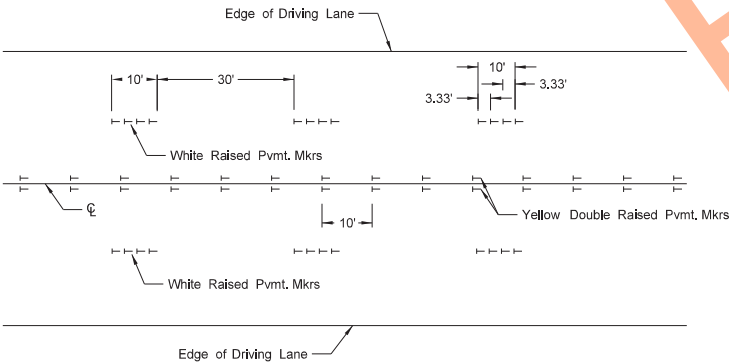
Painted or Tape Lines



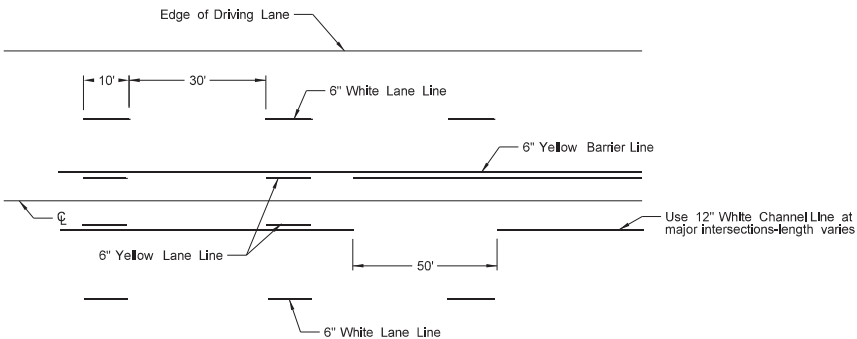
Raised Pavement Markers
TWO-LANE TWO-WAY ROADWAY



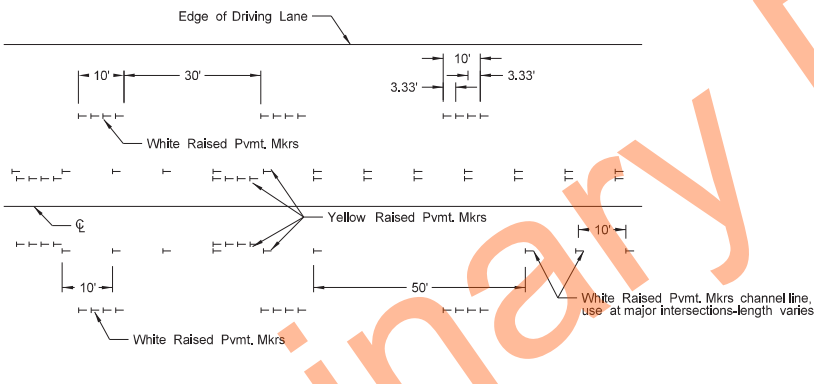
Painted or Tape Lines



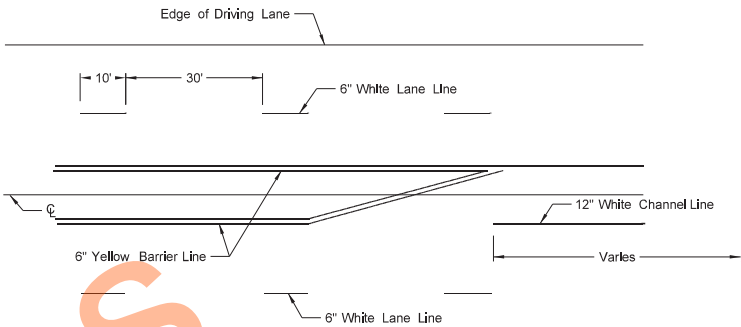
Raised Pavement Markers
FOUR LANE ROADWAY



