

DESIGN DATA 7th St				
Traffic	Average Daily			
Current 2020	Pass: 13340	Trucks: 210	Total: 13550	
Forecast 2040	Pass: 16275	Trucks: 260	Total: 16535	
Clear Zone Distance: 18 Ft		Design Speed: 25 MPH		
Minimum Sight Dist. for Stopping: 155 Ft		Bridges: N/A		
Sight Dist. for No Passing Zone: 450 Ft				
Pavement Design Life Match Existing				
Design Accumulated One-way Ridged ESALs: N/A				
DESIGN DATA 9th St				
Traffic	Average Daily			
Current 2020	Pass: 13705	Trucks: 265	Total: 13970	
Forecast 2040	Pass: 16720	Trucks: 325	Total: 17045	
Clear Zone Distance: 18 Ft		Design Speed: 25 MPH		
Minimum Sight Dist. for Stopping: 155 Ft		Bridges: N/A		
Sight Dist. for No Passing Zone: 450 Ft				
Pavement Design Life Match Existing				
Design Accumulated One-way Ridged ESALs: N/A				



NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

NHU-1-083(146)900
Burleigh County
7th Street (US83B), Front Ave to Broadway Ave
9th Street (US83B), Front Ave to Main Ave

Concrete Pavement Repair,
Grinding, and ADA Improvements

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
NHU-1-083(146)900 (7th St)	0.185	0.185
NHU-1-083(146)900 (9th St)	0.118	0.118
Totals	0.303	0.303

End Project NHU-1-083(146)900
7th St N (US83B), Brodway Ave
Sta 20+27.66
RP 900.817

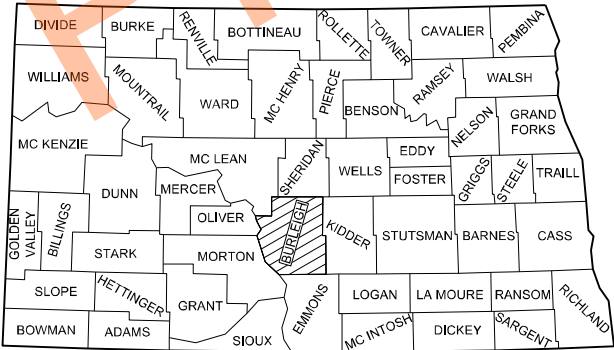
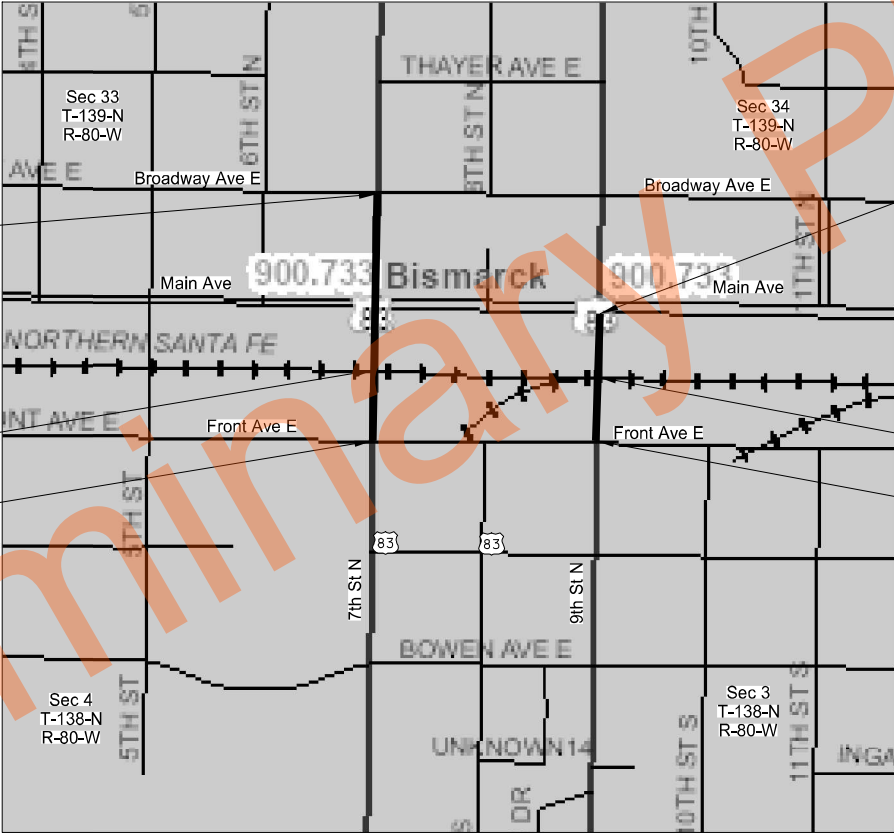
RR Bridge Structure No.
0083-903.335 L B

Begin Project NHU-1-083(146)900
7th St N (US83B), Front Ave
Sta 10+49.65
RP 900.632

End Project NHU-1-083(146)900
9th St N (US83B), Main Ave
Sta 506+95.37
RP 900.750

RR Bridge Structure No.
0083-900.729 R B

Begin Project NHU-1-083(146)900
9th St N (US83B), Front Ave
Sta 500+72.55
RP 900.632



STATE COUNTY MAP

DESIGNER Dylan Dunn, PE
DESIGNER Amy Schaaf, PE
DESIGNER Kyle Reith, PE
DESIGNER Jeremy Butman, PE

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT
Jon Ketterling
08/15/25

MOORE ENGINEERING, INC.

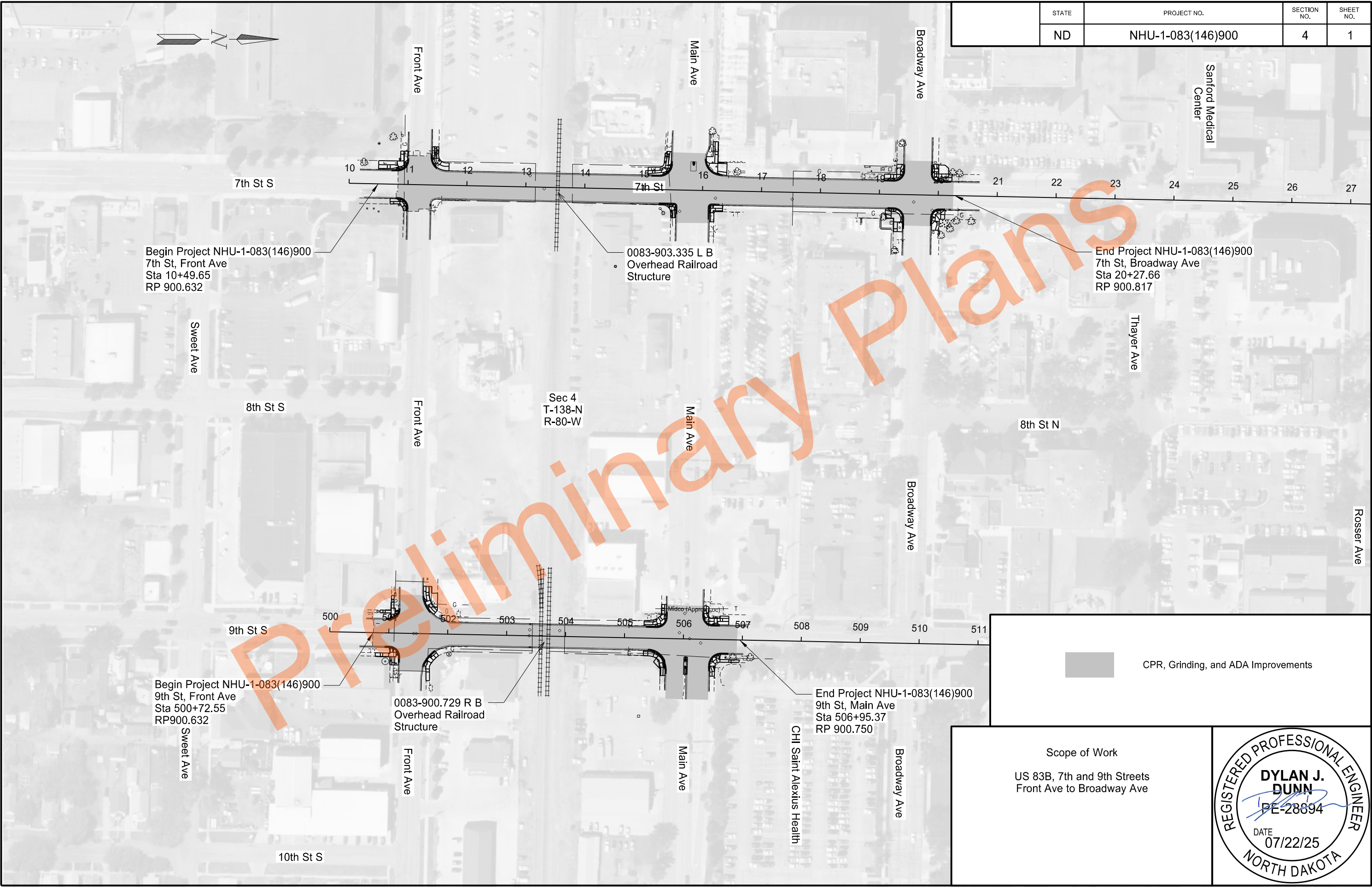
REGISTERED PROFESSIONAL ENGINEER

JORDAN M NEHL
PE-8782

DATE
08/15/25

NORTH DAKOTA

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CPR, Grinding, and ADA Improvements

Scope of Work
US 83B, 7th and 9th Streets
Front Ave to Broadway Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA

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NOTES

- 100-P01

NOISE ORDINANCE: Comply with the City of Bismarck noise ordinance by scheduling operations between the hours of 7:00 AM and 11:00 PM, unless approved in writing by the Engineer. Submit request a minimum of 30 days prior to commencement of the requested work. Follow procedures in SSP “Limitations of Operations” to perform work on holidays.
- 105-110

PAVEMENT SWEEPING: Sweep paved areas that were used by construction traffic before opening these areas to public traffic. Sweep all newly constructed pavement no more than 24 hours before a scheduled final inspection. Use a vacuum or pick-up type sweeper to perform this work.
- 108-100

WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required.
- 108-150

PUBLIC RELATIONS COORDINATOR: Provide a public relations and information coordinator. The coordinator cannot be the project superintendent or construction foreman. The coordinator should be knowledgeable in construction operations, be able to develop effective media releases, possess written and verbal communication skills, and be able to organize productive meetings.

Provide the name, work address, and work phone number to the relevant project, community, and media personnel.

The public relations coordinator is responsible for providing the following:

1. Organizing, scheduling, and conducting the meeting specified in Note 108-100, "Weekly Planning/Reporting Meeting".

2. Advise the Engineer, NDDOT Bismarck District, and the City of Bismarck Engineering Department of upcoming construction activities in regard to street closures and traffic detour routes so that city police, emergency services, schools, and other pertinent city agencies may be notified.

3. Provide news releases and necessary drawings to the media before and during construction. News releases should inform the public on construction activities, schedules, street closures, width or height restrictions to traffic, and traffic detour routes. Update news releases regarding construction activities every other week, at a minimum.

4. Be available for media interviews.

5. Work directly with property owners and businesses affected by construction activities. The coordinator must have sufficient knowledge and authority to resolve property owner and business concerns regarding scheduling, maintaining access, and construction operations.
- 570-P01

CONCRETE PAVEMENT REPAIR: Concrete pavement repair item to include sawing concrete, concrete removal, dowel bars, deformed bars, and tie bars. See Section 11 for more information.

- 704-100

TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.
- 704-P01

TRAFFIC CONTROL INITIATION AND REVISIONS: Notify Engineer a minimum of 1 week prior to initiating any lane closures or detours. Submit revisions to traffic control or phasing a minimum of 2 weeks prior to initiating proposed altered phase.
- 704-P02

TRAFFIC CONTROL PHASING AND WORKING DAY LIMITATIONS: The traffic control details, as indicated in the plans, have been developed based on the premise that this project will be constructed in two phases. Remove and reset devices for each phase of construction. The costs associated with removing and resetting traffic control devices are included in the price bid for “Traffic Control Signs,” “Type III Barricade,” “Sidewalk Barricade,” “Delineator Drums,” “Tubular Markers” respectively.

The construction phasing plan as follows is based upon two lane closures. Additional temporary lane closures are allowed upon written approval from the Engineer. Contractor to submit a detailed phasing plan for any revisions a minimum of 14 days prior to the intended lane closure. Additional temporary lane closures are limited to off-peak times (7:00pm – 7:00am).

Contractor to remove traffic control and open work areas that are completed.

Phase 1:

Close the right two lanes as shown in Section 100. Complete concrete repairs and south curb ramp improvements as indicated in Phase 1A before moving to concrete repairs and north curb ramp improvements as indicated in Phase 1B. Phase 1C, 1D, 1E include lane shift or closures on approaching streets to complete remaining concrete repair areas. Limit the extent of Phase 1C, 1D, and 1E to 10 calendar days each.



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NOTES

Phase 2: Close the left two lanes as shown in Section 100. Complete concrete repairs and south curb ramp improvements as indicated in Phase 2A before moving to north curb ramp improvements or concrete repairs as indicated in Phase 2B. Phase 2C and 2D include lane shift or closures on approaching streets to complete remaining concrete repair areas. Limit the extent of Phase 2C and 2D to 10 calendar days each.

704-P03 PORTABLE CHANGEABLE MESSAGE SIGN: Install two Portable Changeable Message Signs (PCMS) in advance of the project limits. Place one south of E Front Ave on 9th Street and one north of E Broadway Ave on 7th Street two weeks prior to beginning construction and operate for duration of the project. The Engineer will field-verify the locations for the PCMS installation. Relocate the PCMS as directed by the Engineer.

Provide an operator trained in the use of the PCMS. The Engineer will determine the message to be displayed. Program the message within one hour of the Engineer’s request to change the message.

724-P01 ADJUST SPRINKLER HEAD: Prior to construction, coordinate with private entities (business owners or property owners) regarding presence of existing underground irrigation systems and location of sprinkler heads that will be impacted by the proposed improvements. Include all costs for labor, materials, and equipment to relocate and/or replace impacted sprinkler head(s), underground irrigation piping, irrigation control/valve box and restore underground irrigation system to a fully functioning system in the price bid for “Adjust Sprinkler Head.”

748-P01 CURB & GUTTER-TYPE 1: Construct curb and gutter separate from adjacent concrete pavement. Match existing curb height when connecting into existing. Include all costs to perform this work in the price bid for “Curb & Gutter-Type 1.”

750-P01 CONCRETE MEDIAN PAVING: Measurement will be from the curb joint to the end of the median nose, excluding the area beyond the top of the median taper.

750-P02 CURB RAMP AND LANDINGS: Construct adjacent roadway prior to curb ramps and landings. Install concrete landings labeled “TS” or “L” in Section 82, prior to adjacent ramps or sidewalk. Allow landings to cure at least 24 hours before constructing adjacent concrete. Adjust the elevations of the landings so that maximum grades are not exceeded. Construct sidewalks, curb ramps and landings in accordance with Standard Drawing D-750-3, D-750-4, and the details shown in Section 82.

750-P03 SIDEWALK CONCRETE: Concrete mix designs to include macro-fiber reinforcement unless otherwise directed by Engineer. All macro-fiber reinforcement is to meet the requirements of ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete and Shotcrete and be Type III synthetic. Reinforcing fibers are to be a minimum one and one-half inches (1.5”) in length. Dosages per the

minimum manufacturer dosage rate. Any fibers utilized must be approved by the Engineer. The following fibers have been pre-approved: Fibermix PolyMesh, Euclid Tuf-Strand SF & MasterFiber MAC Matrix.

Sidewalk concrete removal is to be included in the price for installation of Sidewalk Concrete. Regrade soil as needed for new sidewalk elevations, slope at 4:1 or flatter. Include costs for labor, materials, and equipment necessary to remove and replace sidewalk concrete in the price bid for “Sidewalk Concrete __ IN.”

Aggregate base course as shown in the details to be included in bid price for “Sidewalk Concrete __ IN.” Provide water for moisture control of aggregate base.

Seed all disturbed areas. Provide the following Class III Seed Mixture:

Seeding Class III Seed Mixture	
Variety and Species of Seed	% by Weight
Fairway Crested	50
Sheep Fescue	30
Perennial Ryegrass	20
Total	100

Seed mixture must not contain less than 85 percent pure live seed (PLS) and be mixed uniformly by weight at shown above. Apply seed at a rate of 6 pounds PLS/1,000SF. Stabilize all disturbed areas within 14 days after completion of work in the specific area. Two applications of mulch to be included in stabilization efforts.

Landscape preparation includes removal and reset of landscape rock. Contractor to take care not to disturb plants.

Seeding, mulch, and landscape preparations included in the bid price for “Sidewalk Concrete __ IN.”

750-P04 DETECTABLE WARNING PANEL: Install unpainted, cast-iron plates by City of Bismarck pre-approved manufacturers:

- Advantage Tactile Systems
- TufTile
- ADA Arcis Tactile
- Hanover Architectural Products
- East Jordan Iron Works
- ADA Solutions, Inc.
- Metadome, LLC
- Access Products, Inc.
- Neenah Foundary

Cut panels as shown in Section 82. Cutting panels included in the bid price for “Detectable Warning Panels.”



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- 754-P01

RESET SIGN PANEL: Remove and reset all sign panels and supports shown in Section 10. Include all costs of equipment and materials needed to remove/reset sign panels and supports in the price bid for “Reset Sign Panel.”
- 762-P01

PREFORMED PATTERNED PAVEMENT MARKING _IN LINE-GROOVED: Use primer for installation of pavement markings as recommend by the manufacturer. Use an approved extended season marking for late season installation per the manufacturer’s recommendations. The extended season markings will be paid at the same contractor price as “Preformed Patterned Pvmt Mk _In Line-Grooved” or “Preformed Patterned Pvmt Mk-Message (Grooved).”
- 762-P02

PREFORMED THERMO PLASTIC PAVEMENT MARKING _IN LINE: Use primer for installation of pavement markings as recommended by the manufacturer. Provide preformed thermoplastic film for 6IN and 24IN pavement markings. Provide submittal to Engineer for approval prior to ordering. Groove the areas to receive 6IN and 24IN thermos plastic pavement markings in accordance with Specification 762.04 A.4 and manufacturer’s recommendations. Include costs for labor, materials, and equipment necessary to groove the pavement and install pavement markings in the price bid for “Preformed Thermo Plastic Pvmt Mk _In Line.”
- 762-P03

PREFORMED PATTERNED PAVEMENT MARKING _IN LINE CONTRAST-GROOVED: Provide 3M Stamark High Performance Contrast Marking Tape Series 380I-5ES or approved equal. Use primer for installation of pavement markings as recommended by the manufacturer. Bid item “Pref Patt Pvmt Mk 7In Line Contrast-Grooved” to be used for centerline skip and includes 4” white with 1.5” black border markings. Bid item “Pref Patt Pvmt Mk 11In Line Contrast-Grooved” to be used for centerline skip and includes 8” white with 1.5” black border markings. Include all costs for labor, materials, and equipment necessary to groove the pavement and install pavement markings in the price bid for “Pref Patt Pvmt Mk _In Line Contrast-Grooved.”
- 970-P01

BENCH: Remove and reset benches on the northwest corner of 7th Street and Broadway. Drill anchor bolts in sidewalk concrete in pattern of existing bench supports. Include all costs for labor, materials, and equipment necessary to reset in the price bid for “Bench.”



Estimated Quantities

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SPEC	CODE	ITEM DESCRIPTION	UNIT	NHU-1-083(146)900	TOTAL
103	0100	CONTRACT BOND	L SUM	0.217	0.217
202	0130	REMOVAL OF CURB & GUTTER	LF	829	829
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	70	70
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	18	18
570	0210	PCC PAVEMENT GRINDING	SY	9938	9938
570	0240	DOWELED CONTRACTION JOINT ASSEMBLY	LF	670	670
570	0650	CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	2943	2943
570	1512	SPALL REPAIR-PARTIAL DEPTH	SF	167	167
570	1600	EPOXY COATED DEFORMED BARS	EA	20	20
702	0100	MOBILIZATION	L SUM	0.217	0.217
704	0100	FLAGGING	MHR	1040	1040
704	1000	TRAFFIC CONTROL SIGNS	UNIT	1708	1708
704	1052	TYPE III BARRICADE	EA	27	27
704	1058	PEDESTRIAN WALKWAY	LF	1170	1170
704	1060	DELINEATOR DRUMS	EA	395	395
704	1067	TUBULAR MARKERS	EA	51	51
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	5	5
704	2108	TEMPORARY CURB RAMP	EA	10	10
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	2
708	1540	INLET PROTECTION-SPECIAL	EA	26	26
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	26	26
722	6140	ADJUST GATE VALVE BOX	EA	6	6
722	6200	ADJUST MANHOLE	EA	3	3
722	6215	ADJUST UTILITY VAULT	EA	7	7
724	1037	ADJUST SPRINKLER HEAD	EA	6	6
748	0140	CURB & GUTTER-TYPE I	LF	783	783
748	0520	CURB-TYPE I	LF	297	297
750	0115	SIDEWALK CONCRETE 4IN	SY	889	889
750	0140	SIDEWALK CONCRETE 6IN	SY	311	311
750	0200	CONCRETE MEDIAN PAVING	SY	14	14
750	2115	DETECTABLE WARNING PANELS	SF	355	355
754	0170	FLEXIBLE DELINEATORS	EA	5	5
754	0592	RESET SIGN PANEL	EA	3	3
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	27	27
762	1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE	LF	1704	1704
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE	LF	457	457
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	265	265
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	273	273
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	360	360
762	1348	PREF PATT PVMT MK 11IN LINE CONTRAST-GROOVED	LF	917	917
772	3091	RELOCATE PEDESTRIAN PUSHBUTTON POST	EA	8	8
970	0300	BENCH	EA	2	2

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Water

25 MGal/Mile for Dust Palliative
15 Gal/SY for Blended Base
20 Gal/Ton for Aggregates
10 Gal/CY for Embankment

Removal of Pavement

Concrete Pavements @ 2.0 Ton/CY
Bituminous Pavements @ 2.0 Ton/CY
Aggregate Bases @ 1.875 Ton/CY

Proposed Pavements

Concrete Pavements @ 2.0 Ton/CY
Commercial Grade HMA @ 2.0 Ton/CY
Aggregate Base Class 5 @ 1.875 Ton/CY

	722	6140
	Adjust Gate Valve Box	
7th St	10+60.97	34.15 Lt
	20+00.32	50.04' Lt
9th St	500+98.70	21.85 Lt
	501+67.46	79.40 Lt
	506+36.32	14.65 Lt
	506+61.27	19.78 Lt
Proposed elevations for gate valves were not calculated. Install flush with concrete. panel replacement.		

	722	6200
	Adjust Manhole	
7th St	15+61.74	36.20 Rt
	19+90.41	25.77 Rt
	16+22.09	12.68 Rt

	722	6215	Owner
	Adjust Utility Vault		
7th St	10+82.08	27.01 Lt	City
	10+85.70	42.87 Lt	City
	11+48.87	33.39 Lt	Midco*
	15+28.71	34.53 Lt	City
	15+35.90	46.99 Lt	City
	15+47.80	36.68 Rt	City
	16+21.61	40.97 Lt	City
	20+00.82	49.00 Rt	Lumen*
9th St	501+05	47.00 Rt	Clty
Proposed elevations for vaults shown on Section 82 sheets. *These vaults are the responsibility of the owner to adjust.			

	724	1037
	Adjust Sprinkler Head	
7th St	10+84.44	35.10 Rt
9th St	501+02.53	33.16 Rt
	506+53.58	47.20 Rt
	506+63.21	32.28 Rt
	506+72.05	30.83 Rt
	506+82.08	38.85 Rt

	754	170
	Flexible Delinators	
9th St	506+04.54	31.21 Rt
	506+03.59	35.17 Rt
	506+05.19	35.17 Rt
	506+03.77	49.33 Rt
	506+05.23	49.33 Rt

	754	592	
	Reset Sign Panel		Description
7th St	16+34.23	27.62 Rt	Do Not Enter
	11+41.34	57.79 Lt	No Parking
9th St	505+64.01	40.53 Lt	One Way

	970	300
	Bench	
7th St	20+05.77	49.73 Lt
	20+14.20	42.26 Lt

Basis of Estimate

US83B, 7th St and 9th St
Front Ave to Broadway Ave



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7th Street Concrete Repair Data Table [NHU-1-083(146)900]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL DEPTH		
Repair Number	Begin Station	Lane	570-0650 CONCRETE PAVEMENT REPAIR - FULL DEPTH-DOWELED							570-0240 DOWELED CONTRACTION JOINT ASSEMBLY (LF)						
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)		Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
1	10+80	T3 - T4 - FRONT INT	***		129	40		63	167	50						
2	10+83	T1 - FRONT INT	***		56	20		37	80	10						
3	11+19	T1 - FRONT INT	***		81	26		48	116	14						
4	11+45	T2												2	2	1
5	11+62	T4												4	4	2
6	11+64	T3														
7	11+80	T2												2	4	1
8	11+87	T2												2	2	1
9	11+96	T1												4	10	5
10	11+96	T2												2	2	1
11	11+96	T4												4	2	1
12	11+98	T2	14	12	19	20	10	12	52							
13	12+17	T2												2	2	1
14	11+29	T2												2	2	1
15	12+43	T1												2	2	1
16	12+48	T4												2	3	1
17	12+64	T3	***		76	40	10	37	111							
18	12+64	T3												2	2	1
19	12+64	T3												2	2	1
20	12+80	T3												2	2	1
21	12+97	T2												2	2	1
22	13+11	T3												2	4	1
23	13+13	T1 - T2 - T3			96	40	20	42	135	30						
24	13+46	T1	9	11	11	10		8	40							
25	13+46	T1 - T2 - T3 - T4	***		204	80	10	99	253	60						
26	14+27	T4											16			
27	14+42	T4												2	2	1
28	14+42	T4												2	2	1
29	14+44	T1												4	2	1
30	14+44	T4	16	10	18	16		13	52							
31	14+59	T3												2	2	1
32	14+59	T3												2	6	2
33	14+70	T1 - T2 - T3 - T4	***		136	70	10	60	170	30						
34	14+74	T1												4	2	1
35	14+75	T4												2	2	1
36	14+77	T4											16			
37	15+06	T1												2	2	1

***Irregular Shape

Concrete Pavement Repair
Data Tables

7th Street
Front Ave to Broadway Ave



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ND		NHU-1-083(146)900	11	2

7th Street Concrete Repair Data Table [NHU-1-083(146)900]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL DEPTH		
Repair Number	Begin Station	Lane	570-0650 CONCRETE PAVEMENT REPAIR - FULL DEPTH-DOWELED							570-0240 DOWELED CONTRACTION JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)							
38	15+06	T1												2	2	1
39	15+10	T2												2	4	1
40	15+12	T1 - MAIN INT	***		96	8		52	103	28						
41	15+17	T3												2	2	1
42	15+22	T1												2	4	1
43	15+26	T4 - MAIN INT	***		71	24		43	92	16						
44	15+28	T3												2	2	1
45	15+41	T3												2	4	1
46	15+55	T3												2	2	1
47	15+57	T1												4	2	1
48	15+68	MAIN INT												2	2	1
49	15+76	T2 - T3												2	4	1
50	15+76	T3												2	2	1
51	15+76	T3 - T4												2	4	1
52	15+76	T4 - MAIN INT												2	4	1
53	15+78	T1 - T2	10	22	25	36		12	64							
54	15+78	T4												4	2	1
55	15+78	MAIN INT												3	2	1
56	15+83	T4												4	2	1
57	15+87	MAIN INT												2	2	1
58	15+89	T2 - T3												5.5	4	3
59	15+89	T4												2	2	1
60	15+95	T1												7	2	2
61	15+99	MAIN INT	***		39	13	4	34	59	10						
62	15+99	T3 - T4 - MAIN INT	***		99	48	10	57	121	27						
63	16+05	T3												2	2	1
64	16+10	T2												2	2	1
65	16+33	T4												2	2	1
66	16+37	T1	21	13	31	9	20	12	68	11						0
67	16+42	T3												2	4	1
68	16+42	T4												2	4	1
69	16+58	T1												2	2	1
70	16+88	T1 - T2														5
71	16+88	T4												4	2	1
72	16+90	T3												2	2	1
73	17+04	T2												2	2	1
74	17+04	T3												2	4	1
75	17+06	T3	48	12	64	20		38	120	20						

***Irregular Shape

Concrete Pavement Repair
Data Tables

7th Street
Front Ave to Broadway Ave



													STATE	PROJECT NO.	SECTION NO.	SHEET NO.
													ND	NHU-1-083(146)900	11	3

7th Street Concrete Repair Data Table [NHU-1-083(146)900]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL DEPTH		
Repair Number	Begin Station	Lane	570-0650 CONCRETE PAVEMENT REPAIR - FULL DEPTH-DOWELED							570-0240 DOWELED CONTRACTION JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)							
76	17+54	T1	16	12	22	20		12	56							
77	17+54	T3 - T4												2	15	4
78	17+62	T4	16	12	22		20	12	56	10						
79	17+86	T1 - T2 - T3 - T4	***		182	80		84	219	50						
80	18+18	T1												2	12	3
81	18+32	T1												2	12	3
82	18+50	T4												2	4	1
83	18+66	T2												2	4	1
84	18+66	T3									14	8				
85	18+80	T4												2	2	1
86	19+04	T1 - BROADWAY INT	***		258	26	10	124	245	64						
87	19+14	T4 - BROADWAY INT	***		112	18		59	125	18						
88	19+38	T2	26	2	6			21	56							
89	19+63	BROADWAY INT												2	4	1
90	19+65	T4 - BROADWAY INT	***		74	18		42	99							
7th St Concrete Repair Quantities TOTAL					1927	682	124	1021	2659	448	14	8	32			82

***Irregular Shape

Concrete Pavement Repair
Data Tables

7th Street
Front Ave to Broadway Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J.
DUNN

PE-28894

DATE
07/22/25

NORTH DAKOTA

													STATE	PROJECT NO.	SECTION NO.	SHEET NO.
													ND	NHU-1-083(146)900	11	4
9th Street Concrete Repair Data Table [NHU-1-083(146)900]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL DEPTH		
Repair Number	Begin Station	Lane	570-0650 CONCRETE PAVEMENT REPAIR - FULL DEPTH-DOWELED							570-0240 DOWELED CONTRACTION JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
91	500+73	T1 - T2 - T3	10	28	32	30		16	48							
92	500+94	T1 - FRONT INT	***		24	8		30	56							
93	500+94	T2 - T3 - T4 - FRONT INT	***		154	40		84	175	50						
94	501+29	FRONT INT												3	2	1
95	501+29	T2												4	2	1
96	50+150	FRONT INT - T1	***		65	46		33	96	14						
97	501+50	T2 - T3												2	4	1
98	501+57	FRONT INT	***		41			35	56	4						
99	501+90	T1												4	2	1
100	501+90	T1 - T2												4	4	2
101	502+34	T3 - T4												2	4	1
102	502+39	T3 - T4												2	4	1
103	502+50	T1	15	10	17	16		12	50							
104	502+50	T2												2	2	1
105	502+50	T3 - T4												2	4	1
106	502+79	T3 - T4												2	4	1
107	502+94	T2												2	2	1
108	502+94	T2												2	2	1
109	502+94	T3 - T4												2	4	1
110	503+07	T1 - T2														2
111	503+07	T3 - T4														2
112	503+15	T4												2	2	1
113	503+22	T3 - T4												2	4	1
114	503+37	T3 - T4												2	4	1
115	504+43	T3 - T4	15	20	34	16		18	70							
116	504+56	T1												2	2	1
117	504+72	T1												2	2	1
118	504+71	T2 - T3												2	4	1
119	504+71	T3 - T4														2
120	504+88	T3 - T4												2	4	1
121	504+02	T2 - T3												2	4	1
122	504+02	T4												2	2	1
123	505+08	T1												2	2	1
124	505+12	T1 - T2												2	4	1
125	505+12	T2 - T3												2	4	1
126	505+14	T3												2	2	1
127	505+23	T2 - T3														2

***Irregular Shape

Concrete Pavement Repair
Data Tables

9th Street
Front Ave to Main Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J.
DUNN
PE-28894

DATE
07/22/25

NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	11	5

9th Street Concrete Repair Data Table [NHU-1-083(146)900]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512		
Repair Number	Begin Station	Lane	570-0650							570-0240 DOWELED CONTRACTION JOINT ASSEMBLY (LF)				SPALL REPAIR - PARTIAL DEPTH		
			CONCRETE PAVEMENT REPAIR - FULL DEPTH-DOWELED								Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)							
128	505+23	T3 - T4												4	4	2
129	505+25	T1												2	2	1
130	505+34	T1												2	2	1
131	505+34	T1 - T2												2	2	1
132	505+36	T1 - MAIN INT	***			59		50	87	18		10				
133	505+39	T3												2	2	1
134	505+39	T4 - MAIN INT	***			50	5	55	89	7						
135	505+52	T2 - T3												2	4	1
136	505+70	T3												2	2	1
137	505+72	T2												2	2	1
139	505+72	MAIN INT W												2	2	1
140	505+82	MAIN INT W - T1														2
141	505+82	MAIN INT E														3
142	505+84	MAIN INT W												2	3	1
143	505+84	MAIN INT W												2	2	1
144	505+84	MAIN INT E												2	2	1
145	505+94	MAIN INT W												2	2	1
146	505+96	T4												2	4	1
147	505+96	MAIN INT E												2	2	1
148	506+05	T1												2	2	1
149	506+07	MAIN INT W												6	2	2
150	506+07	T3														3
151	506+17	MAIN INT W												2	2	1
152	506+17	T2												2	2	1
153	506+24	T2												3	2	1
154	506+27	T1 - T2 - T3 - T4 - MAIN INT	***			272	103	120	183	68						
155	506+29	T1												2	2	1
156	506+38	MAIN INT E												2	2	1
157	506+77	T1												2	2	1
158	506+77	T2												2	2	1
9th St Concrete Repair Quantities TOTAL						748	264		453	910	161	0	10	0		69

***Irregular Shape

Concrete Pavement Repair
Data Tables

9th Street
Front Ave to Main Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	11	6

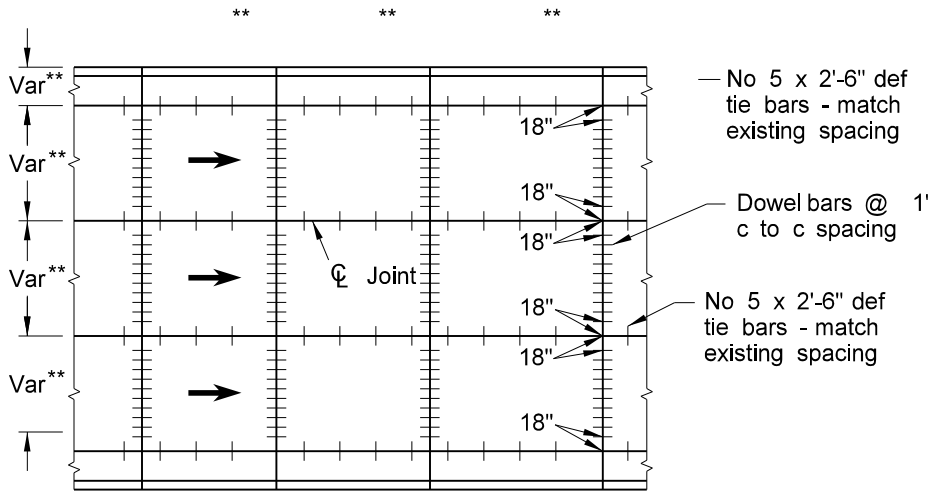
9th Street Concrete Repair Data Table [NHU-1-083(146)900]														
Item Description	Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512		
	570-0650							570-0240				SPALL REPAIR - PARTIAL DEPTH		
	Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)	DOWELED CONTRACTION JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED BARS (EA)		Length (FT)	Width (FT)	Area (SF)
7th St Concrete Repair Quantities TOTAL			1927	682	124	1021	2659	448	14	8	32			82
9th St Concrete Repair Quantities TOTAL			748	264		453	910	161	0	10	0			69
TOTAL			2675					609		18	32			151
TOTAL + 10%			2943					670		20	-			167

TAL	748	264		453	910	161	0	10	0			69
	2675					609		18	32			151
	2943					670		20	-			167

***Irregular Shape

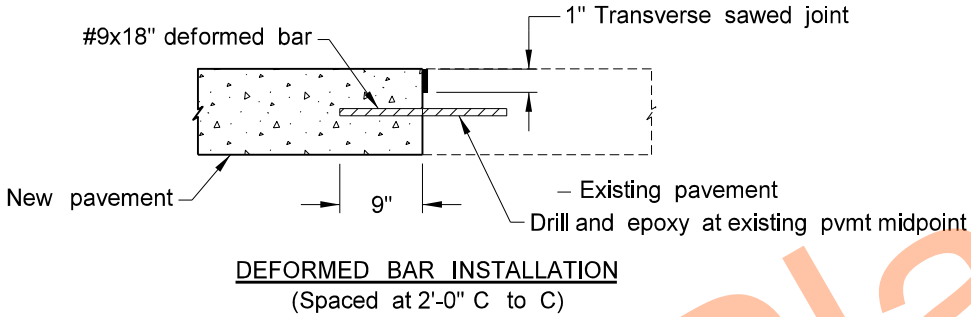
Concrete Pavement Repair Data Tables	
Totals	

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	1

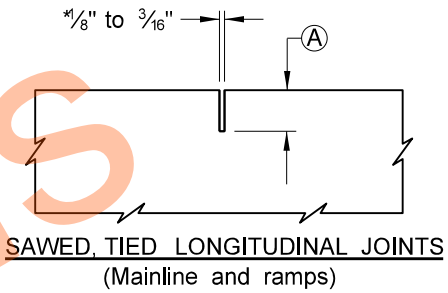


TRANSVERSE JOINTS

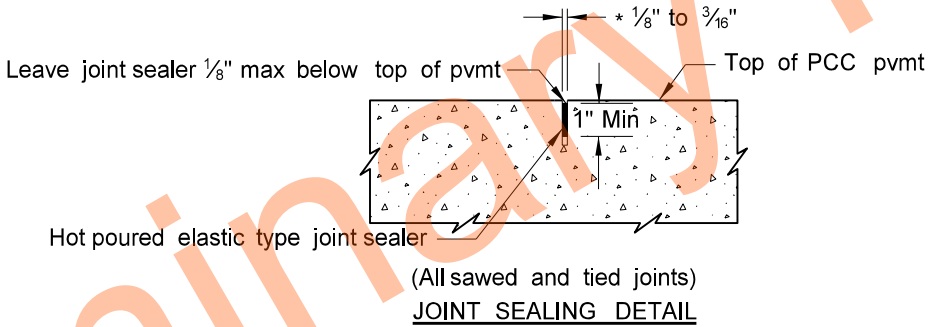
** Joint Spacing to match existing (Varies)



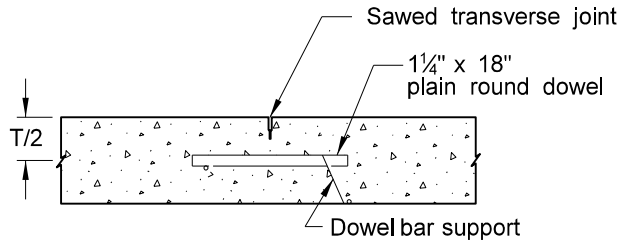
DEFORMED BAR INSTALLATION
(Spaced at 2'-0" C to C)



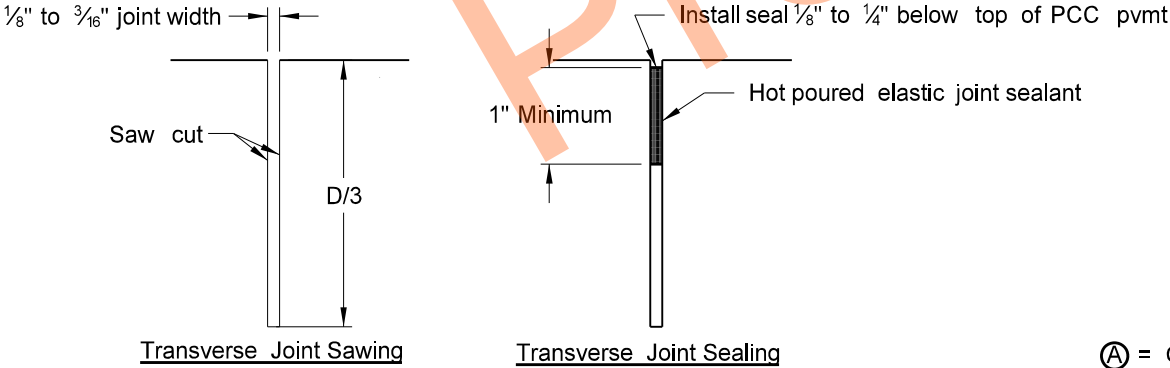
SAWED, TIED LONGITUDINAL JOINTS
(Mainline and ramps)



(All sawed and tied joints)
JOINT SEALING DETAIL



DOWELED TRANSVERSE JOINT



Transverse Joint Sawing

Transverse Joint Sealing

Ⓐ = One-Third thickness of PCC Pavement

*Width requirement for top 1\"

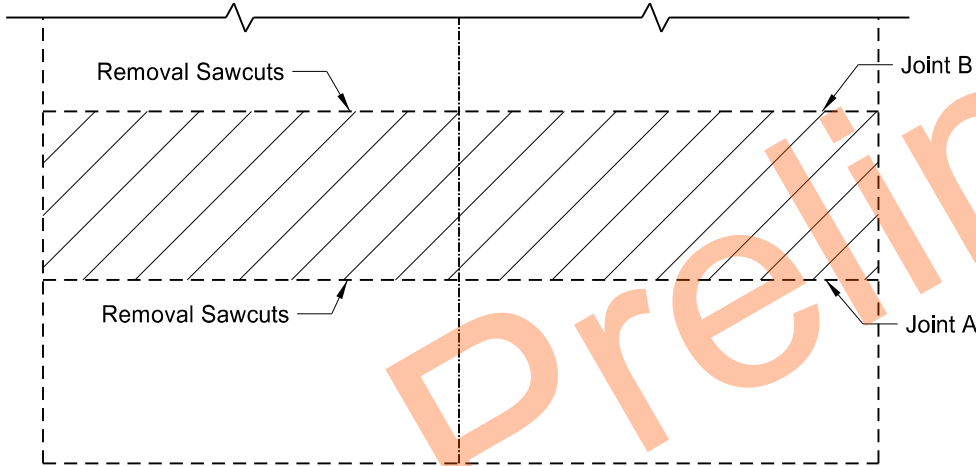
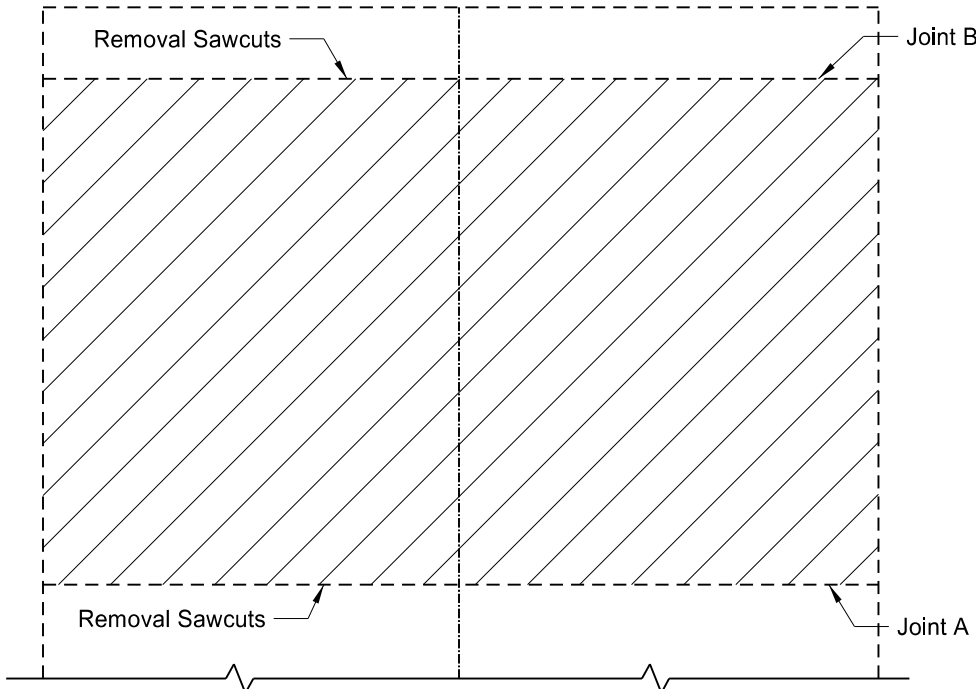
Joint Details for Repairs
1 Panel or More in Length

General Details

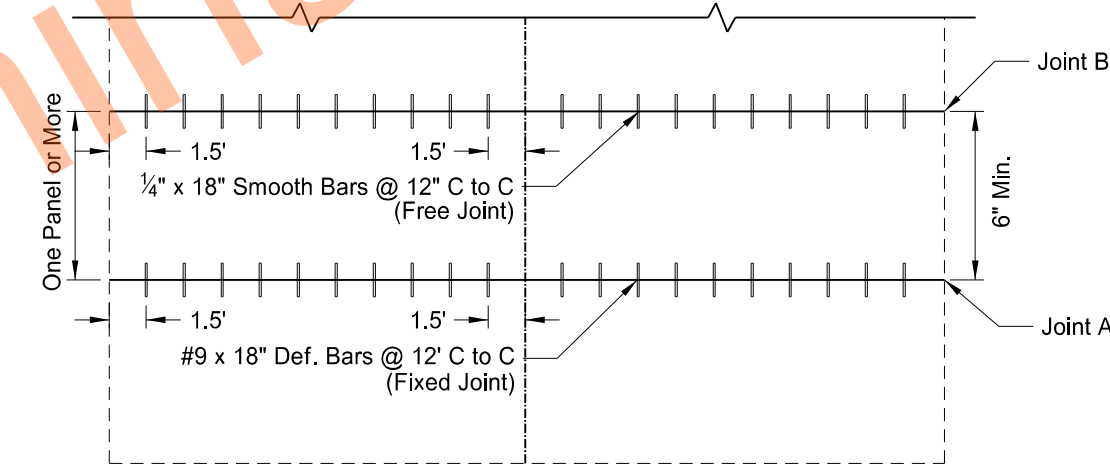
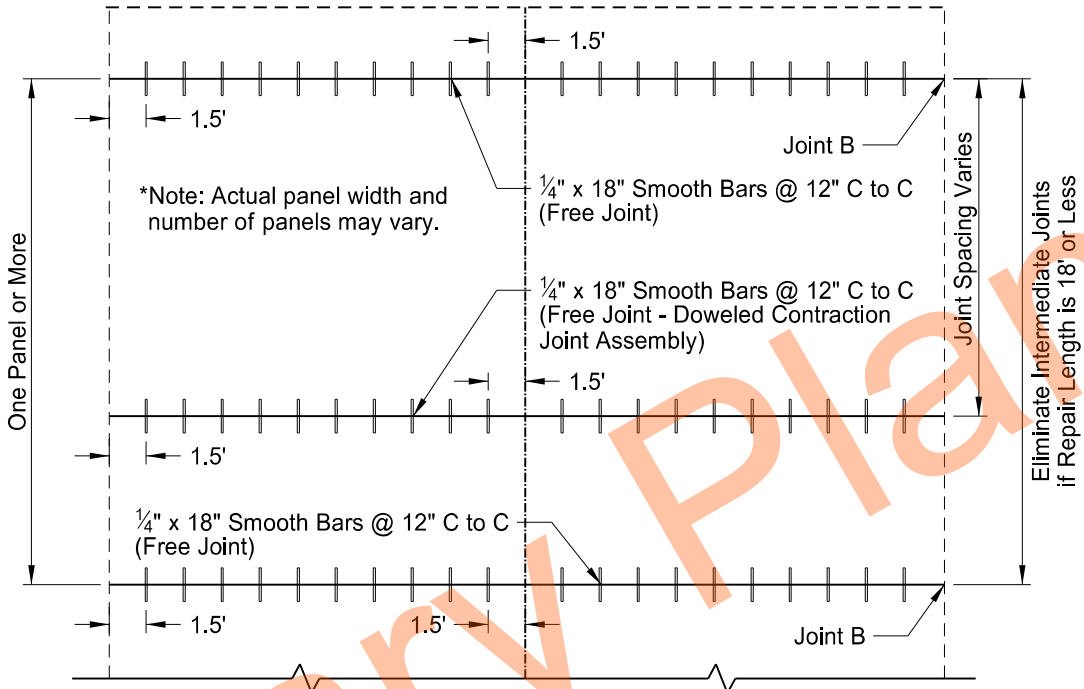
US83B, 7th St and 9th St
Front Ave to Broadway Ave



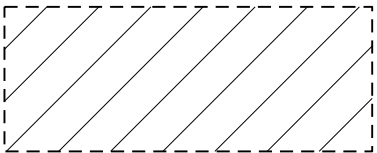
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	2



Removal



Proposed



PCC Removal

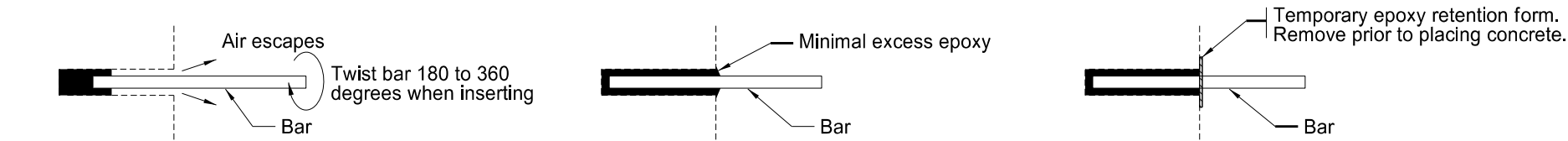
- Notes:
1. Joint A (Fixed Joint) shall be the new joint with the shortest distance to the next transverse joint or working random crack. The saw cut will be made at 90° to the centerline. The deformed bars shall be placed perpendicular to the face of the saw cut.
 2. Joint B (Free Joint) shall be the new joint with the greatest distance to the next transverse joint or working random crack. The smooth bars shall be installed within the tolerances shown on the "Dowel Bar Placement - Full Depth Repair" detail sheet.
 3. When the distance to the next transverse joint or working random crack is equal for both new joints, the free joint (Joint B) shall be placed on the approach side of the repair.
 4. If greater than one panel in length, a Doweled Contraction Joint Assembly shall be installed at transverse contraction joints.
 5. In repair areas which are not the entire roadway width, joints shall be placed to match the existing pavement wherever possible.
 6. The joints at the beginning and end of a full depth repair section can be either a Joint B or Joint A depending on the existing joint.

Joint Details for Repairs 1 Panel or More in Length

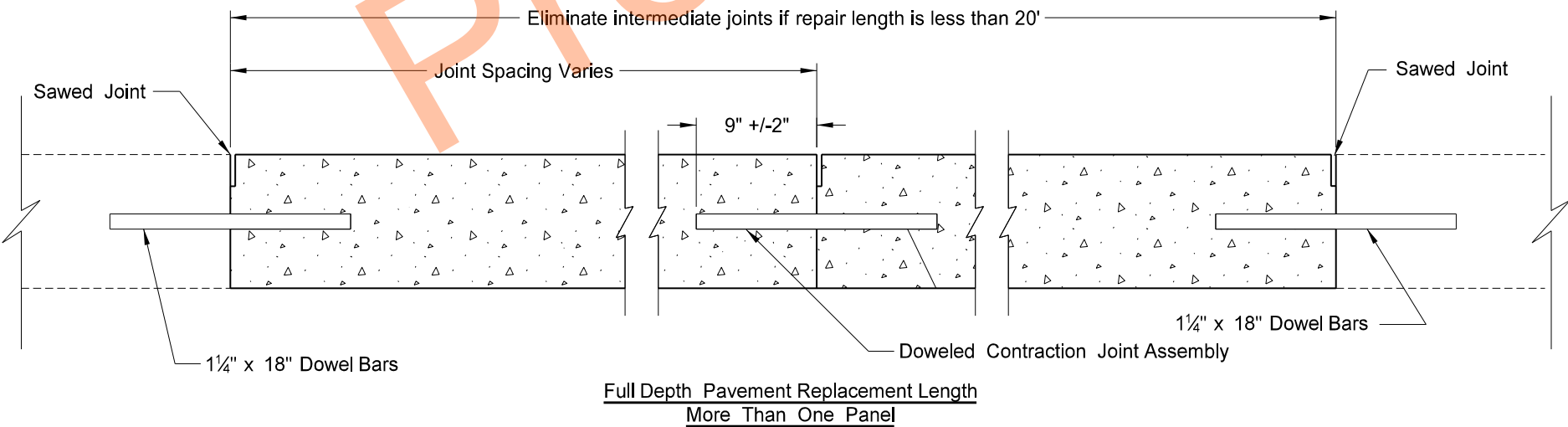
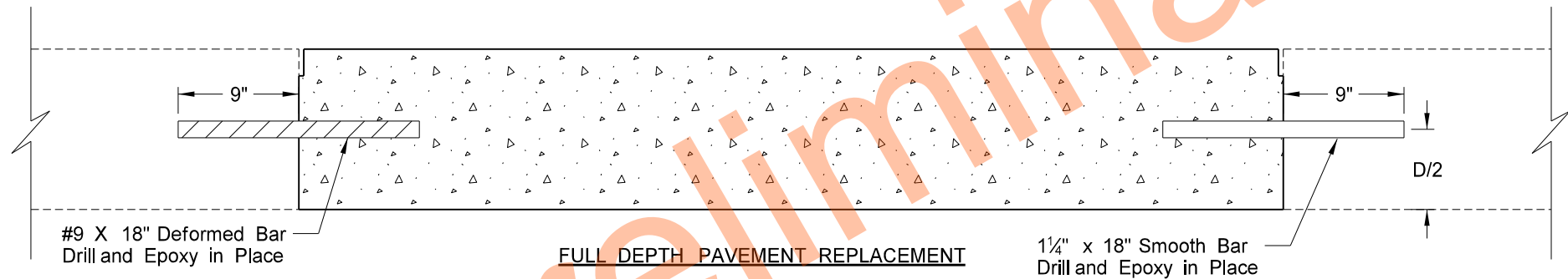
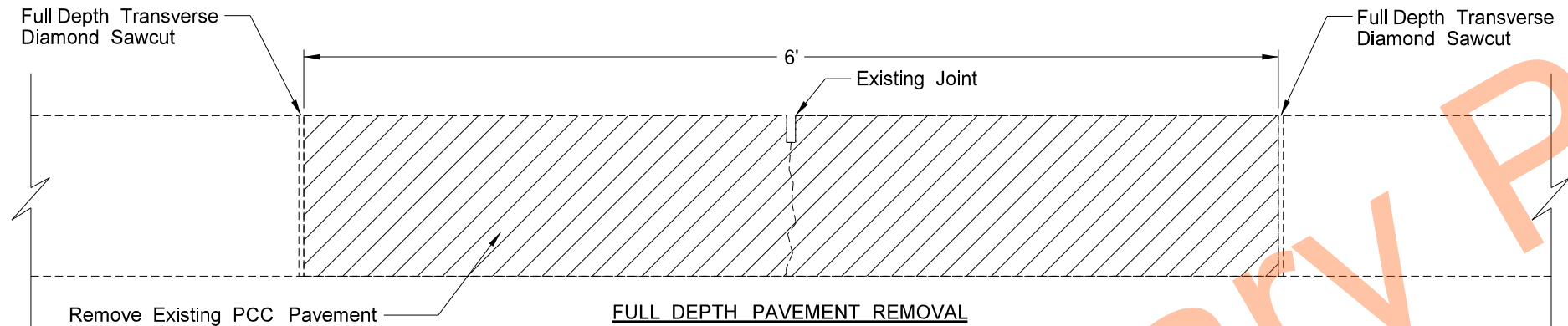
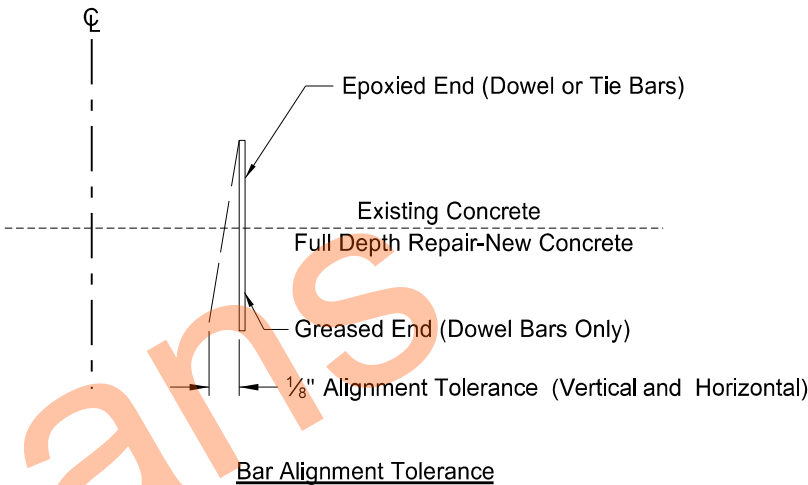
General Details
US83B, 7th St and 9th St
Front Ave to Broadway Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	3



Epoxy and Bar Installation
(Dowel or Tie Bars)



PCC Pavement Removal

PCC Placement

- Notes:
- Variables: D = Pavement Depth
 - Removal and replacement also applies to depth repairs at cracks.
 - Place smooth dowel bars in repair joint which is farthest away from the next transverse joint or working random crack. If the distance is equal for both repair joints, place smooth dowels on approach side of patch.

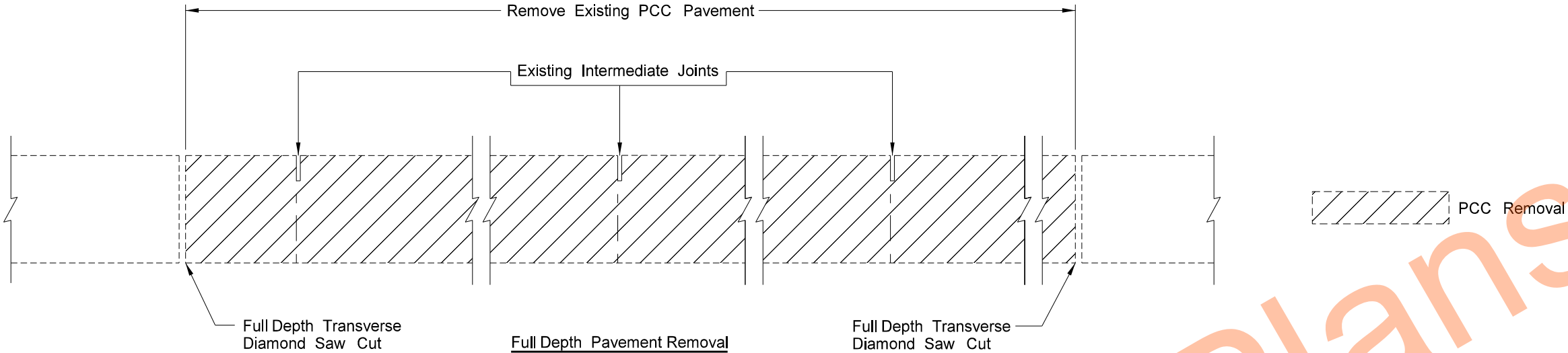
Concrete Pavement Repair

General Details

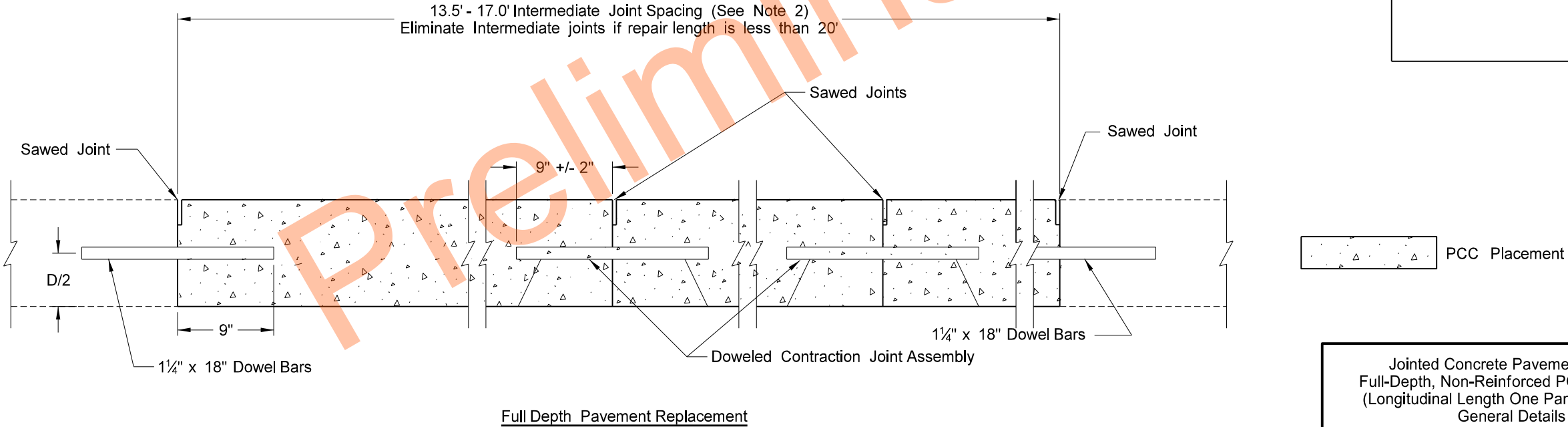
US83B, 7th St and 9th St
Front Ave to Broadway Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	4



- Notes:
- 1. Variables: D = Pavement Depth
 - 2. Space joints 13.5' to 17.0'. Use a 10 foot minimum spacing when repair length requires.
 - 3. Place new joints to match existing joints when repair widths are less than PCC pavement width.

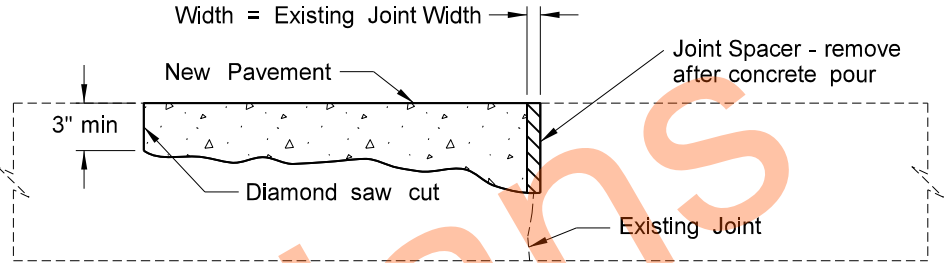
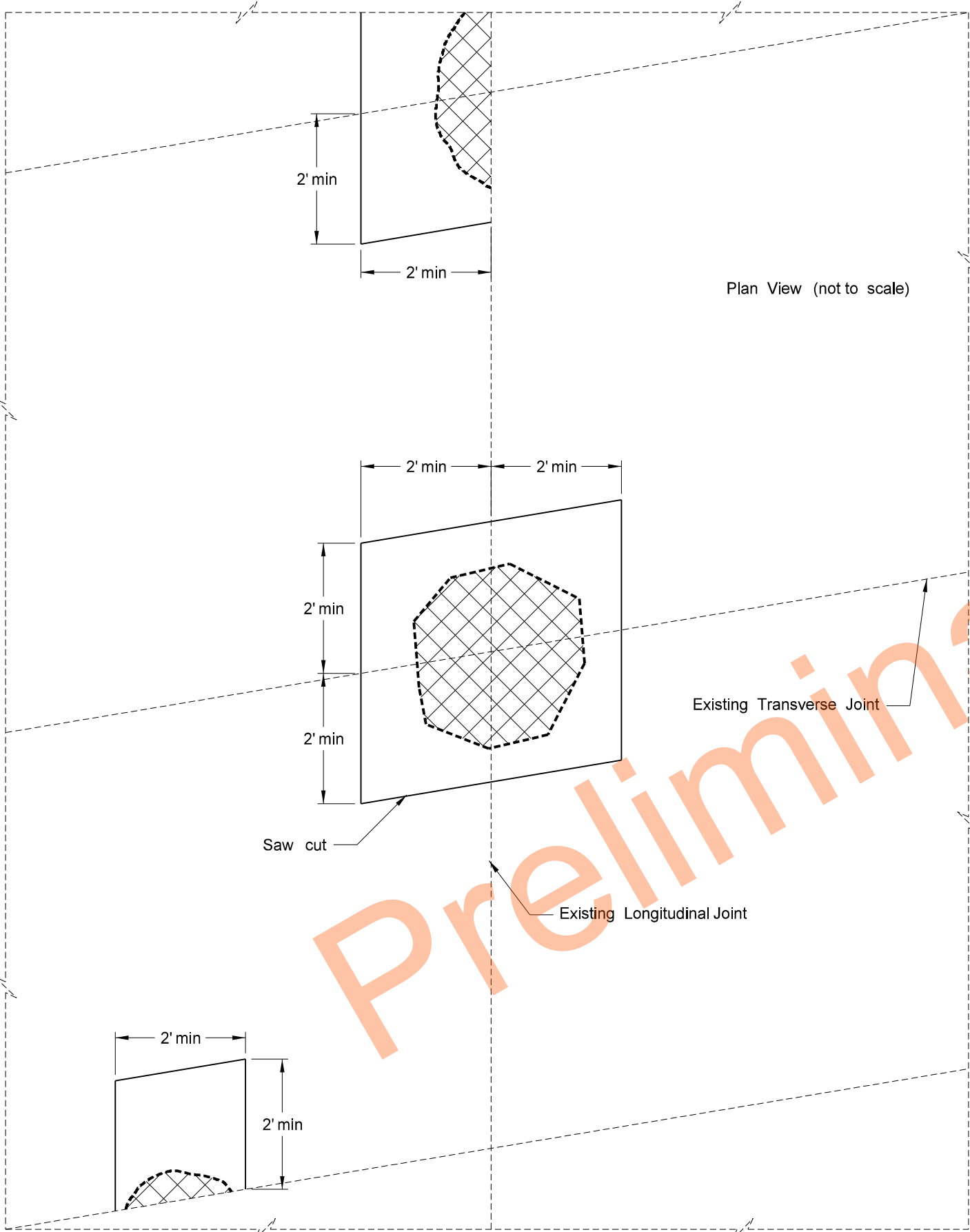


Jointed Concrete Pavement Repair
Full-Depth, Non-Reinforced PCC Pavement
(Longitudinal Length One Panel or Longer)
General Details

US83B, 7th St and 9th St
Front Ave to Broadway Ave



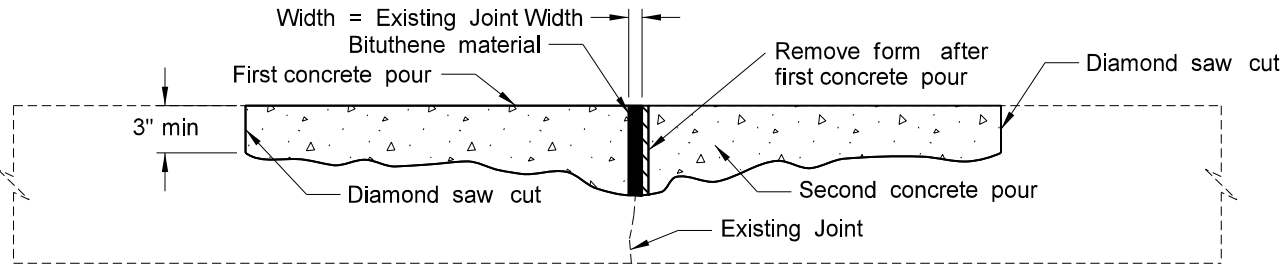
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	5



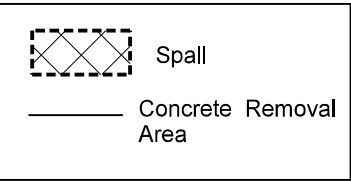
Cross Section - "Repair Area on One Side of Transverse Joint"

Notes:

1. Place a spacer material, that is easily removable after the pour, on the transverse joint face to maintain the width of the existing transverse joint during repair. A bituthene waterproofing material a minimum 260 mil (approximately 1/4") thick or equal to the width of the existing joint, whichever is greater, may be used for this purpose. Cut it to fill over the entire face of the existing joint to provide for expansion and prevent water from entering the existing joint through the sides or bottom. Press it into place to conform to the face of the existing joint.
2. Diamond saw cut not mandatory when using milling machine for spall repair removals.



Cross Section - "Repair on Both Sides of Transverse Joint"



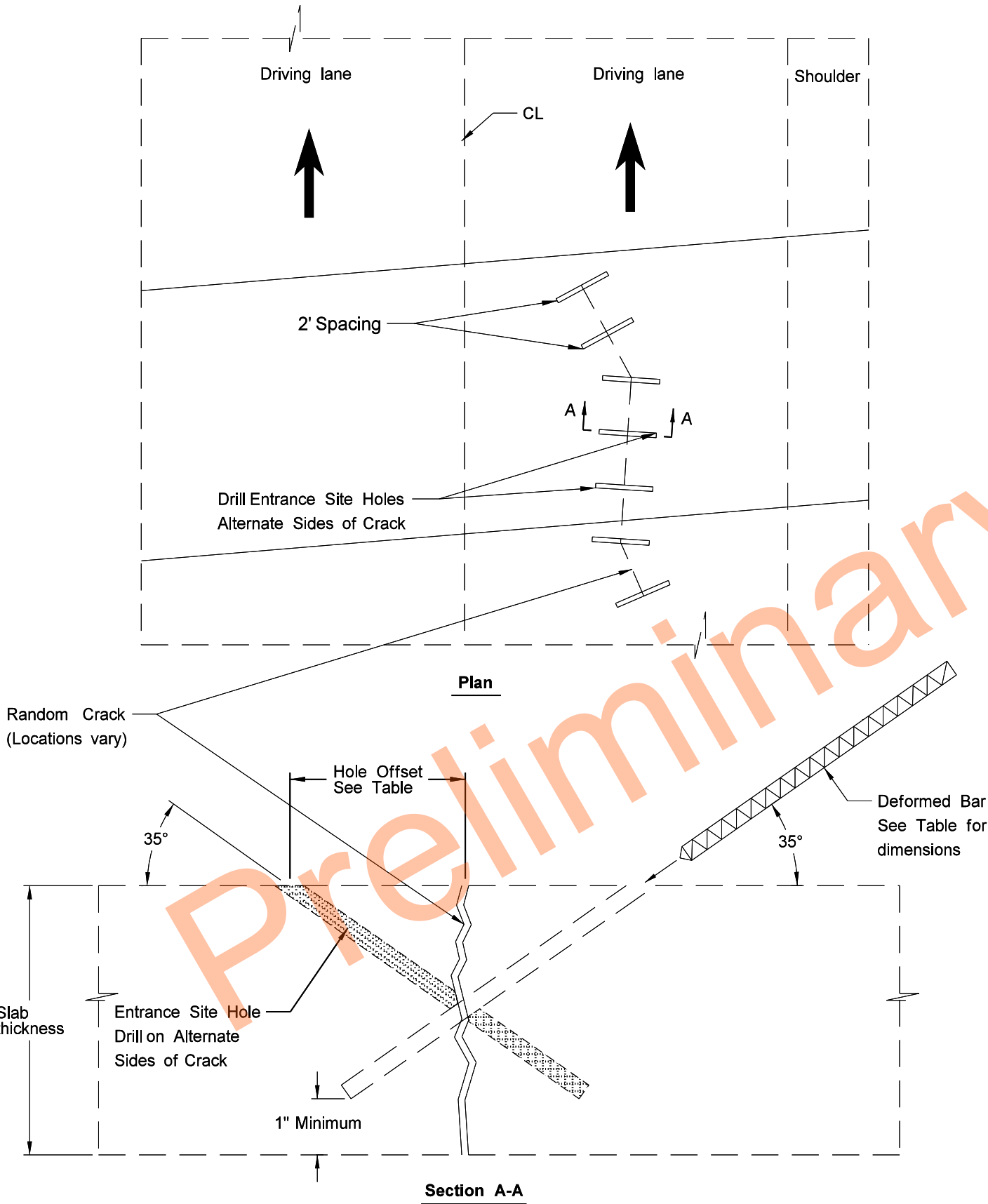
Jointed Non-Reinforced PCC Pavement
Spall Repair Detail

General Details

US83B, 7th St and 9th St
Front Ave to Broadway Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	6



Cross Stitching Bar Dimensions & Hole Locations (No 6 Bars)		
Slab Thickness (inches)	Hole Offset (inches)	Bar Length (inches)
8	5.75	9.50

Notes:

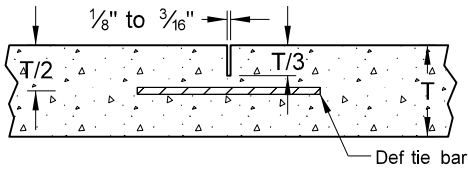
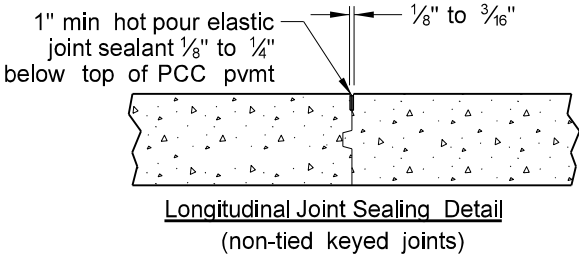
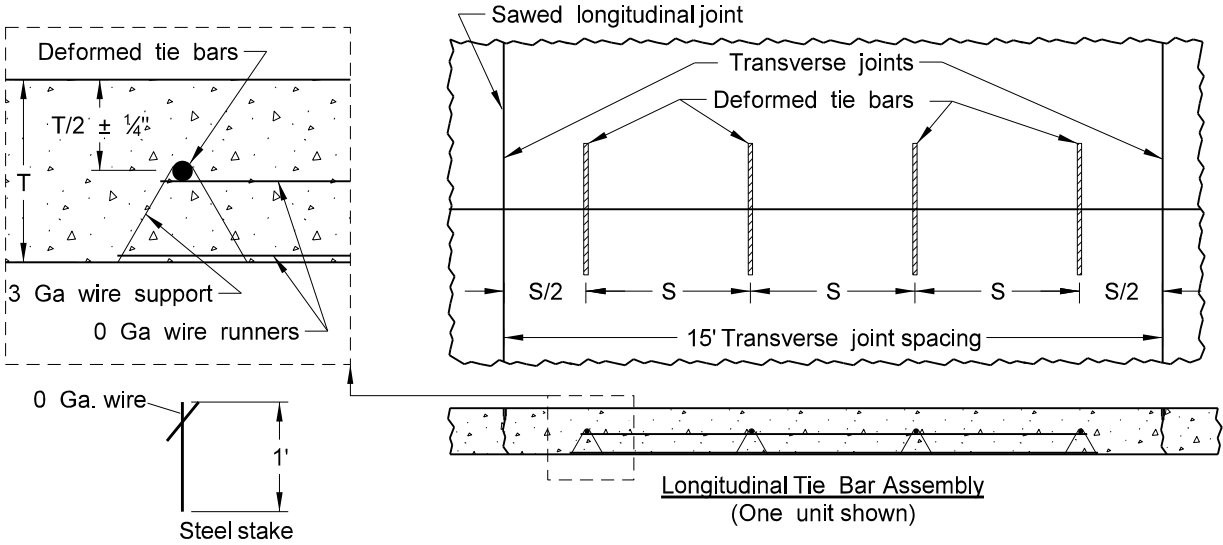
- Epoxy deformed bar into hole. Length shown in table provides 1-inch cover at surface and assume drilling per note 2.
- Do not drill hole completely through slab. Stop drilling so epoxy/grout will not run out of the bottom when filling.
- Random crack stitching locations shown in Section 11 Data Tables.

