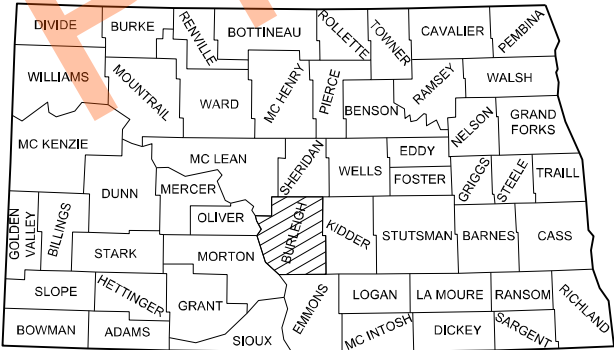
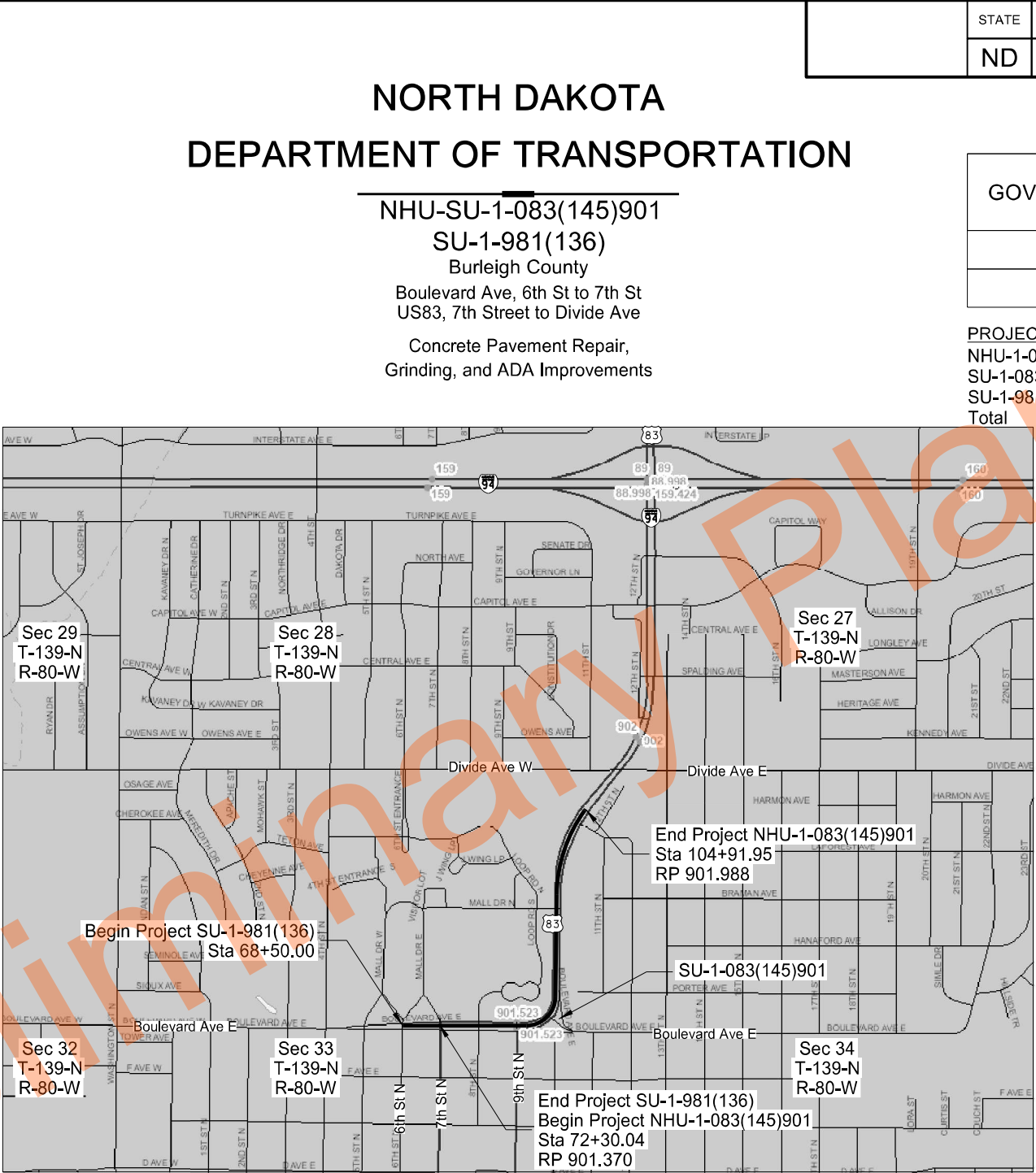


DESIGN DATA 1-083(145)901 NB				
Traffic	Average Daily			
Current 2023	Pass: 13845	Trucks: 165	Total: 14010	
Forecast 2043	Pass: 16895	Trucks: 205	Total: 17100	
Clear Zone Distance: 18 Ft		Design Speed: 40 MPH (30 MPH on Curve)		
Minimum Sight Dist. for Stopping: 200 Ft		Bridges: N/A		
Sight Dist. for No Passing Zone: 500 Ft				
Pavement Design Life: Match Existing				
Design Accumulated One-way Ridged ESALs: N/A				
DESIGN DATA 1-083(145)901 SB				
Traffic	Average Daily			
Current 2023	Pass: 13500	Trucks: 180	Total: 13680	
Forecast 2043	Pass: 16470	Trucks: 220	Total: 16690	
Clear Zone Distance: 18 Ft		Design Speed: 40 MPH (30 MPH on Curve)		
Minimum Sight Dist. for Stopping: 200 Ft		Bridges: N/A		
Sight Dist. for No Passing Zone: 500 Ft				
Pavement Design Life: Match Existing				
Design Accumulated One-way Ridged ESALs: N/A				
DESIGN DATA 1-083(145)901 (7th St to 9th St, EB)				
Traffic	Average Daily			
Current 2023	Pass: 3760	Trucks: 40	Total: 3800	
Forecast 2043	Pass: 4590	Trucks: 50	Total: 4640	
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 1-981(136) (6th St to 7th St)				
Traffic	Average Daily			
Current 2023	Pass: 9755	Trucks: 80	Total: 9835	
Forecast 2043	Pass: 11905	Trucks: 100	Total: 12005	
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				

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



STATE COUNTY MAP



NORTH DAKOTA

DEPARTMENT OF TRANSPORTATION

NHU-SU-1-083(145)901

SU-1-981(136)

Burleigh County
Boulevard Ave, 6th St to 7th St
US83, 7th Street to Divide 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(145)901		0.618	0.618
SU-1-083(145)901		0.047	0.047
SU-1-981(136)		0.072	0.072
Total		0.737	0.737

MOORE ENGINEERING INC.

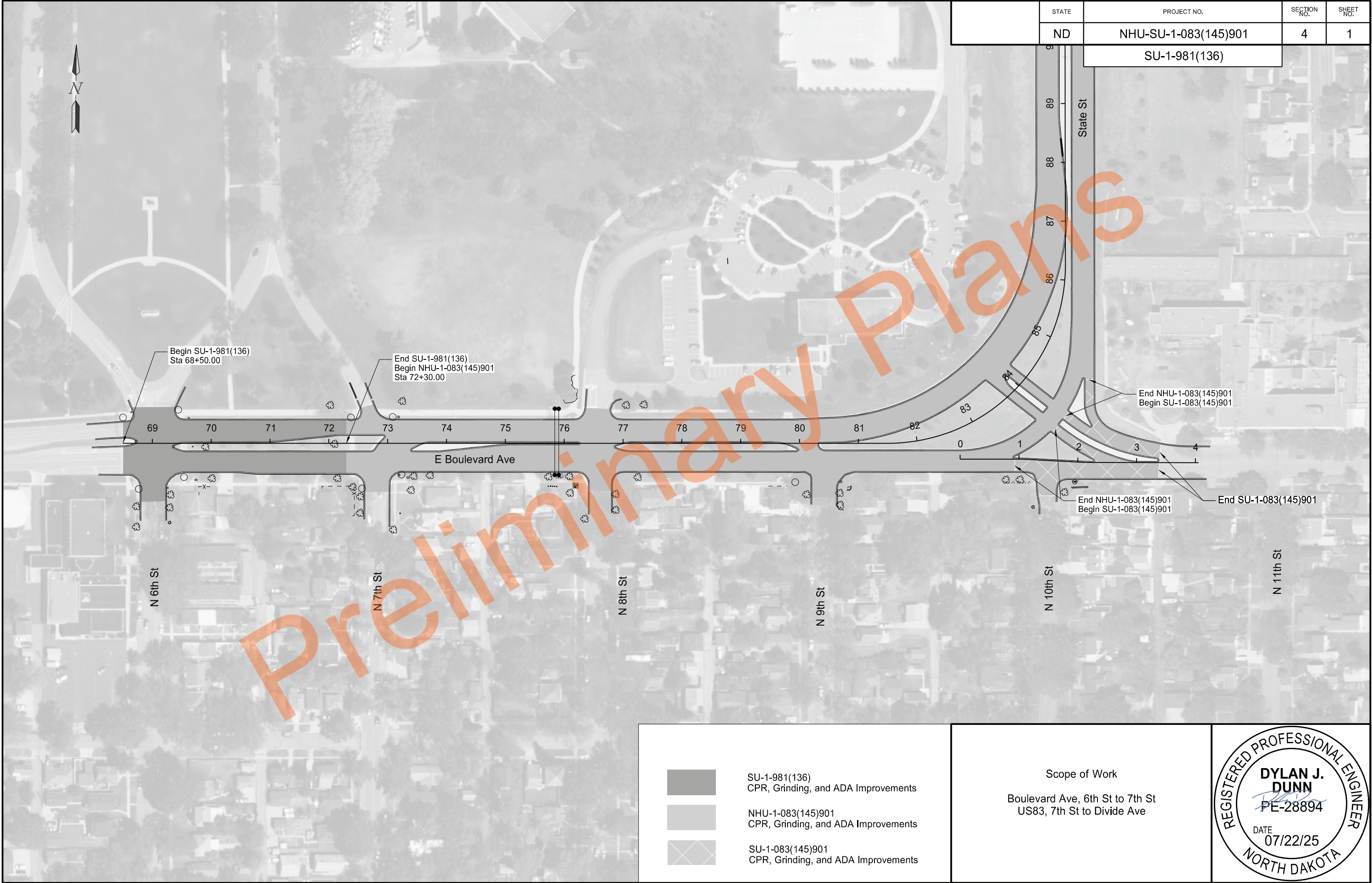


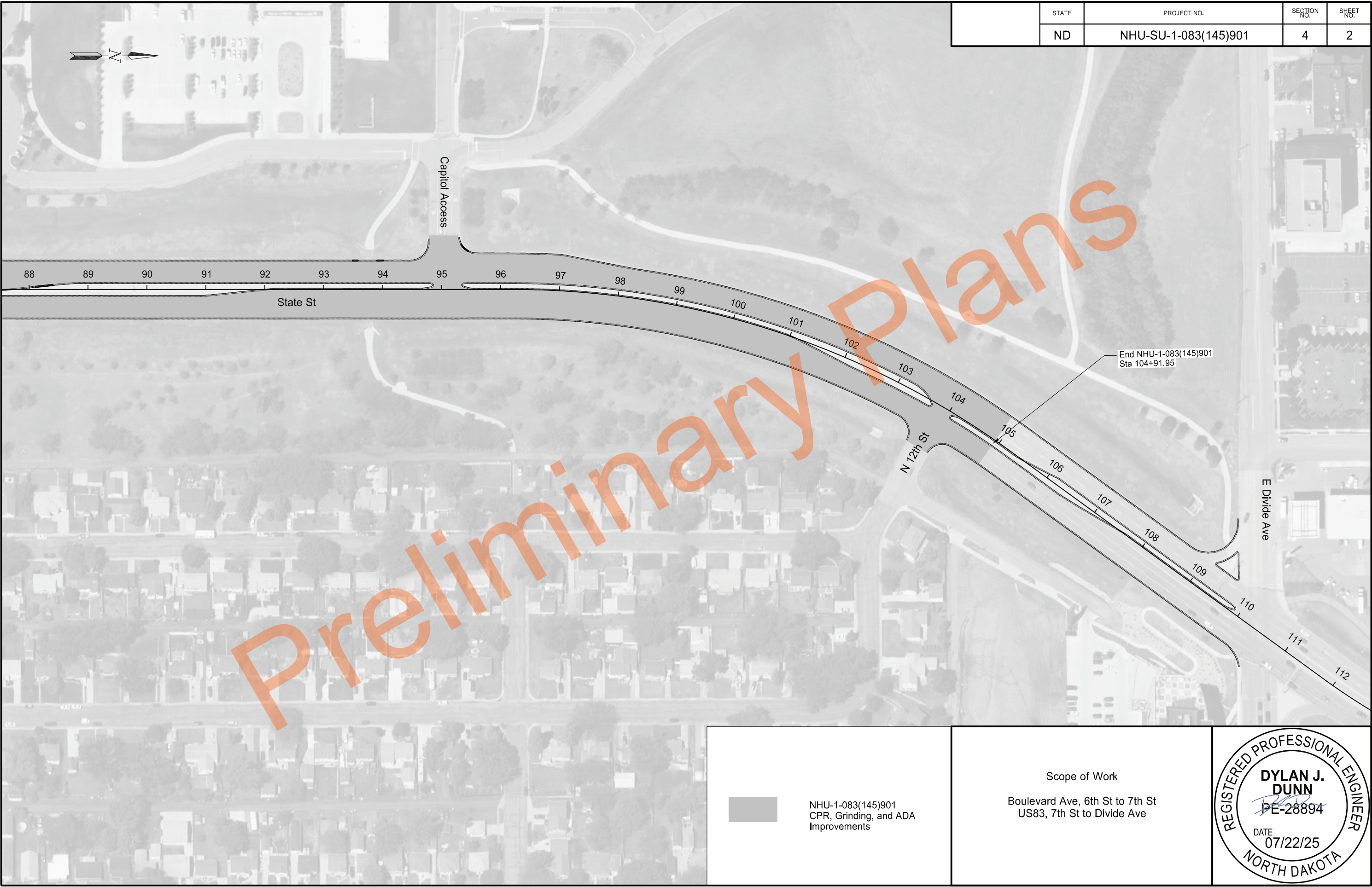
ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Jon Ketterling

08/15/25

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			SU-1-981(136)						
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2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations					
4	1 - 2	Scope of Work	D-101-20, 21	Line Styles					
6	1 - 3	Notes	D-101-30, 31, 32, 33	Symbols					
8	1	Quantities	D-550-2	Longitudinal Joint Details					
10	1	Basis of Estimate	D-550-3	Transverse Contraction Joint Details					
11	1 - 5	Data Tables	D-550-5	Transverse Construction Joint					
20	1 - 9	General Details	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube					
30	1	Typical Sections	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post					
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76	1 - 4	Temporary Erosion Control	D-704-10	Construction Sign Details - Regulatory Signs					
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150	1 - 2	Signals	D-704-27	Mobile Operation (Pavement Marking)					
			D-704-34	Sign Layout For One Lane Closure					
			D-704-50	Portable Sign Support Assembly					
			D-748-1	Curb & Gutter And Valley Gutter					
			D-750-2	Sidewalk					
			D-750-3	Curb Ramp Retrofit Details					
			D-750-4	Curb Ramp Retrofit Transitional Area Details					
			D-762-1	Pavement Marking Message Details					
			D-762-4	Pavement Marking					
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Number	Description								
SSP 1	Temporary Erosion and Sediment Best Management Practices								
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SP 25(25)	Commerical Grade Hot Mix Asphalt								
SP 26(25)	Utility Coordination								





NOTES		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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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.		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.
100-P02	COORDINATION OF CAPITOL EVENTS: The ND State Capitol Grounds hosts multiple events throughout the year. These events include, but are not limited to, the Annual Band Night and Autumnfest Parade, Independence Day Celebration, Capitol A’ Fair, and the Bismarck Marathon. Maintain vehicle and pedestrian access to the East Capitol Access and South Capitol Access as shown in the plans during these events. If either access needs to be closed to vehicle or pedestrian access for any amount of time during the project, coordinate with the Engineer a minimum of 3 weeks before the anticipated closure.	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. An additional 10% has been added to the quantities for “Concrete Pavement Repair – Full Depth-Doweled,” “Doweled Contraction Joint Assembly,” “Epoxy Coated Deformed Bars,” “Spall Repair – Partial Depth.” Do not place tie bars within 9 inches of existing transverse joints. Drill and epoxy tie bars and dowel bars where existing pavement abuts new pavement and curb and gutter. Include all costs for labor, materials, and equipment necessary for removing and installing concrete in the price bid for “Concrete Pavement Repair-Full Depth-Doweled.”
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.	704-100	TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.
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.	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 four 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 one lane closure. 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).

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901 SU-1-981(136)	6	2

NOTES

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

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 sidewalk, curb ramps and landings in accordance with Standard Drawing D-750-3, D-750-4, and the details shown in Section 82.

Phase 1: Close the outside lanes of E Boulevard Ave and State St as shown in Section 100. Complete curb ramp improvements on side indicated in Phase 1A before moving to curb ramp improvements on side indicated in Phase 1B. Phase 1B includes switching Capitol access southbound turn lane closure. Complete concrete pavement repairs.

Phase 2: Close the middle lanes of E Boulevard Ave and State St as shown in Section 100. Complete concrete pavement repairs in Phase 2A before moving to Phase 2B complete remaining repairs by closing outside turn lane to N 7th Street. Limit the extent of Phase 2B E Boulevard Ave to N 7th Street outside left turn lane closure to 10 calendar days.

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.

Phase 3: Close the inside lanes of E Boulevard Ave and State St as shown in Section 100. Complete median curb ramp improvements indicated in Phase 3A. Close N 9th Street westbound turn movement utilizing detour. Limit the extent of Phase 3B N 9th Street to E Boulevard Ave left turn closure to 10 calendar days. Phase 3B includes switching eastbound E Boulevard Ave turn lane. Complete concrete pavement repairs.

Phase 4: Close the middle of the N 6th Street intersection utilizing detour for Phase 4A as shown in Section 100. Limit the extent of Phase 4A and 4B closures to 10 calendar days each. Complete concrete pavement repairs for Phase 4A before moving to Phase 4B. Close crossover and connection of E Boulevard Ave utilizing detour for Phase 4B as shown in Section 100.

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



704-P03

PORTABLE CHANGEABLE MESSAGE SIGN: Install three Portable Changeable Message Signs (PCMS) in advance of the project limits. Place one west of N 6th Street on E Boulevard Ave, one south of E Ave F on 9th St, and one north of N 12th Street on State St 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.

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.

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NOTES

- 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.”
- 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.”
- 772-P01

REMOVE PEDESTRIAN PUSHBUTTON: Notify Engineer 48 hours before the removal of median pedestrian pushbuttons for the City of Bismarck to adjust the pedestrian crossing timing.



Estimated Quantities

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	8	1

SU-1-981(136)

SPEC	CODE	ITEM DESCRIPTION	UNIT	NHU-1-083(145)901	SU-1-083(145)901	SU-1-981(136)	TOTAL
103	0100	CONTRACT BOND	L SUM	0.672	0.035	0.076	0.783
202	0130	REMOVAL OF CURB & GUTTER	LF	404	56	187	647
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	11	5	5	21
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	5	2	2	9
570	0210	PCC PAVEMENT GRINDING	SY	30875	1611	3498	35984
570	0240	DOWELED CONTRACTION JOINT ASSEMBLY	LF	585	161	209	955
570	0650	CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	2000	468	735	3203
570	1512	SPALL REPAIR-PARTIAL DEPTH	SF	901	4	97	1002
570	1600	EPOXY COATED DEFORMED BARS	EA	814		209	1023
702	0100	MOBILIZATION	L SUM	0.672	0.035	0.076	0.783
704	0100	FLAGGING	MHR	670	52	78	800
704	1000	TRAFFIC CONTROL SIGNS	UNIT	4209	321	493	5023
704	1052	TYPE III BARRICADE	EA	28	2	4	34
704	1054	SIDEWALK BARRICADE	EA	2	2		4
704	1058	PEDESTRIAN WALKWAY	LF	1593	121	186	1900
704	1060	DELINEATOR DRUMS	EA	178	14	20	212
704	1067	TUBULAR MARKERS	EA	406	31	48	485
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	2			2
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	129			129
704	2108	TEMPORARY CURB RAMP	EA	9	2	2	13
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	1		3
708	1540	INLET PROTECTION-SPECIAL	EA	45	6	14	65
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	45	6	14	65
722	6140	ADJUST GATE VALVE BOX	EA		1		1
722	6160	ADJUST INLET	EA	2	2		4
748	0140	CURB & GUTTER-TYPE I	LF	404	55	187	646
748	0520	CURB-TYPE I	LF	18			18
750	0115	SIDEWALK CONCRETE 4IN	SY	328	34	137	499
750	0140	SIDEWALK CONCRETE 6IN	SY	89	9	61	159
750	0200	CONCRETE MEDIAN PAVING	SY	2		3	5
750	2115	DETECTABLE WARNING PANELS	SF	213	18	140	371
754	0170	FLEXIBLE DELINEATORS	EA	3		3	6
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	306	28	64	398
762	0422	SHORT TERM 6IN LINE-TYPE R	LF	586		518	1104
762	0426	SHORT TERM 24IN LINE-TYPE R	LF	115		104	219
762	0440	SHORT TERM MESSAGE-TYPE R	SF	55			55
762	1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE	LF	661	66	521	1248
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE	LF	276	28	140	444
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF			42	42
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	1345	232	263	1840
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	2208		125	2333
772	3091	RELOCATE PEDESTRIAN PUSHBUTTON POST	EA	1			1
772	3147	REMOVE PEDESTRIAN PUSHBUTTON	EA	1		2	3

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SU-1-981(136)				

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

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

722	6140
Adjust Gate Valve Box	
1+34.83	40.94 Rt
Proposed elevations for gate valves were not calculated. Install flush with concrete panel replacement.	

722	6160	Exst Elev	Prop Elev
Adjust Inlet			
68+68.97	7.30 Lt	1749.7	1749.64
68+69.97	0.96 Rt	1749.58	1749.52
88+23.54	5.96 Lt	1762.1	1762.2
95+41.64	67.44 Lt	1783.95	1784.45

754	170
Flexible Delinators	
68+67.43	6.33 Lt
68+68.24	CL
68+72.06	3.01 Lt
79+92.48	8.44 Rt
79+92.36	12.45 Rt
79+96.04	11.02 Rt

772 3091						
Relocate Pedestrian Pushbutton						
FROM		TO				
Sta	Offset	Sta	Offset	Northing	Easting	Proposed SW Elev
69+44.88	56.99 Lt	69+53.24	47.02 Lt	419628.4447	1898019.981	1749.3905

772 3147	
Remove Pedestrian Pushbutton	
Sta	Offset
68+58.24	2.61 Lt
69+64.65	6.08 Rt
72+40.98	0.63 Rt

Basis of Estimate

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	11	1

Eastbound Boulevard Ave Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
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 CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)				570-1600 EPOXY COATED DEFORMED	Length (FT)	Width (FT)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)			Saw Concrete (LF)					
1	68+50	TL	***		56	10		21	110	18						
2	68+66	T2									212	107				
3	68+80	6TH ST INT	***		58	9		28	129	16						
4	69+02	LT	20.5	12	28	20		16	65	10						
5	69+12	T1												10	2	20
6	69+66	T2												4	4	16
7	69+68	T1	15	12	20	20		12	54							
8	69+76	T2												2	4	8
9	70+07	T2												2	6	12
10	70+77	T2	15	11	19	20		12	52							
11	71+23	T1	15.5	11.5	20	20		12	54							
12	71+81	T2									44	23				
13	72+26	T2	56	12	75	20		45	136	40						
SU-1-981(136) Eastbound Concrete Repair Quantities SUBTOTAL					276	119	0	146	600	84	256	130	0			56

Eastbound Boulevard Ave Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL		
Repair Number	Begin Station	Lane	570-0650						570-0240 DOWELED CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED	Length (FT)		Width (FT)	Area (SF)	
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)								Saw Concrete (LF)
14	72+39	T1												4	6	24
15	72+80	T1												2	3	6
16	72+80	T3												***		21
17	72+92	7TH ST INT	***		70	18		28	127	18						
18	73+24	T1												2	2	4
19	73+39	T1 - T2	15	24	40	40		12	78		196	99				
20	73+54	T2														
21	74+30	T1												2	6	12
22	74+30	T1												2	2	4
23	74+32	T1	15	12	20	20		12	54							
24	74+48	T1												2	8	16
25	74+83	T1												4	2	8
26	75+64	T2									258	130				
27	76+40	8TH ST INT	***		17	8	8	12	53	8						
28	76+95	T1												4	2	8
29	76+98	T1	***		32	20		12	72	10						
30	77+43	T1												2	2	4
31	77+77	T1												2	2	4
32	77+93	T1												3	2	6
33	78+34	T2												6	2	12
34	78+52	T2												6	2	12
35	78+74	T2												14	2	28
36	78+92	T1 - T2												4	8	32
37	78+92	T2												2	4	8
38	78+96	T2												13	2	26
39	79+83	T1	***		35	20		21	77	10						
40	80+41	T1												4	2	8
41	80+52	9TH ST INT	***		51	8	8	32	110	18						
42	82+22	T1 - T2 - T3	***		172	54		76	255	66						
43	82+91	T2												2	2	4
44	83+13	T1												4	2	8
45	83+22	T1												2	2	4
46	83+34	T1												2	2	4
47	84+28	T1	13	14	21	24			54							
NHU-1-083(145)901 Eastbound Concrete Repair Quantities SUBTOTAL					458	212	16	205	880	130	454	229	0			263

***Irregular Shape

Concrete Pavement Repair
Data Tables

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	11	2

Eastbound Boulevard Ave Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
Location			Concrete Pavement Repair							Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL			
Repair Number	Begin Station	Lane	570-0650						570-0240 DOWELED CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)	
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)								Saw Concrete (LF)
48	83+30	EB BLVD AVE	***		46	38		16	81							
49	83+34	10TH ST INT	***		124	42		70	173	60						
50	83+91	EB BLVD Crossover	***		234	60		77	260	86						
51	84+20	EB BLVD Crossover											2	2	4	
52	84+44	T3 Merge Lane	13.5	14	21	24			55							
SU-1-083(145)901 Eastbound Concrete Repair Quantities					SUBTOTAL		425	164	0	163	569	146	0	0	0	4

Northbound State Street Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
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 CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deforme d Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)							
53	84+94	T1									16	9				
54	84+97	T3												2	2	4
55	85+04	T1	16	13	24	11	12	12	58	11						
56	85+12	T2												2	2	4
57	85+16	T2												2	4	8
58	85+25	T1												2	2	4
59	85+75	T1												2	2	4
60	85+76	T1 - T2												2	***	12
61	85+80	T2												2	2	4
62	86+67	T3									60	31				
63	87+10	T1												4	2	8
64	87+10	T3												4	2	8
65	87+55	T3												4	2	8
66	88+15	T3												2	2	4
67	88+17	T2									27	15				
68	88+44	T1 - T2 - T3	6	36	24	30	60	10	84							
69	88+50	T2									29	16				
70	88+91	T3												4	2	8
71	89+35	T2 - T3												***		16
72	90+08	T3									30	16				
73	90+22	T3												2	2	4
74	90+37	T1									30	16				
75	90+50	T1												2	2	4
76	90+50	T2 - T3												4	4	16
77	91+10	T1 - T2 - T3	6	36	24	30	60	10	84							
78	91+14	T2												2	2	4
79	91+70	T2												2	2	4
80	91+70	T3												4	4	16
81	91+98	T1												2	2	4
82	92+00	TL	15	11	19	17		12	52							
83	92+00	T1												2	2	4
61	92+88	T1 - T2 - T3	6	36	24	20	60	10	84							
62	93+27	T1												18	2	36
63	93+46	T1												4	2	8
64	93+46	T1 - T2												4	9	36
65	93+46	T2												4	2	8
66	93+82	T1												2	2	4
67	93+99	TL												2	2	4
68	93+99	TL												2	3	6
69	94+01	T1												2	3	6
NHU-1-083(145)901 Northbound Concrete Repair Quantities TOTAL					115	108	192	54	362	11	192	103	0	88	69	256

***Irregular Shape

Concrete Pavement Repair
Data Tables

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	11	3

Northbound State Street Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL		
Repair Number	Begin Station	Lane	570-0650								Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)
70	94+01	T1												2	4	8
71	94+01	T2									11	7				
72	94+01	T2												2	2	4
73	94+01	T3												2	2	4
74	94+01	T3												2	2	4
75	94+49	T1- T2 - T3	15	36	60	60		24	102							
76	95+10	T1- T2	6	24	16	20	40	8	60							
77	95+43	TL - T1- T2	***		56	20	44	29	132	30						
78	95+73	TL									45	24				
79	96+01	T1												***		12
80	96+17	TL												2	2	4
81	96+76	T1												2	2	4
82	96+78	T1												2	2	4
83	97+06	T1- T2												4	4	16
84	97+97	T1												2	2	4
85	97+97	T3												4	2	8
86	100+39	T1												4	4	16
87	100+39	T1												4	2	8
88	100+68	T1	6	12	8	10	20	5	36							
89	100+68	T2												6	2	12
89	101+90	T2												2	2	4
90	102+05	T3												4	2	8
90	102+50	T2												4	2	8
91	102+50	T3												2	2	4
91	102+80	T2												4	2	8
92	102+82	T3												2	2	4
NHU-1-083(145)901 Northbound Concrete Repair Quantities TOTAL					140	110	104	66	330	30	56	31	0	56	44	144