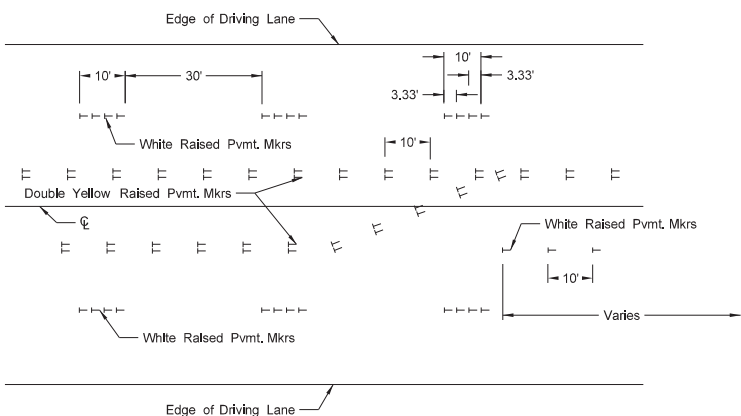
Painted or Tape Lines



Raised Pavement Markers
FIVE LANE ROADWAY TWO WAY LEFT TURN



Painted or Tape Lines



Raised Pavement Markers
FIVE LANE ROADWAY WITH MARKED ISLANDS

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

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



CONCRETE FOUNDATIONS
(TRAFFIC SIGNALS & HIGHWAY LIGHTING)

NOTES:

LIGHT & SIGNAL STANDARD FOUNDATIONS:
See plans for conduit size, number of bends and correct position for each foundation. When conduit does not continue beyond the foundation, conduit with a 105° bend and bushings on both ends may be substituted for the 90° bends shown. See plans for correct size & location of foundations. The grade and exact location shall be established by the Engineer in the field. All reinforcing shall be Grade 60. Tie bars shall have a minimum of a 12" lap. Reinforcing may be omitted for Type I, II, V, VI & VII signal standard foundations if the anchor bolts extend to within 3" to 6" above the bottom of the foundation. A minimum of 6 anchor bolts shall be used for cantilevered structures.

CONTROLLER CABINET FOUNDATION PAD MOUNT
FOUNDATION: See plans for the number of 90° bends per foundation and correct positioning. The foundation for Pad Mounted Controller Cabinet shall be of sufficient size so that there is a minimum of 3" of clearance from the outside edge of cabinet to the outside edge of the foundation on any side. The contractor shall ensure a water-tight seal between the controller cabinet and the foundation by caulking, except for V-groove.

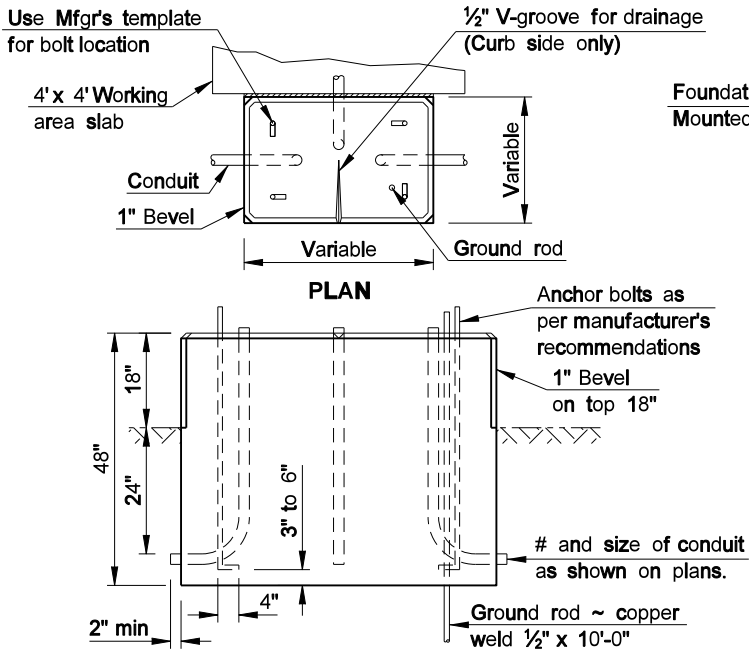
WORKING AREA SLAB: The materials and preparation of this slab shall be as approved by the Engineer in the field.