Random Crack Stitching Detail

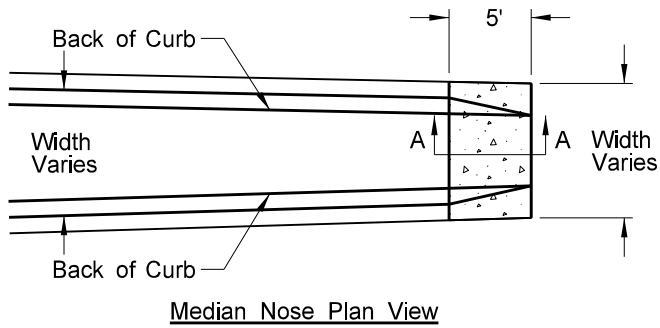
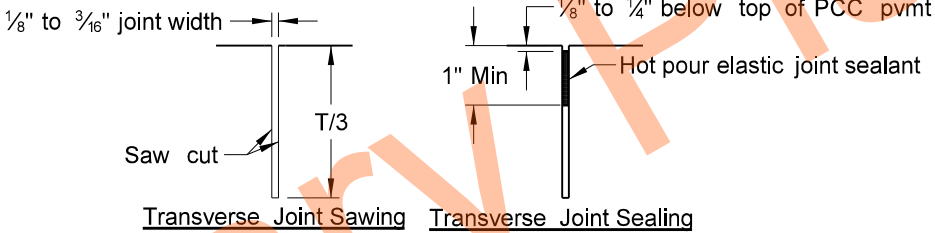
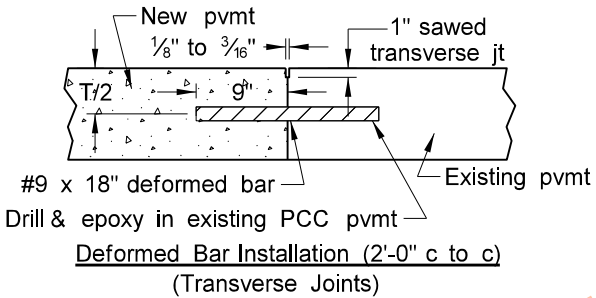
General Details
US83B, 7th St and 9th St
Front Ave to Broadway Ave



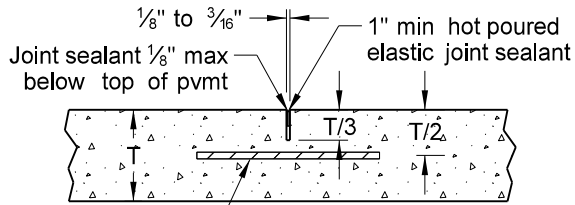
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	7



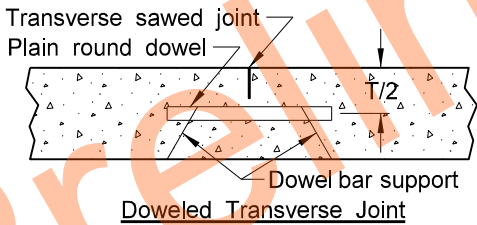
Longitudinal Joint Sawing Detail
(sawed and tied joints)



- Notes:
1. S = Tiebar spacing
 2. T = Pavement thickness
 3. Place dowels in ramp tapers also.
 4. Place no tie bar within 15" of a transverse joint.



Longitudinal Joint Sealing Detail
(sawed and tied joints)

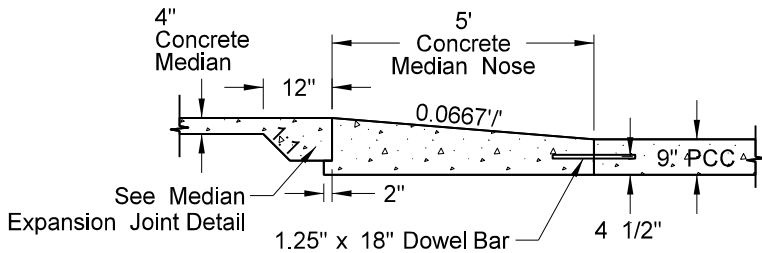


Grade 40 Longitudinal Joint Tie Bars	
PCC Depth	8"
Mainline Centerline	
Bar Size x Length (S=30")	#5 x 30"
Bar Size x Length (S=45")	#6 x 36"
10' Shoulder Joint	
Bar Size x Length (S=30")	#4 x 24"
Bar Size x Length (S=45")	#5 x 30"

Grade 60 Longitudinal Joint Tie Bars	
PCC Depth	8"
Mainline Centerline	
Bar Size x Length (S=30")	#4 x 36"
Bar Size x Length (S=45")	#5 x 42"
10' Shoulder Joint	
Bar Size x Length (S=30")	#3 x 30"
Bar Size x Length (S=45")	#4 x 36"

Transverse Joint Dowel Bars

Joint Location	Dia x Length
ML	d1" x 18"

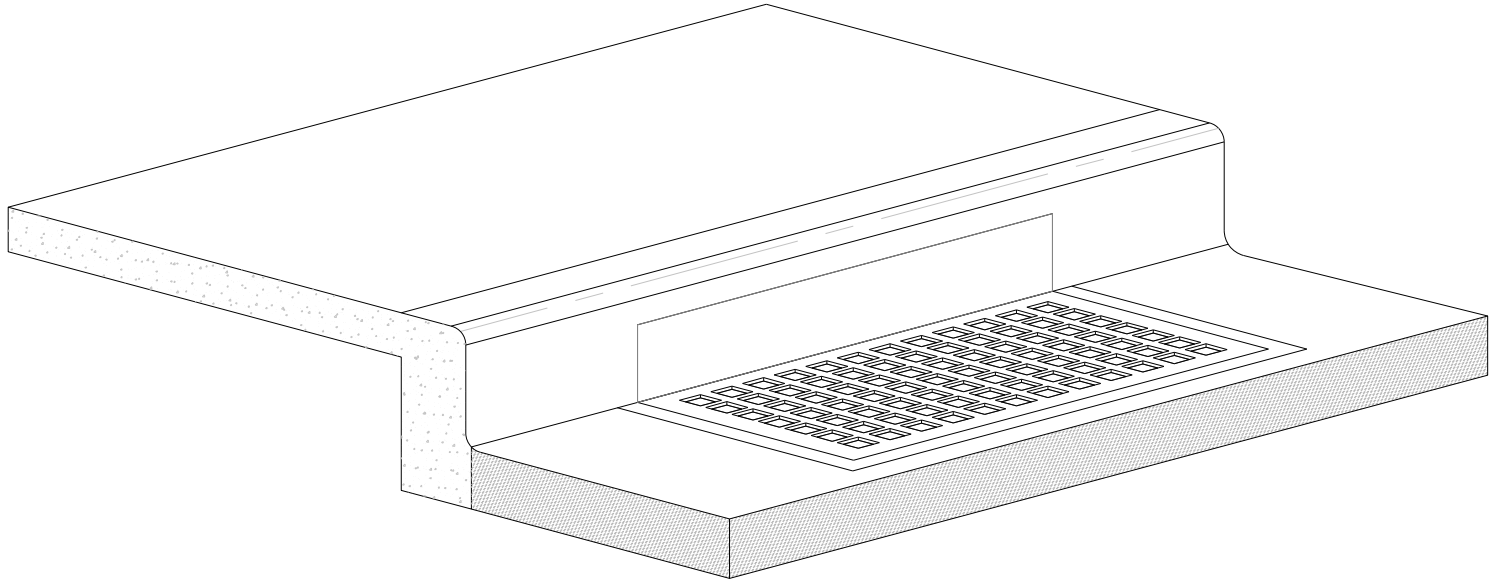


PCC Pavement - Perpendicular Joints@15' Spacing and 10' Wide full Depth PCC Outside Shoulder PCC Pavement Reconstruction General Details

US83B, 7th St and 9th St
Front Ave to Broadway Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	8



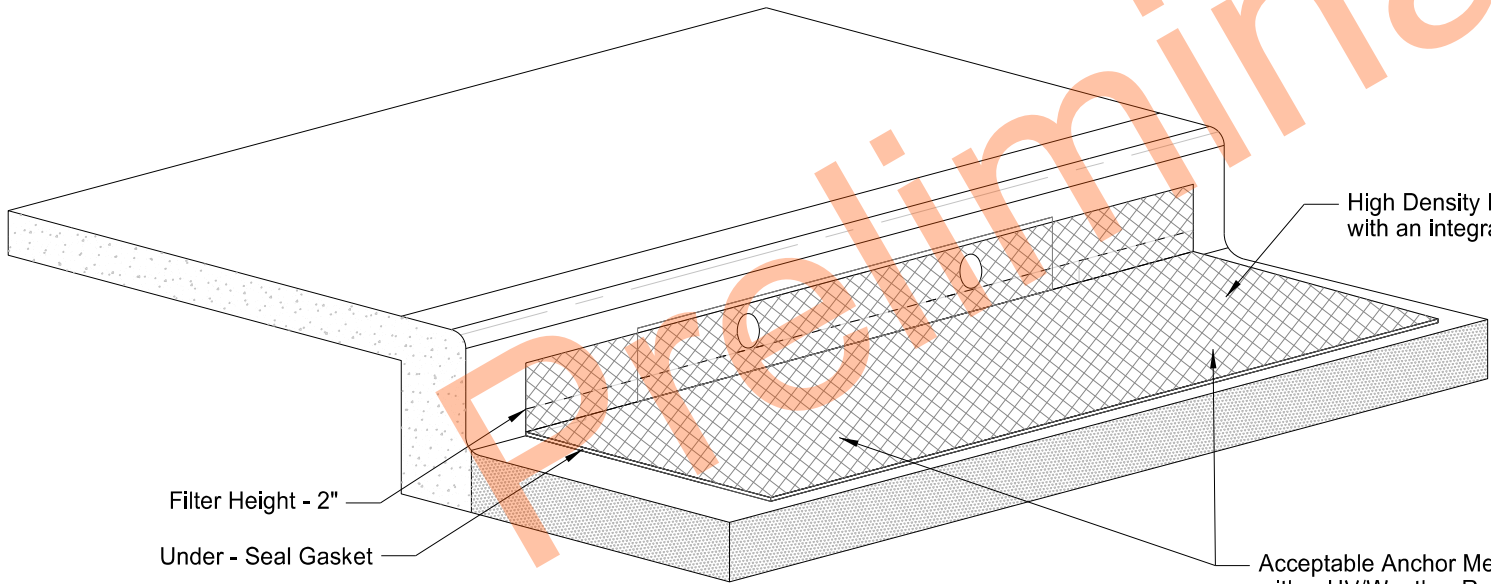
Inlet Protection Device

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.



Filter Height - 2"

Under - Seal Gasket

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

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.

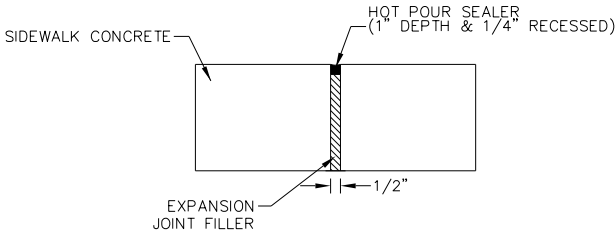
Inlet Protection Device

General Details

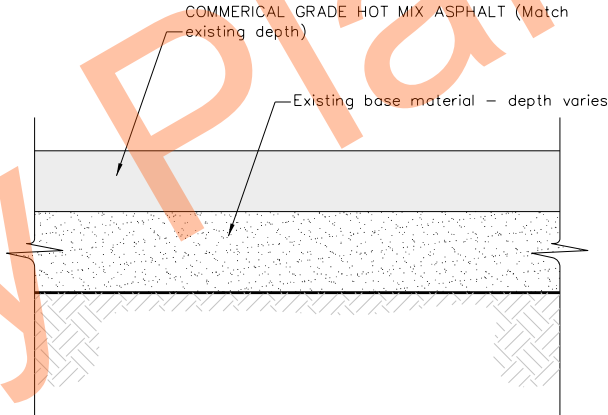
US83B, 7th St and 9th St
Front Ave to Broadway Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	20	9



EXPANSION JOINT SEALANT
NO SCALE



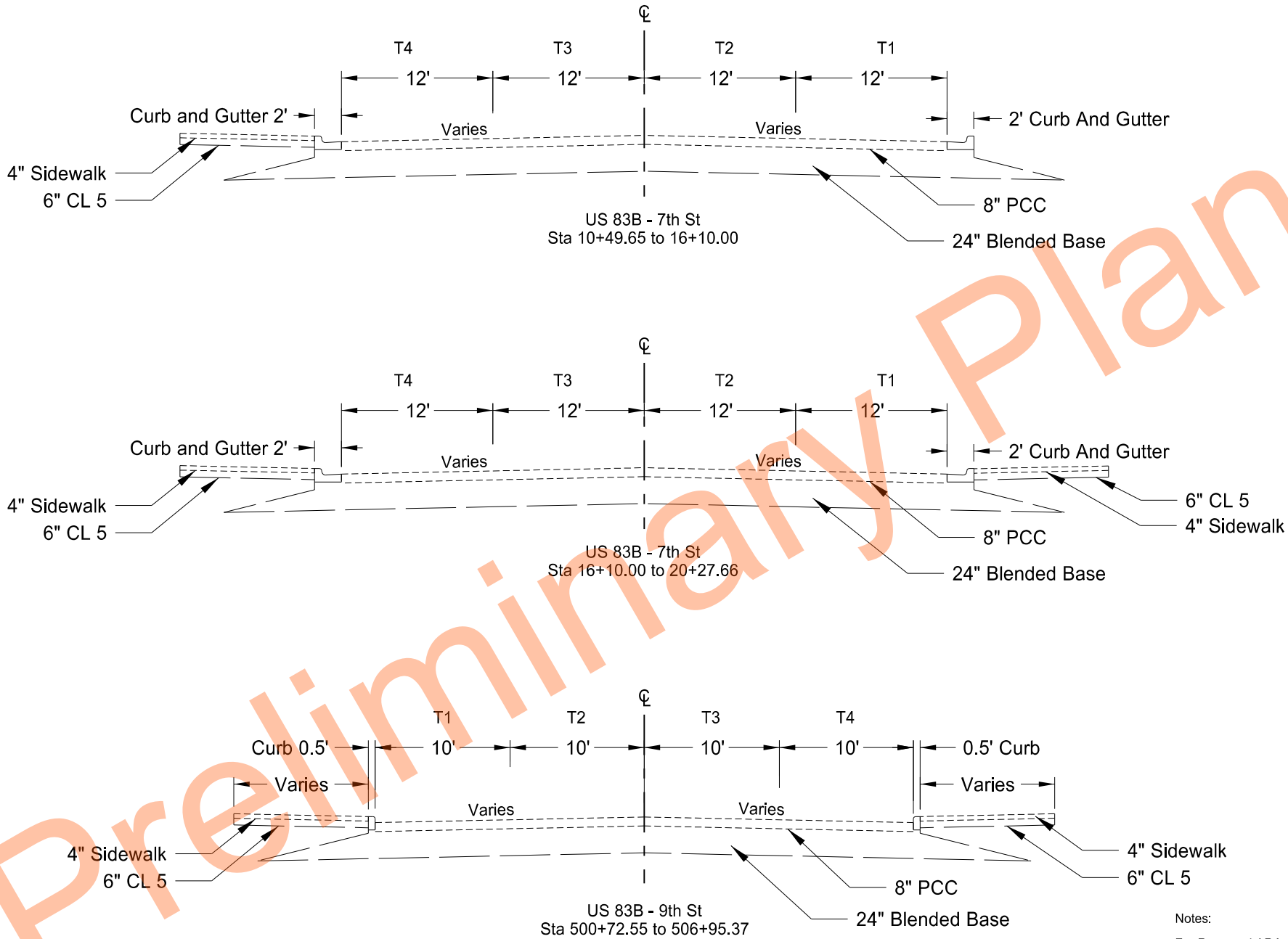
NOTES:
1. TACK COAT – APPLY TACK COAT UNIFORMLY AT THE RATE OF 0.05 GALLONS PER SQUARE YARD. APPLY WITHIN 24 HOURS PRECEDING PLACEMENT OF THE COVERING COURSE.

COMMERICAL GRADE HOT MIX ASPHALT
NO SCALE

Concrete Pavement Repair
General Details
US83B, 7th St and 9th St
Front Ave to Broadway Ave



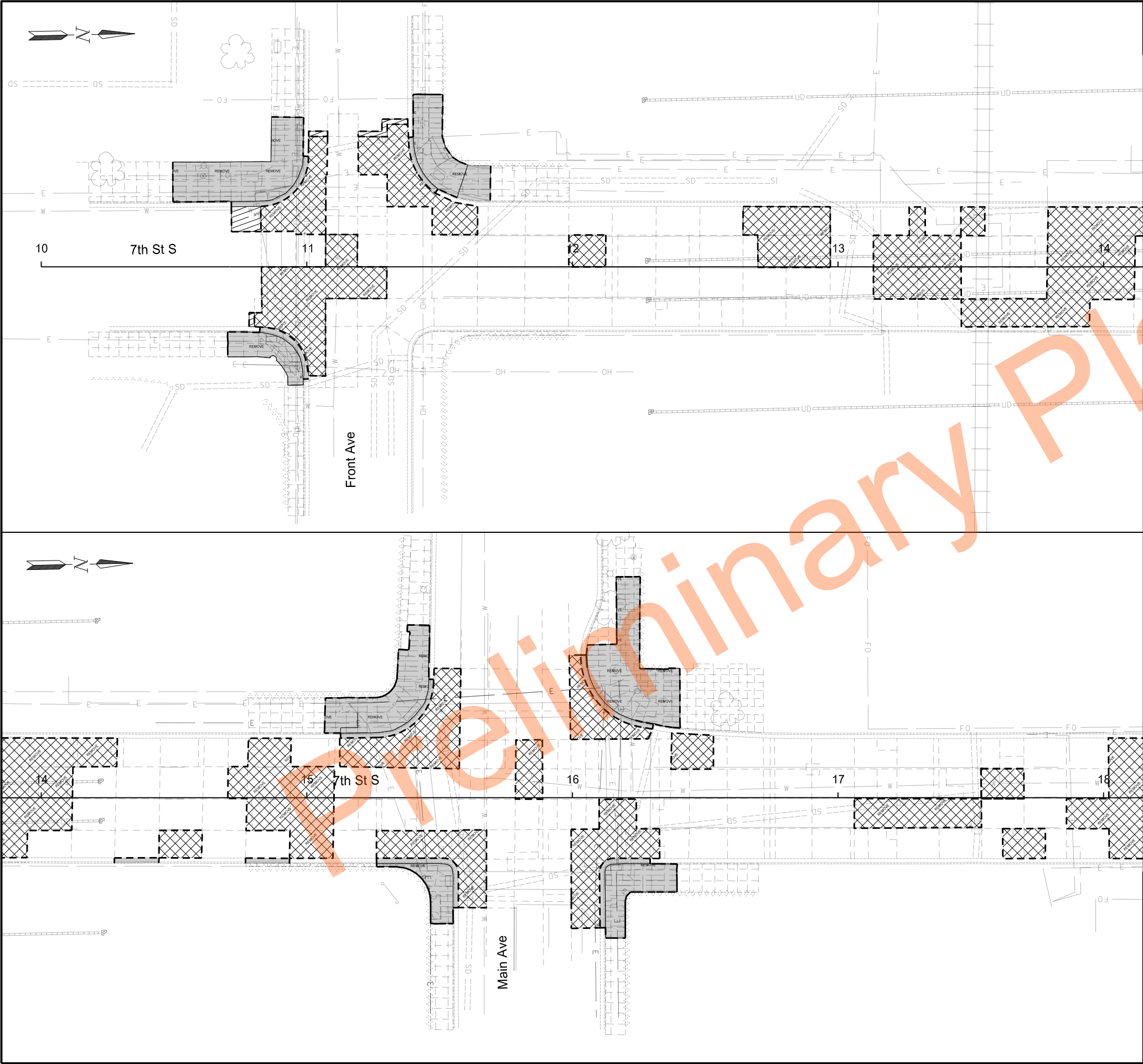
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	30	1



Notes:
For Proposed ADA, Concrete Median, and Curb replacement locations refer to Section 40 and 90.

Existing Typical Sections
Concrete Pavement Repair
General Details
US83B, 7th St and 9th St
Front Ave to Broadway Ave





STATE		PROJECT NO.		SECTION NO.	SHEET NO.
ND		NHU-1-083(146)900		40	1

DE	PAY ITEM	QTY	UNIT
0	REMOVAL OF CURB & GUTTER		
	Sta 10+49 to Sta 14+00	90	LF
	Sta 14+00 to Sta 18+00	205	LF
2	REMOVAL OF BITUMINOUS SURFACING		
	Front Ave (South leg) (2'x6' & 10'x11')	14	SY
	Front Ave (West leg) (2'x7' & 2'x21')	6	SY



Removal of Concrete Pavement
(Incidental to Concrete Pavement Repair)



Removal of Sidewalk
(Incidental to Sidewalk Concrete XIN)



Removal of Bituminous Surfacing



Removal of Curb & Gutter

NOTE:
Pavement joint and maintenance locations are approximate,
Refer to Section 11 for locations and quantities.
See Section 82 for more detail of sidewalk removal and
survey data.

Removals

7th Street
Front Ave to Broadway Ave

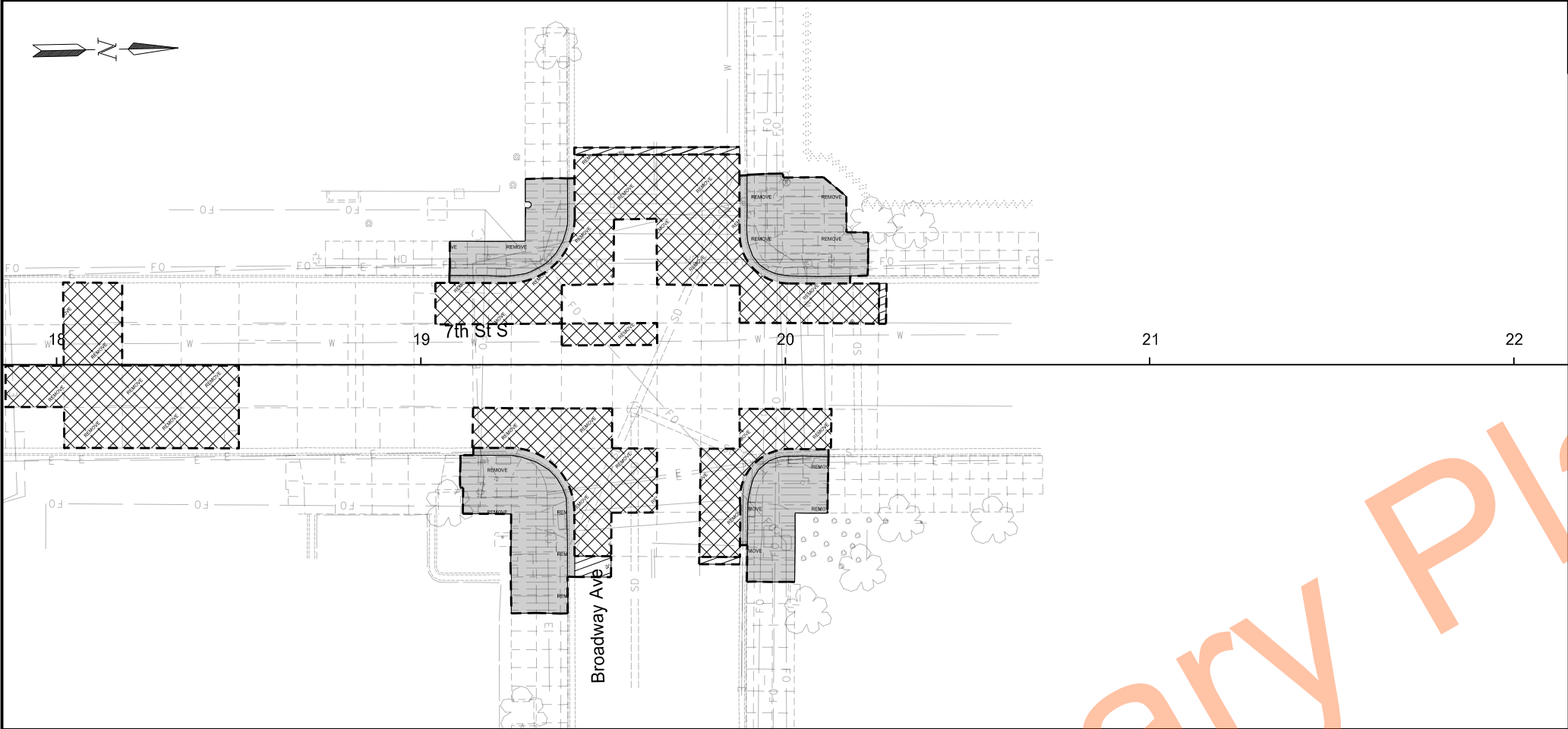
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	40	2

SPEC	CODE	PAY ITEM	QTY UNIT
202	0130	REMOVAL OF CURB & GUTTER	
		Sta 18+00 to Sta 20+27	201 LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	
		Broadway Ave (West leg) (2'x45')	10 SY
		Broadway Ave (East leg) (6'x10' & 2'x11')	9 SY
		Broadway Ave (North leg) (2'x11')	2 SY

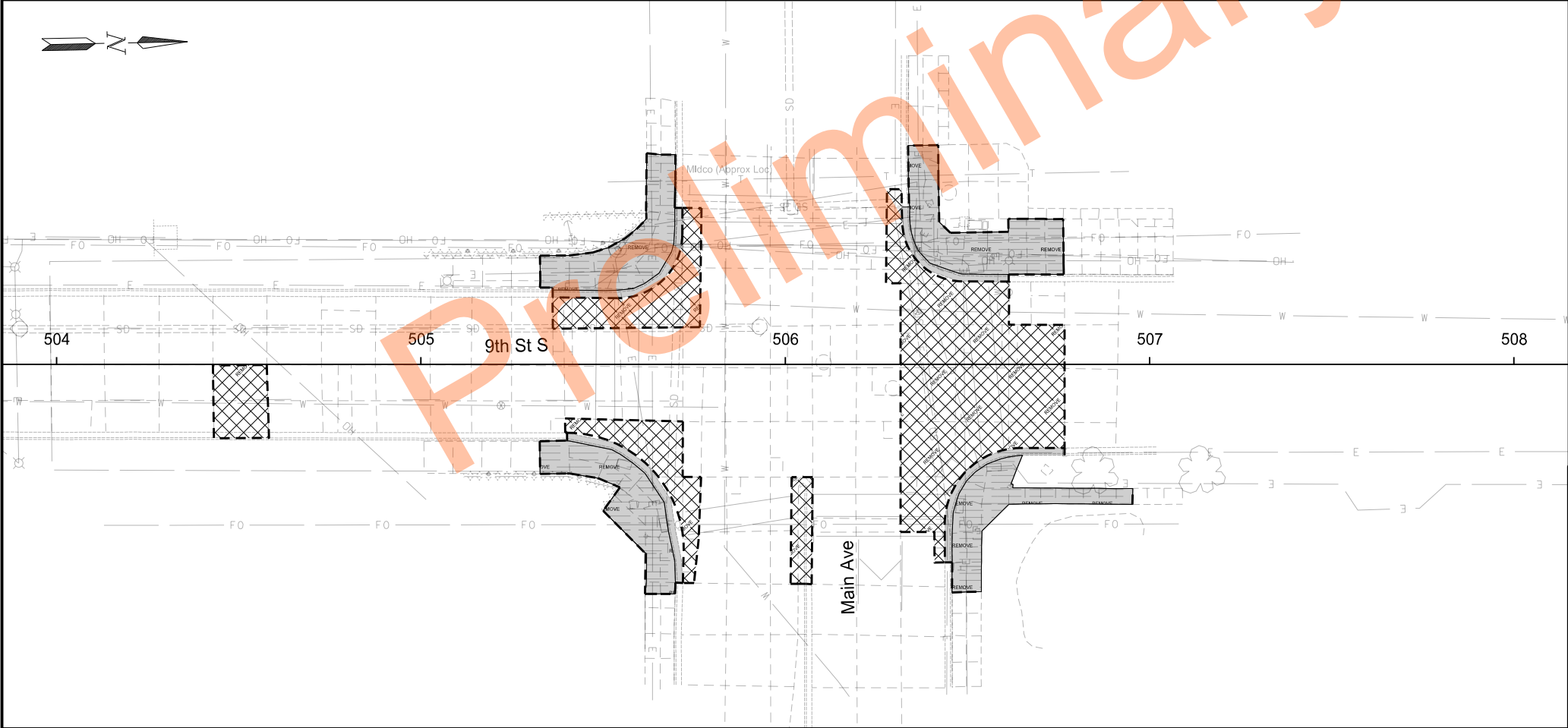
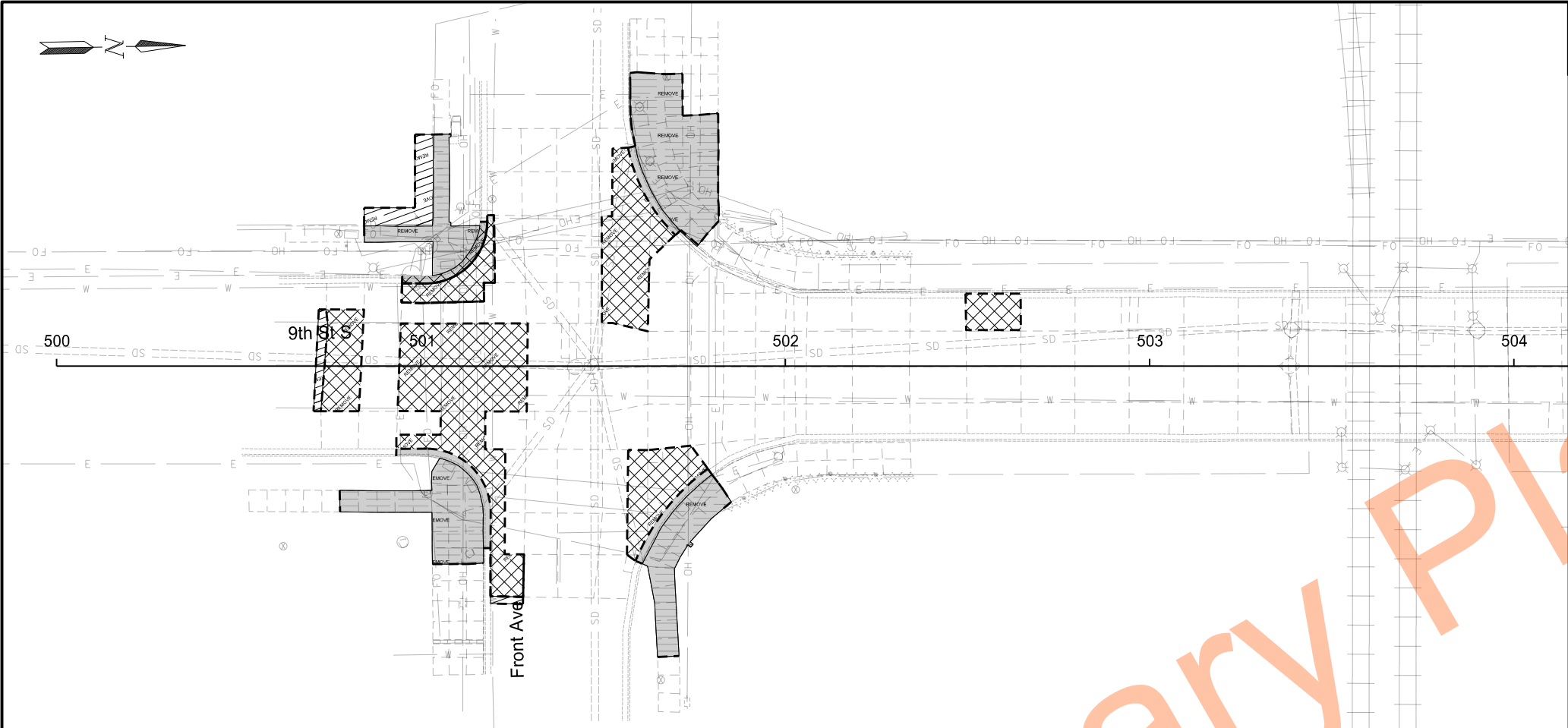
-  Removal of Concrete Pavement
(Incidental to Concrete Pavement Repair)
-  Removal of Sidewalk
(Incidental to Sidewalk Concrete XIN)
-  Removal of Bituminous Surfacing
-  Removal of Curb & Gutter

NOTE:
 Pavement joint and maintenance locations are approximate,
 Refer to Section 11 for locations and quantities.
 See Section 82 for more detail of sidewalk removal and
 survey data.

Removals

7th Street
 Front Ave to Broadway Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	40	3

SPEC	CODE	PAY ITEM	QTY UNIT
202	0130	REMOVAL OF CURB & GUTTER	
		Sta 500+72 to Sta 504+00	133 LF
		Sta 504+00 to Sta 506+95	200 LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	
		Sta 500+72 to Sta 504+00	31 SY

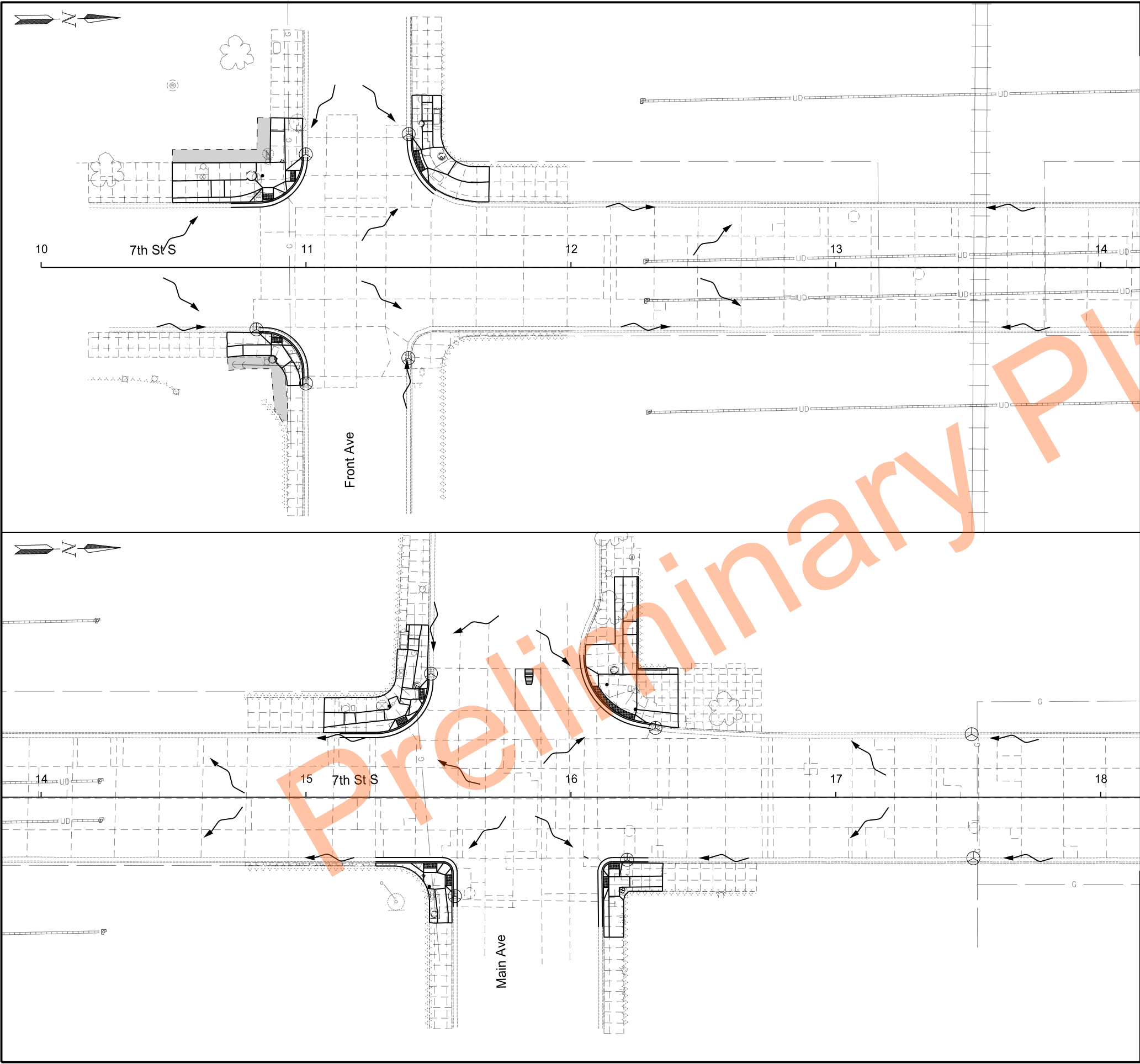
- Removal of Concrete Pavement (Incidental to Concrete Pavement Repair)
- Removal of Sidewalk (Incidental to Sidewalk Concrete XIN)
- Removal of Bituminous Surfacing
- Removal of Curb & Gutter

NOTE:
Pavement joint and maintenance locations are approximate,
Refer to Section 11 for locations and quantities.
See Section 82 for more detail of sidewalk removal and
survey data.

Removals

9th Street
Front Ave to Main Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	76	1

SPEC	CODE	PAY ITEM	QTY	UNIT
708	1540	INLET PROTECTION-SPECIAL		
		Sta 10+49.653 to Sta 14+00	5	EA
		Sta 14+00 to Sta 18+00	6	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 10+49.653 to Sta 14+00	5	EA
		Sta 14+00 to Sta 18+00	6	EA



Inlet Protection-Special



Flow direction



Hydraulic Mulch
(Incidental to Sidewalk
Concrete XIN)

Temporary Erosion Control

7th Street
Front Ave to Broadway Ave

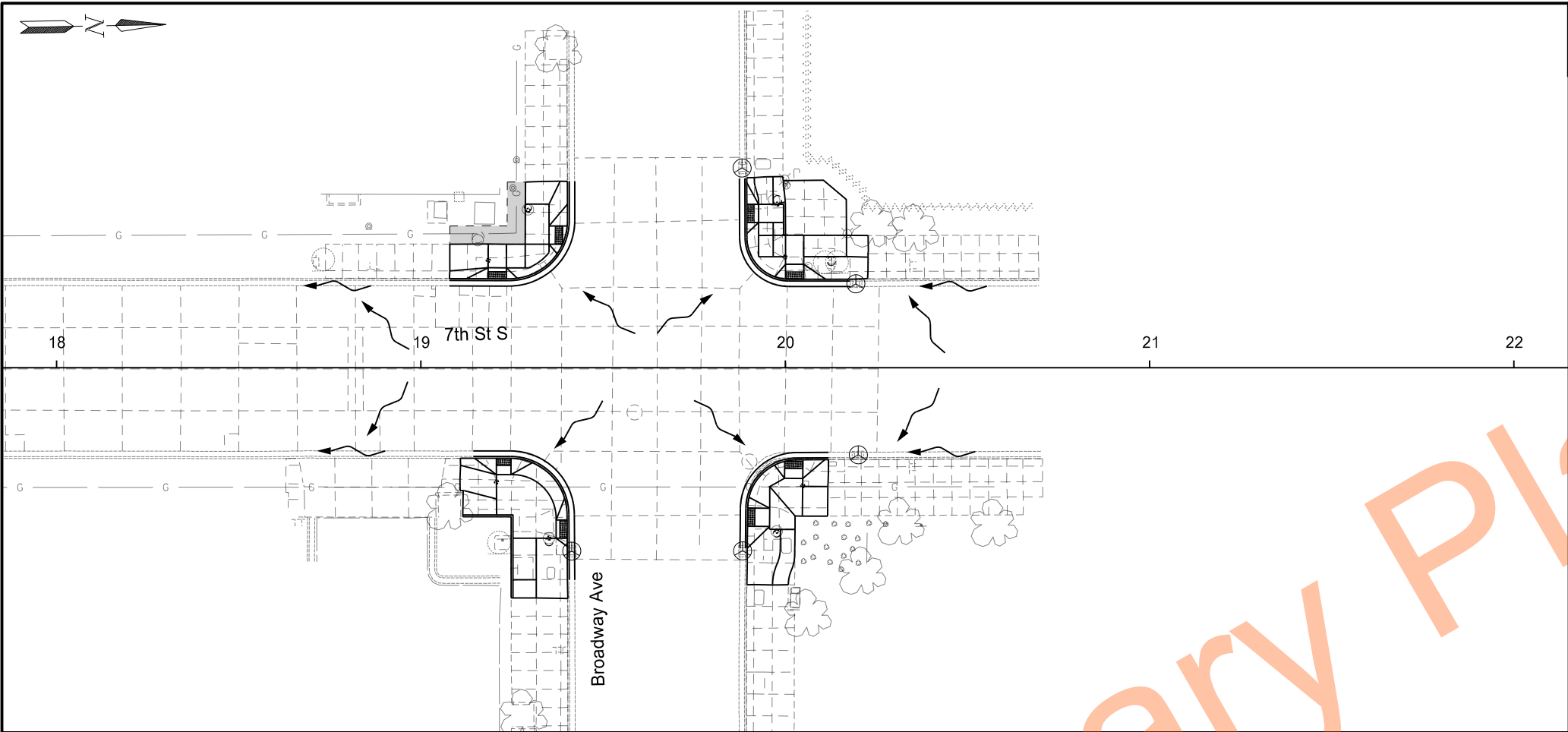
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	76	2

SPEC	CODE	PAY ITEM	QTY	UNIT
708	1540	INLET PROTECTION-SPECIAL		
		Sta 18+00 to Sta 20+27.659	5	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 18+00 to Sta 20+27.659	5	EA



Inlet Protection-Special



Flow direction



Hydraulic Mulch
(Incidental to Sidewalk
Concrete XIN)

Temporary Erosion Control

7th Street

Front Ave to Broadway Ave

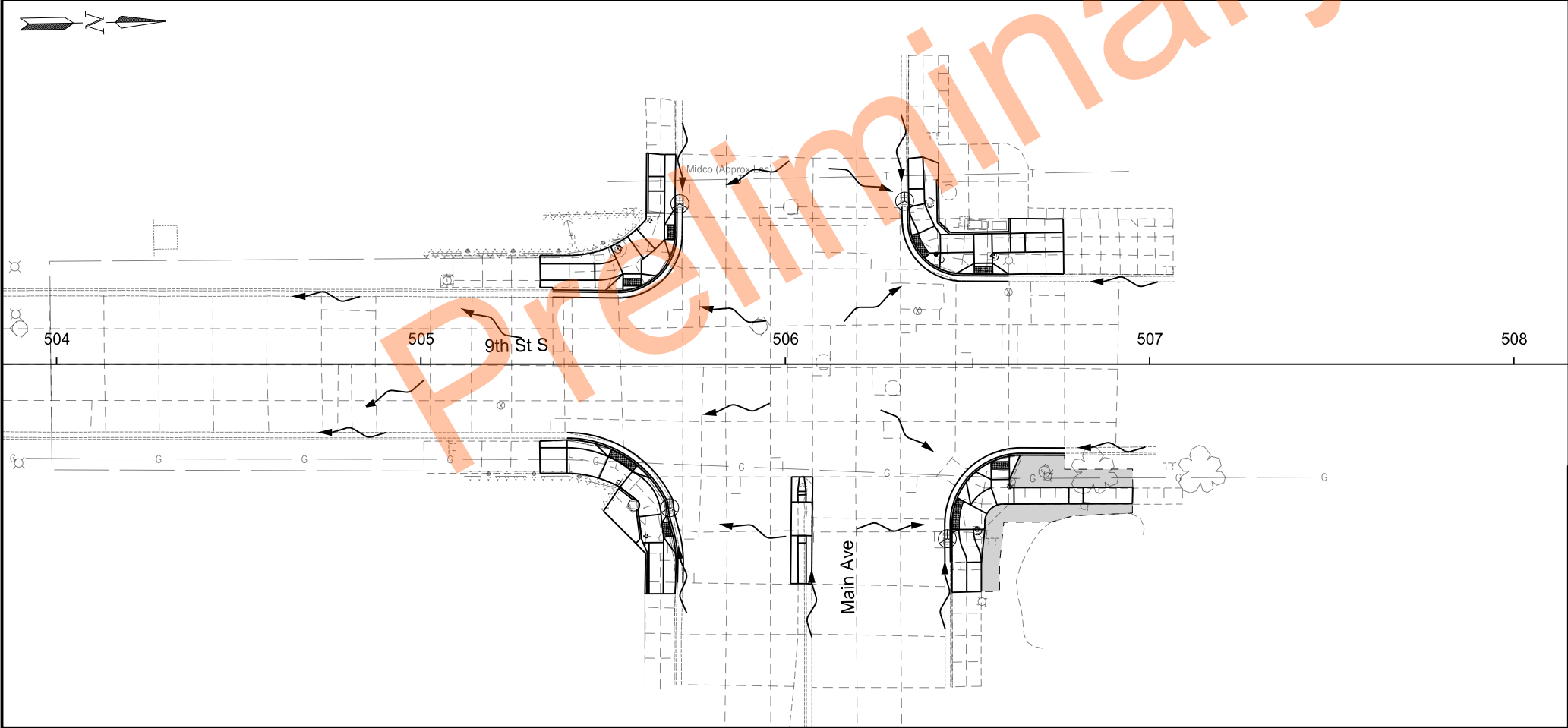
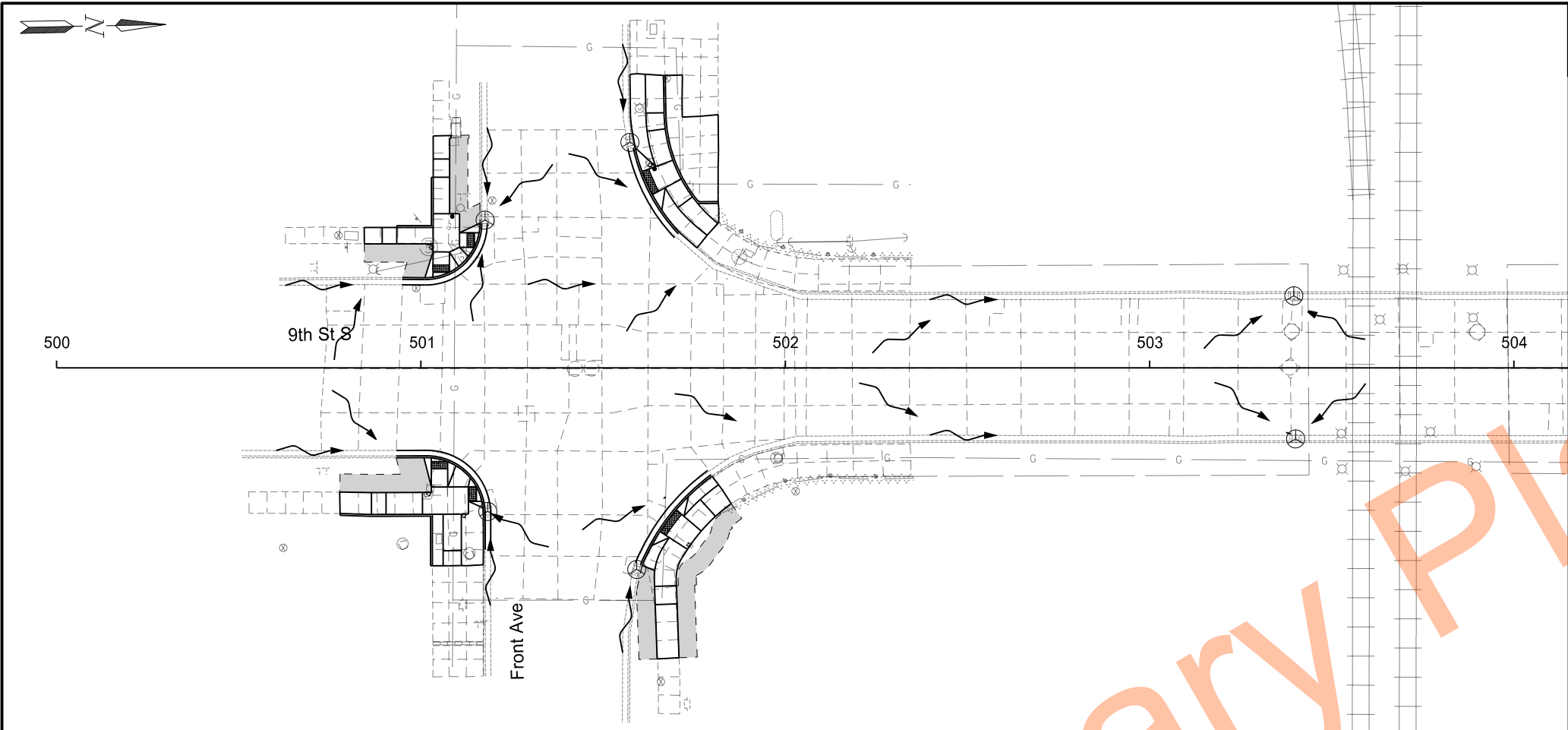
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	76	3

SPEC	CODE	PAY ITEM	QTY	UNIT
708	1540	INLET PROTECTION-SPECIAL		
		Sta 500+72.546 to Sta 504+00	6	EA
		Sta 504+00 to Sta 506+95.369	4	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 500+72.546 to Sta 504+00	6	EA
		Sta 504+00 to Sta 506+95.369	4	EA



Inlet Protection-Special



Flow direction



Hydraulic Mulch
(Incidental to Sidewalk
Concrete XIN)

Temporary Erosion Control

9th Street
Front Ave to Main Ave

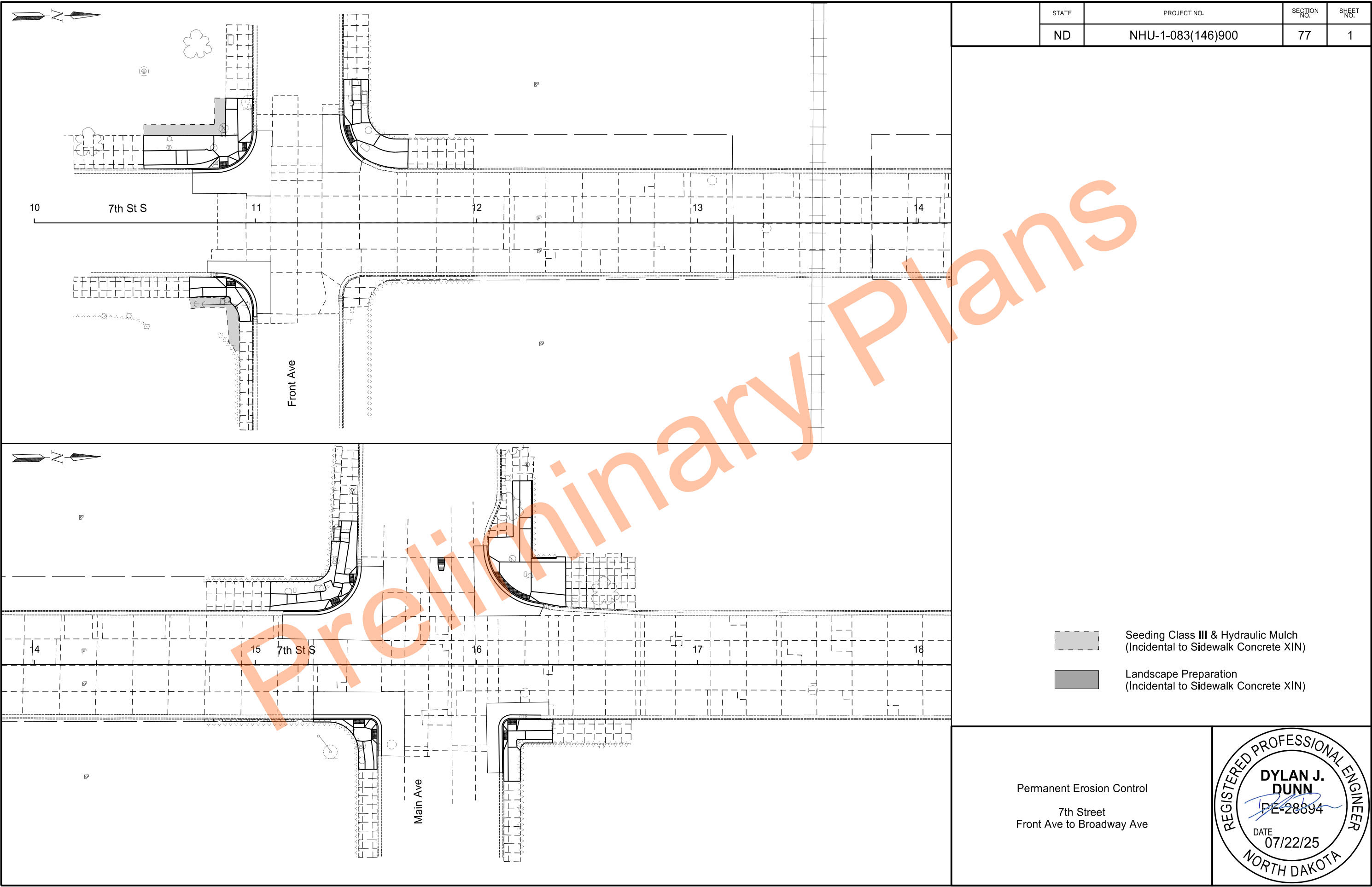
REGISTERED PROFESSIONAL ENGINEER

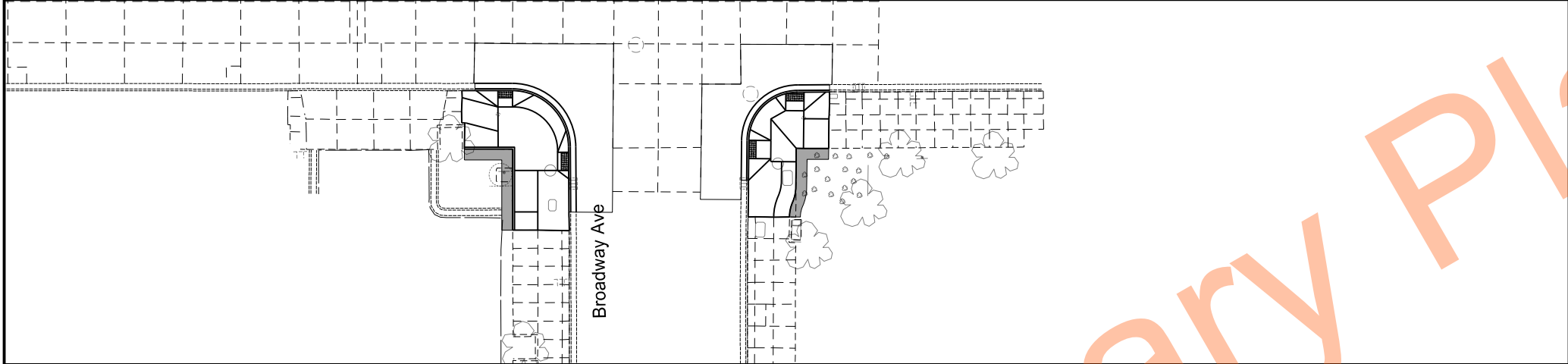
DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA





19 7th St S 20 21 22

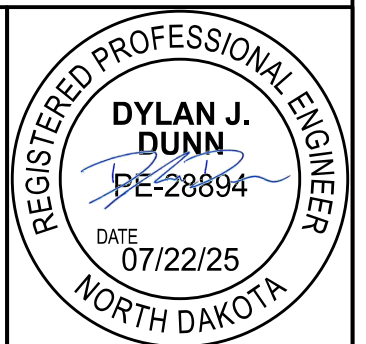
Broadway Ave

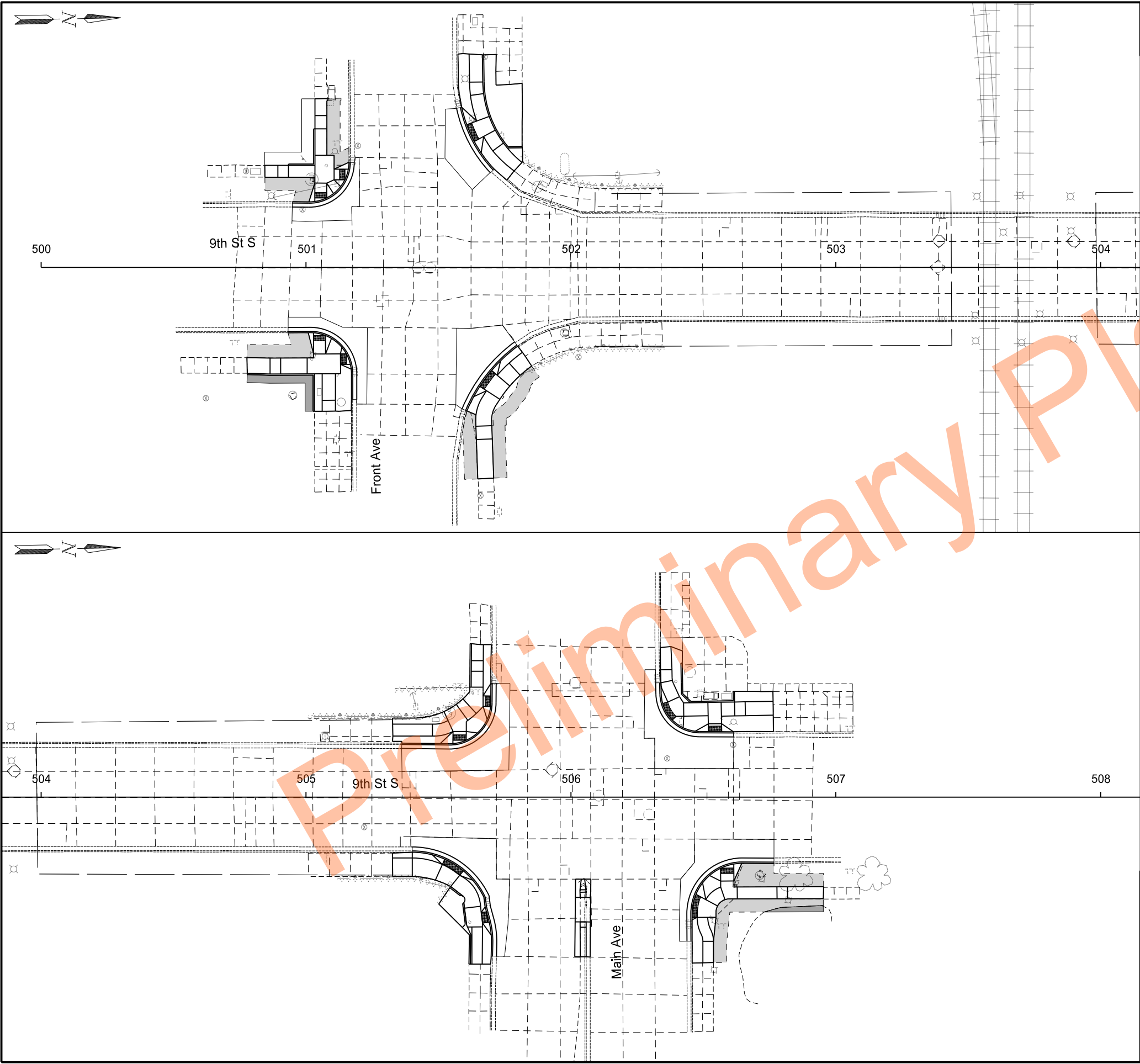
Preliminary Plans

Se (In)

La (In)

- Permanent Erosion Control
7th Street
Front Ave to Broadway Ave





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	77	3

- 

Seeding Class III & Hydraulic Mulch
(Incidental to Sidewalk Concrete XIN)
- 

Landscape Preparation
(Incidental to Sidewalk Concrete XIN)

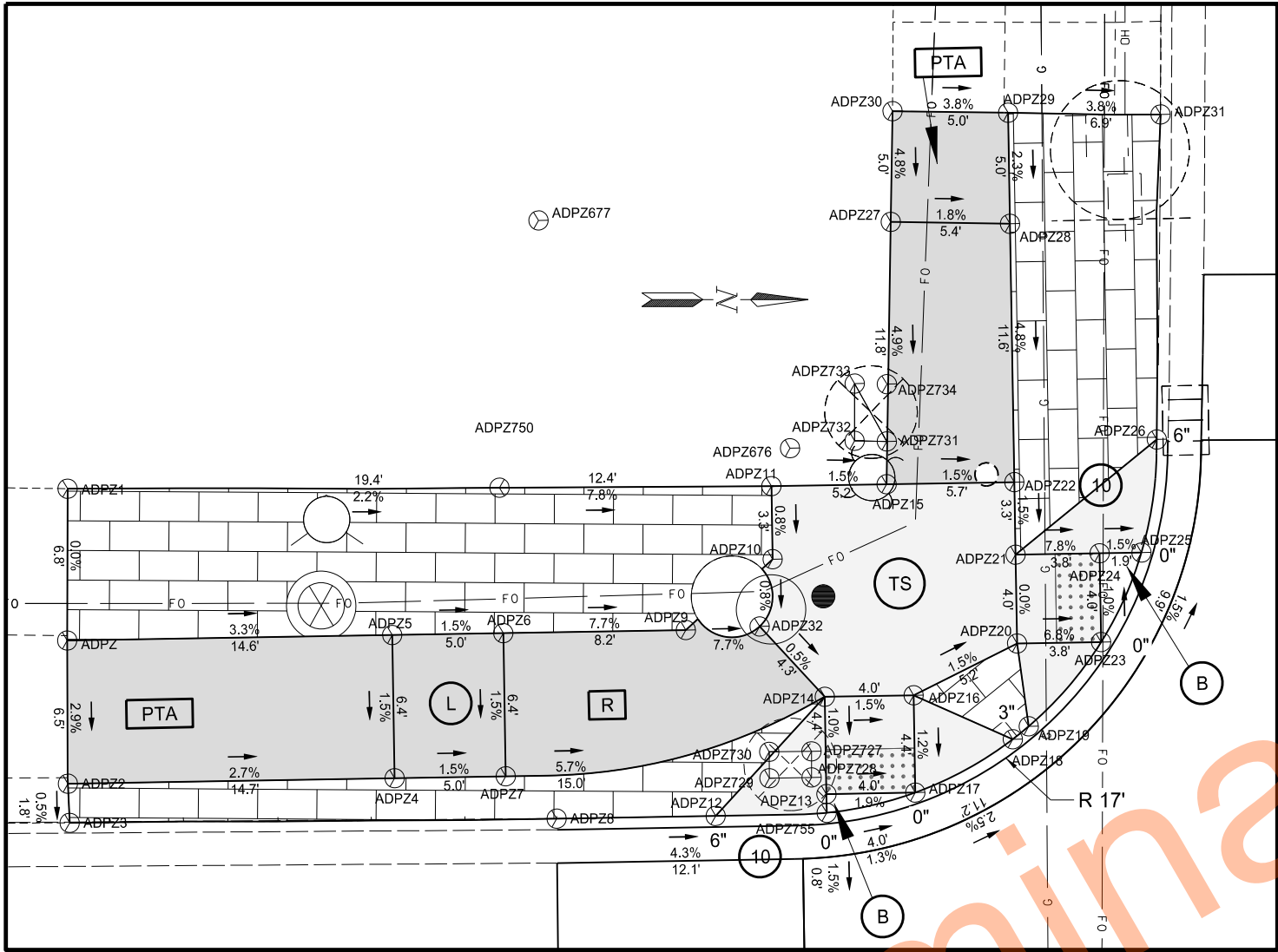
Permanent Erosion Control
9th Street
Front Ave to Main Ave



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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	1

748	0140	CURB & GUTTER-TYPE I	38 LF
750	0115	SIDEWALK CONCRETE 4IN	77 SY
750	0140	SIDEWALK CONCRETE 6IN	19 SY
750	2115	DETECTABLE WARNING PANEL	16 SF



SW Corner 7th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ	414928.9	1898220.682	1669.396	1049.540 R1	-32.589
ADPZ1	414929.056	1898213.849	1669.398	1049.557 R1	-39.424
ADPZ2	414928.8	1898227.13	1669.218	1049.571 R1	-26.14
ADPZ3	414928.845	1898228.893	1669.209	1049.653 R1	-24.379
ADPZ4	414943.508	1898227.181	1668.816	1064.277 R1	-26.39
ADPZ5	414943.53	1898220.733	1668.913	1064.168 R1	-32.837
ADPZ6	414948.53	1898220.75	1668.838	1069.167 R1	-32.921
ADPZ7	414948.508	1898227.198	1668.741	1069.277 R1	-26.474
ADPZ8	414950.76	1898229.15	1668.814	1071.568 R1	-24.569
ADPZ9	414956.747	1898220.778	1668.205	1077.383 R1	-33.061
ADPZ10	414960.717	1898217.669	1667.931	1081.289 R1	-36.25
ADPZ11	414960.729	1898214.38	1667.956	1081.234 R1	-39.539
ADPZ12	414957.919	1898229.175	1668.535	1078.727 R1	-24.69
ADPZ13	414962.922	1898228.292	1667.836	1083.710 R1	-25.674
ADPZ14	414962.937	1898223.91	1667.882	1083.636 R1	-30.056
ADPZ15	414965.915	1898214.399	1667.879	1086.419 R1	-39.625
ADPZ16	414966.937	1898223.924	1667.822	1087.635 R1	-30.123
ADPZ17	414966.922	1898228.306	1667.769	1087.710 R1	-25.742
ADPZ18	414971.359	1898225.997	1667.891	1092.098 R1	-28.141
ADPZ19	414972.087	1898225.427	1667.867	1092.815 R1	-28.725
ADPZ20	414971.64	1898221.688	1667.743	1092.291 R1	-32.454
ADPZ21	414971.653	1898217.688	1667.743	1092.224 R1	-36.454

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ22	414971.665	1898214.421	1667.792	1092.168 R1	-39.72
ADPZ23	414975.422	1898221.701	1667.488	1096.073 R1	-32.518
ADPZ24	414975.435	1898217.701	1667.448	1096.005 R1	-36.518
ADPZ25	414977.319	1898217.708	1667.419	1097.889 R1	-36.55
ADPZ26	414978.113	1898212.632	1667.99	1098.579 R1	-41.641
ADPZ27	414966.343	1898202.592	1668.448	1086.607 R1	-51.439
ADPZ28	414971.705	1898202.786	1668.351	1091.971 R1	-51.354
ADPZ29	414971.722	1898197.786	1668.467	1091.887 R1	-56.353
ADPZ30	414966.524	1898197.611	1668.694	1086.686 R1	-56.422
ADPZ31	414978.582	1898198.004	1668.242	1098.749 R1	-56.275
ADPZ32	414960.07	1898220.686	1667.903	1080.703 R1	-33.221
ADPZ676	414961.601	1898212.688		1082.072 R1	-41.249
ADPZ677	414950.492	1898202.205		1070.751 R1	-51.503
ADPZ727	414962.29	1898226.355	1667.945	1083.039 R1	-27.598
ADPZ728	414962.269	1898227.53	1667.935	1083.042 R1	-26.423
ADPZ729	414960.372	1898227.525	1668.201	1081.145 R1	-26.389
ADPZ730	414960.387	1898226.337	1668.211	1081.136 R1	-27.577
ADPZ731	414965.963	1898212.472	1667.974	1086.428 R1	-41.553
ADPZ732	414964.515	1898212.415	1667.952	1084.979 R1	-41.58
ADPZ733	414964.571	1898209.838	1668.079	1084.983 R1	-44.158
ADPZ734	414966.019	1898209.895	1668.101	1086.432 R1	-44.131
ADPZ750	414948.346	1898214.172	1668.922	1068.850 R1	-39.494
ADPZ755	414962.919	1898229.135	1667.824	1083.725 R1	-24.832

- Detectable Warning Panel**

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope
 1.5 % preferred
 2.0 % maximum

Running and Counter Slope
 < 4.5 % preferred
 5.0 % maximum

PTA Pedestrian Access Transition Area (PTA)
 Tie-in to nearest joint (if needed)

Transition Cross Slope
 < 0.5 % change per foot longitudinally

Running Slope
 < 4.5 % preferred

TS Turning Space
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R Ramp

Cross Slope
 1.5 % Preferred
 2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

B Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare

Cross Slope
 4:1 maximum (adjacent to non-walkable surface)
 10:1 maximum (adjacent to walkable surface)

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN

Flexible Delineator

Sidewalk Concrete 4IN (Non-PAR area)

Sidewalk Concrete 6IN

Concrete Median Paving

Existing Pushbutton

Proposed Pushbutton

Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

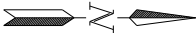
ADA Ramp Details

7th Street
Front Ave to Broadway



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	2

748	0140	CURB & GUTTER-TYPE I	31 LF
750	0115	SIDEWALK CONCRETE 4IN	24 SY
750	0140	SIDEWALK CONCRETE 6IN	8 SY
750	2115	DETECTABLE WARNING PANEL	8 SF



SE Corner 7th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ33	414948.279	1898287.605	1669.02	1070.280 R1	33.925
ADPZ34	414954.257	1898287.109	1668.776	1076.247 R1	33.308
ADPZ35	414954.324	1898283.11	1668.716	1076.232 R1	29.308
ADPZ36	414960.335	1898278.648	1668.622	1082.151 R1	24.724
ADPZ37	414965.016	1898283.288	1668.28	1086.926 R1	29.268
ADPZ38	414965.124	1898280.391	1668.101	1086.974 R1	26.369
ADPZ39	414965.173	1898279.054	1668.081	1086.996 R1	25.031
ADPZ40	414969.121	1898280.539	1668.037	1090.973 R1	26.436
ADPZ41	414969.014	1898283.436	1668.26	1090.925 R1	29.334
ADPZ42	414964.868	1898287.286	1668.344	1086.859 R1	33.268
ADPZ43	414966.701	1898290.214	1668.406	1088.751 R1	36.157
ADPZ46	414973.011	1898283.68	1668.362	1094.927 R1	29.496
ADPZ47	414976.531	1898296.553	1667.977	1098.708 R1	42.295
ADPZ60	414948.393	1898278.167	1668.759	1070.201 R1	24.487
ADPZ62	414948.308	1898283.609	1668.92	1070.227 R1	29.929
ADPZ75	414972.708	1898289.242	1668.289	1094.737 R1	35.063
ADPZ76	414968.696	1898292.225	1668.364	1090.786 R1	38.127
ADPZ77	414970.67	1898298.788	1668.115	1092.894 R1	44.649
ADPZ80	414975.67	1898298.732	1667.998	1097.892 R1	44.491
ADPZ82	414976.503	1898298.723	1667.978	1098.725 R1	44.465
ADPZ679	414962.095	1898293.223		1084.207 R1	39.26
ADPZ779	414960.67	1898298.19		1082.884 R1	44.255

- Detectable Warning Panel**

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope
 1.5 % preferred
 2.0 % maximum

Running and Counter Slope
 < 4.5 % preferred
 5.0 % maximum

PTA (Pedestrian Access Transition Area)
 Tie-in to nearest joint (if needed)

Transition Cross Slope
 < 0.5 % change per foot longitudinally

Running Slope
 < 4.5 % preferred

TS (Turning Space)
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R (Ramp)

Ramp
Cross Slope
 1.5 % Preferred
 2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

B (Blended Transition)

Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare
Cross Slope
 4:1 maxium (adjacent to non-walkable surface)
 10:1 maxium (adjacent to walkable surface)

4
10

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Flexible Delineator

Concrete Median Paving

Sidewalk Concrete 4IN (Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

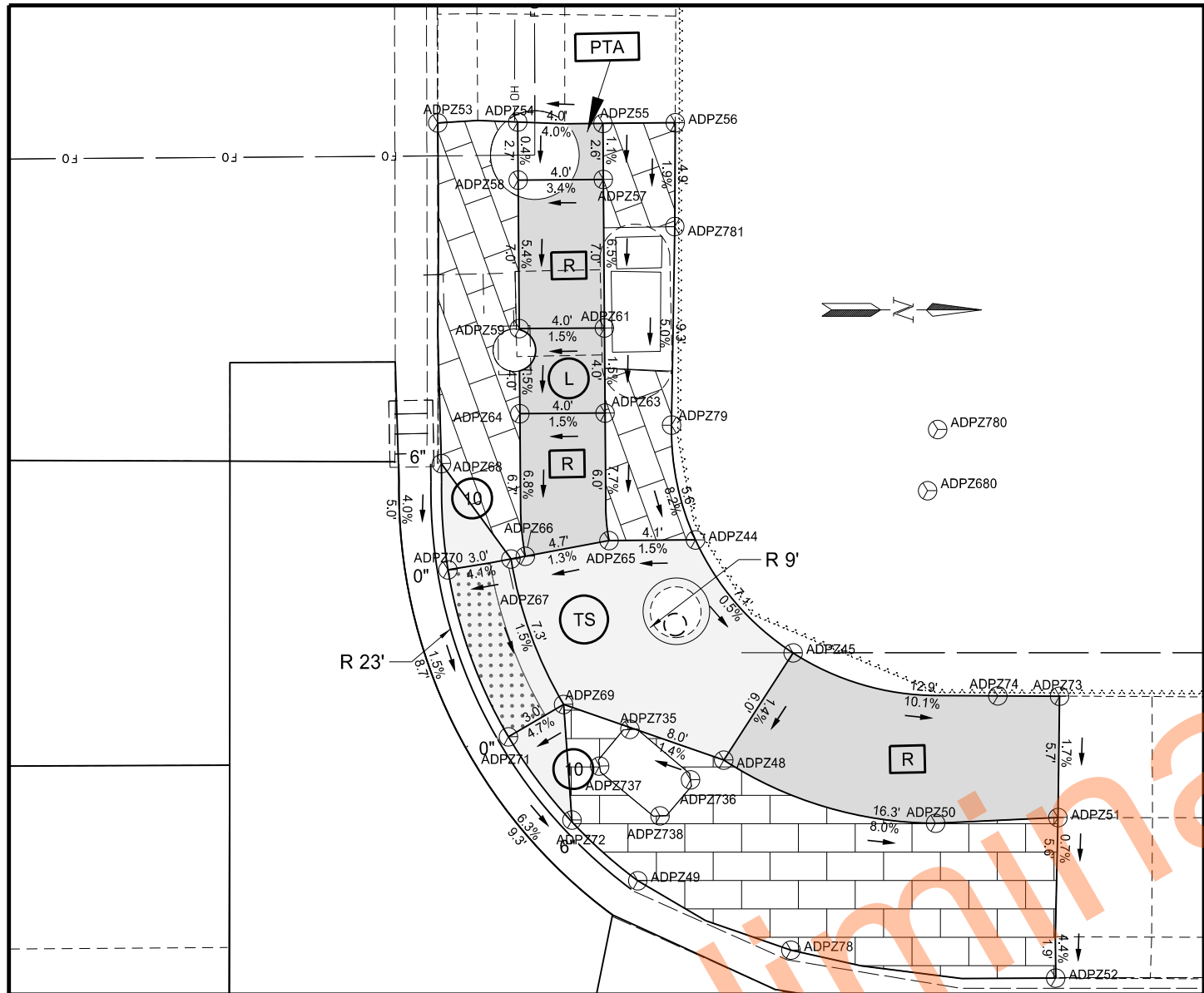
ADA Ramp Details

7th Street
Front Ave to Broadway



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	3

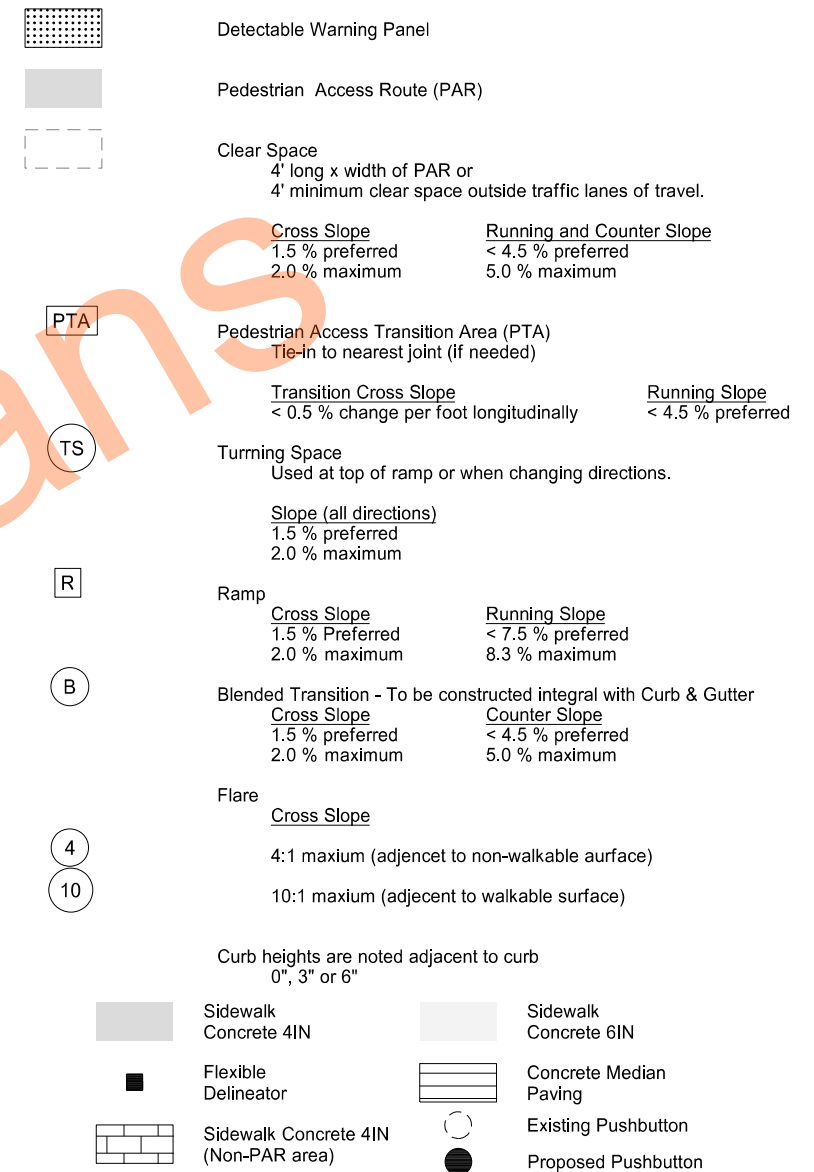
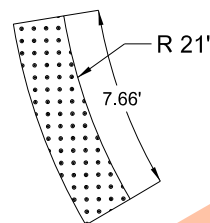
SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	23 LF
750	0115	SIDEWALK CONCRETE 4IN	47 SY
750	0140	SIDEWALK CONCRETE 6IN	14 SY
750	2115	DETECTABLE WARNING PANEL	16 SF