Westbound Boulevard Ave Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL		
Repair Number	Begin Station	Lane	570-0650								Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)
93	68+50	CAPITOL ACCESS - T3 - T2 - TL	***		125	45		70	240	26						
94	69+13	TL	10	12	14	20		8	44							
95	69+34	CAPITOL ACCESS -	***		48	10	10	38	110	20						
96	69+68	T3									110	56				
97	70+48	T2 - T3												4	4	16
98	70+77	T3	15	12	20	20		12	54							
99	70+92	T3									6	4				
100	71+26	T3												4	2	8
101	71+42	TL	12	8	11	14		10	40							
102	71+96	T2 - T3												2	4	8
103	72+11	CAPITOL ACCESS -	***		174	30	10	124	324	60						
SU-1-981(136) Westbound Concrete Repair Quantities TOTAL					392	139	20		812	106	116	60	0			32

***Irregular Shape

Concrete Pavement Repair
Data Tables

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	11	4

Westbound Boulevard Ave Concrete Repair Data Table [NHU-SU-1-083(145)901 / SU-1-981(136)]																	
Location			Concrete Pavement Repair									Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL		
Repair Number	Begin Station	Lane	570-0650							570-0240 DOWELED CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED	Length (FT)		Width (FT)	Area (SF)	
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)								
104	72+40	T2												2	2	4	
105	72+58	T2												4	2	8	
106	72+69	T2												4	2	8	
107	72+80	T2												4	2	8	
108	72+93	T2												2	2	4	
109	72+97	SB Crossover									7	5					
110	73+24	SB Crossover	14	9	14	7		24	46								
111	73+24	T3	16	12	22	20		12	56								
112	73+37	SB Crossover												2	2	4	
113	73+39	SB Crossover	***		14				46								
114	73+40	T3									108	55					
115	73+62	TL												4	2	8	
116	74+77	T3									138	70					
117	76+15	CAPITOL ACCESS -	***		63	10	10	40	115								
118	76+72	CAPITOL ACCESS	***		18			26	68								
119	77+13	T3									7	20					
120	77+20	T1- T2 - T3	6	36	24		60	10	84								
121	77+26	T3									11	7					
122	77+93	T2												2	2	4	
123	77+95	T3												8	2	16	
124	78+65	T3												2	2	4	
125	78+67	T3									114	58					
126	78+94	T2												2	6	12	
127	79+08	T3												2	2	4	
128	79+23	T3												2	2	4	
129	79+38	T3												2	2	4	
130	79+80	T3												2	4	8	
131	79+82	T3	***		19			10	72								
132	79+82	NB Crossover	***		78	14		20	127	38							
133	80+52	T1- T2	6	27	18		44	8	66	25							
134	80+57	T1									38	20					
135	80+96	T1												2	2	4	
136	81+37	T3												2	2	4	
137	81+43	T1												2	7	14	
138	81+45	T3	17	13	25	11	11	14	60	11							
139	81+61	T3									92	47					
140	81+75	T3												2	2	4	
141	81+90	T3												2	2	4	
142	82+04	T3												4	2	8	
143	82+31	T3												2	2	4	
144	82+76	T3	28	13	41	22		22	82	11							
145	82+93	T3									67	35					
146	83+65	T1												5	2	10	
147	83+82	EB BLVD Crossover									20	11					
148	83+95	TL									18	10					
149	84+01	WB BLVD Crossover												2	4	8	
150	84+03	WB BLVD Crossover												2	4	8	
151	84+13	WB BLVD Crossover												2	2	4	
152	84+02	T2 - T3	27	26	78			34	106	22							
153	84+02	T1												2	2	4	
NHU-1-981(136) Westbound Concrete Repair Quantities TOTAL					414	84	125		928	107	620	338	0			176	

***Irregular Shape

Concrete Pavement Repair
Data Tables

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	11	5

Southbound State Street Concrete Repair Data Table [NHU-SU-1-083(145)901/ SU-1-981(136)]																
Location			Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512 SPALL REPAIR - PARTIAL		
Repair Number	Begin Station	Lane	570-0650							570-0240 DOWELED CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)
			Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)							
154	84+73	T1												2	4	8
155	85+26	T1												2	2	4
156	85+32	T2 - T3												2	4	8
157	85+43	T1	14	14	22	22		12	56							
158	85+43	T3	14	14	22	22		12	56							
159	85+71	T3												2	2	4
160	85+99	T3												2	2	4
161	86+01	T1- T2 - T3	***		338	142	10	137	433	154						
162	86+34	T1												2	2	4
163	86+45	T1												2	2	4
164	87+54	T1- T2	6	24	16	40	20	8	60							
165	87+57	TL												2	4	8
166	88+10	TL	30	5	17		7	24	70	8			30			
167	88+60	T1												4	2	8
168	88+60	T1												2	4	8
169	88+60	T3												4	4	16
170	88+75	T1												2	2	4
171	89+35	T1- T2 - T3	6	36	24		60	10	84	30						
172	90+81	T3									76	39				
173	90+81	T3												2	2	4
174	91+26	T3												2	8	16
175	91+98	T3	6	12	8		20	4	36	10						
176	92+73	T2												2	2	4
177	93+01	T1												2	2	4
178	93+01	T2												4	4	16
179	93+45	T1	3	12	4	10	10	2	30							
180	93+75	T3											10			
181	93+90	T3											12			
182	94+00	T2												2	4	8
183	94+00	T1												2	2	4
184	94+02	T1	5	12	7	10	10	4	34							
185	95+10	T1- T2 - T3 - CAPITOL ACCESS	6	48	32		80	12	108	40						
186	95+13	T1- T2 - T3 CAPITOL ACCESS	***		145	94		54	208	12			17			
187	95+26	CAPITOL ACCESS Crossover												2	2	4
188	96+16	T2 - T3	6	24	16	20	40	8	60							
189	96+17	TL												2	2	4
190	97+05	T1	6	12	8	10	20	5	36							
191	97+76	T1												2	3	6
192	97+78	T1	15	12	20	20	10	12	54							
193	97+82	T3												2	2	4
194	98+13	T1												4	2	8
195	98+45	T2												4	2	8
196	99+45	T1	9	12	12	20	10	8	42							
197	99+95	T1												2	2	4
198	100+10	T1												2	2	4
199	100+70	T1												4	6	24
200	100+72	T1												2	2	4
201	101+93	T1												15	2	30
NHU-1-083(145) Southbound Concrete Repair Quantities TOTAL					691	410	297	312	1367	254	76	39	69			236

Item Description	Concrete Pavement Repair								Random Crack Stitching		748-0140 CURB & GUTTER - TYPE I (LF)	570-1512		
	570-0650							SPALL REPAIR - PARTIAL						
	Length (FT)	Width (FT)	Area (SY)	Dowel Bars (EA)	Deformed Bars (EA)	Tie Bars (EA)	Saw Concrete (LF)	570-0240 DOWELED CONTRACTIO N JOINT ASSEMBLY (LF)	Length (LF)	570-1600 EPOXY COATED DEFORMED		Length (FT)	Width (FT)	Area (SF)
NHU-1-083(145)901 Concrete Repair Quantities SUBTOTAL + 10%			2000					585		814	76			1183
SU-1-083(145)901 Concrete Repair Quantities SUBTOTAL + 10%			468					161		0	0			4
SU-1-981(136) Concrete Repair Quantities SUBTOTAL + 10%			735					209		209	0			97

***Irregular Shape

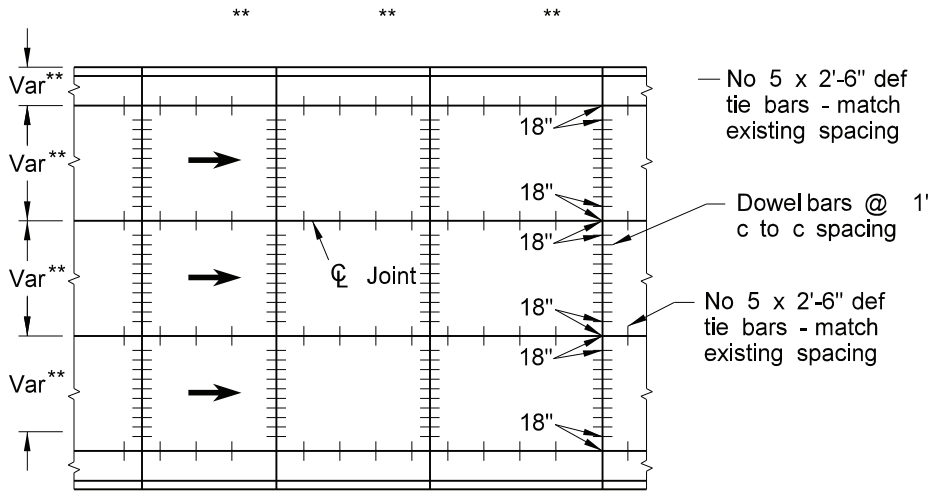
Concrete Pavement Repair
Data Tables

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

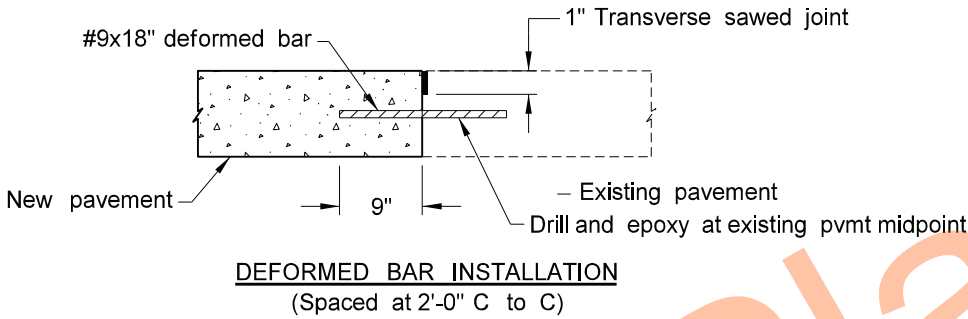


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	1
		SU-1-981(136)		

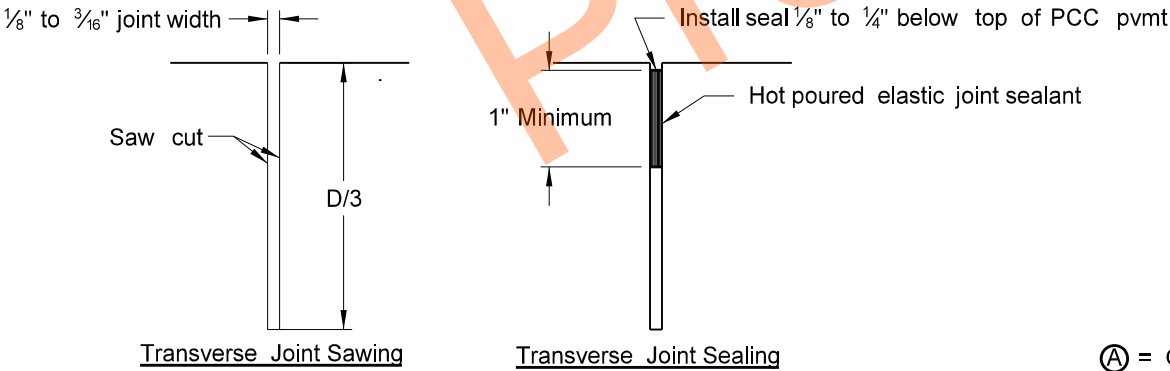
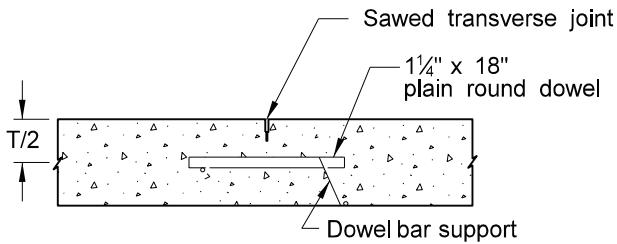
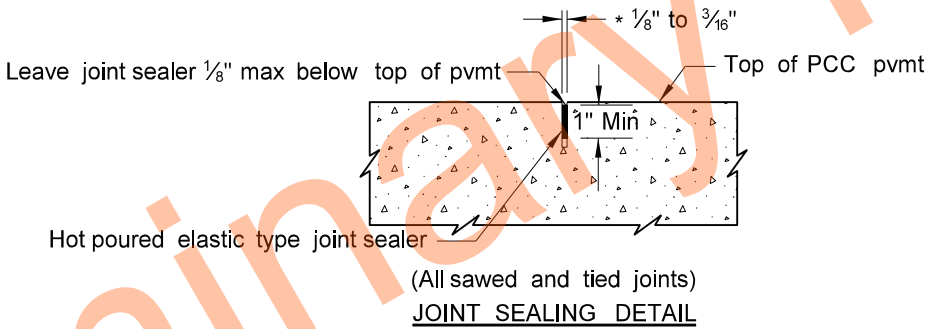
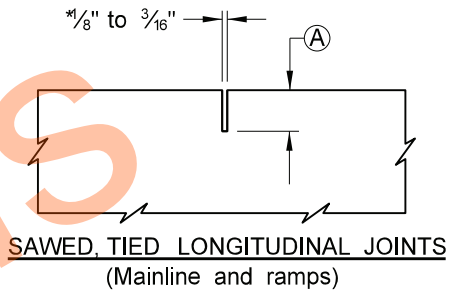


TRANSVERSE JOINTS

** Joint Spacing to match existing (Varies)



DEFORMED BAR INSTALLATION
(Spaced at 2'-0\"



Ⓐ = One-Third thickness of PCC Pavement

*Width requirement for top 1\"

Joint Details for Repairs
1 Panel or More in Length

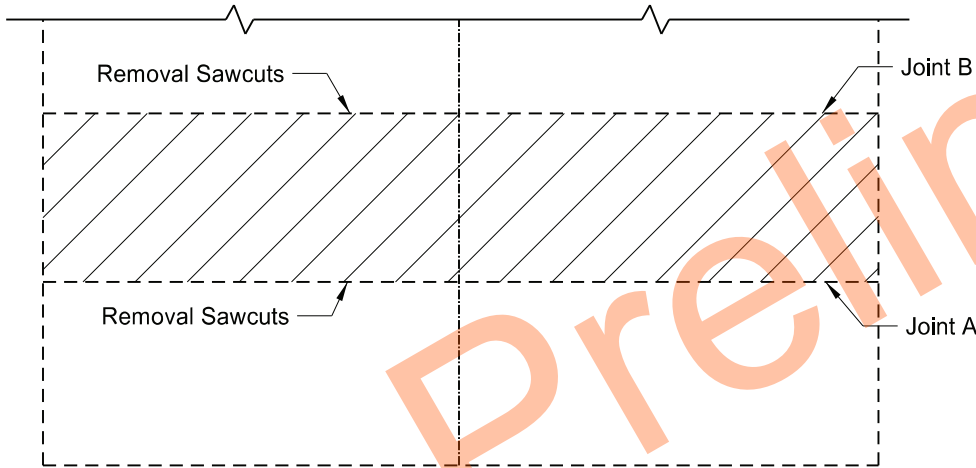
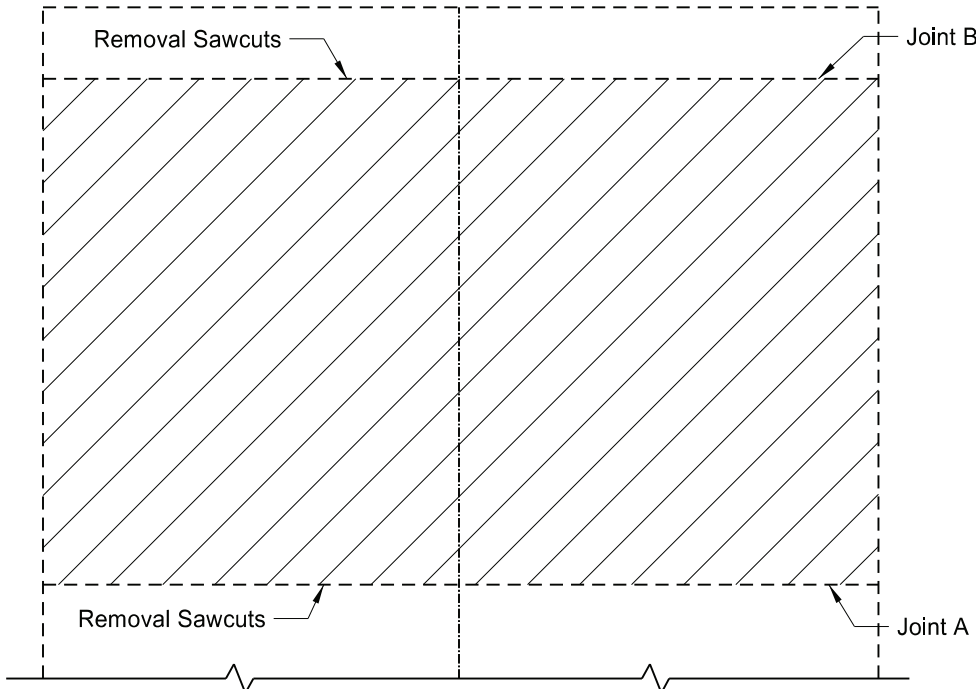
General Details

Boulevard Avenue
N 6th St to N 7th St

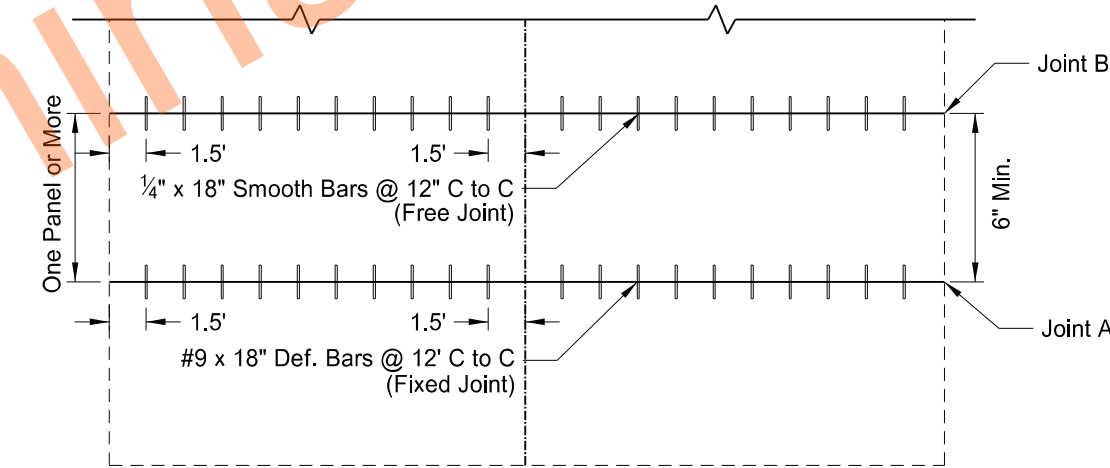
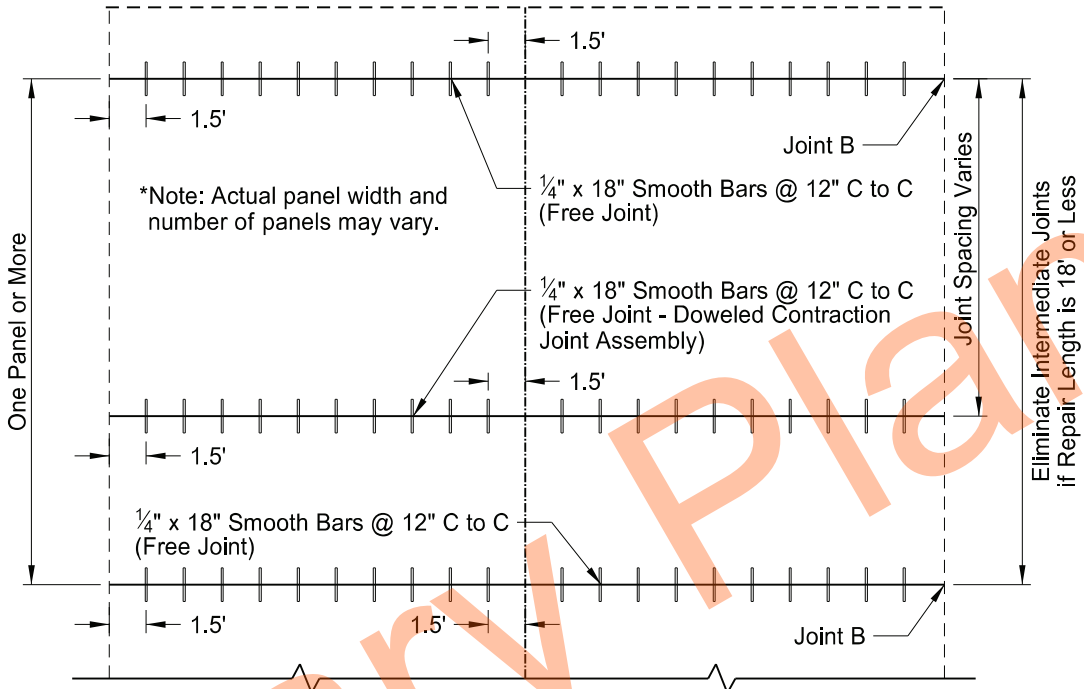
Boulevard Avenue & State Street
N 7th St to Divide Ave



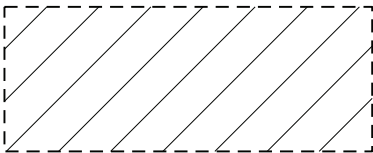
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	2
		SU-1-981(136)		



Removal



Proposed



PCC Removal

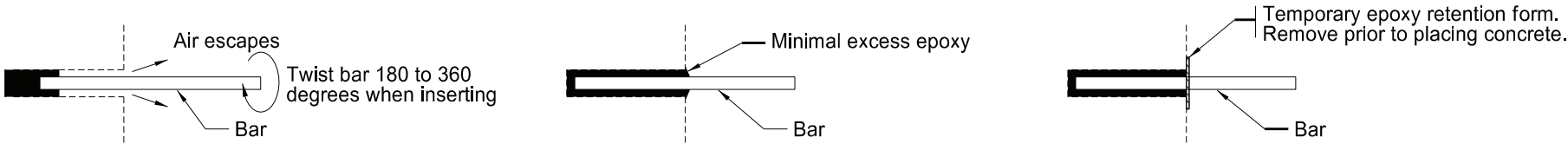
- Notes:
1. Joint A (Fixed Joint) shall be the new joint with the shortest distance to the next transverse joint or working random crack. The saw cut will be made at 90° to the centerline. The deformed bars shall be placed perpendicular to the face of the saw cut.
 2. Joint B (Free Joint) shall be the 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

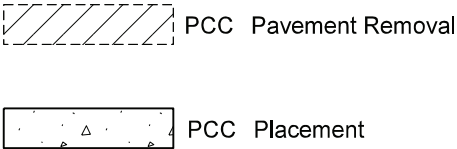
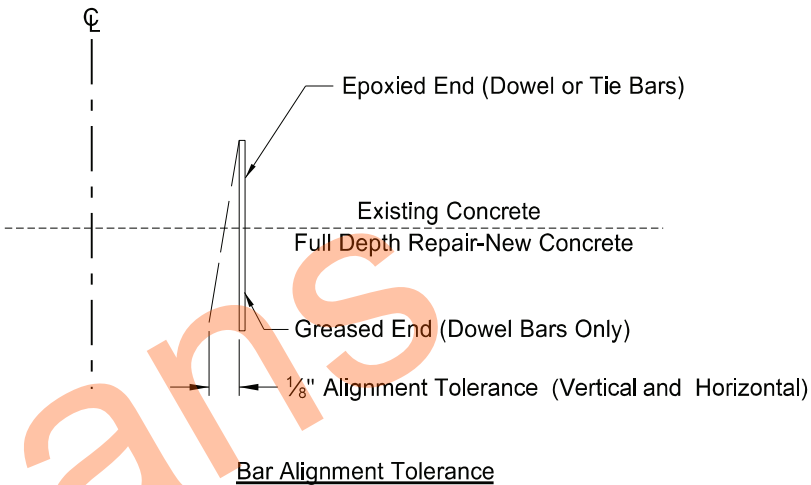
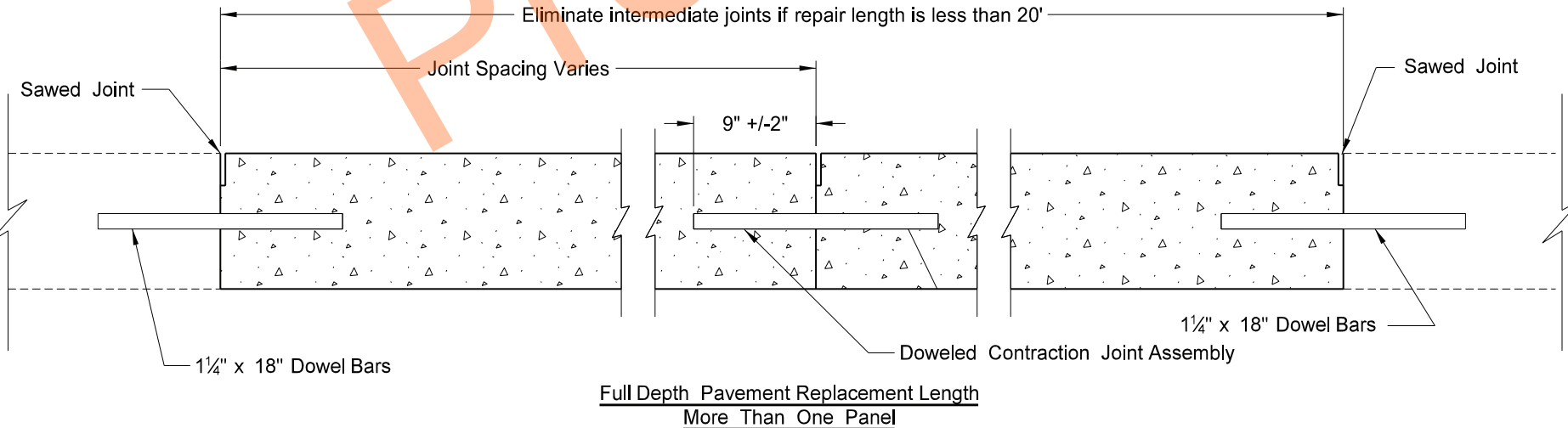
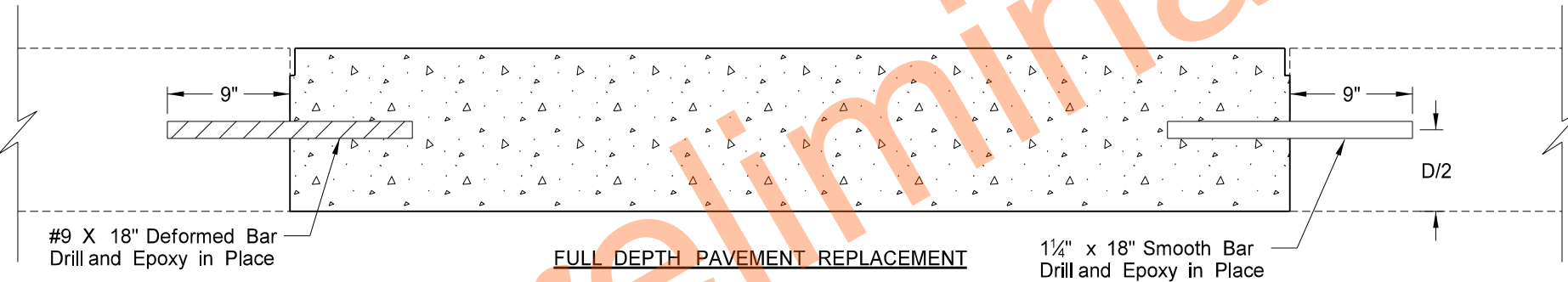
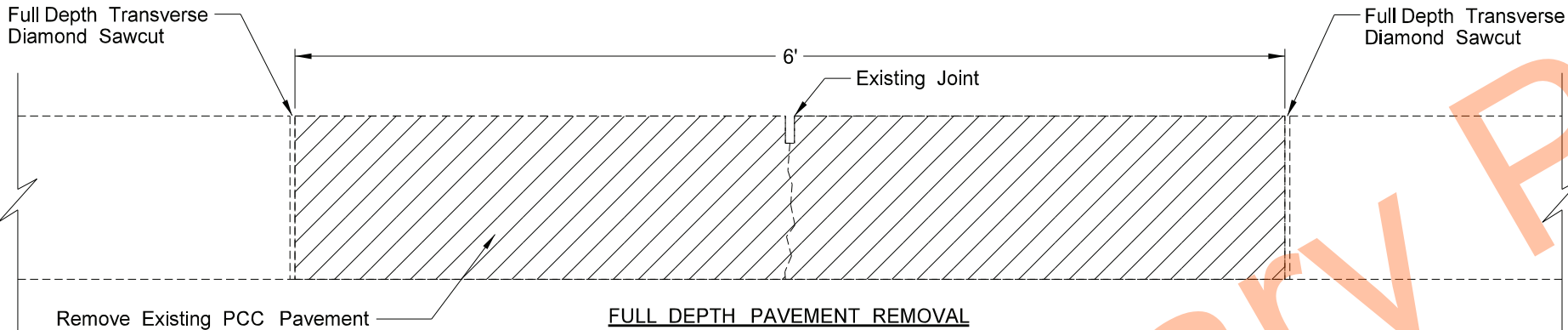
General Details
Boulevard Avenue
N 6th St to N 7th St
Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	3
		SU-1-981(136)		