TRANSFORMER & FEED POINT CABINET FOUNDATION PAD MOUNTED: The foundation shall have a wood float finish. All conduits shown shall be installed. Conduit that is not used at this time shall be plugged with an expandable plug.

FEED POINT CABINET FOUNDATION PAD MOUNTED: The foundation shall have a wood float finish. All conduits shown shall be installed. Conduit that is not used at this time shall be plugged with an expandable plug.

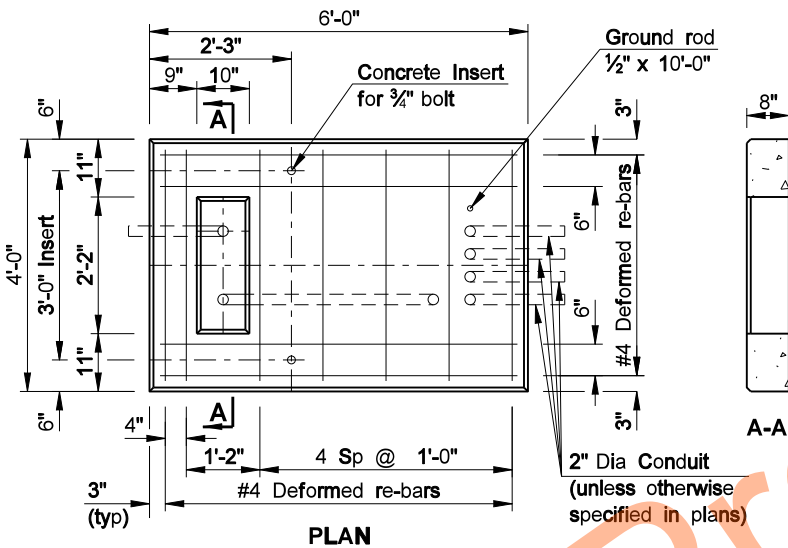
LIGHT & SIGNAL FOUNDATION TABLE	
FOOTING DEPTH (ft)	LONGITUDINAL REINFORCING
≤ 12	8 - #5
13 - 14	8 - #6
15 - 16	8 - #7
17 - 19	8 - #8

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		This document was originally issued and sealed by Terrence R. Udland Registration Number PE- 2674 , on 6/15/10 and the original document is stored at the North Dakota Department of Transportation
6-15-10		
REVISIONS		
DATE	CHANGE	



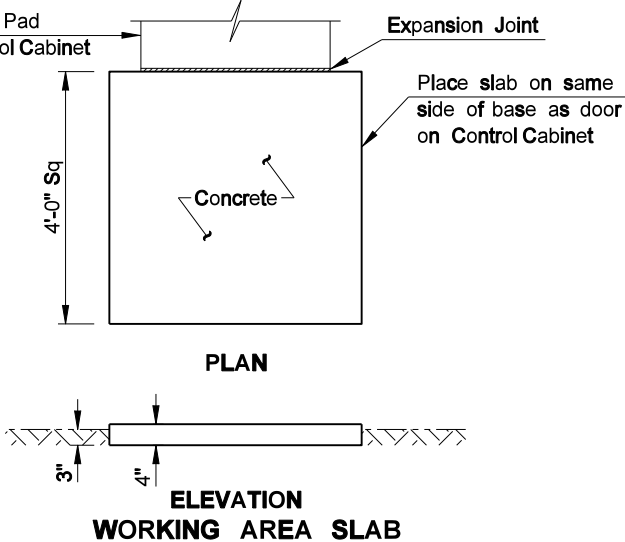
CONTROLLER CABINET FOUNDATION PAD MOUNT

The Controller Cabinet Foundation shall be bid as Concrete Foundation - Traffic Signals.