NW Corner 7th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ44	415031.726	1898210.064	1667.338	1152.128 R1	-45.301
ADPZ45	415036.201	1898215.464	1667.304	1156.712 R1	-39.994
ADPZ48	415032.84	1898220.434	1667.218	1153.454 R1	-34.956
ADPZ49	415028.688	1898226.018	1666.835	1149.416 R1	-29.289
ADPZ50	415042.726	1898223.602	1666.381	1163.402 R1	-31.99
ADPZ51	415048.477	1898223.451	1665.923	1169.149 R1	-32.259
ADPZ52	415048.219	1898230.99	1665.805	1169.045 R1	-24.716
ADPZ53	415020.023	1898190.228	1667.992	1140.023 R1	-64.895
ADPZ54	415023.78	1898190.262	1668.127	1143.780 R1	-64.938
ADPZ55	415027.778	1898190.408	1668.287	1147.780 R1	-64.873
ADPZ56	415031.175	1898190.449	1668.359	1151.177 R1	-64.901
ADPZ57	415027.744	1898193.042	1668.256	1147.800 R1	-62.239
ADPZ58	415023.744	1898192.99	1668.117	1143.800 R1	-62.209
ADPZ59	415023.653	1898199.967	1667.74	1143.851 R1	-55.232
ADPZ61	415027.653	1898200.019	1667.8	1147.851 R1	-55.261
ADPZ63	415027.601	1898204.019	1667.74	1147.881 R1	-51.261
ADPZ64	415023.601	1898203.966	1667.68	1143.881 R1	-51.232
ADPZ65	415027.665	1898210.011	1667.277	1148.067 R1	-45.271

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ66	415023.719	1898210.668	1667.224	1144.135 R1	-44.534
ADPZ67	415023.042	1898210.781	1667.215	1143.461 R1	-44.408
ADPZ68	415019.871	1898206.235	1667.838	1140.197 R1	-48.888
ADPZ69	415025.373	1898217.666	1667.105	1145.932 R1	-37.571
ADPZ70	415020.076	1898211.23	1667.093	1140.504 R1	-43.898
ADPZ71	415022.756	1898219.133	1666.964	1143.345 R1	-36.051
ADPZ72	415025.658	1898223.104	1666.897	1146.327 R1	-32.141
ADPZ73	415048.67	1898217.753	1666.019	1169.226 R1	-37.959
ADPZ74	415045.77	1898217.678	1666.308	1166.324 R1	-37.975
ADPZ78	415035.814	1898229.423	1666.523	1156.610 R1	-26.03
ADPZ79	415031.055	1898195.325	1668.266	1151.157 R1	-60.024
ADPZ680	415042.67	1898207.974		1163.028 R1	-47.615
ADPZ735	415028.464	1898218.898	1667.061	1149.047 R1	-36.403
ADPZ736	415031.263	1898221.33	1666.92	1151.895 R1	-34.028
ADPZ737	415027.008	1898220.594	1666.983	1147.626 R1	-34.677
ADPZ738	415029.796	1898222.992	1666.889	1150.462 R1	-32.337
ADPZ780	415043.202	1898205.108	0	1163.501 R1	-50.49
ADPZ781	415030.71	1898204.646	1667.795	1151.002 R1	-50.697



- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

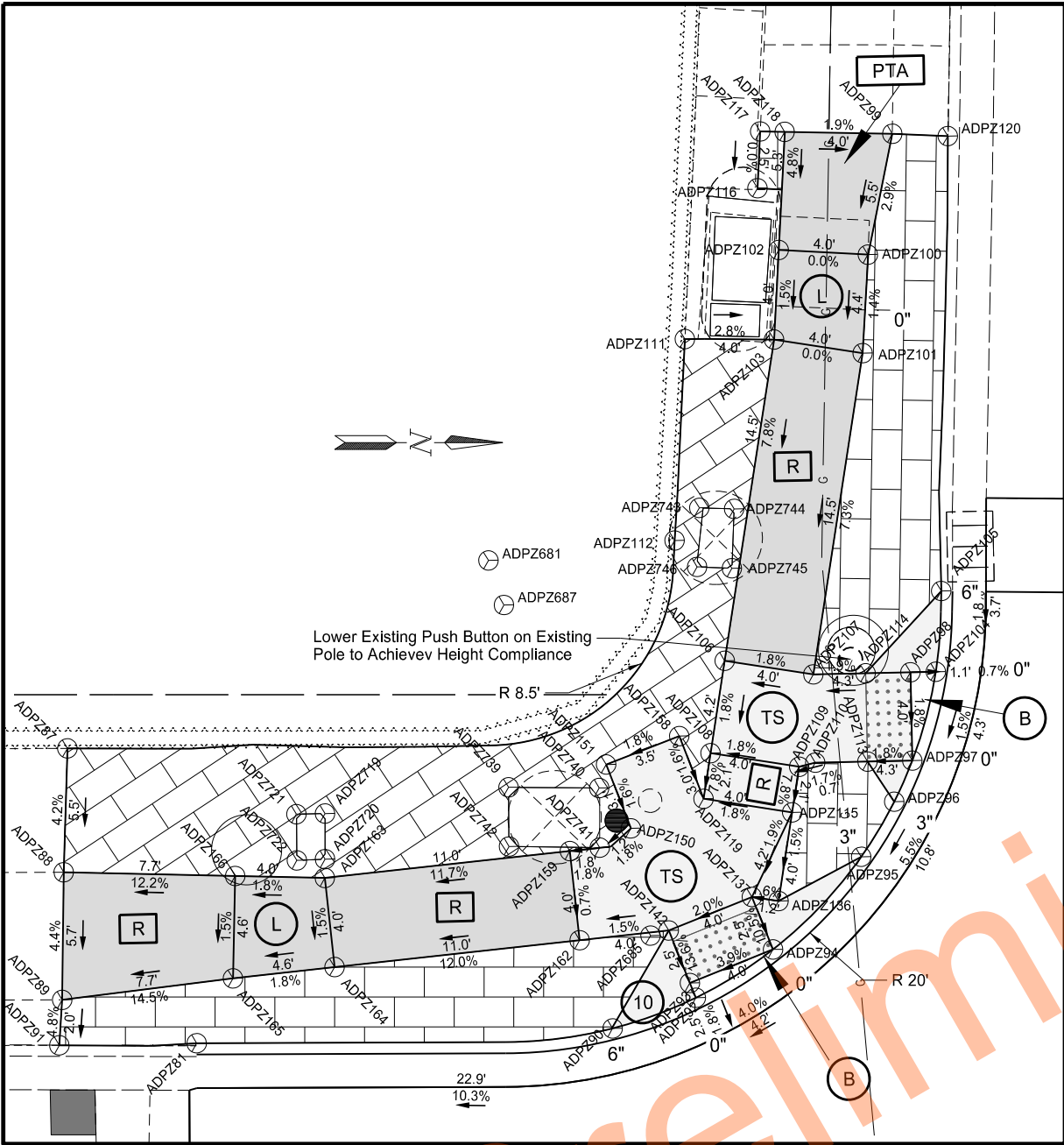
ADA Ramp Details

7th Street
Front Ave to Broadway



SW Corner 7th St and Main Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	82	4



SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	46	LF
750	0115	SIDEWALK CONCRETE 4IN	65	SY
750	0140	SIDEWALK CONCRETE 6IN	14	SY
750	2115	DETECTABLE WARNING PANEL	16	SF

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ81	415391.836	1898238.259	1667.264	1512.739 R1	-24.455
ADPZ87	415386.337	1898224.994	1667.348	1506.970 R1	-37.605
ADPZ88	415386.062	1898230.515	1667.114	1506.808 R1	-32.079
ADPZ89	415385.878	1898236.204	1666.866	1506.740 R1	-26.388
ADPZ90	415410.406	1898237.978	1669.08	1531.298 R1	-25.114
ADPZ91	415385.709	1898238.227	1666.769	1506.612 R1	-24.362
ADPZ92	415414.147	1898236.686	1669.087	1535.013 R1	-26.482
ADPZ93	415413.895	1898236.021	1669.1	1534.747 R1	-27.142
ADPZ94	415417.635	1898234.602	1669.258	1538.457 R1	-28.637
ADPZ95	415421.652	1898230.55	1669.83	1542.391 R1	-32.77
ADPZ96	415423.175	1898228.124	1669.99	1543.864 R1	-35.227
ADPZ97	415424.021	1898226.307	1669.851	1544.673 R1	-37.061
ADPZ98	415424.016	1898222.367	1669.92	1544.588 R1	-40.999
ADPZ99	415423.697	1898198.336	1671.115	1543.779 R1	-65.019
ADPZ100	415422.495	1898203.704	1670.956	1542.686 R1	-59.628
ADPZ101	415422.174	1898208.091	1670.896	1542.455 R1	-55.235
ADPZ102	415418.524	1898203.415	1670.956	1538.711 R1	-59.836
ADPZ103	415418.234	1898207.404	1670.896	1538.501 R1	-55.842
ADPZ104	415425.15	1898222.366	1669.993	1545.721 R1	-41.024
ADPZ105	415425.464	1898218.769	1670.617	1545.962 R1	-44.626
ADPZ106	415415.743	1898221.685	1669.766	1536.302 R1	-41.513
ADPZ107	415419.683	1898222.372	1669.838	1540.256 R1	-40.906
ADPZ108	415415.026	1898225.792	1669.691	1535.670 R1	-37.392
ADPZ109	415418.967	1898226.479	1669.763	1539.623 R1	-36.785
ADPZ110	415419.688	1898226.312	1669.776	1540.341 R1	-36.967
ADPZ111	415414.257	1898207.303	1671.008	1534.523 R1	-55.862
ADPZ112	415413.615	1898216.276	1670.103	1534.064 R1	-46.877
ADPZ113	415422.021	1898226.309	1669.816	1542.673 R1	-37.017
ADPZ114	415422.016	1898222.37	1669.882	1542.588 R1	-40.956
ADPZ115	415418.613	1898228.508	1669.602	1539.311 R1	-34.75
ADPZ116	415417.633	1898200.641	1671.164	1537.763 R1	-62.591
ADPZ117	415417.807	1898198.112	1671.233	1537.885 R1	-65.123
ADPZ118	415418.896	1898198.153	1671.211	1538.975 R1	-65.104
ADPZ119	415414.672	1898227.82	1669.53	1535.357 R1	-35.357
ADPZ120	415426.169	1898198.49	1671.065	1546.253 R1	-64.915
ADPZ136	415417.926	1898232.448	1669.542	1538.704 R1	-30.796
ADPZ137	415416.739	1898232.241	1669.523	1537.514 R1	-30.979
ADPZ142	415412.999	1898233.66	1669.443	1533.804 R1	-29.484
ADPZ150	415411.403	1898229.072	1669.467	1532.114 R1	-34.038
ADPZ151	415410.356	1898226.201	1669.516	1531.009 R1	-36.887
ADPZ158	415413.644	1898225.002	1669.578	1534.272 R1	-38.154
ADPZ159	415408.661	1898230.03	1669.412	1529.392 R1	-33.025
ADPZ162	415409.015	1898234.015	1669.383	1529.827 R1	-29.049
ADPZ163	415397.704	1898231.004	1668.123	1518.457 R1	-31.828
ADPZ164	415398.058	1898234.989	1668.063	1518.893 R1	-27.851
ADPZ165	415393.516	1898235.401	1667.982	1514.360 R1	-27.346
ADPZ166	415393.708	1898230.836	1668.051	1514.458 R1	-31.914
ADPZ681	415405.294	1898216.996	0	1525.760 R1	-45.988
ADPZ682	415423.591	1898216.964		1544.053 R1	-46.392
ADPZ684	415399.559	1898225.769		1520.205 R1	-37.099
ADPZ685	415412.182	1898233.872		1532.991 R1	-29.255
ADPZ686	415398.711	1898226.427		1519.371 R1	-36.425
ADPZ687	415405.944	1898218.996		1526.450 R1	-44.002
ADPZ719	415397.772	1898228.134	1668.314	1518.466 R1	-34.699
ADPZ720	415397.732	1898230.168	1668.179	1518.468 R1	-32.664
ADPZ721	415396.495	1898228.136	1668.219	1517.190 R1	-34.67
ADPZ722	415396.474	1898230.199	1668.132	1517.211 R1	-32.608
ADPZ739	415405.983	1898227.132	1669.232	1526.656 R1	-35.868
ADPZ740	415410.028	1898227.246	1669.635	1530.702 R1	-35.837
ADPZ741	415409.996	1898229.904	1669.455	1530.724 R1	-33.178
ADPZ742	415405.952	1898229.773	1669.056	1526.678 R1	-33.227
ADPZ743	415416.3	1898214.922	1670.253	1536.721 R1	-48.286
ADPZ744	415414.748	1898214.844	1670.232	1535.168 R1	-48.332
ADPZ745	415416.145	1898217.565	1670.068	1536.621 R1	-45.64
ADPZ746	415414.594	1898217.472	1670.036	1535.068 R1	-45.701

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

TS

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

B

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjacent to non-walkable surface)
10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

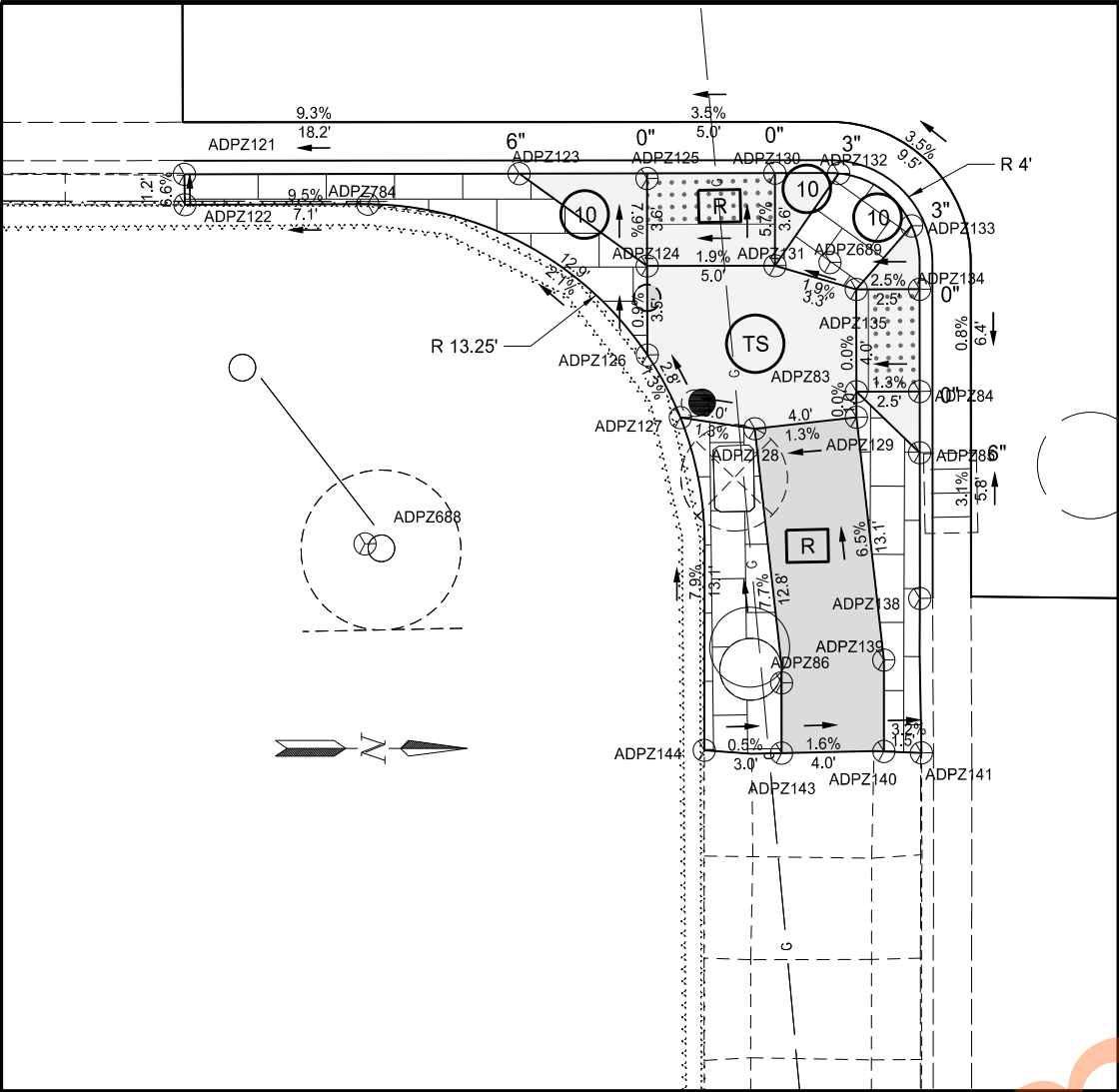
7th Street
Front Ave to Broadway



SE Corner 7th St and Main Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ83	415430.487	1898296.826	1669.935	1552.576 R1	33.312
ADPZ84	415432.962	1898296.872	1669.968	1555.051 R1	33.307
ADPZ85	415432.915	1898299.263	1670.45	1555.053 R1	35.699
ADPZ86	415427.331	1898308.155	1670.649	1549.651 R1	44.703
ADPZ121	415404.384	1898287.79	1668.305	1526.293 R1	24.811
ADPZ122	415404.381	1898288.978	1668.383	1526.315 R1	25.998
ADPZ123	415417.475	1898288.032	1669.525	1539.387 R1	24.785
ADPZ124	415422.407	1898291.742	1669.777	1544.394 R1	28.394
ADPZ125	415422.47	1898288.322	1669.491	1544.387 R1	24.973
ADPZ126	415422.343	1898295.226	1669.81	1544.401 R1	31.879
ADPZ127	415423.584	1898297.699	1669.846	1545.691 R1	34.326
ADPZ128	415426.484	1898298.194	1669.884	1548.602 R1	34.762
ADPZ129	415430.467	1898297.826	1669.935	1552.576 R1	34.312
ADPZ130	415427.473	1898288.216	1669.666	1549.387 R1	24.765
ADPZ131	415427.407	1898291.834	1669.872	1549.394 R1	28.384
ADPZ132	415429.972	1898288.279	1670.005	1551.887 R1	24.777
ADPZ133	415432.783	1898290.386	1670.153	1554.740 R1	26.826
ADPZ134	415433.041	1898292.873	1669.998	1555.048 R1	29.307
ADPZ135	415430.566	1898292.827	1669.935	1552.573 R1	29.312
ADPZ138	415432.803	1898304.962	1670.64	1555.056 R1	41.399
ADPZ139	415431.347	1898307.343	1670.557	1553.650 R1	43.809
ADPZ140	415431.277	1898310.918	1670.79	1553.653 R1	47.385
ADPZ141	415432.742	1898311.004	1670.742	1555.119 R1	47.441
ADPZ143	415427.277	1898310.902	1670.859	1549.653 R1	47.45
ADPZ144	415424.253	1898310.728	1670.886	1546.626 R1	47.338
ADPZ688	415411.152	1898302.387		1533.358 R1	39.266
ADPZ689	415429.562	1898291.755		1551.547 R1	28.261
ADPZ782	415411.529	1898289.106	1669.062	1533.464 R1	25.98
ADPZ784	415411.529	1898289.106	1669.062	1533.464 R1	25.98

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	82	5



SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	45	LF
750	0115	SIDEWALK CONCRETE 4IN	16	SY
750	0140	SIDEWALK CONCRETE 6IN	11	SY
750	2115	DETECTABLE WARNING PANEL	18	SF

PTA

TS

R

B

4

10

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp

Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare

Cross Slope

4:1 maxium (adjecnt to non-walkable surface)

10:1 maxium (adjecnt to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

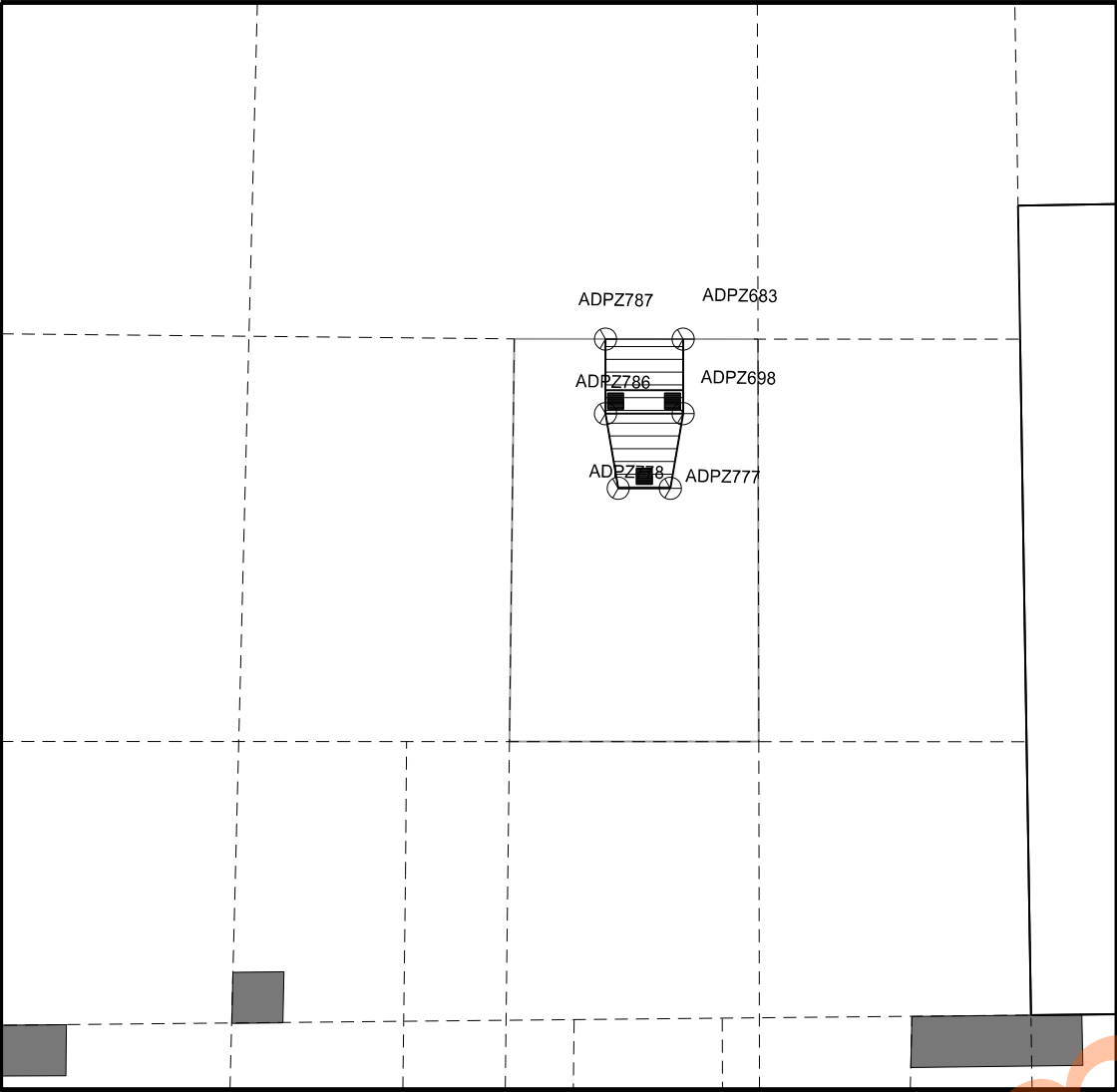
ADA Ramp Details

7th Street
Front Ave to Broadway



West Median 7th St and Main Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ786	415462.176	1898218.609	1672.222	1582.663 R1	-45.534
ADPZ787	415462.236	1898215.687	1672.255	1582.664 R1	-48.458
ADPZ778	415462.615	1898221.541	1671.734	1583.161 R1	-42.613
ADPZ777	415464.654	1898221.583	1671.766	1585.201 R1	-42.612
ADPZ698	415465.215	1898218.673	1672.381	1585.703 R1	-45.533
ADPZ683	415465.276	1898215.75	1672.415	1585.704 R1	-48.456



SPEC	CODE	PAY ITEM	QTY	UNIT
750	0200	CONCRETE MEDIAN PAVIN	2	SY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	6

PTA

TS

R

B

4

10

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp

Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare

Cross Slope

4:1 maxium (adjencet to non-walkable surface)

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
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 3. See Section 150 for reset and relocated pedestrian push button locations.

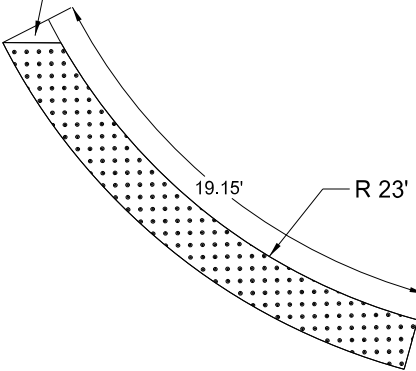
ADA Ramp Details

7th Street
Front Ave to Broadway



NW Corner 7th St and Main Ave

Portion of Panel to be Removed



Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope
 1.5 % preferred
 2.0 % maximum

Running and Counter Slope
 < 4.5 % preferred
 5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
 Tie-in to nearest joint (if needed)

Transition Cross Slope
 < 0.5 % change per foot longitudinally

Running Slope
 < 4.5 % preferred

TS

Turning Space
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R

Ramp

Cross Slope
 1.5 % Preferred
 2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

B

Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare

Cross Slope
 4:1 maxium (adjacent to non-walkable surface)
 10:1 maxium (adjacent to walkable surface)

4
10

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Flexible Delineator

Concrete Median Paving

Sidewalk Concrete 4IN (Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

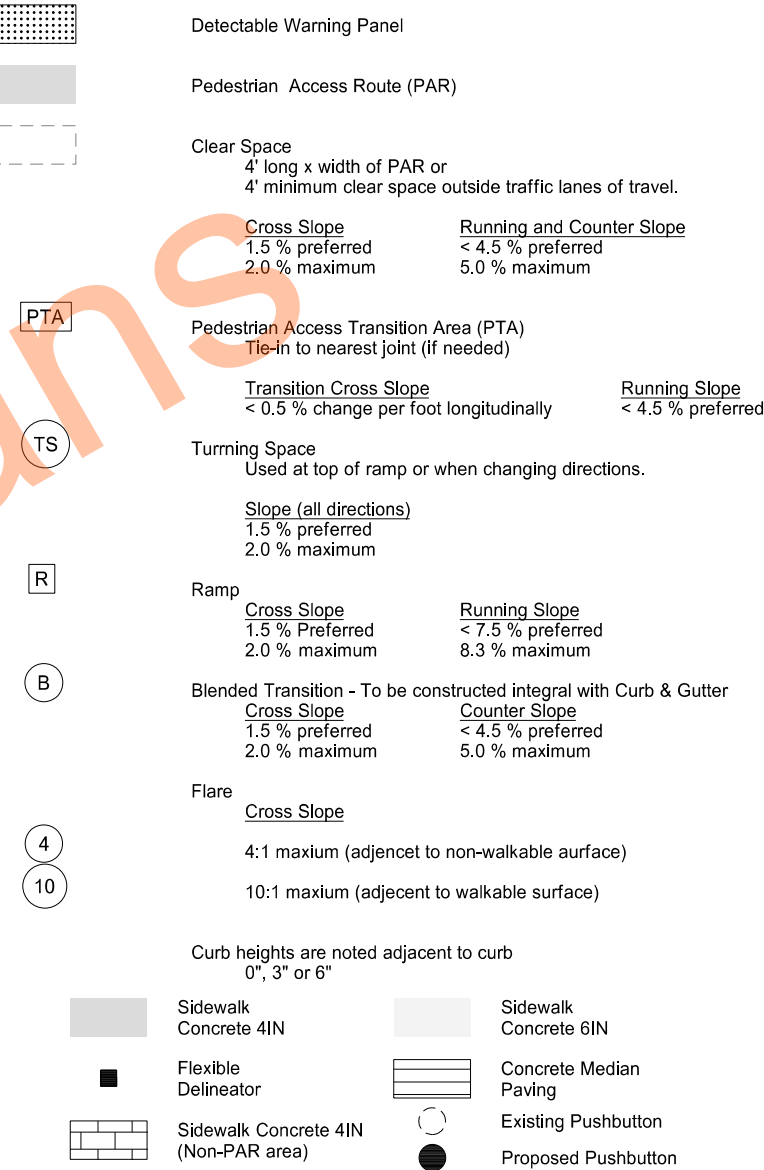
- Notes:
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 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

7th Street
Front Ave to Broadway



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ183	415490.017	1898317.57	1671.748	1612.516 R1	52.838
ADPZ184	415491.968	1898317.625	1671.831	1614.468 R1	52.853
ADPZ185	415497.406	1898317.692	1672.038	1619.906 R1	52.809
ADPZ186	415490	1898313.683	1671.716	1612.420 R1	48.952
ADPZ187	415500.157	1898294.858	1671.237	1622.191 R1	29.924
ADPZ189	415490.082	1898303.775	1671.643	1612.300 R1	39.044
ADPZ190	415490.124	1898298.775	1671.053	1612.240 R1	34.045
ADPZ191	415490.157	1898294.775	1671.037	1612.191 R1	30.045
ADPZ192	415490.264	1898292.277	1671.277	1612.247 R1	27.546
ADPZ194	415492.293	1898289.86	1671.012	1614.227 R1	25.088
ADPZ196	415492.252	1898294.792	1671.098	1614.287 R1	30.02
ADPZ197	415500.124	1898298.858	1671.297	1622.239 R1	33.924
ADPZ200	415499.745	1898300.415	1671.344	1621.892 R1	35.488
ADPZ203	415496.293	1898289.893	1670.998	1618.227 R1	25.039
ADPZ204	415496.295	1898289.646	1670.995	1618.224 R1	24.792
ADPZ207	415497.679	1898303.737	1671.344	1619.894 R1	38.852
ADPZ208	415496.174	1898302.24	1671.304	1618.359 R1	37.385
ADPZ209	415507.321	1898289.94	1671.492	1629.253 R1	24.861
ADPZ212	415497.466	1898289.677	1671.49	1619.395 R1	24.799
ADPZ213	415496.219	1898298.826	1671.239	1618.335 R1	33.971
ADPZ240	415492.219	1898298.792	1671.219	1614.335 R1	34.019
ADPZ241	415496.252	1898294.826	1671.179	1618.286 R1	29.971
ADPZ263	415492.174	1898302.186	1671.27	1614.359 R1	37.413
ADPZ264	415512.86	1898290.103	1671.58	1634.794 R1	24.911
ADPZ265	415512.577	1898294.961	1671.776	1634.610 R1	29.774
ADPZ266	415512.489	1898298.961	1671.813	1634.604 R1	33.774
ADPZ268	415512.461	1898300.668	1671.811	1634.611 R1	35.482
ADPZ690	415493.671	1898293.078		1615.670 R1	28.276



Notes:

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3. See Section 150 for reset and relocated pedestrian push button locations.

7th Street
Front Ave to Broadway

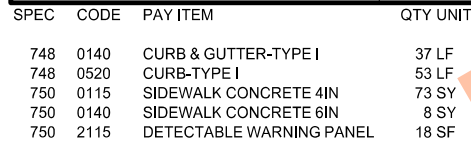


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POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ205	415814.617	1898226.463	1675.065	1935.191 R1	-44.869
ADPZ214	415787.143	1898236.886	1675.392	1907.935 R1	-33.887
ADPZ215	415787.004	1898244.208	1675.348	1907.945 R1	-26.564
ADPZ216	415786.857	1898246.364	1675.286	1907.843 R1	-24.406
ADPZ217	415791.482	1898246.47	1675.32	1912.469 R1	-24.394
ADPZ218	415797.701	1898237.075	1675.073	1918.495 R1	-33.914
ADPZ219	415797.551	1898243.573	1674.975	1918.477 R1	-27.414
ADPZ220	415797.481	1898246.609	1674.86	1918.469 R1	-24.378
ADPZ221	415802.7	1898237.191	1675.073	1923.495 R1	-33.9
ADPZ222	415802.55	1898243.689	1674.975	1923.477 R1	-27.4
ADPZ223	415802.479	1898246.724	1674.893	1923.469 R1	-24.364
ADPZ224	415805.478	1898246.632	1675.163	1926.465 R1	-24.518
ADPZ225	415807.705	1898243.808	1675.073	1928.634 R1	-27.386
ADPZ226	415807.855	1898237.31	1675.073	1928.652 R1	-33.886
ADPZ227	415808.561	1898243.828	1675.065	1929.490 R1	-27.384
ADPZ228	415814.31	1898239.732	1674.997	1935.155 R1	-31.596
ADPZ229	415814.363	1898237.46	1674.975	1935.161 R1	-33.869
ADPZ230	415807.97	1898232.311	1675.073	1928.665 R1	-38.886
ADPZ231	415814.478	1898232.461	1674.975	1935.174 R1	-38.869
ADPZ232	415816.565	1898240.087	1675.045	1937.417 R1	-31.287
ADPZ233	415818.059	1898237.545	1674.749	1938.858 R1	-33.859
ADPZ234	415818.174	1898232.546	1674.687	1938.871 R1	-38.859
ADPZ235	415819.471	1898232.576	1674.667	1940.168 R1	-38.855
ADPZ236	415819.65	1898226.531	1675.075	1940.224 R1	-44.903
ADPZ237	415817.804	1898220.24	1675.038	1938.250 R1	-51.155
ADPZ238	415819.756	1898220.305	1674.98	1940.204 R1	-51.13
ADPZ239	415808.248	1898220.273	1675.338	1928.697 R1	-50.928
ADPZ269	415808.109	1898226.313	1675.163	1928.681 R1	-44.886
ADPZ692	415803.576	1898230.745		1924.239 R1	-40.362

- Notes:
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 3. See Section 150 for reset and relocated pedestrian push button locations.

A circular professional engineer seal for the State of North Dakota. The outer ring contains the text "REGISTERED PROFESSIONAL ENGINEER" at the top and "NORTH DAKOTA" at the bottom. In the center, the name "KYLE W. RIETH" is printed in bold, with a blue ink signature over it. Below the name is the license number "PE-41069". At the bottom center, it says "DATE 07/22/25".



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ242	415788.838	1898295.71	1675.438	1910.829 R1	24.89
ADPZ243	415788.838	1898297.647	1675.47	1910.869 R1	26.826
ADPZ244	415788.602	1898304.569	1675.571	1910.774 R1	33.751
ADPZ245	415789.426	1898304.574	1675.583	1911.598 R1	33.74
ADPZ246	415789.72	1898304.576	1675.574	1911.892 R1	33.736
ADPZ247	415789.186	1898311.275	1675.708	1911.495 R1	40.444
ADPZ248	415792.371	1898295.759	1675.483	1914.362 R1	24.867
ADPZ249	415792.754	1898295.767	1675.5	1914.745 R1	24.867
ADPZ250	415798.753	1898295.886	1675.074	1920.745 R1	24.864
ADPZ251	415798.663	1898300.39	1675.22	1920.747 R1	29.369
ADPZ252	415798.53	1898307.036	1675.286	1920.751 R1	36.016
ADPZ253	415798.442	1898311.458	1675.331	1920.753 R1	40.439
ADPZ254	415798.432	1898311.958	1675.781	1920.753 R1	40.939
ADPZ255	415789.176	1898311.775	1675.717	1911.495 R1	40.944
ADPZ256	415802.752	1898295.969	1675.125	1924.745 R1	24.865
ADPZ257	415802.662	1898300.47	1675.26	1924.747 R1	29.367
ADPZ258	415802.941	1898311.547	1675.263	1925.252 R1	40.436
ADPZ259	415802.432	1898312.037	1675.771	1924.753 R1	40.937
ADPZ260	415808.6	1898297.303	1675.449	1930.620 R1	26.079
ADPZ261	415802.825	1898317.912	1675.168	1925.266 R1	46.802
ADPZ262	415802.325	1898317.903	1675.797	1924.766 R1	46.803
ADPZ267	415809.196	1898318.039	1675.072	1931.638 R1	46.799
ADPZ270	415817.549	1898334.785	1675.347	1940.331 R1	63.371
ADPZ271	415817.206	1898307.235	1675.201	1939.426 R1	35.834
ADPZ272	415814.786	1898313.15	1675.065	1937.128 R1	41.797
ADPZ273	415817.77	1898313.209	1674.843	1940.112 R1	41.795
ADPZ274	415817.701	1898318.209	1674.755	1940.145 R1	46.795
ADPZ275	415814.687	1898318.149	1674.99	1937.130 R1	46.797
ADPZ276	415808.915	1898334.472	1675.686	1931.692 R1	63.234
ADPZ277	415817.543	1898329.637	1675.307	1940.220 R1	58.225
ADPZ278	415802.507	1898334.32	1675.862	1925.282 R1	63.213
ADPZ279	415802.007	1898334.308	1675.876	1924.782 R1	63.211
ADPZ280	415802.602	1898329.321	1675.651	1925.276 R1	58.213
ADPZ407	415809.011	1898329.443	1675.554	1931.686 R1	58.204
ADPZ417	415817.669	1898320.51	1675.214	1940.160 R1	49.096
ADPZ693	415802.293	1898311.46		1924.602 R1	40.362
ADPZ694	415802.806	1898312.469		1925.136 R1	41.361
ADPZ695	415819.116	1898322.651		1941.650 R1	51.208

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope
 1.5 % preferred
 2.0 % maximum

Running and Counter Slope
 < 4.5 % preferred
 5.0 % maximum

PTA Pedestrian Access Transition Area (PTA)
 Tie-in to nearest joint (if needed)

Transition Cross Slope
 < 0.5 % change per foot longitudinally

Running Slope
 < 4.5 % preferred

TS Turning Space
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R Ramp

Cross Slope
 1.5 % Preferred
 2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

B Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare

Cross Slope
 4:1 maxium (adjacent to non-walkable surface)
 10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Flexible Delineator

Concrete Median Paving

Sidewalk Concrete 4IN (Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

Notes:

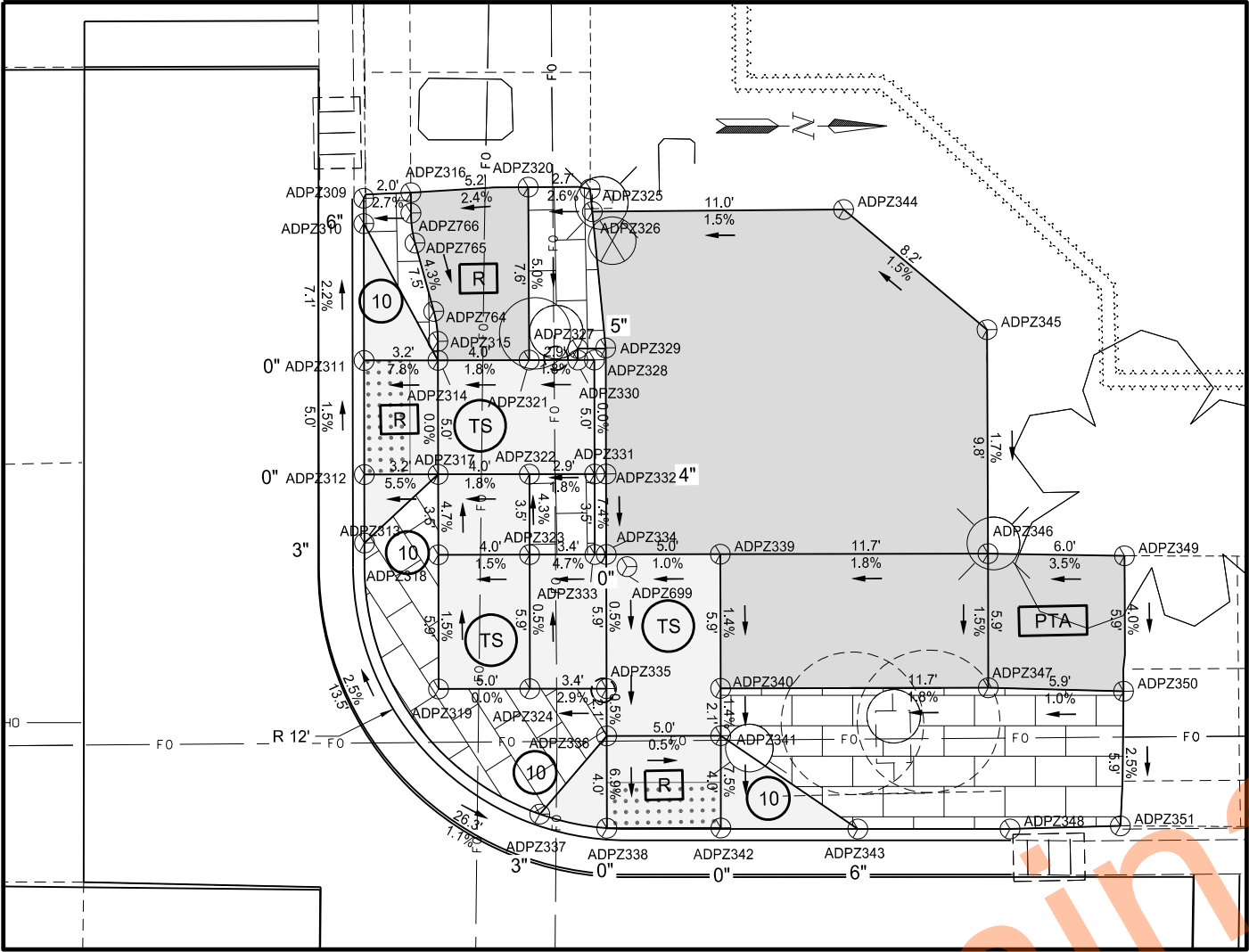
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3. See Section 150 for reset and relocated pedestrian push button locations.

7th Street
Front Ave to Broadway



SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	52	LF
748	0520	CURB-TYPE I	10	LF
750	0115	SIDEWALK CONCRETE 4IN	62	SY
750	0140	SIDEWALK CONCRETE 6IN	22	SY
750	2115	DETECTABLE WARNING PANEL	20	SF

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	82	11



NW Corner 7th St and Broadway Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ309	415868.989	1898220.518	1674.806	1989.430 R1	-51.921
ADPZ310	415868.969	1898221.629	1674.809	1989.433 R1	-50.81
ADPZ311	415868.859	1898227.628	1674.285	1989.446 R1	-44.81
ADPZ312	415868.768	1898232.627	1674.361	1989.456 R1	-39.81
ADPZ313	415868.713	1898235.627	1674.684	1989.463 R1	-36.81
ADPZ314	415872.093	1898227.687	1674.538	1992.680 R1	-44.817
ADPZ315	415872.108	1898226.856	1674.573	1992.678 R1	-45.647
ADPZ316	415871.059	1898220.311	1674.86	1991.496 R1	-52.17
ADPZ317	415872.001	1898232.686	1674.538	1992.690 R1	-39.817
ADPZ318	415871.937	1898236.211	1674.702	1992.697 R1	-36.291
ADPZ319	415871.829	1898242.092	1674.792	1992.710 R1	-30.409
ADPZ320	415876.204	1898220.177	1674.992	1996.637 R1	-52.409
ADPZ321	415876.092	1898227.76	1674.61	1996.680 R1	-44.825
ADPZ322	415876.001	1898232.759	1674.61	1996.691 R1	-39.825
ADPZ323	415875.937	1898236.284	1674.762	1996.698 R1	-36.3
ADPZ324	415875.829	1898242.165	1674.792	1996.711 R1	-30.418
ADPZ325	415878.916	1898220.315	1675.062	1999.351 R1	-52.326
ADPZ326	415878.994	1898221.312	1675.061	1999.449 R1	-51.331
ADPZ327	415878.232	1898227.299	1675.056	1998.809 R1	-45.33
ADPZ328	415878.223	1898227.799	1674.648	1998.810 R1	-44.83
ADPZ329	415878.952	1898227.812	1674.661	1999.541 R1	-44.831
ADPZ330	415879.459	1898227.295	1675.056	2000.037 R1	-45.359
ADPZ331	415878.861	1898232.811	1674.661	1999.551 R1	-39.831
ADPZ332	415879.361	1898232.821	1674.973	2000.051 R1	-39.832

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ333	415878.797	1898236.336	1674.897	1999.559 R1	-36.306
ADPZ334	415879.297	1898236.346	1674.92	2000.059 R1	-36.307
ADPZ335	415879.189	1898242.226	1674.891	2000.071 R1	-30.425
ADPZ336	415879.152	1898244.3	1674.881	2000.076 R1	-28.351
ADPZ337	415876.155	1898247.667	1674.885	1997.149 R1	-24.923
ADPZ338	415879.078	1898248.345	1674.603	2000.084 R1	-24.305
ADPZ339	415884.296	1898236.437	1674.97	2005.059 R1	-36.317
ADPZ340	415884.189	1898242.318	1674.885	2005.071 R1	-30.436
ADPZ341	415884.151	1898244.392	1674.856	2005.076 R1	-28.361
ADPZ342	415884.077	1898248.436	1674.551	2005.084 R1	-24.316
ADPZ343	415890.075	1898248.603	1674.989	2011.085 R1	-24.272
ADPZ344	415890.009	1898221.441	1675.226	2010.465 R1	-51.427
ADPZ345	415896.185	1898226.836	1675.349	2016.750 R1	-46.159
ADPZ346	415896.026	1898236.651	1675.181	2016.791 R1	-36.343
ADPZ347	415895.918	1898242.532	1675.093	2016.803 R1	-30.461
ADPZ348	415896.746	1898248.739	1674.919	2017.757 R1	-24.272
ADPZ349	415902.005	1898236.868	1675.389	2022.773 R1	-36.247
ADPZ350	415901.843	1898242.804	1675.153	2022.732 R1	-30.309
ADPZ351	415901.584	1898248.702	1675.006	2022.593 R1	-24.407
ADPZ699	415880.192	1898236.899		2000.965 R1	-35.772
ADPZ764	415871.956	1898225.538	1674.631	1992.499 R1	-46.962
ADPZ765	415871.195	1898222.529	1674.764	1991.676 R1	-49.955
ADPZ766	415871.043	1898221.211	1674.821	1991.498 R1	-51.27

PTA

TS

R

B

4

10

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjencet to non-walkable surface)

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.

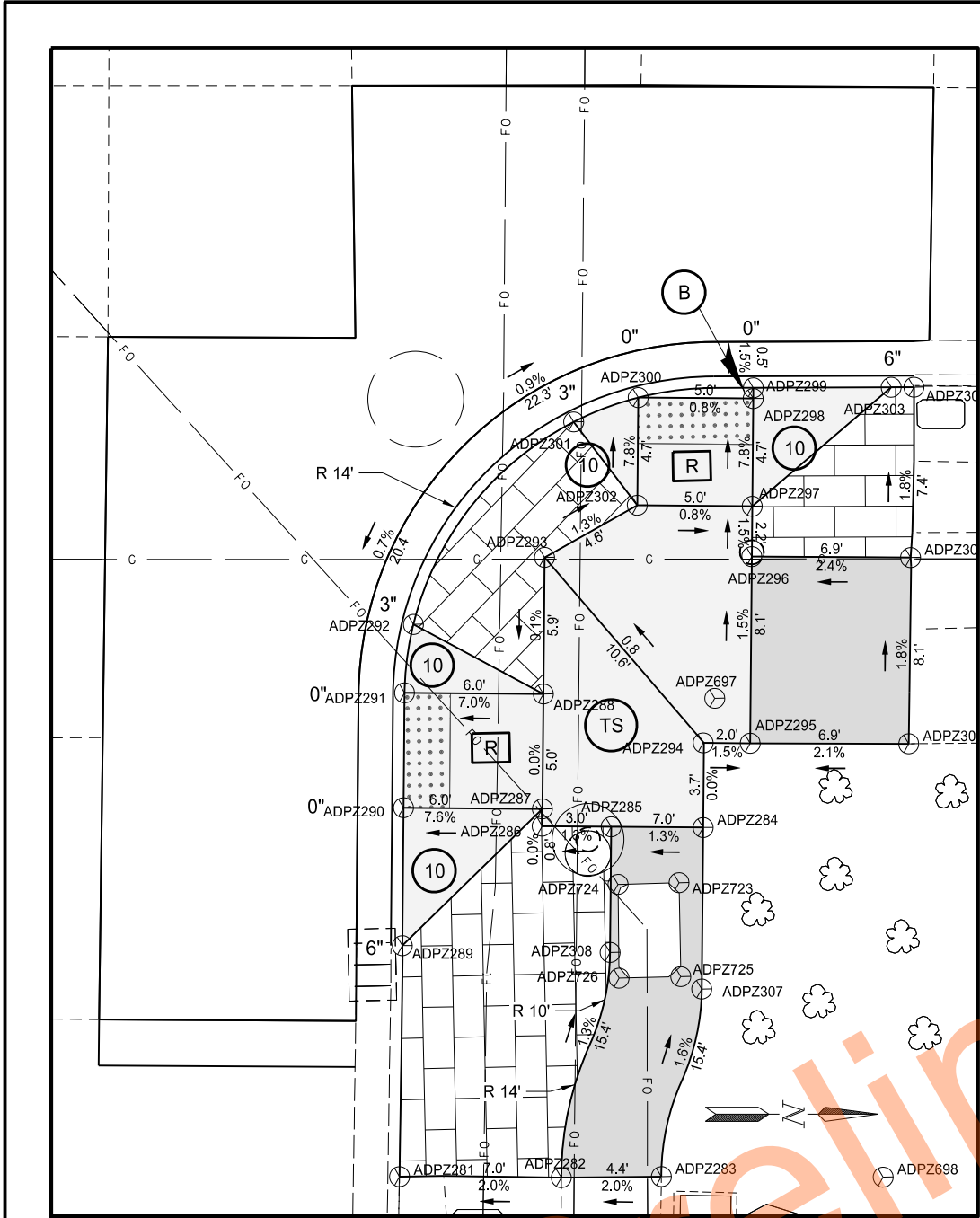
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3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

7th Street
Front Ave to Broadway





SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	42	LF
750	0115	SIDEWALK CONCRETE 4IN	34	SY
750	0140	SIDEWALK CONCRETE 6IN	24	SY
750	2115	DETECTABLE WARNING PANEL	20	SF

NE Corner 7th St and Broadway Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ281	415866.751	1898332.009	1675.131	1989.466 R1	59.593
ADPZ282	415873.785	1898332.194	1675.266	1996.502 R1	59.634
ADPZ283	415878.137	1898332.239	1675.358	2000.854 R1	59.59
ADPZ284	415880.262	1898317.094	1675.111	2002.670 R1	44.406
ADPZ285	415876.264	1898316.978	1675.059	1998.671 R1	44.371
ADPZ286	415873.265	1898316.891	1675.019	1995.671 R1	44.345
ADPZ287	415873.287	1898316.141	1675.019	1995.677 R1	43.595
ADPZ288	415873.432	1898311.143	1675.019	1995.720 R1	38.595
ADPZ289	415867.075	1898321.963	1675.092	1989.586 R1	49.542
ADPZ290	415867.25	1898315.966	1674.562	1989.638 R1	43.543
ADPZ291	415867.395	1898310.968	1674.596	1989.681 R1	38.543
ADPZ292	415867.842	1898308.002	1674.868	1990.068 R1	35.568
ADPZ293	415873.605	1898305.204	1675.026	1995.772 R1	32.653
ADPZ294	415880.34	1898313.41	1675.09	2002.673 R1	40.72
ADPZ295	415882.385	1898313.469	1675.09	2004.718 R1	40.738
ADPZ296	415882.621	1898305.35	1674.959	2004.789 R1	32.616
ADPZ297	415882.684	1898303.164	1674.926	2004.808 R1	30.429
ADPZ298	415882.82	1898298.48	1674.561	2004.848 R1	25.743
ADPZ299	415882.834	1898298.013	1674.561	2004.852 R1	25.276
ADPZ300	415877.822	1898298.335	1674.601	1999.849 R1	25.7
ADPZ301	415874.994	1898299.336	1674.879	1997.042 R1	26.759
ADPZ302	415877.686	1898303.019	1674.966	1999.808 R1	30.385
ADPZ303	415888.833	1898298.111	1674.999	2010.852 R1	25.252
ADPZ304	415889.821	1898298.127	1675.022	2011.840 R1	25.248
ADPZ305	415889.525	1898305.533	1675.123	2011.696 R1	32.658
ADPZ306	415889.279	1898313.632	1675.23	2011.615 R1	40.76
ADPZ307	415880.058	1898324.116	1675.224	2002.609 R1	51.43
ADPZ308	415876.105	1898322.442	1675.131	1998.623 R1	49.837
ADPZ697	415880.886	1898311.483	1675.28	2003.179 R1	38.783
ADPZ723	415879.166	1898319.469	1675.28	2001.623 R1	46.802
ADPZ724	415876.512	1898319.49	1675.28	1998.970 R1	46.878
ADPZ725	415879.158	1898323.559	1675.29	2001.698 R1	50.891
ADPZ726	415876.474	1898323.57	1675.29	1999.015 R1	50.957

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

TS

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

B

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjencet to non-walkable surface)

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

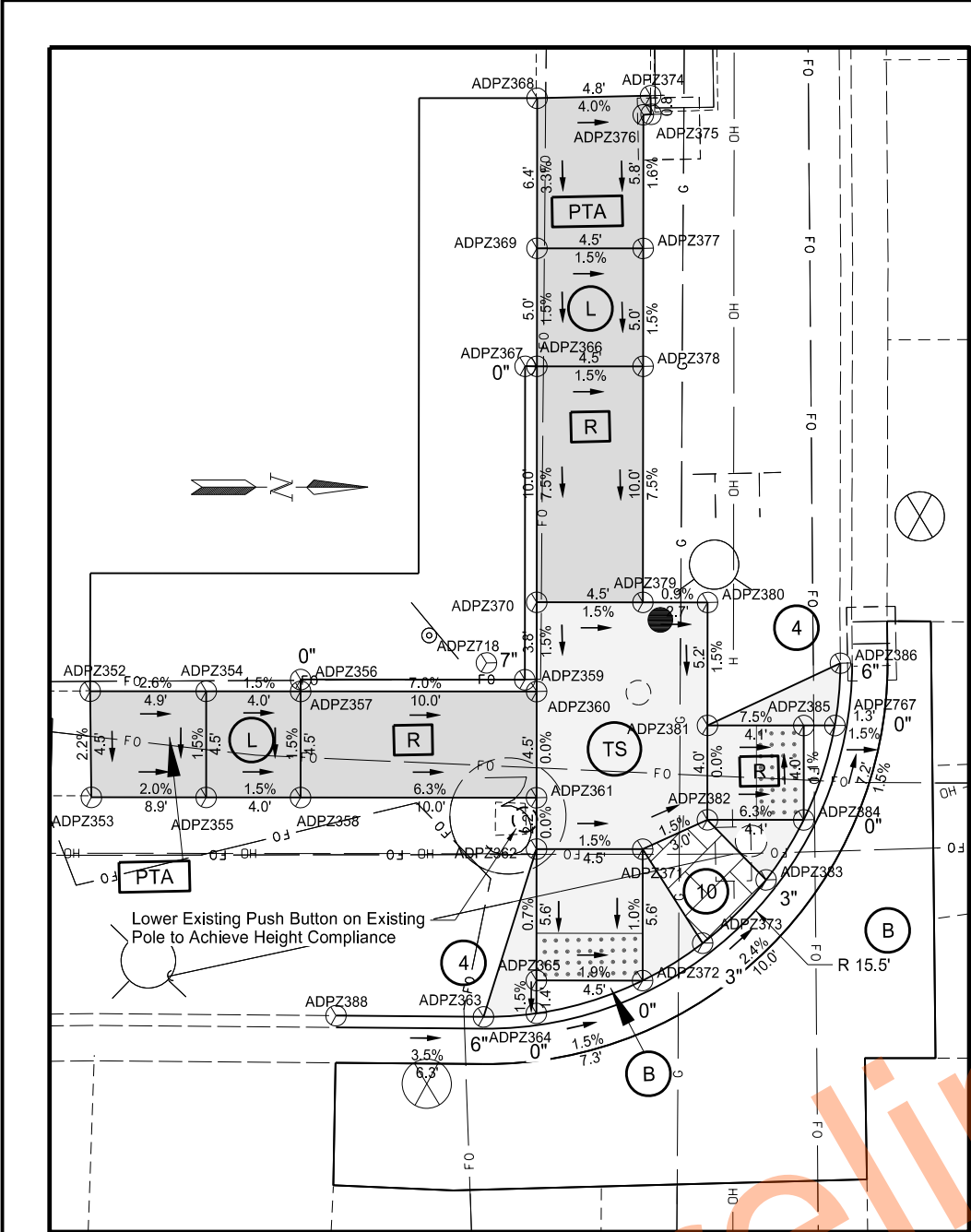
Proposed Pushbutton

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1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

7th Street
Front Ave to Broadway





SW Corner 9th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ352	414931.287	1898976.892	1670.656	50084.439 R1	-38.488
ADPZ353	414931.246	1898981.392	1670.561	50084.489 R1	-33.988
ADPZ354	414936.204	1898976.996	1670.53	50089.358 R1	-38.483
ADPZ355	414936.109	1898981.495	1670.463	50089.353 R1	-33.983
ADPZ356	414940.214	1898976.581	1670.47	50093.358 R1	-38.979
ADPZ357	414940.204	1898977.081	1670.47	50093.358 R1	-38.479
ADPZ358	414940.108	1898981.58	1670.402	50093.353 R1	-33.979
ADPZ359	414949.712	1898976.782	1670.32	50102.858 R1	-38.969
ADPZ360	414950.201	1898977.293	1669.77	50103.358 R1	-38.468
ADPZ361	414950.106	1898981.792	1669.77	50103.353 R1	-33.968
ADPZ362	414950.06	1898983.967	1669.77	50103.351 R1	-31.792
ADPZ363	414947.669	1898991.031	1670.251	50101.103 R1	-24.681
ADPZ364	414949.912	1898990.928	1669.716	50103.344 R1	-24.83
ADPZ365	414949.942	1898989.536	1669.73	50103.345 R1	-26.222
ADPZ366	414950.493	1898963.515	1670.577	50103.372 R1	-52.249
ADPZ367	414949.994	1898963.504	1670.47	50102.872 R1	-52.25
ADPZ368	414950.734	1898952.159	1670.862	50103.384 R1	-63.608
ADPZ369	414950.599	1898958.516	1670.652	50103.377 R1	-57.249
ADPZ370	414950.282	1898973.513	1669.827	50103.362 R1	-42.249
ADPZ371	414954.559	1898984.063	1669.701	50107.851 R1	-31.788
ADPZ372	414954.441	1898989.632	1669.643	50107.845 R1	-26.217
ADPZ373	414957.019	1898988.097	1669.818	50110.392 R1	-27.803
ADPZ374	414955.545	1898952.15	1670.67	50108.194 R1	-63.714
ADPZ375	414955.547	1898952.938	1670.673	50108.212 R1	-62.926
ADPZ376	414955.218	1898952.954	1670.673	50107.883 R1	-62.903
ADPZ377	414955.098	1898958.611	1670.584	50107.877 R1	-57.245
ADPZ378	414954.993	1898963.608	1670.509	50107.872 R1	-52.247
ADPZ379	414954.78	1898973.608	1669.759	50107.862 R1	-42.245
ADPZ380	414957.521	1898973.666	1669.734	50110.603 R1	-42.242
ADPZ381	414957.411	1898978.877	1669.655	50110.598 R1	-37.03
ADPZ382	414957.326	1898982.876	1669.655	50110.594 R1	-33.03
ADPZ383	414959.761	1898985.47	1669.723	50113.081 R1	-30.485
ADPZ384	414961.407	1898982.962	1669.397	50114.675 R1	-33.026
ADPZ385	414961.491	1898978.963	1669.351	50114.679 R1	-37.026
ADPZ386	414963.097	1898976.356	1669.787	50116.232 R1	-39.665
ADPZ387	414963.098	1898976.307	1669.79	50116.232 R1	-39.714
ADPZ388	414941.423	1898990.852	1670.47	50094.854 R1	-24.735
ADPZ718	414948.1	1898976.038		50101.232 R1	-39.681
ADPZ767	414962.807	1898978.991	1669.331	50115.995 R1	-37.025

SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	31	LF
748	0520	CURB-TYPE I	24	LF
750	0115	SIDEWALK CONCRETE 4IN	22	SY
750	0140	SIDEWALK CONCRETE 6IN	16	SY
750	2115	DETECTABLE WARNING PANEL	17	SF

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	13

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

TS

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

B

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjacent to non-walkable surface)
10:1 maxium (adjacent to walkable surface)

4

10

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

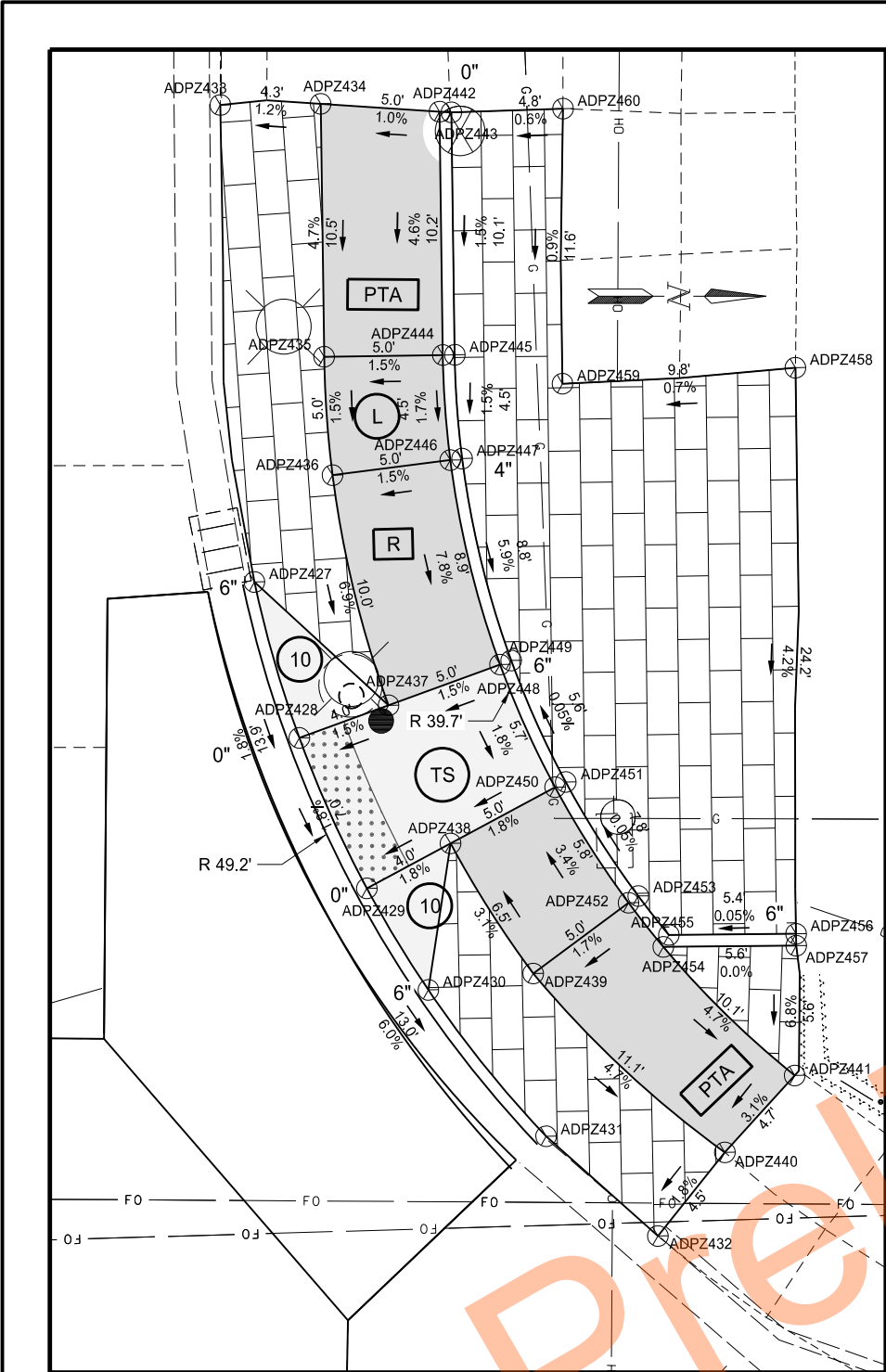
Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

9th Street
Front Ave to Main Ave





NW Corner 9th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ427	415006.064	1898956.478	1670.096	50158.789 R1	-60.404
ADPZ428	415007.82	1898963.085	1669.259	50160.678 R1	-53.835
ADPZ429	415010.534	1898969.479	1669.136	50163.521 R1	-47.497
ADPZ430	415013.037	1898973.807	1669.362	50166.110 R1	-43.219
ADPZ431	415017.868	1898980.073	1669.109	50171.067 R1	-37.053
ADPZ432	415022.489	1898984.369	1668.802	50175.773 R1	-32.85
ADPZ433	415005.035	1898936.361	1670.527	50157.355 R1	-80.497
ADPZ434	415009.262	1898936.399	1670.58	50161.582 R1	-80.544
ADPZ435	415009.192	1898947.054	1670.084	50161.727 R1	-69.889
ADPZ436	415009.443	1898952.046	1670.009	50162.079 R1	-64.904
ADPZ437	415011.604	1898961.788	1669.319	50164.435 R1	-55.207
ADPZ438	415014.095	1898967.657	1669.207	50167.045 R1	-49.39
ADPZ439	415017.465	1898973.209	1669.405	50170.526 R1	-43.907
ADPZ440	415025.382	1898980.905	1668.882	50178.596 R1	-36.372
ADPZ441	415028.371	1898977.747	1669.012	50181.521 R1	-39.59
ADPZ442	415014.259	1898936.831	1670.629	50166.587 R1	-80.213
ADPZ443	415014.759	1898936.869	1670.634	50167.088 R1	-80.185
ADPZ444	415014.191	1898947.082	1670.159	50166.726 R1	-69.963
ADPZ445	415014.696	1898947.085	1670.477	50167.231 R1	-69.97
ADPZ446	415014.415	1898951.515	1670.084	50167.039 R1	-65.535
ADPZ447	415014.912	1898951.462	1670.41	50167.535 R1	-65.598
ADPZ448	415016.334	1898960.167	1669.394	50169.132 R1	-56.923
ADPZ449	415016.807	1898960.005	1669.89	50169.602 R1	-57.095
ADPZ450	415018.547	1898965.38	1669.295	50171.449 R1	-51.756
ADPZ451	415019.019	1898965.138	1669.888	50171.916 R1	-52.007
ADPZ452	415021.522	1898970.323	1669.49	50174.523 R1	-46.874
ADPZ453	415021.975	1898970.001	1669.886	50174.970 R1	-47.205
ADPZ454	415023.012	1898972.197	1669.379	50176.051 R1	-45.03
ADPZ455	415023.21	1898971.699	1669.885	50176.239 R1	-45.532
ADPZ456	415028.568	1898971.762	1669.883	50181.597 R1	-45.577
ADPZ457	415028.566	1898972.262	1669.379	50181.605 R1	-45.077
ADPZ458	415029.028	1898947.921	1670.651	50181.577 R1	-69.423
ADPZ459	415019.203	1898948.393	1670.579	50171.763 R1	-68.753
ADPZ460	415019.463	1898936.811	1670.678	50171.790 R1	-80.338
ADPZ709	415053.889	1898947.301		50206.420 R1	-70.544

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	82	15

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

TS

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

B

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjencet to non-walkable surface)

4

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

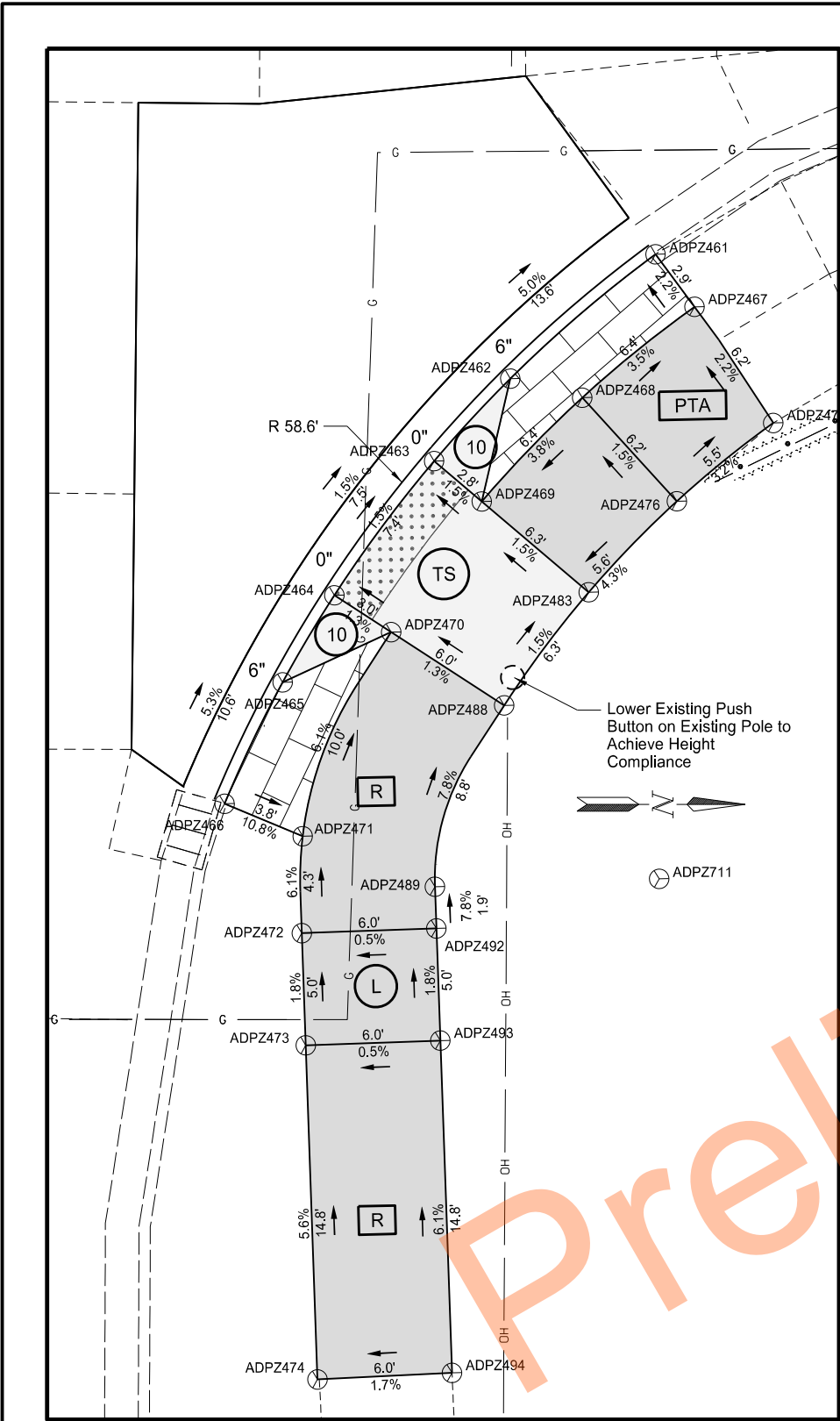
Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

9th Street
Front Ave to Main Ave





SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	32 LF
750	0115	SIDEWALK CONCRETE 4IN	36 SY
750	0140	SIDEWALK CONCRETE 6IN	8 SY
750	2115	DETECTABLE WARNING PANEL	15 SF

NE Corner 9th St and Front Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ461	415025.383	1899047.029	1668.386	50179.930 R1	29.738
ADPZ462	415018.8	1899052.437	1668.673	50173.457 R1	35.278
ADPZ463	415015.331	1899056.037	1668.385	50170.061 R1	38.948
ADPZ464	415010.765	1899061.925	1668.5	50165.615 R1	44.926
ADPZ465	415008.381	1899065.755	1669.249	50163.309 R1	48.803
ADPZ466	415005.686	1899071.109	1669.56	50160.722 R1	54.211
ADPZ467	415027.074	1899049.405	1668.446	50181.668 R1	32.08
ADPZ468	415021.987	1899053.35	1668.671	50176.662 R1	36.127
ADPZ469	415017.417	1899057.881	1668.426	50172.184 R1	40.749
ADPZ470	415013.263	1899063.617	1668.54	50168.146 R1	46.568
ADPZ471	415009.134	1899072.627	1669.15	50164.200 R1	55.659
ADPZ472	415009.008	1899076.943	1669.41	50164.162 R1	59.977
ADPZ473	415009.082	1899081.943	1669.51	50164.336 R1	64.974
ADPZ474	415009.302	1899096.834	1670.345	50164.856 R1	79.858
ADPZ475	415030.476	1899054.65	1668.587	50185.175 R1	37.255
ADPZ476	415026.11	1899058.047	1668.765	50180.879 R1	40.74
ADPZ477	415026.182	1899057.99	1668.762	50180.949 R1	40.682
ADPZ483	415022.101	1899062.02	1668.52	50176.950 R1	44.793
ADPZ488	415018.23	1899066.983	1668.61	50173.180 R1	49.832
ADPZ489	415014.98	1899074.997	1669.30	50170.093 R1	57.91
ADPZ492	415015.008	1899076.855	1669.45	50170.158 R1	59.768
ADPZ493	415015.082	1899081.854	1669.54	50170.332 R1	64.765
ADPZ494	415015.3	1899096.664	1670.447	50170.849 R1	79.567
ADPZ710	415058.896	1899094.538		50214.394 R1	76.562
ADPZ711	415024.979	1899074.85		50180.018 R1	49.832
ADPZ712	415056.986	1899093.22		50212.458 R1	75.283

PTA

TS

R

B

4

10

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjencet to non-walkable surface)

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Flexible Delineator

Concrete Median Paving

Sidewalk Concrete 4IN (Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.

2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.