Epoxy and Bar Installation
(Dowel or Tie Bars)



- 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

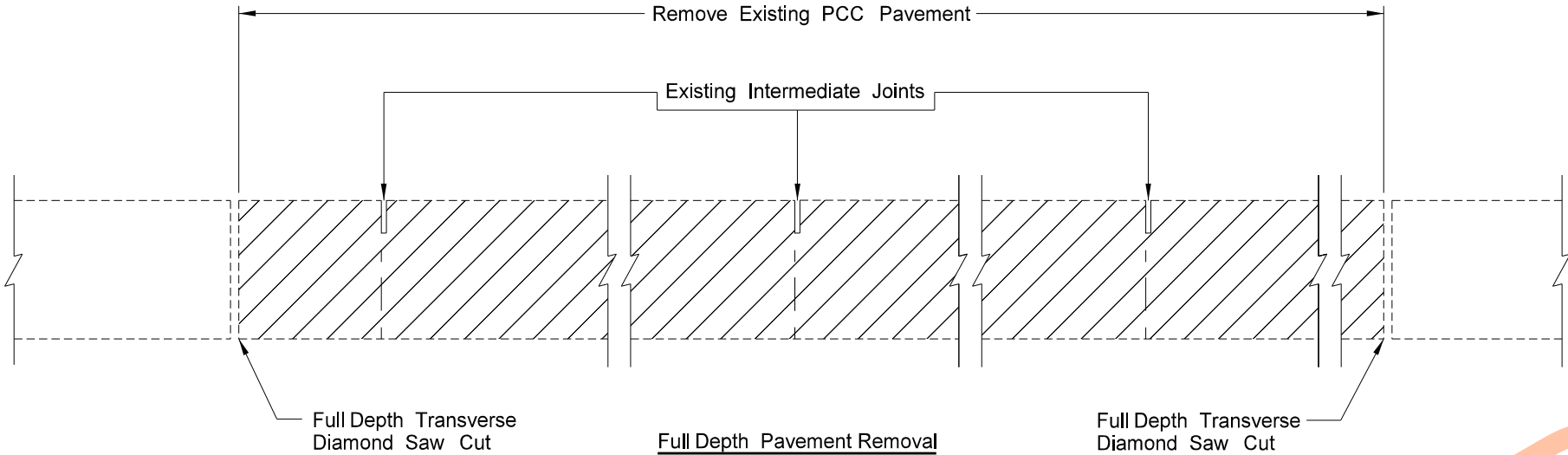
Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



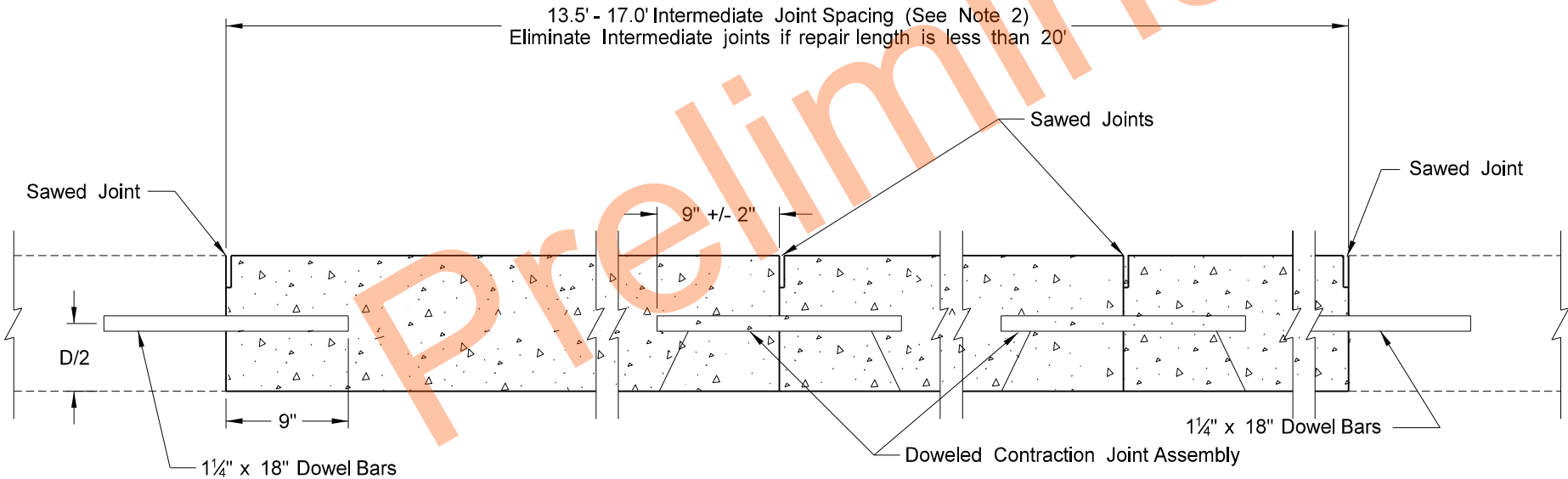
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	4

SU-1-981(136)



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.



PCC Placement

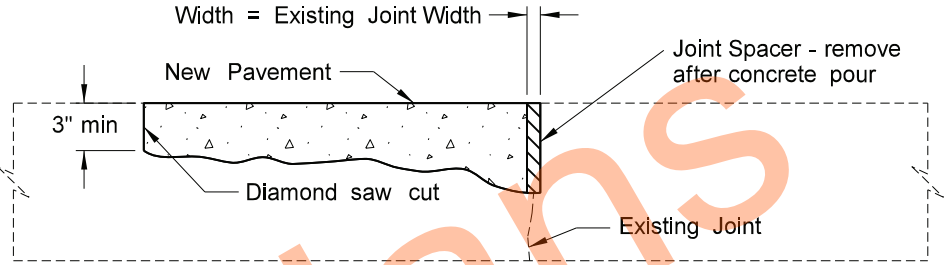
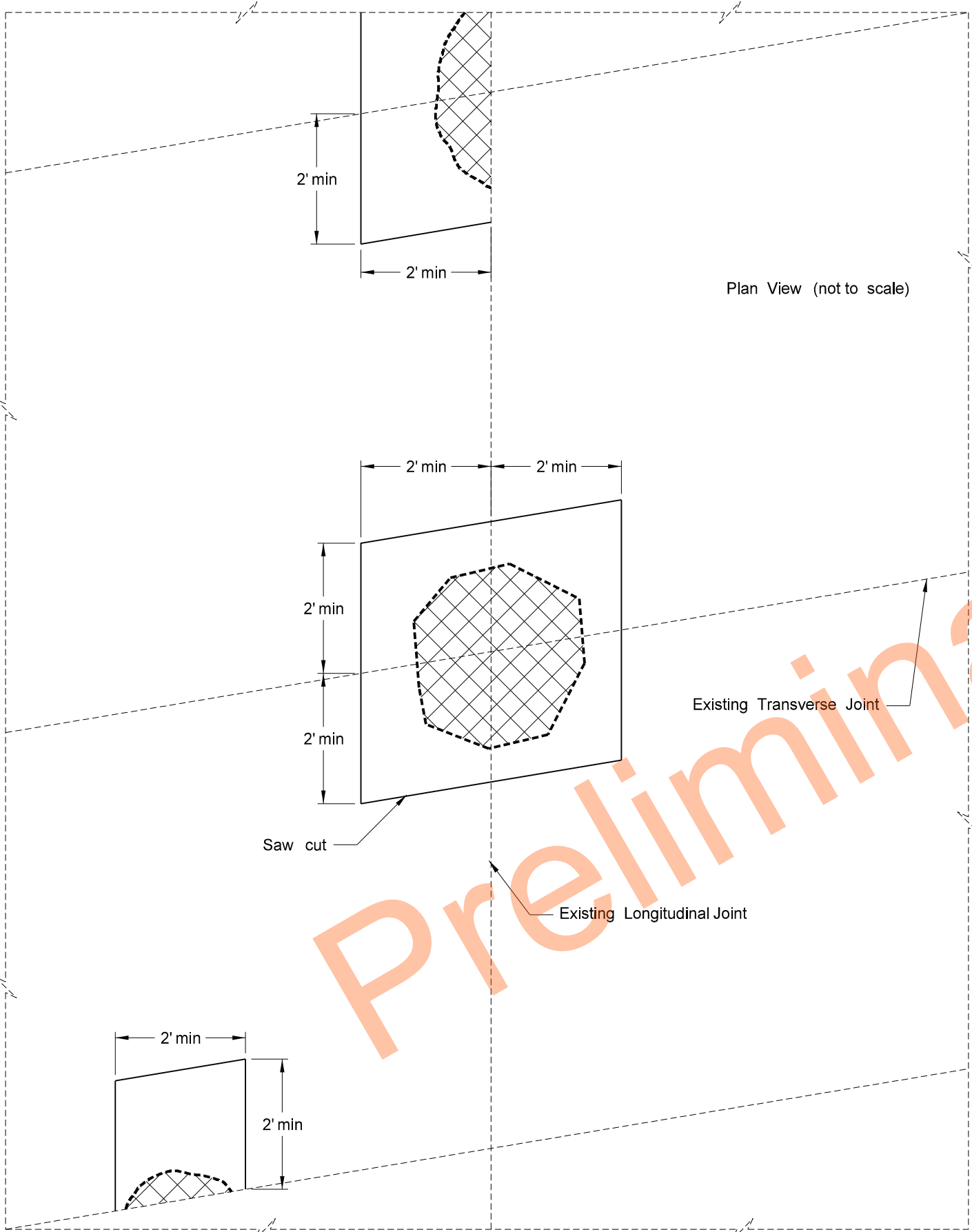
Jointed Concrete Pavement Repair
Full-Depth, Non-Reinforced PCC Pavement
(Longitudinal Length One Panel or Longer)
General Details

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



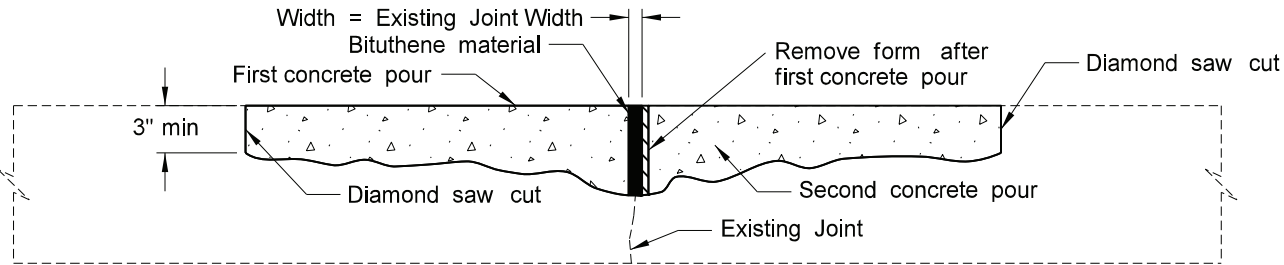
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	5
		SU-1-981(136)		



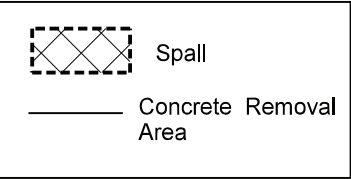
Cross Section - "Repair Area on One Side of Transverse Joint"

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 (approximty 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

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

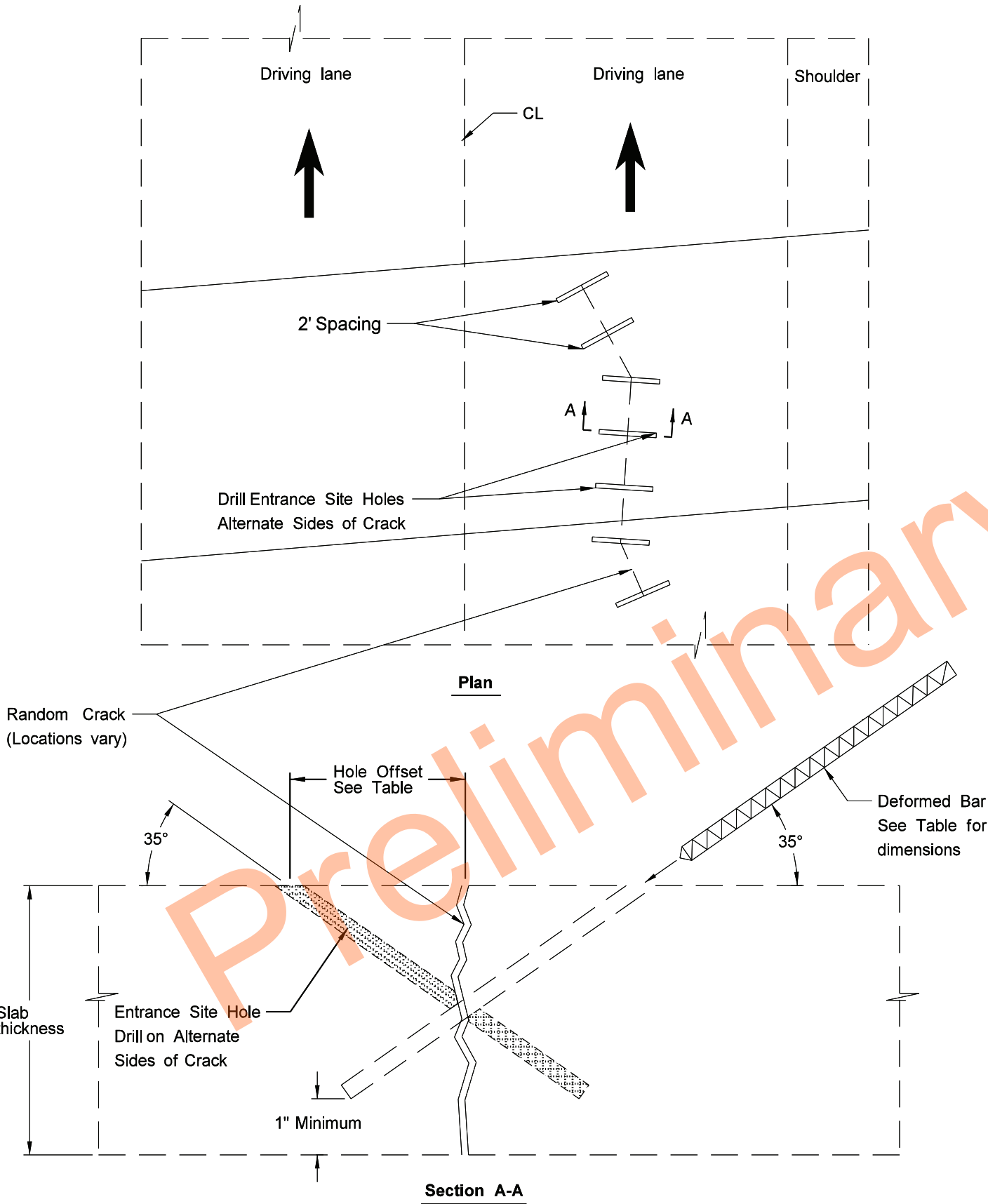
PE-28894

DATE 07/22/25

NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	6

SU-1-981(136)



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

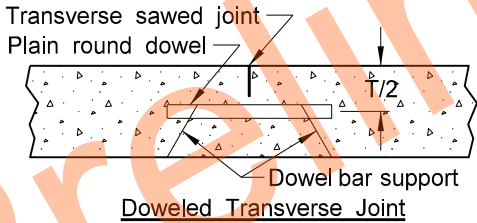
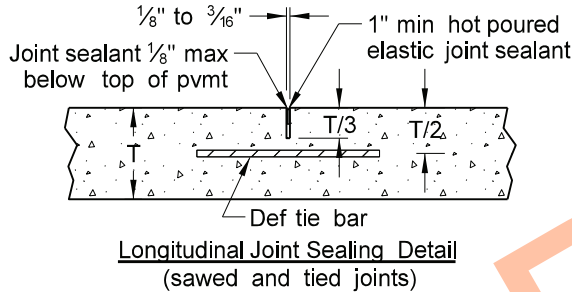
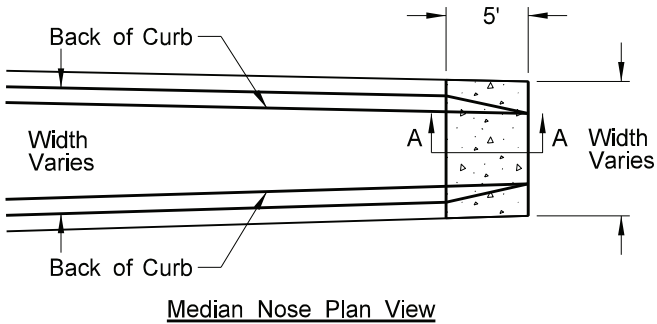
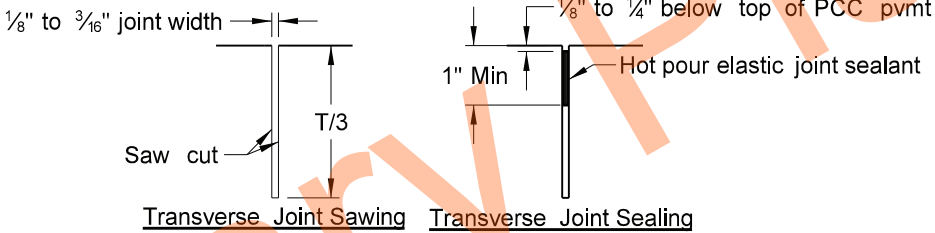
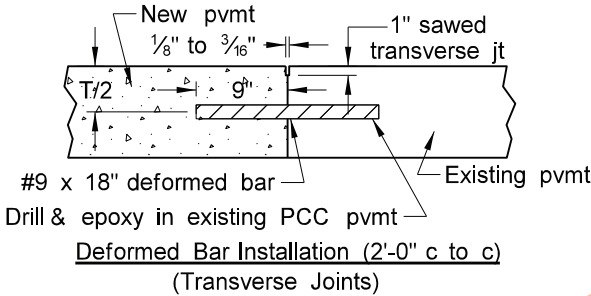
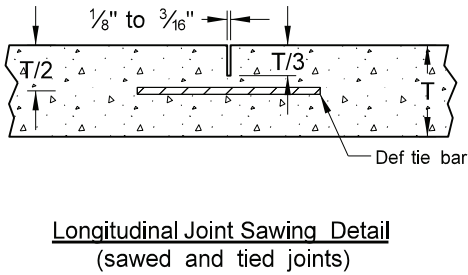
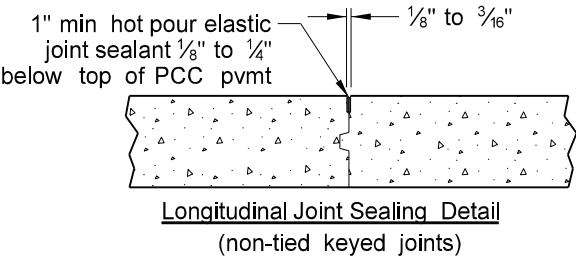
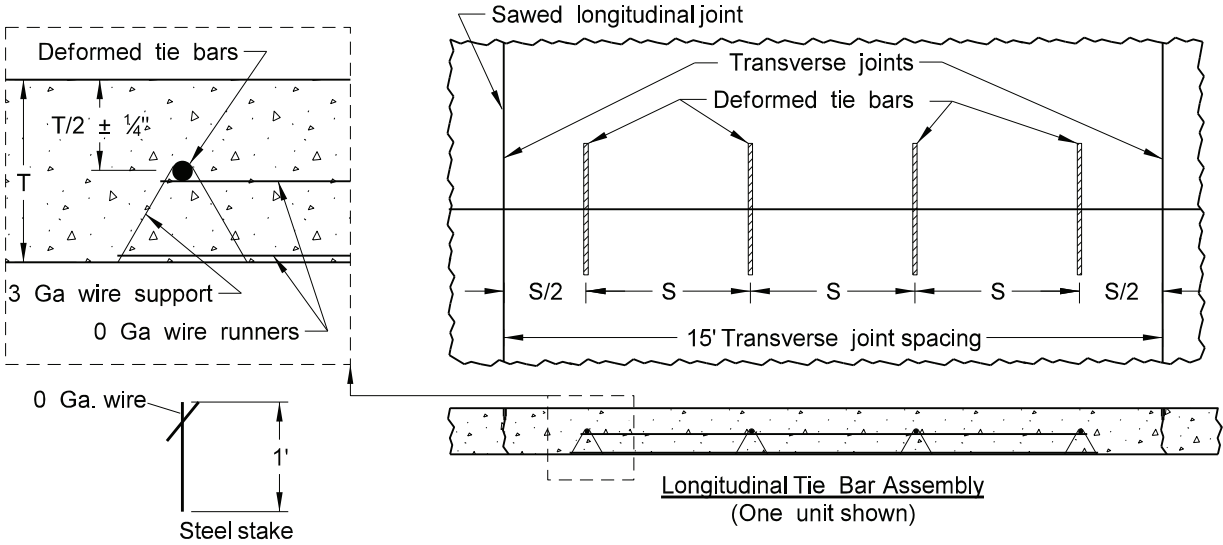
General Details

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	7
		SU-1-981(136)		



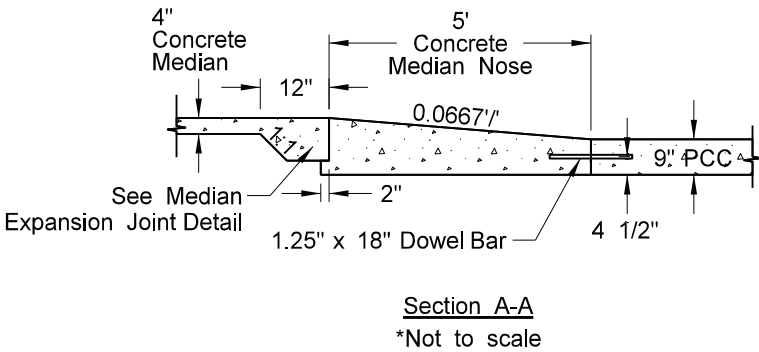
- Notes:
1. S = Tiebar spacing
 2. T = Pavement thickness
 3. Place dowels in ramp tapers also.
 4. Place no tie bar within 15" of a transverse joint.

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

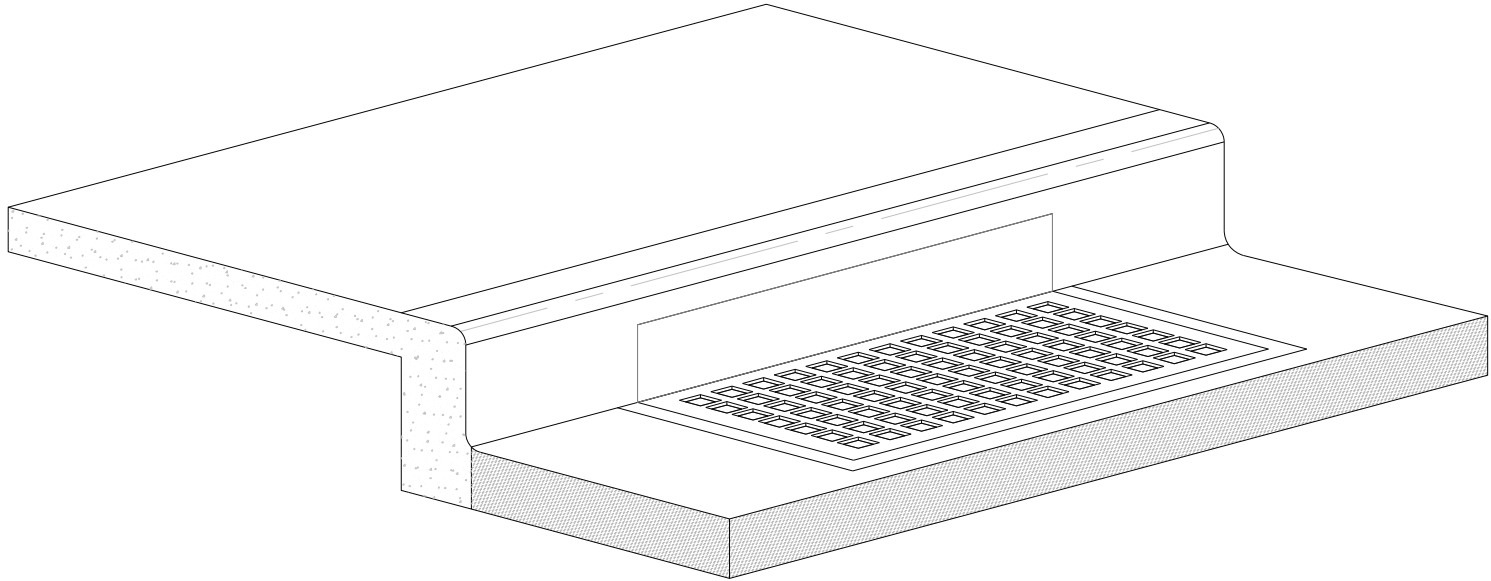
General Details

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	8
		SU-1-981(136)		



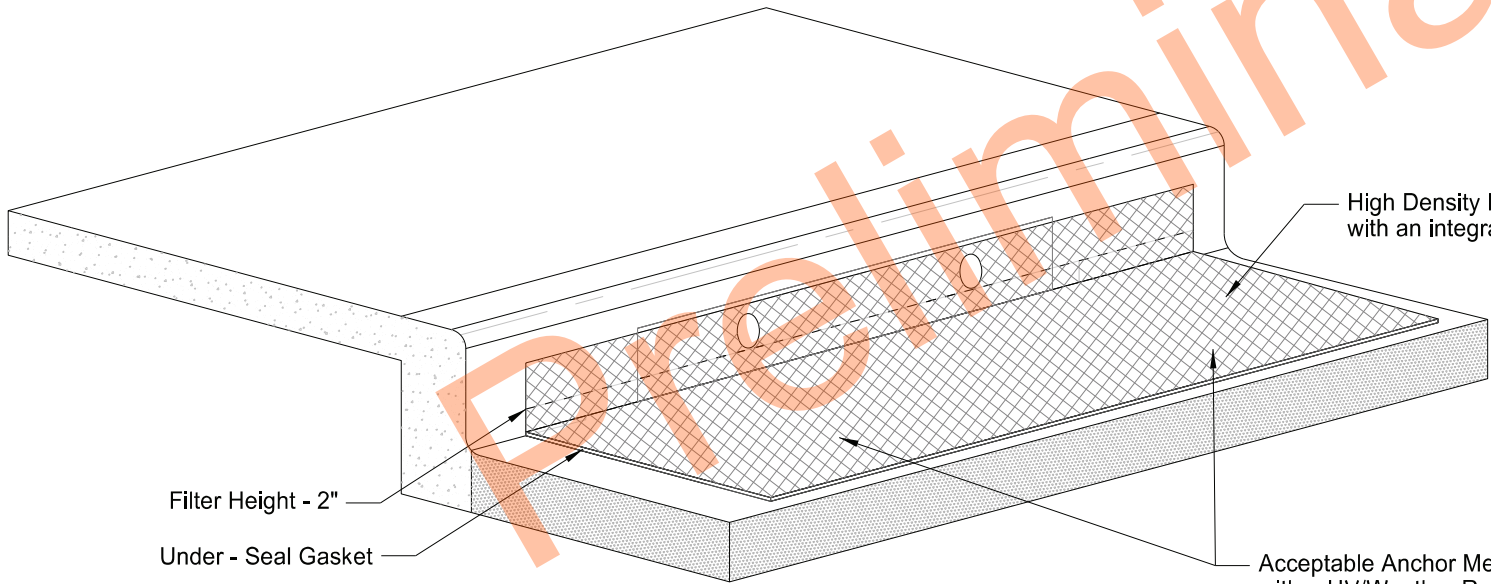
Inlet Protection Device

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

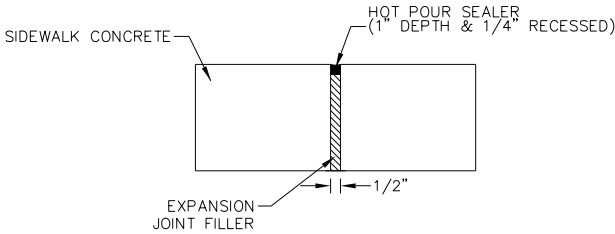
General Details

Boulevard Avenue
N 6th St to N 7th St

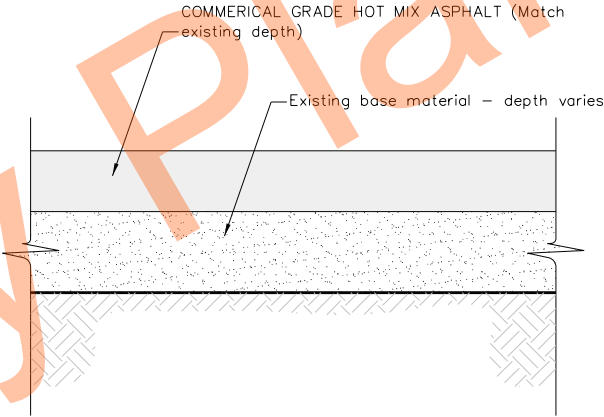
Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	20	9
SU-1-981(136)				