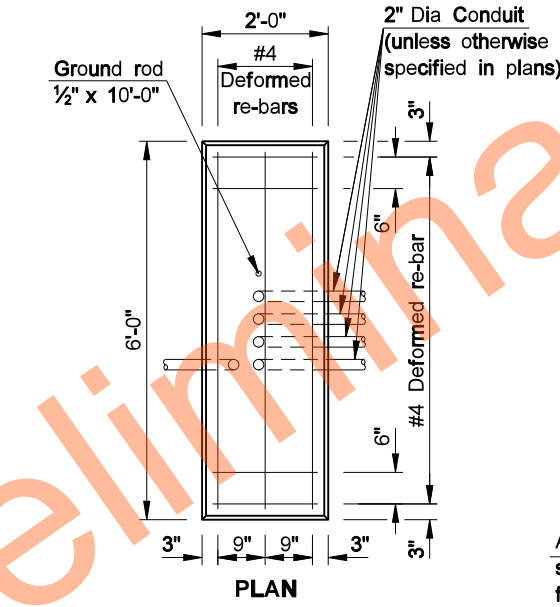


TRANSFORMER & FEED POINT
CABINET FOUNDATION PAD MOUNT

The Transformer & Feed Point Cabinet Foundation Pad Mount shall be bid as Concrete Foundation ~ Feed Point ~ Type A.

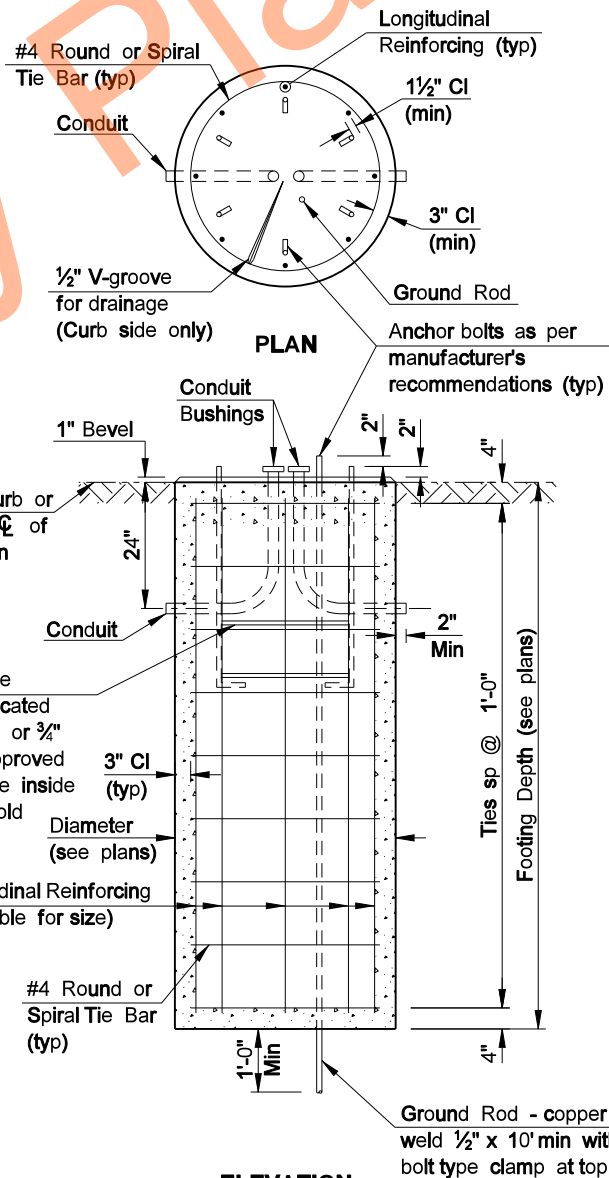
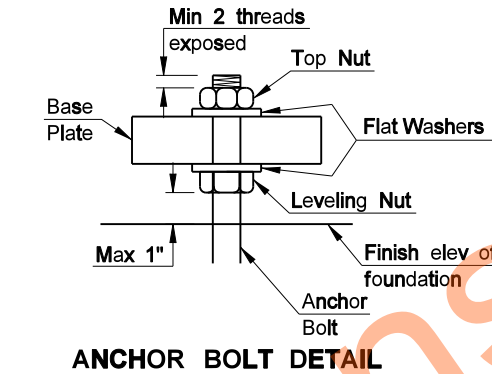


The Working Area Slab shall be installed where shown on the plans and shall not be bid separately but shall be included in the price bid for Concrete Foundation - Traffic Signals.