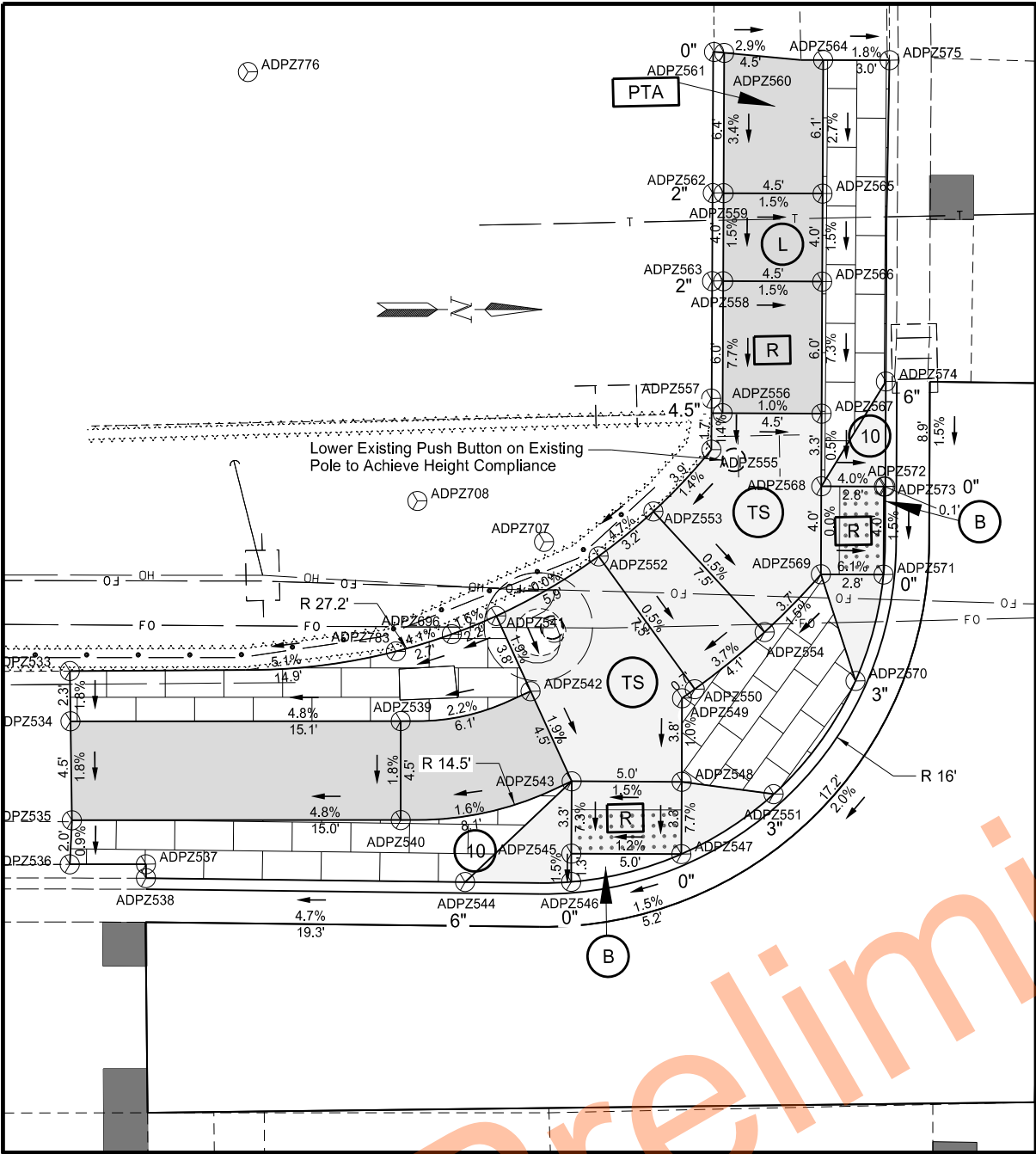
3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

9th Street
Front Ave to Main Ave



SW Corner 9th St and Main Ave



SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	51	LF
748	0520	CURB-TYPE I	16	LF
750	0115	SIDEWALK CONCRETE 4IN	42	SY
750	0140	SIDEWALK CONCRETE 6IN	21	SY
750	2115	DETECTABLE WARNING PANEL	18	SF

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ533	415379.271	1898994.567	1670.999	50532.689 R1	-29.846
ADPZ534	415379.257	1898996.85	1670.959	50532.720 R1	-27.563
ADPZ535	415379.228	1899001.35	1670.879	50532.783 R1	-23.063
ADPZ536	415379.091	1899003.348	1670.86	50532.686 R1	-21.063
ADPZ537	415382.554	1899003.416	1671.029	50536.149 R1	-21.064
ADPZ538	415382.541	1899004.046	1671.025	50536.149 R1	-20.434
ADPZ539	415394.263	1898997.146	1671.684	50547.729 R1	-27.569
ADPZ540	415394.174	1899001.645	1671.603	50547.731 R1	-23.069
ADPZ541	415398.699	1898992.461	1671.89	50552.070 R1	-32.343
ADPZ542	415400.189	1898995.911	1671.819	50553.630 R1	-28.923
ADPZ543	415401.974	1899000.042	1671.733	50555.497 R1	-24.829
ADPZ544	415397.037	1899004.518	1671.748	50550.651 R1	-20.254
ADPZ545	415401.893	1899003.327	1671.494	50555.482 R1	-21.543
ADPZ546	415401.861	1899004.61	1671.475	50555.476 R1	-20.26
ADPZ547	415406.891	1899003.45	1671.555	50560.482 R1	-21.521
ADPZ548	415406.972	1899000.166	1671.808	50560.497 R1	-24.806
ADPZ549	415407.066	1898996.371	1671.846	50560.515 R1	-28.602
ADPZ550	415407.654	1898995.973	1671.853	50561.094 R1	-29.012
ADPZ551	415411.138	1899000.812	1671.905	50564.675 R1	-24.244
ADPZ552	415403.406	1898989.846	1671.89	50556.724 R1	-35.052
ADPZ553	415405.938	1898987.859	1672.041	50559.215 R1	-37.09
ADPZ554	415410.881	1898993.44	1672.004	50564.269 R1	-31.609
ADPZ555	415408.633	1898985.107	1672.096	50561.854 R1	-39.895
ADPZ556	415409.174	1898983.46	1672.121	50562.362 R1	-41.553
ADPZ557	415408.668	1898982.781	1672.546	50561.842 R1	-42.222
ADPZ558	415409.322	1898977.462	1672.583	50562.389 R1	-47.553
ADPZ559	415409.421	1898973.463	1672.643	50562.407 R1	-51.553
ADPZ560	415409.579	1898967.09	1672.86	50562.437 R1	-57.927
ADPZ561	415409.12	1898967.039	1672.873	50561.977 R1	-57.97
ADPZ562	415408.932	1898973.449	1672.754	50561.918 R1	-51.557
ADPZ563	415408.818	1898977.448	1672.668	50561.885 R1	-47.557
ADPZ564	415414.07	1898967.504	1672.739	50566.935 R1	-57.604
ADPZ565	415413.92	1898973.574	1672.575	50566.907 R1	-51.532
ADPZ566	415413.821	1898977.573	1672.515	50566.889 R1	-47.532
ADPZ567	415413.673	1898983.571	1672.076	50566.861 R1	-41.532
ADPZ568	415413.591	1898986.869	1672.059	50566.846 R1	-38.233
ADPZ569	415413.492	1898990.868	1672.059	50566.828 R1	-34.233
ADPZ570	415414.963	1898995.746	1672.034	50568.398 R1	-29.386
ADPZ571	415416.338	1898990.939	1671.885	50569.675 R1	-34.22
ADPZ572	415416.437	1898986.94	1671.946	50569.693 R1	-38.22
ADPZ573	415416.502	1898986.941	1671.945	50569.758 R1	-38.22
ADPZ574	415416.62	1898982.17	1672.608	50569.780 R1	-42.993
ADPZ575	415417.089	1898967.574	1672.686	50569.955 R1	-57.595
ADPZ696	415396.667	1898993.244	1671.856	50550.054 R1	-31.519
ADPZ707	415400.943	1898989.137		50554.247 R1	-35.711
ADPZ708	415395.225	1898987.163		50548.490 R1	-37.57
ADPZ776	415387.922	1898967.516	0	50540.793 R1	-57.065
ADPZ783	415394.102	1898993.977	1671.754	50547.504 R1	-30.734

PTA

TS

R

B

4

10

Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope
1.5 % preferred
2.0 % maximum

Running and Counter Slope
< 4.5 % preferred
5.0 % maximum

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
< 0.5 % change per foot longitudinally

Running Slope
< 4.5 % preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp
Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
< 7.5 % preferred
8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter
Cross Slope
1.5 % preferred
2.0 % maximum

Counter Slope
< 4.5 % preferred
5.0 % maximum

Flare
Cross Slope
4:1 maxium (adjacent to non-walkable surface)

10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Sidewalk
Concrete 6IN

Flexible
Delineator

Concrete Median
Paving

Sidewalk Concrete 4IN
(Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

- Notes:
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
 3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

9th Street
Front Ave to Main Ave



Detectable Warning Panel

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope
 1.5 % preferred
 2.0 % maximum

Running and Counter Slope
 < 4.5 % preferred
 5.0 % maximum

PTA (Pedestrian Access Transition Area)

Pedestrian Access Transition Area (PTA)
 Tie-in to nearest joint (if needed)

Transition Cross Slope
 < 0.5 % change per foot longitudinally

Running Slope
 < 4.5 % preferred

TS (Turning Space)

Turning Space
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R (Ramp)

Ramp

Cross Slope
 1.5 % Preferred
 2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

B (Blended Transition)

Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare

Cross Slope
 4:1 maxium (adjacent to non-walkable surface)
 10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Flexible Delineator

Concrete Median Paving

Sidewalk Concrete 4IN (Non-PAR area)

Existing Pushbutton

Proposed Pushbutton

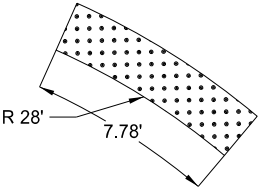
Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

9th Street
Front Ave to Main Ave



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ497	415378.172	1899045.494	1670.99	50532.616 R1	21.093
ADPZ498	415378.16	1899047.344	1670.987	50532.641 R1	22.943
ADPZ499	415378.114	1899054.341	1670.975	50532.736 R1	29.94
ADPZ500	415385.7	1899045.315	1671.17	50540.139 R1	20.763
ADPZ501	415385.655	1899047.498	1671.203	50540.138 R1	22.946
ADPZ502	415385.511	1899054.496	1671.308	50540.135 R1	29.946
ADPZ503	415393.194	1899046.426	1671.494	50547.654 R1	21.723
ADPZ504	415397.878	1899048.175	1671.207	50552.372 R1	23.376
ADPZ505	415396.947	1899050.149	1671.305	50551.481 R1	25.369
ADPZ506	415394.182	1899056.012	1671.403	50548.835 R1	31.286
ADPZ507	415404.833	1899052.728	1671.334	50559.417 R1	27.788
ADPZ508	415403.396	1899054.371	1671.422	50558.014 R1	29.46
ADPZ509	415404.289	1899065.039	1672.52	50559.121 R1	40.107
ADPZ510	415399.9	1899058.576	1671.504	50554.603 R1	33.734
ADPZ511	415399.599	1899059.003	1672.089	50554.311 R1	34.167
ADPZ512	415395.301	1899065.047	1672.571	50550.136 R1	40.297
ADPZ513	415408.309	1899056.322	1671.773	50562.965 R1	31.311
ADPZ515	415411.029	1899066.213	1671.93	50565.884 R1	41.146
ADPZ516	415403.39	1899062.044	1672.33	50558.163 R1	37.132
ADPZ517	415404.977	1899066.837	1672.034	50559.846 R1	41.892
ADPZ518	415403.973	1899074.086	1672.818	50558.988 R1	49.159
ADPZ519	415405.109	1899072.997	1672.769	50560.102 R1	48.047
ADPZ520	415405.631	1899073.188	1672.135	50560.628 R1	48.229
ADPZ521	415407.095	1899076.741	1672.27	50562.163 R1	51.751
ADPZ526	415406.589	1899076.929	1672.798	50561.661 R1	51.949
ADPZ527	415414.681	1899085.08	1672.67	50569.915 R1	59.935
ADPZ528	415414.46	1899088.137	1672.619	50569.756 R1	62.997
ADPZ530	415407.319	1899087.998	1672.727	50562.614 R1	63.001
ADPZ531	415406.745	1899087.987	1672.742	50562.040 R1	63.002
ADPZ532	415406.245	1899087.971	1672.742	50561.540 R1	62.996
ADPZ584	415411.244	1899088.075	1672.699	50566.540 R1	62.999
ADPZ596	415407.61	1899073.957	1672.13	50562.622 R1	48.958
ADPZ597	415411.626	1899074.004	1672.062	50566.638 R1	48.923
ADPZ598	415411.642	1899072.554	1672.044	50566.625 R1	47.473
ADPZ599	415411.232	1899068.575	1671.995	50566.135 R1	43.503
ADPZ600	415406.037	1899066.728	1672.052	50560.904 R1	41.761
ADPZ605	415412.414	1899062.94	1672.31	50567.203 R1	37.846
ADPZ705	415385.082	1899075.309		50540.126 R1	50.763
ADPZ706	415397.294	1899066.685		50552.162 R1	41.894
ADPZ756	415412.75	1899066.454	1672.311	50567.610 R1	41.352
ADPZ757	415413.222	1899068.37	1671.839	50568.120 R1	43.258
ADPZ758	415413.632	1899072.349	1671.888	50568.610 R1	47.228
ADPZ759	415414.181	1899072.292	1671.88	50569.158 R1	47.16
ADPZ760	415414.873	1899077.244	1672.493	50569.950 R1	52.097
ADPZ785	415405.94	1899073.938	1672.16	50560.952 R1	48.972



SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	57 LF
748	0520	CURB-TYPE I	30 LF
750	0115	SIDEWALK CONCRETE 4IN	48 SY
750	0140	SIDEWALK CONCRETE 6IN	15 SY
750	2115	DETECTABLE WARNING PANEL	24 SF

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Cross Slope

Cross Slope	Running and Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

PTA

Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope
 $< 0.5\%$ change per foot longitudinally

Running Slope
 $< 4.5\%$ preferred

Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

Ramp

Cross Slope
1.5 % Preferred
2.0 % maximum

Running Slope
 < 7.5 % preferred
 8.3 % maximum

Blended Transition - To be constructed integral with Curb & Gutter

<u>Cross Slope</u>	<u>Counter Slope</u>
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

Flare

Cross Slope

4:1 maxium (adjencet to non-walkable aurface)

10:1 maximum (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

Sidewalk
Concrete 4IN

Flexible Delineator

Sidewalk Concrete 4IN
(Non-PAR area)

Sidewalk
Concrete 6IN

Concrete Median Paving

Existing Pushbutton

Proposed Pushbutton

Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

NW Corner 9th St and Main Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADP2423	415481.323	1898991.076	1672.155	50634.650 R1	-35.393
ADP2514	415485.487	1898983.491	1672.571	50638.660 R1	-43.06
ADP2522	415485.172	1898982.44	1672.621	50638.323 R1	-44.105
ADP2523	415488.473	1898983.245	1672.662	50641.640 R1	-43.366
ADP2524	415488.979	1898983.247	1672.975	50642.146 R1	-43.375
ADP2525	415485.093	1898978.385	1672.68	50638.163 R1	-48.157
ADP2529	415487.694	1898988.69	1672.227	50640.971 R1	-37.907
ADP2576	415480.864	1898969.982	1672.794	50633.765 R1	-56.473
ADP2577	415484.871	1898969.64	1673.042	50637.765 R1	-56.896
ADP2578	415489.201	1898991.044	1672.622	50642.525 R1	-35.584
ADP2579	415480.755	1898978.38	1672.619	50633.826 R1	-48.075
ADP2580	415480.831	1898983.237	1672.576	50633.999 R1	-43.22
ADP2581	415483.259	1898990.573	1672.549	50636.575 R1	-35.935
ADP2582	415484.832	1898997.401	1672.164	50638.285 R1	-29.14
ADP2583	415488.845	1899000.383	1672.471	50642.358 R1	-26.239
ADP2585	415493.396	1899001.794	1672.532	50646.936 R1	-24.92
ADP2586	415498.391	1899002.019	1672.337	50651.934 R1	-24.796
ADP2587	415503.391	1899002.024	1672.394	50656.933 R1	-24.892
ADP2588	415503.39	1899002.16	1672.392	50656.936 R1	-24.756
ADP2589	415507.808	1899002.285	1672.903	50661.355 R1	-24.72
ADP2590	415522.867	1899002.563	1673.305	50676.417 R1	-24.745
ADP2591	415489.156	1898971.399	1673.217	50642.084 R1	-55.224
ADP2592	415489.011	1898975.997	1673.057	50642.032 R1	-50.624
ADP2593	415488.497	1898975.996	1673.038	50641.518 R1	-50.614
ADP2594	415488.484	1898987.736	1672.294	50641.742 R1	-38.876

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ595	415488.998	1898987.544	1672.931	50642.252 R1	-39.079
ADPZ601	415491.995	1898990.547	1672.934	50645.308 R1	-36.137
ADPZ602	415491.787	1898991.047	1672.341	50645.111 R1	-35.633
ADPZ603	415498.403	1898990.554	1673.071	50651.716 R1	-36.259
ADPZ604	415498.403	1898991.054	1672.652	50651.725 R1	-35.759
ADPZ606	415498.394	1898999.129	1672.53	50651.879 R1	-27.685
ADPZ607	415503.394	1898999.135	1672.585	50656.878 R1	-27.78
ADPZ608	415503.397	1898996.308	1672.628	50656.824 R1	-30.607
ADPZ609	415503.403	1898991.06	1672.707	50656.724 R1	-35.854
ADPZ610	415503.403	1898990.56	1673.175	50656.715 R1	-36.354
ADPZ611	415507.979	1898987.04	1673.372	50661.219 R1	-39.965
ADPZ612	415508.479	1898987.051	1673.379	50661.719 R1	-39.965
ADPZ613	415507.97	1898990.564	1673.275	50661.280 R1	-36.442
ADPZ614	415508.469	1898991.065	1673.097	50661.790 R1	-35.951
ADPZ615	415508.463	1898996.313	1673.018	50661.890 R1	-30.704
ADPZ616	415512.469	1898991.07	1673.157	50665.789 R1	-36.027
ADPZ617	415512.463	1898996.318	1673.078	50665.889 R1	-30.78
ADPZ618	415523.027	1898987.389	1673.611	50676.271 R1	-39.919
ADPZ619	415523.036	1898991.081	1673.566	50676.354 R1	-36.228
ADPZ620	415522.972	1898996.329	1673.403	50676.396 R1	-30.98
ADPZ700	415495.357	1898987.427		50648.607 R1	-39.324
ADPZ713	415486.284	1898996.025	1672.2	50639.709 R1	-30.545
ADPZ714	415489.196	1898996.028	1672.236	50642.620 R1	-30.6
ADPZ715	415498.397	1898996.039	1672.562	50651.820 R1	-30.775

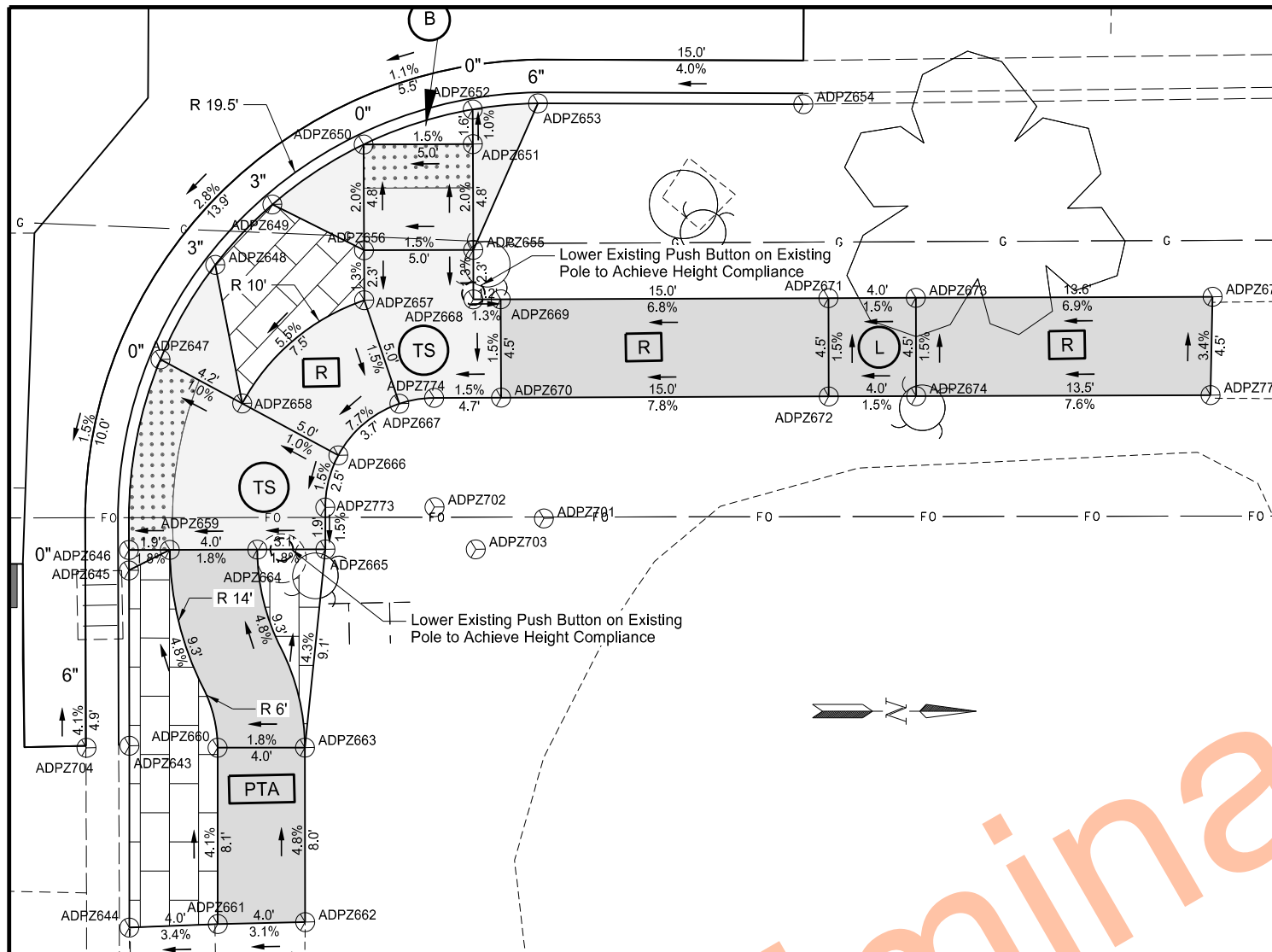
ADA Ramp Details

9th Street
Front Ave to Main Ave



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	82	20

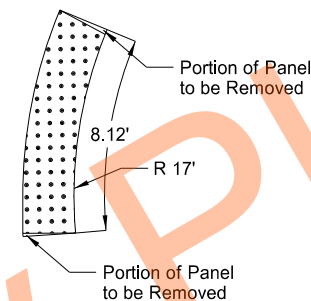
PEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	53 LF
750	0115	SIDEWALK CONCRETE 4IN	35 SY
750	0140	SIDEWALK CONCRETE 6IN	20 SY
750	2115	DETECTABLE WARNING PANEL	27 SF



NE Corner 9th St and Main Ave

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ643	415490.65	1899080.987	1672.3	50645.787 R1	54.312
ADPZ644	415490.476	1899089.305	1672.421	50645.780 R1	62.632
ADPZ645	415490.72	1899077.029	1672.242	50645.777 R1	50.354
ADPZ646	415490.808	1899072.03	1671.743	50645.764 R1	45.354
ADPZ647	415492.431	1899063.338	1671.879	50647.212 R1	36.63
ADPZ648	415495.025	1899059.063	1672.271	50649.719 R1	32.305
ADPZ649	415497.694	1899056.353	1672.38	50652.333 R1	29.541
ADPZ650	415501.928	1899053.694	1672.271	50656.512 R1	26.797
ADPZ651	415506.927	1899053.778	1672.347	50661.512 R1	26.78
ADPZ652	415506.954	1899052.192	1672.33	50661.507 R1	25.194
ADPZ653	415509.946	1899051.973	1672.95	50664.494 R1	24.915
ADPZ654	415522.086	1899052.261	1673.43	50676.637 R1	24.958
ADPZ655	415506.846	1899058.617	1672.444	50661.528 R1	31.62
ADPZ656	415501.846	1899058.533	1672.369	50656.528 R1	31.637
ADPZ657	415501.808	1899060.821	1672.335	50656.536 R1	33.925
ADPZ658	415496.129	1899065.429	1671.922	50650.951 R1	38.647
ADPZ659	415492.681	1899072.062	1671.777	50647.637 R1	45.348
ADPZ660	415494.682	1899081.158	1672.227	50649.821 R1	54.402
ADPZ661	415494.525	1899089.228	1672.557	50649.827 R1	62.473
ADPZ662	415498.526	1899089.221	1672.68	50653.827 R1	62.386

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ663	415498.681	1899081.236	1672.299	50653.821 R1	54.399
ADPZ664	415496.684	1899072.129	1671.849	50651.641 R1	45.334
ADPZ665	415499.802	1899072.182	1671.906	50654.759 R1	45.324
ADPZ666	415500.481	1899067.891	1671.972	50655.352 R1	41.02
ADPZ667	415503.321	1899065.587	1672.26	50658.144 R1	38.66
ADPZ668	415506.807	1899060.884	1672.414	50661.536 R1	33.888
ADPZ669	415508.057	1899060.905	1672.398	50662.786 R1	33.884
ADPZ670	415507.982	1899065.405	1672.33	50662.801 R1	38.384
ADPZ671	415523.055	1899061.158	1673.418	50677.786 R1	33.834
ADPZ672	415522.979	1899065.657	1673.485	50677.801 R1	38.334
ADPZ673	415527.055	1899061.225	1673.478	50681.786 R1	33.821
ADPZ674	415526.979	1899065.725	1673.545	50681.801 R1	38.321
ADPZ675	415540.636	1899061.454	1674.414	50695.369 R1	33.776
ADPZ701	415509.83	1899070.973		50664.761 R1	43.913
ADPZ702	415504.833	1899070.352		50659.753 R1	43.394
ADPZ703	415506.682	1899072.323		50661.641 R1	45.327
ADPZ704	415488.683	1899081.042		50643.821 R1	54.406
ADPZ773	415499.834	1899070.268	1671.934	50654.753 R1	43.41
ADPZ774	415504.917	1899065.353	1672.284	50659.736 R1	38.394
ADPZ775	415540.451	1899065.952	1674.566	50695.275 R1	38.276



- Detectable Warning Panel**

Pedestrian Access Route (PAR)

Clear Space
 4' long x width of PAR or
 4' minimum clear space outside traffic lanes of travel.

Cross Slope 1.5 % preferred 2.0 % maximum	Running and Counter Slope <u>< 4.5 % preferred</u> 5.0 % maximum
--	--

PTA Pedestrian Access Transition Area (PTA)
 Tie-in to nearest joint (if needed)

Transition Cross Slope < 0.5 % change per foot longitudinally	Running Slope <u>< 4.5 % preferred</u>
---	---

TS Turning Space
 Used at top of ramp or when changing directions.

Slope (all directions)
 1.5 % preferred
 2.0 % maximum

R Ramp

Cross Slope 1.5 % Preferred 2.0 % maximum	Running Slope < 7.5 % preferred 8.3 % maximum
--	--

B Blended Transition - To be constructed integral with Curb & Gutter

Cross Slope 1.5 % preferred 2.0 % maximum	Counter Slope < 4.5 % preferred 5.0 % maximum
--	--

Flare
Cross Slope
 4:1 maxium (adjacent to non-walkable surface)
 10:1 maxium (adjacent to walkable surface)

Curb heights are noted adjacent to curb
 0", 3" or 6"

Sidewalk Concrete 4IN	Sidewalk Concrete 6IN
Flexible Delineator	Concrete Median Paving
Sidewalk Concrete 4IN (Non-PAR area)	Existing Pushbutton
	Proposed Pushbutton

Notes:

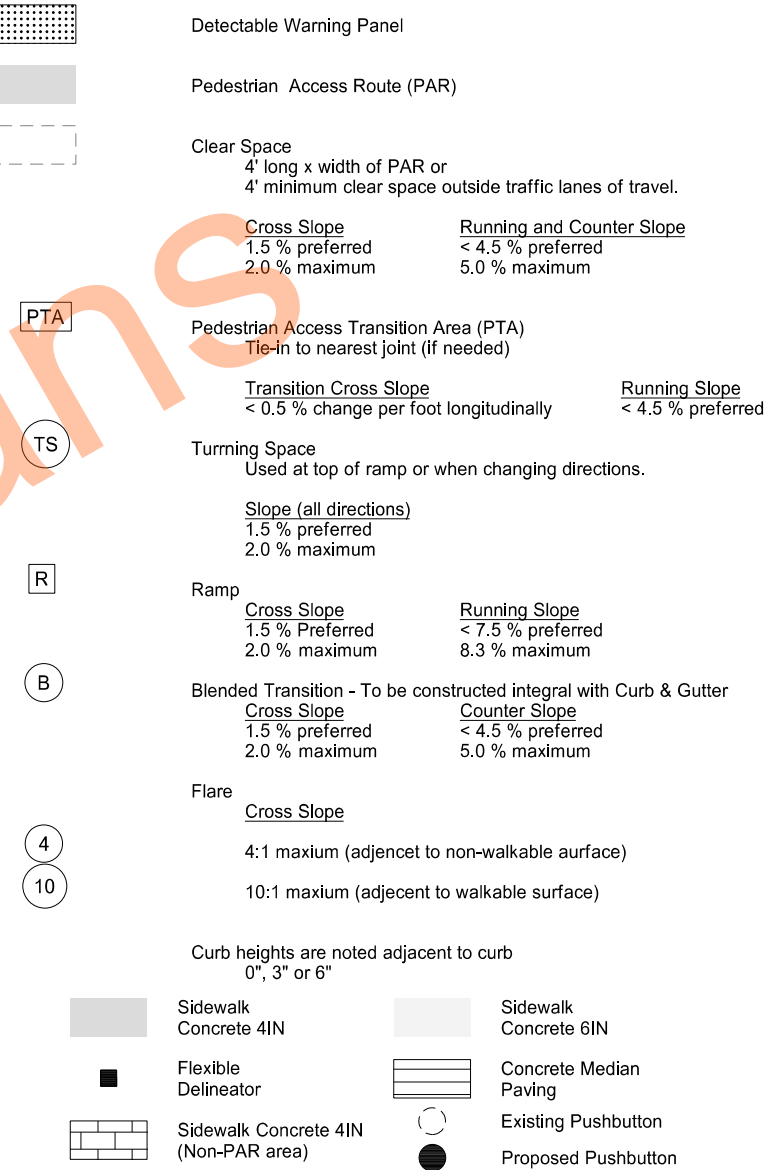
1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

ADA Ramp Details

9th Street
Front Ave to Main Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	82	21



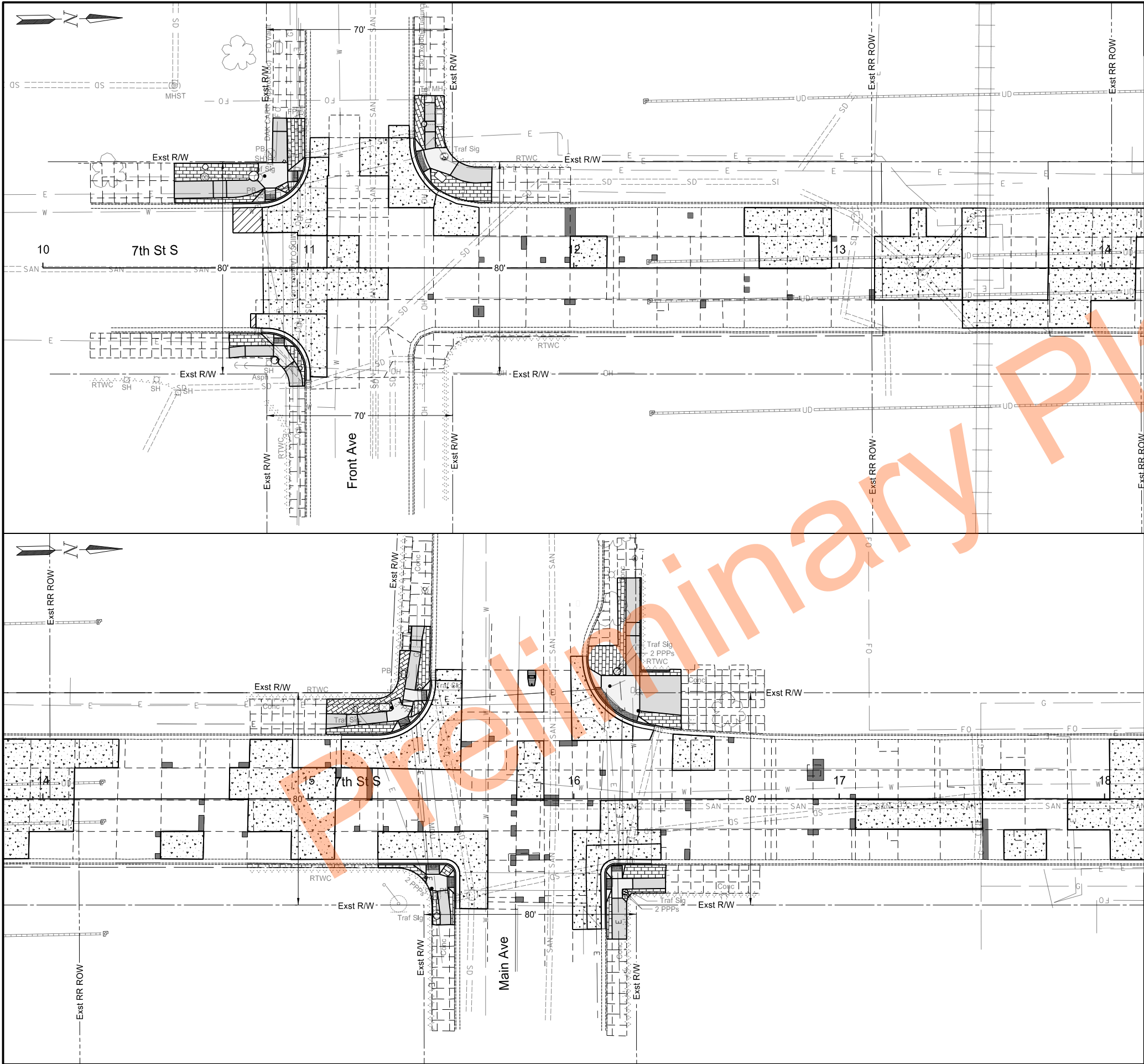
Notes:

1. All landing, turning, and non-PAR spaces to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See Section 150 for reset and relocated pedestrian push button locations.

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ621	415447.074	1899056.722	1672.686	50601.731 R1	30.93
ADPZ622	415452.888	1899056.824	1672.662	50607.545 R1	30.915
ADPZ623	415452.682	1899063.766	1672.677	50607.479 R1	37.86
ADPZ624	415452.408	1899072.988	1672.729	50607.391 R1	47.086
ADPZ625	415452.014	1899086.237	1672.79	50607.264 R1	60.34
ADPZ626	415450.516	1899086.084	1673.304	50605.764 R1	60.217
ADPZ627	415448.267	1899086.045	1673.295	50603.514 R1	60.224
ADPZ628	415446.204	1899086.008	1672.816	50601.451 R1	60.228
ADPZ629	415446.596	1899072.816	1672.758	50601.577 R1	47.03
ADPZ630	415446.87	1899063.594	1672.722	50601.665 R1	37.805
ADPZ631	415448.554	1899063.644	1672.709	50603.349 R1	37.821
ADPZ632	415448.588	1899061.672	1672.705	50603.344 R1	35.849
ADPZ633	415448.604	1899060.749	1672.704	50603.341 R1	34.926
ADPZ634	415449.172	1899056.759	1672.696	50603.829 R1	30.925
ADPZ635	415450.623	1899056.784	1672.693	50605.280 R1	30.921
ADPZ636	415451.053	1899060.792	1672.691	50605.791 R1	34.92
ADPZ637	415451.037	1899061.716	1672.691	50605.794 R1	35.843
ADPZ638	415451.003	1899063.717	1672.69	50605.799 R1	37.844
ADPZ639	415450.843	1899072.942	1672.737	50605.826 R1	47.071
ADPZ640	415450.809	1899074.94	1672.752	50605.832 R1	49.07
ADPZ641	415448.359	1899074.897	1672.769	50603.382 R1	49.076
ADPZ642	415448.394	1899072.869	1672.749	50603.376 R1	47.048

9th Street
Front Ave to Main Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	90	1

SPEC	CODE	PAY ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE ASPHALT		
		Sta 10+71 to Sta 10+83 LT	4	TON
		Sta 10+78 to Sta 10+81RT	1	TON

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Detectable Warning Panels

Concrete Pavement Repair-Full Depth Doweled

Spall Repair - Partial Depth

Curb & Gutter - Type I

Curb Type I

Commercial Grade Asphalt

Sidewalk Concrete 4IN (Non-PAR area)

Concrete Median Paving

Random Crack Stitching

NOTES:

CPR full depth and spall locations are approximate and shown for informational purposes. Refer to Section 11 for quantities and locations. See section 82 for details and quantities for sidewalk work.

Paving Layouts

7th Street

Front Ave to Broadway Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA

NOTES:
CPR full depth and spall locations are approximate and shown for informational purposes.
Refer to Section 11 for quantities and locations.
See section 82 for details and quantities for sidewalk work.

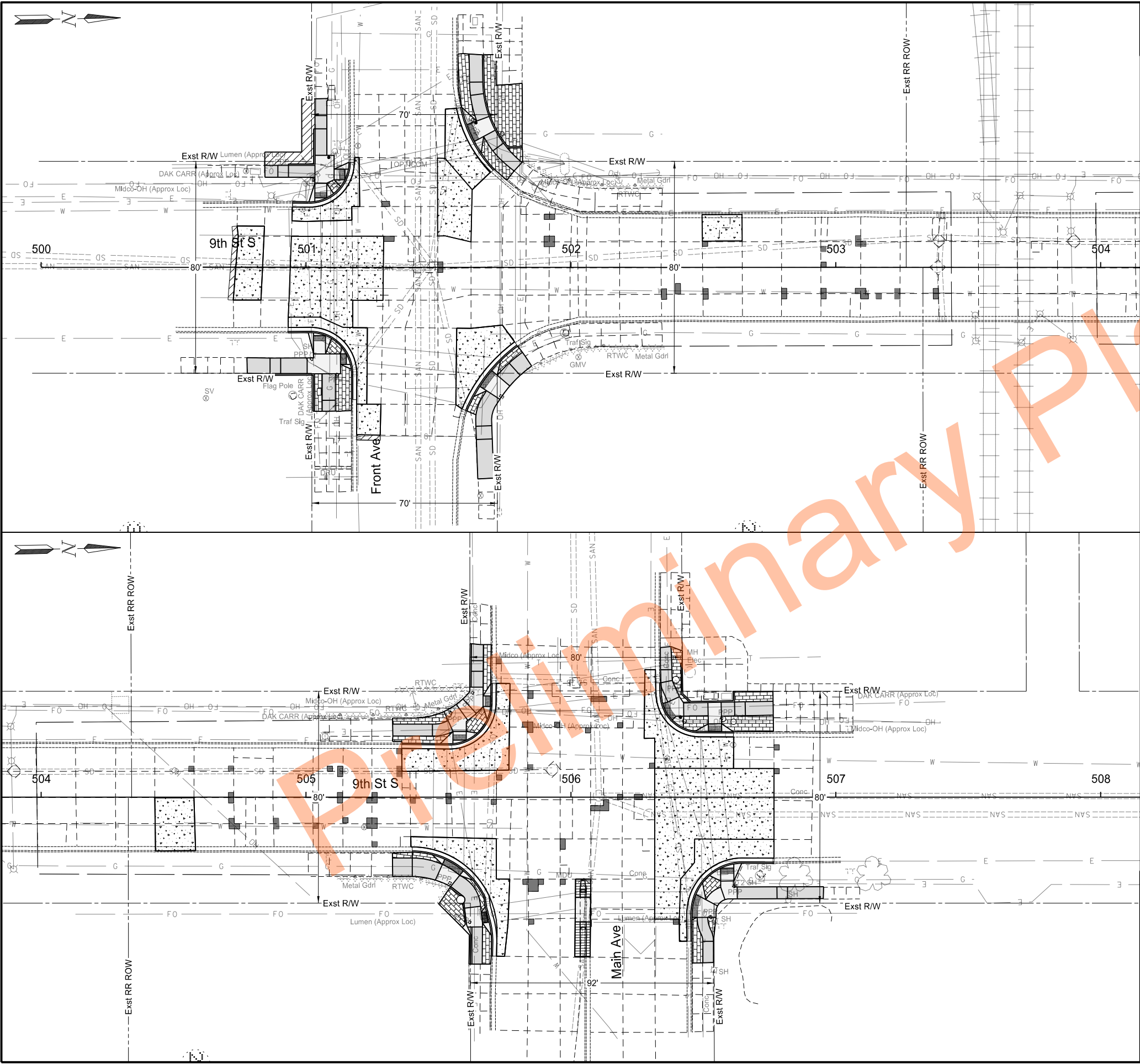
Paving Layouts

7th Street
Front Ave to Broadway Ave

REGISTERED PROFESSIONAL ENGINEER
DYLAN J. DUNN
PE-28894
DATE 07/22/25
NORTH DAKOTA

SPEC	CODE	PAY ITEM	QTY UNIT
430	0500	COMMERCIAL GRADE ASPHALT	
		Sta 19+42 to Sta 19+88 RT	3 TON
		Sta 19+77 to Sta 20+28 LT	2 TON

NOTES:
CPR full depth and spall locations are approximate and shown for informational purposes.
Refer to Section 11 for quantities and locations.
See section 82 for details and quantities for sidewalk work.



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	90	3

SPEC	CODE	PAY ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE ASPHALT		
		Sta 500+84 to Sta 501+03 LT	8	TON

	Sidewalk Concrete 4IN		Curb & Gutter - Type I
	Sidewalk Concrete 6IN		Curb Type I
	Detectable Warning Panels		Commercial Grade Asphalt
	Concrete Pavement Repair-Full Depth Doweled		Sidewalk Concrete 4IN (Non-PAR area)
	Spall Repair - Partial Depth		Concrete Median Paving
			Random Crack Stitching

NOTES:
CPR full depth and spall locations are approximate and shown for informational purposes.
Refer to Section 11 for quantities and locations.
See section 82 for details and quantities for sidewalk work.

Paving Layouts
9th Street
Front Ave to Main Ave

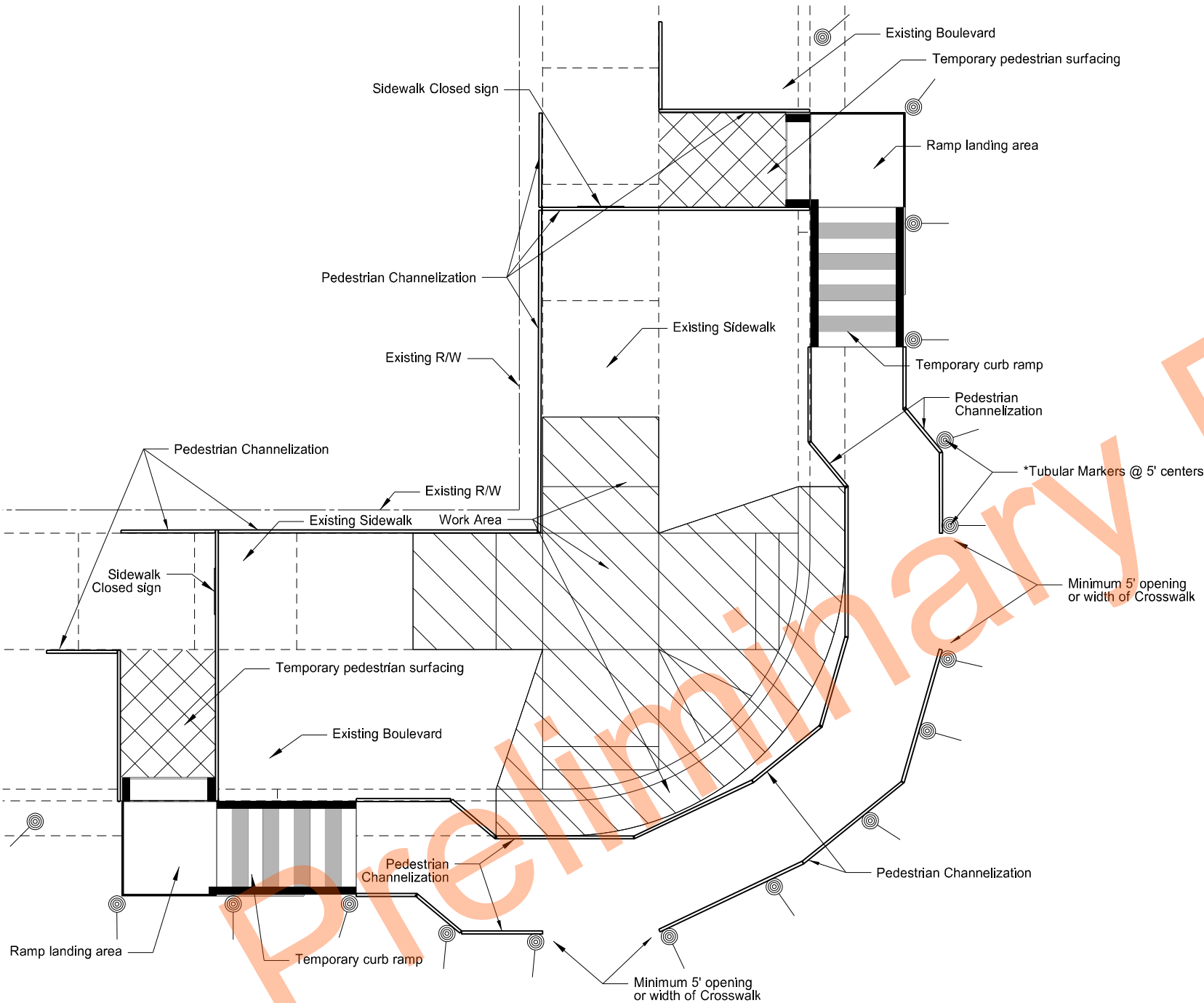


SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED					TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL	
			BY PHASE NO.								
			1A	1B	1C	1D	1E				
E5-1-48	48"x48"	EXIT GORE								35	
G20-1-60	60"x24"	ROAD WORK NEXT ____ MILES								28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)								18	
G20-2-48	48"x24"	END ROAD WORK	10	10	10	10	10	10	26		260
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	4	4	4	4	4	4	59		236
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)								7	
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								32	
R1-2-60	60"x60"	YIELD								29	
R2-1-36	36"x48"	SPEED LIMIT ____ (Portable only)	4	4	4	4	4	4	30		120
R2-1-48	48"x60"	SPEED LIMIT ____								39	
R2-1aP-24	24"x18"	MINIMUM FEE \$150 (Mounted on Speed Limit post)	4	4	4	4	4	4	10		40
R3-2-48	48"x48"	NO LEFT TURN								35	
R3-5-24	30"x24"	LEFT TURN ONLY		1				1	7		7
R3-6a-24	30"x24"	THROUGH ARROW	1	2				2	7		14
R4-1-48	48"x60"	DO NOT PASS								39	
R4-7-12	12"x18"	KEEP RIGHT	5	8	6			8	2		16
R4-7-55	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	
R8-3a-24	24"x36"	NO PARKING		1				1	7		7
R9-9-24	24"x12"	SIDEWALK CLOSED (Mounted on Barricade)	10	9				10	3		30
R10-6-24	24"x36"	STOP HERE ON RED								16	
R10-6L-24	24"x36"	STOP HERE ON RED	1					1	7		7
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)								15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT								35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT	3	5	1			5	35		175
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT								35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW	1	6	3	1		6	26		156
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	4	4	5	5	4	5	35		175
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								35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ____ FT or ____ MILE								35	
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	10	10	10	10	10	10	35		350
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			1	1		1	35		35
W20-7-48	48"x48"	FLAGGER	2	2	2	2	2	2	35		70
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	2	2	2	2	2	2	5		10
W20-52P-54	54"x12"	NEXT ____ MILES (Mounted on warning sign post)								12	

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VERSION: 6.26.2025

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	100	3



*NOTE: Eliminate tubular markers if pedestrian channelization is retro-reflective

Temporary Pedestrian Walkway

Temporary Pedestrian Facilities Estimate Summary - 7th Street

Intersection	704-1068 Pedestrian Walkway		704-2108 Temporary Curb Ramp	R9-9-24 Sidewalk Closed Sign
	Pedestrian Channelization	Temporary Pedestrian Surfacing		
Phase 1A				
Front St - SW	240 LF	0 SY	2 EA	2 EA
Main Ave - SW	220 LF	0 SY	2 EA	2 EA
Broadway Ave - SW	220 LF	0 SY	2 EA	2 EA
Phase 1B				
Front St - NW	220 LF	0 SY	2 EA	2 EA
Main Ave - NW	280 LF	0 SY	1 EA	1 EA
Broadway Ave - NW	220 LF	0 SY	2 EA	2 EA
Phase 2A				
Front St - SE	160 LF	0 SY	2 EA	2 EA
Main Ave - SE	120 LF	0 SY	2 EA	2 EA
Broadway Ave - SE	240 LF	0 SY	2 EA	2 EA
Phase 2B				
Main Ave - NE	190 LF	0 SY	2 EA	2 EA
Broadway Ave - NE	210 LF	0 SY	2 EA	2 EA
TOTAL	2320 LF	0 SY	21EA	21EA

Temporary Pedestrian Facilities Estimate Summary - 9th Street

Intersection	704-1068 Pedestrian Walkway		704-2108 Temporary Curb Ramp	R9-9-24 Sidewalk Closed Sign
	Pedestrian Channelization	Temporary Pedestrian Surfacing		
	Phase 1A			
Front St - SE	220 LF	4 SY	2 EA	2 EA
Main Ave - SE	220 LF	0 SY	2 EA	2 EA
	Phase 1B			
Front St - NE	200 LF	4 SY	2 EA	2 EA
Main Ave - NE	250 LF	4 SY	2 EA	2 EA
	Phase 2A			
Front St - SW	240 LF	8 SY	2 EA	2 EA
Main Ave - SW	240 LF	0 SY	2 EA	2 EA
	Phase 2B			
Front St - NW	190 LF	0 SY	2 EA	2 EA
Main Ave - NW	240 LF	0 SY	2 EA	2 EA
TOTAL	1800 LF	20 SY	16 EA	16 EA

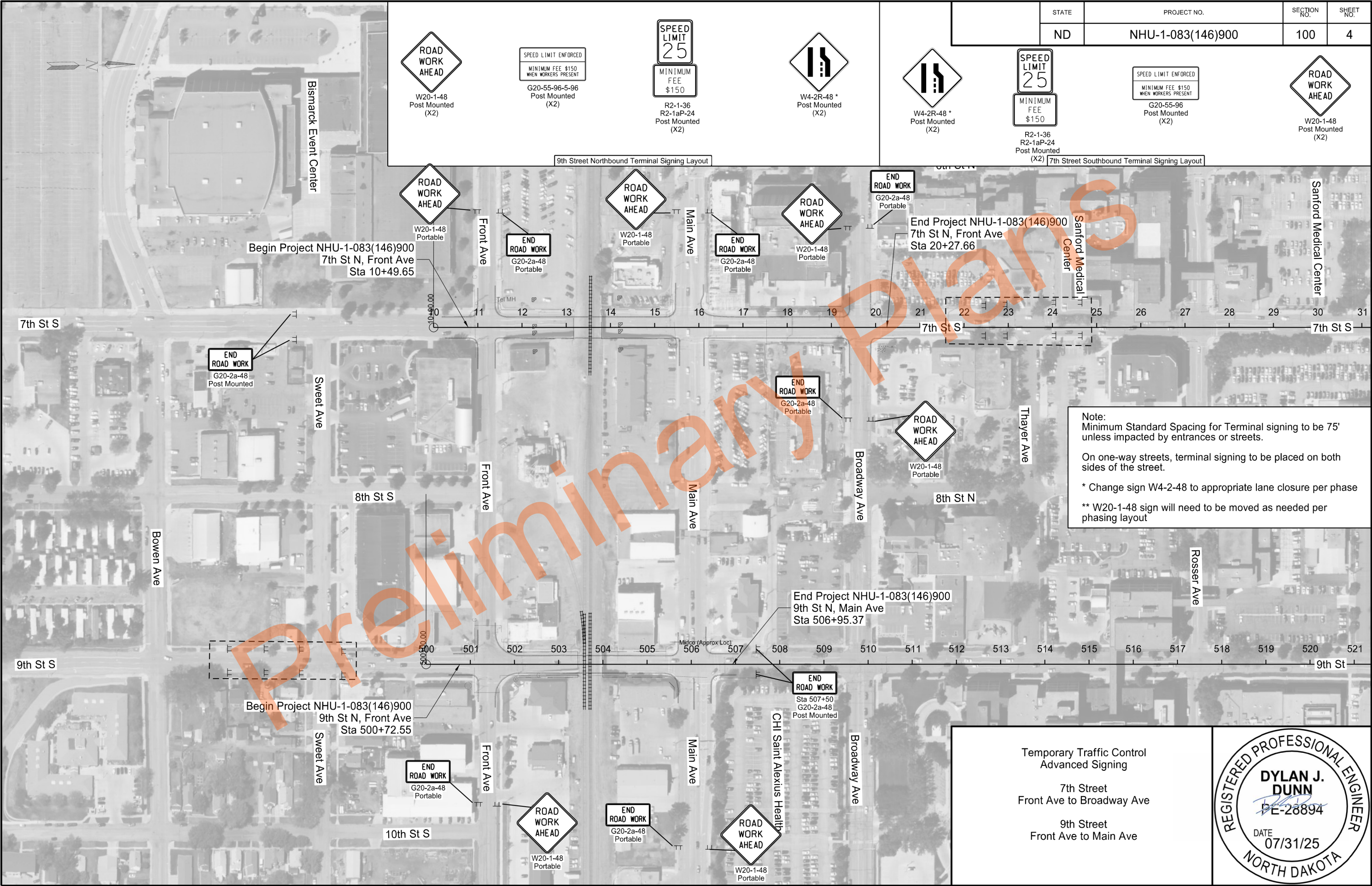
Note: Phase curb ramp closures so only one side of any roadway is closed at a time

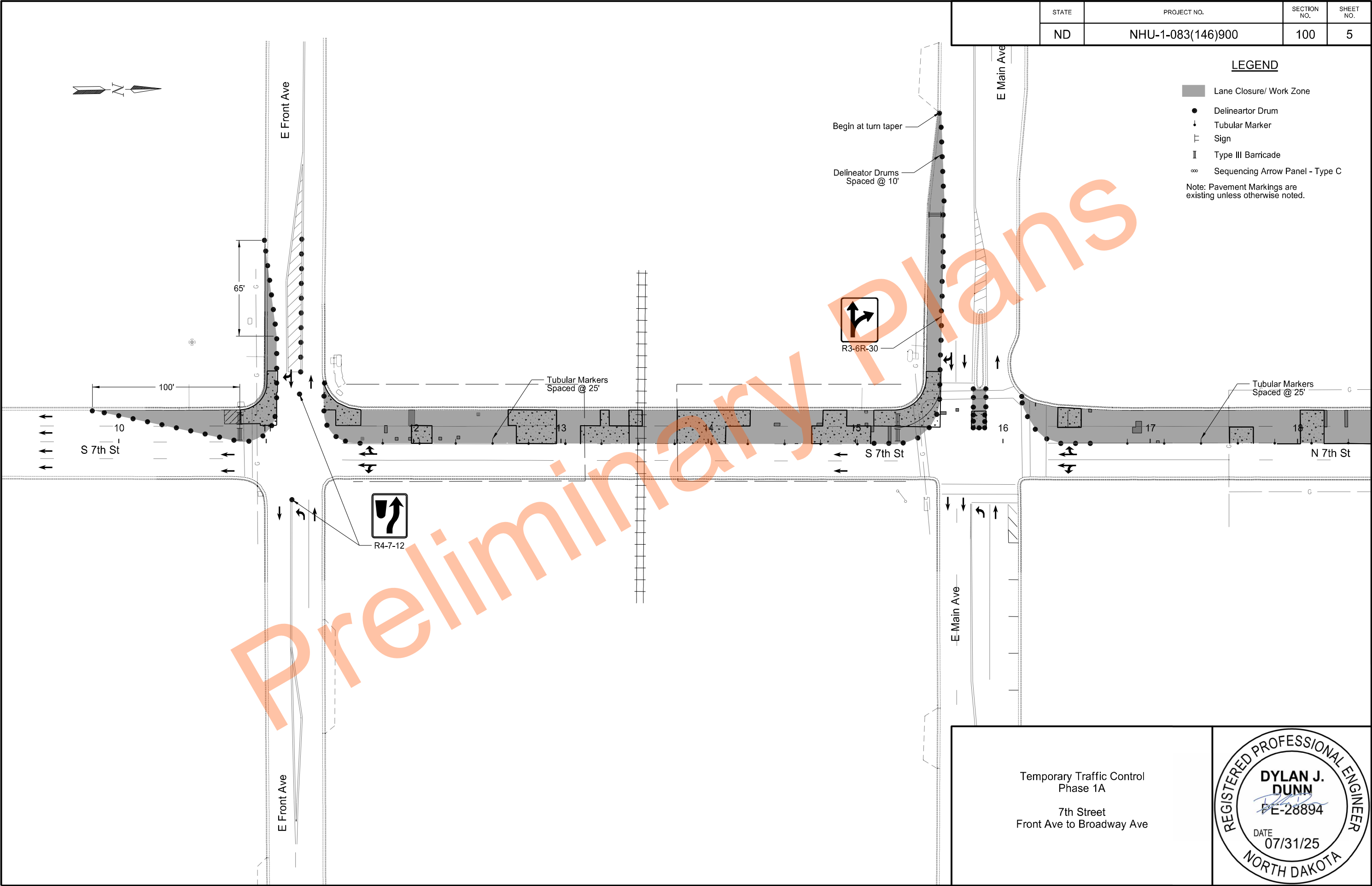
Temporary Pedestrian Routes
Workzone Traffic Control