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

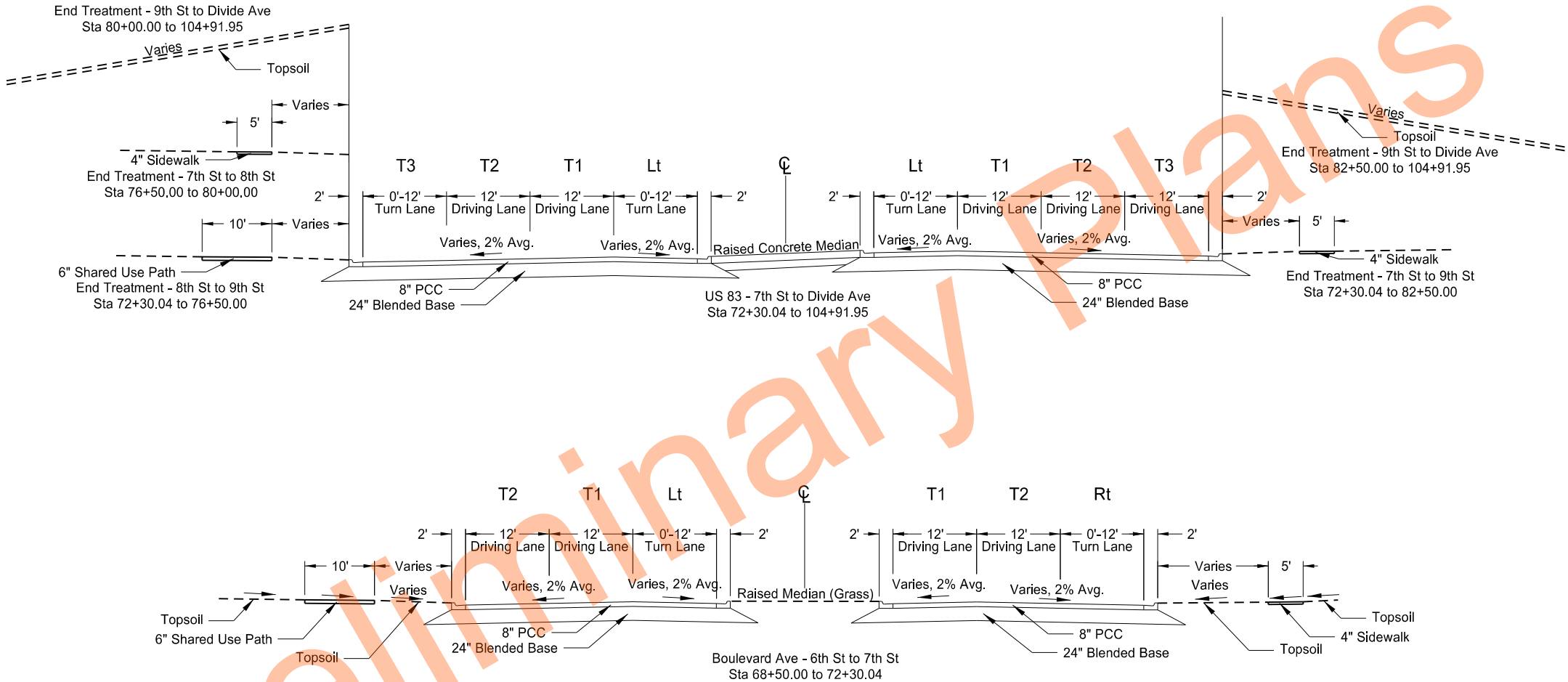
General Details

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



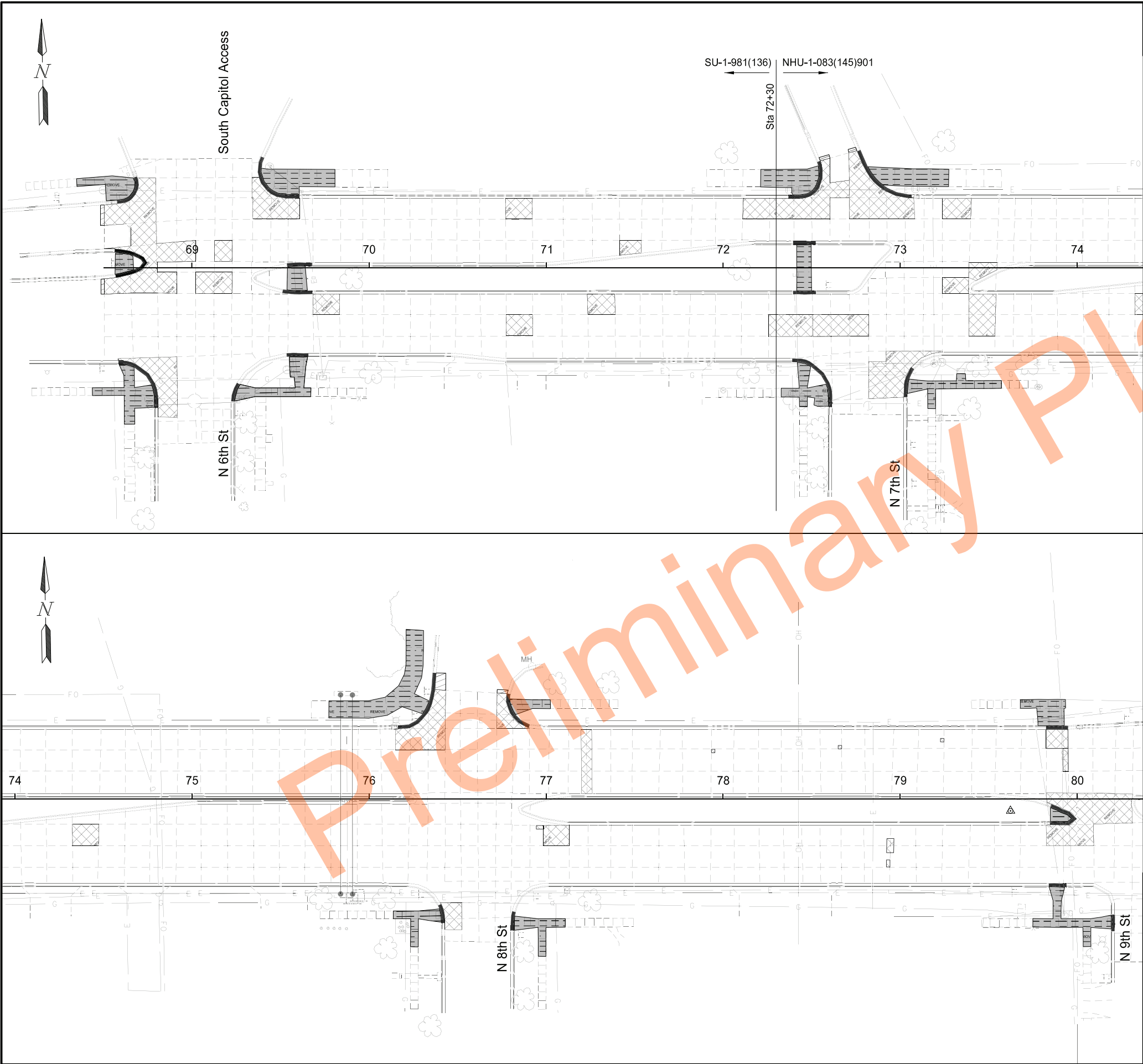
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	30	1
		SU-1-981(136)		



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

Typical Sections
Boulevard Avenue
N 6th St to N 7th St
Boulevard Avenue & State Street
N 7th St to Divide Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	40	1

SU-1-981(136)

SPEC CODE	PAY ITEM	QTY UNIT
SU-1-981(136)		
202 0130	REMOVAL OF CURB & GUTTER	
	Sta 68+50 to Sta 72+30	187 LF
202 0132	REMOVAL OF BITUMINOUS SURFACING	
	Capitol Access Road	2 SY
	N 8th St north approach (6'x9' & 2'x6')	7 SY
NHU-1-083(145)901		
202 0130	REMOVAL OF CURB & GUTTER	
	Sta 72+30 to Sta 74+00	157 LF
	Sta 74+00 to Sta 80+00	136 LF
202 0132	REMOVAL OF BITUMINOUS SURFACING	
	WB E Boulevard (2'x12')	3 SY
	EB E Boulevard (2'x8')	2 SY



Removal of Concrete Pavement
(Included in the bid price for Concrete Pavement Repair Item)



Removal of Sidewalk
(Included in the bid price for 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

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

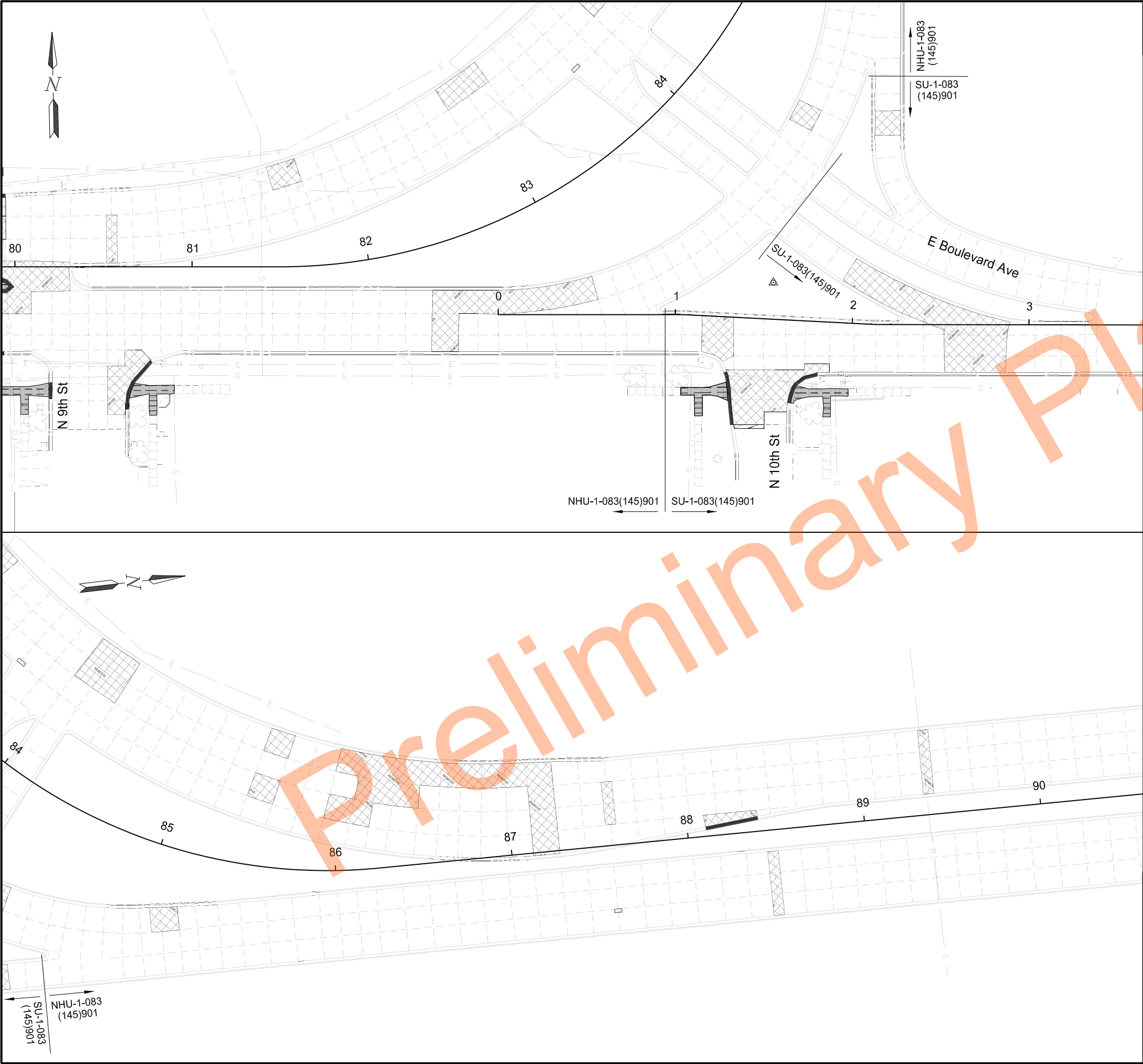
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



STATE		PROJECT NO.	SECTION NO.	SHEET NO.
ND		NHU-SU-1-083(145)901	40	2

SPEC	CODE	PAY ITEM	QTY	UNIT
NHU-1-083(145)901				
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 80+00 to Sta 84+35	41	LF
		Sta 84+35 to Sta 90+35	30	LF
SU-1-083(145)901				
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 0+00 to Sta 3+64	56	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING		
		N 10th St (2'x17')	4	SY

Removal of Concrete Pavement
(Included in the bid price for Concrete Pavement Repair Item)

Removal of Sidewalk
(Included in the bid price for 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

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

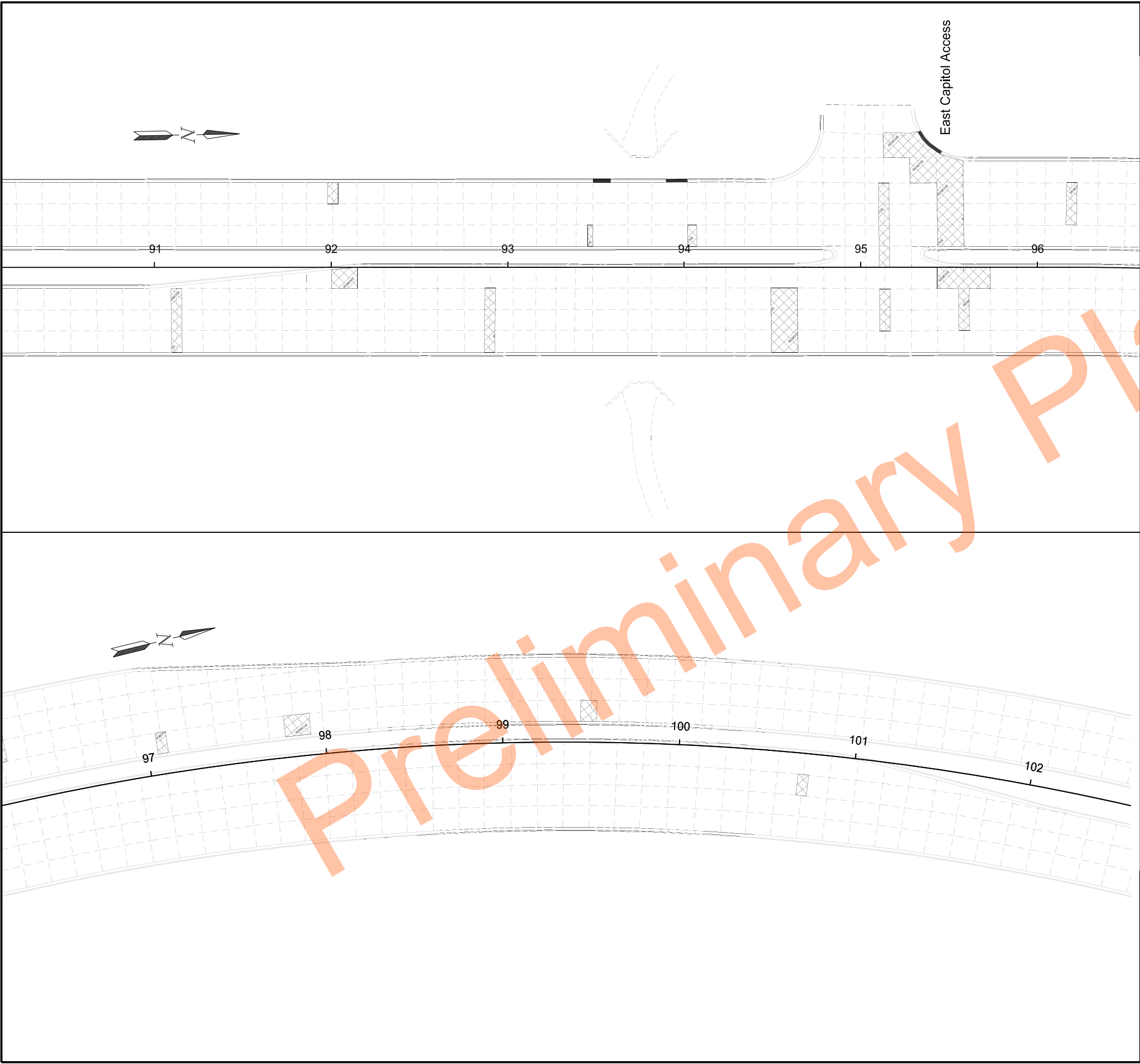
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	40	3

SPEC	CODE	PAY ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 90+35 to Sta 96+35	40	LF


Removal of Concrete Pavement
(Included in the bid price for Concrete Pavement Repair Item)


Removal of Sidewalk
(Included in the bid price for Sidewalk Concrete XIN)


Removal of Bituminous Surfacing


Removal of Curb & Gutter

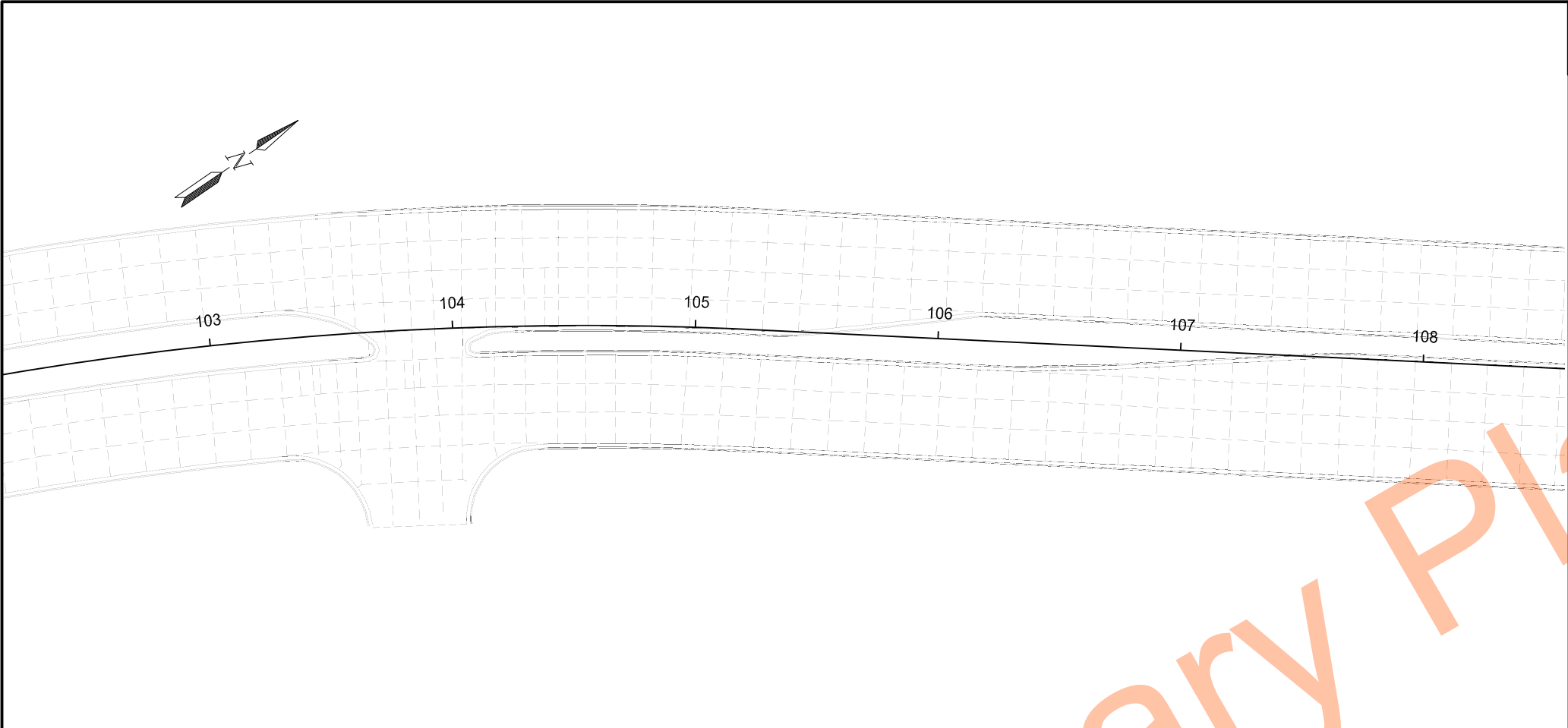
NOTE:
Pavement joint and maintenance locations are approximate,
Refer to Section 11 for locations and quantities.
See Section 82 for more detail of sidewalk removal and
survey data.

Removals

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	40	4

- 

Removal of Concrete Pavement
(Included in the bid price for Concrete Pavement Repair Item)
- 

Removal of Sidewalk
(Included in the bid price for Sidewalk Concrete XIN)
- 

Removal of Bituminous Surfacing
- 

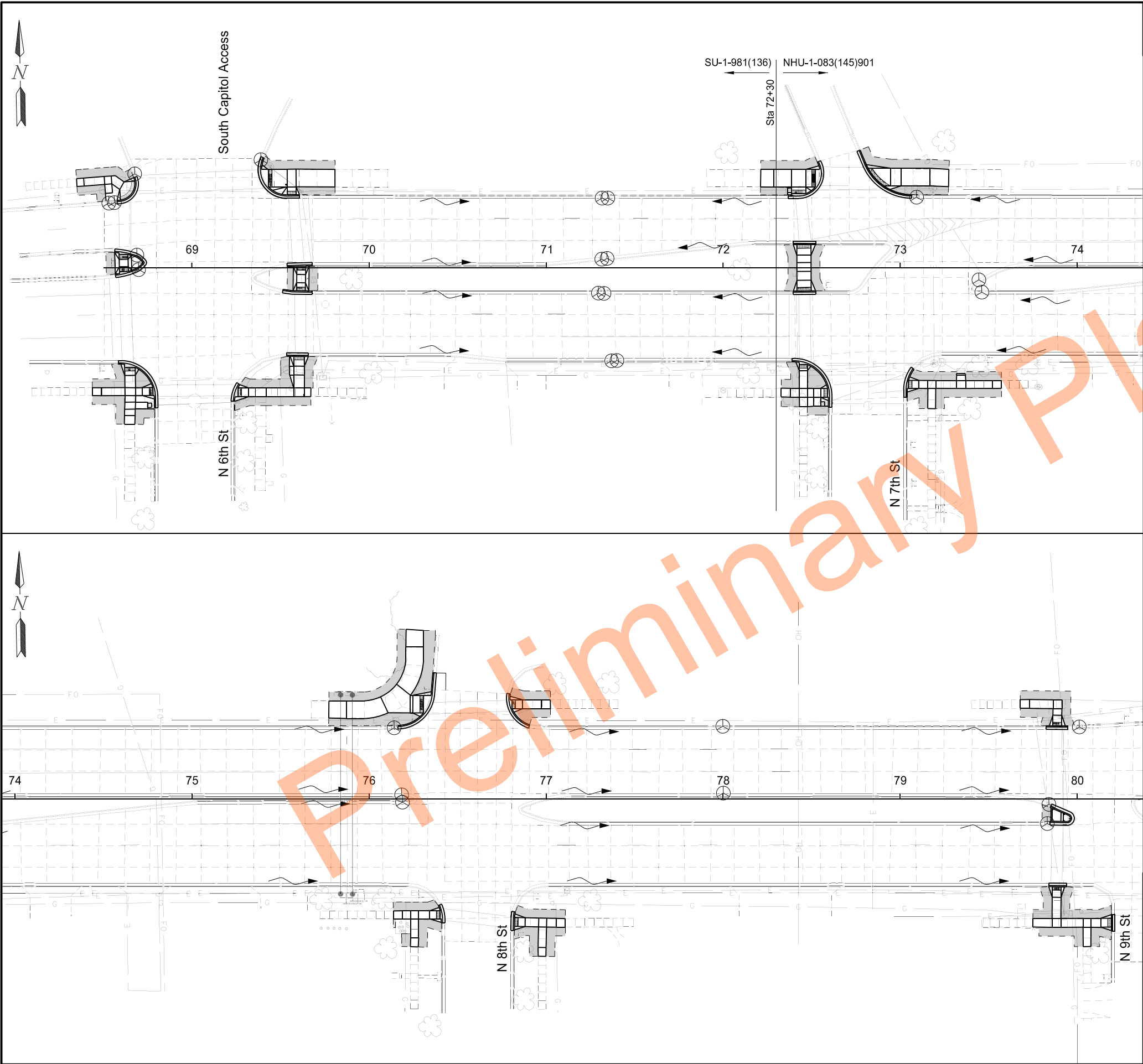
Removal of Curb & Gutter

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
Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	76	1
		SU-1-981(136)		
SPEC CODE PAY ITEM			QTY UNIT	
SU-1-981(136)				
708	1540	INLET PROTECTION-SPECIAL		
Sta 68+50 to Sta 72+30			14	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
Sta 68+50 to Sta 72+30			14	EA
NHU-1-083(145)901				
708	1540	INLET PROTECTION-SPECIAL		
Sta 72+30 to Sta 74+00			3	EA
Sta 74+00 to Sta 80+00			7	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
Sta 72+30 to Sta 74+00			3	EA
Sta 74+00 to Sta 80+00			7	EA

Inlet Protection Special

Flow Direction

Hydraulic Mulch
(Included in the bid price for Sidewalk
Concrete XIN or Curb & Gutter - Type 1)