FEED POINT CABINET
FOUNDATION PAD MOUNT

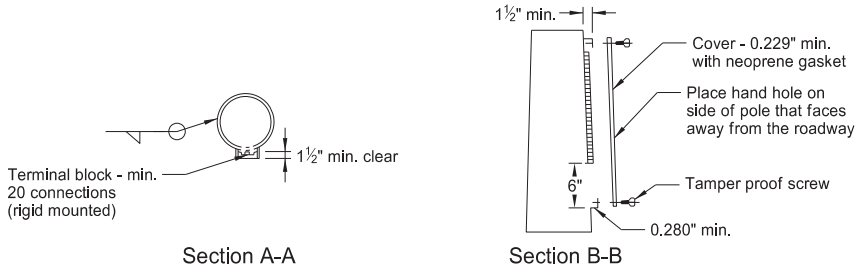
The Feed Point Cabinet Foundation Pad Mount shall be bid as Concrete Foundation ~ Feed Point ~ Type B.



LIGHT & SIGNAL STANDARD FOUNDATION

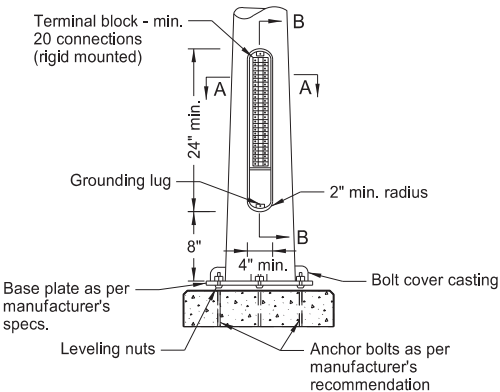
TRAFFIC SIGNAL STANDARDS

D-772-2



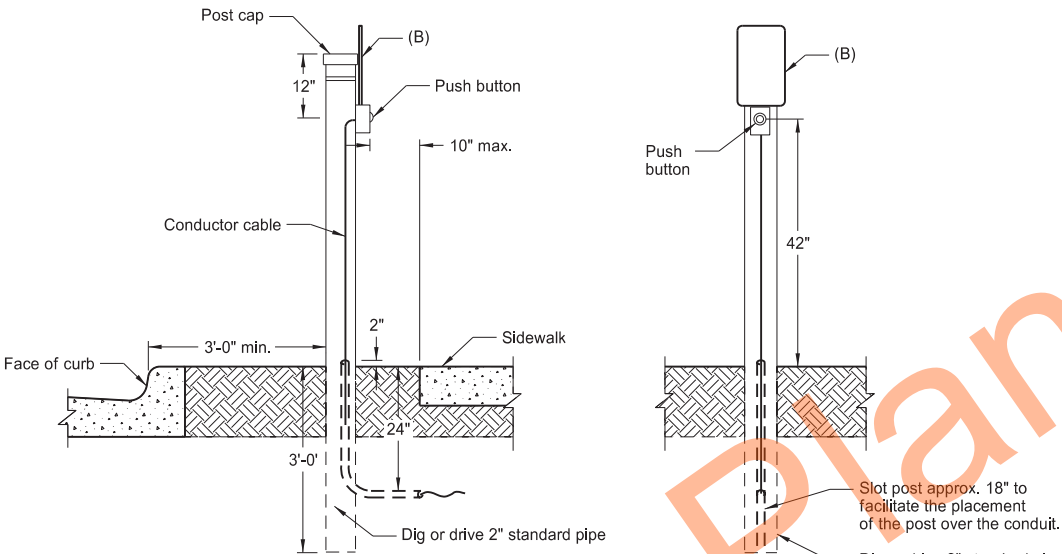
Section A-A

Section B-B



Alternate Signal Standard Base

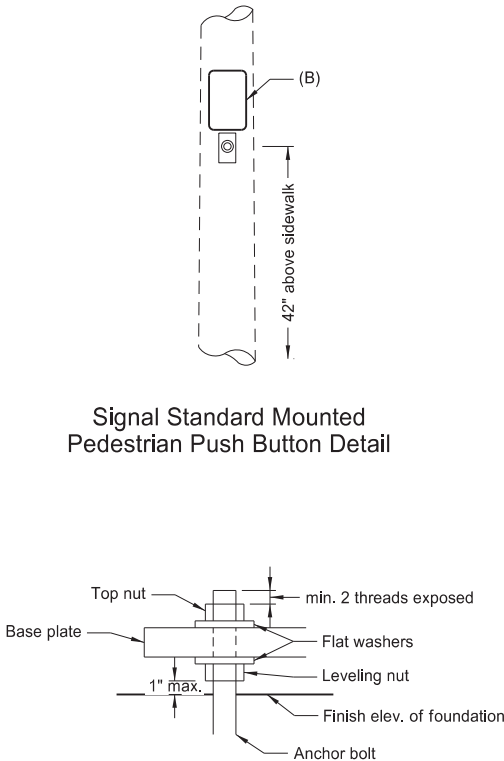
For use only with Type V, VI, and VII signal standards.



Side View

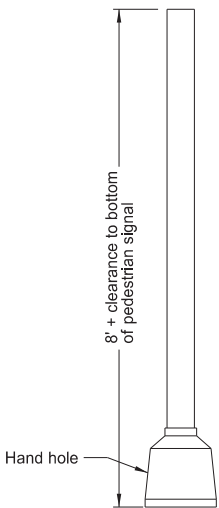
Front View

Pedestrian Push Button Post Details (A)



Signal Standard Mounted Pedestrian Push Button Detail

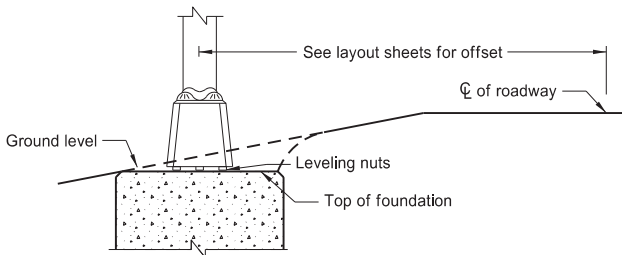
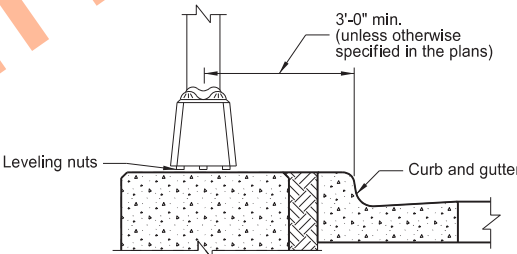
Anchor Bolt Detail



Type II



Type V, VI, VII



Signal Standard Minimum Clearance Details

- (A) Use positioning of the sign, pushbutton, and direction of arrow to clearly indicate which crosswalk is actuated by the push button. Place type of sign based on the jurisdiction in which placed.
- (B) Attach sign to post using rust resistant 0.081 aluminum bracket and banding. See Standard Signs book for dimensions and legend series. See plans for type of sign.

Notes:

- Signal Heads: See traffic signal layout for correct mounting position, number, size, and arrangement of lenses.
- Steel Standards: Place signal standard a minimum of 3 ft. from the face of the curb to center of signal standard, unless shown otherwise on layout sheets.
- Paint: See note sheet for required color of paint.
- Transformer Base: In lieu of transformer base use alternate signal standard base.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-14-13	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice
10-25-19	Added 10" dim for ped pushbutton
08-20-25	Added physical stamp & signature



08/20/25