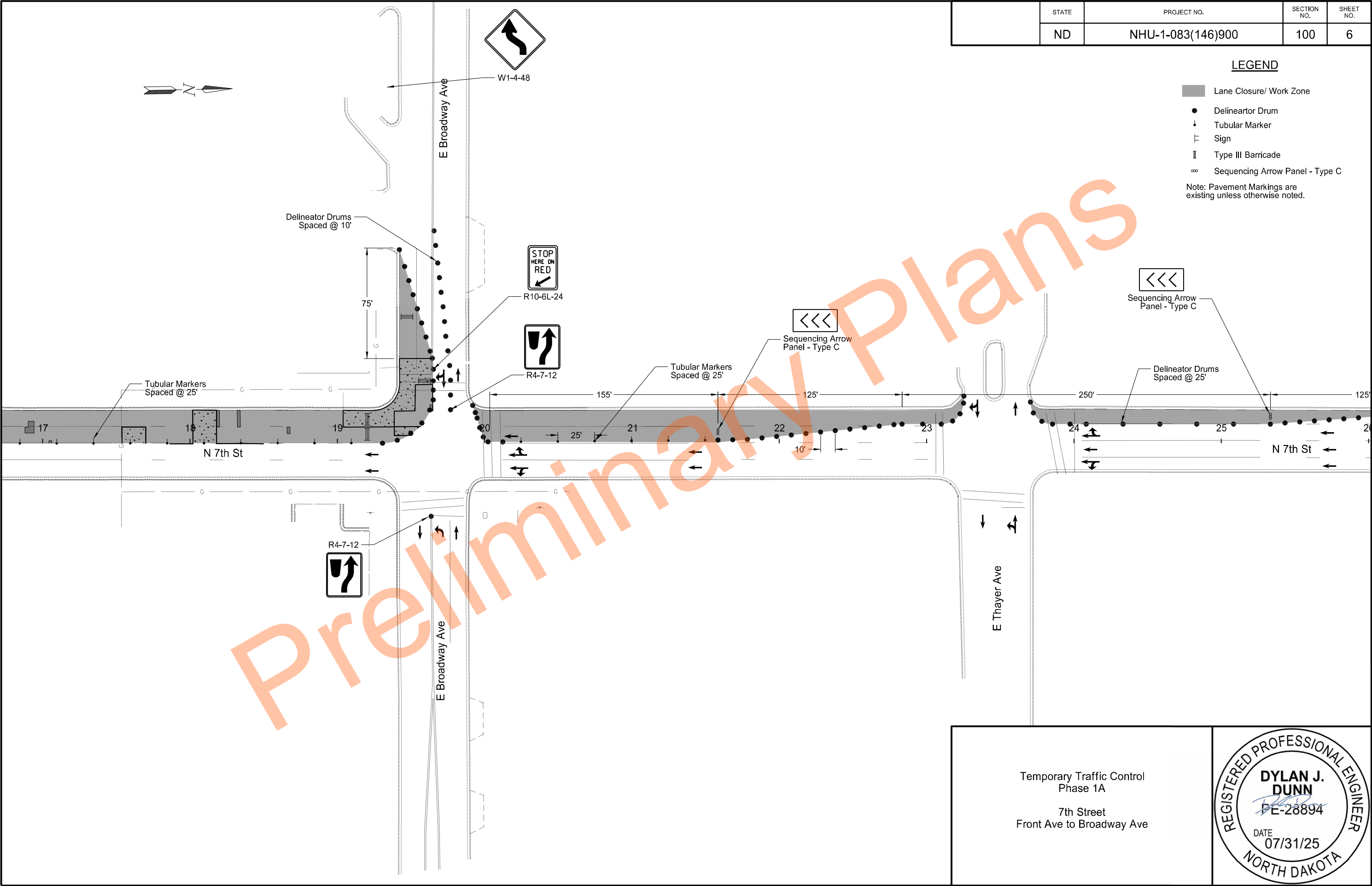
7th Street
Front Ave to Broadway Ave

9th Street
Front Ave to Main Ave





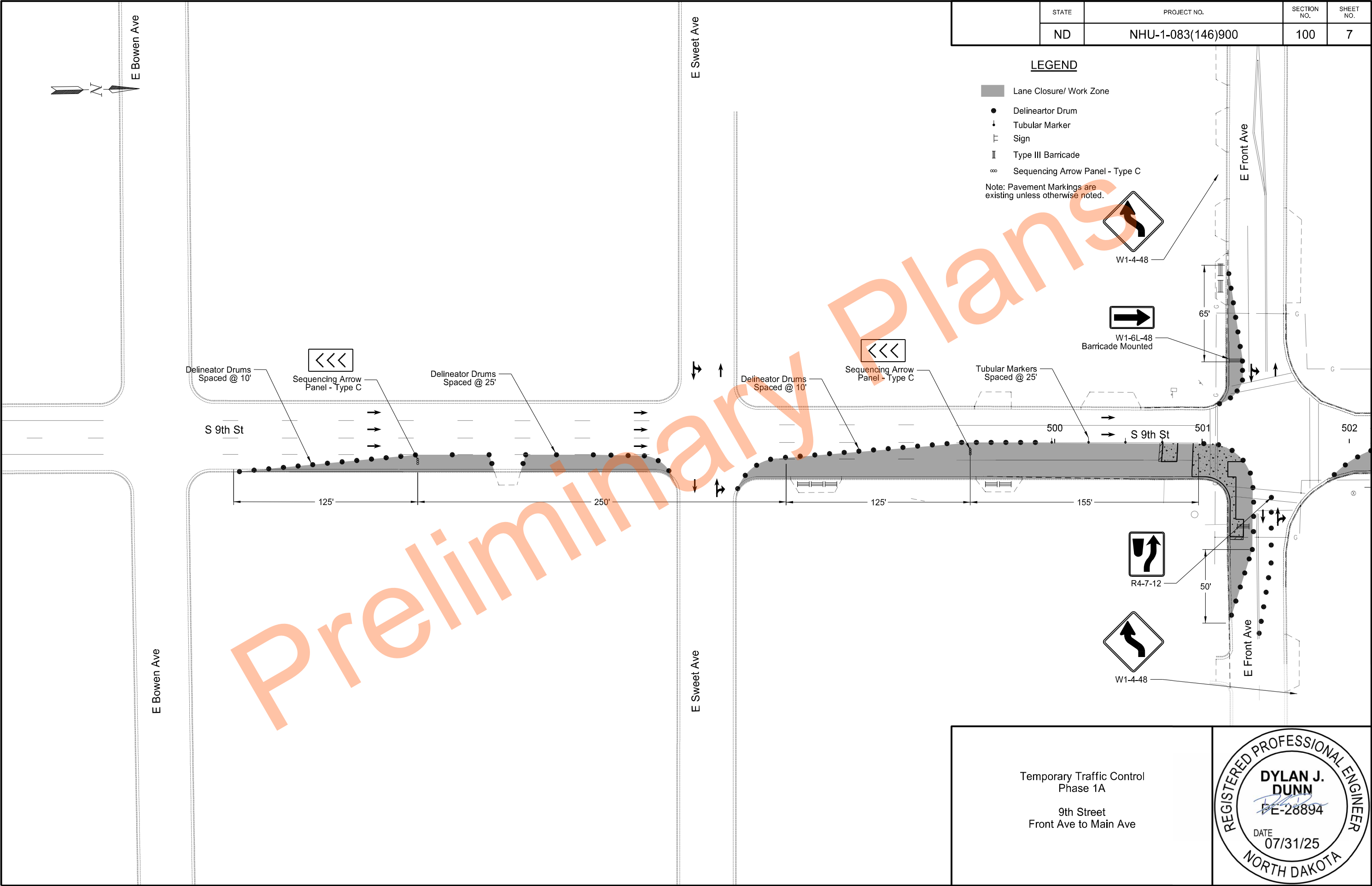


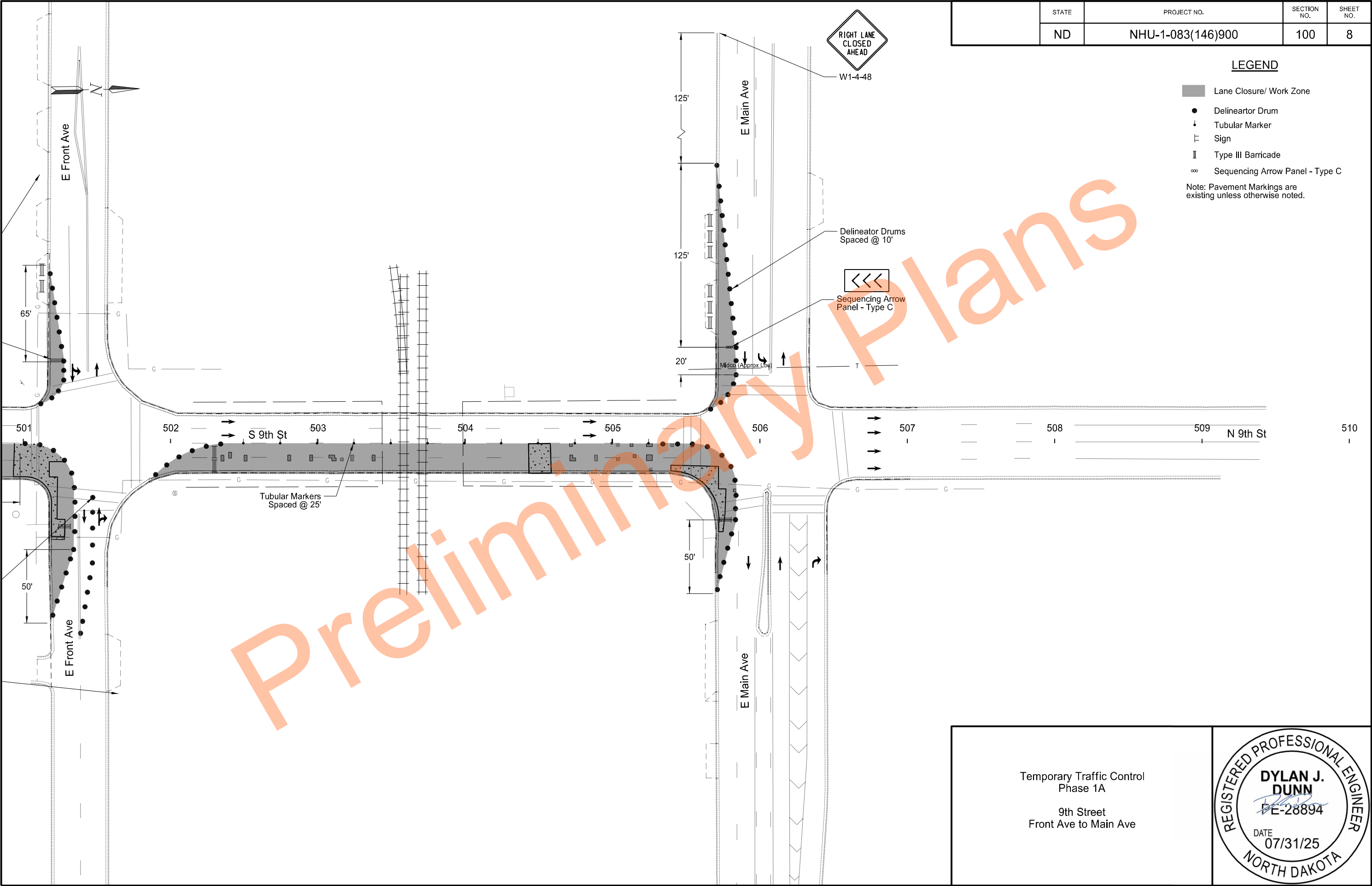


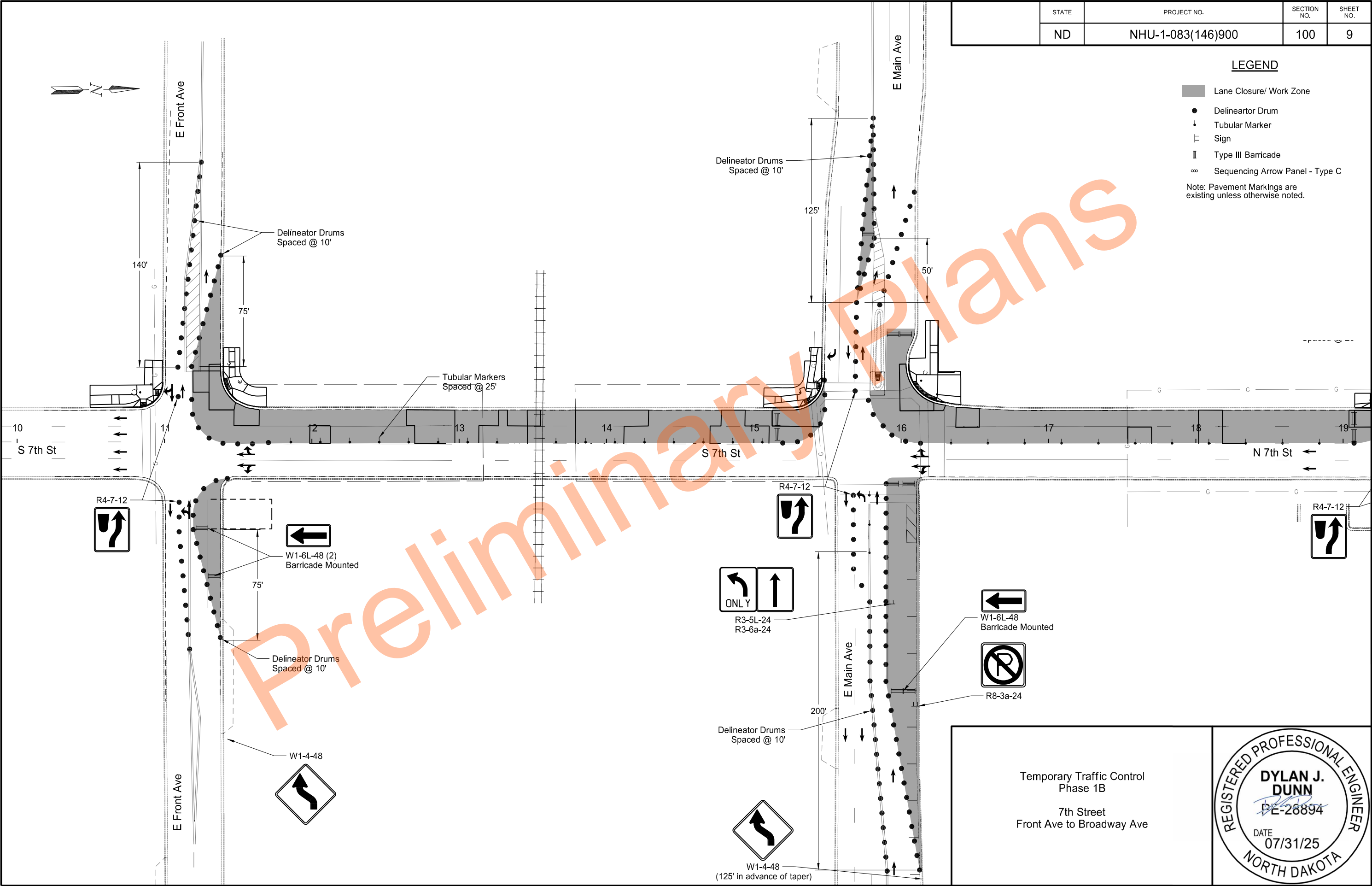
Temporary Traffic Control
Phase 1A

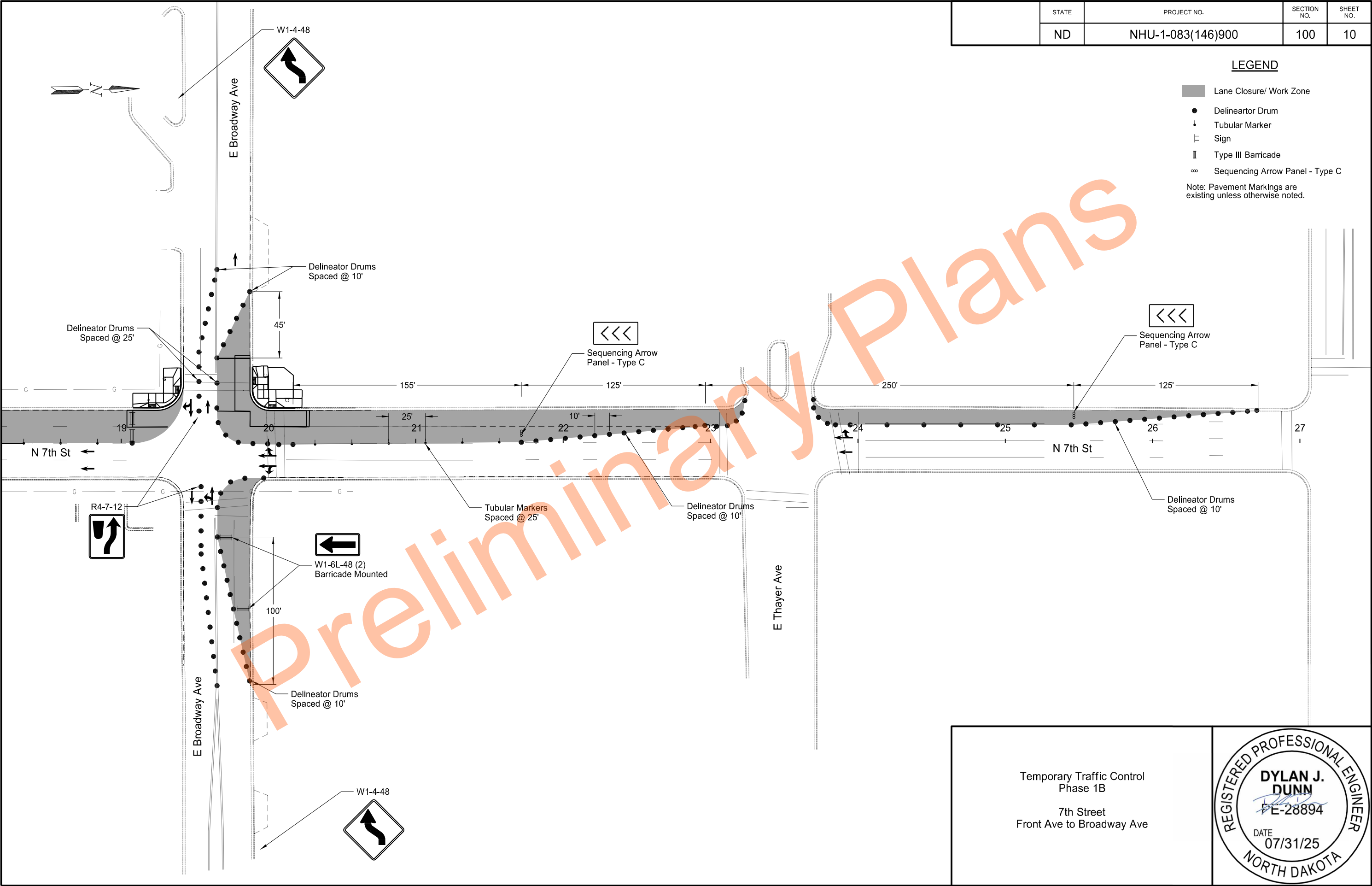
7th Street
Front Ave to Broadway Ave







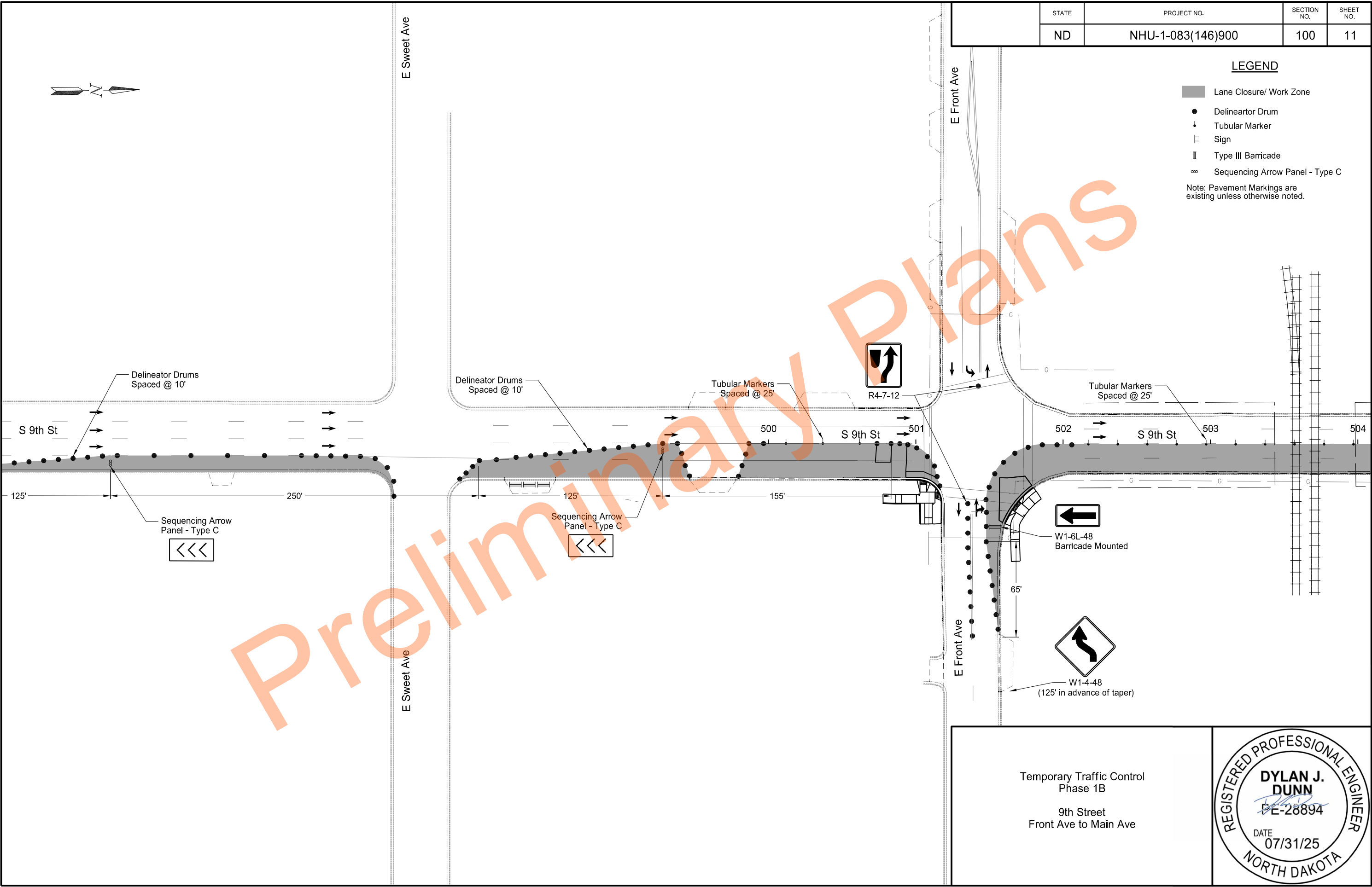




Temporary Traffic Control
Phase 1B

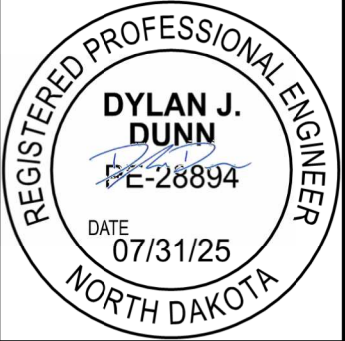
7th Street
Front Ave to Broadway Ave

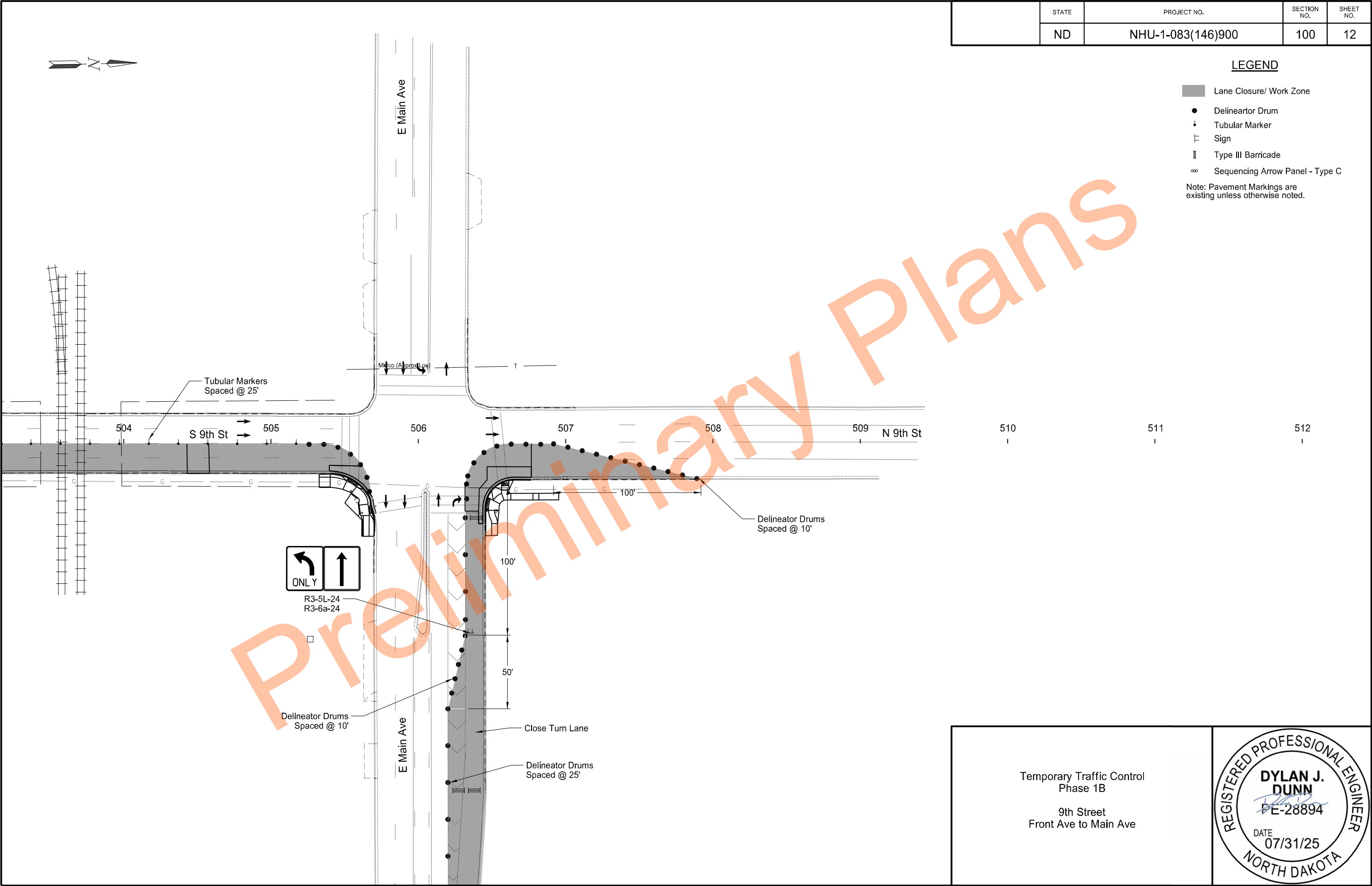




Temporary Traffic Control
Phase 1B

9th Street
Front Ave to Main Ave





Temporary Traffic Control
Phase 1B

9th Street
Front Ave to Main Ave

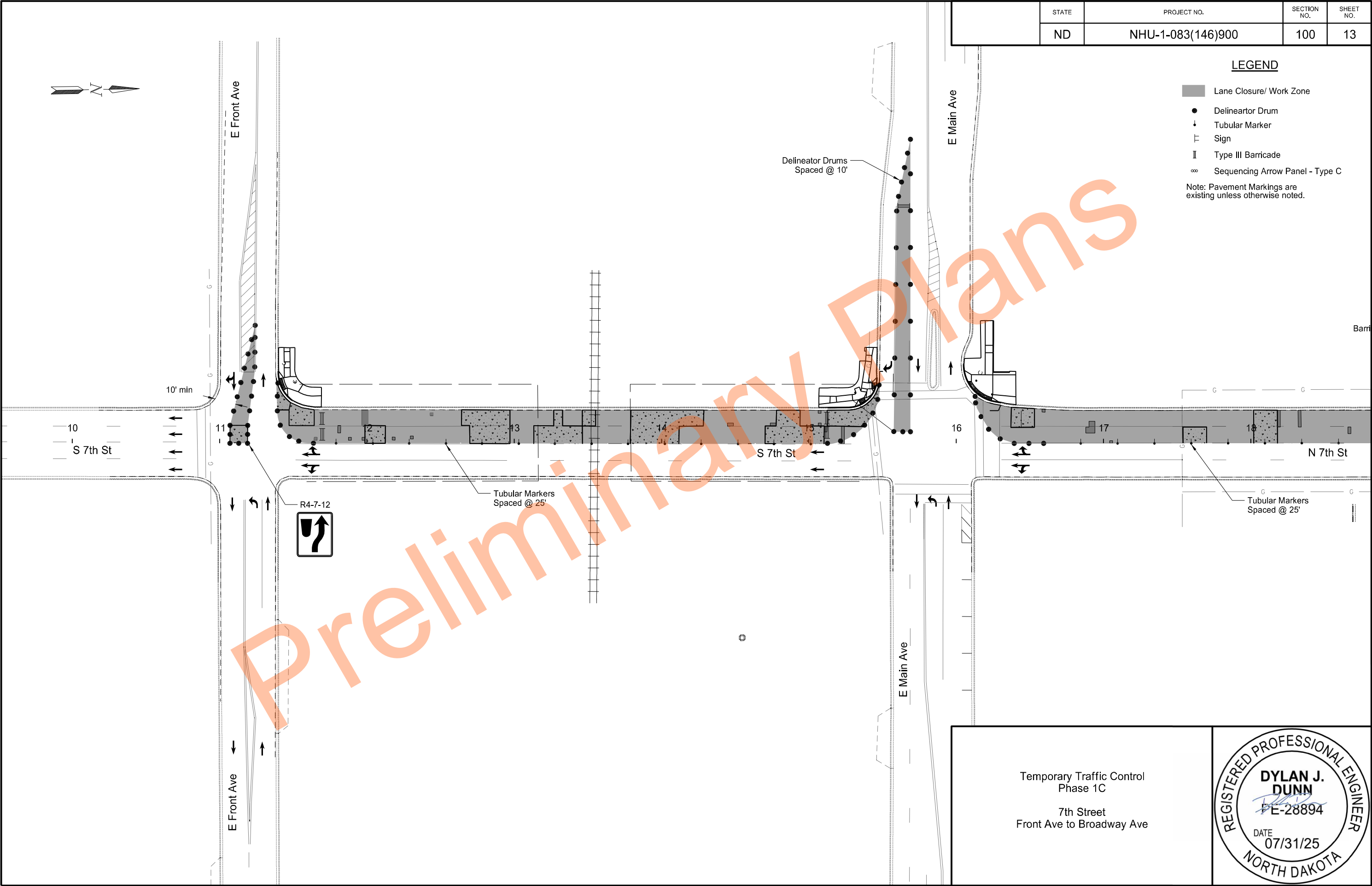
REGISTERED PROFESSIONAL ENGINEER

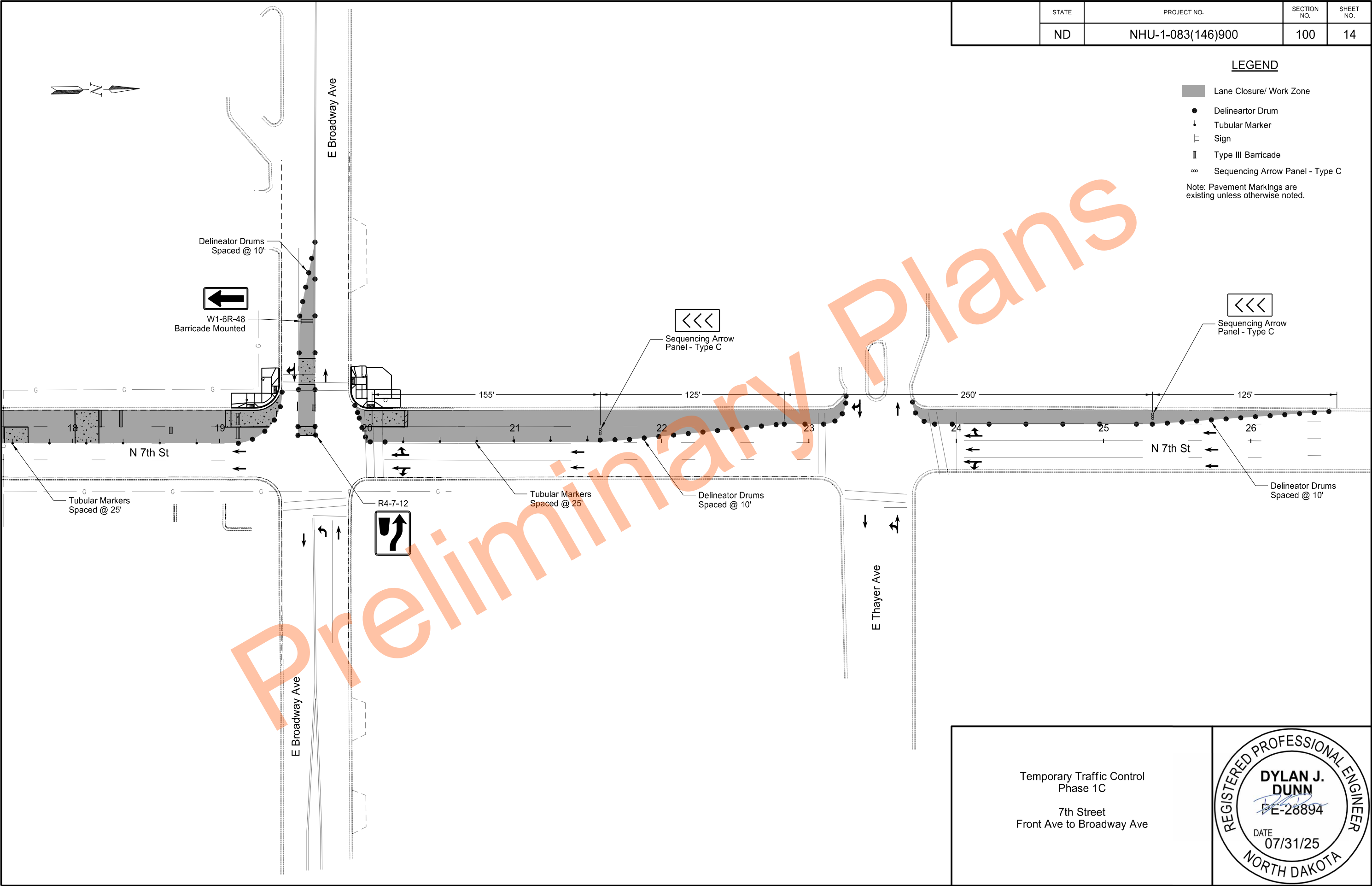
DYLAN J. DUNN

E-28894

DATE 07/31/25

NORTH DAKOTA





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	100	14

LEGEND

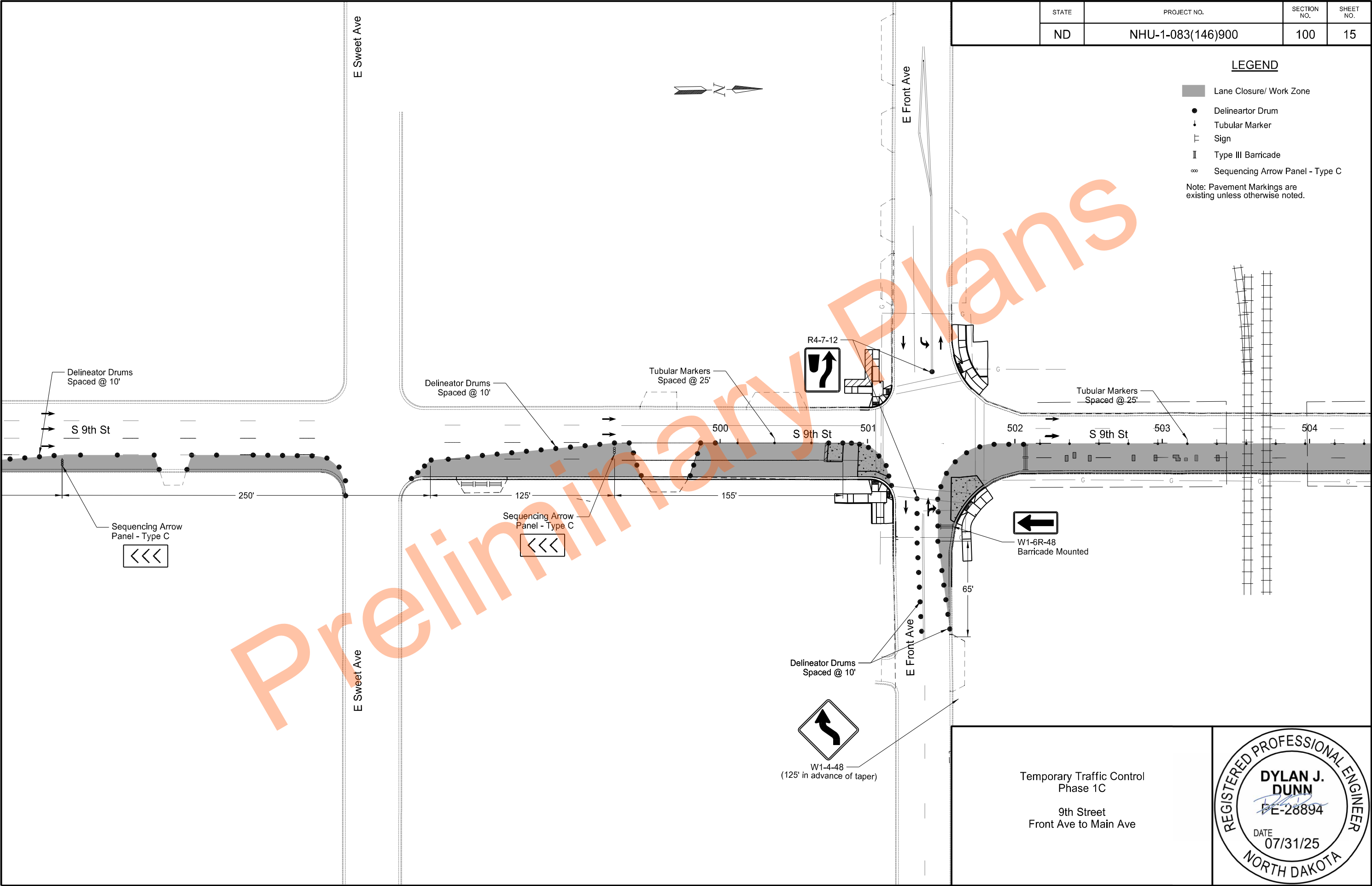
- Lane Closure/ Work Zone
- Delineartor Drum
- Tubular Marker
- Sign
- Type III Barricade
- Sequencing Arrow Panel - Type C

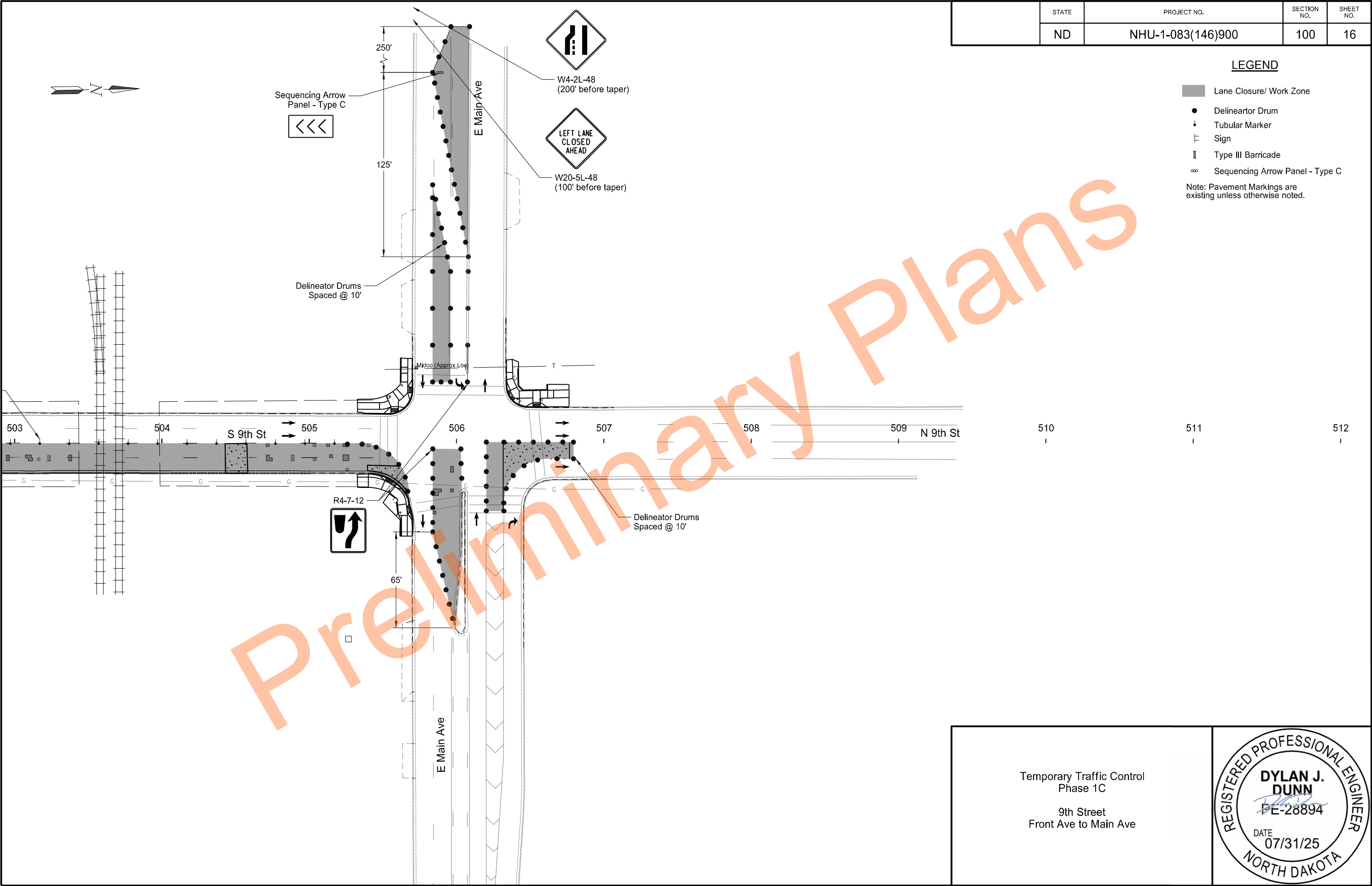
Note: Pavement Markings are existing unless otherwise noted.

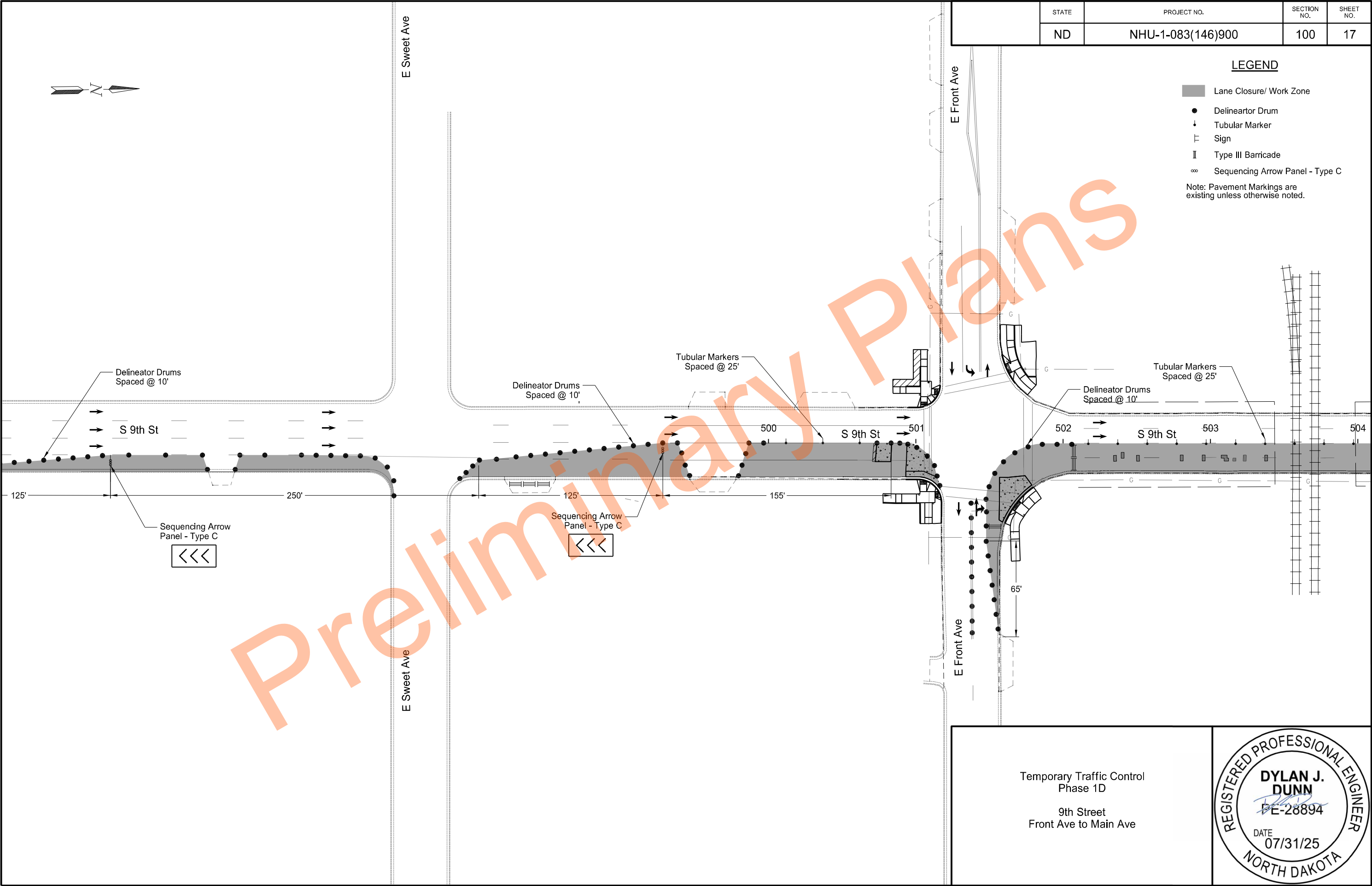
Temporary Traffic Control
Phase 1C

7th Street
Front Ave to Broadway Ave









Temporary Traffic Control
Phase 1D

9th Street
Front Ave to Main Ave

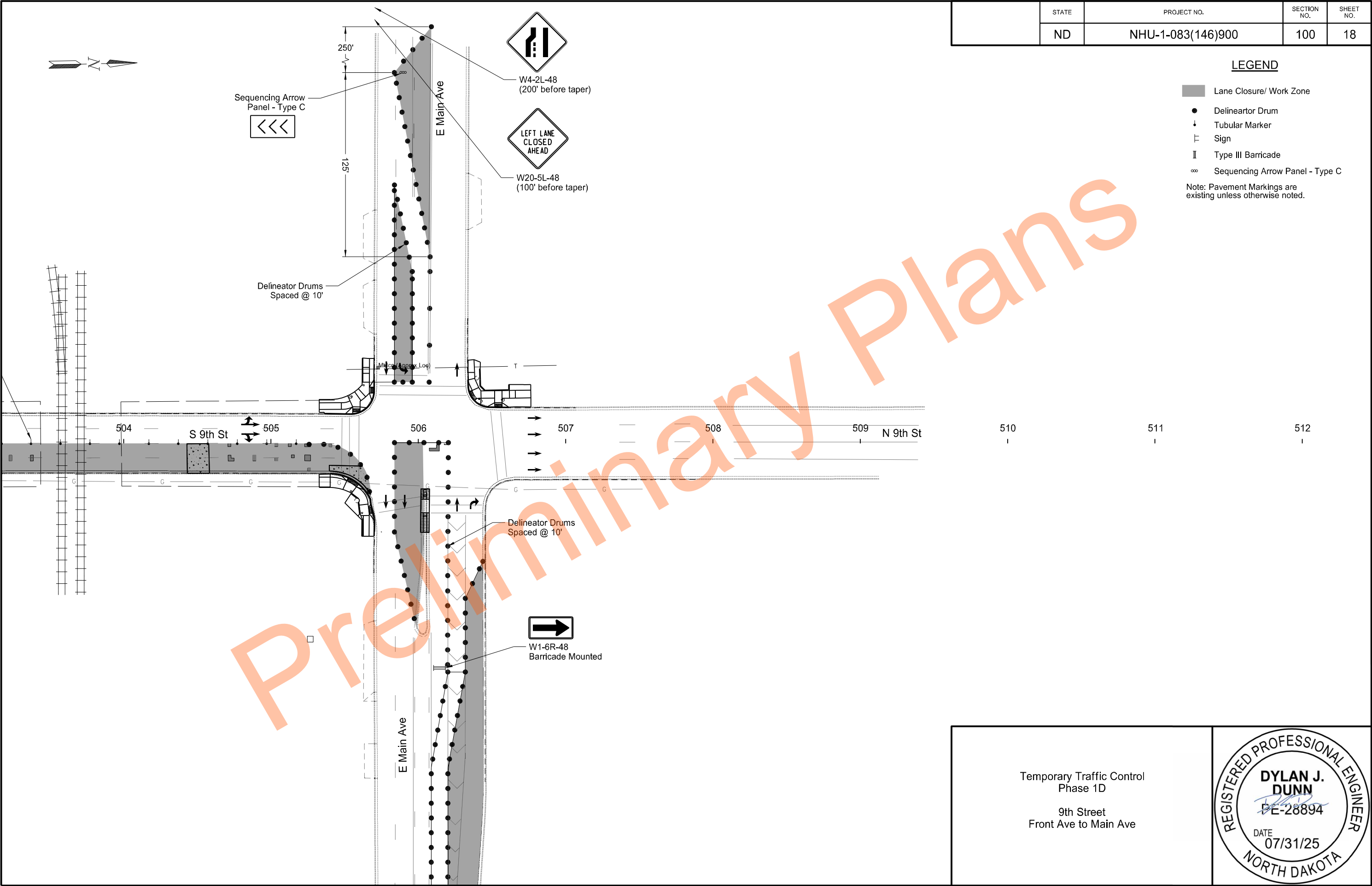
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

E-28894

DATE 07/31/25

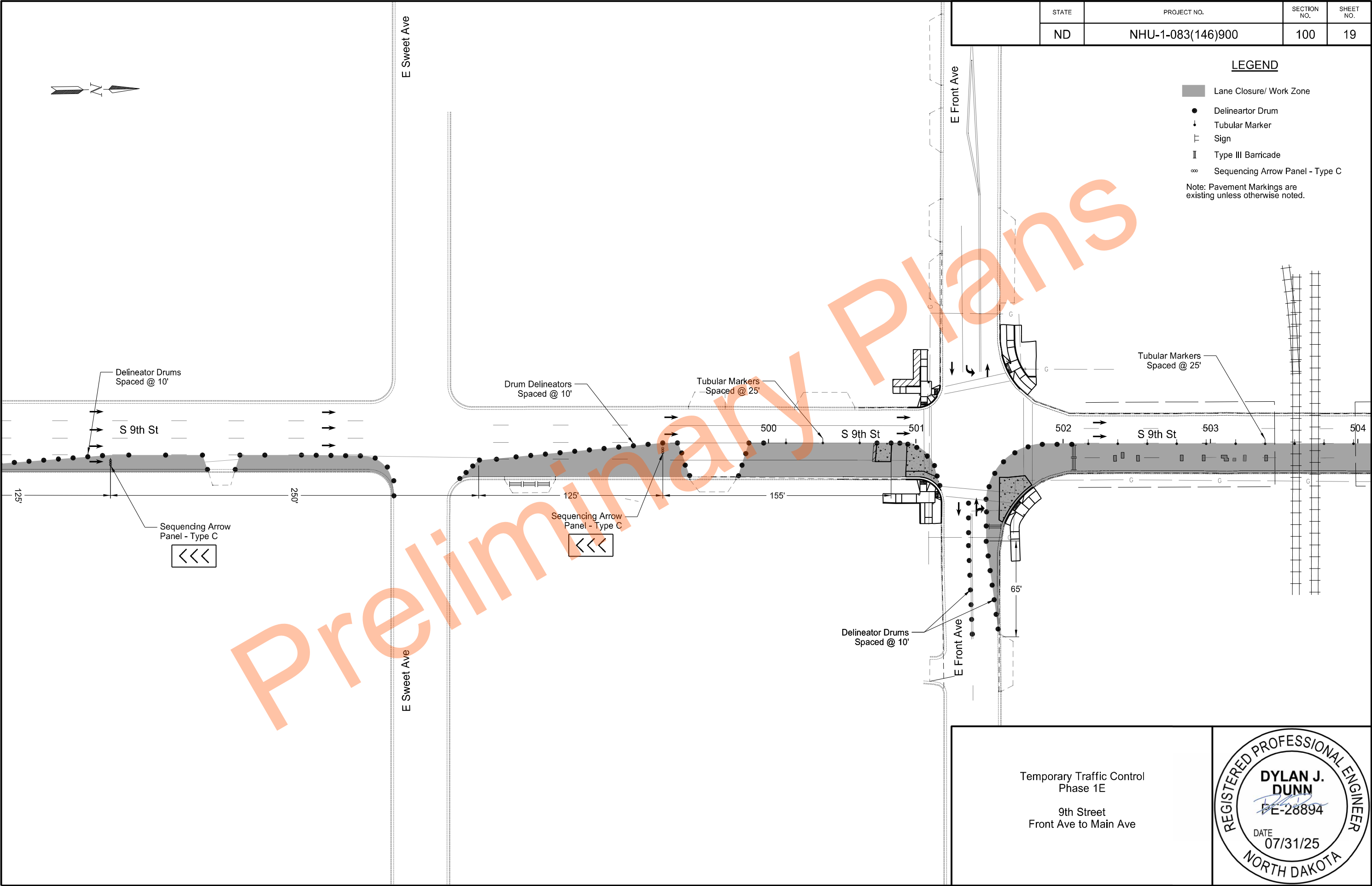
NORTH DAKOTA



Temporary Traffic Control
Phase 1D

9th Street
Front Ave to Main Ave





Temporary Traffic Control
Phase 1E

9th Street
Front Ave to Main Ave

REGISTERED PROFESSIONAL ENGINEER

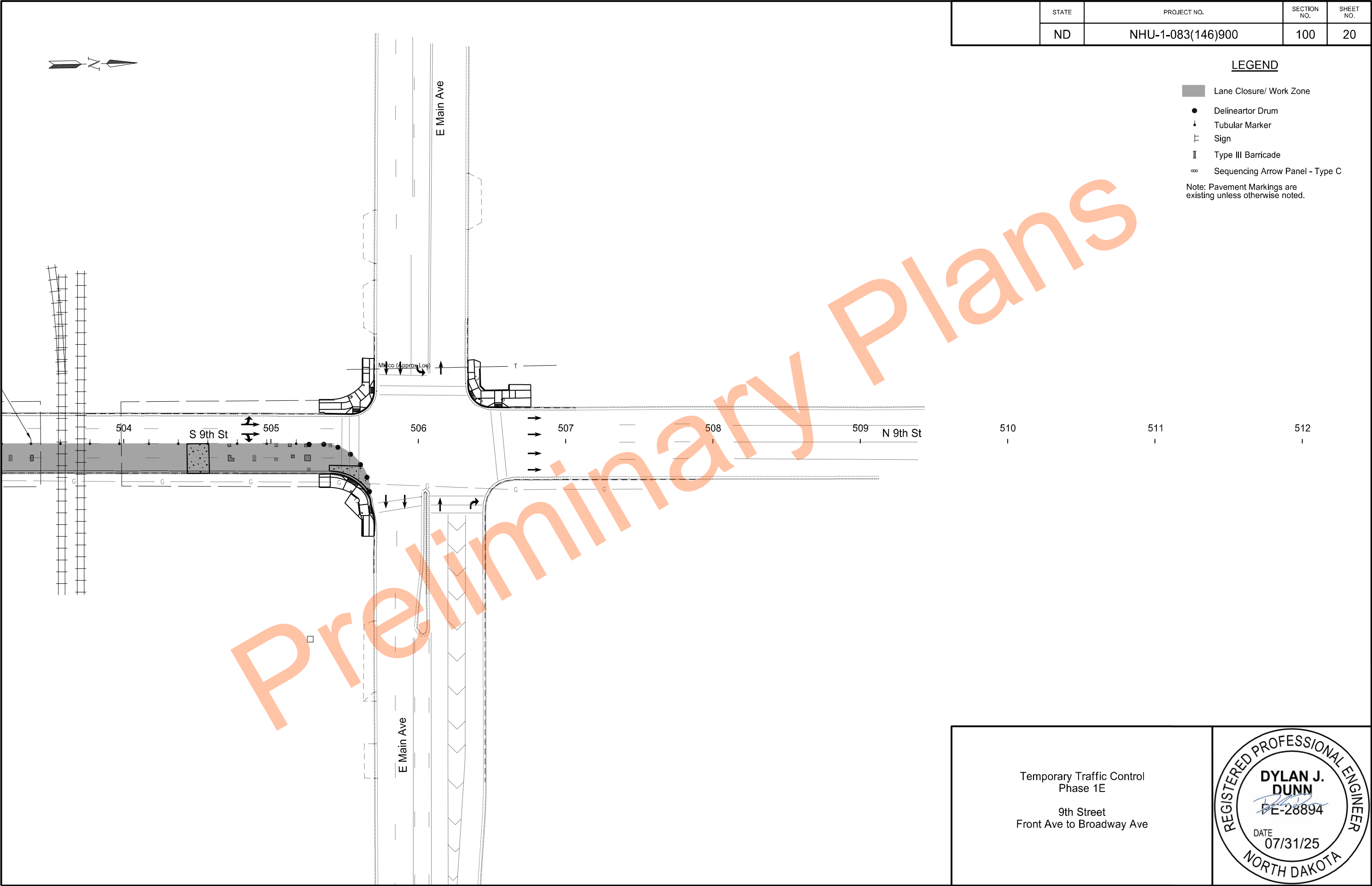
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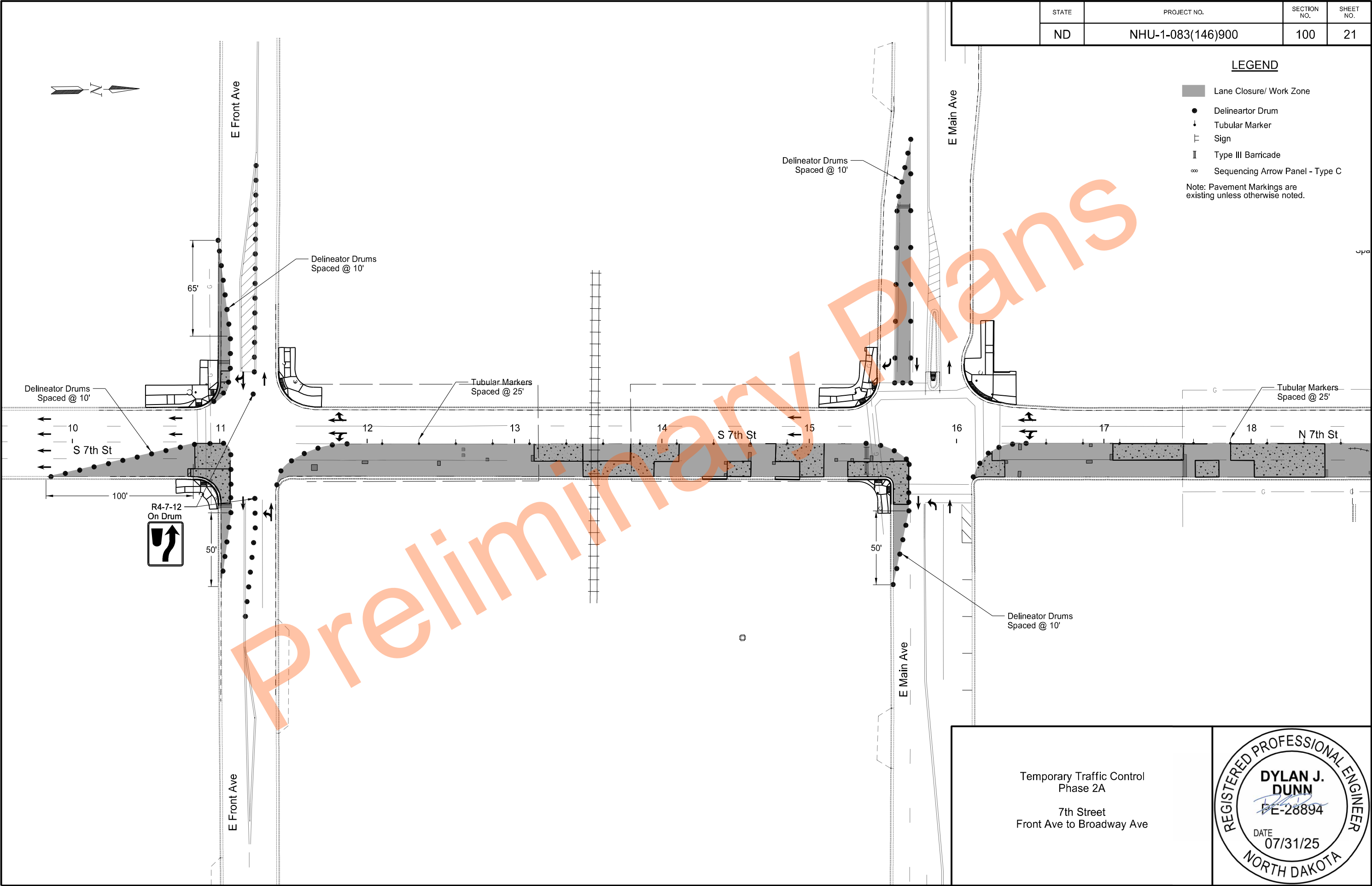
E-28894

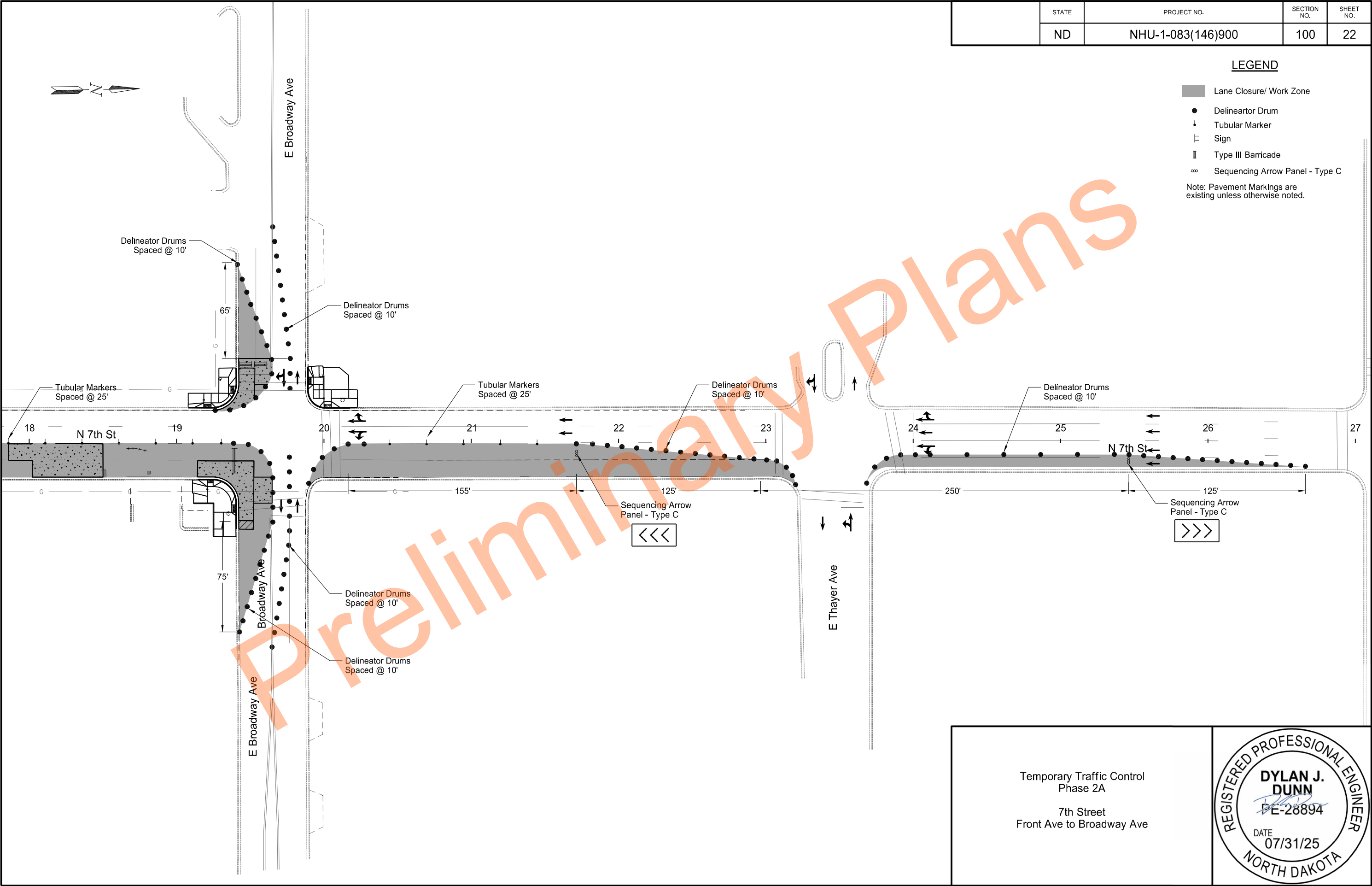
DATE

07/31/25

NORTH DAKOTA







Temporary Traffic Control
Phase 2A

7th Street
Front Ave to Broadway Ave

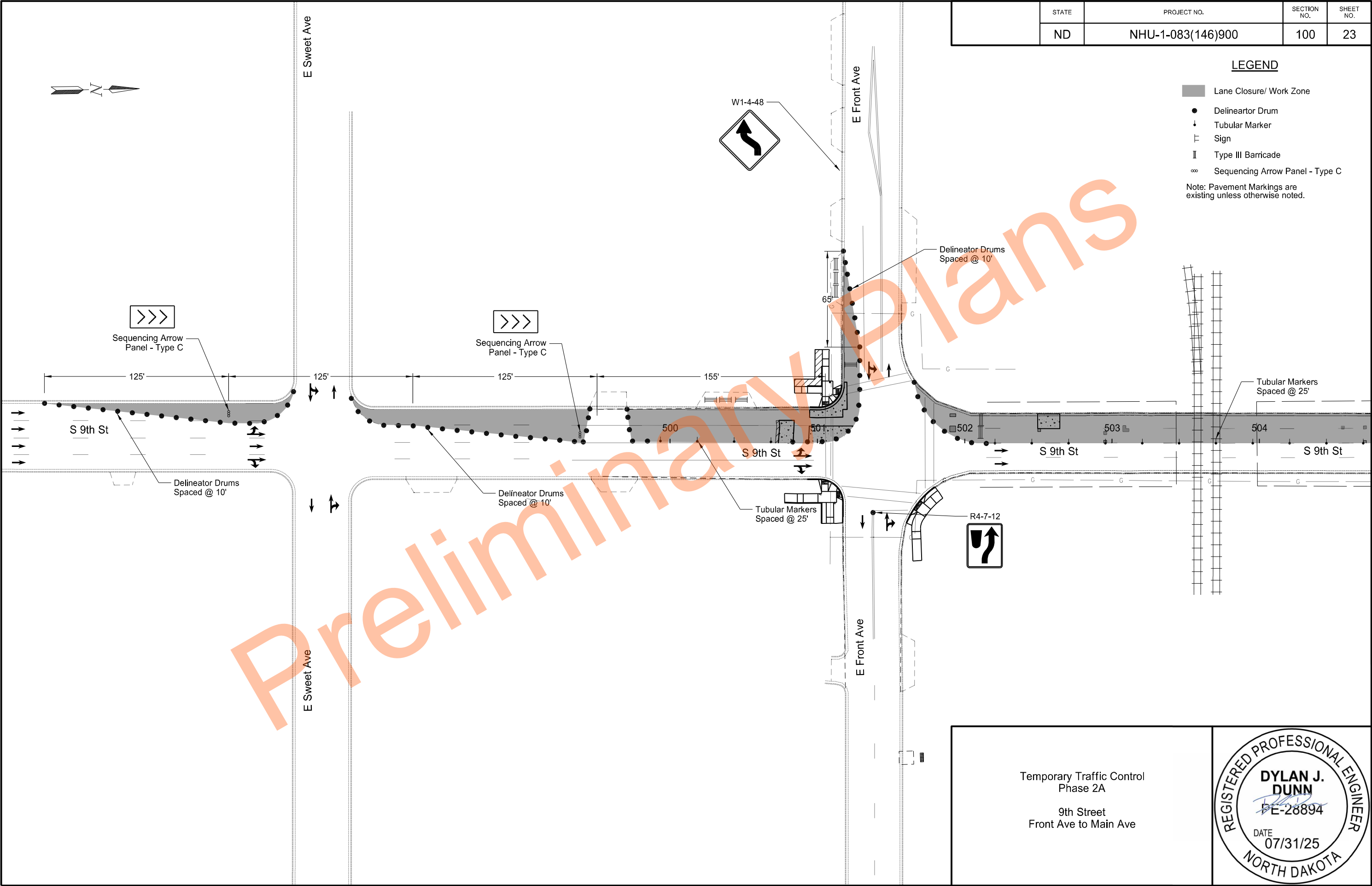
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

E-28894

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NORTH DAKOTA



Temporary Traffic Control
Phase 2A

9th Street
Front Ave to Main Ave

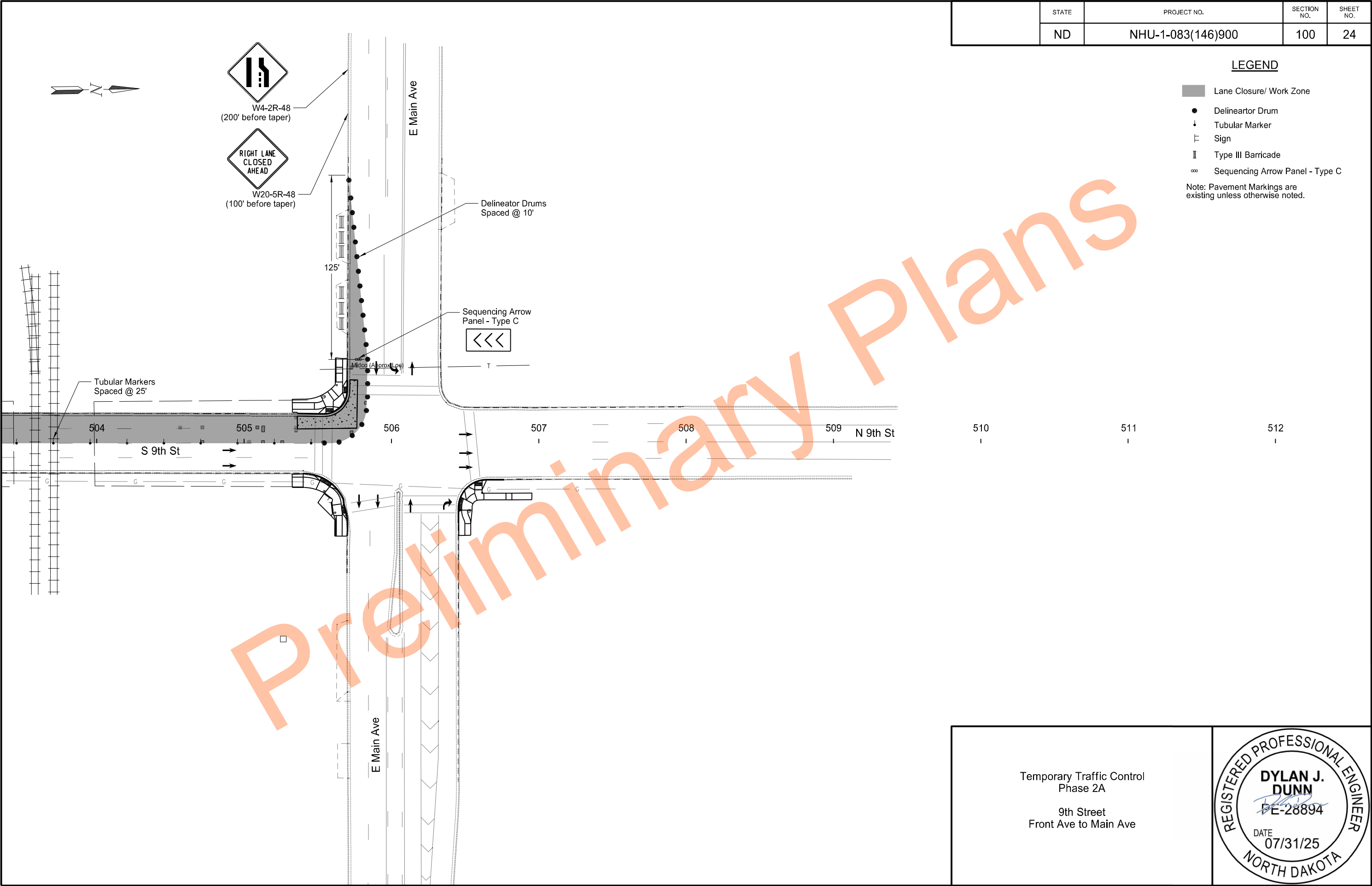
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E-28894

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NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	100	24

LEGEND

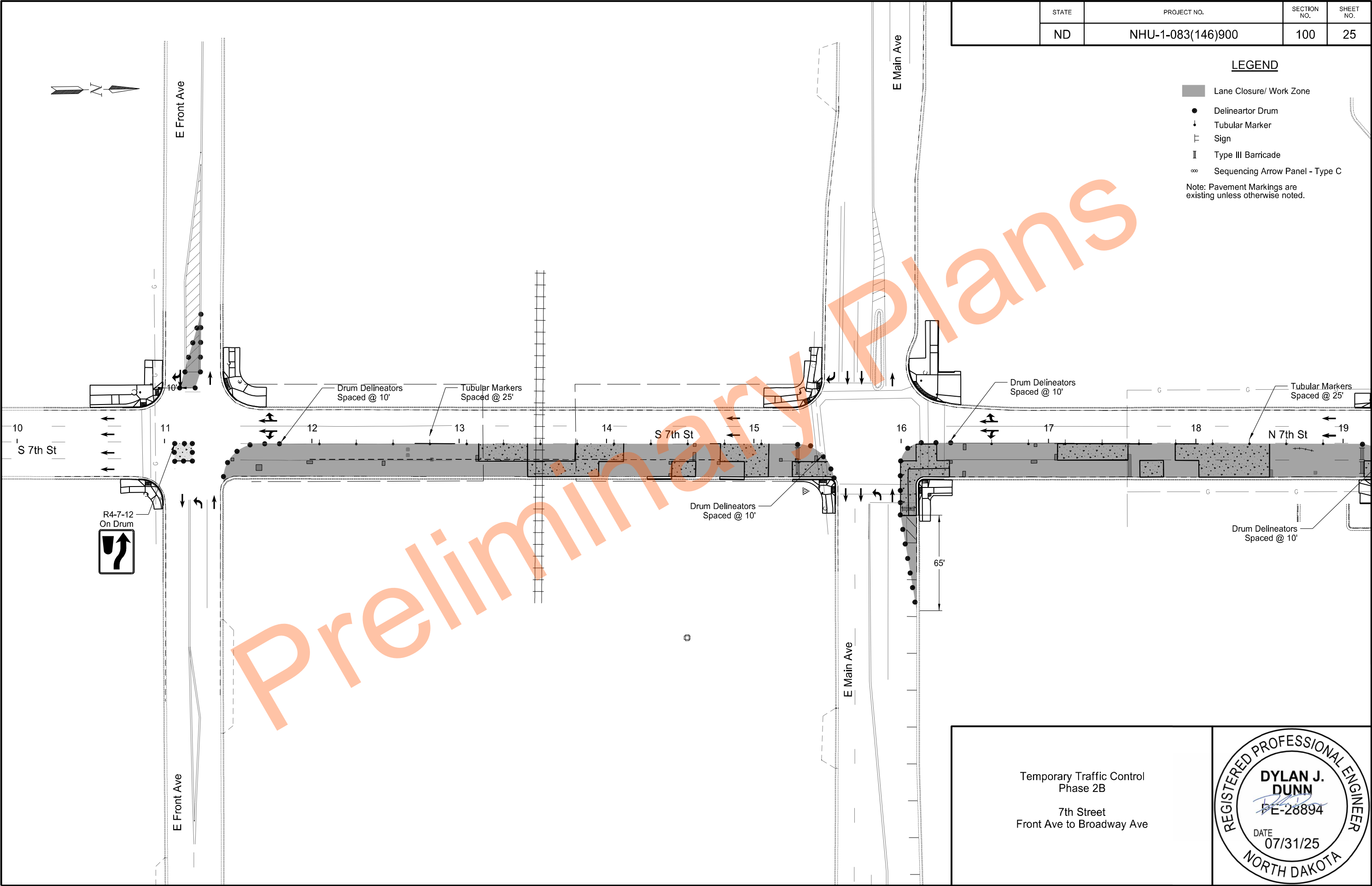
- Lane Closure/ Work Zone
- Delineator Drum
- Tubular Marker
- Sign
- Type III Barricade
- Sequencing Arrow Panel - Type C

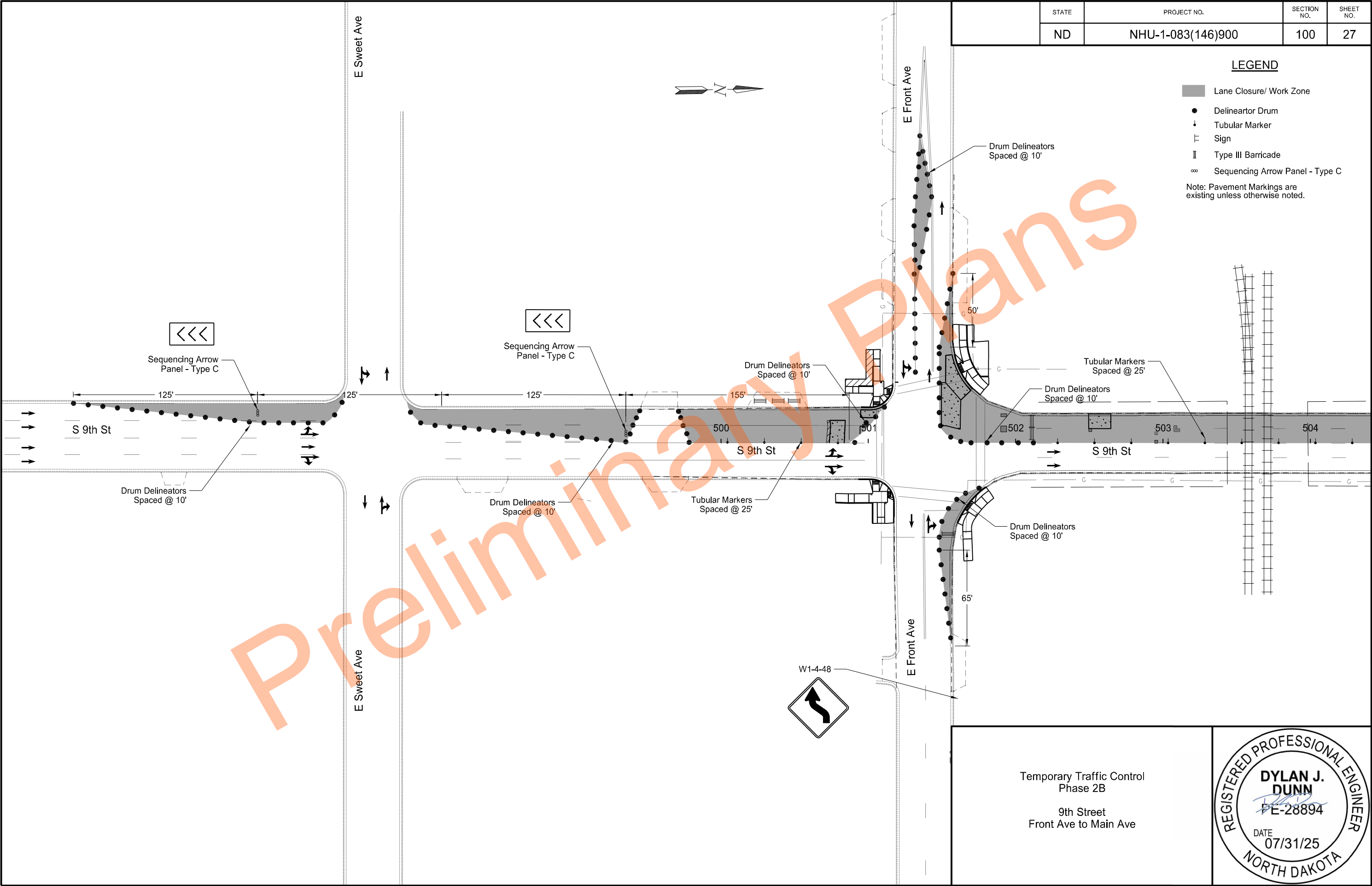
Note: Pavement Markings are existing unless otherwise noted.

Temporary Traffic Control
Phase 2A

9th Street
Front Ave to Main Ave





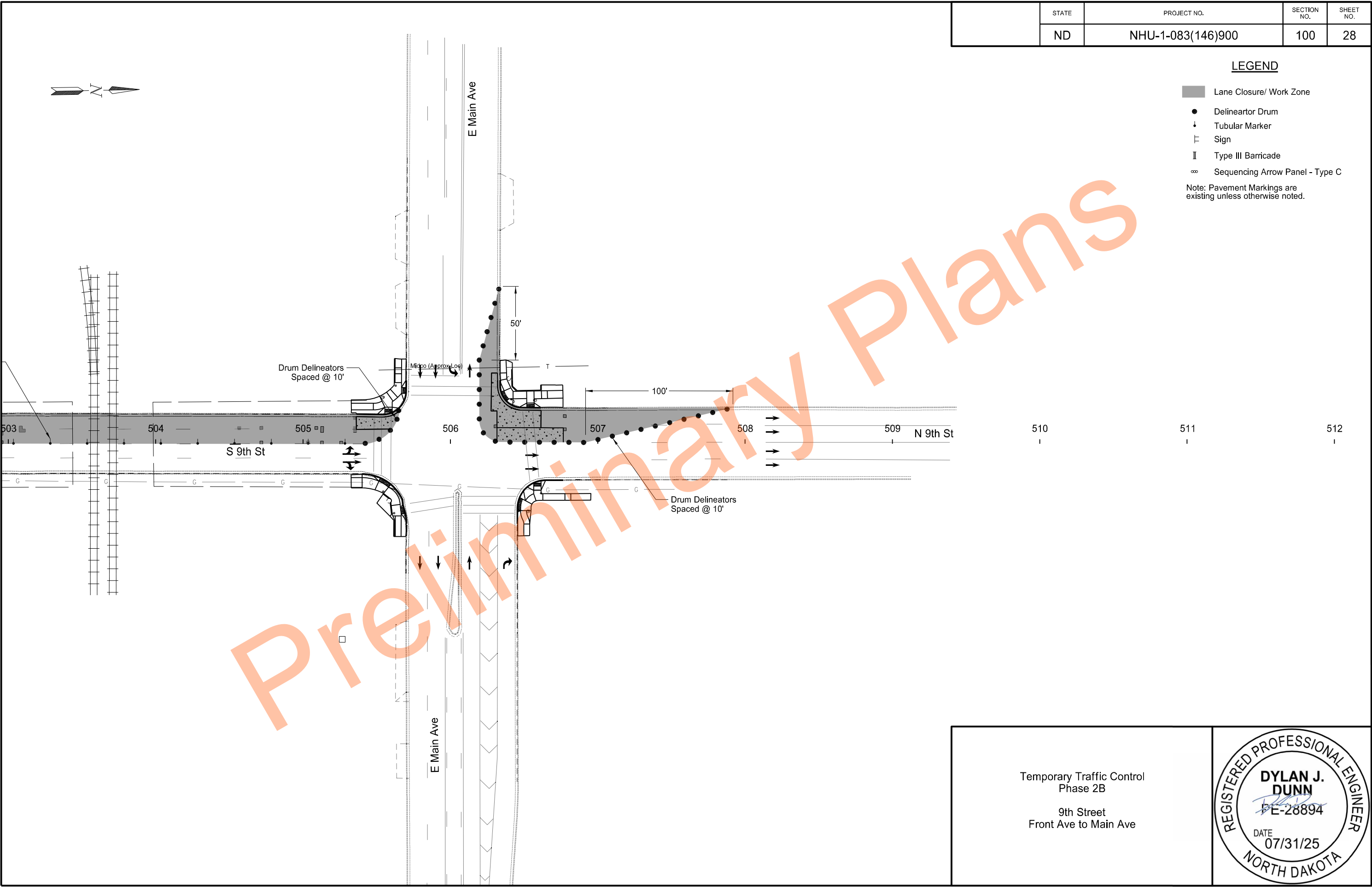


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	100	28

LEGEND

- Lane Closure/ Work Zone
- Delineator Drum
- Tubular Marker
- Sign
- Type III Barricade
- Sequencing Arrow Panel - Type C

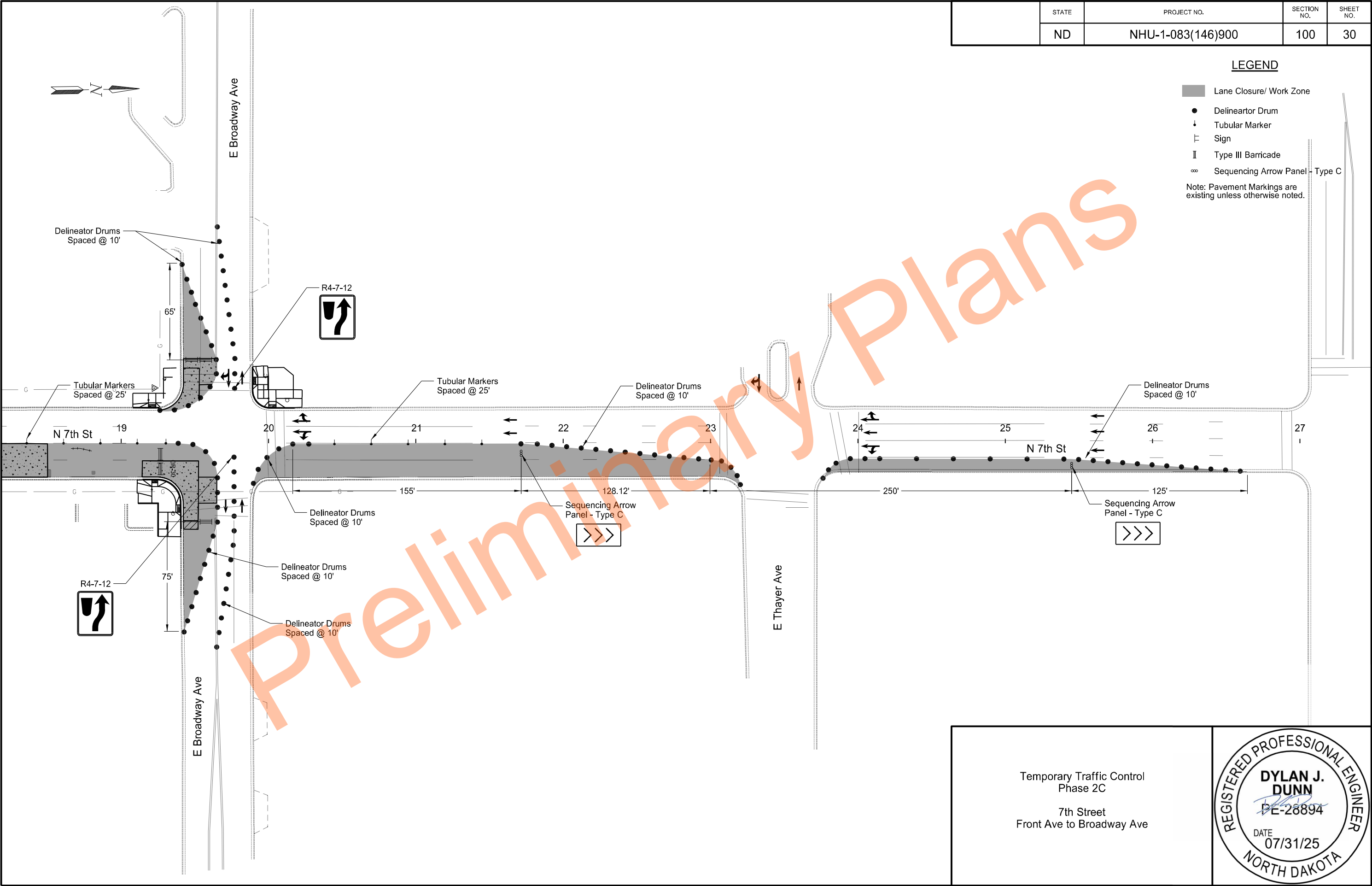
Note: Pavement Markings are existing unless otherwise noted.