Temporary Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

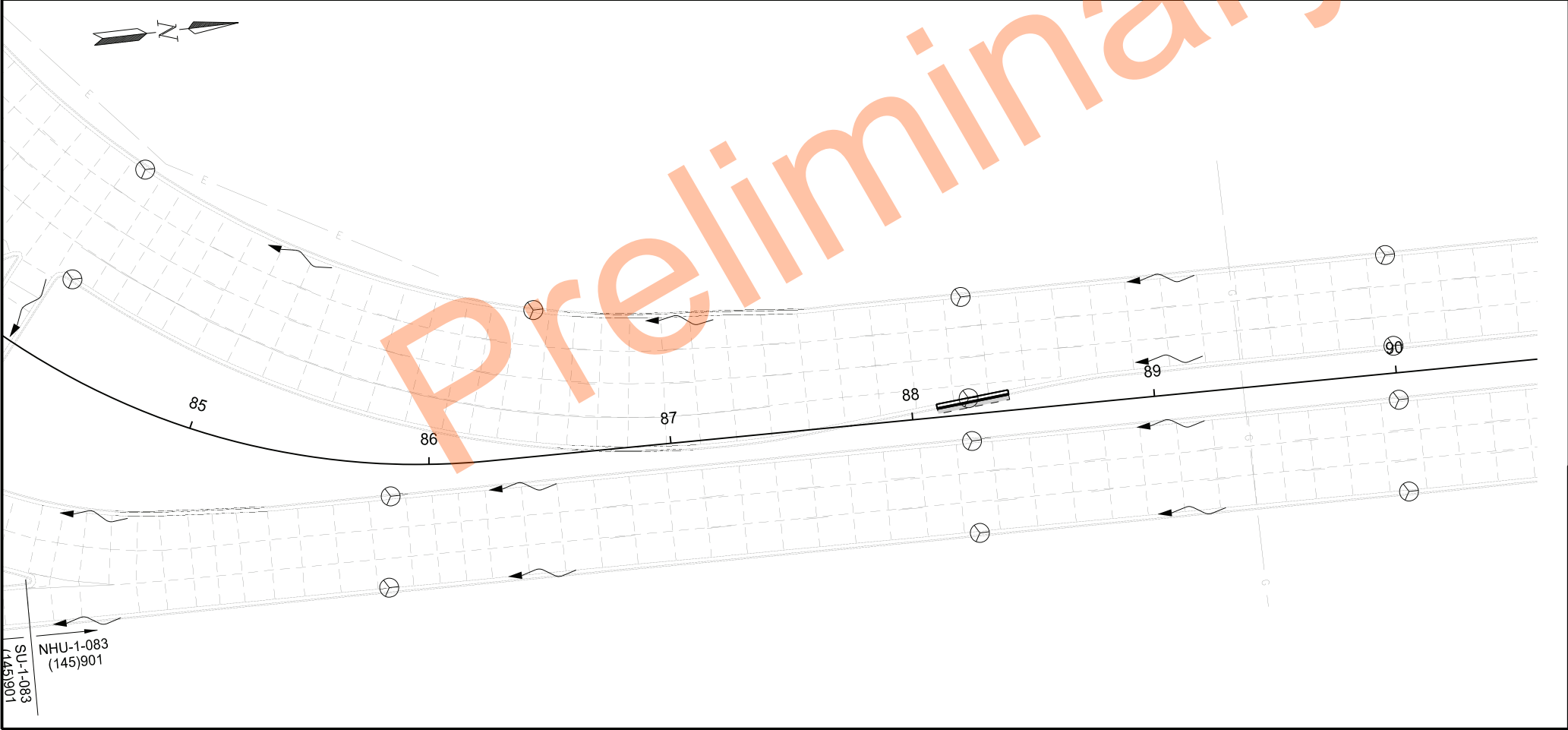
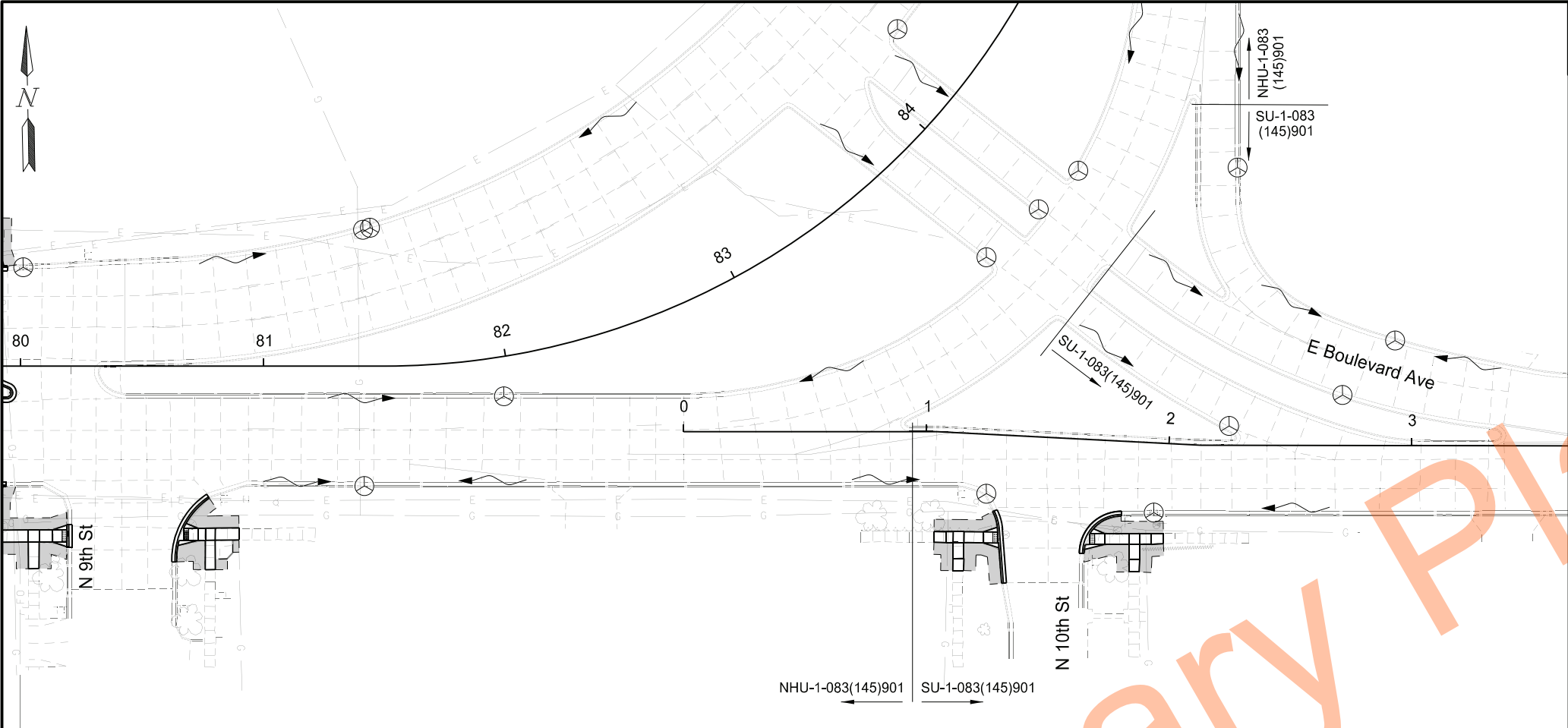
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	76	2

SPEC CODE		PAY ITEM	QTY UNIT	
NHU-1-083(145)901				
708	1540	INLET PROTECTION-SPECIAL		
Sta 80+00 to Sta 84+35			9	EA
Sta 84+35 to Sta 90+35			12	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
Sta 80+00 to Sta 84+35			9	EA
Sta 84+35 to Sta 90+35			12	EA
SU-1-083(145)901				
708	1540	INLET PROTECTION-SPECIAL		
Sta 0+00 to Sta 3+64			6	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
Sta 0+00 to Sta 3+64			6	EA



Inlet Protection Special



Flow Direction



Hydraulic Mulch
(Included in the bid price for Sidewalk
Concrete XIN or Curb & Gutter - Type 1)

Temporary Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

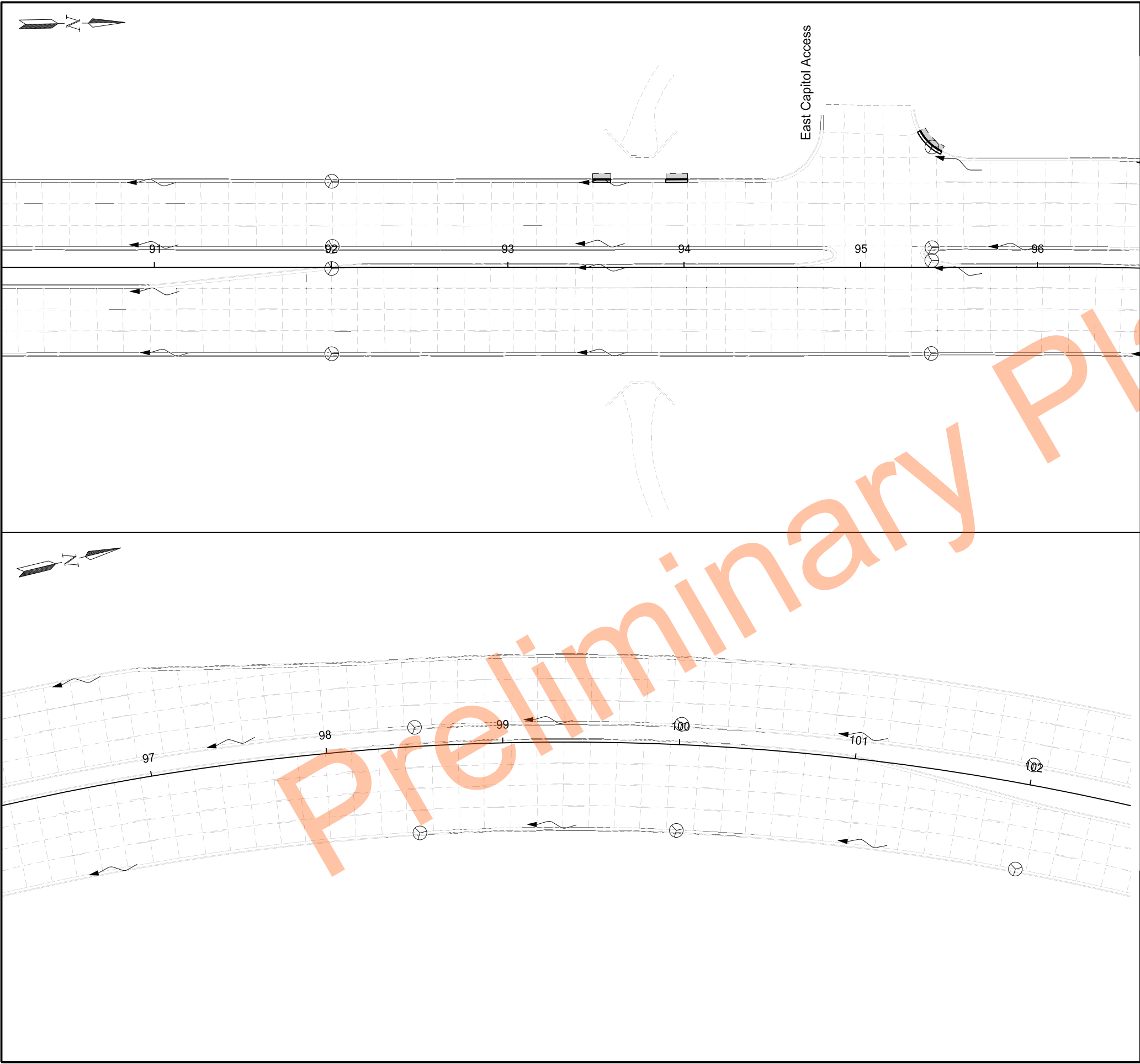
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	76	3

SPEC CODE PAY ITEM		QTY UNIT
708	1540 INLET PROTECTION-SPECIAL	
	Sta 90+35 to Sta 96+35	8 EA
	Sta 96+35 to Sta 102+35	6 EA
708	1541 REMOVE INLET PROTECTION-SPECIAL	
	Sta 90+35 to Sta 96+35	8 EA
	Sta 96+35 to Sta 102+35	6 EA



Inlet Protection Special



Flow Direction



Hydraulic Mulch
(Included in the bid price for Sidewalk
Concrete XIN or Curb & Gutter - Type 1)

Temporary Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA

	Inlet Protection Special Flow Direction Hydraulic Mulch (Included in the bid price for Sidewalk Concrete XIN or Curb & Gutter - Type 1)
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REGISTERED PROFESSIONAL ENGINEER

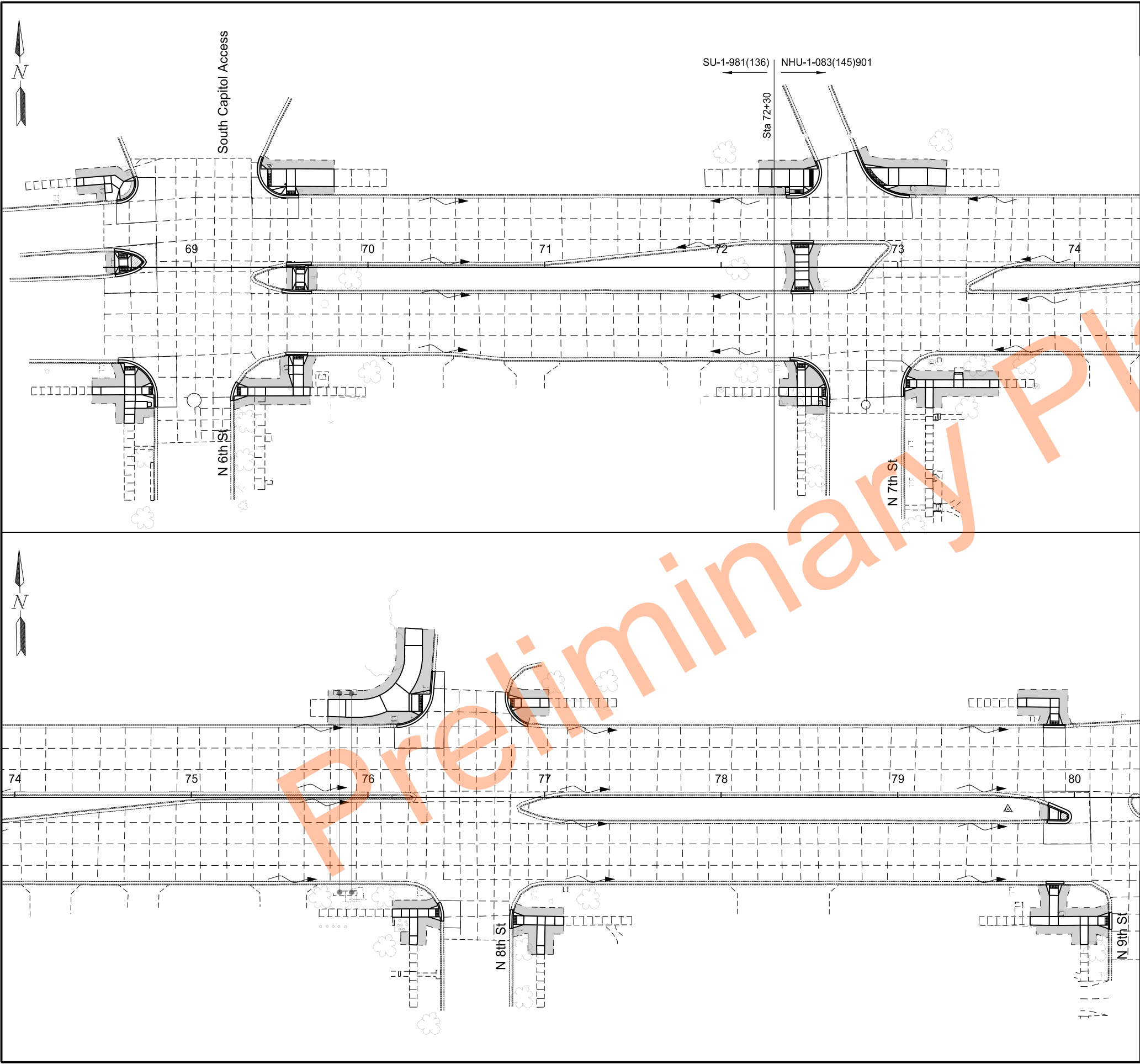
DYLAN J. DUNN

[Signature]

PE-28894

DATE 07/22/25

NORTH DAKOTA



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	77	1

SU-1-981(136)

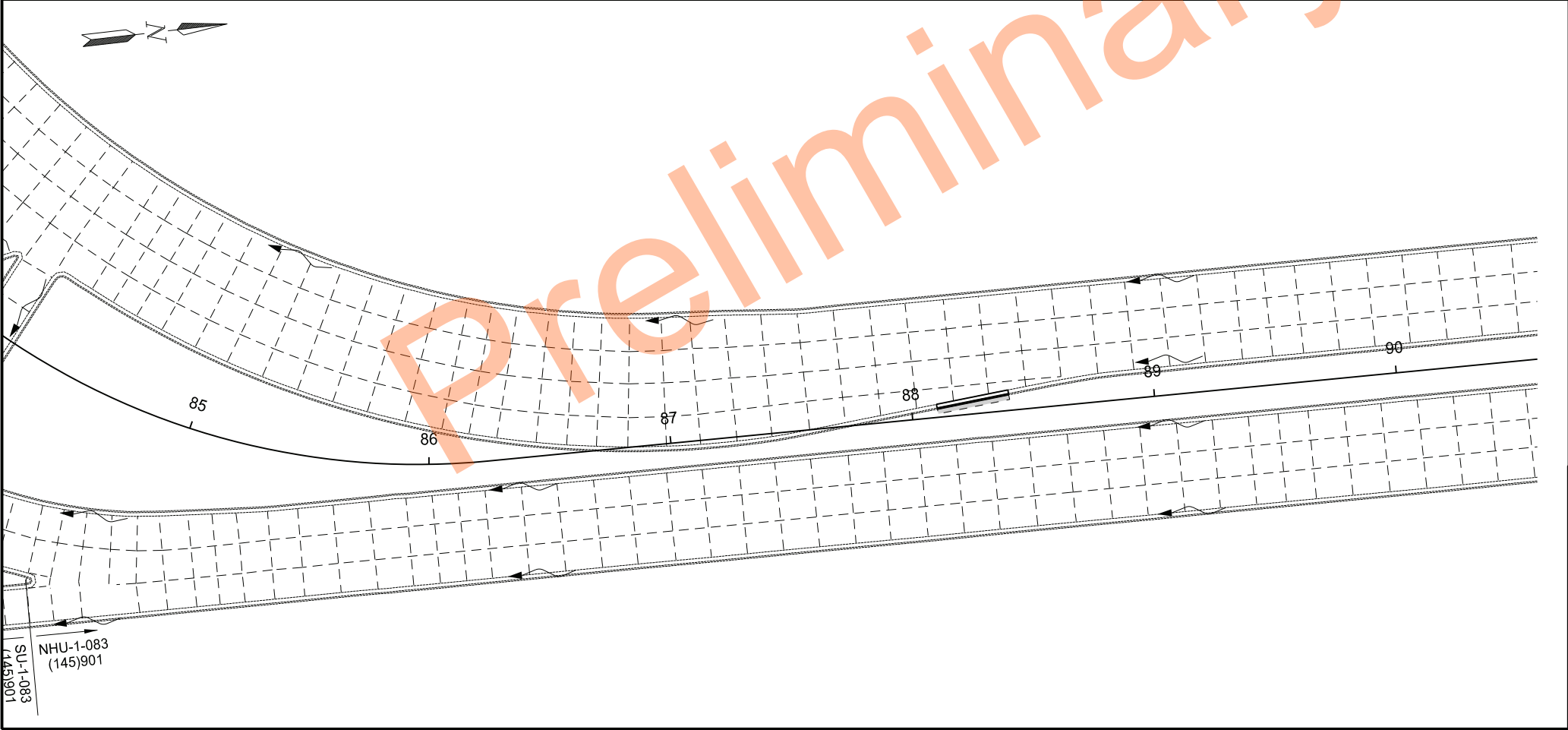
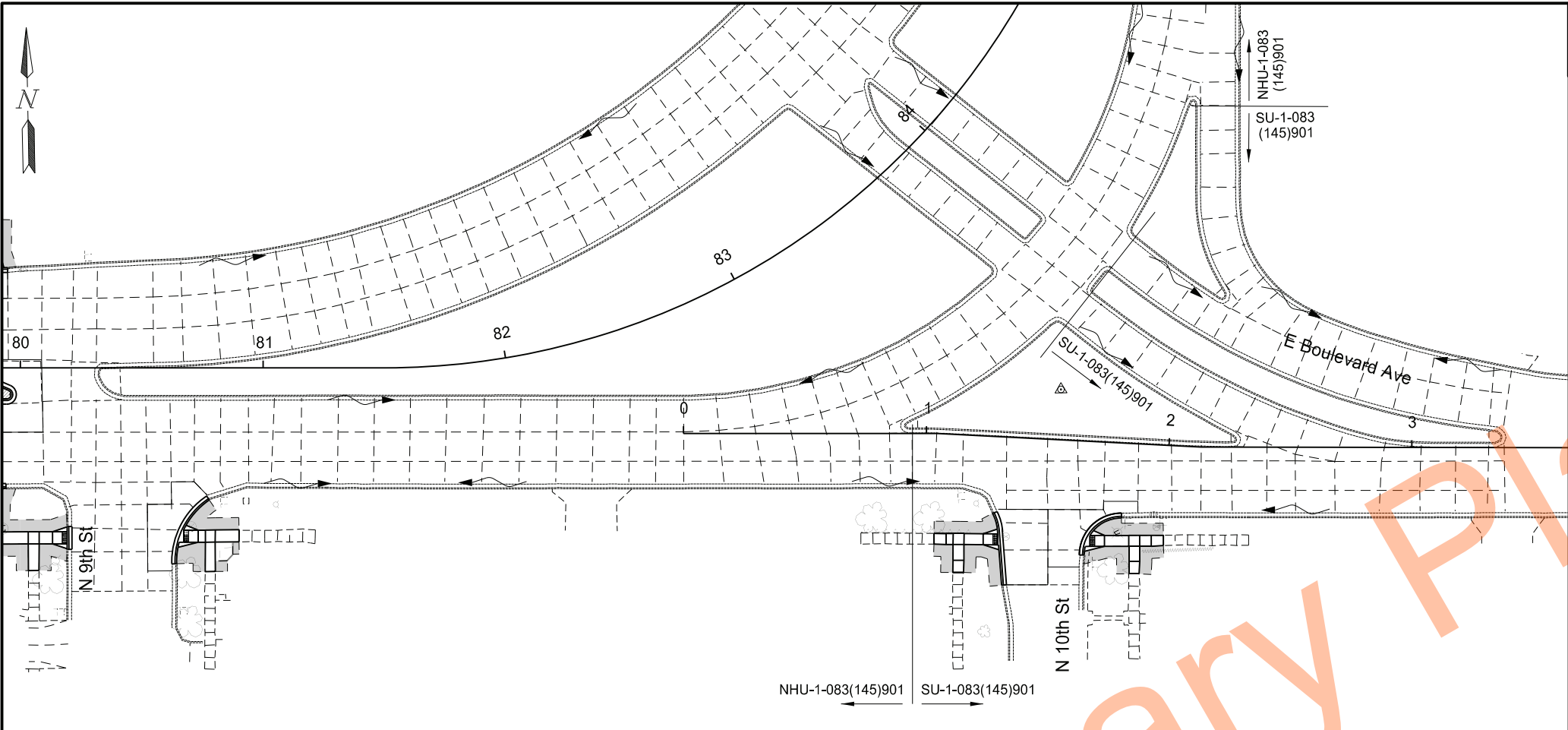
Seeding Class III & Hydraulic Mulch
(Incidental to Sidewalk Concrete XIN)

Permanent Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	77	2

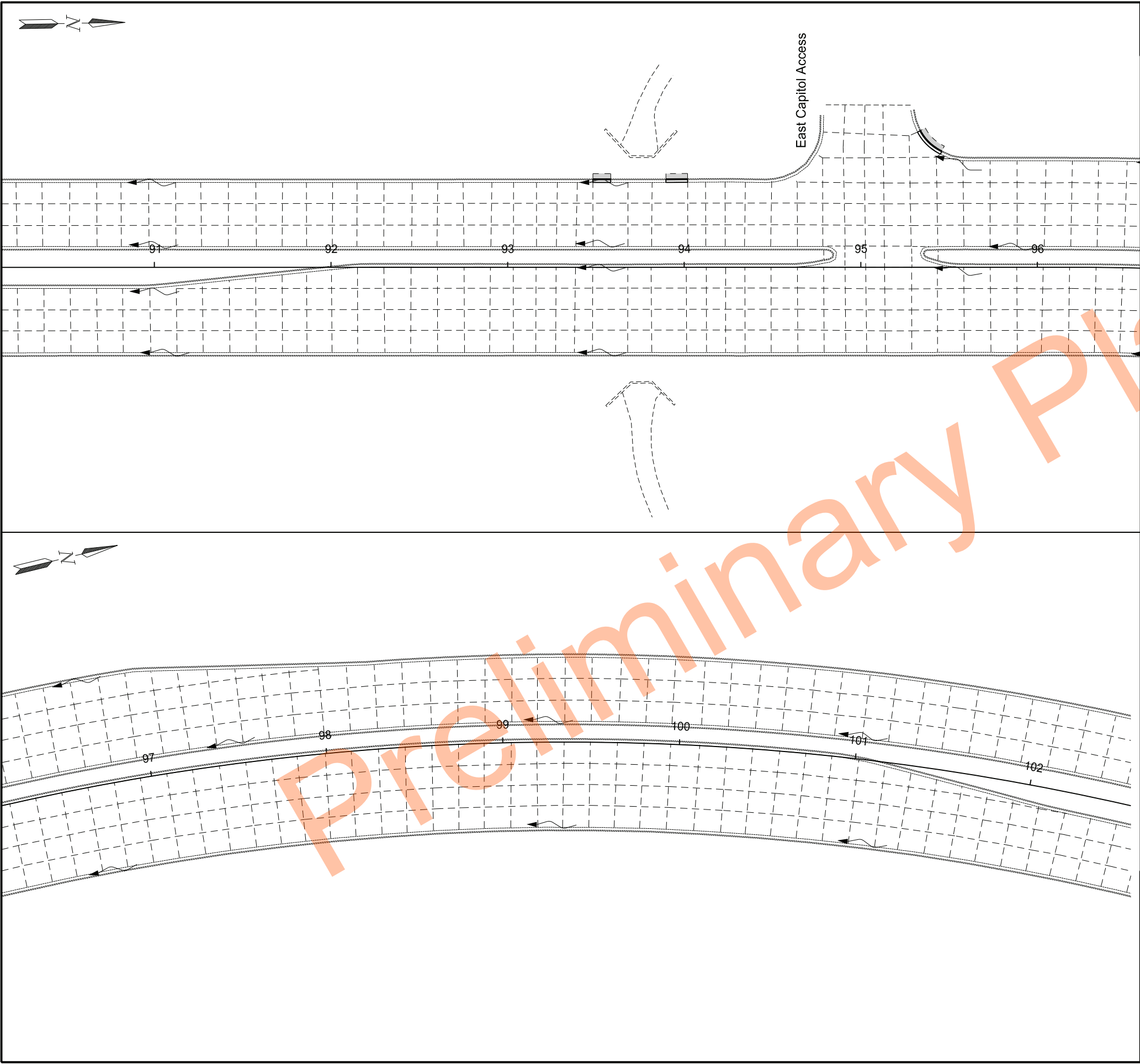
Seeding Class III & Hydraulic Mulch
(Incidental to Sidewalk Concrete XIN)

Permanent Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	77	3



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

Permanent Erosion Control

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



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

REGISTERED PROFESSIONAL ENGINEER

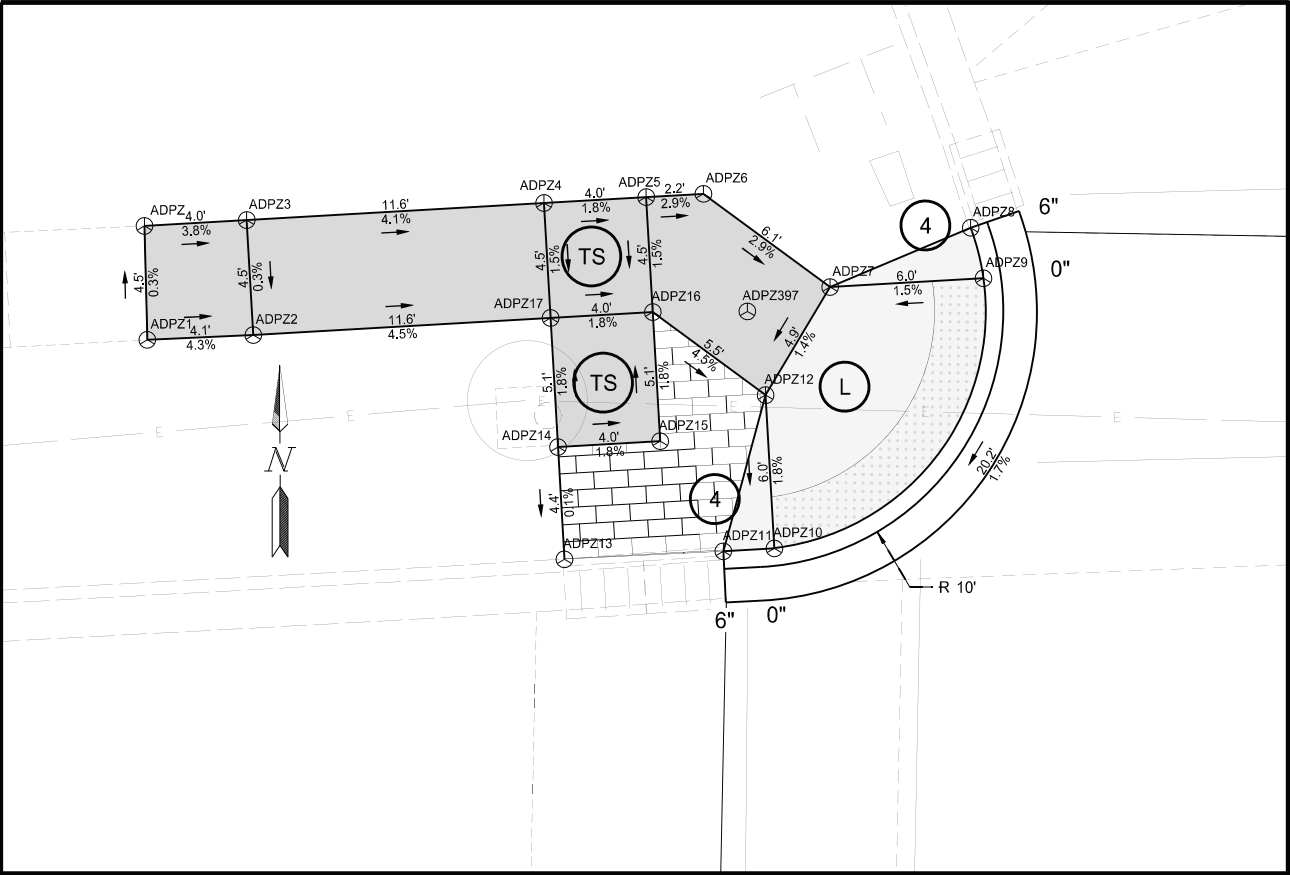
DYLAN J. DUNN

[Signature]

PE-28894

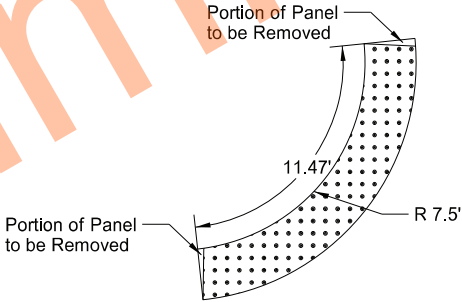
DATE 07/22/25

NORTH DAKOTA



NW Corner 6th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ	419634.199	1897901.701	1750.229	6834.873 R1	-52.638
ADPZ1	419629.749	1897901.812	1750.241	6835.072 R1	-48.333
ADPZ2	419629.936	1897905.955	1750.061	6839.210 R1	-47.482
ADPZ3	419634.429	1897905.697	1750.076	6838.863 R1	-51.935
ADPZ4	419635.096	1897917.312	1749.605	6850.462 R1	-51.626
ADPZ5	419635.326	1897921.305	1749.533	6854.450 R1	-51.935
ADPZ6	419635.454	1897923.542	1749.467	6856.684 R1	-52.108
ADPZ7	419631.809	1897928.494	1749.286	6861.708 R1	-48.562
ADPZ8	419634.128	1897933.984	1749.886	6867.150 R1	-50.99
ADPZ9	419632.154	1897934.484	1749.376	6867.690 R1	-49.026
ADPZ10	419621.598	1897926.317	1749.111	6859.735 R1	-38.31
ADPZ11	419621.483	1897924.32	1749.535	6857.741 R1	-38.155
ADPZ12	419627.588	1897925.973	1749.219	6859.271 R1	-44.292
ADPZ13	419621.171	1897918.112	1749.624	6851.540 R1	-37.719
ADPZ14	419625.558	1897917.86	1749.628	6851.201 R1	-42.1
ADPZ15	419625.787	1897921.853	1749.556	6855.188 R1	-42.409
ADPZ16	419630.833	1897921.563	1749.465	6854.798 R1	-47.448
ADPZ17	419630.604	1897917.57	1749.537	6850.810 R1	-47.139
ADPZ397	419630.859	1897925.258	0	6858.492 R1	-47.548



SU-1-981(136)				
SPEC	CODE	PAY ITEM	QTY UNIT	
748	0140	CURB & GUTTER-TYPE I	20	LF
750	0115	SIDEWALK CONCRETE 4IN	21	SY
750	0140	SIDEWALK CONCRETE 6IN	8	SY
750	2115	DETECTABLE WARNING PANEL	27	SF

- 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
- 4

10

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 6IN
- Sidewalk
Concrete 4IN
- Concrete Median
Paving
- Flexible Delineator
- Non-compliant
Area
- Exst Pushbutton
- Prpsd Pushbutton

- Notes:
1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

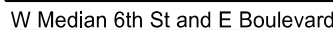
ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	37 LF
750	0115	SIDEWALK CONCRETE 4IN	4 SY
750	0140	SIDEWALK CONCRETE 6IN	7 SY
750	2115	DETECTABLE WARNING PANEL	20 SF
750	0200	CONCRETE MEDIAN PAVING	3 SY



	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.		
	<u>Cross Slope</u> 1.5 % preferred 2.0 % maximum	<u>Running and Counter Slope</u> < 4.5 % preferred 5.0 % maximum	
	Pedestrian Access Transition Area (PTA) Tie-in to nearest joint (If needed)		
	<u>Transition Cross Slope</u> < 0.5 % change per foot longitudinally	<u>Running Slope</u> < 4.5 % preferred	
	Turning Space Used at top of ramp or when changing directions.		
	<u>Slope (all directions)</u> 1.5 % preferred 2.0 % maximum		
	Ramp <u>Cross Slope</u> 1.5 % Preferred 2.0 % maximum	<u>Running Slope</u> < 7.5 % preferred 8.3 % maximum	
	Blended Transition - To be constructed integral with Curb & Gutter <u>Cross Slope</u> 1.5 % preferred 2.0 % maximum	<u>Counter Slope</u> < 4.5 % preferred 5.0 % maximum	
	Flare <u>Cross Slope</u> 4:1 maxium (adjencet to non-walkable surface)		
	10:1 maxium (adjecent to walkable surface)		
	Curb heights are noted adjacent to curb 0", 3" or 6"		
	Sidewalk Concrete 6IN		Sidewalk Concrete 4IN
	Concrete Median Paving		Flexible Delineator
	Non-compliant Area		Exst Pushbutton
			Prpsd Pushbutton

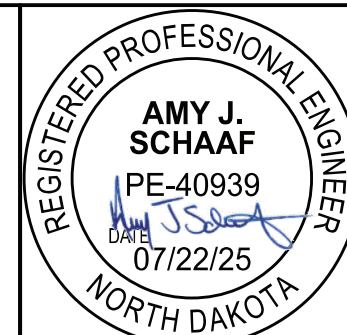
Notes:

1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

ADA Ramp Details

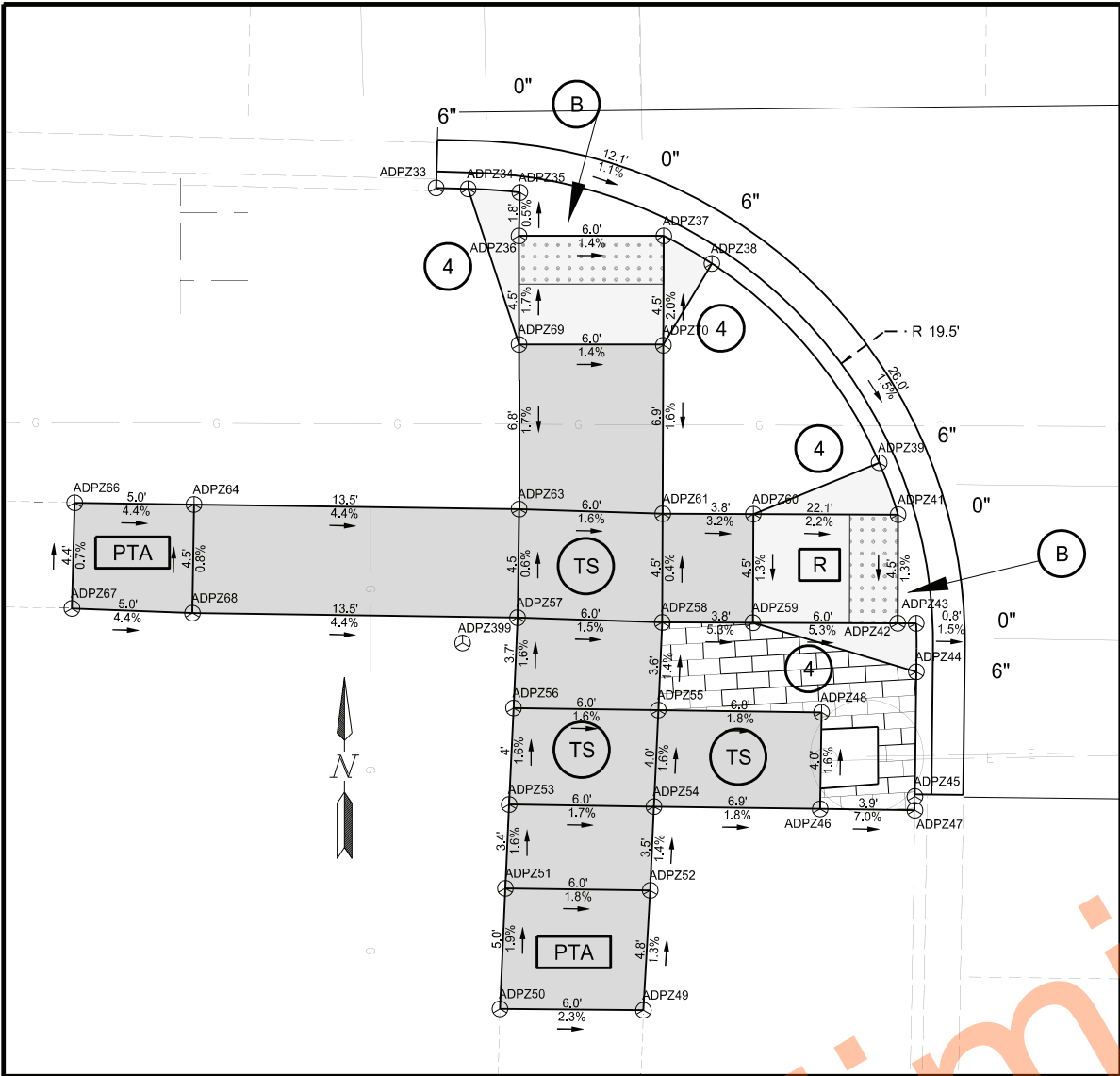
Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



SU-1-981(136)				
SPEC	CODE	PAY ITEM	QTY UNIT	
748	0140	CURB & GUTTER-TYPE I	38	LF
750	0115	SIDEWALK CONCRETE 4IN	37	SY
750	0140	SIDEWALK CONCRETE 6IN	9	SY
750	2115	DETECTABLE WARNING PANEL	21	SF

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-1-981(136)	82	3



SW Corner 6th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ33	419528.944	1897923.261	1749.951	6858.528 R1	54.387
ADPZ34	419528.906	1897924.59	1749.949	6859.857 R1	54.399
ADPZ35	419528.754	1897926.732	1749.433	6862.001 R1	54.507
ADPZ36	419526.954	1897926.697	1749.442	6862.002 R1	56.307
ADPZ37	419526.956	1897932.697	1749.359	6868.001 R1	56.186
ADPZ38	419525.812	1897934.692	1749.832	6870.018 R1	57.29
ADPZ39	419517.556	1897941.624	1749.567	6877.113 R1	65.406
ADPZ41	419515.405	1897942.408	1749.125	6877.941 R1	67.541
ADPZ42	419510.905	1897942.392	1749.066	6878.014 R1	72.04
ADPZ43	419510.903	1897943.158	1749.054	6878.781 R1	72.027
ADPZ44	419508.894	1897943.164	1749.374	6878.826 R1	74.036
ADPZ45	419503.729	1897943.104	1749.299	6878.869 R1	79.201
ADPZ46	419503.213	1897939.179	1749.294	6874.955 R1	79.795
ADPZ47	419503.157	1897943.108	1749.294	6878.884 R1	79.773
ADPZ48	419507.212	1897939.236	1749.508	6874.932 R1	75.796
ADPZ49	419494.873	1897931.853	1749.794	6867.797 R1	88.28
ADPZ50	419494.925	1897925.908	1749.93	6861.852 R1	88.346
ADPZ51	419499.923	1897926.133	1749.849	6861.977 R1	83.344

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ52	419499.838	1897932.135	1749.741	6867.980 R1	83.31
ADPZ53	419503.395	1897926.289	1749.793	6862.064 R1	79.87
ADPZ54	419503.31	1897932.291	1749.694	6868.067 R1	79.835
ADPZ55	419507.308	1897932.471	1749.629	6868.167 R1	75.835
ADPZ56	419507.393	1897926.469	1749.728	6862.164 R1	75.87
ADPZ57	419511.137	1897926.637	1749.668	6862.258 R1	72.123
ADPZ58	419510.939	1897932.634	1749.578	6868.258 R1	72.202
ADPZ59	419510.929	1897936.392	1749.381	6872.015 R1	72.137
ADPZ60	419515.429	1897936.409	1749.44	6871.942 R1	67.637
ADPZ61	419515.443	1897932.652	1749.561	6868.186 R1	67.698
ADPZ63	419515.637	1897926.701	1749.64	6862.232 R1	67.623
ADPZ64	419515.827	1897913.226	1750.236	6848.756 R1	67.713
ADPZ66	419515.897	1897908.28	1750.455	6843.809 R1	68.012
ADPZ67	419511.519	1897908.165	1750.486	6843.782 R1	72.377
ADPZ68	419511.328	1897913.163	1750.386	6848.783 R1	72.211
ADPZ69	419522.454	1897926.698	1749.521	6862.093 R1	60.807
ADPZ70	419522.424	1897932.679	1749.45	6868.074 R1	60.717
ADPZ399	419510.088	1897924.36	0	6860.002 R1	73.217

- 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)
- TS

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
- 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)
- 4
- 10
- Curb heights are noted adjacent to curb
0", 3" or 6"

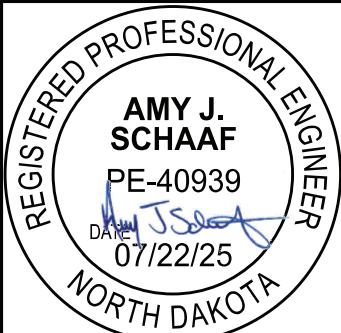
- Sidewalk
Concrete 6IN
- Sidewalk
Concrete 4IN
- Concrete Median
Paving
- Flexible Delineator
- Non-compliant
Area
- Exst Pushbutton
- Prpsd Pushbutton

- Notes:
1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

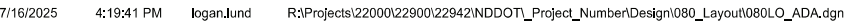
ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



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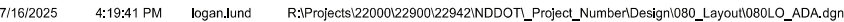
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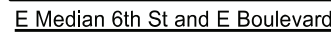
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-1-981(136)	82	5



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ101	419569.358	1898017.023	1749.564	6951.465 R1	12.111
ADPZ102	419568.479	1898022.655	1749.495	6957.113 R1	12.878
ADPZ103	419568.414	1898024.654	1748.995	6959.113 R1	12.903
ADPZ104	419568.251	1898029.648	1748.938	6964.109 R1	12.966
ADPZ105	419568.195	1898031.651	1749.385	6966.113 R1	12.982
ADPZ106	419568.154	1898033.611	1749.405	6968.074 R1	12.984
ADPZ107	419572.911	1898024.8	1749.147	6959.170 R1	8.403
ADPZ108	419572.749	1898029.798	1749.089	6964.169 R1	8.466
ADPZ109	419577.423	1898029.95	1749.16	6964.228 R1	3.79
ADPZ110	419577.594	1898024.953	1749.175	6959.229 R1	3.718
ADPZ111	419582.021	1898019.634	1749.608	6953.823 R1	-0.601
ADPZ112	419582.066	1898023.098	1749.608	6957.285 R1	-0.715
ADPZ113	419582.092	1898025.099	1749.108	6959.286 R1	-0.781
ADPZ114	419581.921	1898030.097	1749.092	6964.285 R1	-0.71
ADPZ115	419582.157	1898030.093	1749.089	6964.277 R1	-0.946
ADPZ116	419582.183	1898032.093	1749.589	6966.276 R1	-1.012
ADPZ117	419582.206	1898033.844	1749.587	6968.026 R1	-1.07

SU-1-981(136)			
SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	31 LF
750	0115	SIDEWALK CONCRETE 4IN	4 SY
750	0140	SIDEWALK CONCRETE 6IN	10 SY
750	2115	DETECTABLE WARNING PANEL	20 SF

- 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

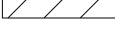
Cross Slope
 1.5 % preferred
 2.0 % maximum

Counter Slope
 < 4.5 % preferred
 5.0 % maximum

Flare

Cross Slope
 4:1 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 6IN |  | Sidewalk
Concrete 4IN |
|  | Concrete Median
Paving |  | Flexible Delineator |
|  | Non-compliant
Area |  | Exst Pushbutton |
| | |  | Prpsd Pushbutton |

Notes:

1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide 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

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 6IN

Sidewalk
Concrete 4IN

Concrete Median
Paving

Flexible Delineator

Exst Pushbutton

Non-compliant
Area

Prpsd Pushbutton

ADA Ramp Details

REGISTERED PROFESSIONAL ENGINEER

AMY J. SCHAAF

PE-40939

DATE *J. SchAAF*

07/22/25

NORTH DAKOTA



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ71	419516.016	1897991.554	1749.297	6927.064 R1	65.95
ADPZ72	419514.144	1897990.419	1748.835	6925.968 R1	67.845
ADPZ73	419509.145	1897990.318	1748.787	6925.965 R1	72.845
ADPZ74	419509.145	1897988.714	1748.771	6924.362 R1	72.877
ADPZ75	419506.619	1897988.451	1749.18	6924.150 R1	75.407
ADPZ76	419509.025	1897996.316	1749.195	6931.965 R1	72.845
ADPZ77	419514.024	1897996.416	1749.242	6931.965 R1	67.845
ADPZ78	419513.944	1898000.415	1749.282	6935.965 R1	67.845
ADPZ79	419508.945	1898000.316	1749.235	6935.965 R1	72.845
ADPZ80	419508.826	1898006.314	1749.295	6941.965 R1	72.845
ADPZ81	419513.825	1898006.414	1749.342	6941.965 R1	67.845
ADPZ82	419513.515	1898021.922	1749.117	6957.477 R1	67.845
ADPZ83	419508.603	1898021.849	1749.191	6957.502 R1	72.758
ADPZ84	419508.517	1898027.849	1749.18	6963.501 R1	72.724
ADPZ85	419508.464	1898031.527	1749.224	6967.180 R1	72.704
ADPZ86	419513.321	1898031.664	1749.129	6967.220 R1	67.845
ADPZ87	419513.396	1898027.921	1749.107	6963.477 R1	67.845
ADPZ88	419520.902	1898019.786	1749.05	6955.193 R1	60.502
ADPZ89	419520.849	1898022.059	1749.035	6957.467 R1	60.51
ADPZ90	419520.709	1898028.067	1748.995	6963.477 R1	60.53
ADPZ91	419525.708	1898028.167	1748.945	6963.477 R1	55.53
ADPZ92	419525.848	1898022.168	1748.985	6957.477 R1	55.51
ADPZ93	419525.903	1898019.799	1749.001	6955.107 R1	55.502
ADPZ94	419531.44	1898018.3	1749.317	6953.498 R1	49.996
ADPZ95	419531.402	1898019.927	1749.31	6955.126 R1	50.002
ADPZ97	419531.394	1898020.278	1749.309	6955.477 R1	50.003
ADPZ98	419531.347	1898022.278	1748.829	6957.477 R1	50.01
ADPZ99	419531.207	1898028.276	1748.789	6963.476 R1	50.03
ADPZ100	419531.152	1898030.632	1749.16	6965.833 R1	50.038

SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	23 LF
750	0115	SIDEWALK CONCRETE 4IN	31 SY
750	0140	SIDEWALK CONCRETE 6IN	10 SY
750	2115	DETECTABLE WARNING PANEL	22 SF

SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	33 LF
750	0115	SIDEWALK CONCRETE 4IN	22 SY
750	0140	SIDEWALK CONCRETE 6IN	10 SY
750	2115	DETECTABLE WARNING PANEL	36 SF



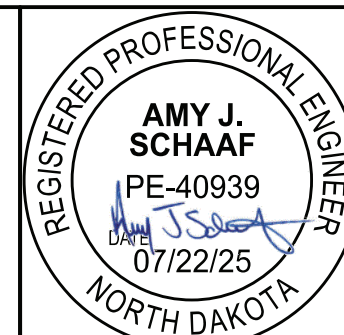
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ141	419635.145	1898320.391	1750.306	7253.460 R1	-59.713
ADPZ142	419633.087	1898321.045	1750.01	7254.155 R1	-57.668
ADPZ143	419631.077	1898321.526	1749.518	7254.676 R1	-55.668
ADPZ144	419631.131	1898318.85	1749.526	7251.999 R1	-55.669
ADPZ145	419621.138	1898318.649	1749.375	7251.998 R1	-45.674
ADPZ146	419619.13	1898316.419	1749.507	7249.808 R1	-43.622
ADPZ147	419617.561	1898313.345	1749.159	7246.766 R1	-41.992
ADPZ148	419617.722	1898305.346	1749.038	7238.766 R1	-41.993
ADPZ149	419616.925	1898305.33	1749.026	7238.766 R1	-41.196
ADPZ150	419616.948	1898303.33	1749.486	7236.766 R1	-41.179
ADPZ151	419616.953	1898302.937	1749.486	7236.373 R1	-41.176
ADPZ152	419618.407	1898305.36	1749.048	7238.766 R1	-42.678
ADPZ153	419618.453	1898302.975	1749.501	7236.381 R1	-42.677
ADPZ154	419620.827	1898303.044	1749.321	7236.402 R1	-45.052
ADPZ155	419621.446	1898303.051	1749.151	7236.397 R1	-45.67
ADPZ156	419620.842	1898305.409	1749.085	7238.766 R1	-45.114
ADPZ157	419621.398	1898305.42	1749.093	7238.767 R1	-45.67
ADPZ158	419621.238	1898313.418	1749.22	7246.767 R1	-45.669
ADPZ159	419631.236	1898313.619	1749.37	7246.768 R1	-55.669
ADPZ160	419631.396	1898305.62	1749.243	7238.768 R1	-55.67
ADPZ161	419631.596	1898295.622	1749.513	7228.768 R1	-55.671
ADPZ162	419631.724	1898288.166	1749.742	7221.310 R1	-55.65
ADPZ163	419621.772	1898287.778	1749.476	7221.121 R1	-45.692
ADPZ164	419621.598	1898295.422	1749.338	7228.767 R1	-45.671
ADPZ400	419629.214	1898309.354	0	7242.544 R1	-53.562

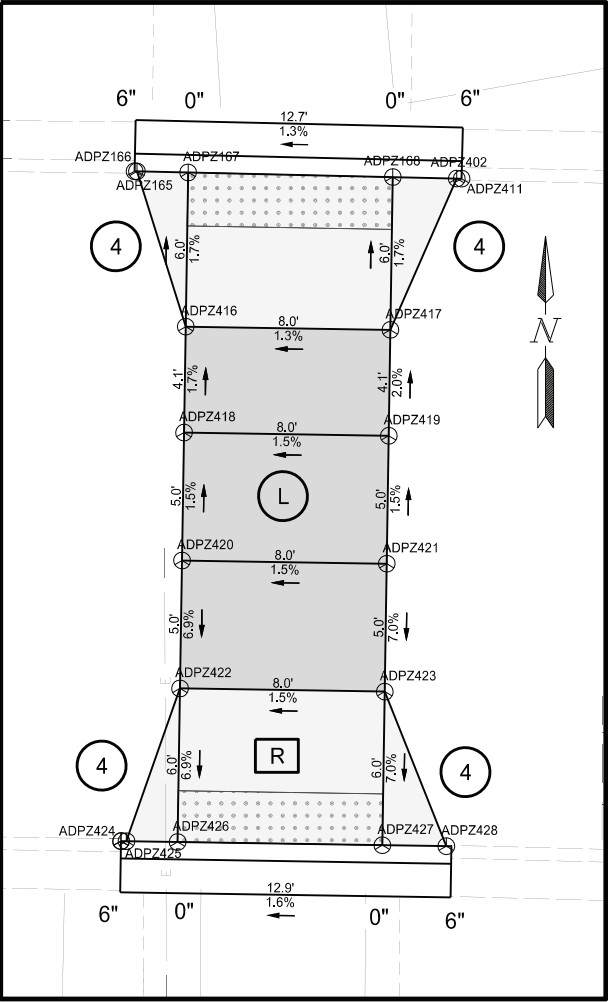
- Notes:
1. All landing, turning spaces, and non-compliant areas to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.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

ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





W Median 7th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ165	419588.887	1898305.539	1749.852	7239.534 R1	-13.168
ADPZ166	419588.885	1898305.631	1749.836	7239.626 R1	-13.167
ADPZ167	419588.84	1898307.631	1749.513	7241.626 R1	-13.162
ADPZ168	419588.659	1898315.629	1749.617	7249.626 R1	-13.141
ADPZ402	419588.603	1898318.128	1750.012	7252.126 R1	-13.135
ADPZ411	419588.599	1898318.319	1750.044	7252.317 R1	-13.134
ADPZ416	419582.814	1898307.537	1749.618	7241.652 R1	-7.136
ADPZ417	419582.689	1898315.536	1749.72	7249.652 R1	-7.17
ADPZ418	419578.676	1898307.472	1749.687	7241.670 R1	-2.997
ADPZ419	419578.551	1898315.471	1749.804	7249.670 R1	-3.032
ADPZ420	419573.676	1898307.394	1749.762	7241.692 R1	2.003
ADPZ421	419573.551	1898315.393	1749.879	7249.692 R1	1.968
ADPZ422	419568.677	1898307.316	1749.415	7241.713 R1	7.003
ADPZ423	419568.552	1898315.315	1749.532	7249.713 R1	6.968
ADPZ424	419562.712	1898305.012	1749.435	7239.529 R1	13.012
ADPZ425	419562.709	1898305.222	1749.388	7239.739 R1	13.011
ADPZ426	419562.678	1898307.222	1748.998	7241.739 R1	13.003
ADPZ427	419562.553	1898315.221	1749.115	7249.739 R1	12.968
ADPZ428	419562.514	1898317.721	1749.602	7252.239 R1	12.957
ADPZ429	419562.712	1898305.012	1749.643	7239.529 R1	13.012

SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	26	LF
750	0115	SIDEWALK CONCRETE 4IN	13	SY
750	0140	SIDEWALK CONCRETE 6IN	14	SY
750	2115	DETECTABLE WARNING PANEL	32	SF

- 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)
- 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
- 4

10

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"

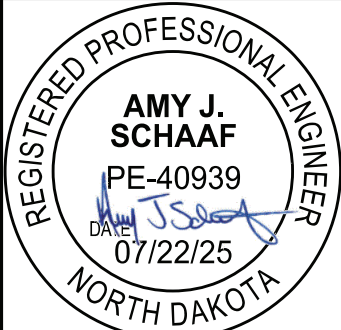
- Sidewalk
Concrete 6IN
- Sidewalk
Concrete 4IN
- Concrete Median
Paving
- Flexible Delineator
- Non-compliant
Area
- Exst Pushbutton
- Prpsd Pushbutton

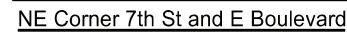
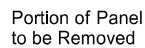
- Notes:
1. All landing, turning spaces, and non-compliant areas to be constructed as separate pours from adjacent sidewalk or ramps.
 2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.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

ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



Portion of Panel
to be Removed

NHU-1-083(145)901

STATE

PROJECT NO.

SECTION NO.

SHEET
NO.

ND

NHU-SU-1-083(145)901

82

10

Sidewalk
Concrete 6IN

Sidewalk
Concrete 4IN

Concrete Median Paving

Flexible Delineator

Non-compliant
Area

Exst Pushbutton

Prpsd Pushbutton

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

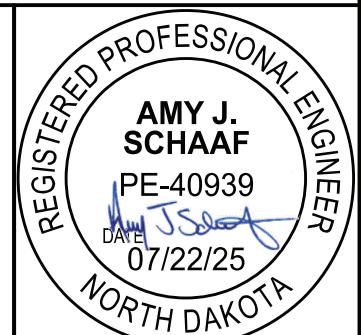
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.