Temporary Traffic Control
Phase 2B

9th Street
Front Ave to Main Ave





Temporary Traffic Control
Phase 2C

7th Street
Front Ave to Broadway Ave

REGISTERED PROFESSIONAL ENGINEER

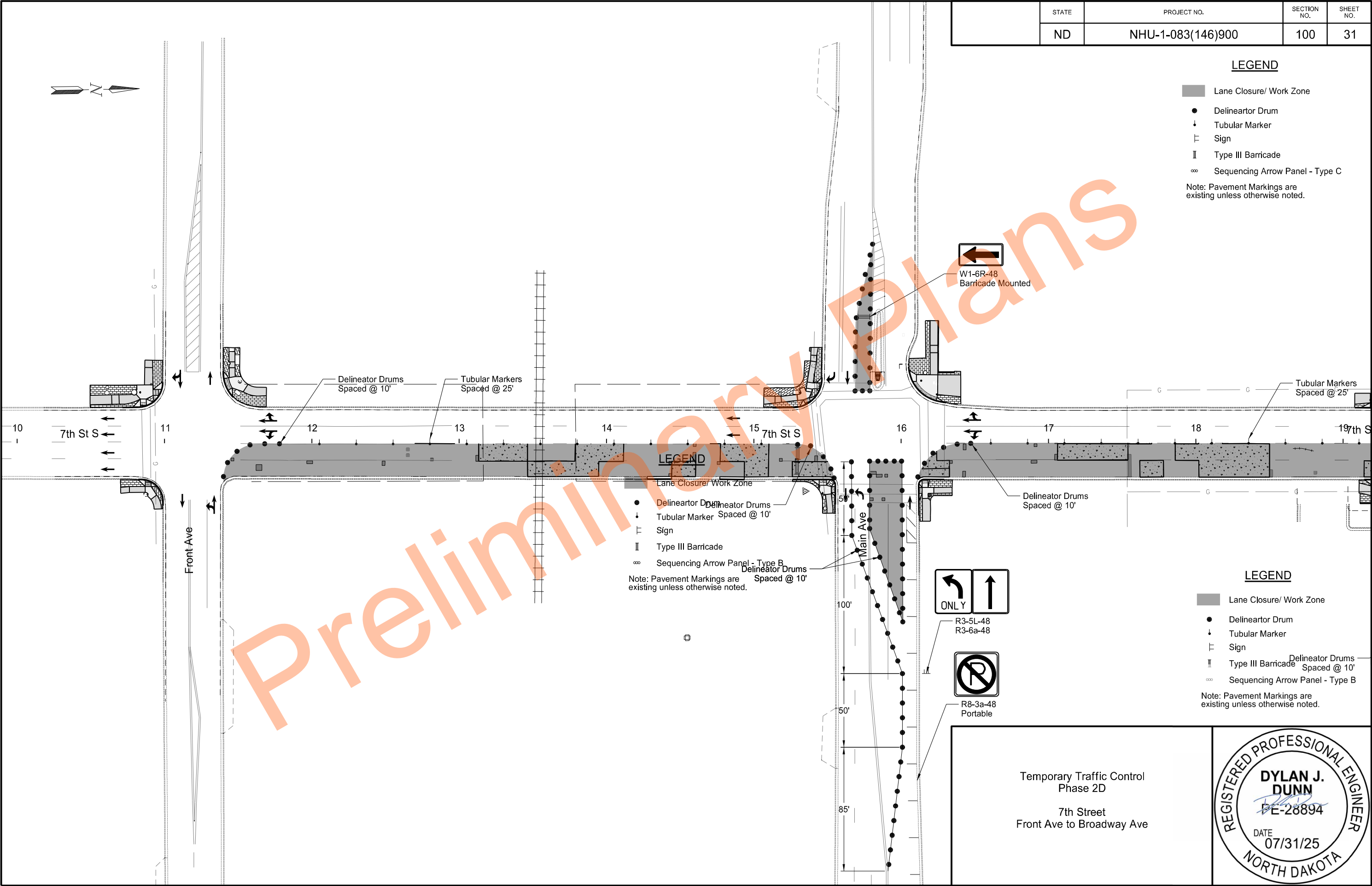
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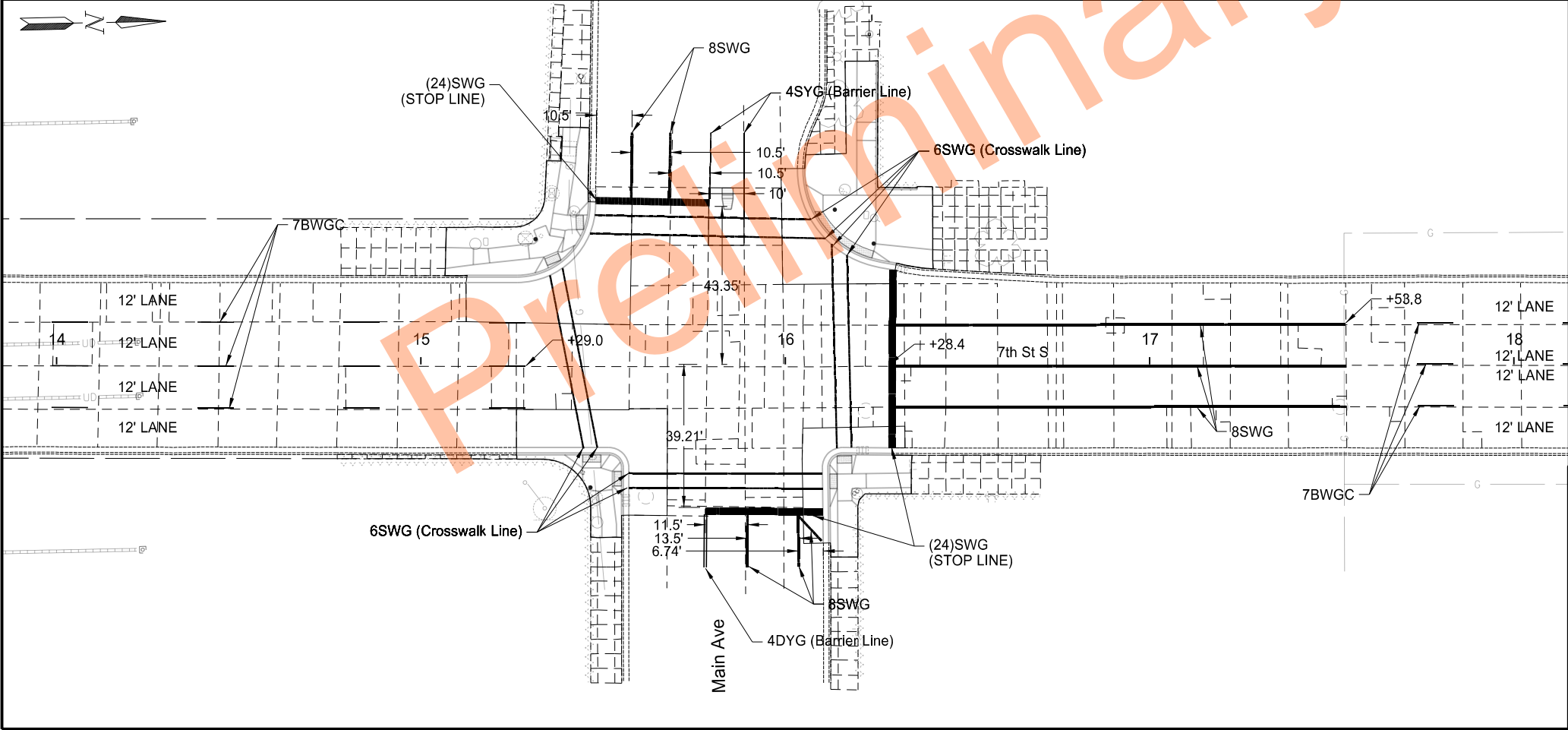
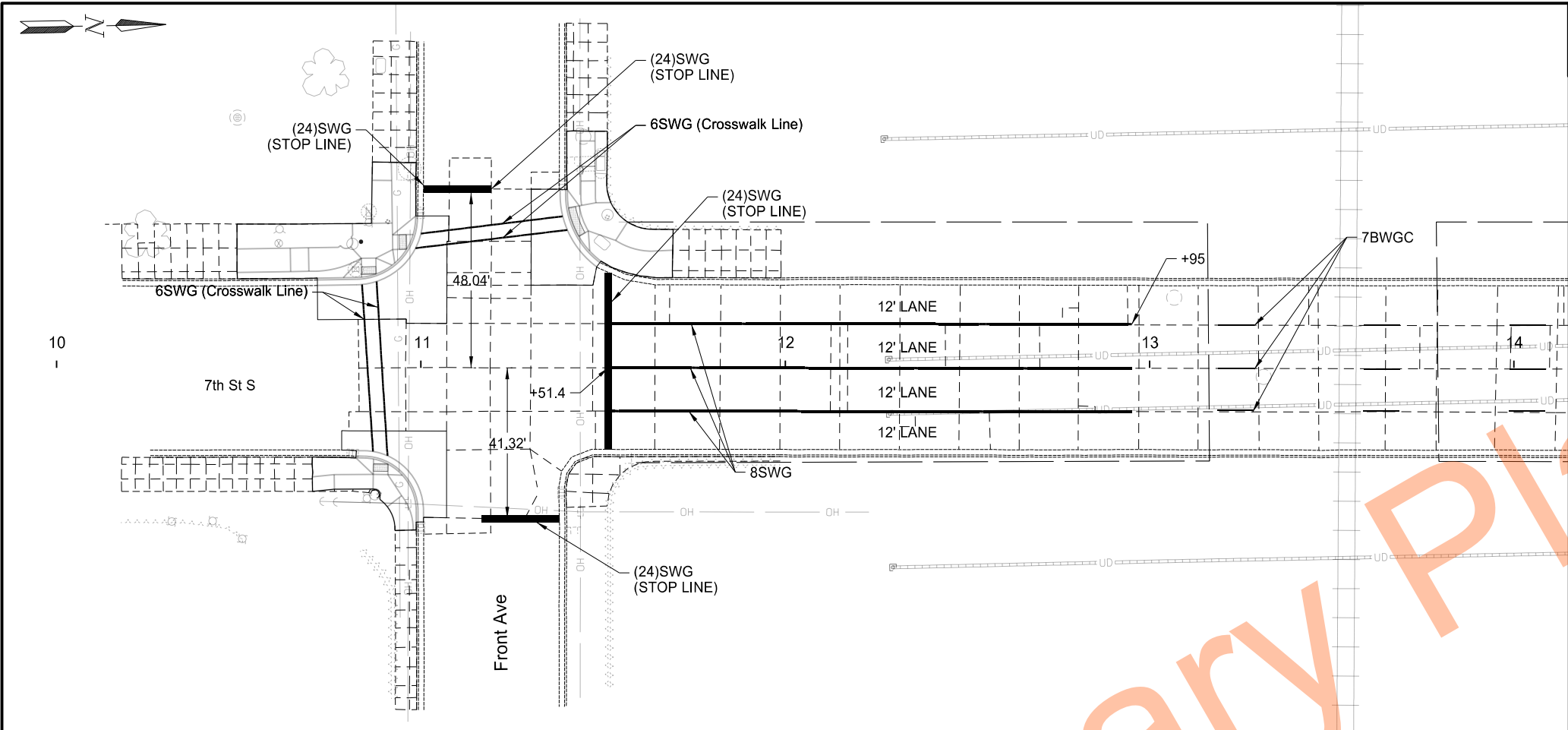
PE-28894

DATE

07/31/25

NORTH DAKOTA





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	120	1

SPEC	CODE	PAY ITEM	QTY	UNIT
762	1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE		
		Sta 10+49.653 to Sta 14+00	175	LF
		Sta 14+00 to Sta 18+00	438	LF
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE		
		Sta 10+49.653 to Sta 14+00	89	LF
		Sta 14+00 to Sta 18+00	112	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		Sta 14+00 to Sta 18+00	71	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		Sta 14+00 to Sta 18+00	73	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Sta 10+49.653 to Sta 14+00	41	LF
		Sta 14+00 to Sta 18+00	79	LF
762	1348	PREF PATT PVMT MK 11IN LINE CONTRAST-GROOVED		
		Sta 10+49.653 to Sta 14+00	429	LF
		Sta 14+00 to Sta 18+00	372	LF

STRIPING LEGEND

2ND DIGIT
PATTERN

S - Solid
B - Broken
T - Dotted
D - Double Solid

3RD DIGIT
COLOR

W - White
Y - Yellow
B - Black

4TH DIGIT
GROOVED?

G - Yes
N - No

5TH DIGIT
(IF PRESENT)

C - Contrast

1ST DIGIT
(WIDTH INCHES)

4, 6, 8, (11), (12), (24)

Example: 4SWG = 4" LINE, SOLID, WHITE, GROOVED, CONTRAST.

Notes:

1) All Longitudinal Pavement Markings shall be Pref Patterned.
All Transverse Pavement Markings shall be Pref Thermo Plastic unless noted otherwise.

2) Centerline pavement marking cycle shall be (10' line, 30' skip) unless noted otherwise.

Pavement Marking

7th Street

Front Ave to Broadway Ave

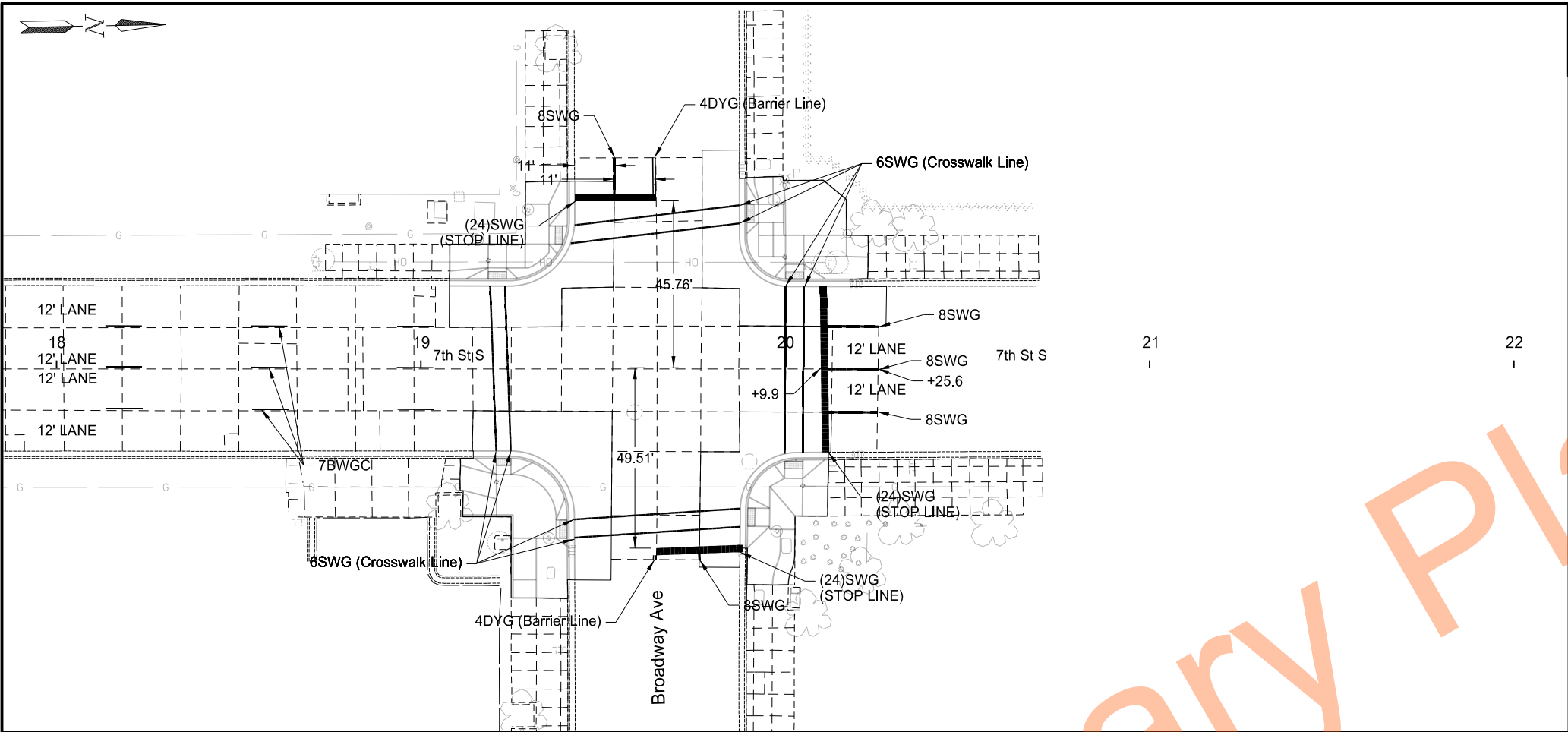
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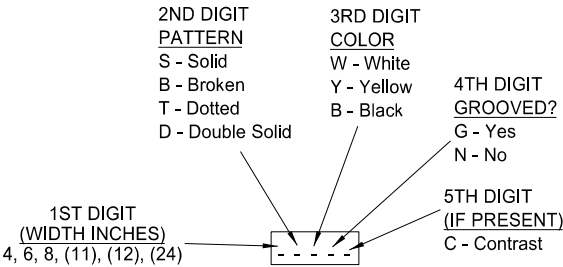
NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	120	2

SPEC	CODE	PAY ITEM	QTY	UNIT
762	1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE Sta 18+00 to Sta 20+27.659	367	LF
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE Sta 18+00 to Sta 20+27.659	91	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED Sta 18+00 to Sta 20+27.659	22	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED Sta 18+00 to Sta 20+27.659	12	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED Sta 18+00 to Sta 20+27.659	52	LF
762	1348	PREF PATT PVMT MK 11IN LINE CONTRAST-GROOVED Sta 18+00 to Sta 20+27.659	42	LF

STRIPING LEGEND

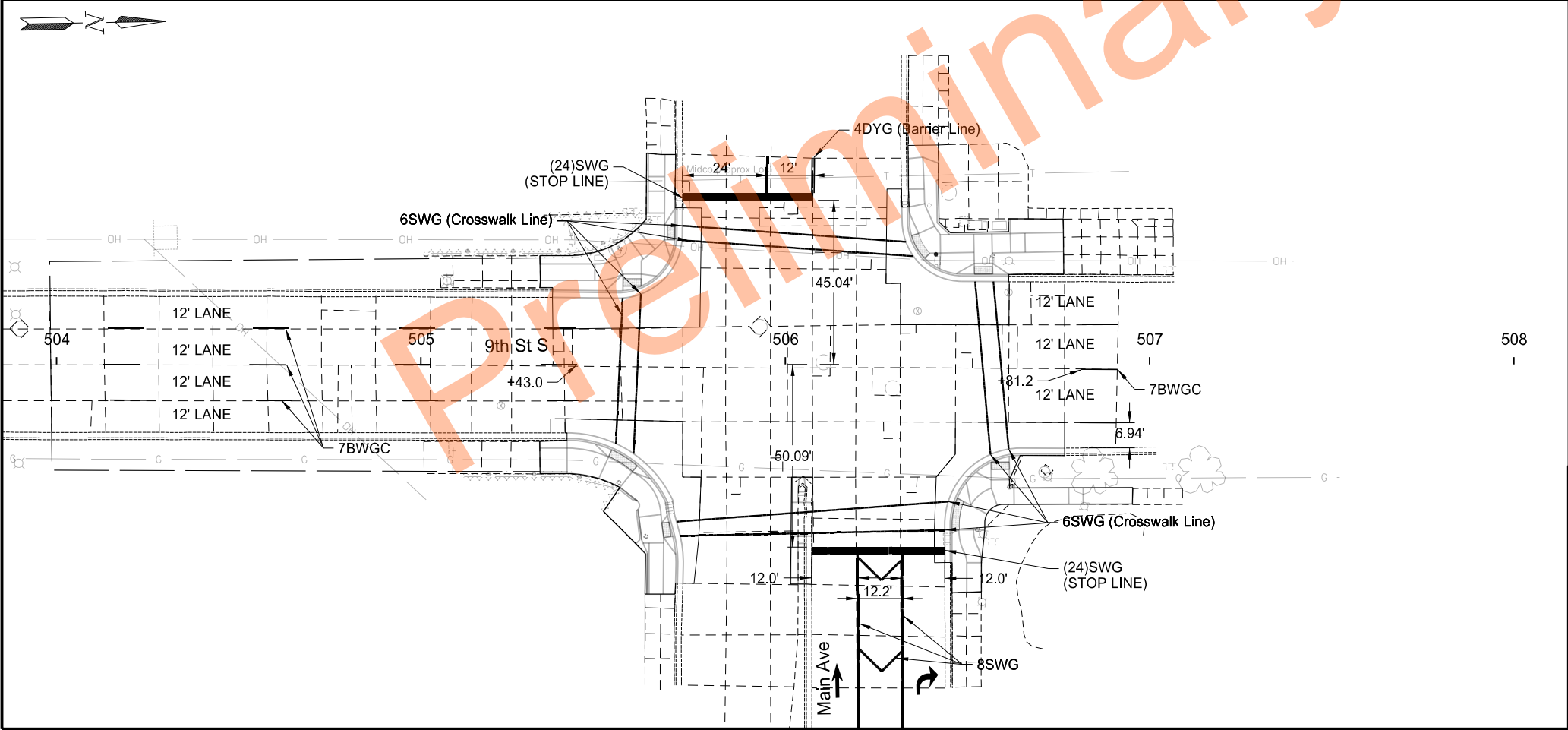
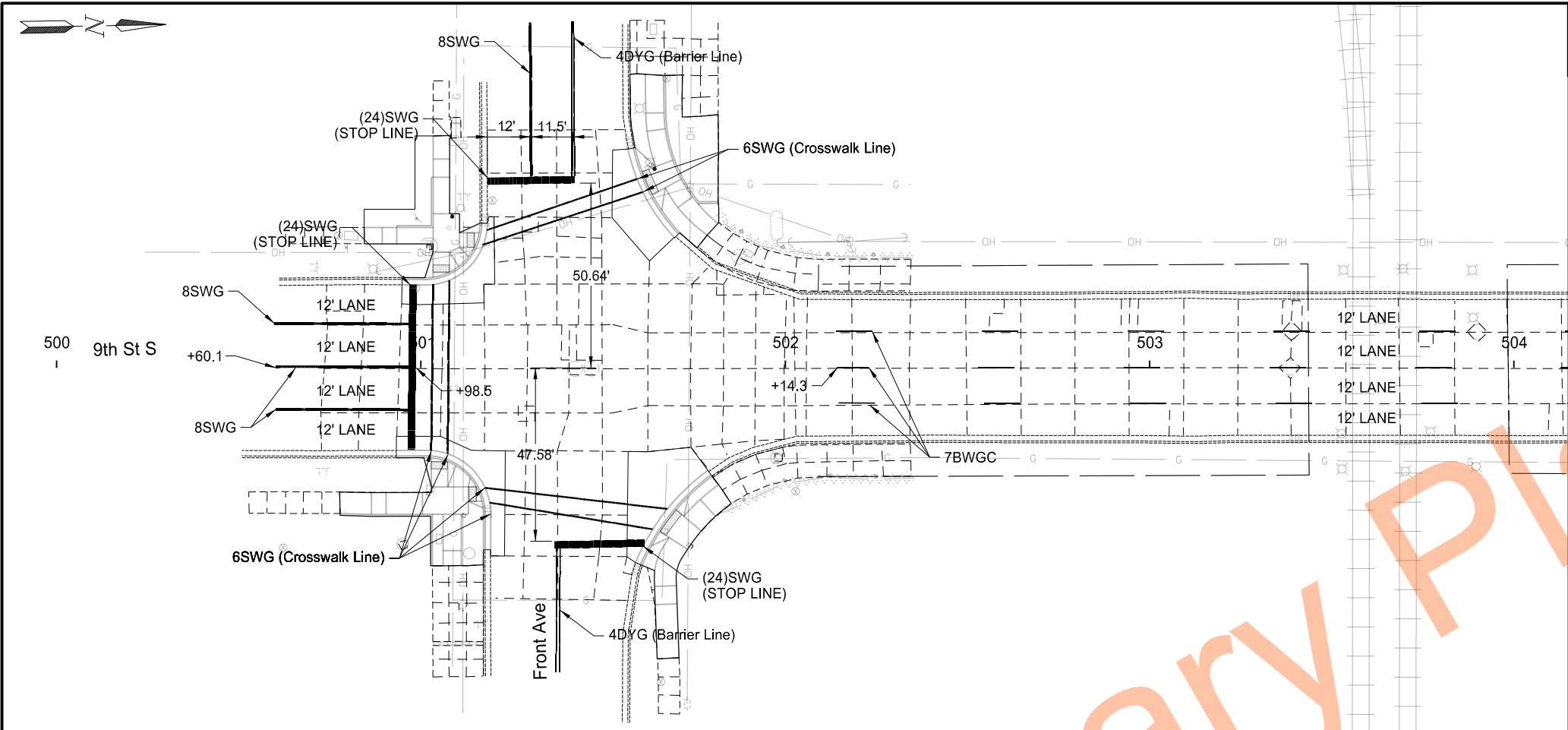


Example: 4SWG = 4" LINE, SOLID, WHITE, GROOVED, CONTRAST.

Notes:
1) All Longitudinal Pavement Markings shall be Pref Patterned.
All Transverse Pavement Markings shall be Pref Thermo Plastic
unless noted otherwise.
2) Centerline pavement marking cycle shall be (10' line, 30' skip)
unless noted otherwise.

Pavement Marking
7th Street
Front Ave to Broadway Ave





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-1-083(146)900	120	3

SPEC	CODE	PAY ITEM	QTY	UNIT
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Sta 504+00 to Sta 506+95.369	27	SF
762	1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE Sta 500+72.546 to Sta 504+00 Sta 504+00 to Sta 506+95.369	279 445	LF
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE Sta 500+72.546 to Sta 504+00 Sta 504+00 to Sta 506+95.369	93 72	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED Sta 500+72.546 to Sta 504+00 Sta 504+00 to Sta 506+95.369	152 20	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED Sta 500+72.546 to Sta 504+00 Sta 504+00 to Sta 506+95.369	42 146	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED Sta 500+72.546 to Sta 504+00 Sta 504+00 to Sta 506+95.369	93 95	LF
762	1348	PREF PATT PVMT MK 11IN LINE CONTRAST-GROOVED Sta 500+72.546 to Sta 504+00	74	LF

STRIPING LEGEND

2ND DIGIT PATTERN	3RD DIGIT COLOR	4TH DIGIT GROOVED?	5TH DIGIT (IF PRESENT)
S - Solid	W - White	G - Yes	C - Contrast
B - Broken	Y - Yellow	N - No	
T - Dotted	B - Black		
D - Double Solid			

1ST DIGIT
(WIDTH INCHES)
4, 6, 8, (11), (12), (24)

Example: 4SWG = 4" LINE, SOLID, WHITE, GROOVED, CONTRAST.

- Notes:
- 1) All Longitudinal Pavement Markings shall be Pref Patterned.
All Transverse Pavement Markings shall be Pref Thermo Plastic unless noted otherwise.
 - 2) Centerline pavement marking cycle shall be (10' line, 30' skip) unless noted otherwise.

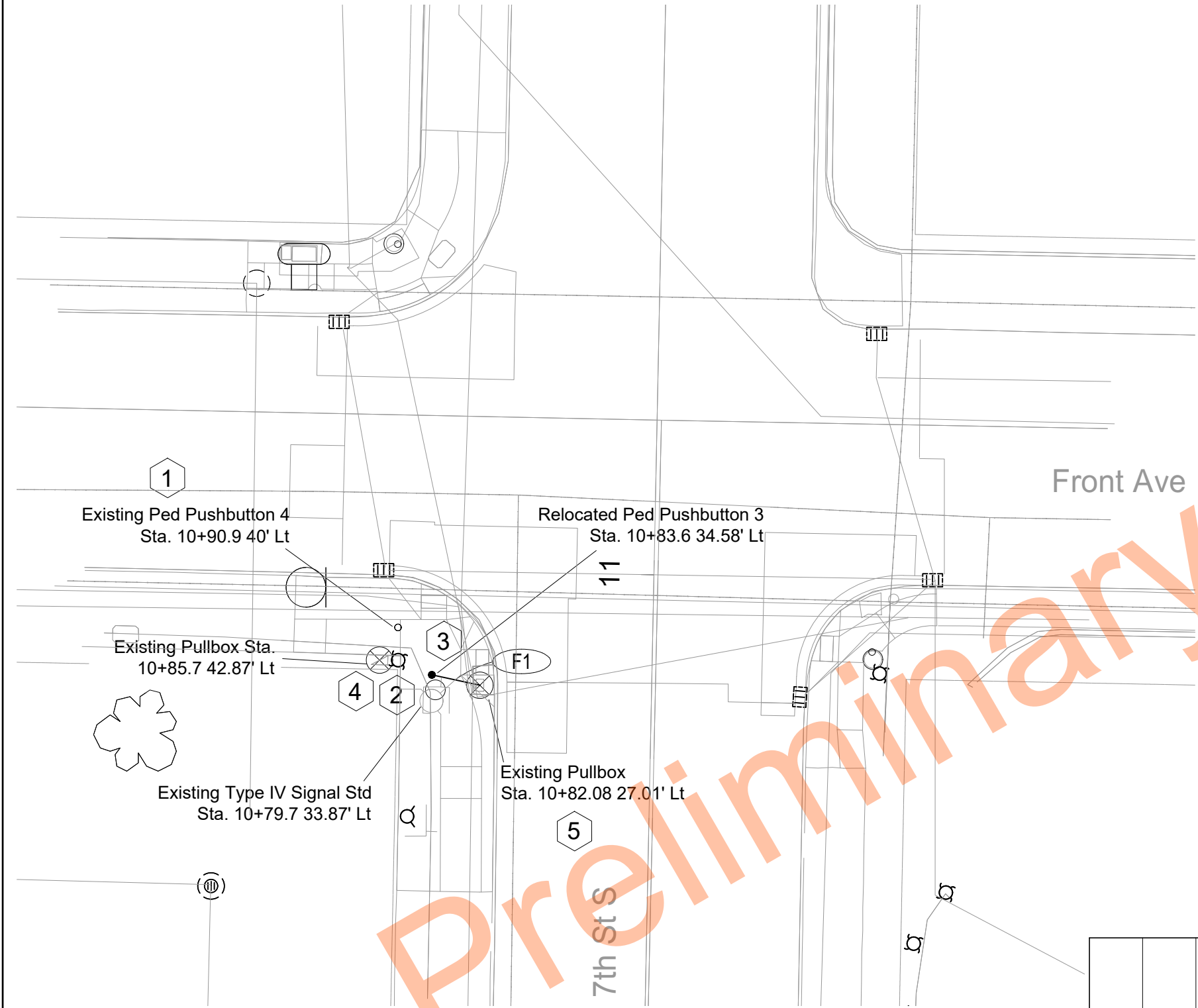
Pavement Marking
9th Street
Front Ave to Main Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	150	1

KEYNOTES

1. Remove existing PED pushbutton 4 and post for new concrete placement. Pull existing circuitry back to existing signal standard. Lower existing pushbutton to achieve height compliance with proposed concrete elevations. Pull existing circuitry back into post and terminate as required.
2. Existing PED pushbutton 3 on existing signal standard. Remove existing PED Pushbutton 3 from signal standard and seal signal standard penetrations as required. PED Pushbutton 3 to be relocated to note 3 location.
3. Relocated PED pushbutton 3. Provide new PED pushbutton post and relocate existing pushbutton 3 to achieve height compliance with proposed concrete elevations. Provide new circuitry indicated.
4. Reset existing pullbox top elevation as required by new, lower top of concrete.



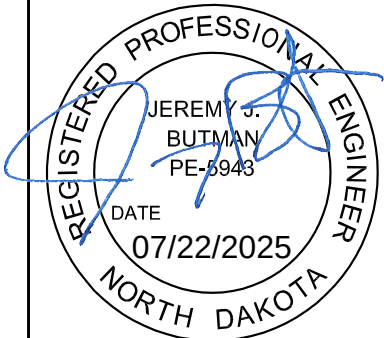
Cable Run Designation	Station & Offset	Cable Run Description	Existing Rigid Conduit	1" Diameter Rigid Conduit	2" Diameter Rigid Conduit	Underground Conductor NO6-Type THW	Pedestrian Pushbutton NO16 AWG 3 Conductor Cable
F1	10+82.08 27.07' Lt to 10+83.6 34.58' Lt	Existing pull box to Relocated PED Pushbutton 3		8 LF		20 LF	20 LF

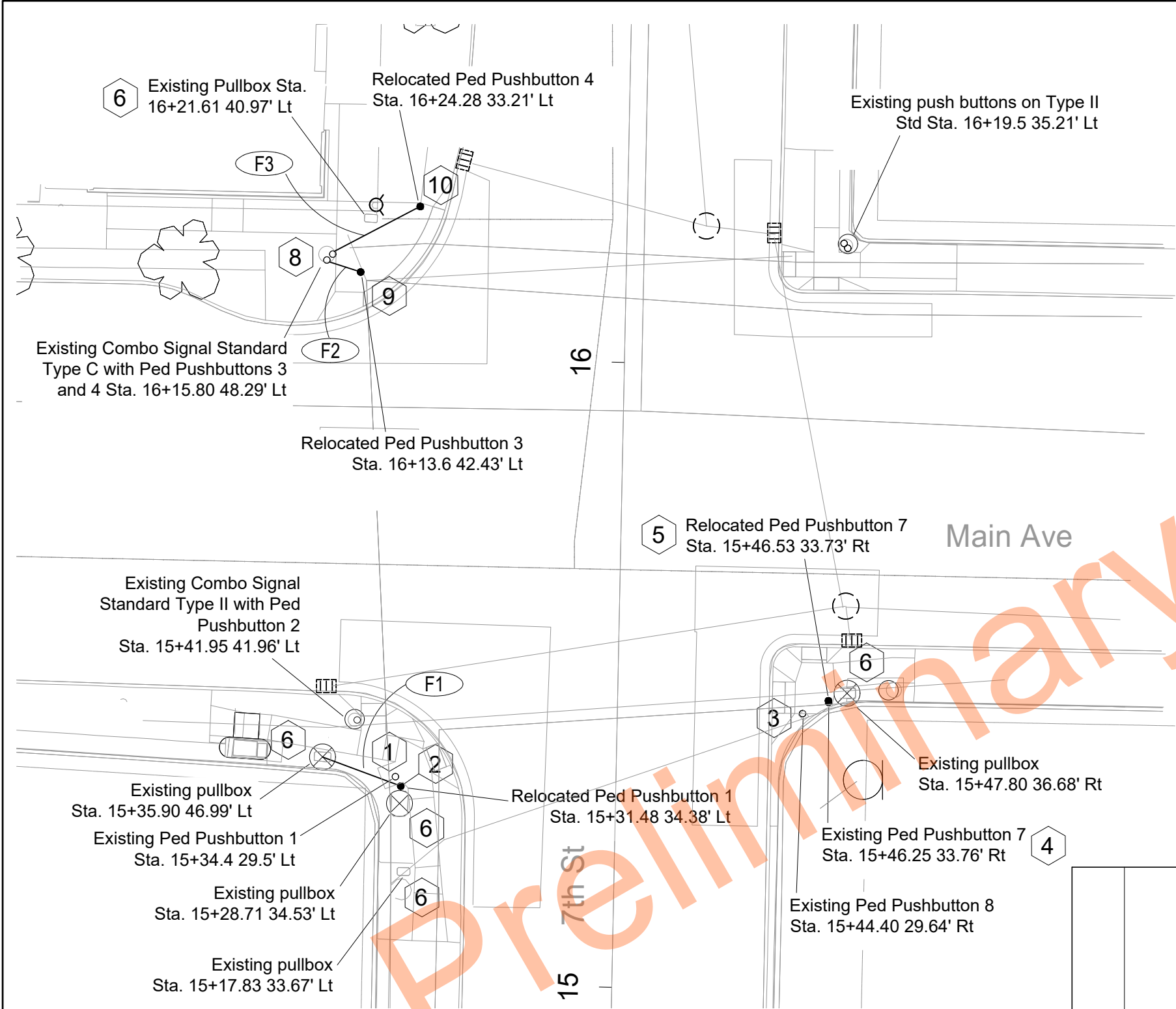


Push Button Adjustments

7th Street
Front Ave to Broadway

7th and Main Ave Intersection





KEYNOTES

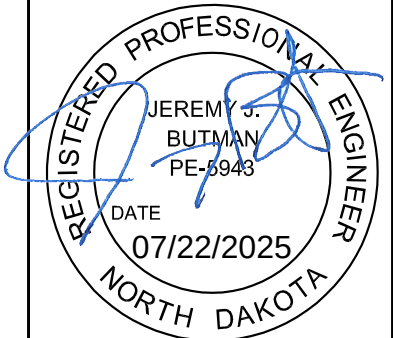
- Remove existing PED pushbutton 1 post and pushbutton for concrete removal and grade lowering. Remove existing 16 AWG 3 conductor cable and (1) underground conductor NO6-Type THW tracer wire to pullbox. PED Pushbutton 1 to be relocated to note 2 location.
- Relocated PED pushbutton 1. Provide new circuitry indicated. Splice in existing pullbox as required.
- Remove existing PED pushbutton 8 post and pushbutton for concrete removal and grade lowering. Pull back existing 16 AWG 3 conductor cable and (1) underground conductor NO6-Type THW tracer wire to pullbox. Reinstall PED pushbutton at a modified, compliant height based on new top of sidewalk elevation after concrete removal. Repull existing cabling from pullbox and terminate as required.
- Remove existing PED pushbutton 7 post and pushbutton for concrete removal and grade lowering. Pull back existing 16 AWG 3 conductor cable and (1) underground conductor NO6-Type THW tracer wire to pullbox.
- Relocated PED pushbutton 7. Relocate existing post and pushbutton. Repull existing circuitry to new location. Modify existing conduit as required.
- Reset existing pullbox top elevation as required by new, lower top of concrete.
- Existing pushbutton 2 on existing signal standard. Lower existing pushbutton to achieve height compliance with proposed concrete elevations. Seal any remaining signal standard penetrations as required.
- Existing PED pushbuttons 3 and 4 on existing signal standard. Remove existing PED Pushbuttons 3 and 4 from signal standard and seal unused signal standard penetrations as required. PED Pushbutton 3 to be relocated to note 9 location and PED Pushbutton 4 to be relocated to note 10 location.
- Relocated PED pushbutton 3. Provide new post for pushbutton to achieve height compliance with proposed concrete elevations. Provide new circuitry indicated. Splice circuitry in existing signal standard.
- Relocated PED pushbutton 4. Provide new post for pushbutton to achieve height compliance with proposed concrete elevations. Provide new circuitry indicated. Splice circuitry in existing signal standard.

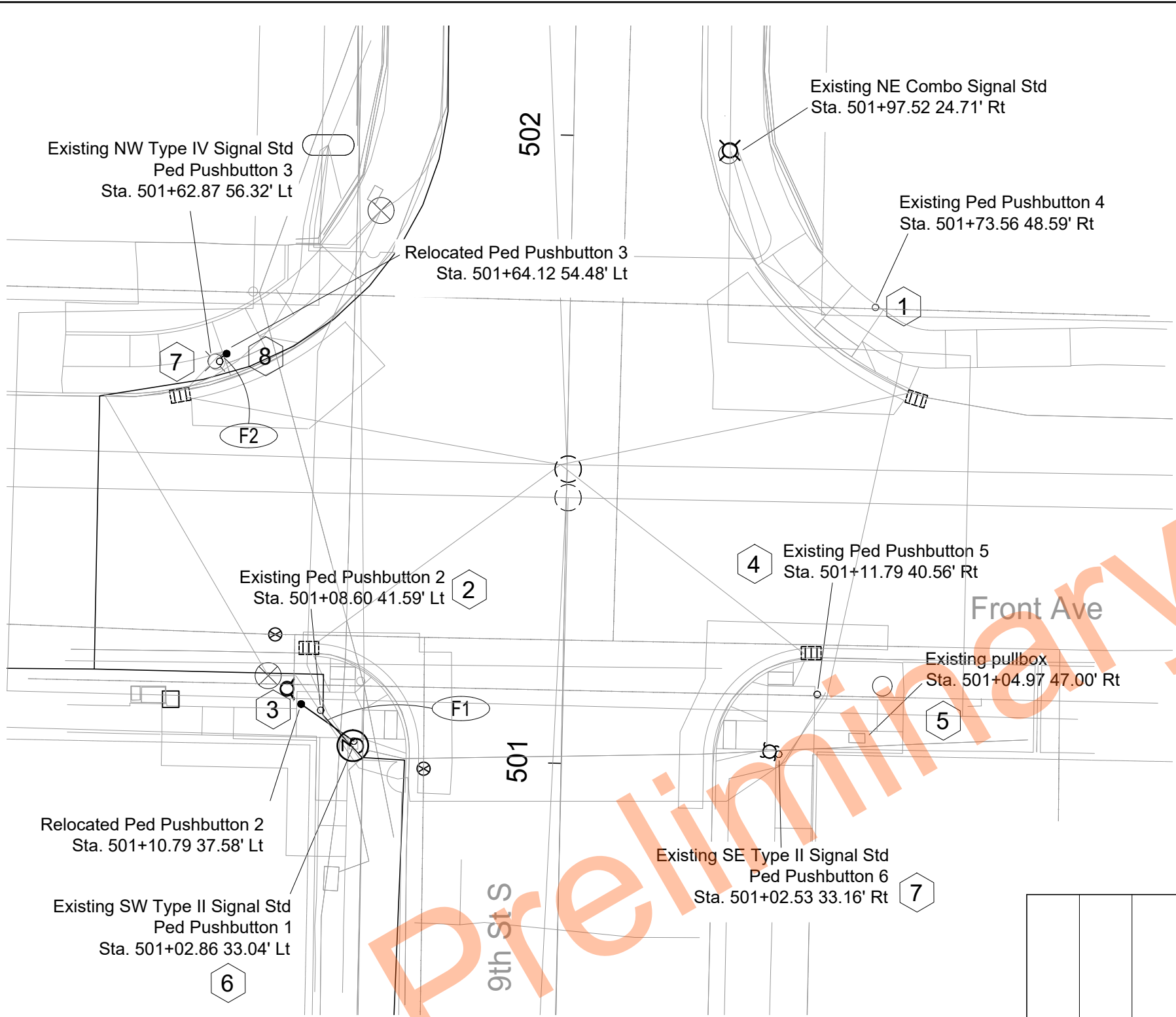
Cable Run Designation	Station & Offset	Cable Run Description	Existing Rigid Conduit	1" Diameter Rigid Conduit	2" Diameter Rigid Conduit	Underground Conductor NO6-Type THW	Pedestrian Pushbutton NO16 AWG 3 Conductor Cable
F1	15+35.90 46.99' Lt to 15+31.48 34.38' Lt	Existing pullbox to Relocated PED Pushbutton 1		13 LF		25 LF	25 LF
F2	16+15.80 48.29' Lt to 16+13.6 42.43' Lt	Existing signal standard to Relocated PED Pushbutton 3		6 LF		18 LF	18 LF
F3	16+15.80 48.29' Lt to 16+24.28 33.21' Lt	Existing signal standard to Relocated PED Pushbutton 4		15 LF		27 LF	27 LF

Push Button Adjustments

7th Street
Front Ave to Broadway

7th and Main Ave Intersection





KEYNOTES

1. Remove existing PED Pushbutton 4 pushbutton for new concrete placement. Pull existing circuitry back to existing signal standard. Reset existing standard in same location at modified height and orientation to achieve height compliance with proposed concrete elevations, and modify existing 2" conduit as required for proposed concrete elevation. Pull existing circuitry back into standard and terminate as required
2. Remove existing PED pushbutton 2 for new concrete placement. Pull existing circuitry back to existing note 1 PED standard. Relocate to note 3 location.
3. Relocated PED Pushbutton 2. Provide new post for pushbutton to achieve height compliance with proposed concrete elevations. Provide new circuitry indicated. Splice circuitry in existing signal standard.
4. Remove existing PED pushbutton 5 post and pushbutton for concrete removal and grade lowering. Pull back existing 16 AWG 3 conductor cable and (1) underground conductor NO6-Type THW tracer wire to pullbox. Reinstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations. Repull existing cabling from pullbox and terminate as required.
5. Reset existing pullbox top elevation as required by new, lower top of concrete.
6. Remove existing PED pushbutton 1 and lower on existing signal standard to achieve height compliance with proposed concrete elevations. Seal unused signal standard penetrations as required.
7. Existing PED pushbutton 3 on existing signal standard. Remove existing PED pushbutton 3 from signal standard and seal unused signal standard penetrations as required. See Note 8 for new pushbutton locations.
8. Provide new PED pushbutton post and relocate existing pushbutton 3 to achieve height compliance with proposed concrete elevations.

Cable Run Designation	Station & Offset	Cable Run Description	Existing Rigid Conduit	1" Diameter Rigid Conduit	2" Diameter Rigid Conduit	Underground Conductor NO6-Type THW	Pedestrian Pushbutton NO16 AWG 3 Conductor Cable	Type II Pedestrian Signal Standard NO14 AWG 7 Conductor Cable
F1	501+02.86 33.04'Lt to 501+08.60 41.59'Lt	Existing PED standard to Relocated PED Pushbutton 2			11 LF	23 LF	23 LF	
F2	501+32.87 56.32'Lt to 501+64.12 54.48'Lt	Existing PED standard to Relocated PED Pushbutton 2			3 LF	15 LF	15 LF	

Push Button Adjustments

9th Street
Front Ave to Broadway

9th and Front Ave Intersection

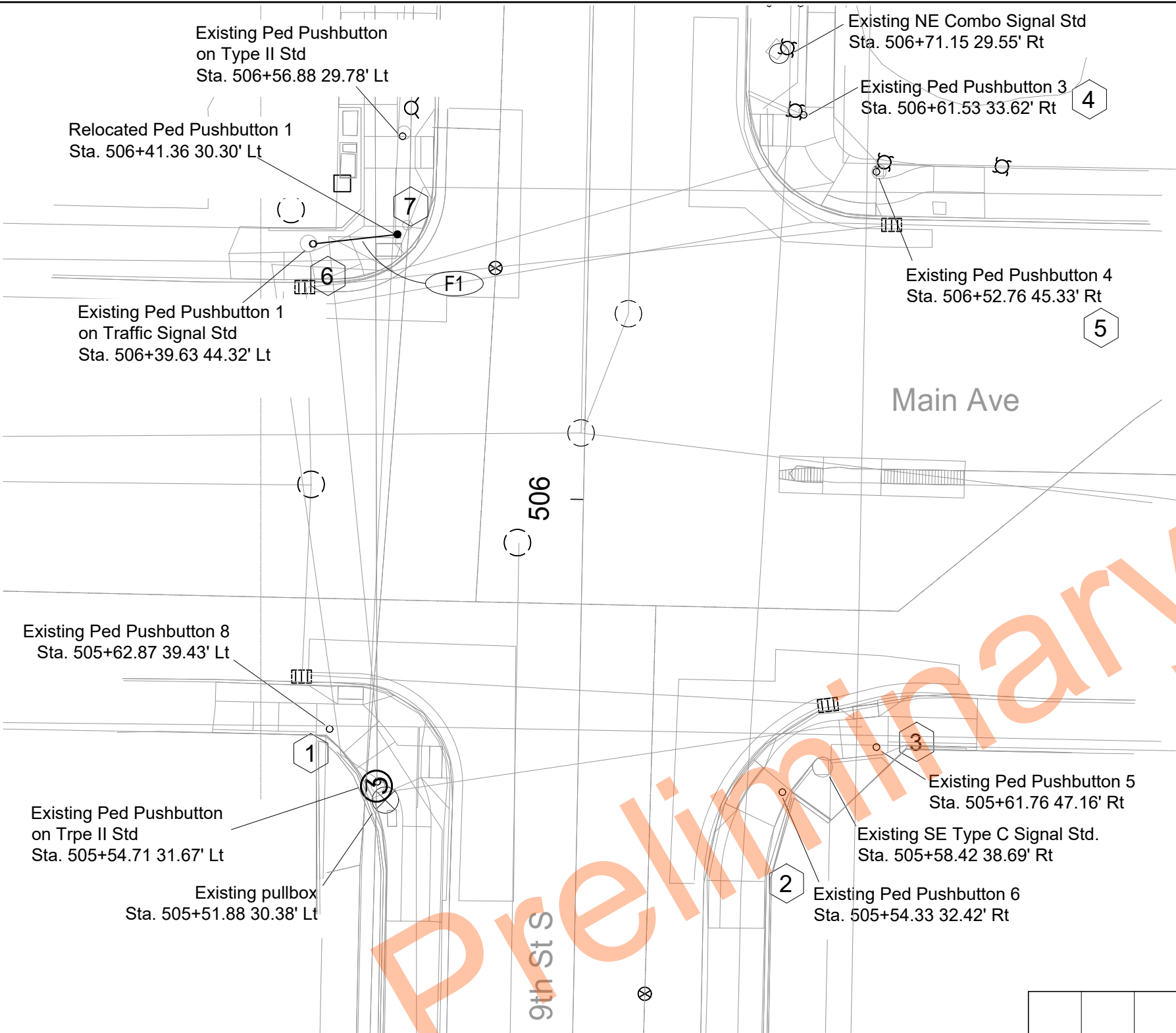
REGISTERED PROFESSIONAL ENGINEER

JEREMY J. BUTMAN
PE-6943

DATE 07/22/2025

NORTH DAKOTA





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-1-083(146)900	150	4

KEYNOTES

1. Remove existing PED pushbutton 8 and associated post for new concrete placement. Pull existing circuitry back to existing signal standard. einstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations and modify existing 2" conduit as required for lower concrete elevation. Pull existing circuitry back into post and terminate as required.
2. Remove existing PED pushbutton 6 and associated post for new concrete placement. Pull existing circuitry back to existing signal standard. einstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations and modify existing 2" conduit as required for lower concrete elevation. Pull existing circuitry into standard and terminate as required.
3. Remove existing PED pushbutton 5 and associated post for new concrete placement. Pull existing circuitry back to existing signal standard. einstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations and modify existing 2" conduit as required for lower concrete elevation. Pull existing circuitry back into post and terminate as required.
4. Remove existing PED pushbutton 3 and associated post for new concrete replacement. Pull existing circuitry back to existing signal standard. Reinstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations and modify existing 2" conduit as required for lower concrete elevation. Pull existing circuitry into standard and terminate as required.
5. Remove existing PED pushbutton 4 and associated post for new concrete replacement. Pull existing circuitry back to existing signal standard. Reinstall in same location at modified height and orientation to achieve height compliance with proposed concrete elevations and modify existing 2" conduit as required for lower concrete elevation. Pull existing circuitry into standard and terminate as required.
6. Existing PED pushbutton 1 on existing signal standard. Remove existing PED pushbutton 1 from signal standard and seal signal standard penetration as required. PED pushbutton 1 to be relocated to note 7 location.
7. Relocated PED pushbutton 1. Provide new post for pushbutton at height to achieve height compliance with proposed concrete elevations. Provide new circuitry indicated. Splice circuitry in existing signal standard.

Cable Run Designation	Station & Offset	Cable Run Description	Existing Rigid Conduit	1" Diameter Rigid Conduit	2" Diameter Rigid Conduit	Underground Conductor NO6-Type THW	Pedestrian Pushbutton NO16 AWG 3 Conductor Cable	Type II Pedestrian Signal Standard NO14 AWG 7 Conductor Cable
F1	506+39.63 44.32'Lt to 506+41.36 30.30'Lt	Existing Sig. standard to Relocated PED Pushbutton 1			12 LF	24 LF	24 LF	

Push Button Adjustments

9th Street
Front Ave to Broadway

9th and Main Ave Intersection

REGISTERED PROFESSIONAL ENGINEER

JEREMY J. BUTMAN
PE-6943

DATE 07/22/2025

NORTH DAKOTA



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.

Abn abandoned
Abut abutment
Adj adjusted
Aggr aggregate
Ahd ahead
ARV air release valve
Align alignment
Al alley
Alt alternate
Alum aluminum
ADA Americans with Disabilities Act
& and
Appr approach
Approx approximate
ACP asbestos cement pipe
Asph asphalt
AC asphalt cement
Assmd assumed
@ at
Atten attenuation
ATR automatic traffic recorder
Ave Avenue
Avg average
ADT average daily traffic

Bk back
BF back face
Balc balcony
B Wire barbed wire
Barr barricade
Btry battery
BI beehive inlet
Beg begin
BG below grade
BM bench mark
Bkwy bikeway
Bit bituminous
Blk block
BH bore hole
Bot bottom
Blvd Boulevard
Bndry boundary
Brkwy breakaway
Br bridge
Bldg building
Bus. business
BV butterfly valve
Byp bypass

C Gdrl cable guardrail
Calc calculate
CIP cast iron pipe
CB catch basin
CRS cationic rapid setting
C Gd cattle guard
C To C center to center
CL or ☐ centerline
Ch chain
Chnlk chain-link
Ch Blk channel block
Ch Ch channel change
Chk check
Chsld chiseled
Cir circle
Cl class
Clnt clean-out
Clr clear
Cl&gr clearing & grubbing
Comb. combination
Coml commercial
Compr compression
CADD computer aided drafting & design
Conc concrete
CECB concrete erosion control blanket
Cond conductor
Const construction
Cont continuous
CSB continuous split barrel sample
Contr contraction
Contr contractor
CP control point
Coord coordinate
Cor corner
Corr corrected
CAES corrugated aluminum end section
CAP corrugated aluminum pipe
CMES corrugated metal end section
CMP corrugated metal pipe
CPVCP corrugated poly-vinyl chloride pipe
CSES corrugated steel end section
CSFES corrugated steel flared end section
CSP corrugated steel pipe
CSTES corrugated steel traversable end section
Co County
Crse course
Ct Court
Xarm cross arm
Xbuck cross buck
Xsec cross sections
Xing crossing
Xrd crossroad
Crm crown

Culv culvert
C&G curb & gutter
CI curb inlet
CR curb ramp
C cut

Dd Ld dead load
Defl deflection
Defm deformed
DInt delineate
DIntr delineator
Depr depression
Desc description
Det detail
DWP detectable warning panel
Dtr detour
Dia or ø diameter
Dir direction
Dist distance
DM disturbed material
DB ditch block
DG ditch grade
Dbl double
Dn down
Dwg drawing
Dr drive
Drwy driveway
DI drop inlet
D dry density

Ea each
Esmt easement
E East
EB Eastbound
Elast elastomeric
EL electric locker
E Mtr electric meter
EVSE electric vehicle supply equipment
Elec electric/al
EDM electronic distance meter
Elev or El elevation
Ellipt elliptical
Emb embankment
Emuls emulsion/emulsified
ES end section
Engr engineer
ESS environmental sensor station
Eq equal
Evgr evergreen
Exc excavation
Exst existing
Exp expansion
Expy Expressway
E external of curve
Extru extruded

FOS factor of safety
Fed Federal
FP feed point
Fn fence
Fn P fence post
FO fiber optic
FD field drive
F fill
FAA fine aggregate angularity
FH fire hydrant
FI flange
Flrd flared
FES flared end section
F Bcn flashing beacon
FA flight auger sample
FL flow line
Ftg footing
FM force main
Fnd found
Fdn foundation
Frac fractional
Frwy freeway
Frt front
FF front face
F Disp fuel dispenser
FFP fuel filler pipes
FLS fuel leak sensor
Furn furnish/ed

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	VG	valley gutter
SB	split barrel sample	Vap	vapor
SH	sprinkler head	Vert	vertical
SV	sprinkler valve	VCP	vitrified clay pipe
Sq	square	Vol	volume
Stk	stake	VSFS	vehicle speed feedback sign
Std	standard		
N	standard penetration test	Wkwy	walkway
Std Specs	standard specifications	W	water content
Stm L	steam line	WGV	water gate valve
SEC	steel encased concrete	WL	water line
SMA	stone matrix asphalt	WM	water main
SSD	stopping sight distance	WMV	water main valve
SD	storm drain	W Mtr	water meter
St	street	WSV	water service valve
SPP	structural plate pipe	WW	water well
SPPA	structural plate pipe arch	Wrng	wearing
Str	structure	WIM	weigh in motion
Subd	subdivision	W	west
Sub	subgrade	WB	westbound
Sub Prep	subgrade preperation	Wrng	wiring
Ss	subsoil	W/	with
SS	supplement specification	W/o	without
Supp	supplemental		
Surf	surfacing		
Surv	survey		
Sym	symmetrical		

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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



NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

D-101-10

702COM
ACCENT
AGASSIZ WU
AGC
ALL PL
ALL SEAS WU
AMOCO PI
AMRDA HESS
AT&T
B PAW
BAKER ELEC
BASIN ELEC
BEK TEL
BELLE PL
BLM
BNSF
BOEING
BRNS RWD
BURK-DIV ELEC
BURL WRD
CABLE ONE
CABLE SERV
CAP ELEC
CASS CO ELEC
CASS RWU
CAV ELEC
CBLCOM
CENEX PL
CENT PL WATER DIST
CENT PWR ELEC
CENTURYLINK
COE
CONS COMM
CONS TELCOM
CONT RES
CPR
D O E
DAK CARR
DAK CENT TEL
DAK RWD
DGC
DICKY R NET
DICKY WRD
DICKY TEL
DNRR
DOME PL
DVELEC
DVMW
E CENT REG WD
ENBRDG
ENVENTIS
EQUINOR
FALK MNG
FHWA
G FKS-TRL WD
GETTY TRD & TRAN
GLDN W ELEC

702 Communications
Accent Communications
Agassiz Water Users District
Associated General Contractors of America
Alliance Pipeline
All Seasons Water Users District
Amoco Pipeline Company
Amerada Hess Corporation
AT&T Corporation
Bear Paw Energy Incorporated
Baker Electric
Basin Electric Cooperative Incorporated
Bek Communications Cooperative
Belle Fourche Pipeline Company
Bureau of Land Management
Burlington Northern Santa Fe Railway
Boeing
Barnes Rural Water District
Burke-Divide Electric Cooperative
Burleigh County Water Resource District
Cable One
Cable Services
Capital Electric Cooperative Incorporated
Cass County Electric Cooperative
Cass Rural Water Users District
Cavalier Rural Electric Cooperative
Cablecom Of Fargo
Cenex Pipeline
Central Pipe Line Water District
Central Power Electric Cooperative
CenturyLink
Corps of Engineers
Consolidated Communications
Consolidated Telcom
Continental Resource Inc
Canadian Pacific Railway
Department Of Energy
Dakota Carrier Network
Dakota Central Telephone
Dakota Rural Water District
Dakota Gasification Company
Dickey Rural Networks
Dickey County Water Resource District
Dickey Telephone
Dakota Northern Railroad
Dome Pipeline Company
Dakota Valley Electric Cooperative
Dakota, Missouri Valley & Western
East Central Water District
Enbridge Pipelines Incorporated
Enventis Telephone
Equinor Pipeline
Falkirk Mining Company
Federal Highway Administration
Grand Forks-traill Water District
Getty Trading & Transportation
Golden West Electric Cooperative

GTR RAMSEY WD
GT PLNS NAT GAS
HALS TEL
IDEA1
INT-COMM TEL
KANEB PL
KEM ELEC
KOCH GATH SYS
LKHD PL
LWR YELL R ELEC
LUMEN
MCKNZ CON
MCKNZ ELEC
MCKNZ WRD
MCLEOD
MCLN ELEC
MCLN-SHRDN R WAT
MDU
MIDCO
MIDSTATE TEL
MINOT CABLE
MINOT TEL
MISS VALL COMM
MISS W W S
MINKOTA PWR
MOR-GRAN-SOU ELEC
MOUNT-WILLI ELEC
MLGC
MUNICIPAL
MUNICIPAL
N CENT ELEC
N PRAIR REG WD
ND PKS & REC
ND TEL
NDDOT
NE REG WD
NDSU SOIL SCI DEPT
NEMONT TEL
NODAK R ELEC
NOON FRMS TEL
NPR
NSP
NTHN BRDR PL
NTHN PLNS ELEC
NTHWSTRN REF
NW COMM
NWRWD
ONEOK
OSHA
OTTR TL PWR
PAAP
P L E M
POLAR COM
PVT ELEC
QWEST
R&T REG WD

Greater Ramsey Water District
Great Plains Natural Gas Company
Halstad Telephone Company
Idea1
Inter-Community Telephone Company
Kaneb Pipeline Company
Kem Electric Cooperative Incorporated
Koch Gathering Systems Incorporated
Lakehead Pipeline Company
Lower Yellowstone Rural Electric
Lumen Technologies Incorporated
McKenzie Consolidated Telcom
McKenzie Electric Cooperative
McKenzie County Water Resource District
McLeod USA
McLean Electric Cooperative
McLean-Sheridan Rural Water District
Montana-dakota Utilities
MidContinent Communications
Midstate Telephone Company
Minot Cable Television
Minot Telephone Company
Missouri Valley Communications Incorporated
Missouri West Water System
Minnkota Power
Mor-gran-sou Electric Cooperative
Mountrail-williams Electric Cooperative
Moore & Liberty - Griggs County
City Water And Sewer
City Of '.....'
North Central Electric Cooperative
North Prairie Regional Water District
North Dakota Parks And Recreation
North Dakota Telephone Company
North Dakota Department of Transportation
Northeast Regional Water District
NDSU Soil Science Department
Nemont Telephone
Nodak Rural Electric Cooperative
Noonan Farmers Telephone Company
Northern Plains Railroad
Northern States Power
Northern Border Pipeline
Northern Plains Electric Cooperative Incorporated
Northwestern Refinery Company
Northwest Communication Cooperation
Northwest Rural Water District
Oneok gas
Occupational Safety and Health Administration
Otter Tail Power Company
Plains All American Pipeline
Praeliands Energy Marketing
Polar Communications
Private Electric
Qwest Communications
R & T Water District

RED RIV COMM
RESVTN TEL
ROBRTS TEL
R-RIDER ELEC
RRVW
S CENT REG WD
SE W U
SCOTT CABLE
SHERDN ELEC
SHEYN VLY ELEC
SKYTECH
SLOPE ELEC
SOURIS RIV TELCOM
ST WAT COMM
STATE LN WATER
STER ENG
STUT RWD
SW PL PRJ
SWWA
SUNOCO
T M C
TCI
TESORO GHG PLNS PL
TRI-CNTY WU
TRL CO WRD
UNTD TEL
UPPR SOUR WD
US SPRINT
USAF MSL CABLE
USFWS
USW COMM
VRNDRY ELEC
W RIV TEL
WAPA
WAWSA
WEB
WILLI WRD
WILSTN BAS PL
WLSH RWD
WOLVRTN TEL
XLENER
YSVR

Red River Communications
Reservation Telephone
Roberts Company Telephone
Roughrider Electric Cooperative
Red River Valley & Western Railroad
South Central Regional Water District
Southeast Water Users Incorporated
Scott Cable Television Dickinson
Sheridan Electric Cooperative
Sheyenne Valley Electric Cooperative
Skyland Technologies Incorporated
Slope Electric Cooperative Incorporated
Souris River Telecommunications
State Water Commission
State Line Water Cooperative
Sterling Energy
Stutsman Rural Water District
Southwest Pipeline Project
Southwest Water Authority
Sunoco LP
Turtle Mountain Communications
TCI of North Dakota
Tesoro High Plains Pipeline
Tri-County Water Users Incorporated
Traill County Water Resource District
United Telephone
Upper Souris Water District
U.S. Sprint
U.S.A.F. Missile Cable
US Fish and Wildlife Service
U.S. West Communications
Verendrye Electric Cooperative
West River Telephone Incorporated
Western Area Power Administration
Western Area Water Supply Authority
W. E. B. Water Development Association
Williams County Water Resource District
Williston Basin Interstate Pipeline Company
Walsh Water Rural Water District
Wolverton Telephone
Xcel Energy
Yellowstone Valley Railroad

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



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
12-18-20	General Revisions

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

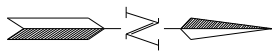
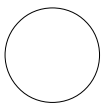
	Wetland Mitigation
	Existing Wetland Easement USFWS
	Existing Wetland Jurisdictional
	Existing Wetland
	Tree Row

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



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	
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DATE	CHANGE
12-18-20	General Revisions



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
				Arrow Panel (Caution Mode, Double Direction, Left Directional, Right Directional, Sequencing, Truck Mounted)				Existing RR Profile Spot
				Attenuation Device				Existing Railroad Crossbuck
				Truck Mounted Attenuator				Existing Railroad Frog
				Delineator Drums				Existing Mailbox (Private, Federal)
				Flagger				
				Tubular Marker				
				Traffic Cone				
				Back to Back Vertical Panel Sign				

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

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PE-4683
ENGINEER
NORTH DAKOTA
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

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PROFESSIONAL

Kirk J. Hoff

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

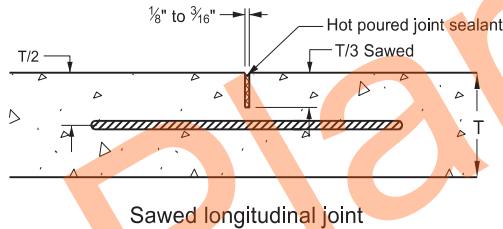
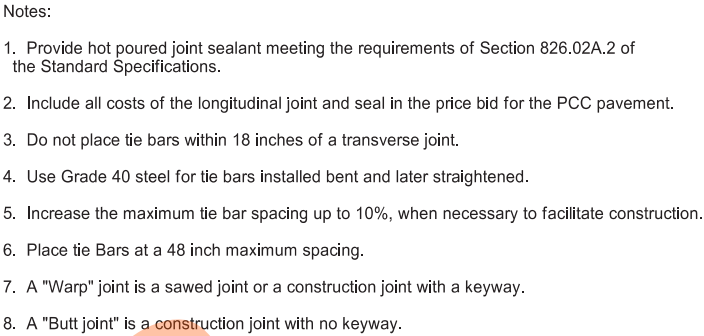
SYMBOLS

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

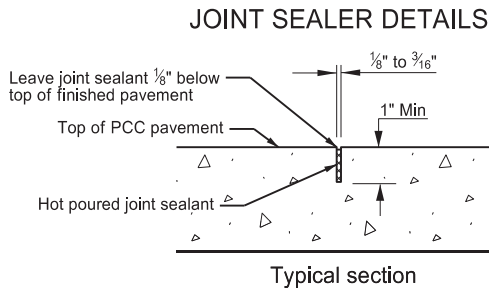
KIRK J. HOFF
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12 18 2020



Hot poured joint sealant

#4 x 24" Tie bars @ 4' c to c max

Curb and gutter sections

[illegible]

03/13/25

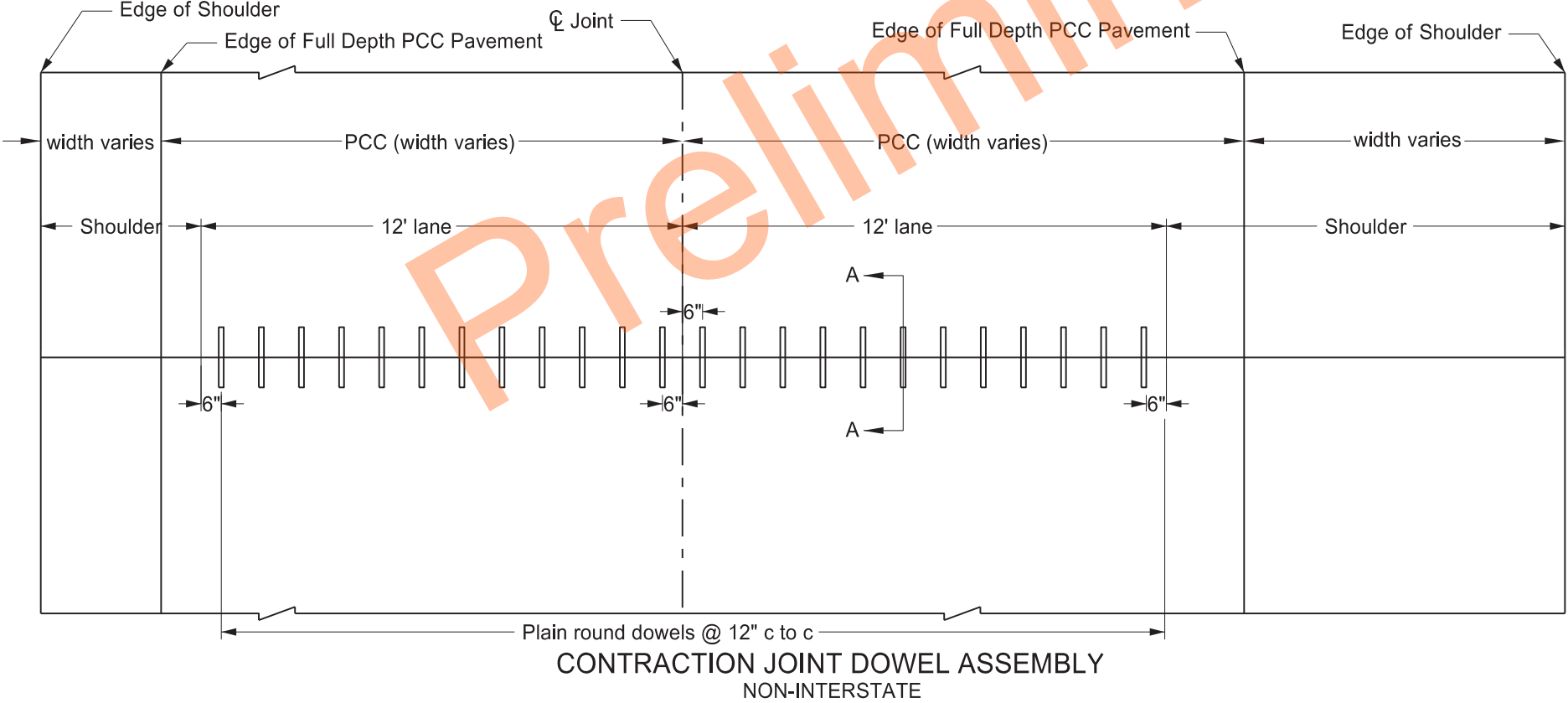
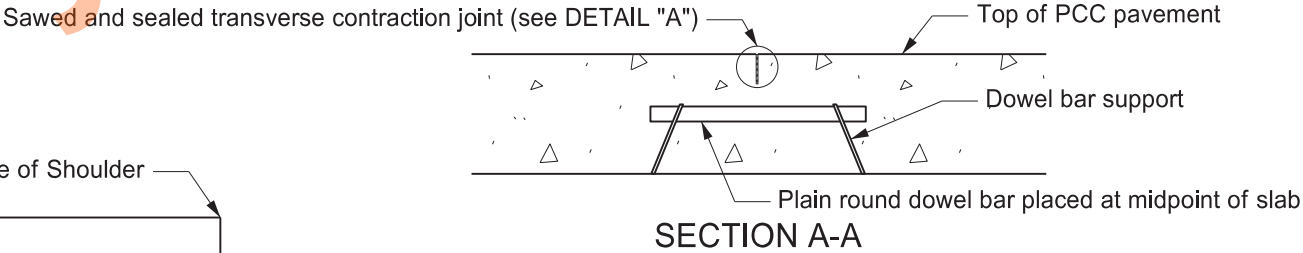
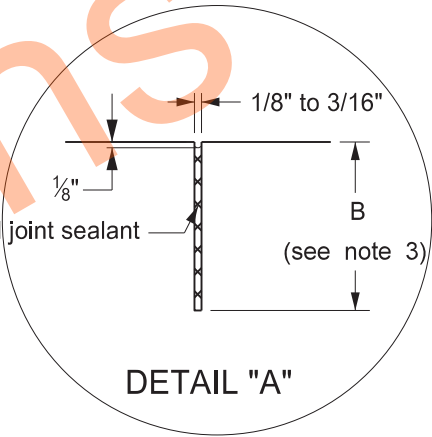
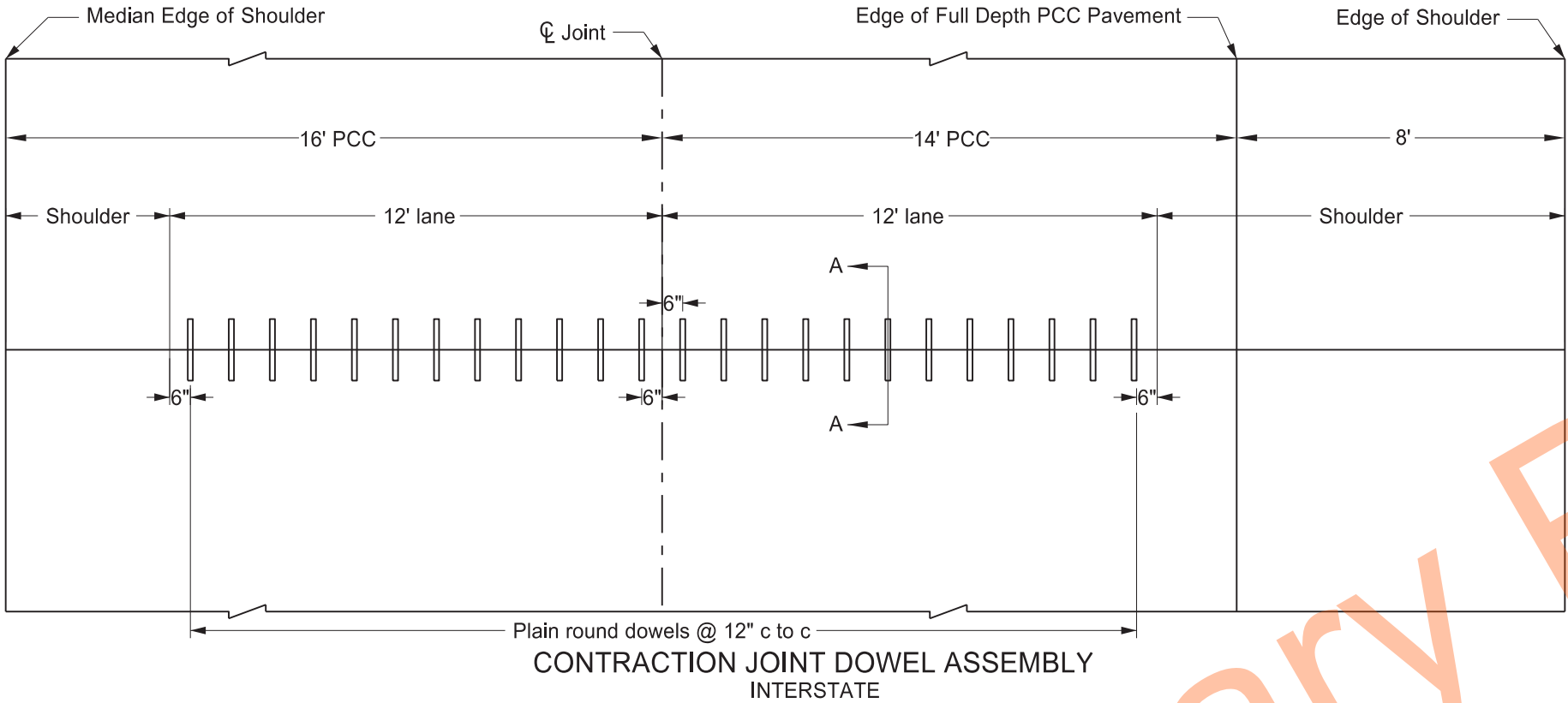
*Spacing where the calculated pullout strength of the tiebar equals the calculated yield strength of the tiebar - 48 inch spacing indicates a calculated spacing of 4 feet or greater.

TRANSVERSE CONTRACTION JOINT DETAILS

D-550-3

Notes

1. The joint seal details apply to both doweled and non-doweled (plain) transverse joints.
2. T = Thickness of pavement.
3. $B = T/4 + \frac{1}{4}"$ for AE or non-doweled concrete pavement or
 $B = T/3$ for AAE or doweled concrete pavement

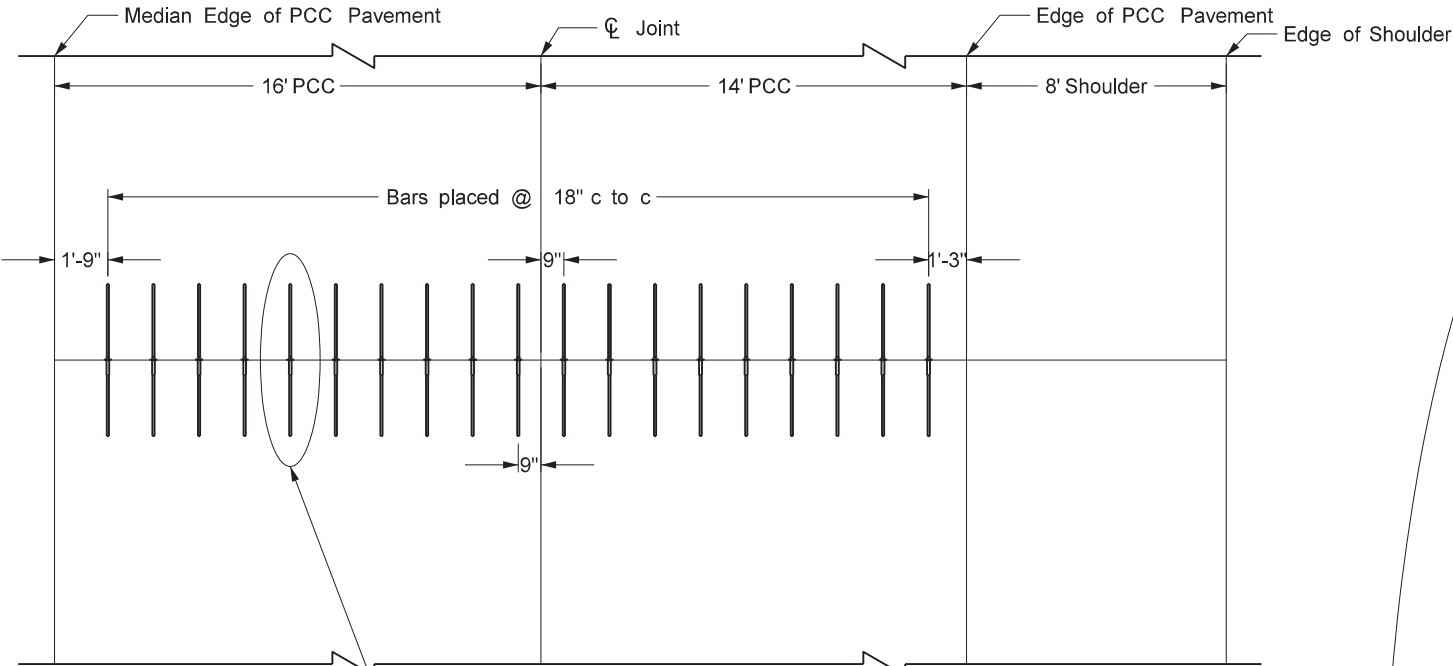


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-10	
REVISIONS	
DATE	CHANGE
6/23/2014	Removed dowel size reference
3/16/2016	Revised Joint Details and notes
10/25/2019	Expanded Details for clarity
03/13/2025	Revised # of Dowels & Note 3.