3. See Section 150 for reset or relocation details on pushbuttons.

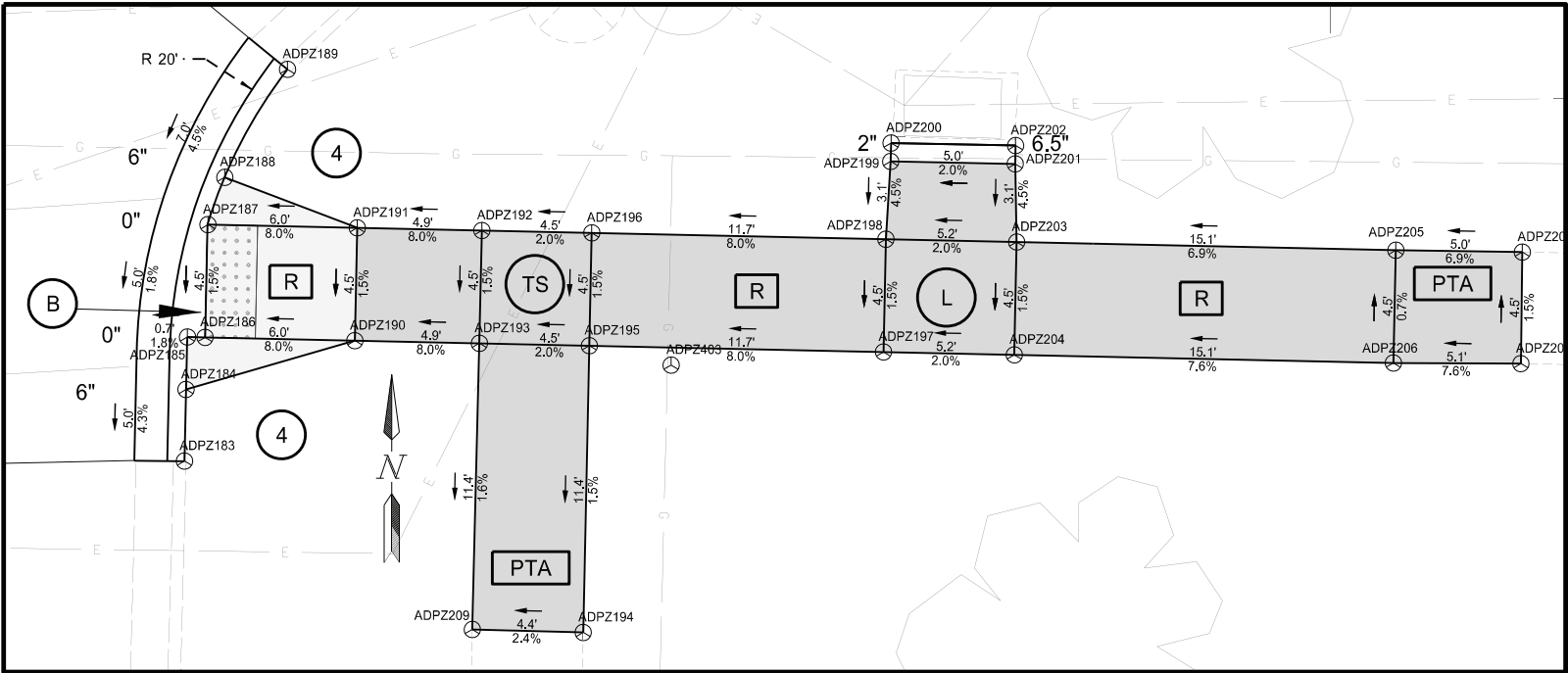
ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	82	11



SE Corner 7th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ183	419501.43	1898368.292	1749.283	7304.019 R1	73.02
ADPZ184	419504.282	1898368.354	1749.404	7304.023 R1	70.168
ADPZ185	419506.376	1898368.412	1748.994	7304.040 R1	68.073
ADPZ186	419506.361	1898369.113	1749.007	7304.741 R1	68.074
ADPZ187	419510.86	1898369.226	1749.076	7304.764 R1	63.574
ADPZ188	419512.747	1898369.901	1749.6	7305.402 R1	61.673
ADPZ189	419517.054	1898372.4	1749.892	7307.814 R1	57.318
ADPZ190	419506.232	1898375.085	1749.485	7310.715 R1	68.084
ADPZ191	419510.731	1898375.182	1749.552	7310.722 R1	63.584
ADPZ192	419510.624	1898380.149	1749.95	7315.689 R1	63.591
ADPZ193	419506.125	1898380.052	1749.882	7315.682 R1	68.091
ADPZ194	419494.59	1898384.189	1749.804	7320.049 R1	79.542
ADPZ195	419506.031	1898384.436	1749.97	7320.067 R1	68.098
ADPZ196	419510.53	1898384.532	1750.037	7320.074 R1	63.598
ADPZ197	419505.778	1898396.162	1750.908	7331.796 R1	68.117
ADPZ198	419510.277	1898396.259	1750.976	7331.803 R1	63.617
ADPZ199	419513.38	1898396.45	1751.115	7331.933 R1	60.511
ADPZ200	419514.113	1898396.465	1751.224	7331.933 R1	59.778
ADPZ201	419513.281	1898401.413	1751.22	7336.897 R1	60.511
ADPZ202	419514.014	1898401.43	1751.765	7336.899 R1	59.778
ADPZ203	419510.165	1898401.474	1751.08	7337.020 R1	63.626
ADPZ204	419505.666	1898401.377	1751.029	7337.012 R1	68.126
ADPZ205	419509.839	1898416.591	1752.127	7352.140 R1	63.65
ADPZ206	419505.34	1898416.494	1752.158	7352.133 R1	68.15
ADPZ207	419509.764	1898421.636	1752.477	7357.186 R1	63.624
ADPZ208	419505.313	1898421.577	1752.543	7357.215 R1	68.076
ADPZ209	419494.711	1898379.768	1749.698	7315.626 R1	79.509
ADPZ403	419505.256	1898387.696	0	7323.342 R1	68.808

NHU-1-083(145)901				
SPEC	CODE	PAY ITEM	QTY UNIT	
748	0140	CURB & GUTTER-TYPE I	17 LF	
748	0520	CURB-TYPE I	5 LF	
750	0115	SIDEWALK CONCRETE 4IN	31 SY	
750	0140	SIDEWALK CONCRETE 6IN	4 SY	
750	2115	DETECTABLE WARNING PANEL	9 SF	

- 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"

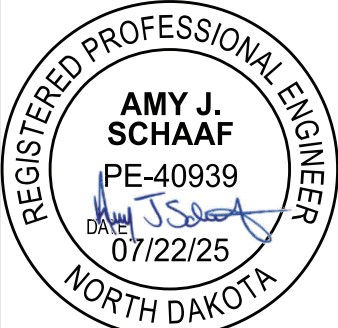
- Sidewalk
Concrete 6IN
- Sidewalk
Concrete 4IN
- Concrete Median
Paving
- Flexible Delineator
- Non-compliant
Area
- Exst Pushbutton
- Prpsd Pushbutton

- Notes:
1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

ADA Ramp Details

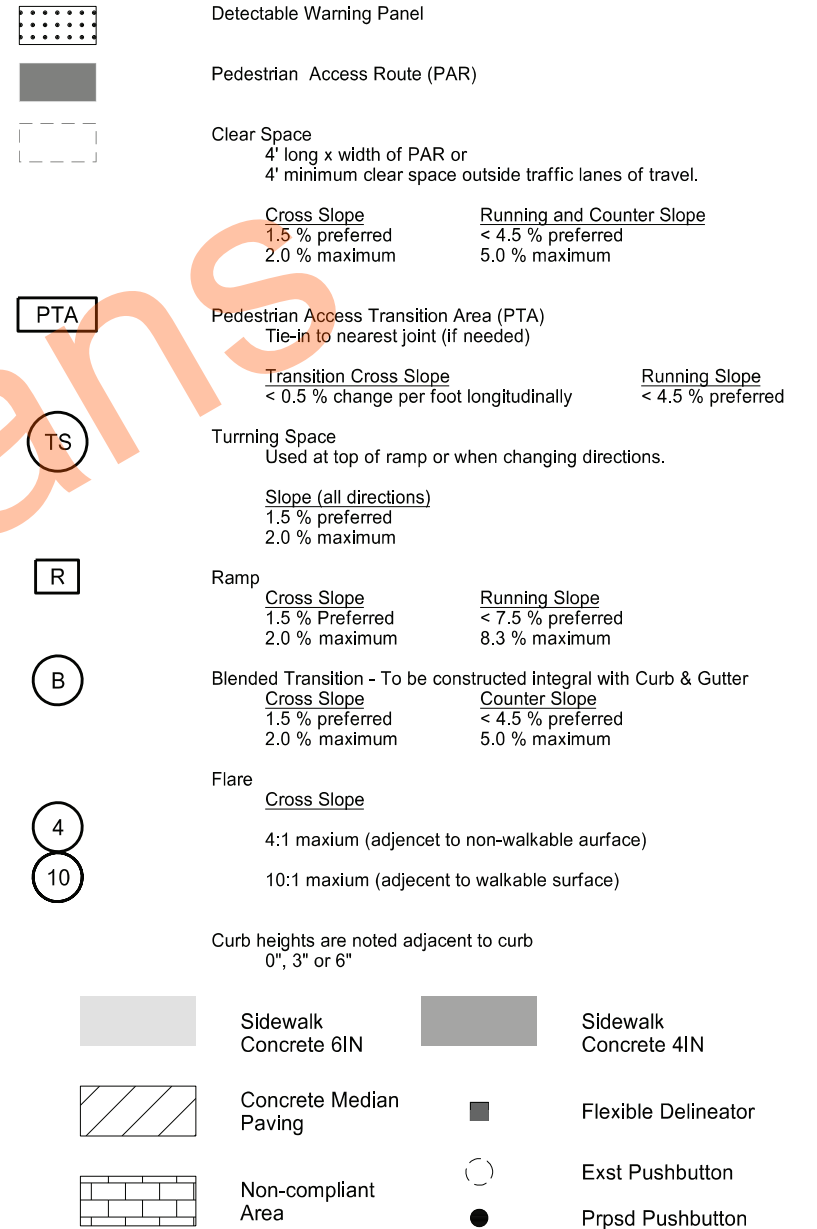
Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	41 LF
750	0115	SIDEWALK CONCRETE 4IN	95 SY
750	0140	SIDEWALK CONCRETE 6IN	10 SY
750	2115	DETECTABLE WARNING PANEL	20 SF

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZZ10	419624.397	1898644.215	1753.126	7577.434 R1	-55.425
ADPZZ11	419614.676	1898643.881	1752.916	7577.294 R1	-45.699
ADPZZ12	419624.182	1898654.213	1753.149	7587.434 R1	-55.409
ADPZZ13	419614.184	1898654.003	1753.013	7587.424 R1	-45.409
ADPZZ14	419613.977	1898663.965	1753.036	7597.388 R1	-45.401
ADPZZ15	419623.975	1898664.175	1753.172	7597.399 R1	-55.401
ADPZZ16	419626.063	1898673.406	1753.193	7606.586 R1	-57.673
ADPZZ17	419616.912	1898677.439	1753.068	7610.801 R1	-48.604
ADPZZ18	419646.919	1898688.073	1753.257	7620.835 R1	-78.817
ADPZZ19	419626.646	1898690.265	1753.082	7623.430 R1	-58.591
ADPZZ20	419616.648	1898690.055	1752.911	7623.420 R1	-48.591
ADPZZ21	419616.619	1898691.431	1752.807	7624.796 R1	-48.59
ADPZZ22	419609.703	1898682.853	1752.257	7616.358 R1	-41.504
ADPZZ23	419626.617	1898691.641	1752.978	7624.806 R1	-58.59
ADPZZ24	419614.533	1898695.503	1752.758	7628.909 R1	-46.585
ADPZZ25	419616.493	1898697.43	1752.357	7630.796 R1	-48.583
ADPZZ26	419626.491	1898697.639	1752.528	7630.806 R1	-58.583
ADPZZ27	419626.402	1898701.859	1752.528	7635.027 R1	-58.579
ADPZZ28	419628.398	1898702.08	1753.089	7635.208 R1	-60.579
ADPZZ29	419639.066	1898703.179	1753.419	7636.094 R1	-71.267
ADPZZ30	419632.999	1898682.542	1753.257	7615.582 R1	-64.79
ADPZZ31	419646.486	1898698.066	1753.616	7630.835 R1	-78.583
ADPZZ32	419653.904	1898688.221	1753.805	7620.843 R1	-85.804
ADPZZ33	419653.694	1898698.219	1753.794	7630.843 R1	-85.793
ADPZZ34	419663.898	1898688.62	1754.205	7621.043 R1	-95.803
ADPZZ35	419663.088	1898698.417	1754.026	7630.854 R1	-95.189
ADPZA04	419648.862	1898663.397	0	7596.124 R1	-80.267
ADPZA05	419629.019	1898682.725	0	7615.845 R1	-60.814



REGISTERED PROFESSIONAL ENGINEER

AMY J. SCHAAF

PE-40939

DATE *[Signature]* 07/22/25

NORTH DAKOTA

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)

4
10

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

Sidewalk Concrete 6IN

Sidewalk Concrete 4IN

Concrete Median Paving

Flexible Delineator

Non-compliant Area

Exst Pushbutton

Prpsd Pushbutton

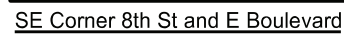
Notes:

1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ249	419504.945	1898678.185	1752.934	7613.780 R1	63.326
ADPZ250	419500.562	1898678.035	1752.917	7613.717 R1	67.711
ADPZ251	419504.955	1898683.186	1752.759	7618.780 R1	63.216
ADPZ252	419500.456	1898683.092	1752.917	7618.775 R1	67.716
ADPZ253	419504.854	1898688.017	1752.59	7623.612 R1	63.221
ADPZ254	419500.355	1898687.923	1752.514	7623.607 R1	67.721
ADPZ255	419489.569	1898687.696	1752.403	7623.596 R1	78.509
ADPZ256	419484.573	1898687.456	1752.351	7623.455 R1	83.509
ADPZ257	419484.338	1898691.849	1752.289	7627.852 R1	83.656
ADPZ258	419489.476	1898692.125	1752.341	7628.025 R1	78.514
ADPZ259	419500.26	1898692.422	1752.446	7628.107 R1	67.726
ADPZ260	419504.759	1898692.516	1752.523	7628.112 R1	63.226
ADPZ261	419504.63	1898698.691	1752.06	7634.288 R1	63.233
ADPZ262	419500.131	1898698.596	1751.983	7634.283 R1	67.733
ADPZ263	419507.463	1898703.702	0	7639.241 R1	60.3
ADPZ264	419506.401	1898704.121	1752.122	7639.682 R1	61.353
ADPZ265	419504.504	1898704.688	1751.61	7640.287 R1	63.239
ADPZ266	419500.005	1898704.595	1751.533	7640.283 R1	67.739
ADPZ267	419499.992	1898705.191	1751.524	7640.880 R1	67.739
ADPZ268	419497.878	1898705.161	1751.947	7640.892 R1	69.854

NHU-1-083(145)901			
SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	10 LF
750	0115	SIDEWALK CONCRETE 4IN	18 SY
750	0140	SIDEWALK CONCRETE 6IN	4 SY
750	2115	DETECTABLE WARNING PANEL	9 SF

SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	11 LF
750	0115	SIDEWALK CONCRETE 4IN	21 SY
750	0140	SIDEWALK CONCRETE 6IN	5 SY
750	2115	DETECTABLE WARNING PANEL	10 SF



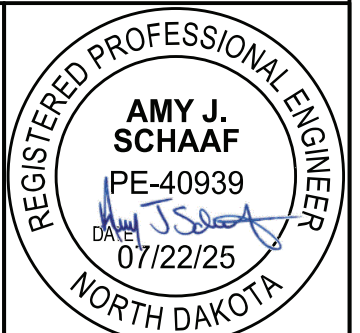
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ269	419502.919	1898747.011	1751.813	7682.633 R1	63.979
ADPZ270	419501.877	1898746.823	1751.792	7682.465 R1	65.024
ADPZ271	419499.884	1898746.629	1751.272	7682.311 R1	67.021
ADPZ272	419494.889	1898746.423	1751.207	7682.204 R1	72.02
ADPZ273	419492.89	1898746.34	1751.681	7682.162 R1	74.019
ADPZ274	419494.642	1898752.416	1751.453	7688.202 R1	72.147
ADPZ275	419499.638	1898752.622	1751.518	7688.308 R1	67.148
ADPZ276	419499.325	1898760.219	1751.701	7695.910 R1	67.309
ADPZ277	419499.139	1898764.716	1751.768	7700.409 R1	67.405
ADPZ278	419494.329	1898760.014	1751.712	7695.804 R1	72.308
ADPZ279	419494.144	1898764.51	1751.779	7700.303 R1	72.404
ADPZ280	419482.728	1898759.536	1751.621	7695.557 R1	83.916
ADPZ281	419477.729	1898759.473	1751.582	7695.594 R1	88.916
ADPZ282	419477.547	1898763.826	1751.56	7699.950 R1	89.011
ADPZ283	419482.543	1898764.032	1751.627	7700.056 R1	84.012
ADPZ284	419498.914	1898770.188	1751.731	7705.885 R1	67.521
ADPZ285	419493.918	1898769.982	1751.812	7705.779 R1	72.52
ADPZ286	419498.708	1898775.184	1751.698	7710.884 R1	67.627
ADPZ287	419493.877	1898775.045	1751.843	7710.841 R1	72.46

- Notes:
1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

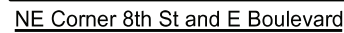
ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

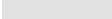
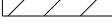
Boulevard Avenue & State Street
N 7th St to Divide Ave



SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	23 LF
750	0115	SIDEWALK CONCRETE 4IN	9 SY
750	0140	SIDEWALK CONCRETE 6IN	5 SY
750	2115	DETECTABLE WARNING PANEL	10 SF



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ236	419626.256	1898746.707	1752.959	7679.868 R1	-59.327
ADPZ237	419624.927	1898746.542	1752.876	7679.731 R1	-57.995
ADPZ238	419622.928	1898746.5	1752.306	7679.728 R1	-55.996
ADPZ239	419622.904	1898747.656	1752.306	7680.884 R1	-55.995
ADPZ240	419617.905	1898747.551	1752.216	7680.879 R1	-50.995
ADPZ241	419615.89	1898748.516	1752.514	7681.884 R1	-48.999
ADPZ242	419617.779	1898753.55	1752.454	7686.879 R1	-50.989
ADPZ243	419622.778	1898753.654	1752.546	7686.884 R1	-55.989
ADPZ244	419622.554	1898764.201	1752.478	7697.433 R1	-55.975
ADPZ245	419617.558	1898764.096	1752.361	7697.428 R1	-50.978
ADPZ246	419617.456	1898769.172	1752.289	7702.505 R1	-50.977
ADPZ247	419622.452	1898769.2	1752.445	7702.433 R1	-55.973
ADPZ248	419608.621	1898757.264	1751.652	7690.775 R1	-41.907
ADPZ406	419623.615	1898762.301	0	7695.513 R1	-56.997

- | | | | |
|---|---------------------------|---|--------------------------|
|  | Sidewalk
Concrete 6IN |  | Sidewalk
Concrete 4IN |
|  | Concrete Median
Paving |  | Flexible Delineator |
|  | Non-compliant
Area |  | Exst Pushbutton |
| | |  | Prpsd Pushbutton |

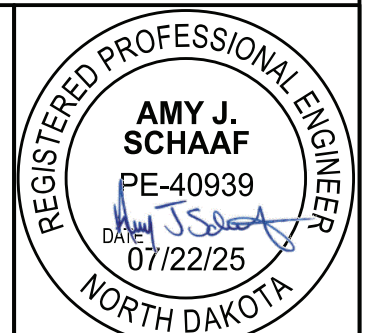
Notes:

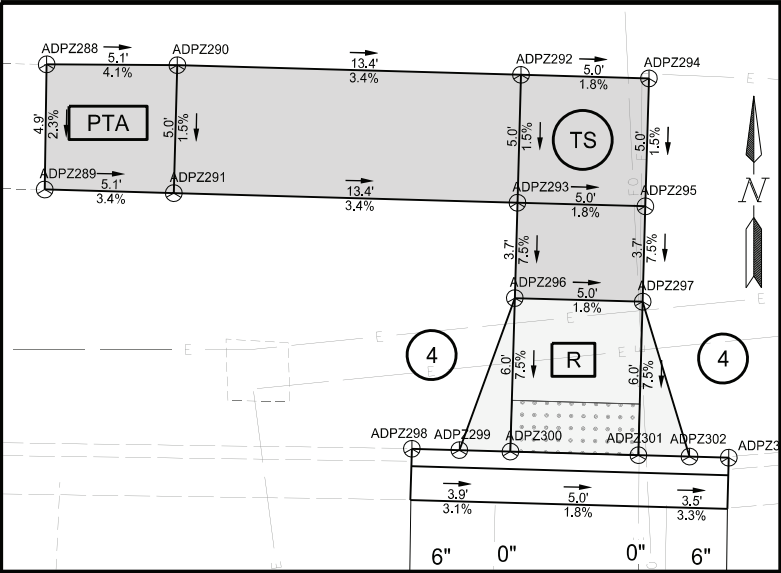
1. All landing, turning spaces, and non-compliant areas to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.
3. See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

ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





NW Corner 9th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ288	419617.231	1899034.571	1748.11	7967.856 R1	-56.045
ADPZ289	419612.339	1899034.495	1747.998	7967.877 R1	-51.152
ADPZ290	419617.196	1899039.68	1747.901	7972.964 R1	-56.112
ADPZ291	419612.198	1899039.54	1747.826	7972.924 R1	-51.112
ADPZ292	419616.82	1899053.106	1747.443	7986.396 R1	-56.004
ADPZ293	419611.822	1899052.967	1747.368	7986.355 R1	-51.004
ADPZ294	419616.68	1899058.105	1747.354	7991.395 R1	-55.964
ADPZ295	419611.682	1899057.965	1747.279	7991.355 R1	-50.964
ADPZ296	419608.097	1899052.862	1747.089	7986.326 R1	-47.278
ADPZ297	419607.957	1899057.86	1747	7991.325 R1	-47.238
ADPZ298	419602.207	1899048.841	1747.235	7982.422 R1	-41.309
ADPZ299	419602.156	1899050.695	1747.138	7984.277 R1	-41.294
ADPZ300	419602.1	1899052.695	1746.639	7986.277 R1	-41.278
ADPZ301	419601.96	1899057.693	1746.548	7991.277 R1	-41.238
ADPZ302	419601.904	1899059.692	1746.993	7993.277 R1	-41.222
ADPZ303	419601.861	1899061.224	1746.932	7994.810 R1	-41.209

NHU-1-083(145)901

SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	12	LF
750	0115	SIDEWALK CONCRETE 4IN	15	SY
750	0140	SIDEWALK CONCRETE 6IN	5	SY
750	2115	DETECTABLE WARNING PANEL	10	SF



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 6IN



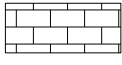
Sidewalk
Concrete 4IN



Concrete Median
Paving



Flexible Delineator



Non-compliant
Area



Exst Pushbutton



Prpsd Pushbutton

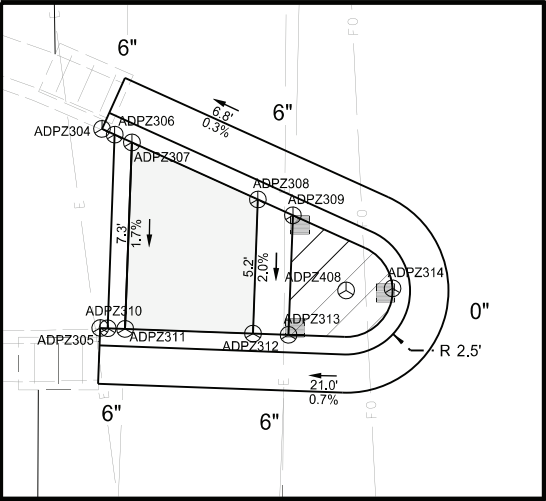
Notes: 1. All landing, turning spaces, and non-compliant areas to be constructed as separate pours from adjacent sidewalk or ramps.
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.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

ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave





W Median 9th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ304	419556.003	1899050.22	1747.632	7984.723 R1	4.859
ADPZ305	419548.224	1899050.152	1747.51	7984.810 R1	12.638
ADPZ306	419555.778	1899050.718	1747.639	7985.225 R1	5.074
ADPZ307	419555.473	1899051.39	1747.42	7985.903 R1	5.365
ADPZ308	419553.245	1899056.312	1747.152	7990.869 R1	7.494
ADPZ309	419552.626	1899057.68	1747.671	7992.248 R1	8.086
ADPZ310	419548.213	1899050.442	1747.51	7985.100 R1	12.643
ADPZ311	419548.188	1899051.124	1747.458	7985.783 R1	12.654
ADPZ312	419548.006	1899056.121	1747.048	7990.782 R1	12.737
ADPZ313	419547.955	1899057.51	1747.588	7992.171 R1	12.76
ADPZ314	419549.772	1899061.574	1747.102	7996.198 R1	10.862
ADPZ408	419549.691	1899059.758	0	7994.385 R1	10.979

NHU-1-083(145)901				
SPEC	CODE	PAY ITEM	QTY UNIT	
748	0140	CURB & GUTTER-TYPE I	28	LF
748	0520	CURB-TYPE I	13	LF
750	0140	SIDEWALK CONCRETE 6IN	3	SY
750	0200	CONCRETE MEDIAN PAVING	2	SY

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	82	17

- 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"

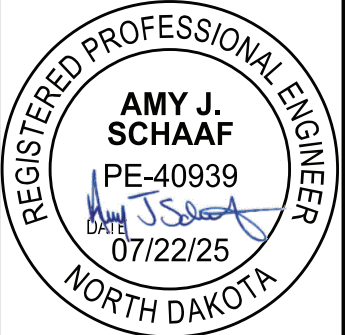
- Sidewalk
Concrete 6IN
- Sidewalk
Concrete 4IN
- Concrete Median
Paving
- Flexible Delineator
- Non-compliant
Area
- Exst Pushbutton
- Prpsd Pushbutton

- Notes:
1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

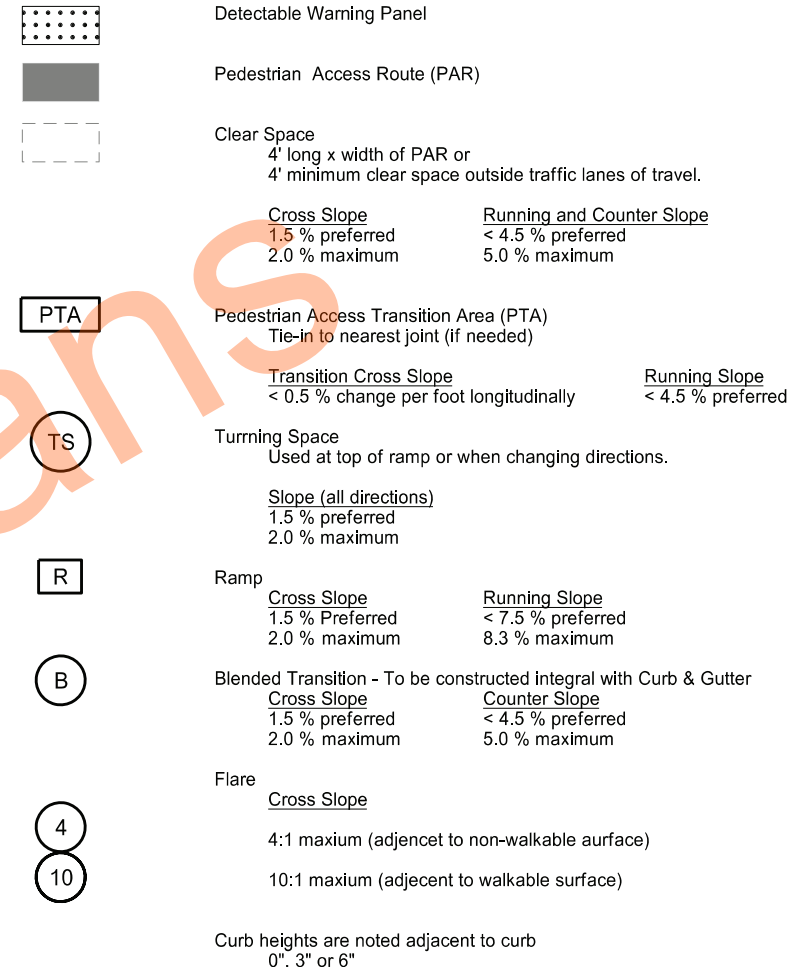
ADA Ramp Details

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	20 LF
750	0115	SIDEWALK CONCRETE 4IN	33 SY
750	0140	SIDEWALK CONCRETE 6IN	9 SY
750	2115	DETECTABLE WARNING PANEL	20 SF



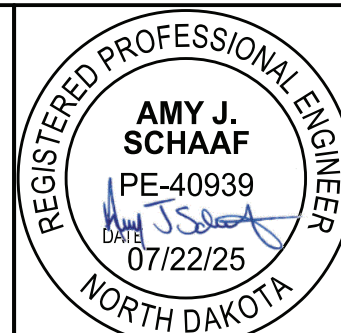
	Sidewalk Concrete 6IN		Sidewalk Concrete 4IN
	Concrete Median Paving		Flexible Delineator
	Non-compliant Area		Exst Pushbutton
			Prpsd Pushbutton

Notes:

1. All landing, turning spaces, and non-compliant areas 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 or relocation details on pushbuttons.

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

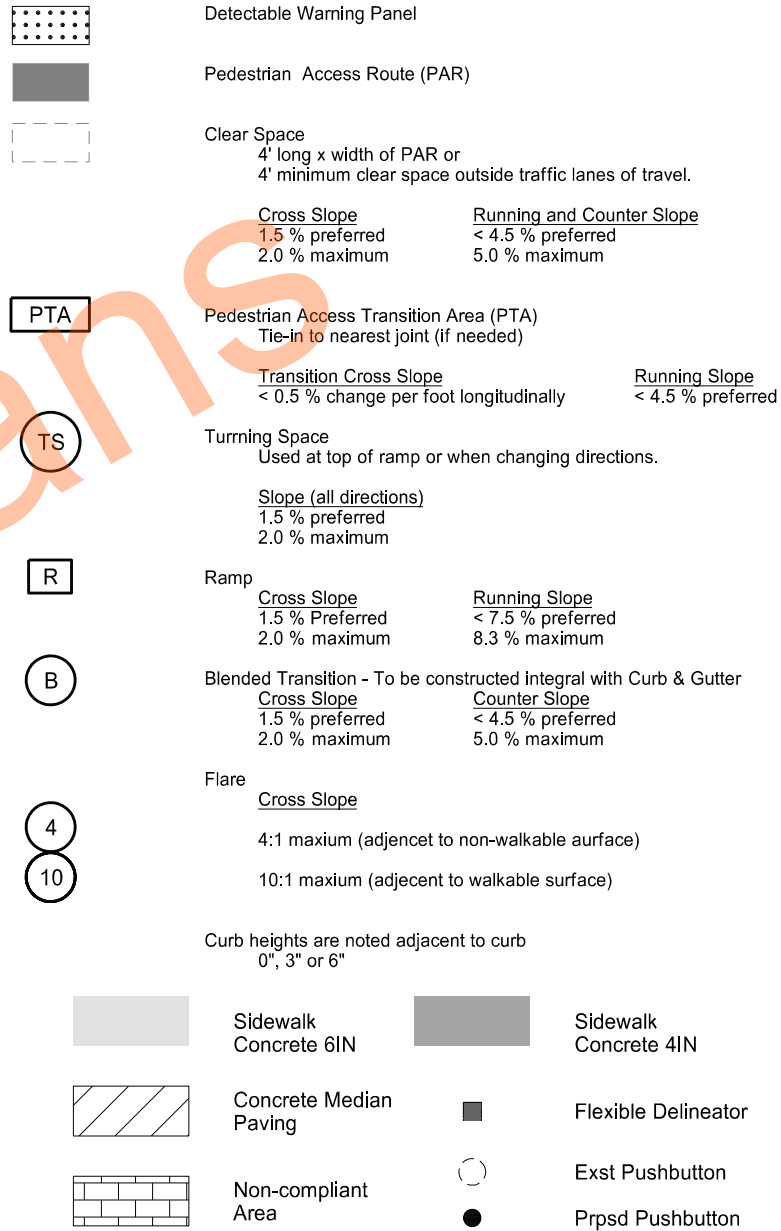


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	82	19



POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ338	419478.643	1899128.375	1746.668	8064.405 R1	80.645
ADPZ339	419485.422	1899129.044	1746.709	8064.938 R1	73.854
ADPZ340	419487.422	1899129.544	1746.213	8065.398 R1	71.845
ADPZ341	419487.398	1899131.391	1746.245	8067.246 R1	71.832
ADPZ342	419492.397	1899131.456	1746.237	8067.211 R1	66.832
ADPZ343	419494.383	1899132.521	1746.736	8068.237 R1	64.825
ADPZ344	419492.311	1899137.455	1746.687	8073.211 R1	66.798
ADPZ345	419487.32	1899137.39	1746.74	8073.245 R1	71.79
ADPZ346	419492.281	1899140.455	1746.912	8076.210 R1	66.769
ADPZ347	419487.281	1899140.39	1746.987	8076.245 R1	71.769
ADPZ348	419475.177	1899140.013	1746.839	8076.110 R1	83.878
ADPZ349	419475.127	1899144.173	1746.964	8080.270 R1	83.845
ADPZ350	419487.229	1899144.39	1747.047	8080.245 R1	71.741
ADPZ351	419492.229	1899144.455	1746.972	8080.210 R1	66.741
ADPZ352	419492.102	1899154.274	1747.056	8090.030 R1	66.673
ADPZ353	419487.102	1899154.209	1747.18	8090.065 R1	71.673
ADPZ354	419504.563	1899142.332	1746.803	8077.842 R1	54.452
ADPZ407	419479.075	1899158.689	0	8094.704 R1	79.608

NHU-1-083(145)901			
SPEC	CODE	PAY ITEM	QTY UNIT
748	0140	CURB & GUTTER-TYPE I	32 LF
750	0115	SIDEWALK CONCRETE 4IN	15 SY
750	0140	SIDEWALK CONCRETE 6IN	5 SY
750	2115	DETECTABLE WARNING PANEL	10 SF



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

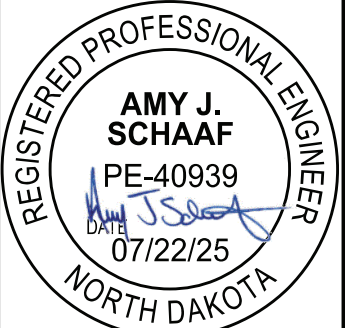
2. Portions of Panels to be Removed on radial panels will be incidental to bid item. No additional payment will be made for cut panels. Payment will be for area installed.