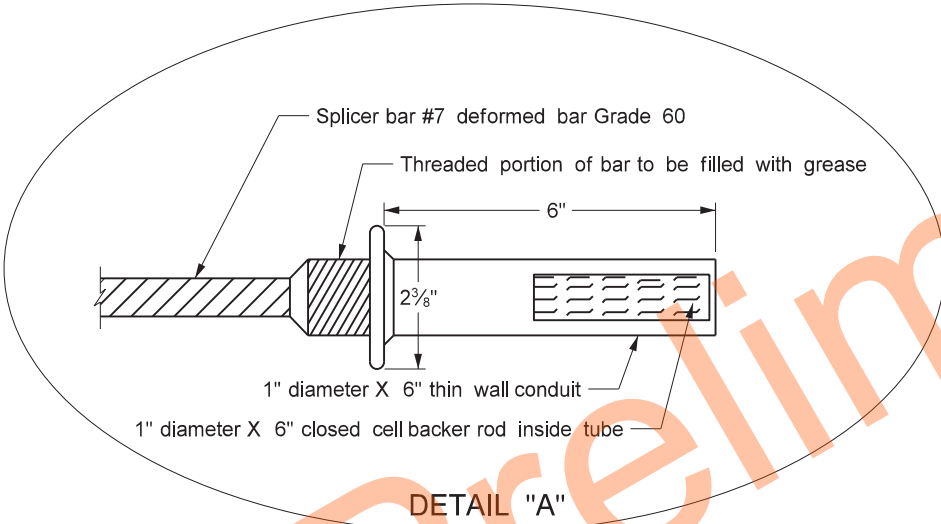


03/13/25

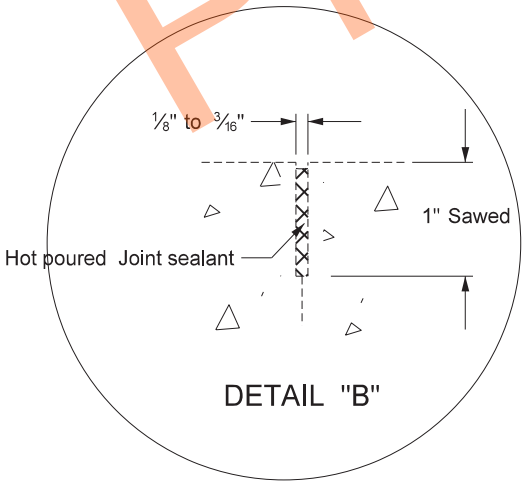
TRANSVERSE CONSTRUCTION JOINT



PLAN VIEW

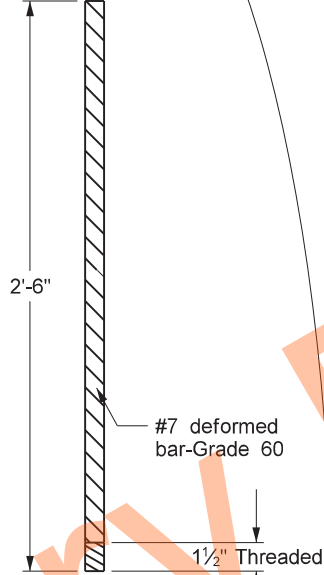


DETAIL "A"

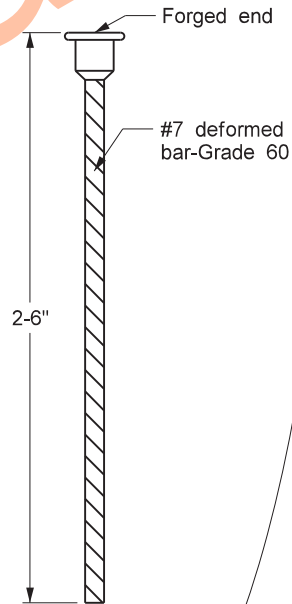


DETAIL "B"

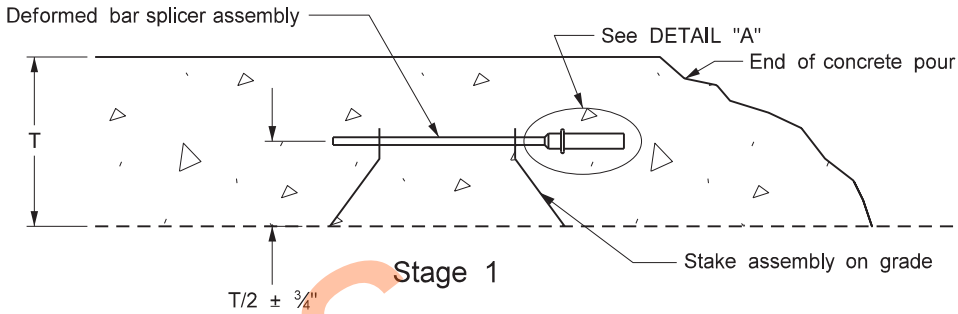
DEFORMED INSERT



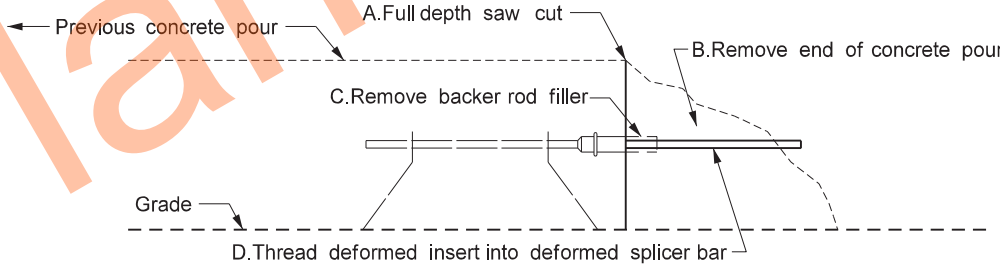
DEFORMED SPLICER BAR



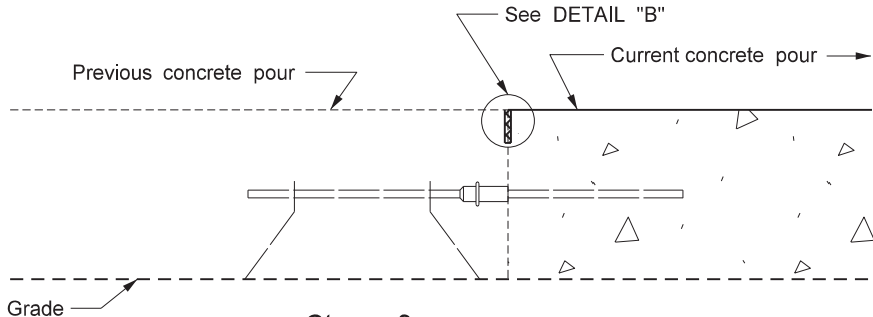
STAGES OF CONSTRUCTION



Stage 1



Stage 2



Stage 3

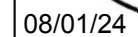
Notes

1. Saw and seal all construction joints.
2. Include all costs for transverse construction joints in the price bid for PCC pavement.
3. Do not saturate the subgrade during the sawing operation.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-2010	
REVISIONS	
DATE	CHANGE
3-16-16	Revised Joint Details & notes.
8-27-19	New Design Engr PE Stamp.
8-09-24	Electronic Stamp/Signature.



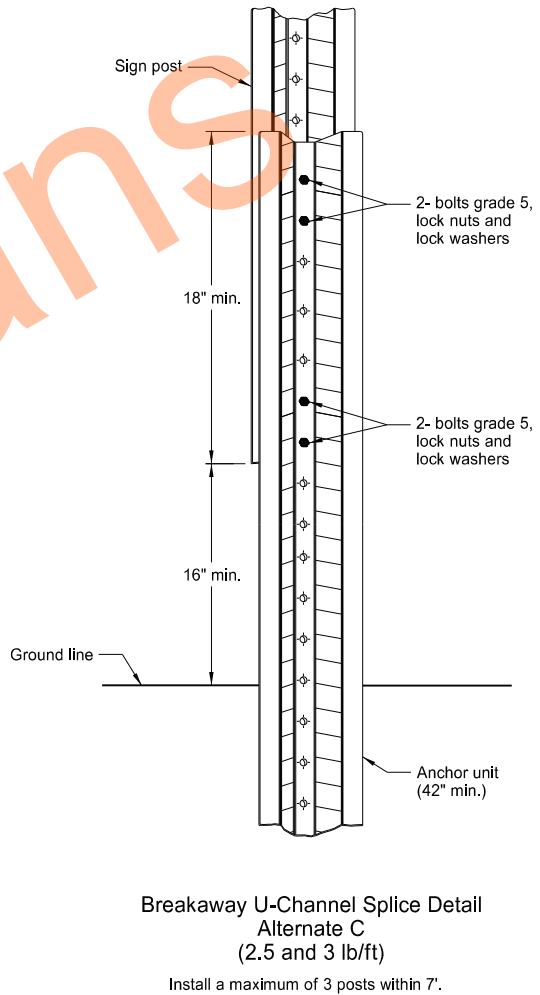
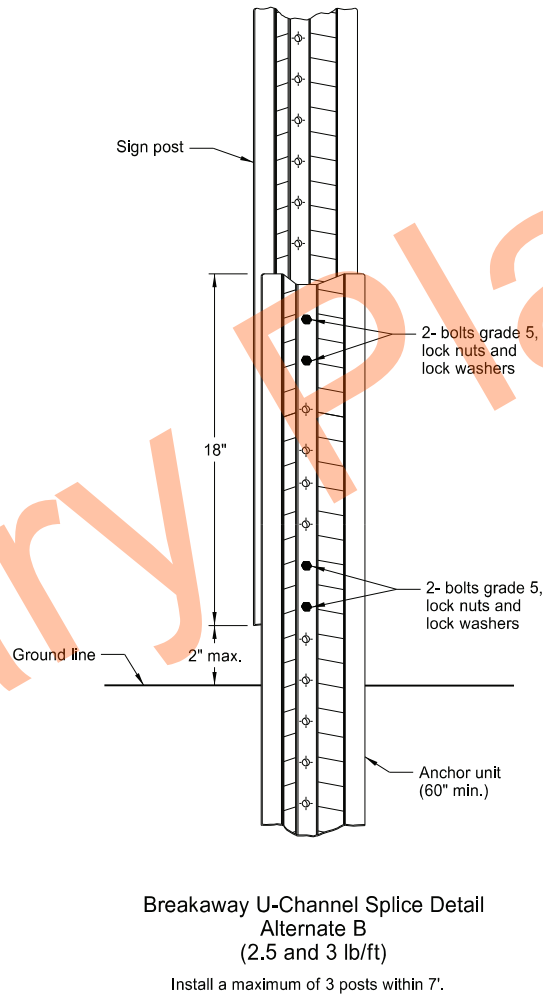
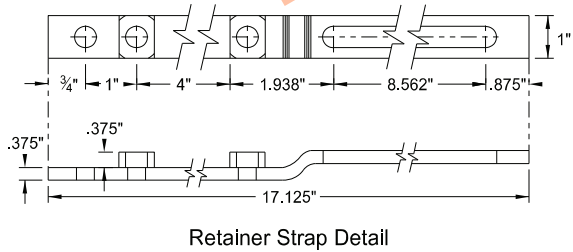
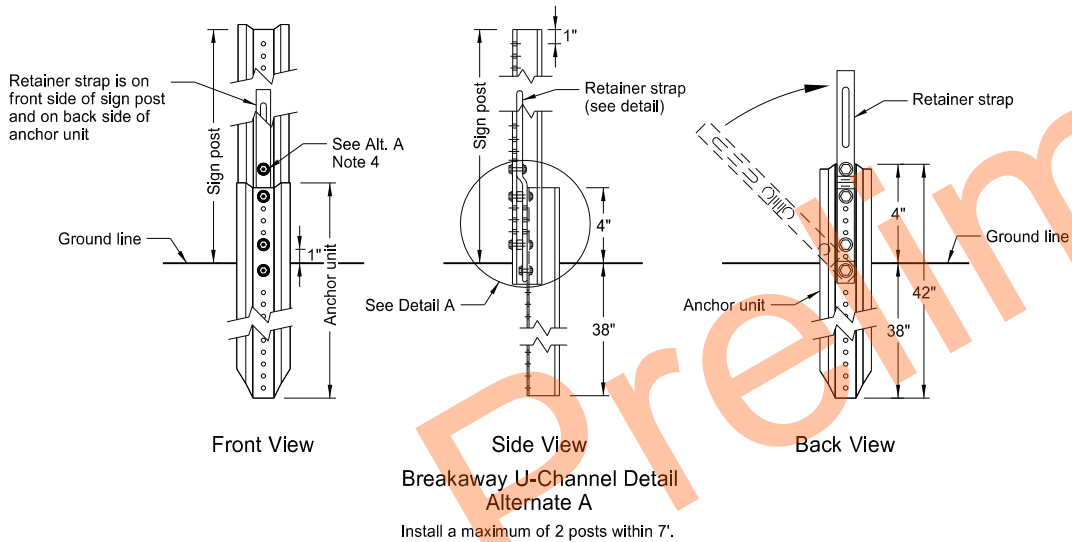
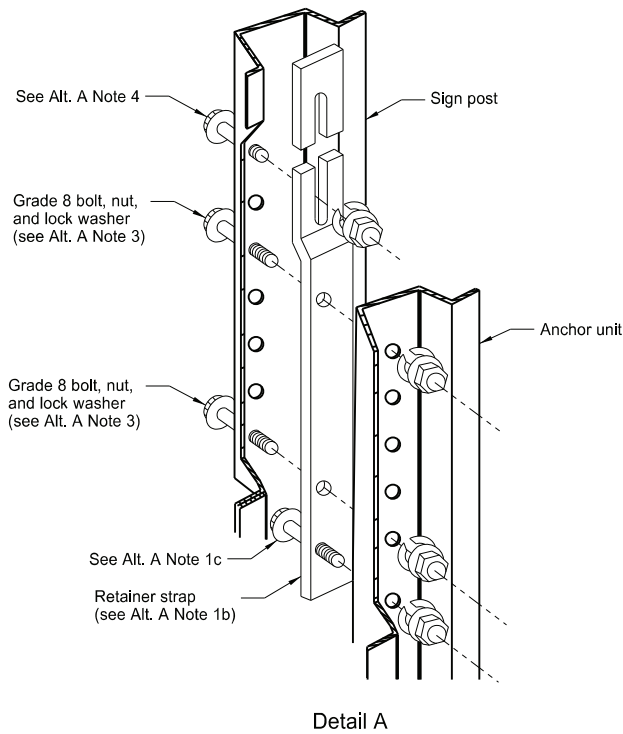
08/09/24



BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

D-704-8

U-Channel Post



Alternate A Steps of Installation:

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

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

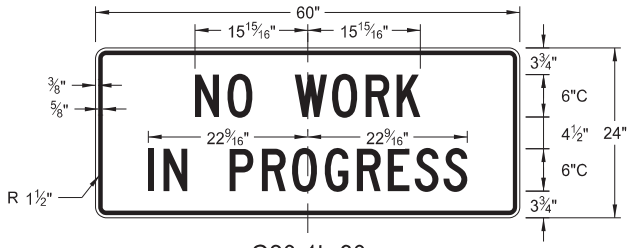


08/01/24

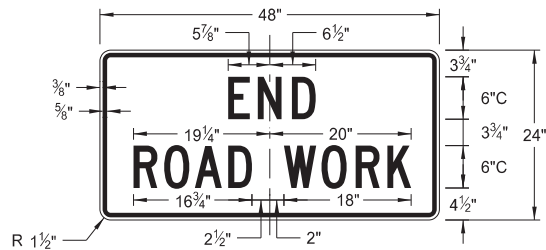
CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS



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



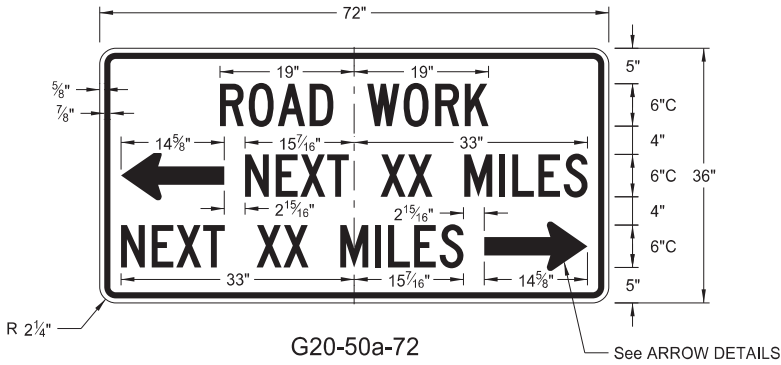
G20-1b-60
Legend: black (non-refl)
Background: orange



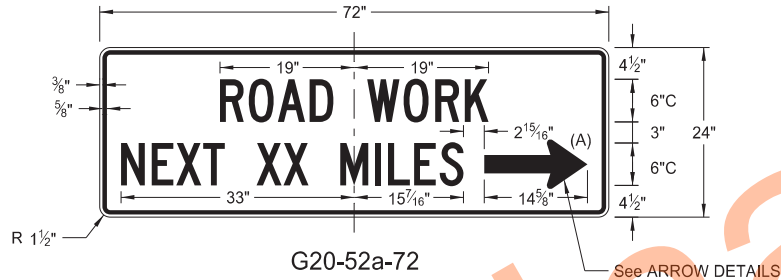
G20-2-48
Legend: black (non-refl)
Background: orange



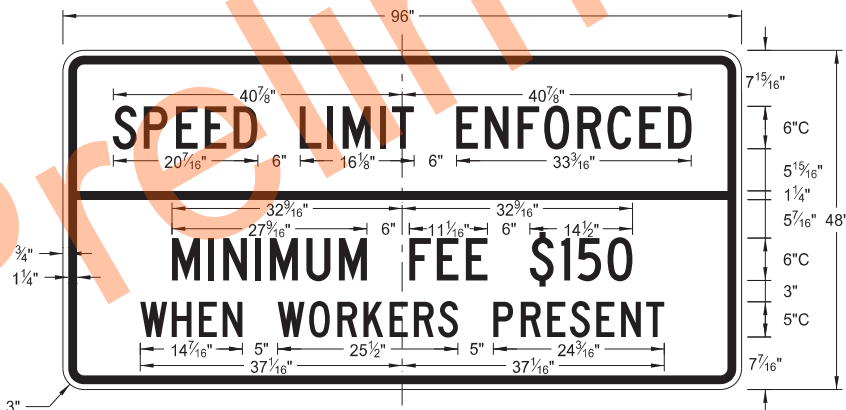
G20-4b-36
Legend: black (non-refl)
Background: orange



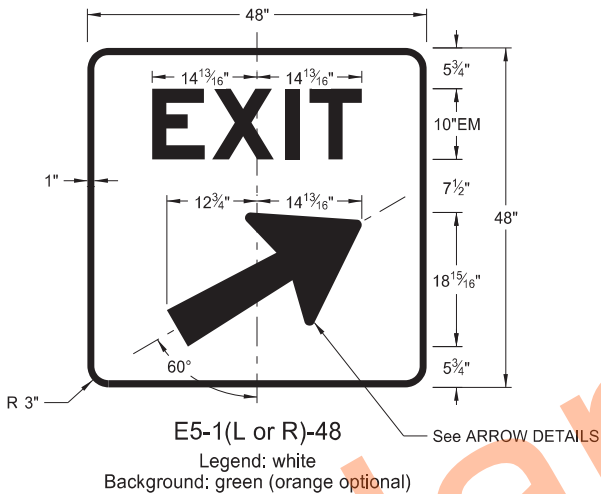
G20-50a-72
Legend: black (non-refl)
Background: orange



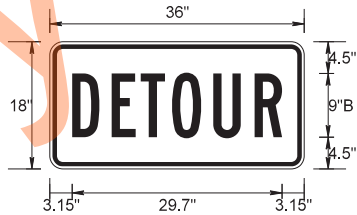
G20-52a-72
Legend: black (non-refl)
Background: orange



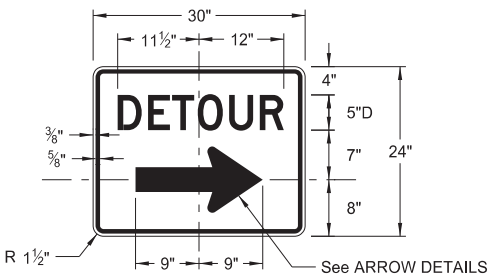
G20-55-96
Legend: black (non-refl)
Background: orange



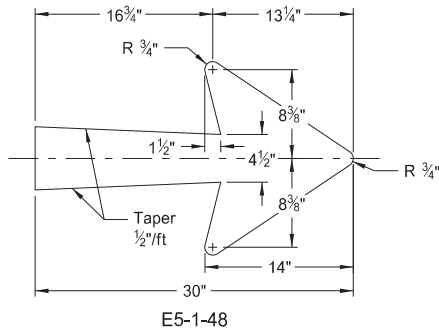
E5-1(L or R)-48
Legend: white
Background: green (orange optional)



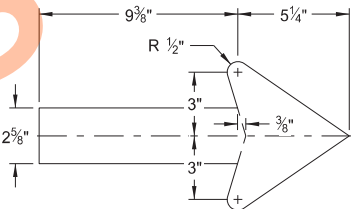
M4-8-36
Legend: black (non-refl)
Background: orange



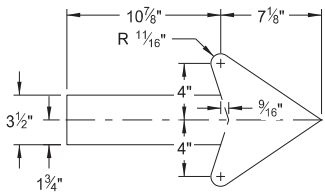
M4-9(L or R)-30 &
M4-9-30
Legend: black (non-refl)
Background: orange



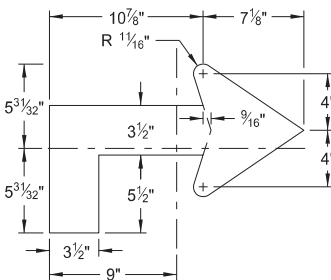
E5-1-48



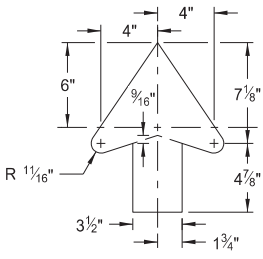
G20-50a-72
G20-52a-72



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



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



M4-9-30
Straight

ARROW DETAILS

NOTES:

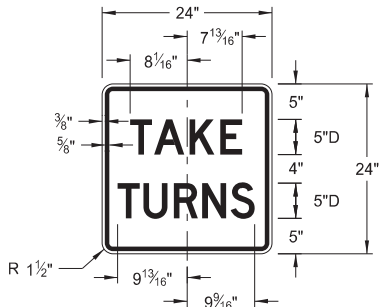
(A) Arrow may be right or left of the legend to indicate construction to the right or left.

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

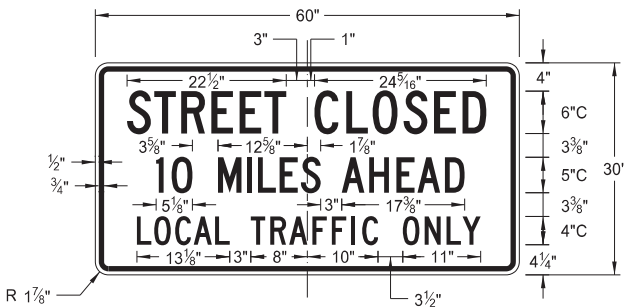


CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

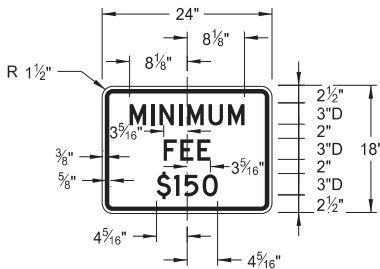
D-704-10



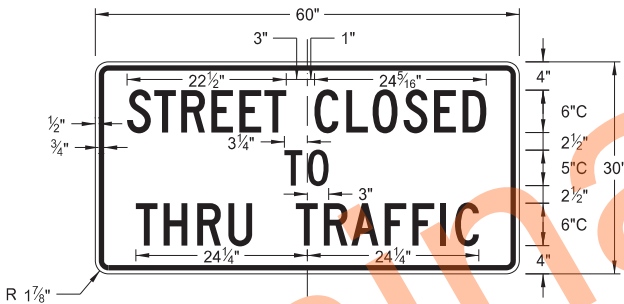
R1-50P-24
Legend: black (non-refl)
Background: white



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



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



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



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

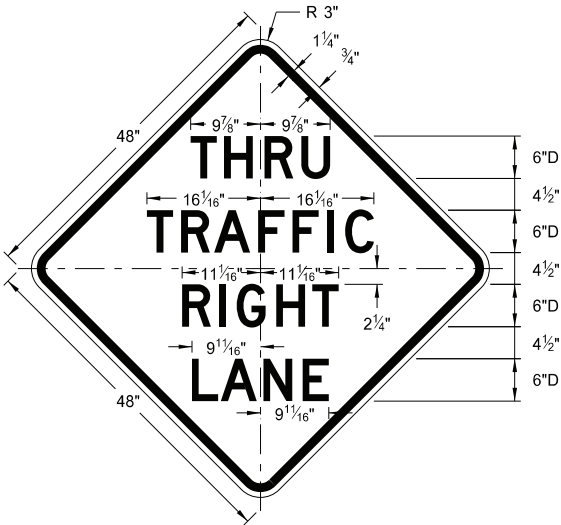
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17	Revised sign number
10-03-19	New Design Engineer PE Stamp
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes



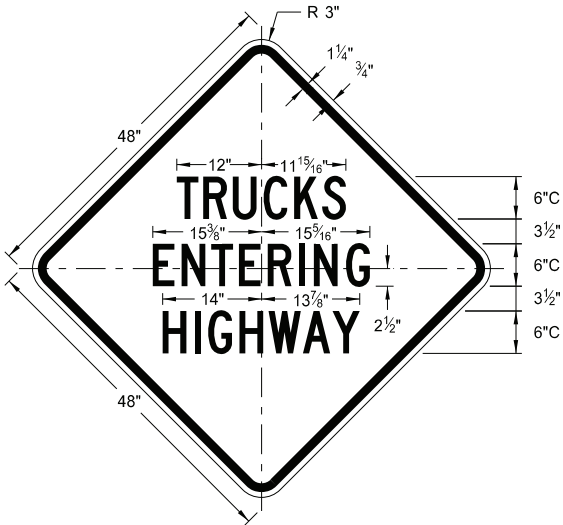
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

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

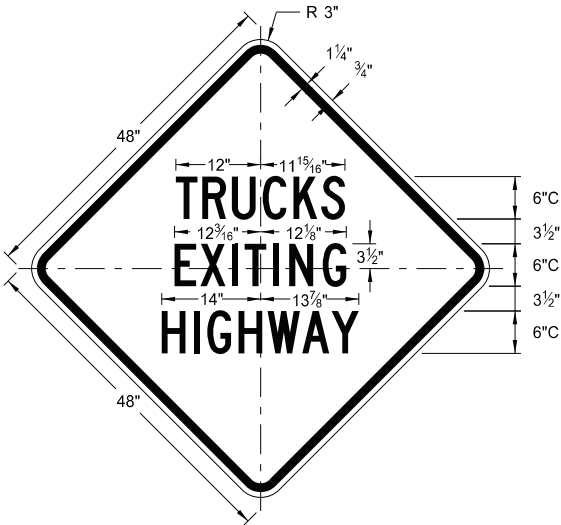
* DISTANCE MESSAGES



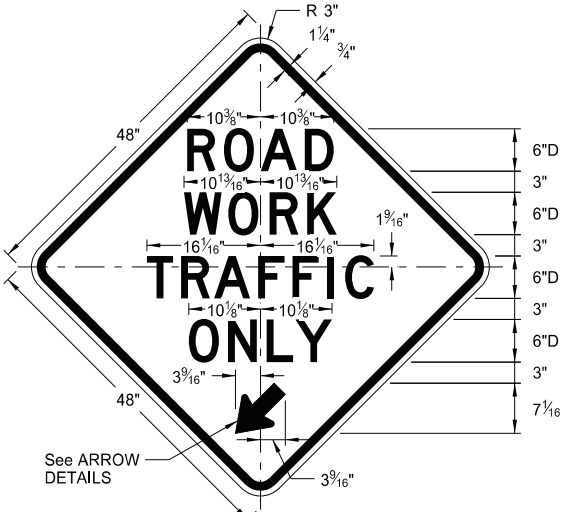
W5-8-48
Legend: black (non-refl)
Background: orange



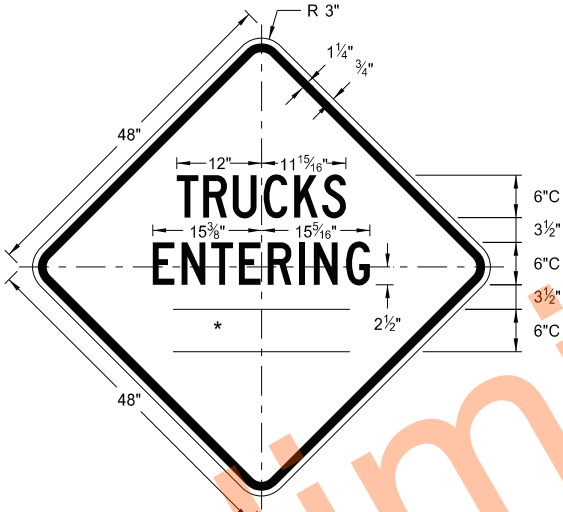
W8-53-48
Legend: black (non-refl)
Background: orange



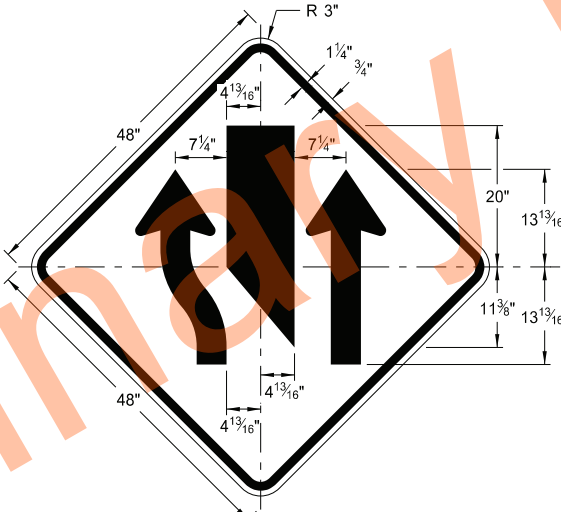
W8-56-48
Legend: black (non-refl)
Background: orange



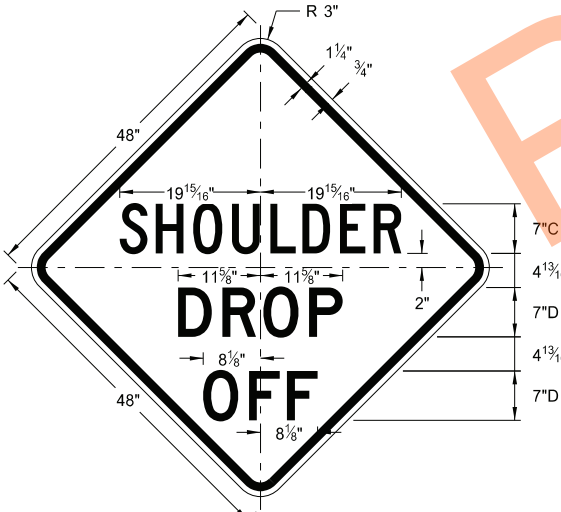
W5-9-48
Legend: black (non-refl)
Background: orange



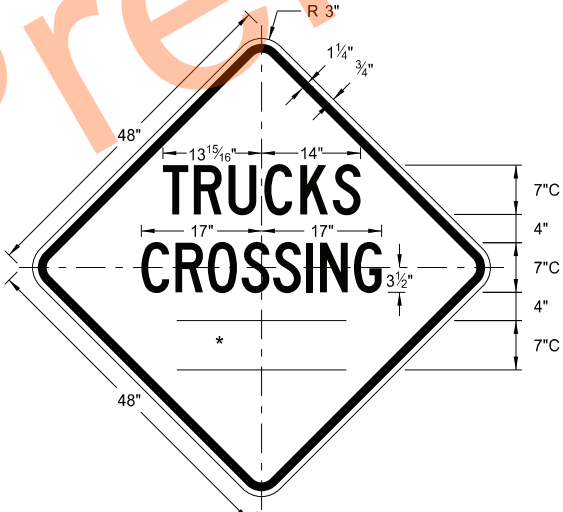
W8-54-48
Legend: black (non-refl)
Background: orange



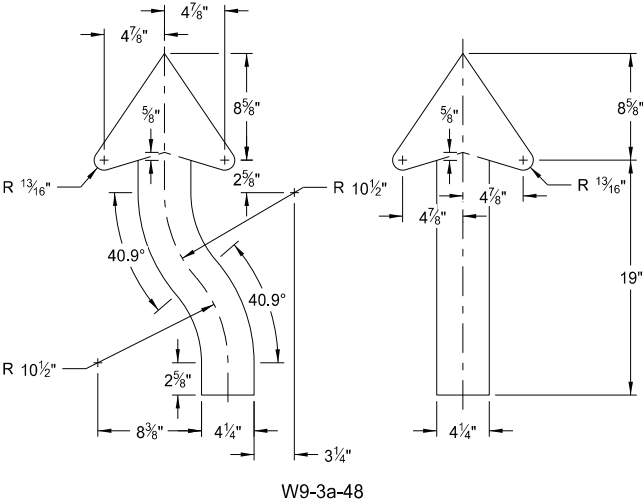
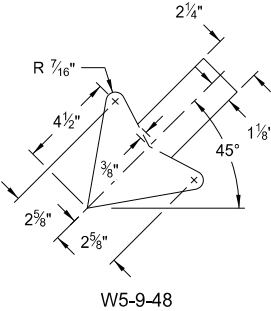
W9-3a-48
Legend: black (non-refl)
Background: orange



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



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



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

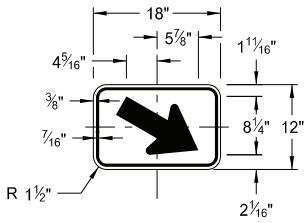


08/01/24

CONSTRUCTION SIGN DETAILS
WARNING SIGNS

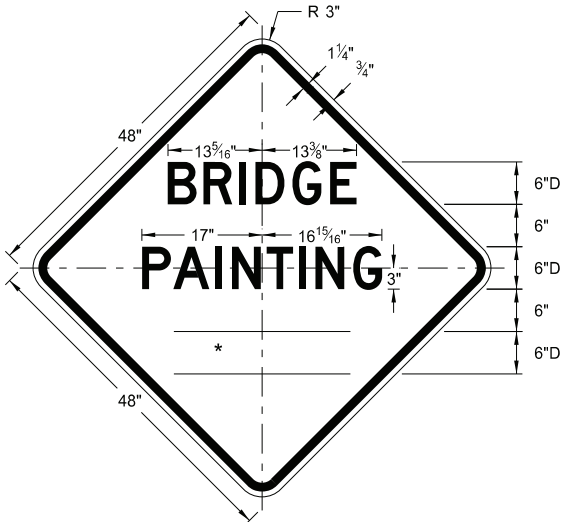
WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

* DISTANCE MESSAGES



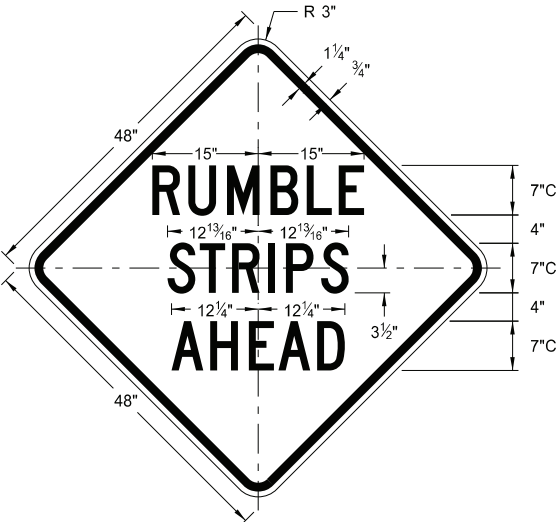
W16-7aP-18

Legend: black (non-refl)
Background: orange



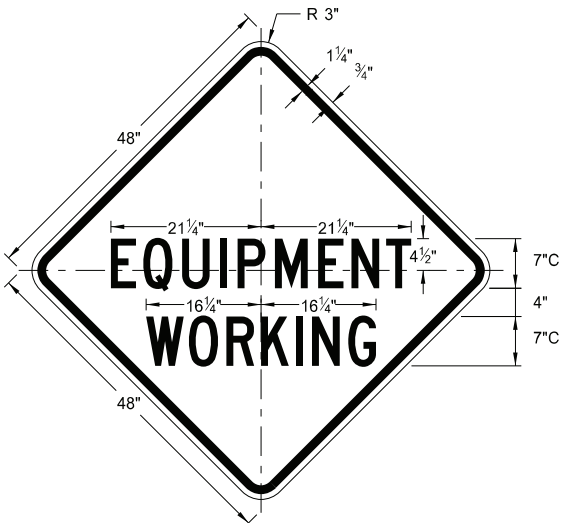
W21-50-48

Legend: black (non-refl)
Background: orange



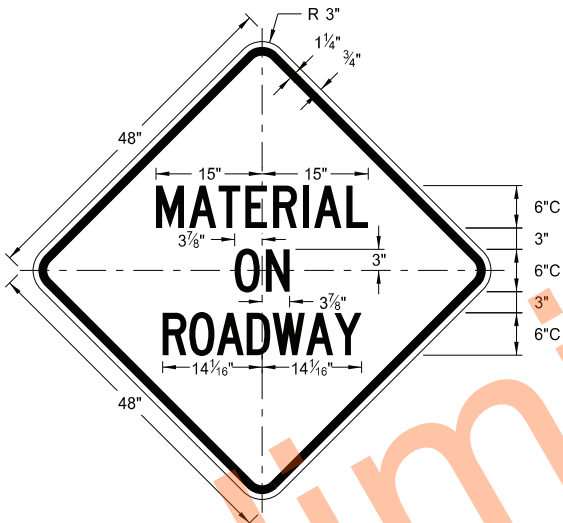
W21-53-48

Legend: black (non-refl)
Background: orange



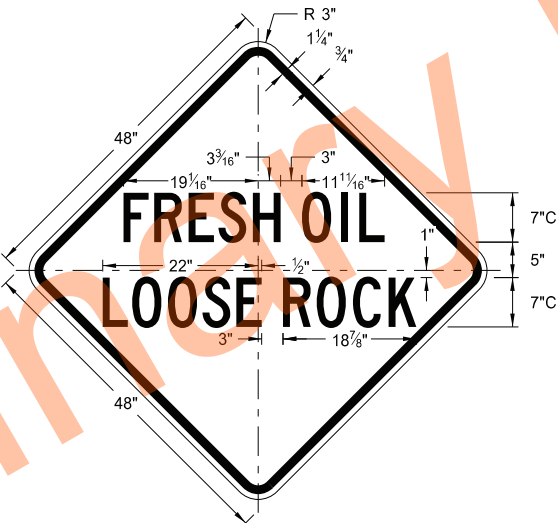
W20-51-48

Legend: black (non-refl)
Background: orange



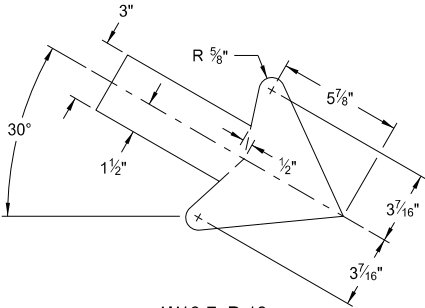
W21-51-48

Legend: black (non-refl)
Background: orange

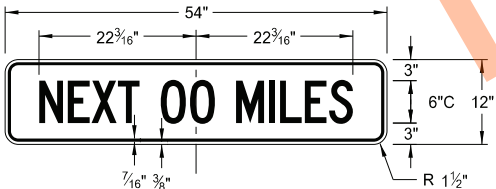


W22-8-48

Legend: black (non-refl)
Background: orange

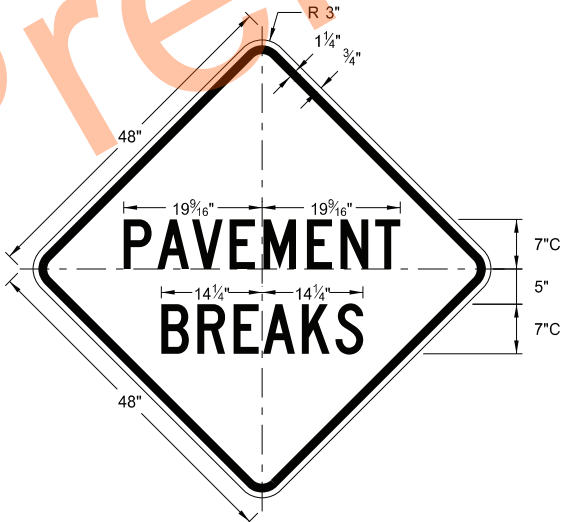


W16-7aP-18



W20-52P-54

Legend: black (non-refl)
Background: orange



W21-52-48

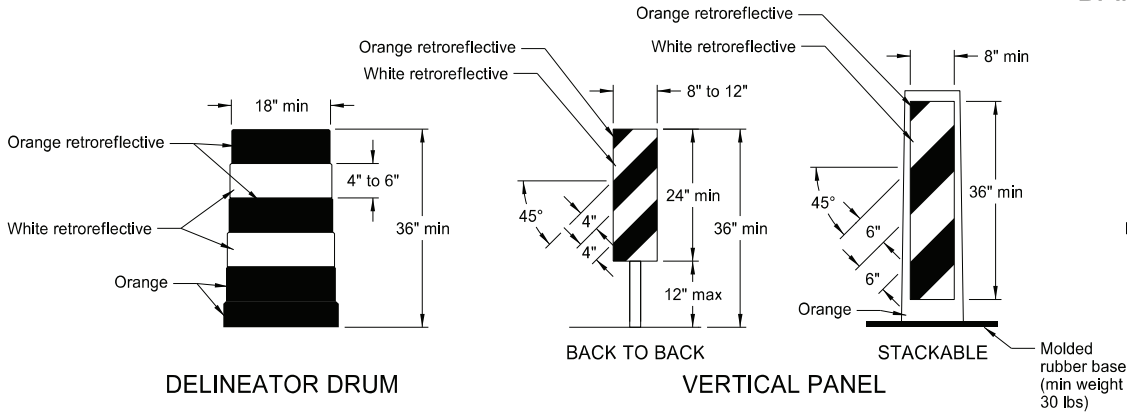
Legend: black (non-refl)
Background: orange

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



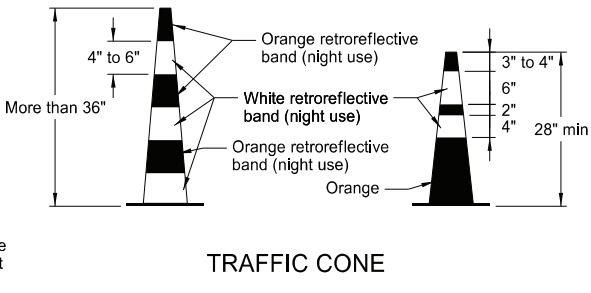
08/01/24

BARRICADE AND CHANNELIZING DEVICE DETAILS

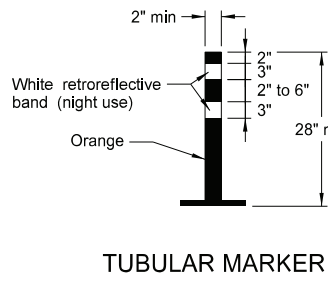


Provide horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide for drum markings. Use a minimum of two orange and two white stripes with the top stripe being orange for each drum. Do not exceed 3" nonretroreflectORIZED spaces between the horizontal orange and white stripes. Avoid placement of stripes on drum ribs or indentations. Use closed top drums that will not allow collection of debris. Do not place ballast on the top of drum.

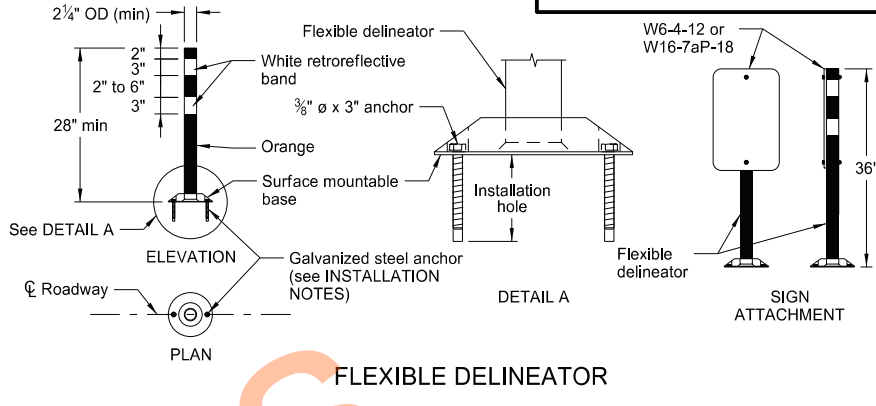
Provide alternating orange and white retroreflective stripes, sloping downward in direction vehicular traffic is to pass. Place retroreflective sheeting on both sides of panel with a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective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



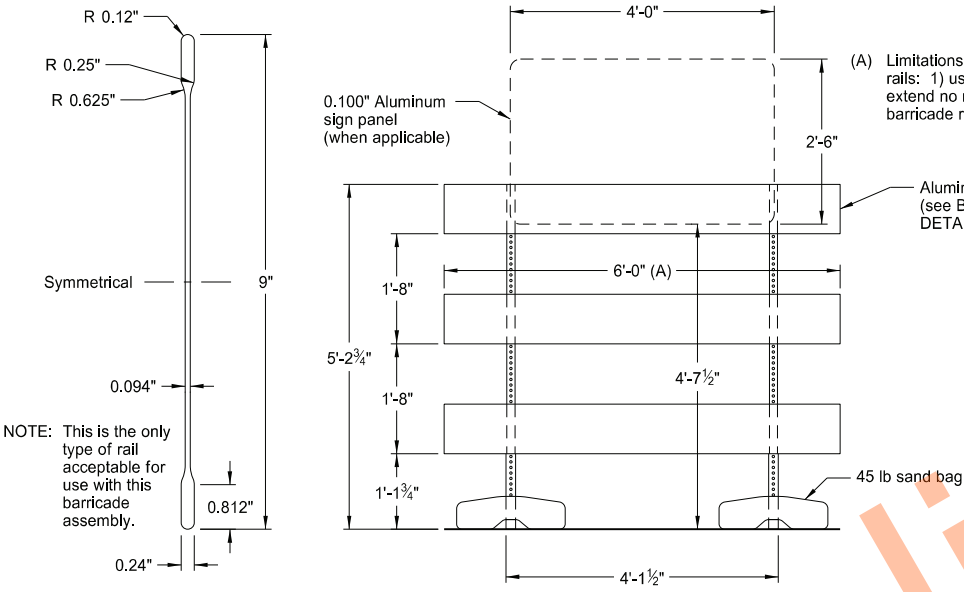
Provide retroreflectORIZATION of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectORIZED space between the orange and white stripes.



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.



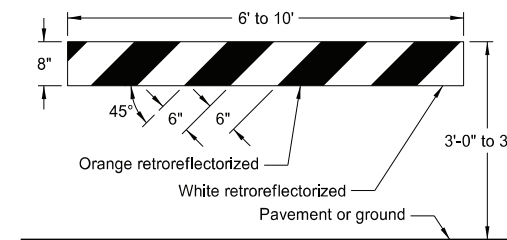
- INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.
 2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
 3. In lieu of bolted down base, use an 8" x 8" butyl pad or hot melt butyl.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



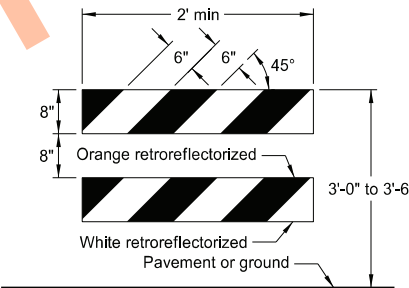
BARRICADE BLADE DETAIL

ELEVATION VIEW
BARRICADE ASSEMBLY DETAIL
(Aluminum Barricade Rails)

NOTE: For barricade markings use alternating orange and white retroreflective stripes, sloping downward in the direction traffic is to pass. Place retroreflective sheeting on both sides of the rails with a minimum of 270 square inches of visible retroreflective area facing vehicular traffic. When the barricade length is less than 36", use a rail stripe width of 4".

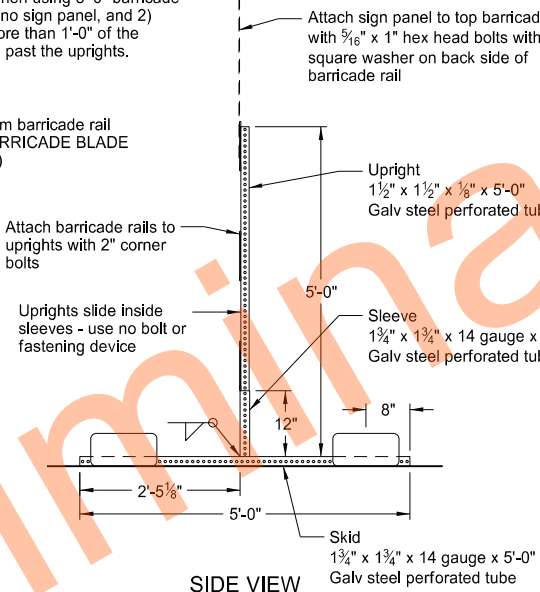


TYPE I BARRICADE

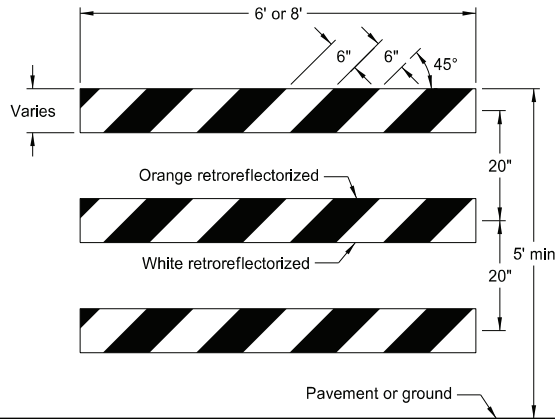


TYPE II BARRICADE

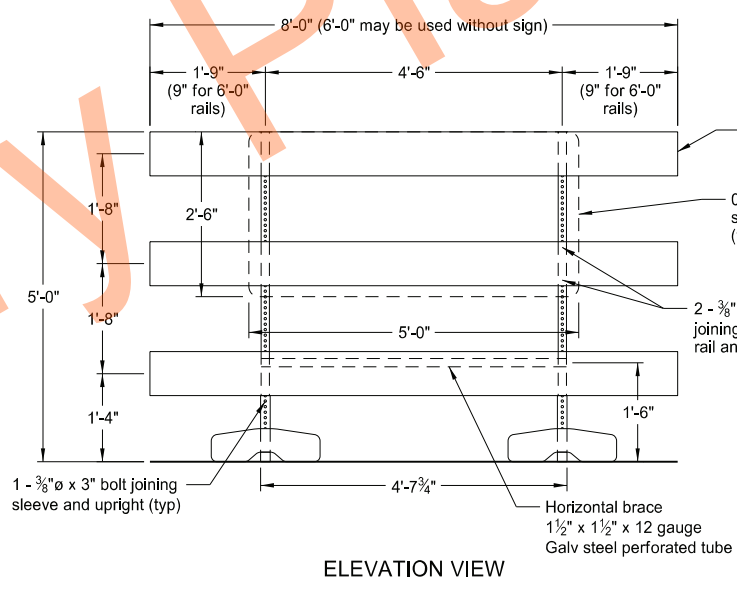
BARRICADE RAIL DETAILS



SIDE VIEW

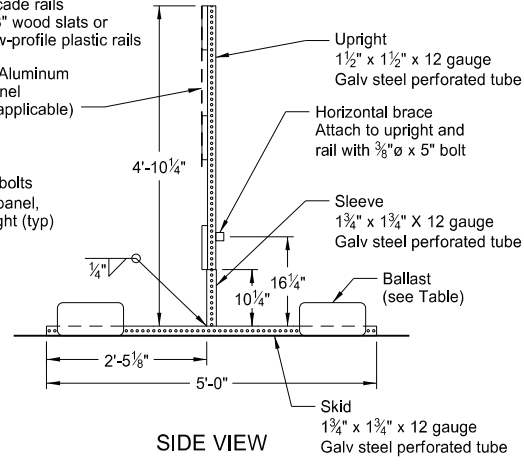


TYPE III BARRICADE



ELEVATION VIEW

BARRICADE ASSEMBLY DETAIL
(Wood or Plastic Rails)

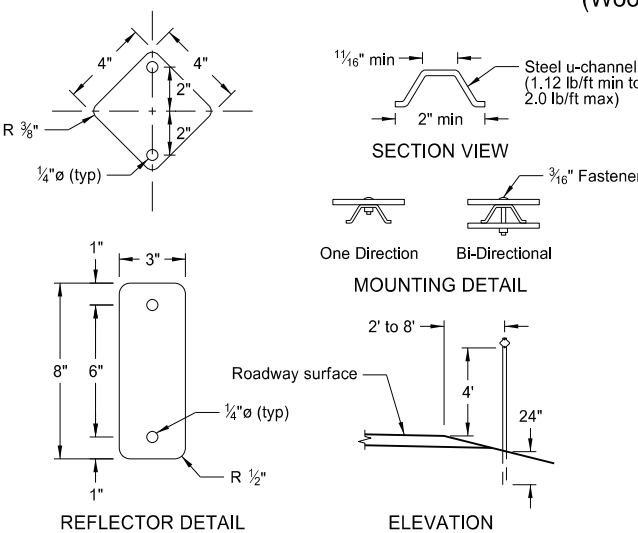


SIDE VIEW

MINIMUM BALLAST
(For each side of barricade support)

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

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.



REFLECTOR DETAIL

ELEVATION

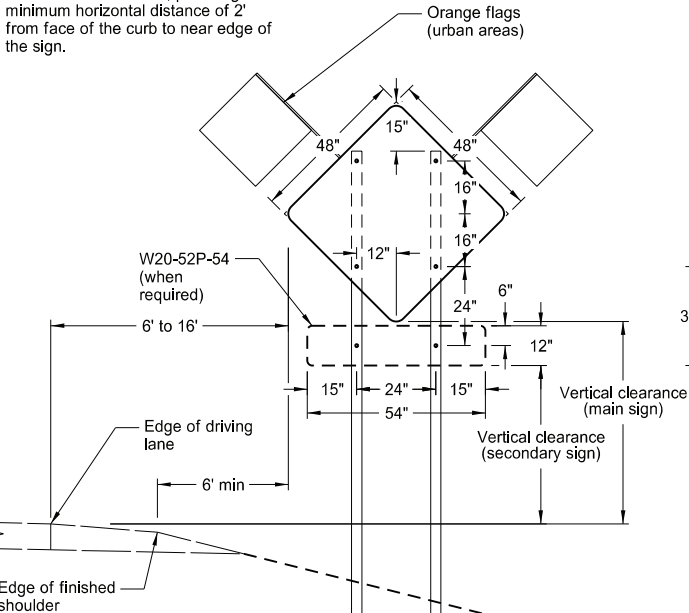
DELINEATORS

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

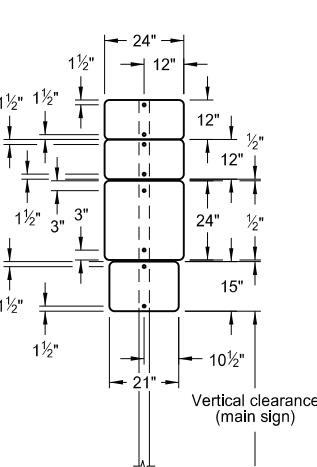


CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

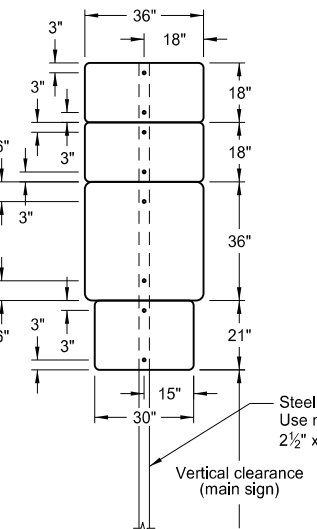
Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



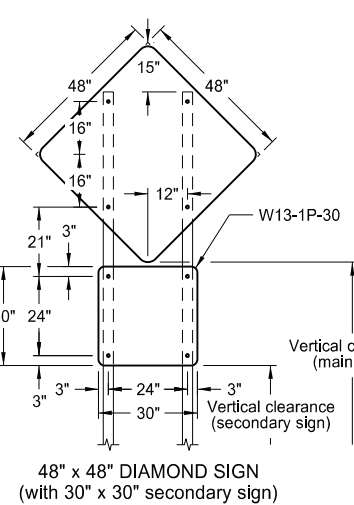
TYPICAL SECTION
(48" x 48" diamond warning sign shown)



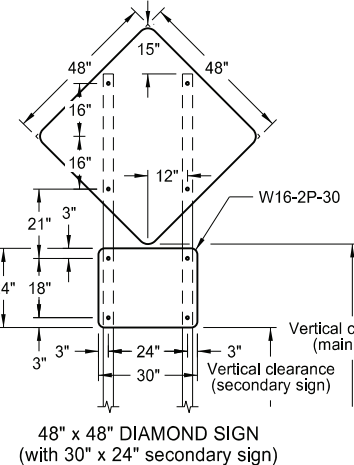
24" x 24"
ROUTE MARKER
ASSEMBLY



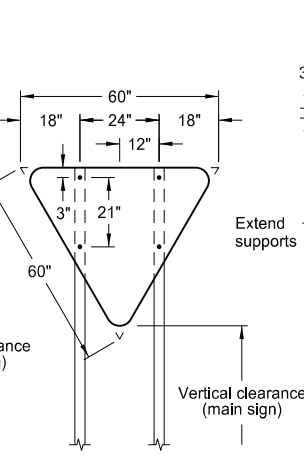
36" x 36"
ROUTE MARKER
ASSEMBLY



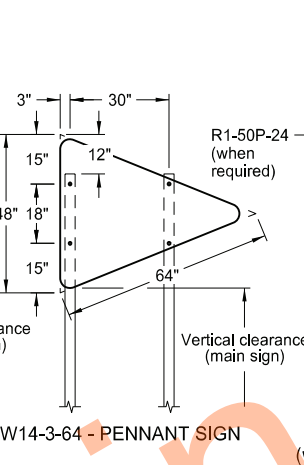
48" x 48" DIAMOND SIGN
(with 30" x 30" secondary sign)



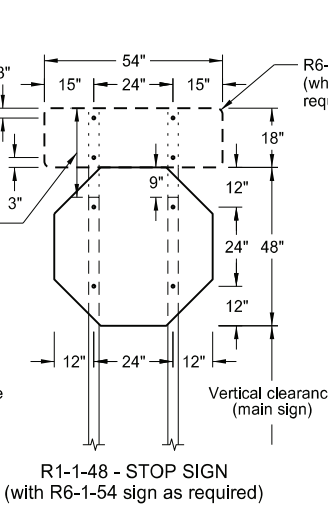
48" x 48" DIAMOND SIGN
(with 30" x 24" secondary sign)



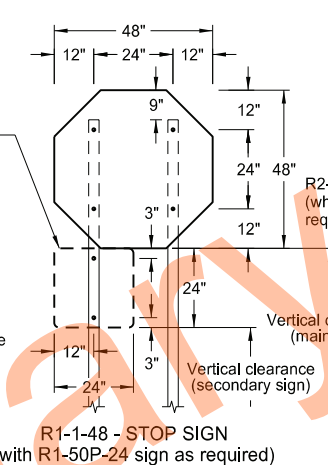
R1-2-60 - YIELD SIGN



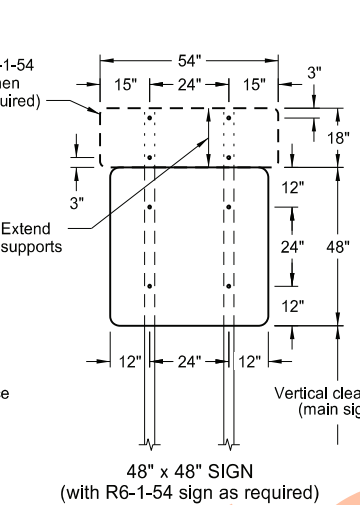
W14-3-64 - PENNANT SIGN



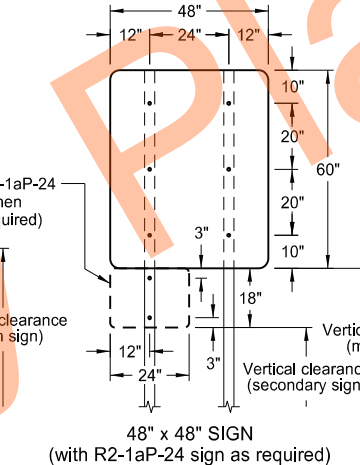
R1-1-48 - STOP SIGN
(with R6-1-54 sign as required)



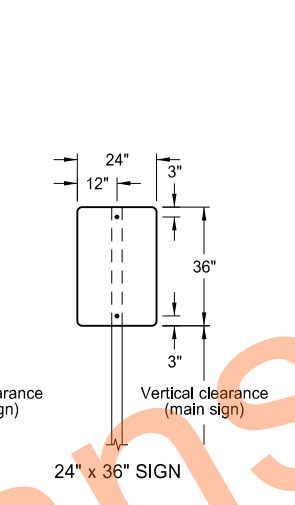
R1-1-48 - STOP SIGN
(with R1-50P-24 sign as required)



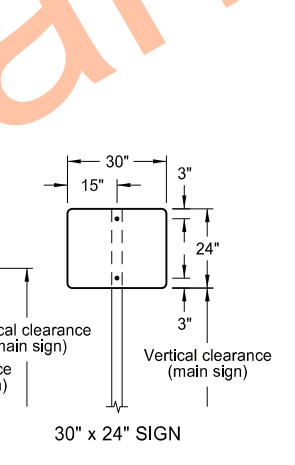
48" x 48" SIGN
(with R6-1-54 sign as required)



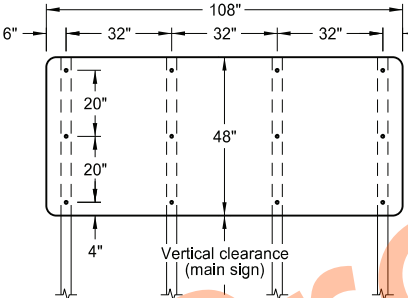
48" x 48" SIGN
(with R2-1aP-24 sign as required)



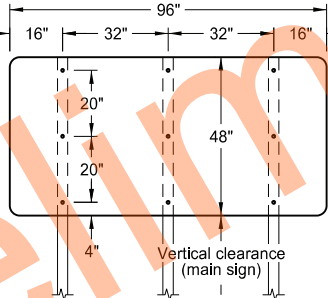
24" x 36" SIGN



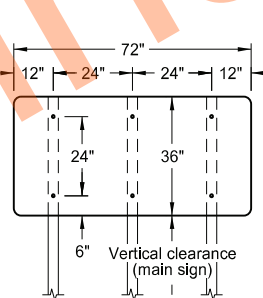
30" x 24" SIGN



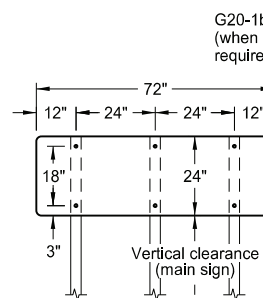
108" x 48" SIGN



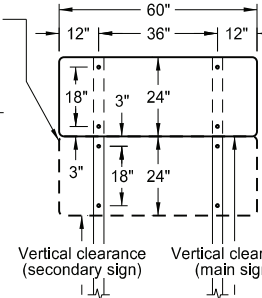
96" x 48" SIGN



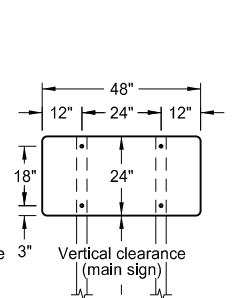
72" x 36" SIGN



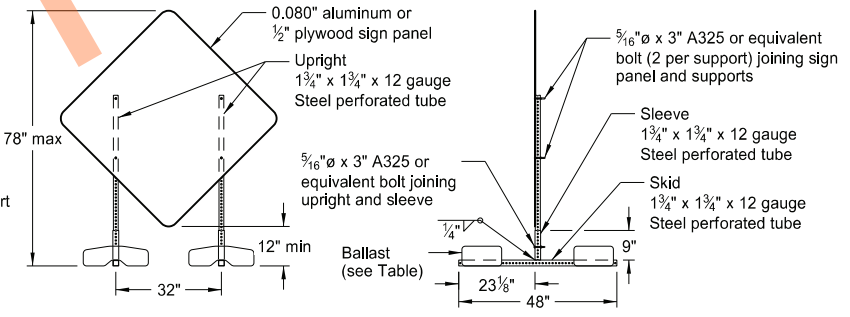
72" x 24" SIGN



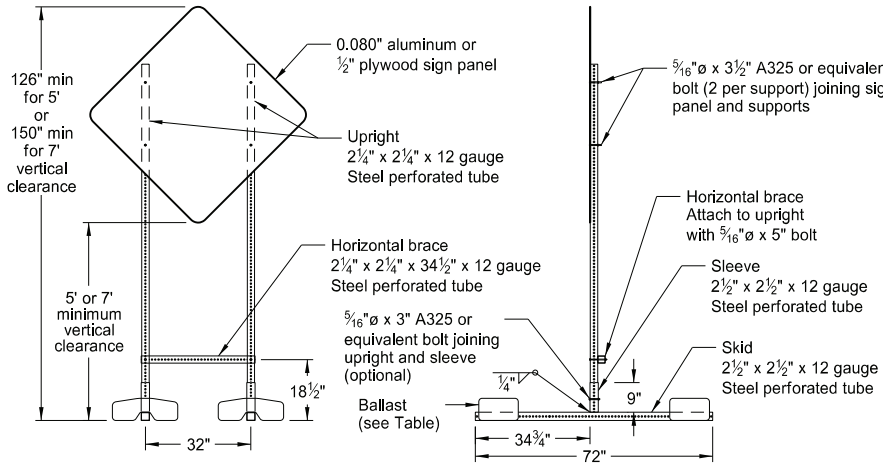
60" x 24" SIGN



48" x 24" SIGN



PORTABLE SIGN SUPPORT
LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT
HIGH-MOUNTING HEIGHT

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.

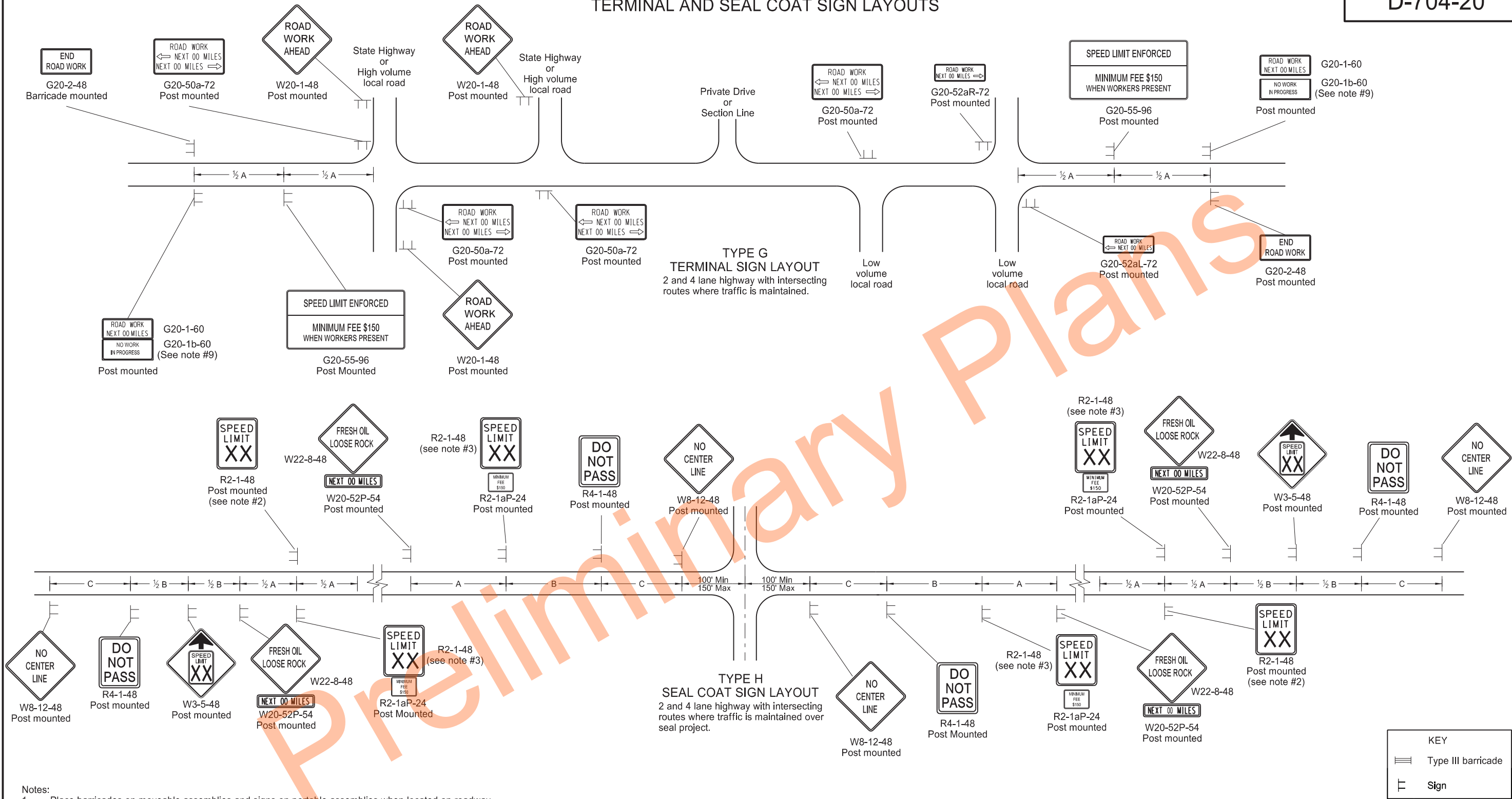
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	
REVISIONS	
DATE	CHANGE
11-14-13	Revised Note 6
9-27-17	Updated to active voice
11-01-19	Revised 60"x24" sign detail
8-01-24	Electronic Stamp/Signature



08/01/24

TERMINAL AND SEAL COAT SIGN LAYOUTS

D-704-20



Notes:

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

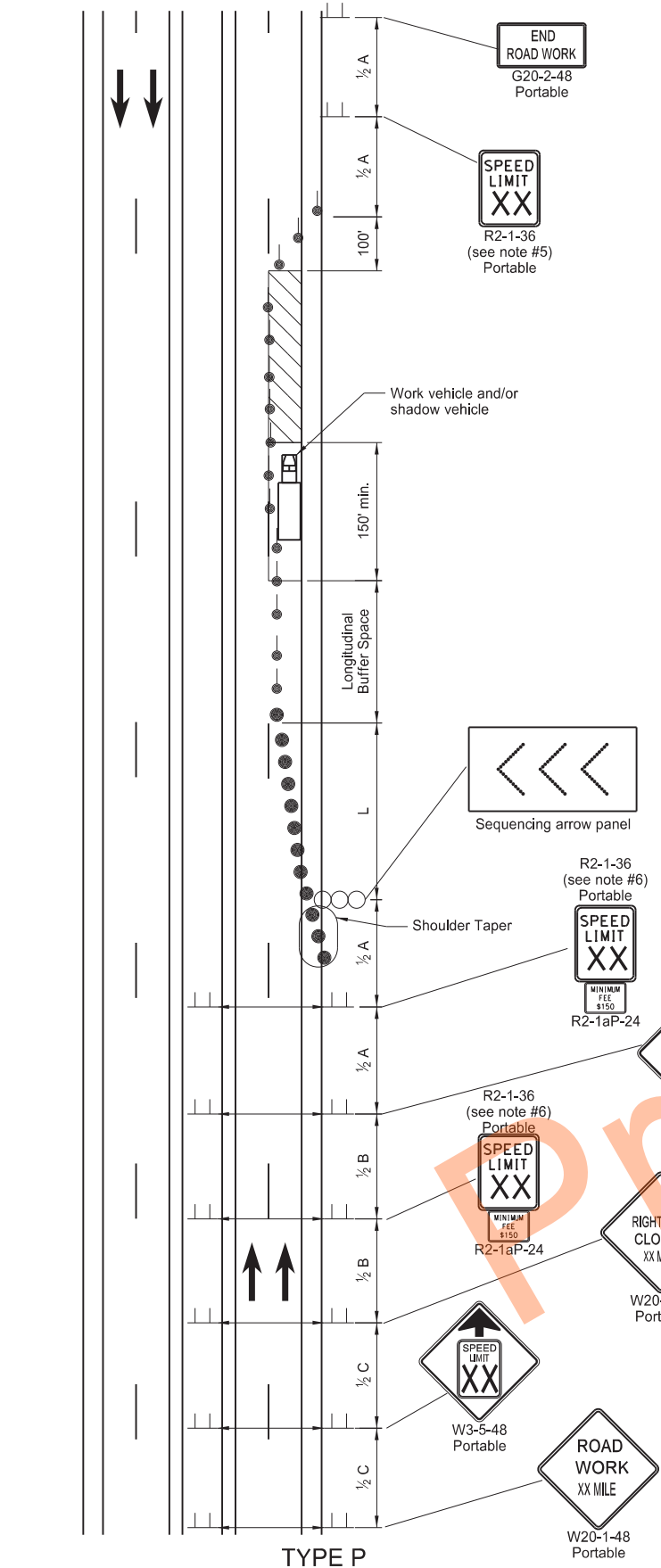
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Updated notes & sign numbers
11-01-19	Updated note & sign
12-08-21	Switched order of Road Work and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes



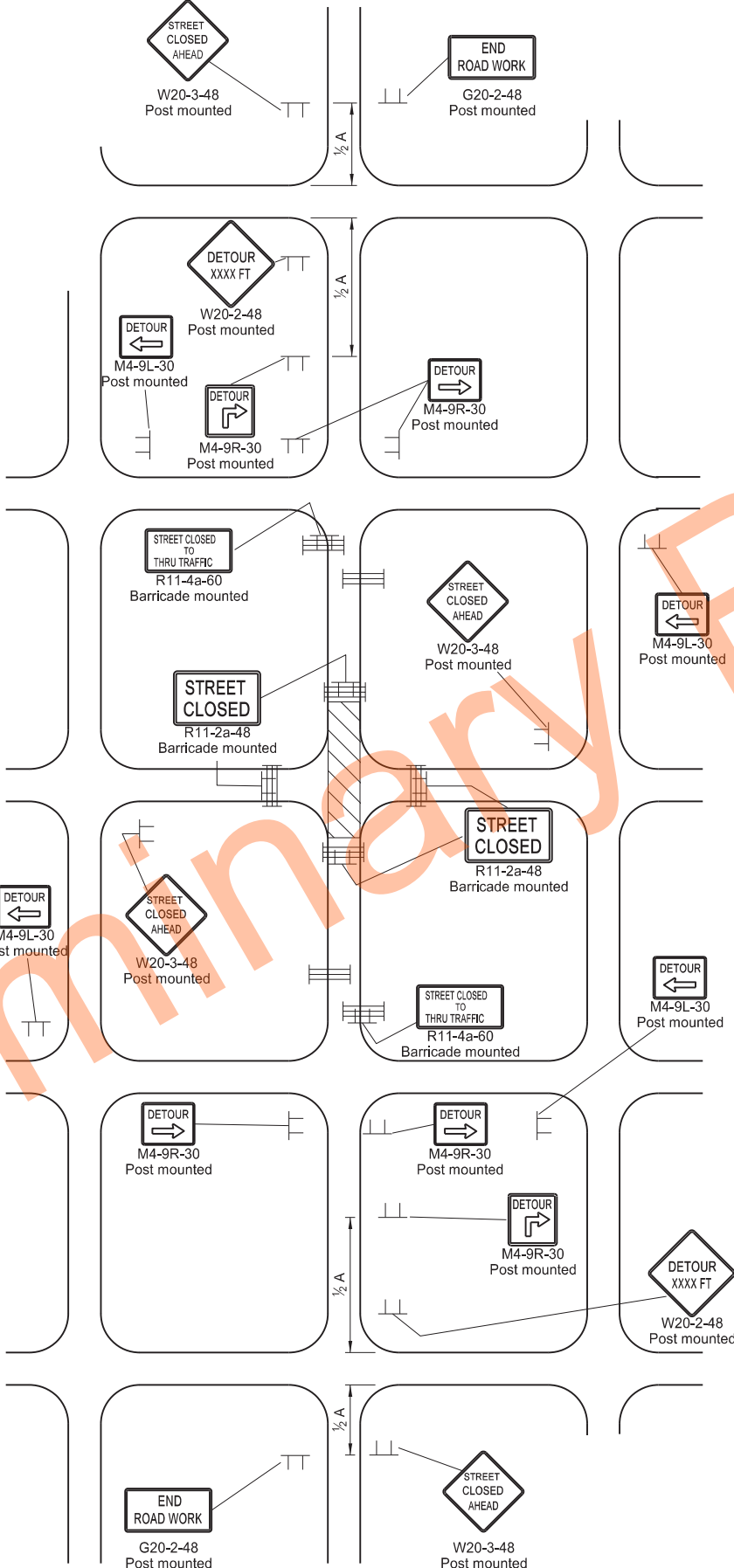


SHORT TERM URBAN DETOUR AND LANE CLOSURE ON A DIVIDED HIGHWAY LAYOUTS

D-704-23



TYPE P
STATIONARY LANE CLOSURE ON A DIVIDED HIGHWAY
4 lane divided roadway where 1/2 of roadway is closed.
Short-term (more than 1 hour within a single daylight period.)



TYPE Q
DETOUR FOR A CLOSED STREET
Where city streets are used for detouring traffic.
Urban projects do not require the G20-55-96 and R2-1aP-24 signs.

- Notes:
- Variables
 - S = Numerical value of speed limit or 85th percentile.
 - W = The width of taper in feet
 - L = Minimum length of taper, $S \times W$ for freeways, expressways, and all other roads with speeds of 45 mph or greater, or $W \times S^2 / 60$ for urban, residential, and other streets with speeds of 40 mph or less.
 - Place barricades on moveable assemblies and signs on portable assemblies when located on roadway.
 - Space delineator drums for tapering traffic at dimension "S". Space delineator drums or tubular markers for tangents at 2 times "S".
 - Place Sequencing Arrow Panels at the beginning of taper. Where shoulder width does not provide sufficient room, move panel closer to the work area and place on roadway surface.
 - Use Type A on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
 - Use Type B on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
 - Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
 - Re-established 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 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 payment marking measured as as Obliteration of Pavement Marking.
 - Change intersection control on detour for Type Q when determined necessary by the engineer.
 - Engineer to determine safe speed where necessary. 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.
 - As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
 - Recommend using 40 mph speed limit in vicinity of workers for Layout Type P, unless location and conditions dictate otherwise.

KEY

	Type III barricade		Work area
	Sign		Sequencing arrow panel
	Delineator Drum		Tubular Markers

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

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

9-27-13

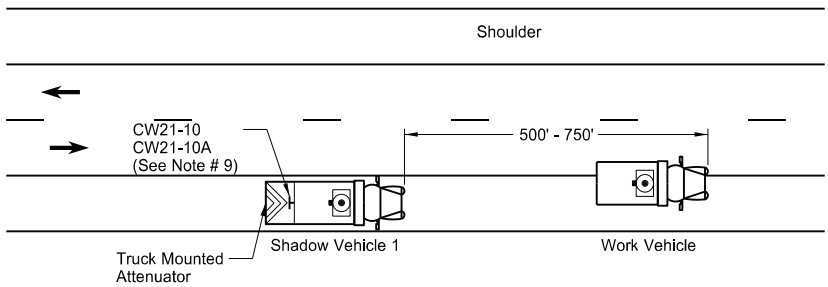
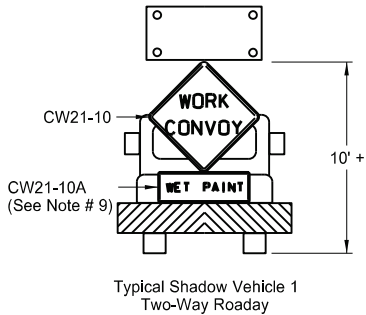
REVISIONS

DATE	CHANGE
08-17-17	Removed speed limit signs, & updated notes & sign numbers
11-01-19	Revised sign numbers & note
12-08-21	Added Dollars At Work sign
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes

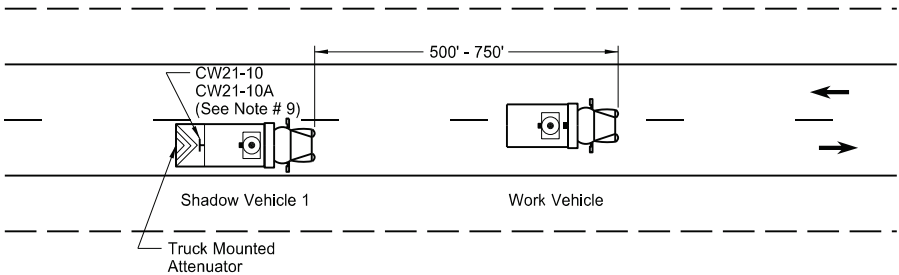


MOBILE OPERATION
(PAVEMENT MARKING)

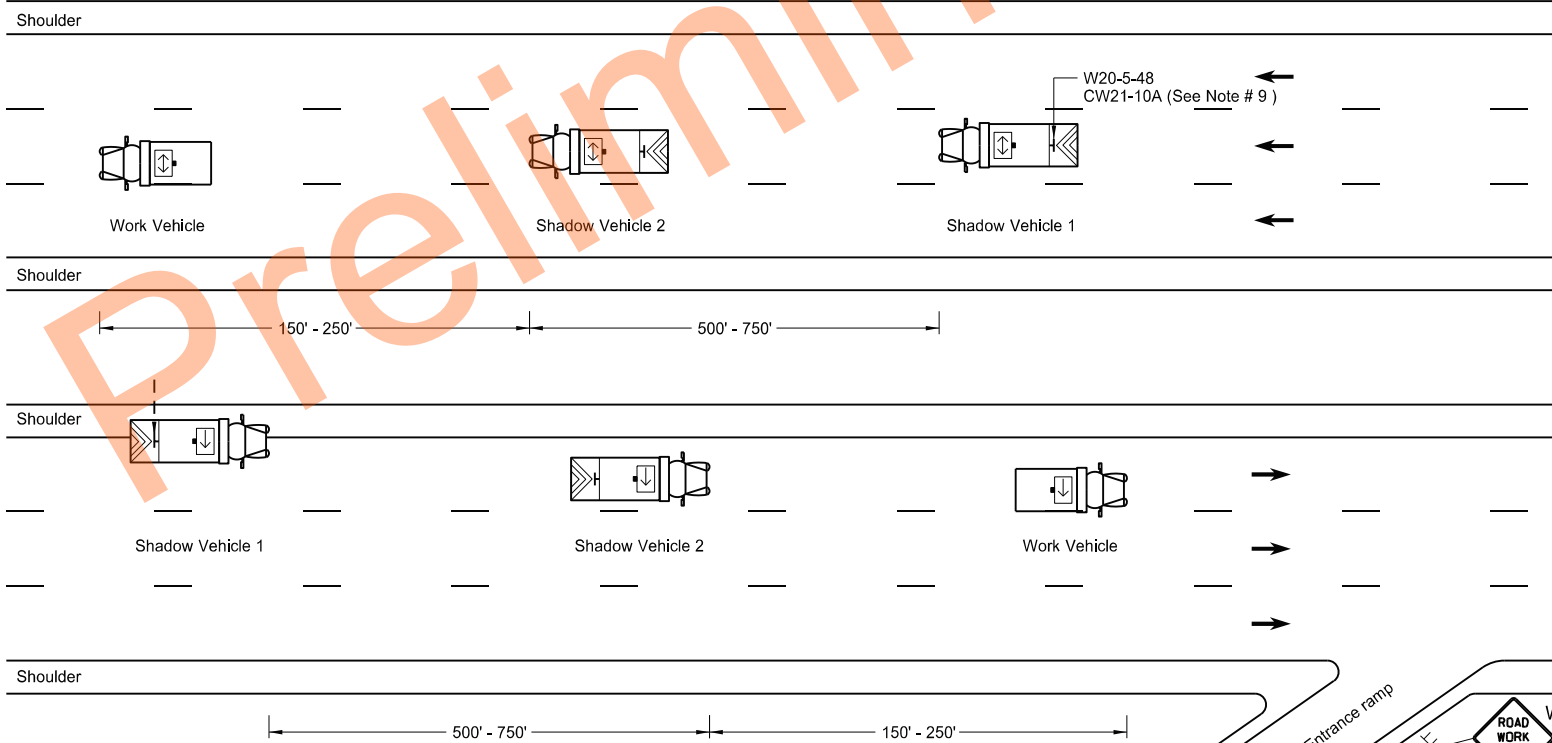
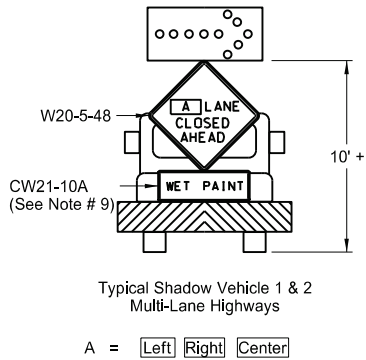
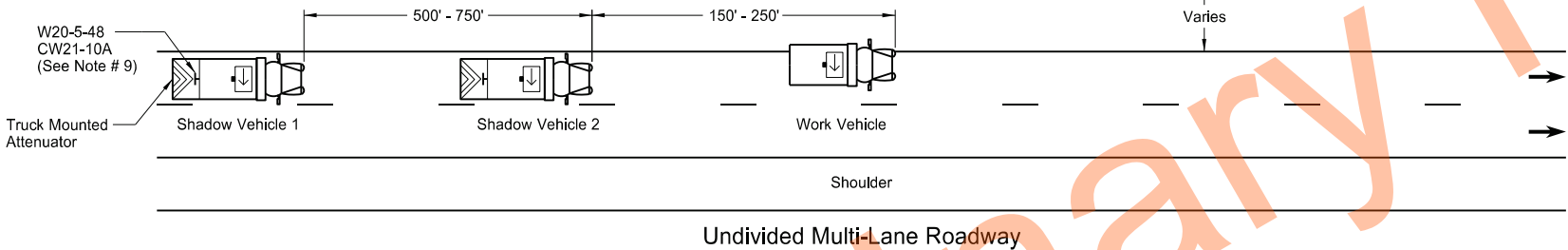
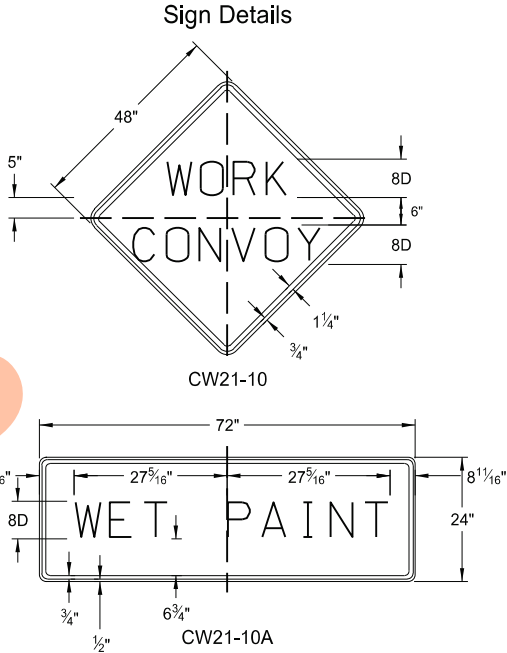
D-704-27



Two-Way Roadway with Paved Shoulders

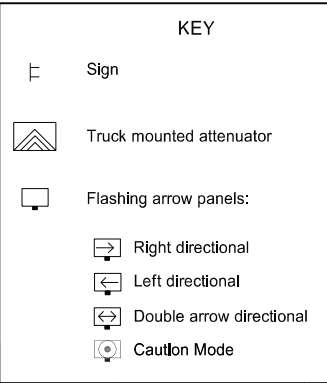


Two-Way Roadway without Paved Shoulders



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.



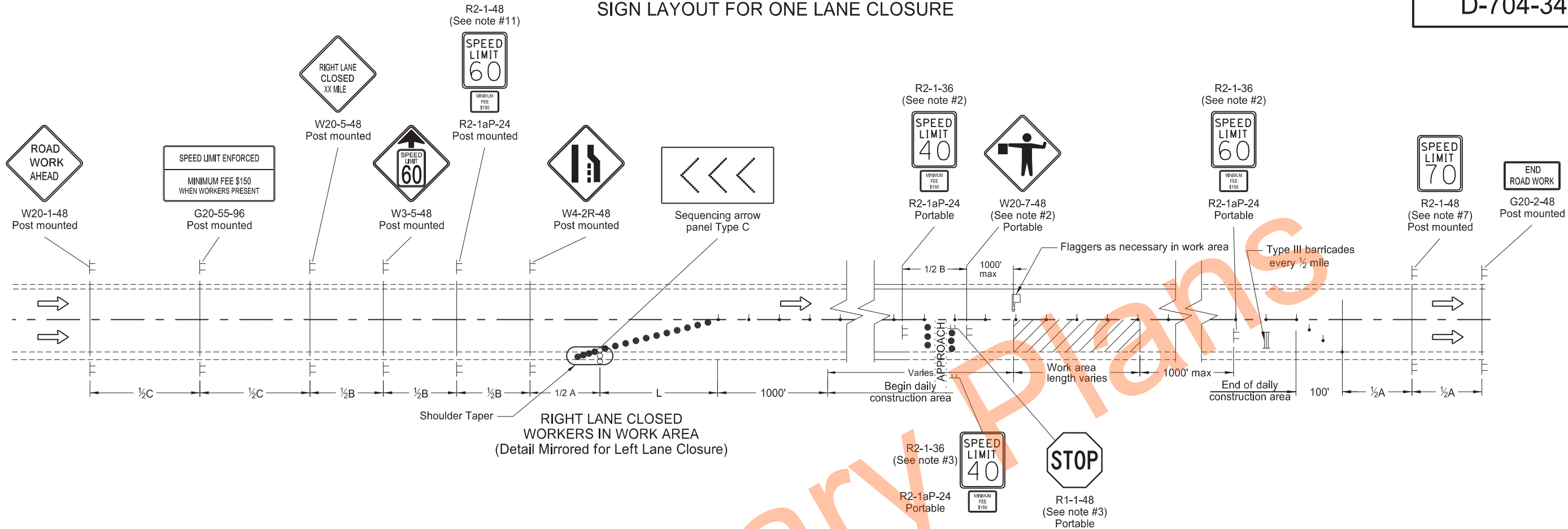
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
6-18-14	Removed shadow vehicle 2 on two lane roadways
9-27-17	Updated to active voice
11-08-19	Changed Standard Heading
6-02-24	Electronic Stamp/Signature.



08/02/24

SIGN LAYOUT FOR ONE LANE CLOSURE

D-704-34



Notes:

1. Install advance signs for flagging when flaggers are flagging.
2. Move the advanced flagger sign and speed limit signs as the work area moves through the construction zone. When the work area is not visible from the flagger, move the flagger station so the work area is visible. Place the 40 mph speed limit sign at 1/2 A in advance of the flagger sign and move the 60 mph speed limit sign. Cover or remove the 40 mph speed limit and the Minimum Fee \$150 signs upon completion of the work day or when workers are not present. Determine the exact speed limit in the field, dependent on location and conditions.
3. Approaches: When the work area encompasses an approach, install a 40 mph speed limit sign to control the approach. Cover the existing stop sign and install a new portable stop sign when the approach is on the side of the lane closure. Remove the approach speed limit sign once the main line 40 mph speed zone is moved past the approach.
4. Variables:
 - S=Numerical value of speed limit or 85th percentile
 - W=The width of taper.
 - L=Minimum length of taper, or SxW for freeways, expressways, and all other roads with speeds of 45 mph or greater, or (WxSxS)/60 for urban, residential, and other streets with speeds of 40 mph or less.
5. Space delineator drums for tapering traffic at the dimension "S". Space tubular markers used for tangents at 2 times dimension "S".
6. Place sequencing arrow panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on the roadway surface.
 - Use Type A on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
 - Use Type B on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
 - Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
7. Re-establish the speed limit. Determine the exact speed limit in the field, dependent on location and conditions.
8. Cover existing speed limit signs within a reduced speed zone.
9. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the diamond sign, and at such a distance above the edge that the flag does not touch the sign when limp.
10. Determine the reduced speed limit dependent on the in place speed limit before construction. Where speed limits are to be reduced more than 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at 1/2 B.
11. As an option use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
12. Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or the work is less than 15 days.

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

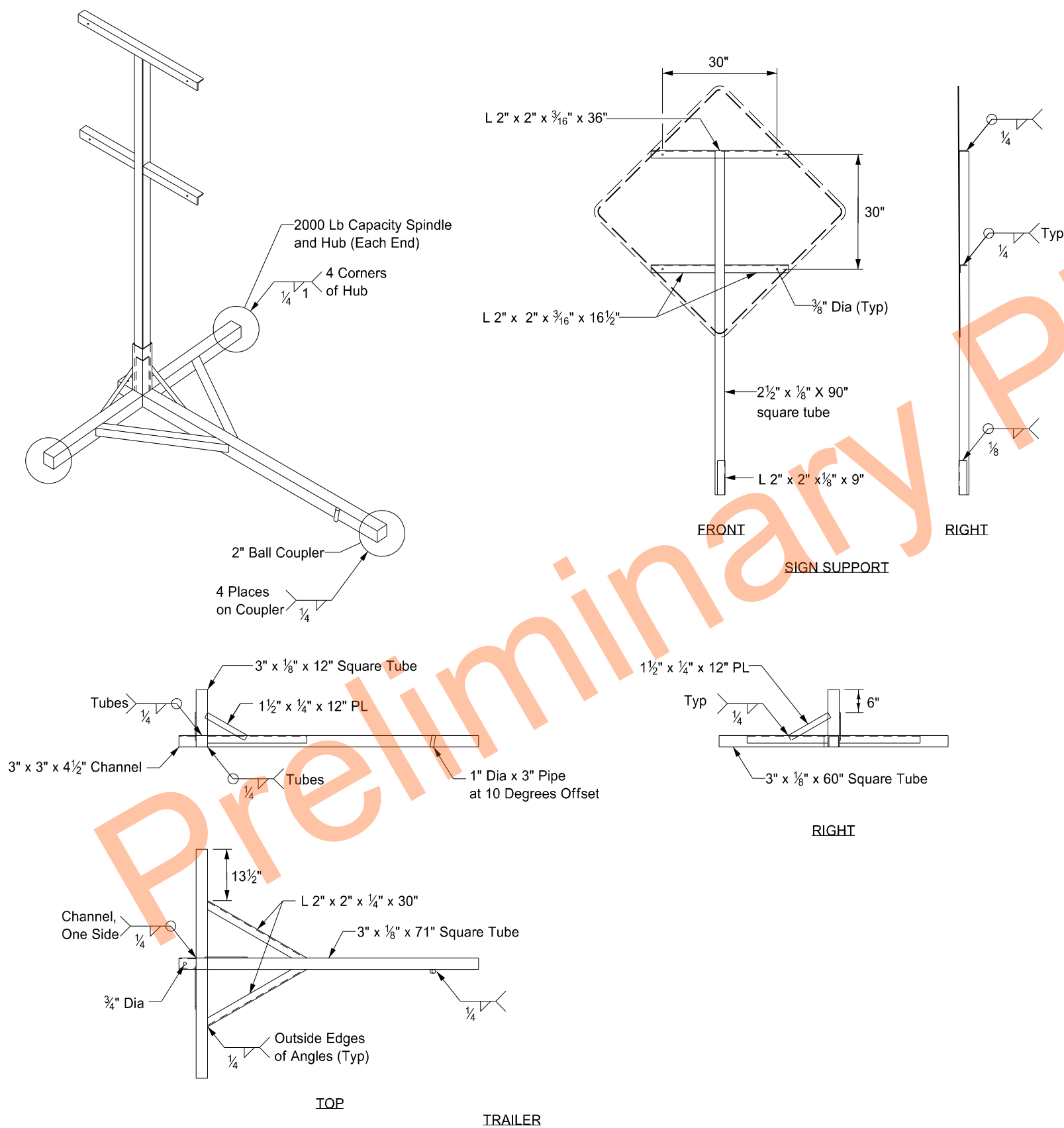
ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway 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

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

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PORTABLE SIGN SUPPORT ASSEMBLY

D-704-50

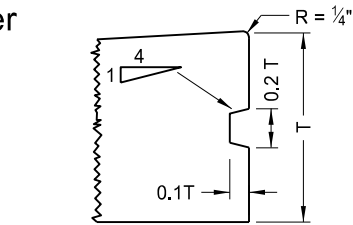
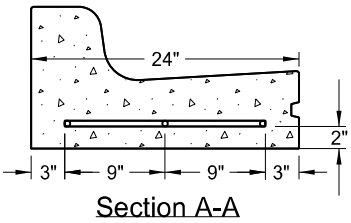
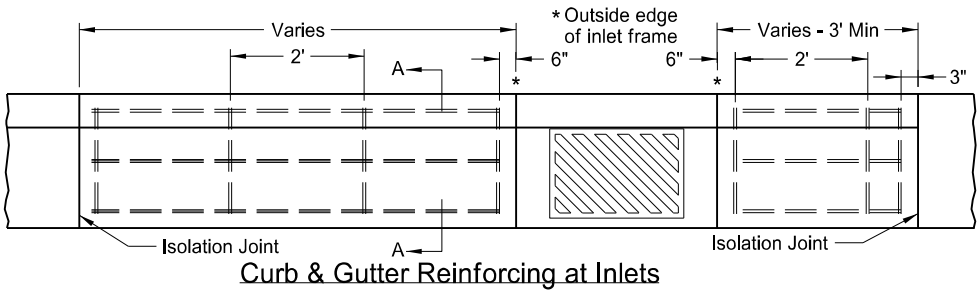


- Notes:
- ①. Maximum 250 pound weight of assembly.
 - ②. Use a 14" wheel and tire.
 - ③. Use no automotive and equipment axle assemblies for trailer-mounted sign supports.
 - ④. Other NCHRP 350 or MASH crash tested assemblies are acceptable.

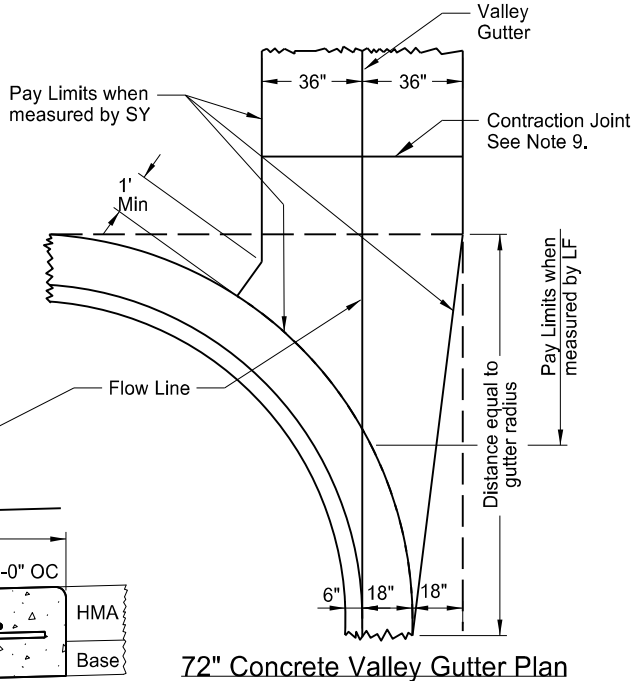
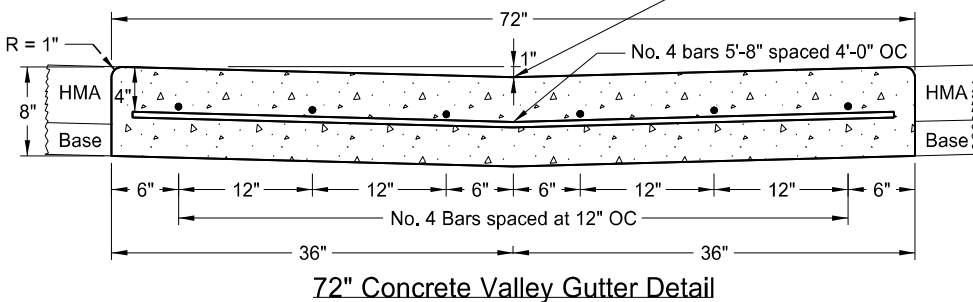
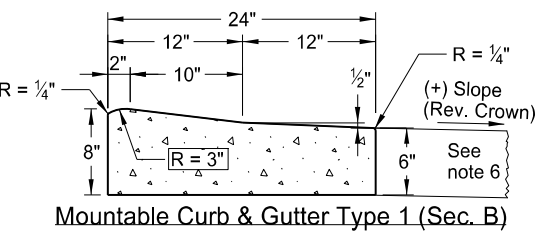
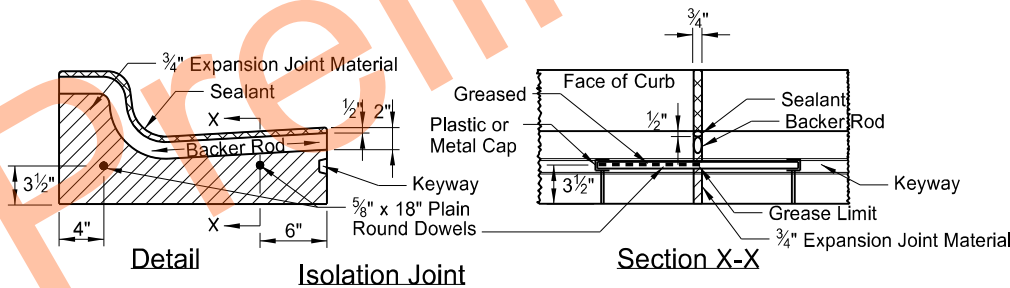
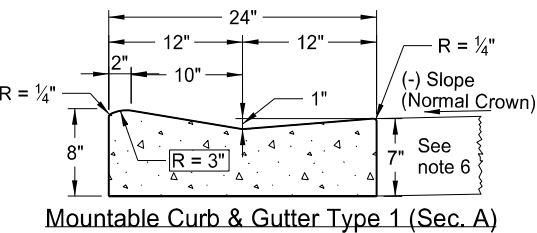
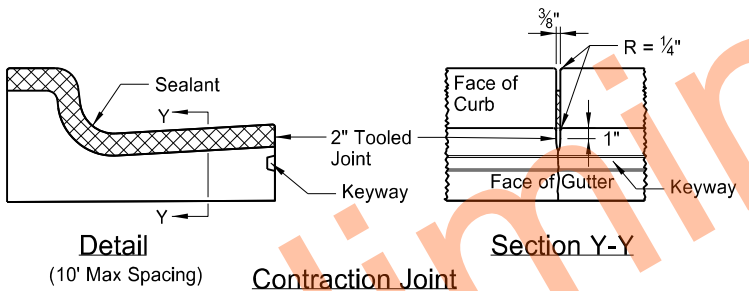
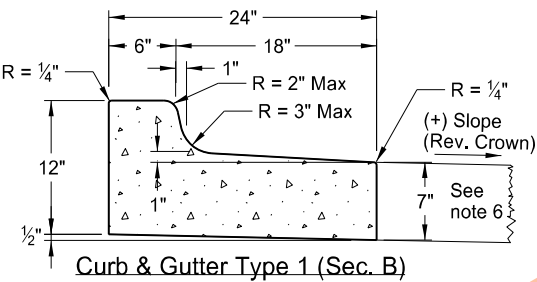
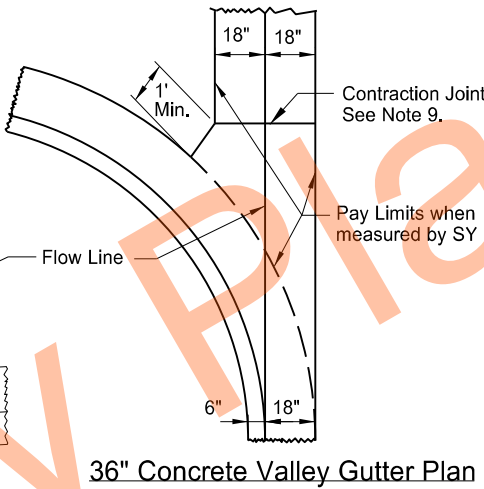
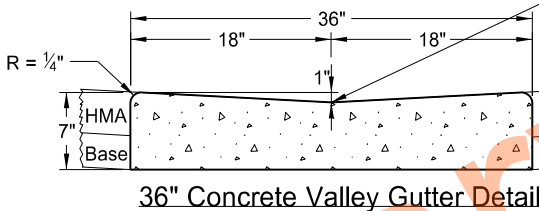
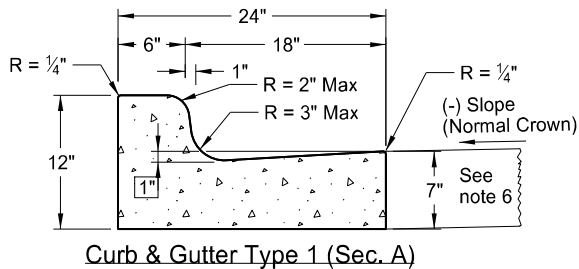
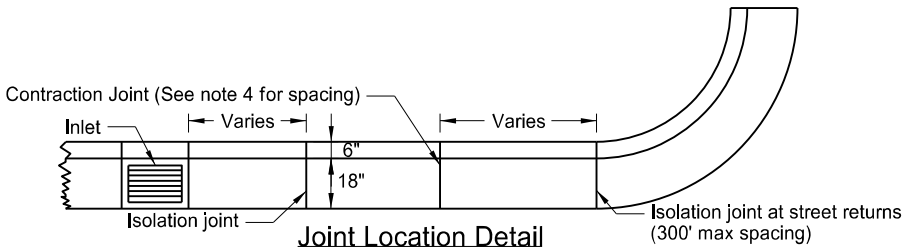
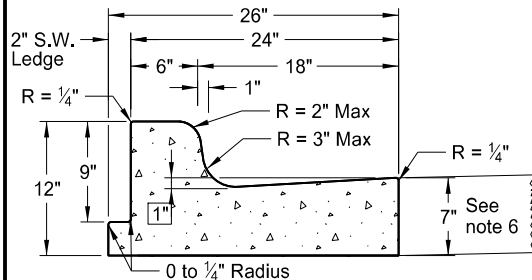
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE
12/02/2020	Updated Note to active voice.

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12 02 2020

Curb & Gutter and Valley Gutter



T= Thickness of pavement unless otherwise noted on plans.



- 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.

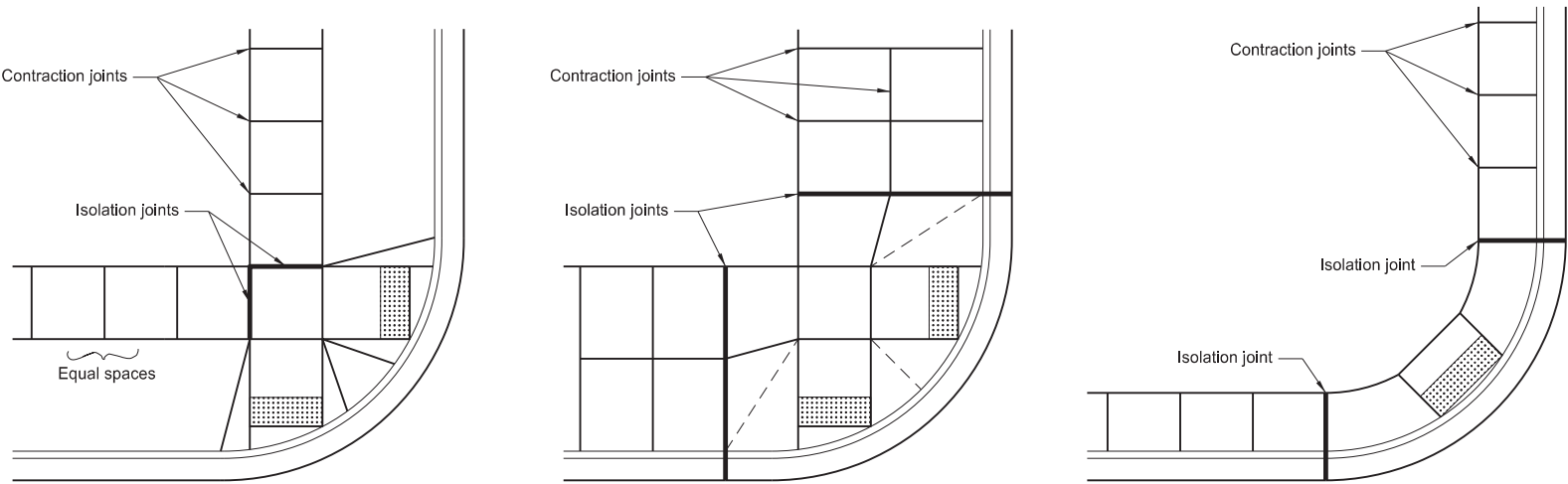
Saw or groove contraction joints to a minimum depth of 1/3 the depth of the concrete.

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

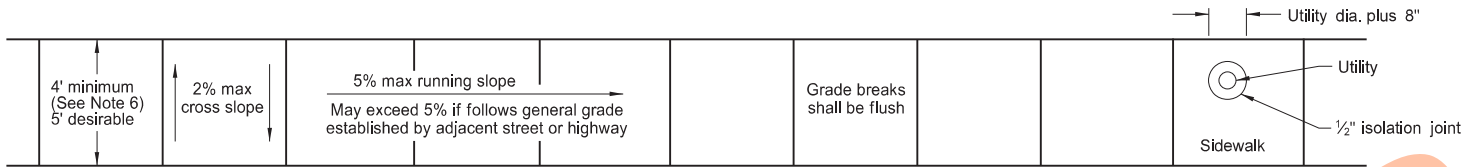
Use isolation joints between separate concrete pours, or between old and new concrete.
3. Include all costs for labor, equipment, and material necessary to construct contraction and isolation joints in the price bid for sidewalk concrete.
4. Use 4" sidewalk concrete thickness unless otherwise specified.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

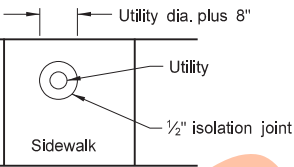
When clear width of pedestrian access routes is less than 5.0', provide passing spaces at a maximum of 200' with a minimum size of 5.0' by 5.0'.



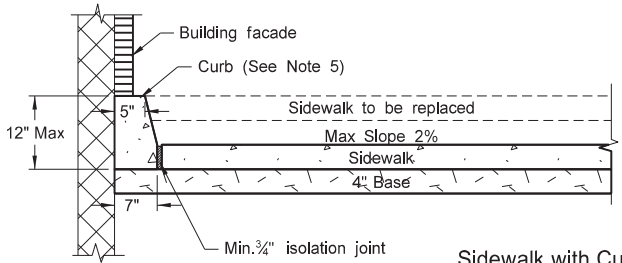
Typical Joint Layouts



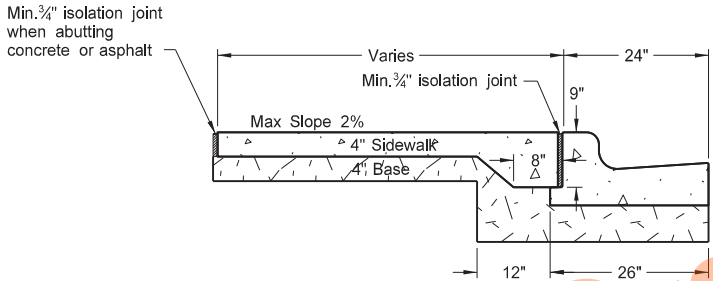
Sidewalk Width and Grade



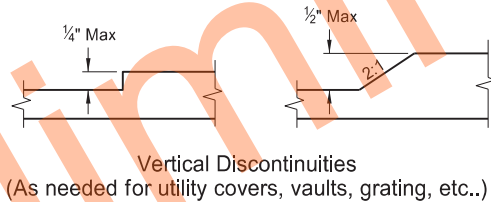
Utility Blockout



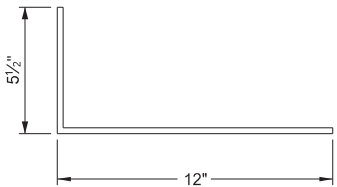
Sidewalk with Curb Detail
(Building face application)



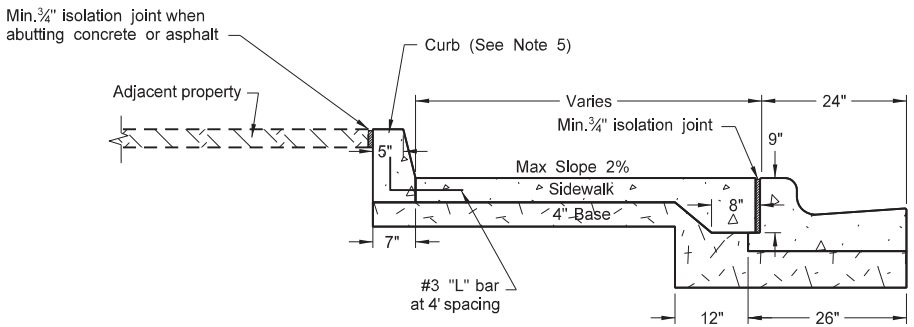
Sidewalk Detail
(Installed adjacent to curb and gutter)



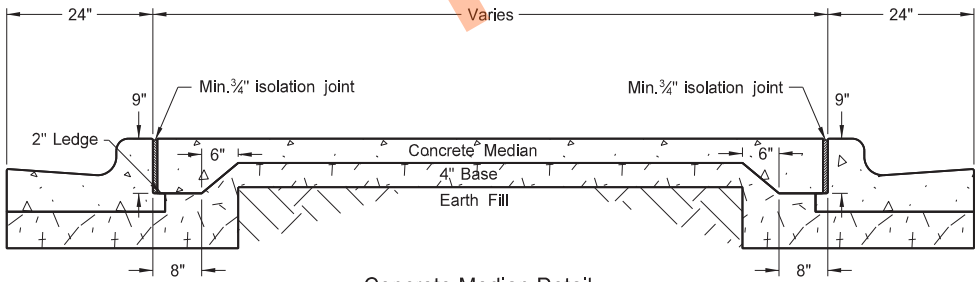
Vertical Discontinuities
(As needed for utility covers, vaults, grating, etc..)



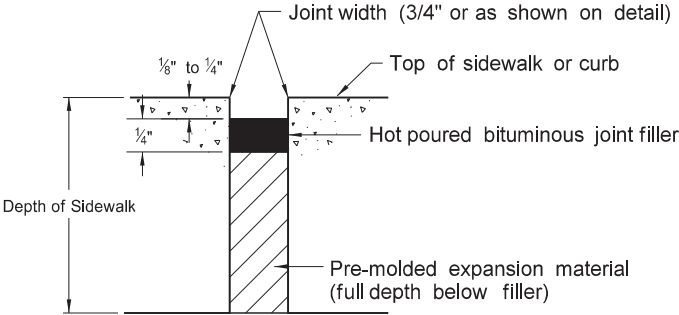
"L" Bar Detail
#3 Bar



Sidewalk with Curb Detail
(Adjacent property application)



Concrete Median Detail



Typical Isolation Joint Seal
(longitudinal and transverse)

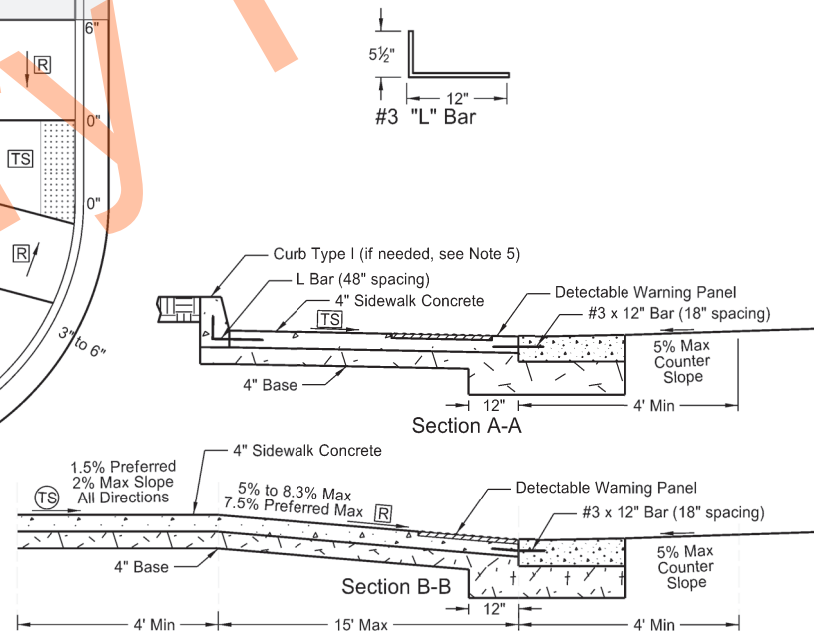
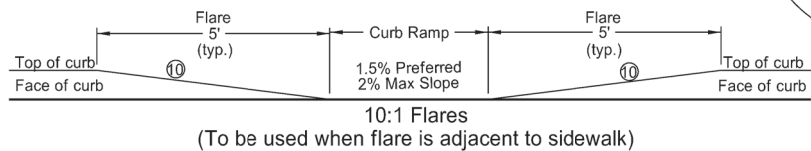
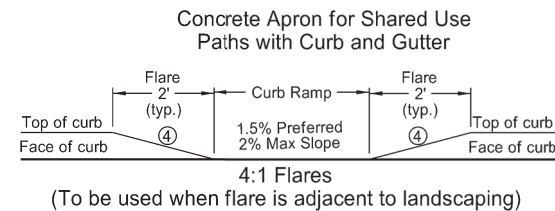
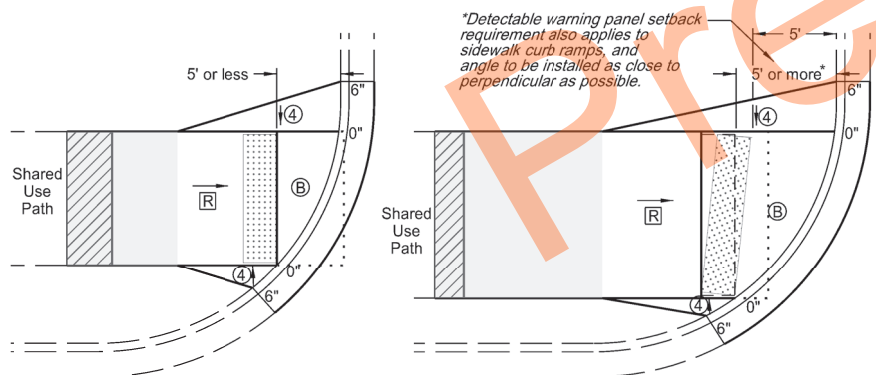
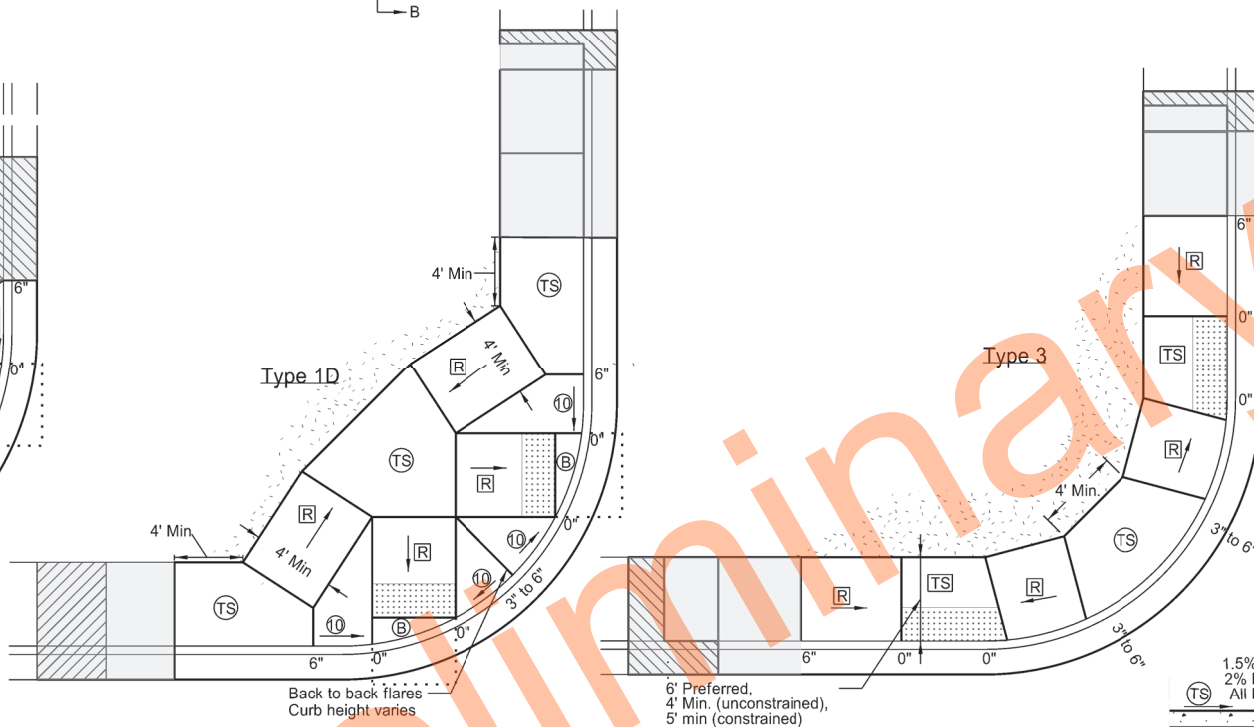
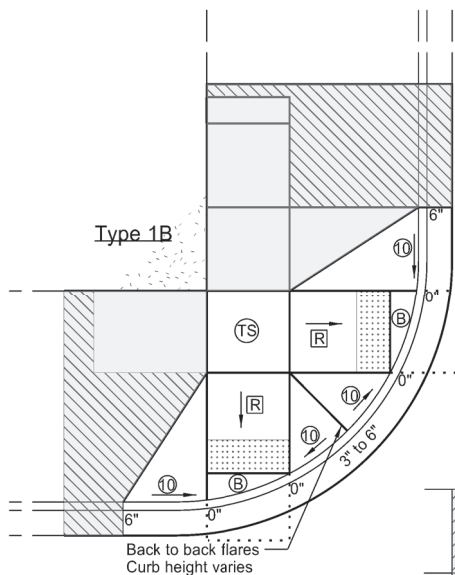
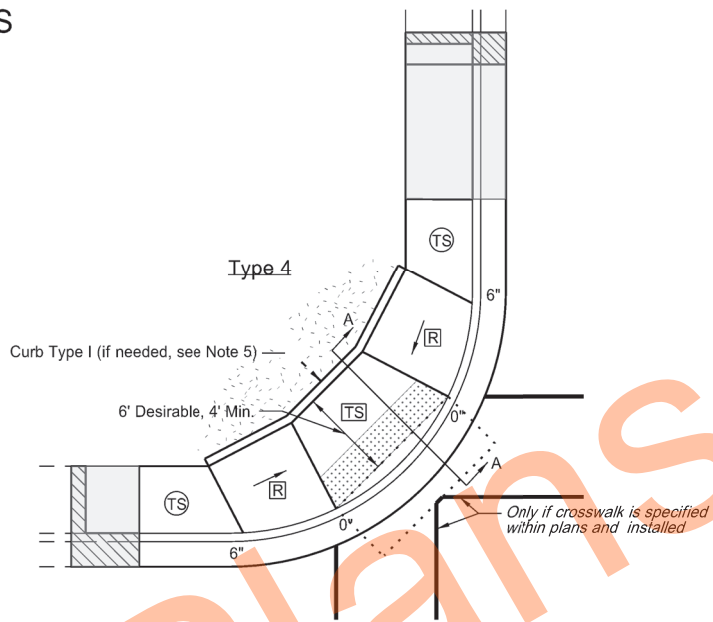
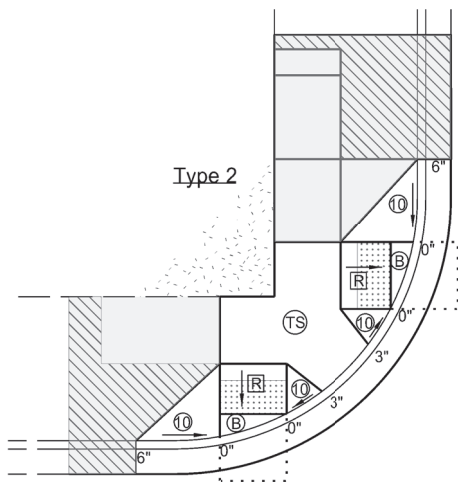
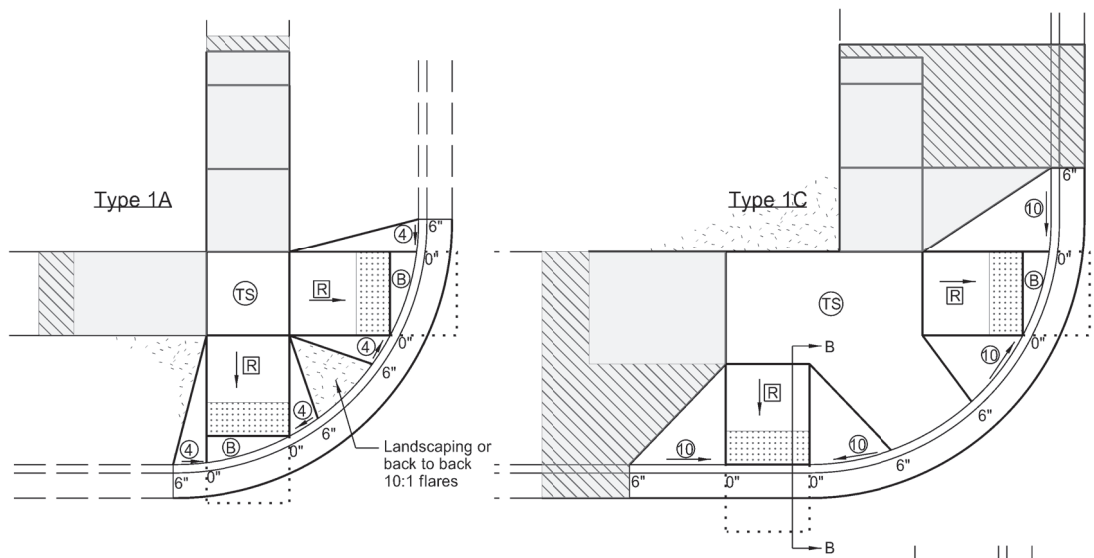
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
09-05-18	Added sidewalk details for width & grade & passing lane requirements.
08-27-19	New Design Engineer PE Stamp.
08-09-24	Electronic Stamp/Signature.



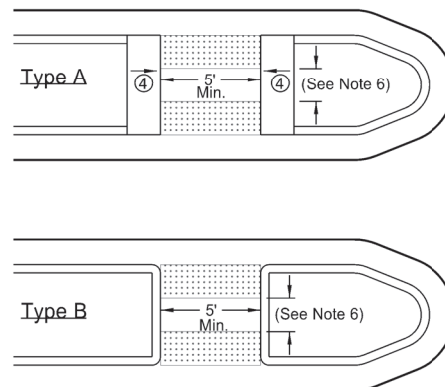
08/09/24

CURB RAMP RETROFIT DETAILS

D-750-3



Median Refuge Islands (Cut-Through)



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 I" 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:

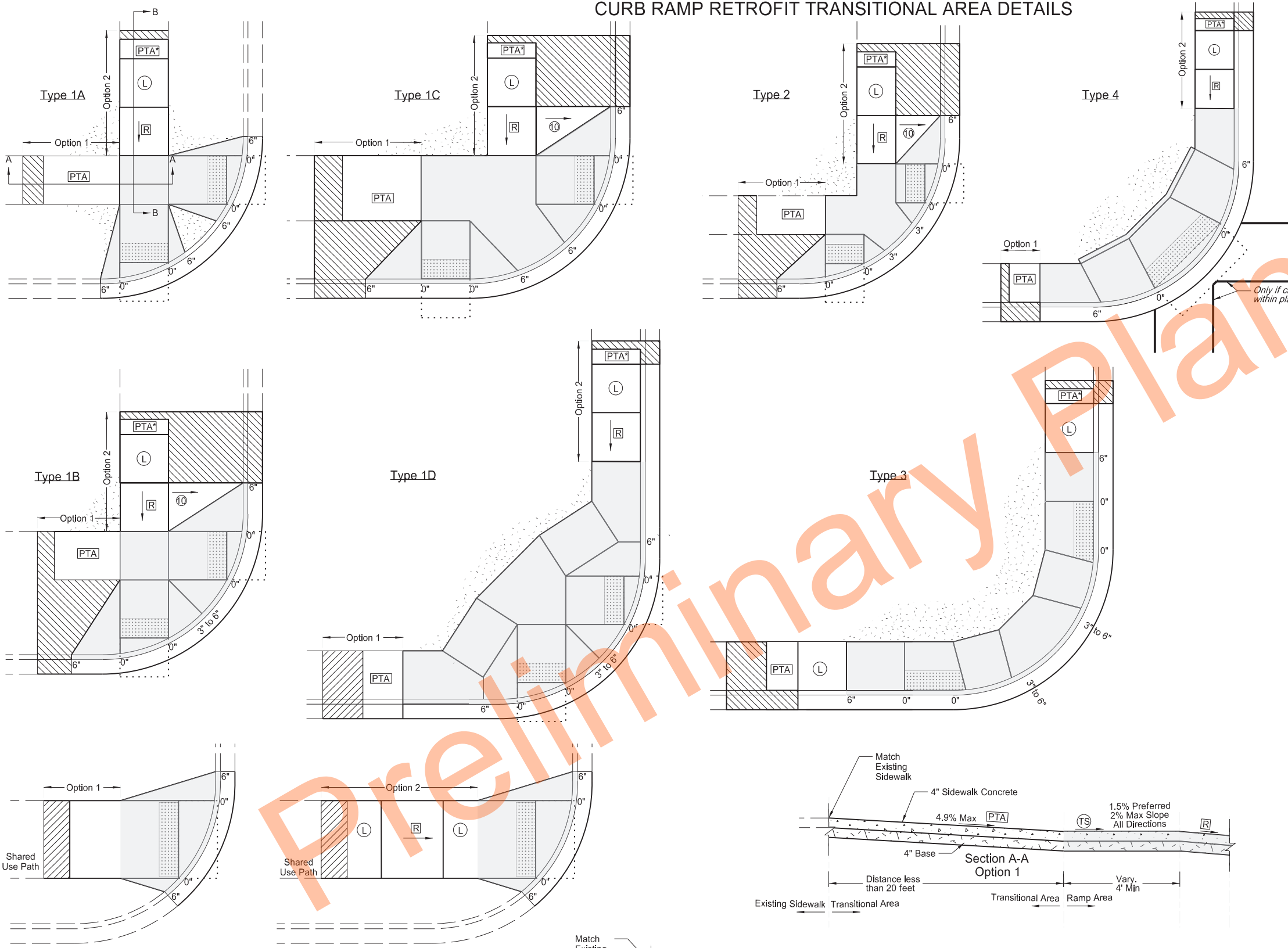
- Detectable Warning Panel.
- Landscaping.
- Transitional tie-in to nearest joint, if needed.
- Curb Ramp Retrofit Transitional Area (See Standard Drawing D750-4)
- 4' long x width of EPF or 4' minimum Clear space outside traffic lanes of travel. 1.5% preferred cross slope 2% maximum cross slope 4.7% 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



CURB RAMP RETROFIT TRANSITIONAL AREA DETAILS

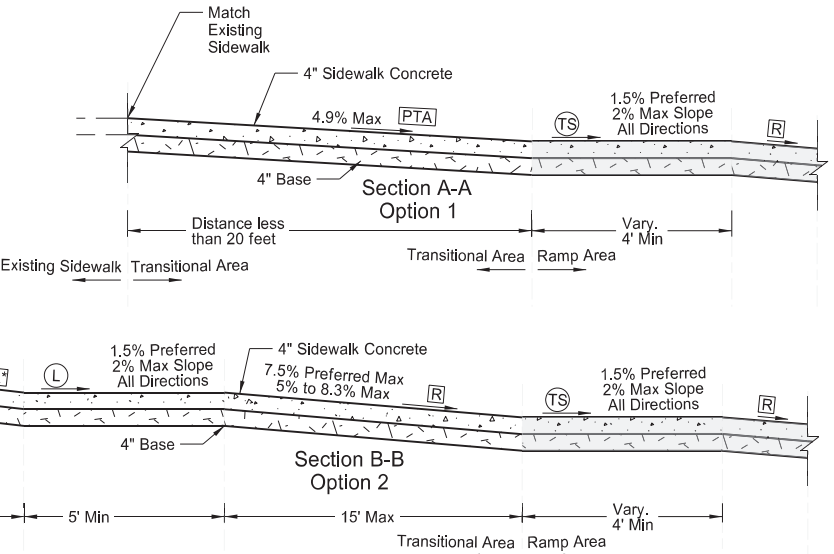
D-750-4



- 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

[illegible]

Technical drawing of a complex shape with dimensions and radii. The overall width is 11'-8". The overall height is 8'-4". The shape features several internal dimensions and radii:

- Top horizontal dimension: 11'-8"
- Left vertical dimension: 8'-4"
- Top-left internal dimensions: 3'-0" and 8"
- Left vertical segments: 2'-8" and 3'-8"
- Bottom-left internal dimensions: 2'-8" and 4"
- Bottom horizontal segments: 5'-4", 1'-0", and 5'-4"
- Right vertical segments: 2'-4", 1'-8", and 2'-4"
- Internal vertical dimensions on the right: 1'-8" and 2'-4"
- Internal horizontal dimensions on the right: 8" and 4"
- Radius callouts: $R = 3'-4"$ and $R \approx 2'-4"$

Technical drawing of a mechanical part with dimensions in inches. The part has a complex profile with multiple vertical and horizontal segments, and curved sections defined by radii. Key dimensions include overall width of 7'-6", overall height of 12'-9", and various segment lengths and radii such as R=3'-4" and R=2'-4".

Technical drawing of a door handle assembly. The drawing shows a side view of the handle with the following dimensions:

- Total height: 6'-0"
- Top section height: 1'-0³/₄"
- Middle section height: 1'-9³/₄"
- Bottom section height: 1'-0³/₄"
- Bottom section height (alternative): 2'-0³/₄"
- Width: 1'-1"
- Detail: 3/4"

Technical drawing of a stylized 'STOP' sign. The sign is rectangular with a total width of 6'-3" and a total height of 8'-0". The word 'STOP' is rendered in a bold, sans-serif font. Dimensions are provided for various parts of the sign and lettering:

- Overall Dimensions:** 6'-3" wide by 8'-0" high.
- Letter 'S':**
 - Top horizontal stroke: 16" wide.
 - Vertical stroke: 16" wide.
 - Bottom horizontal stroke: 16" wide.
 - Left vertical stroke: 4" wide.
 - Right vertical stroke: 4" wide.
 - Bottom curve: 4" wide.
- Letter 'T':**
 - Top horizontal stroke: 16" wide.
 - Vertical stroke: 2" wide.
 - Bottom horizontal stroke: 16" wide.
- Letter 'O':**
 - Top horizontal stroke: 16" wide.
 - Vertical stroke: 5" wide.
 - Bottom horizontal stroke: 16" wide.
- Letter 'P':**
 - Top horizontal stroke: 16" wide.
 - Vertical stroke: 16" wide.
 - Bottom horizontal stroke: 16" wide.
 - Right vertical stroke: 8" wide.
 - Bottom curve: 12" wide.
- Letter 'S' Details:**
 - Top curve: 6" wide.
 - Bottom curve: 4" wide.
- Letter 'T' Details:**
 - Top curve: 4" wide.
 - Bottom curve: 4" wide.
- Letter 'O' Details:**
 - Top curve: 4" wide.
 - Bottom curve: 4" wide.
- Letter 'P' Details:**
 - Top curve: 4" wide.
 - Bottom curve: 4" wide.

[illegible]

Technical drawing of a stylized 'GOLF' sign. The sign is 12'-0" wide and 8'-0" high. The letters are outlined in black. Dimensions are provided for the overall size and the spacing between the letters. The overall width is 12'-0" and the overall height is 8'-0". The spacing between the letters is 4" for the 'G', 'O', 'L', and 'F', and 4" for the 'G' and 'O'. The spacing between the letters is 4" for the 'G', 'O', 'L', and 'F', and 4" for the 'G' and 'O'. The spacing between the letters is 4" for the 'G', 'O', 'L', and 'F', and 4" for the 'G' and 'O'.

Speed Limit	Chevron Width	Chevron Spacing 45° to Traffic
0-25 mph	8"	5'
30-40 mph	8"	15'
45 mph and above	12"	25'

Diagram illustrating a road cross-section. It shows a central travel lane labeled "10'" and a total width labeled "30'". The edges of the road are marked with "Edge line".

Advance Placement Distance for Railroad Warning Signs	
Posted or 85th Percentile Speed	Advance Distance
20 mph	min. 100 ft
25 mph	min. 100 ft
30 mph	min. 100 ft
35 mph	min. 100 ft
40 mph	125 ft
45 mph	175 ft
50 mph	250 ft
55 mph	325 ft
60 mph	400 ft
65 mph	475 ft
70 mph	550 ft

[illegible]

W10-1 

Notes:
Mark a three lane roadway with a centerline for two-lane approach operation on the approach to a crossing. On multi-lane roads, extend the transverse bands across all approach lanes, and use individual R X R symbols in each approach lane.

See plans for correct message. Use white pavement markings unless noted otherwise.

Railroad cross & 2 R's	60.5 S.F.
3 Bands (12' lane)	72 S.F.

*Stop Bar nearest crossing - 8' from gate or 26' to nearest rail - Use whichever is further from tracks.

Diagram illustrating the dimensions and markings for a 12' wide roadway. The diagram shows a cross-section of the road with various markings and dimensions:

- 12' min to 30" max**: Dimension for the top section of the road.
- Curb face**: Indicated by an arrow pointing to the left edge of the road.
- 24"**: Dimension for the first blacked-out section.
- 24"**: Dimension for the second blacked-out section.
- 2'x6', 2'x8", 2'x10' or 2'x12' white line**: Dimension for the white line section.
- 24"**: Dimension for the third blacked-out section.
- Wheel track**: Dimension for the wheel track section.
- 30"**: Dimension for the wheel track section.
- 24"**: Dimension for the fourth blacked-out section.
- 12" min to 30" max**: Dimension for the section between the fourth blacked-out section and the wheel track.
- 24"**: Dimension for the fifth blacked-out section.
- Wheel track**: Dimension for the wheel track section.
- 30" max**: Dimension for the wheel track section.
- 24"**: Dimension for the sixth blacked-out section.
- 6" min to 15" max**: Dimension for the bottom section of the road.
- ℄ of Roadway**: Indicated by an arrow pointing to the center line of the road.

NOTES:

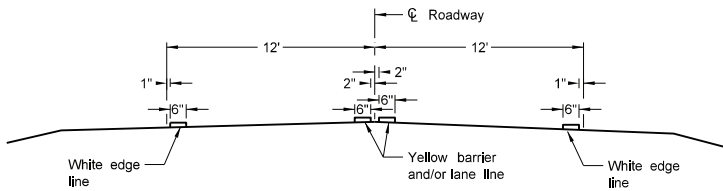
1. Normal width line - 6 inches wide for freeways, expressways, and ramps; 6 inches for all other roadways with speed limits > 40 mph,
2. Use 4 or 6 inch wide pavement marking for all other roadways with speed limits ≤ 40 mph.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-6-11	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
08-27-19	New Design Engineer PE Stamp.
01-28-2020	Revised min Stop Bar distance to rail
11-22-2023	Revised pavement marking widths.

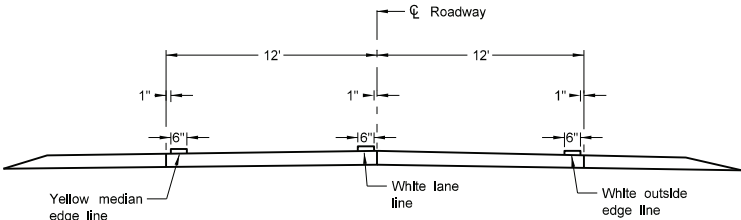


PAVEMENT MARKING

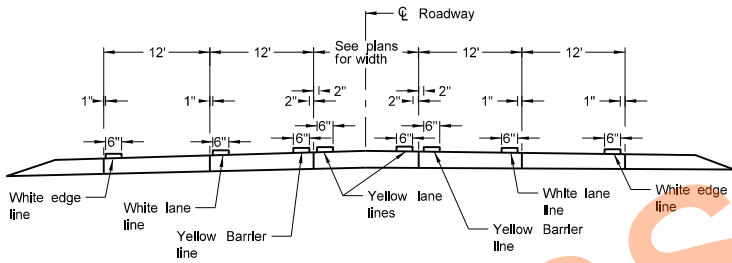
D-762-4



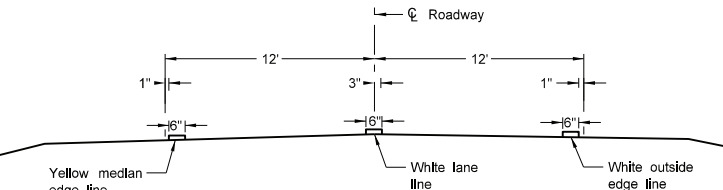
Two Lane Two Way
RURAL ROADWAY



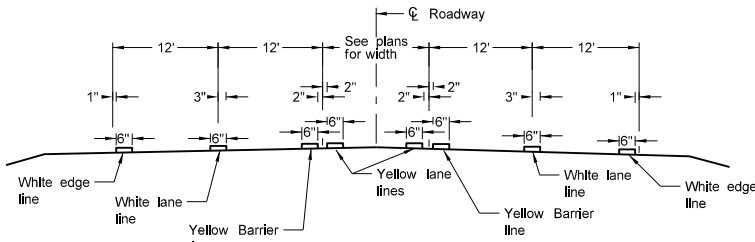
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



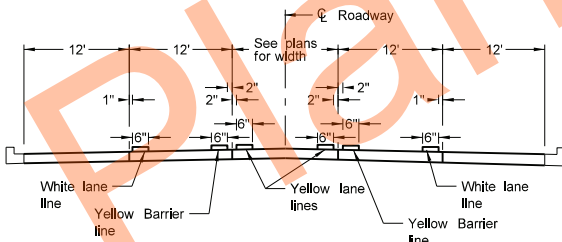
RURAL FIVE LANE ROADWAY
Concrete Section



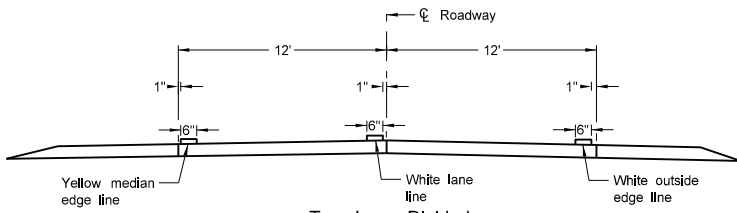
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



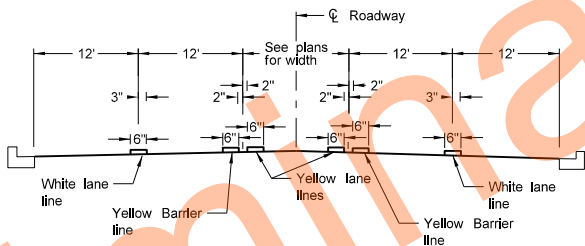
RURAL FIVE LANE ROADWAY
Asphalt Section



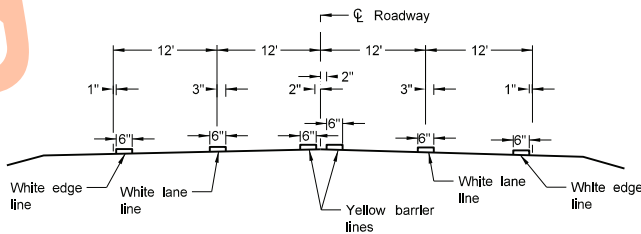
URBAN FIVE LANE SECTION
Concrete Section



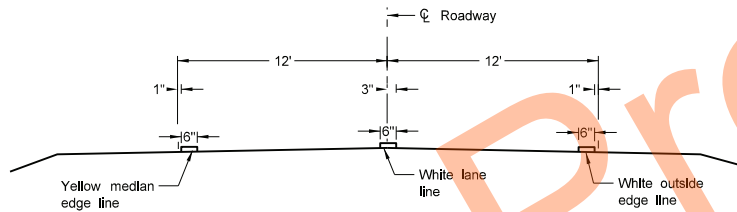
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Concrete Section



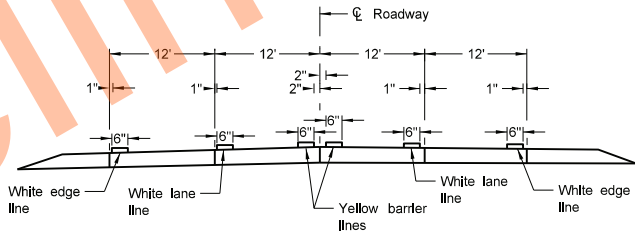
URBAN FIVE LANE SECTION
Asphalt Section



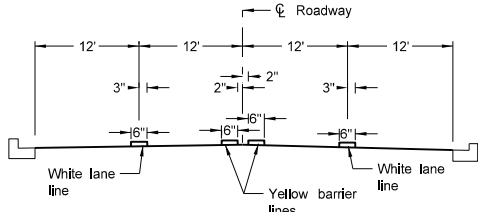
RURAL FOUR LANE ROADWAY
Asphalt Section



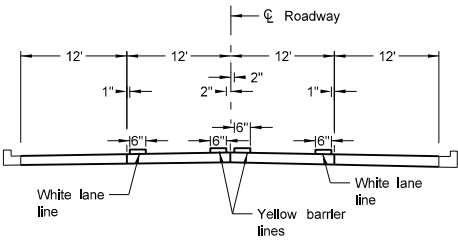
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



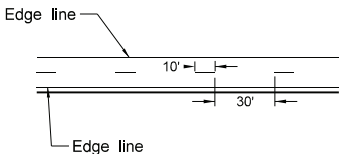
RURAL FOUR LANE ROADWAY
Concrete Section



URBAN FOUR LANE SECTION
Asphalt Section



URBAN FOUR LANE SECTION
Concrete Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

NOTES:

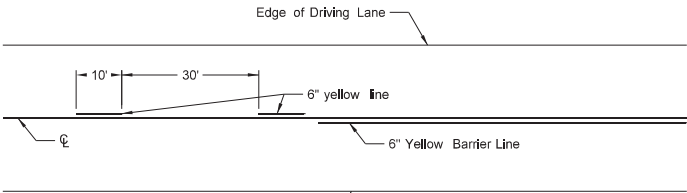
1. Continue edge lines through private drives and field drives. Break edge lines for intersections.
For section lines, county roads, and street approaches, stripe the radii and edge lines of the paved surface within the right of way except where curb and gutter is present.
2. Normal width line - 6 inches 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.

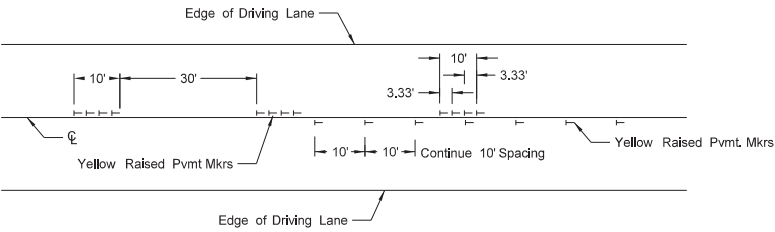


SHORT-TERM PAVEMENT MARKING

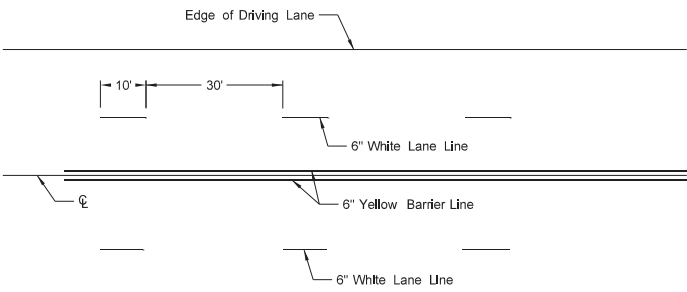
D-762-11



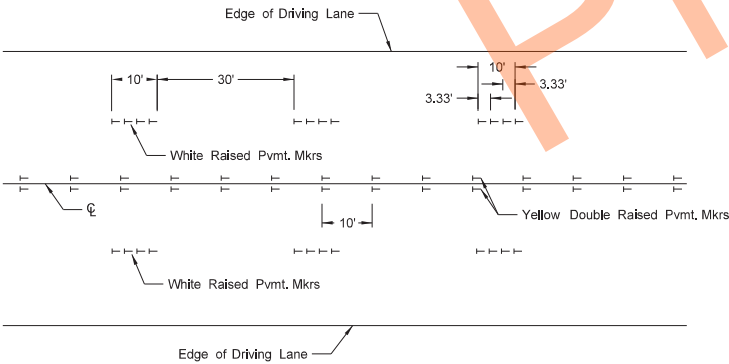
Painted or Tape Lines



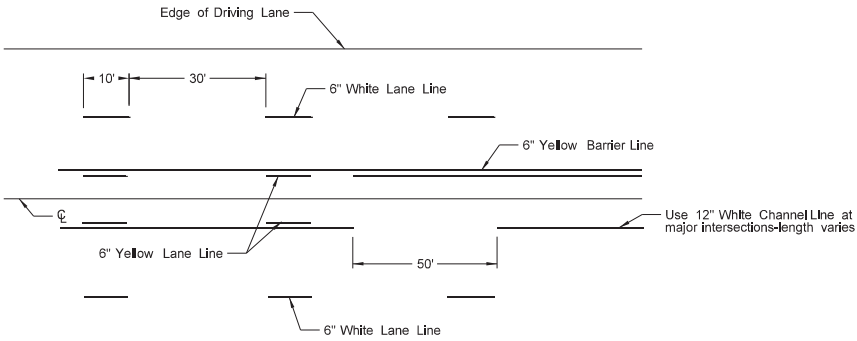
Raised Pavement Markers
TWO-LANE TWO-WAY ROADWAY



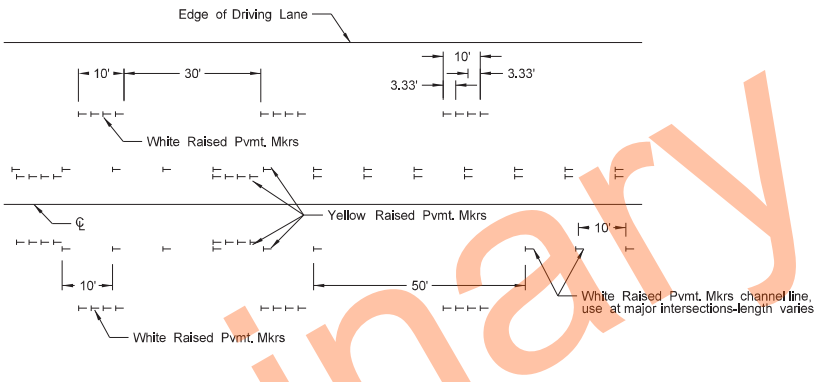
Painted or Tape Lines



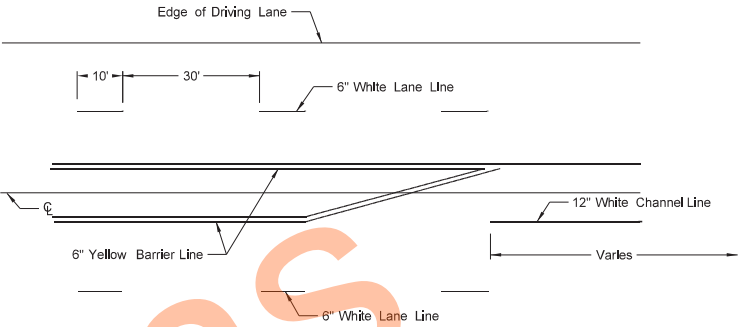
Raised Pavement Markers
FOUR LANE ROADWAY



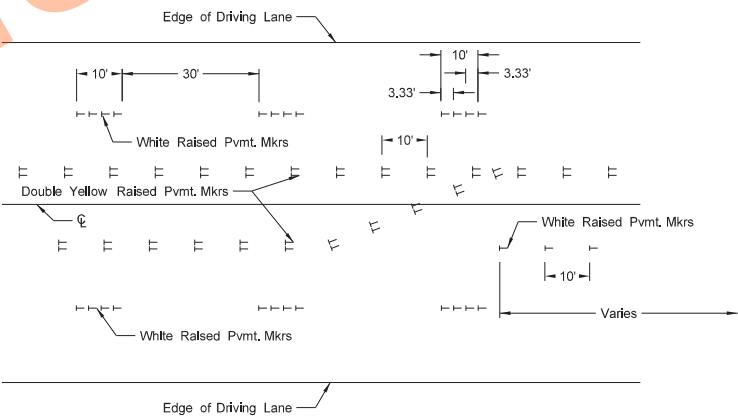
Painted or Tape Lines



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.