3. See Section 150 for reset or relocation details on pushbuttons.

ADA Ramp Details

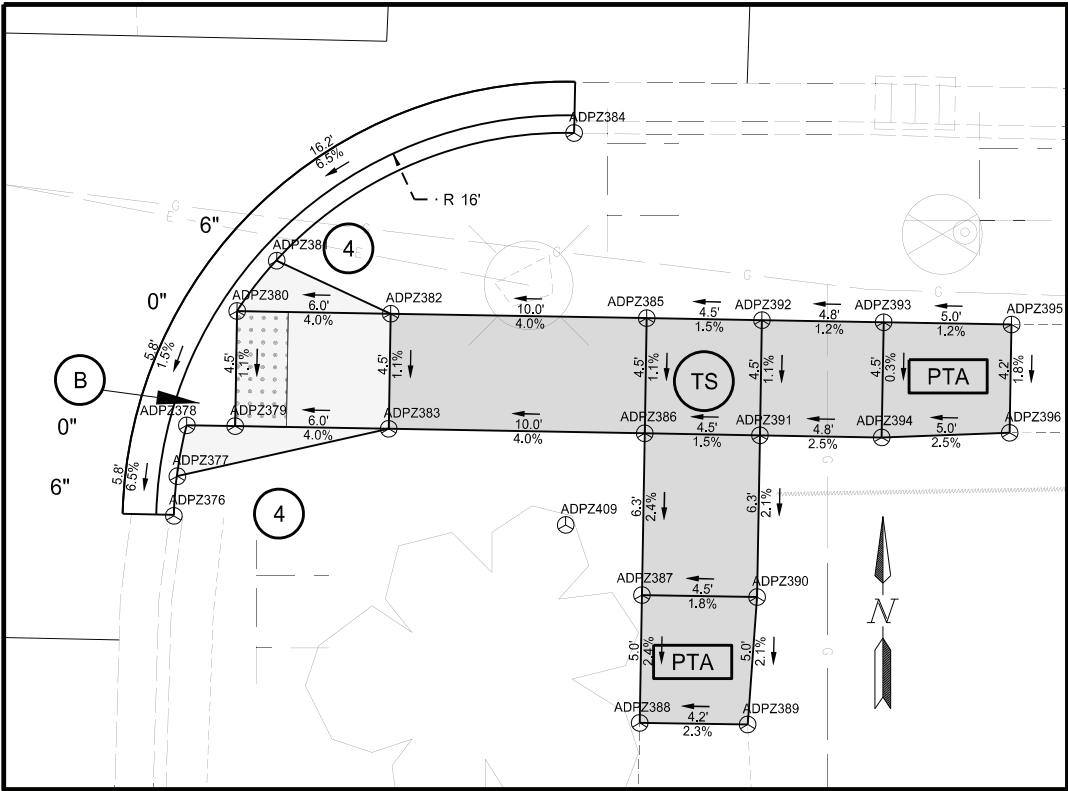
Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave



SU-1-083(145)981

SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	25	LF
750	0115	SIDEWALK CONCRETE 4IN	18	SY
750	0140	SIDEWALK CONCRETE 6IN	5	SY
750	2115	DETECTABLE WARNING PANEL	9	SF



SE Corner 10th St and E Boulevard

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ376	419474.769	1899501.943	1744.525	167.446 R1	46.879
ADPZ377	419476.319	1899502.081	1744.369	167.473 R1	45.323
ADPZ378	419478.307	1899502.45	1744.234	167.699 R1	43.314
ADPZ379	419478.274	1899504.34	1744.262	169.587 R1	43.211
ADPZ380	419482.773	1899504.419	1744.311	169.343 R1	38.718
ADPZ381	419484.739	1899505.964	1744.929	170.744 R1	36.647
ADPZ382	419482.668	1899510.418	1744.548	175.335 R1	38.394
ADPZ383	419478.169	1899510.339	1744.5	175.578 R1	42.887
ADPZ384	419489.729	1899517.583	1745.871	181.977 R1	30.839
ADPZ385	419482.494	1899520.423	1744.943	185.327 R1	37.852
ADPZ386	419477.995	1899520.345	1744.895	185.570 R1	42.346
ADPZ387	419471.675	1899520.234	1744.745	185.912 R1	48.657
ADPZ388	419466.676	1899520.147	1744.626	186.182 R1	53.65
ADPZ389	419466.616	1899524.364	1744.721	190.393 R1	53.408
ADPZ390	419471.597	1899524.734	1744.828	190.405 R1	48.414
ADPZ391	419477.916	1899524.844	1744.962	190.064 R1	42.103
ADPZ392	419482.415	1899524.922	1745.01	189.820 R1	37.609
ADPZ393	419482.332	1899529.679	1745.069	194.570 R1	37.352
ADPZ394	419477.833	1899529.6	1745.082	194.814 R1	41.845
ADPZ395	419482.245	1899534.678	1745.131	199.563 R1	37.082
ADPZ396	419478.015	1899534.602	1745.208	199.790 R1	41.306
ADPZ409	419474.416	1899517.254	0	182.744 R1	46.136

- 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)
- TS

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 6IN

Sidewalk
Concrete 4IN

Concrete Median
Paving

Flexible Delineator

Non-compliant
Area

Exst Pushbutton

Prpsd Pushbutton

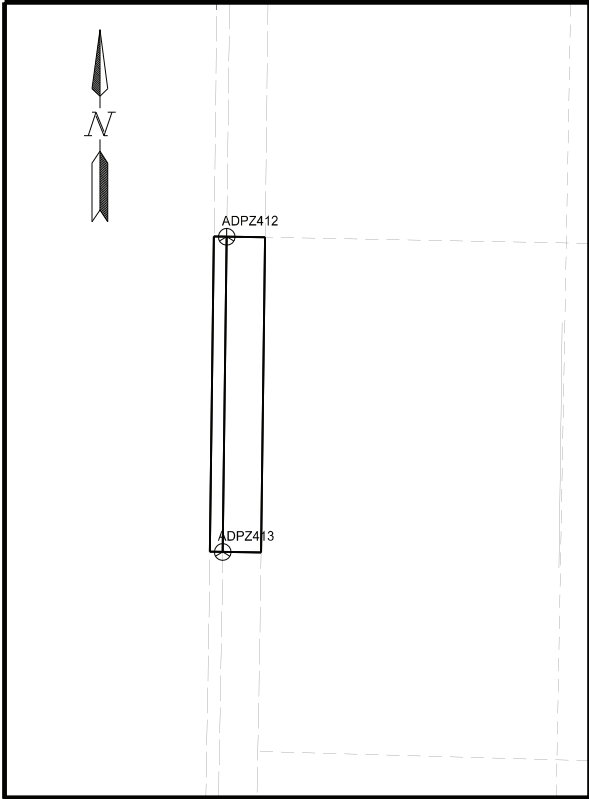
Notes: 1. All landing, turning spaces, and non-compliant areas to be constructed as separate pours from adjacent sidewalk or ramps.
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3. See Section 150 for reset or relocation details on pushbuttons.

ADA Ramp Details

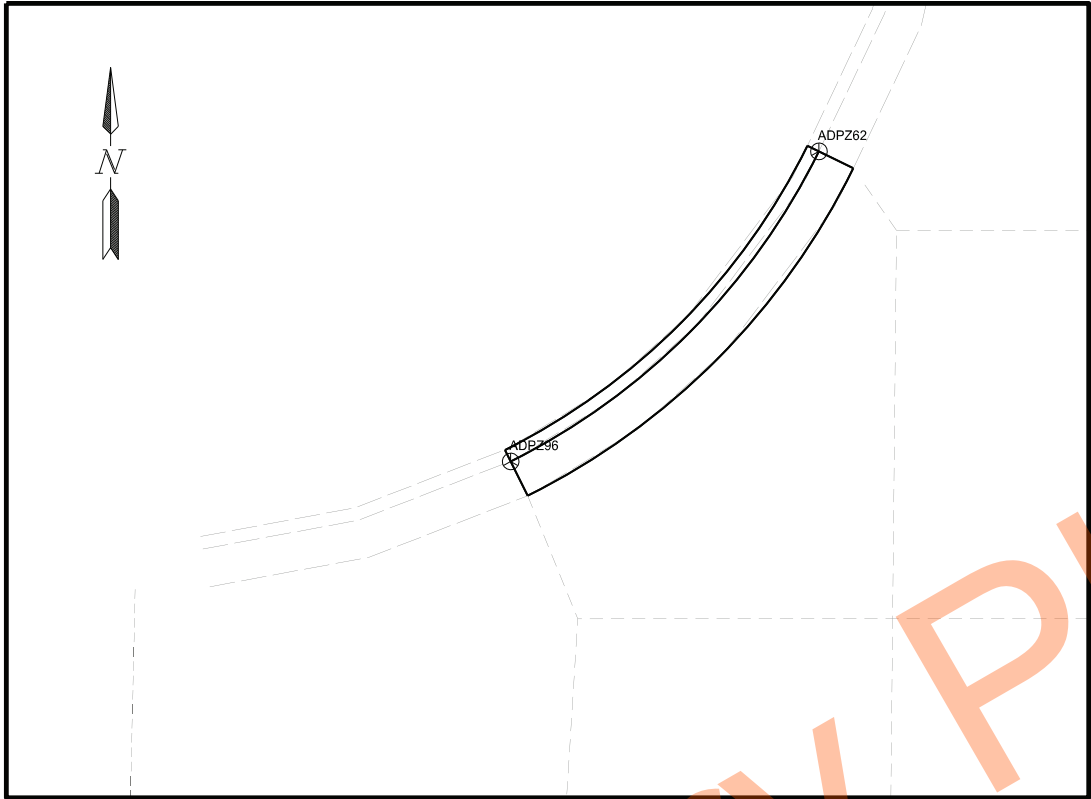
Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

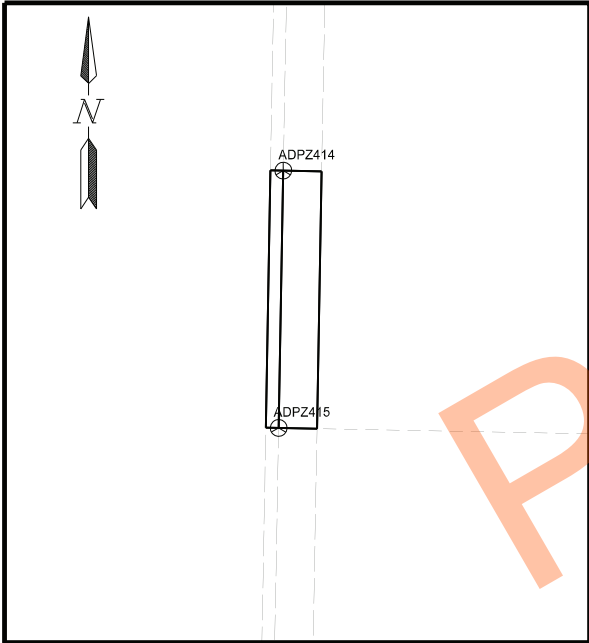




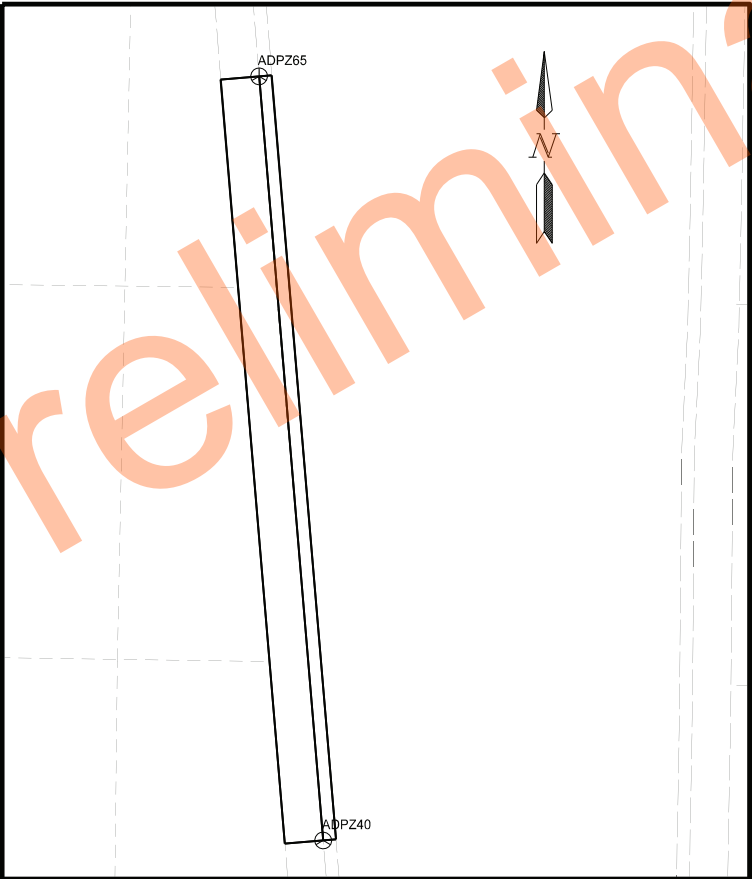
Southbound Spot Curb Replacement 94+00



Southbound Curb Replacement 95+40



Southbound Spot curb Replacement 93+50



Southbound Spot curb Replacement 88+20

NHU-1-083(145)901

SPEC	CODE	PAY ITEM	QTY	UNIT
748	0140	CURB & GUTTER-TYPE I	70	LF

POINT	NORTHING	EASTING	STATION	OFFSET
ADPZ40	420039.574	1899523.006	8810.501 R1	-3.892
ADPZ62	420775.876	1899475.331	9545.779 R1	-65.374
ADPZ65	420069.43	1899520.501	8840.305 R1	-6.957
ADPZ96	420763.76	1899463.283	9533.439 R1	-77.192
ADPZ412	420631.766	1899488.406	9401.940 R1	-49.598
ADPZ413	420619.45	1899488.247	9389.623 R1	-49.525
ADPZ414	420588.225	1899487.671	9358.393 R1	-49.515
ADPZ415	420578.17	1899487.49	9348.336 R1	-49.508

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 (adjecent to walkable surface)

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

Sidewalk Concrete 6IN

Sidewalk Concrete 4IN

Concrete Median Paving

Flexible Delineator

Non-compliant Area

Exst Pushbutton

Prpsd Pushbutton

Notes:

1. All landing, turning spaces, and non-compliant areas 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.

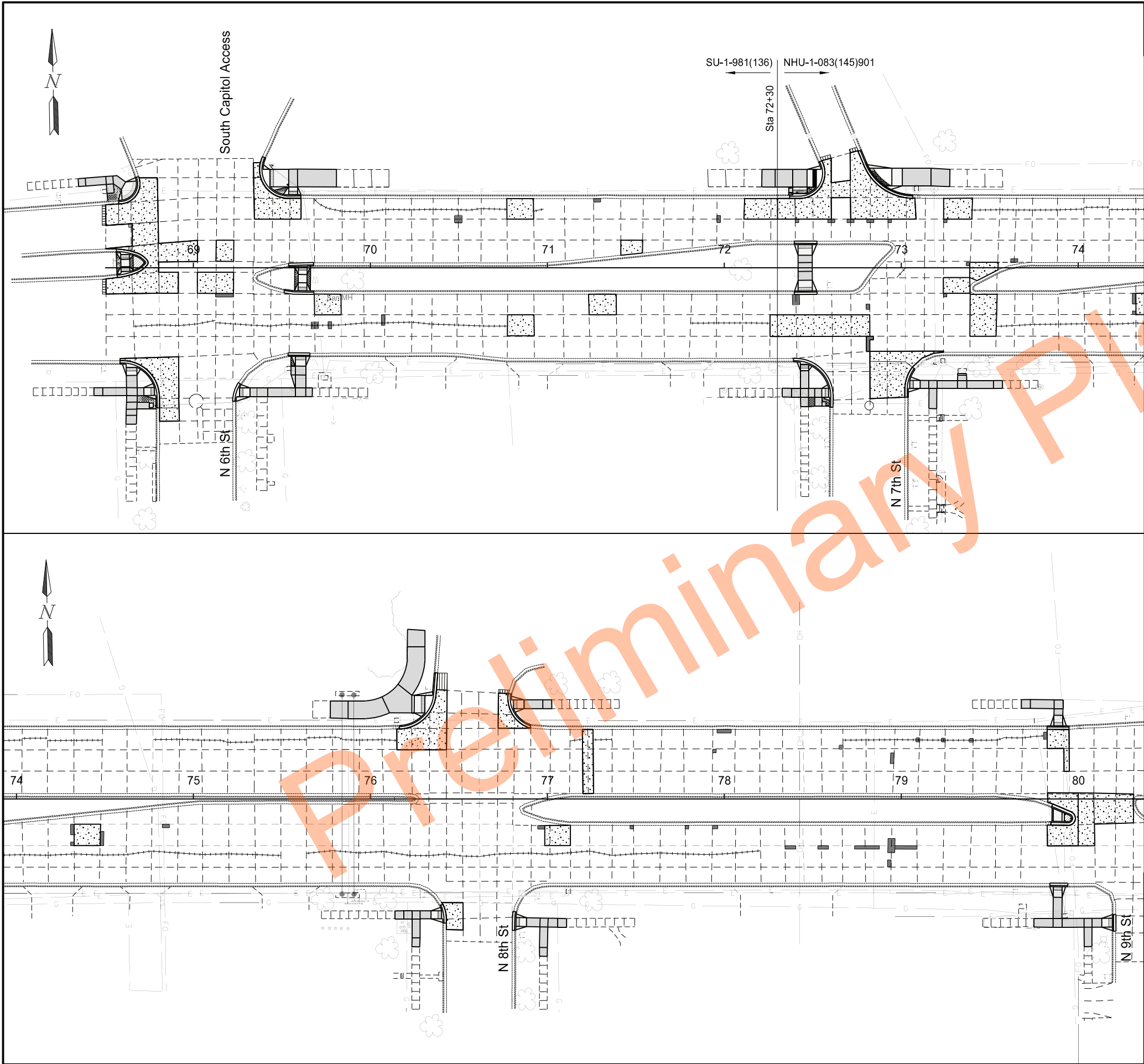
3. See Section 150 for reset or relocation details on pushbuttons.

Spot Curb Replacement

Boulevard Ave
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Ave

7/16/2025 4:20:52 PM loganlund R:\Projects\22000\22900\22942\INDDOT\Project_Number\Design\080_Layout\080LO_ADA.dgn



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	90	1

SU-1-981(136)

SPEC CODE PAY ITEM		QTY UNIT
SU-1-981(136)		
430	0500 COMMERCIAL GRADE ASPHALT	
	Sta 68+50 to Sta 68+52 LT	1 TON
	Sta 68+50 to Sta 68+52 RT	1 TON
NHU-1-083(145)901		
430	0500 COMMERCIAL GRADE ASPHALT	
	Sta 72+54 to Sta 72+76 LT	2 TON
	Sta 76+37 to Sta 76+79 LT	3 TON

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Detectable Warning Panels

Concrete Pavement Repair-Full Depth Doweled

Spall Repair - Partial Depth

Concrete Median Paving

Commercial Grade Asphalt

Curb & Gutter - Type I

Curb Type I

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.

Paving Layouts

Boulevard Avenue

N 6th St to N 7th St

Boulevard Avenue & State Street

N 7th St to Divide Avenue

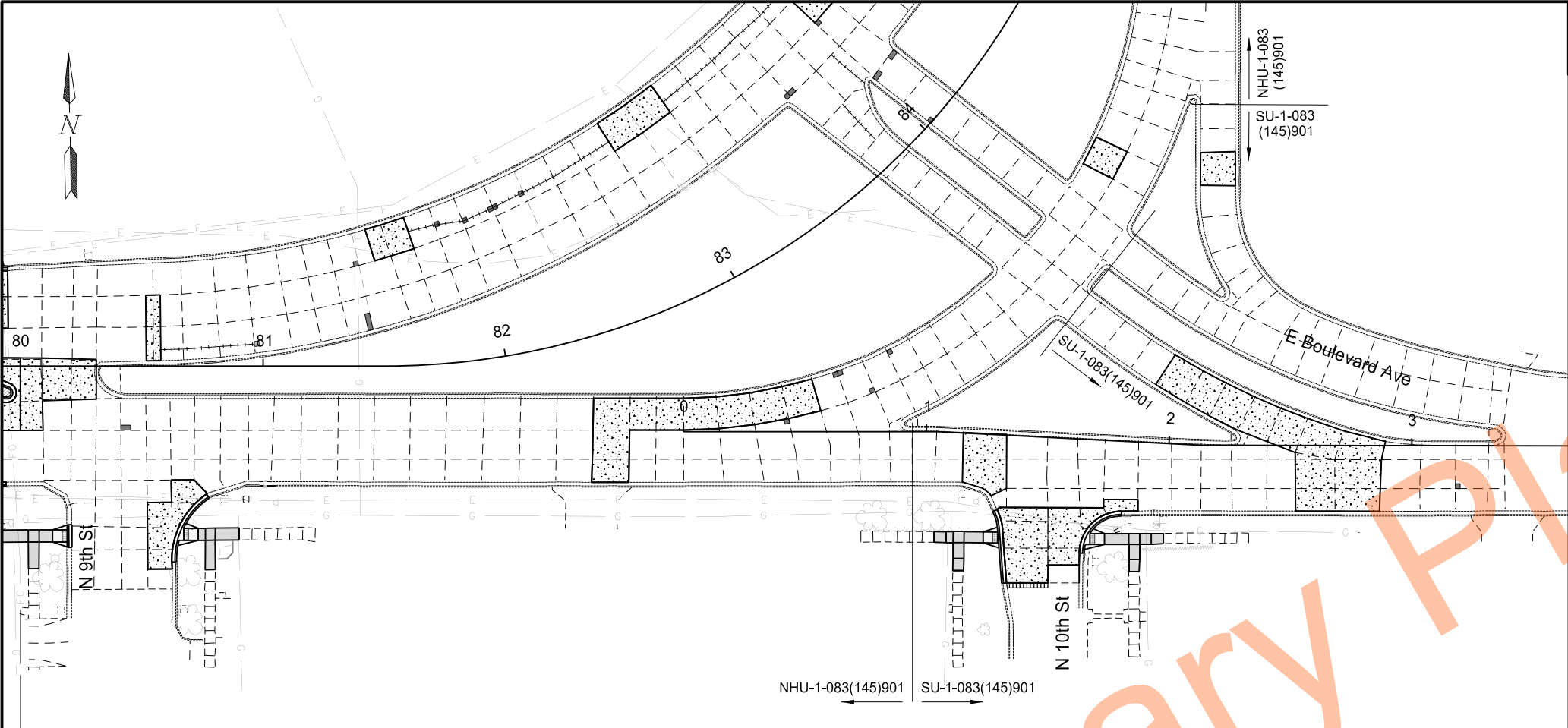
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	90	2

SPEC	CODE	PAY ITEM	QTY	UNIT
430	0500	SU-1-083(145)901 COMMERCIAL GRADE ASPHALT Sta 1+36 to Sta 1+53 RT		2 TON

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Detectable Warning Panels

Concrete Pavement Repair-
Full Depth Doweled

Spall Repair - Partial Depth

Concrete Median Paving

Commercial Grade Asphalt

Curb & Gutter - Type I

Curb Type I

Random Crack Stitching

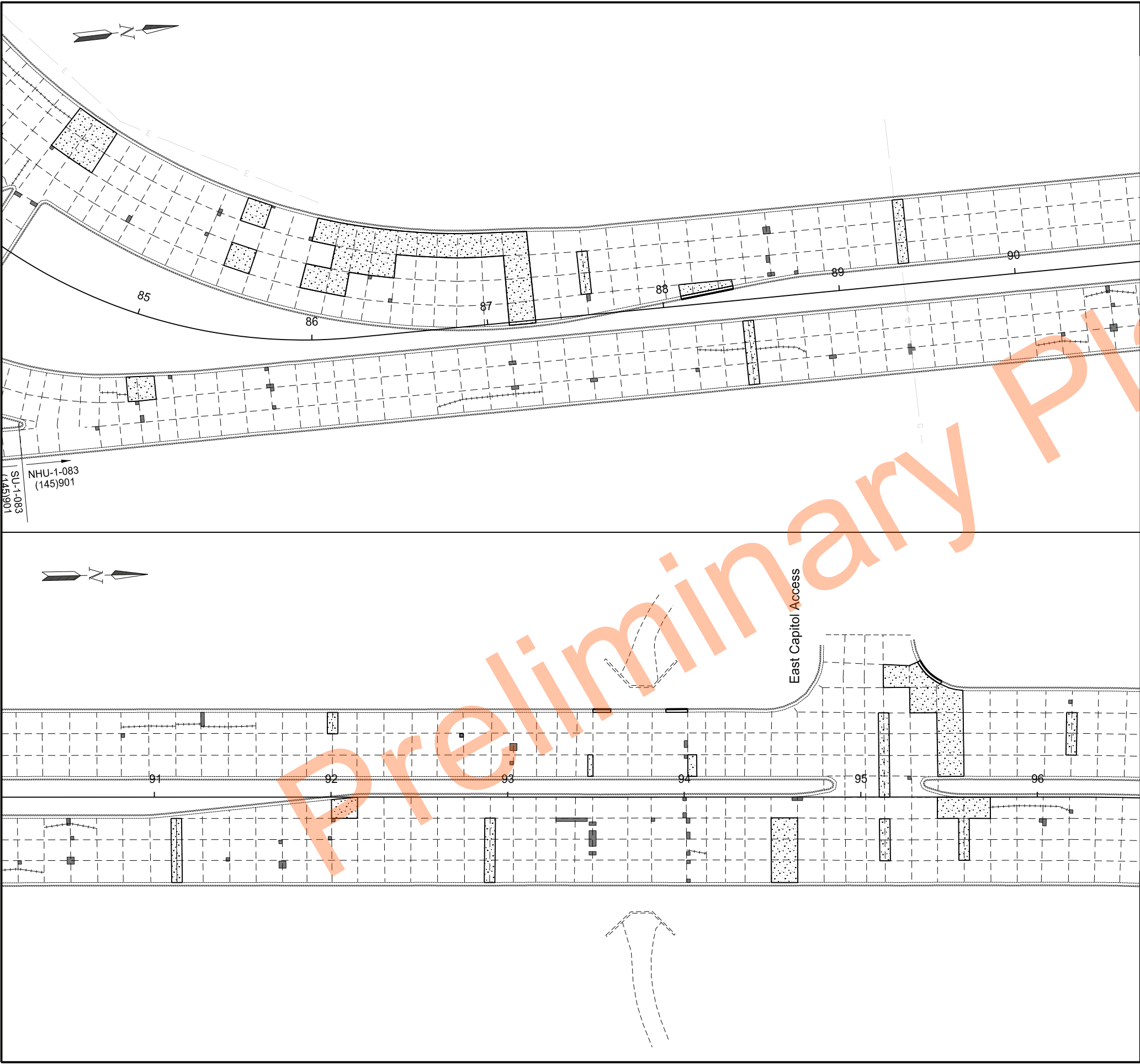
NOTES:
CPR full depth and spall locations are approximate and shown for informational purposes. Refer to Section 11 for quantities and locations.

Paving Layouts

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	90	3

Legend:

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

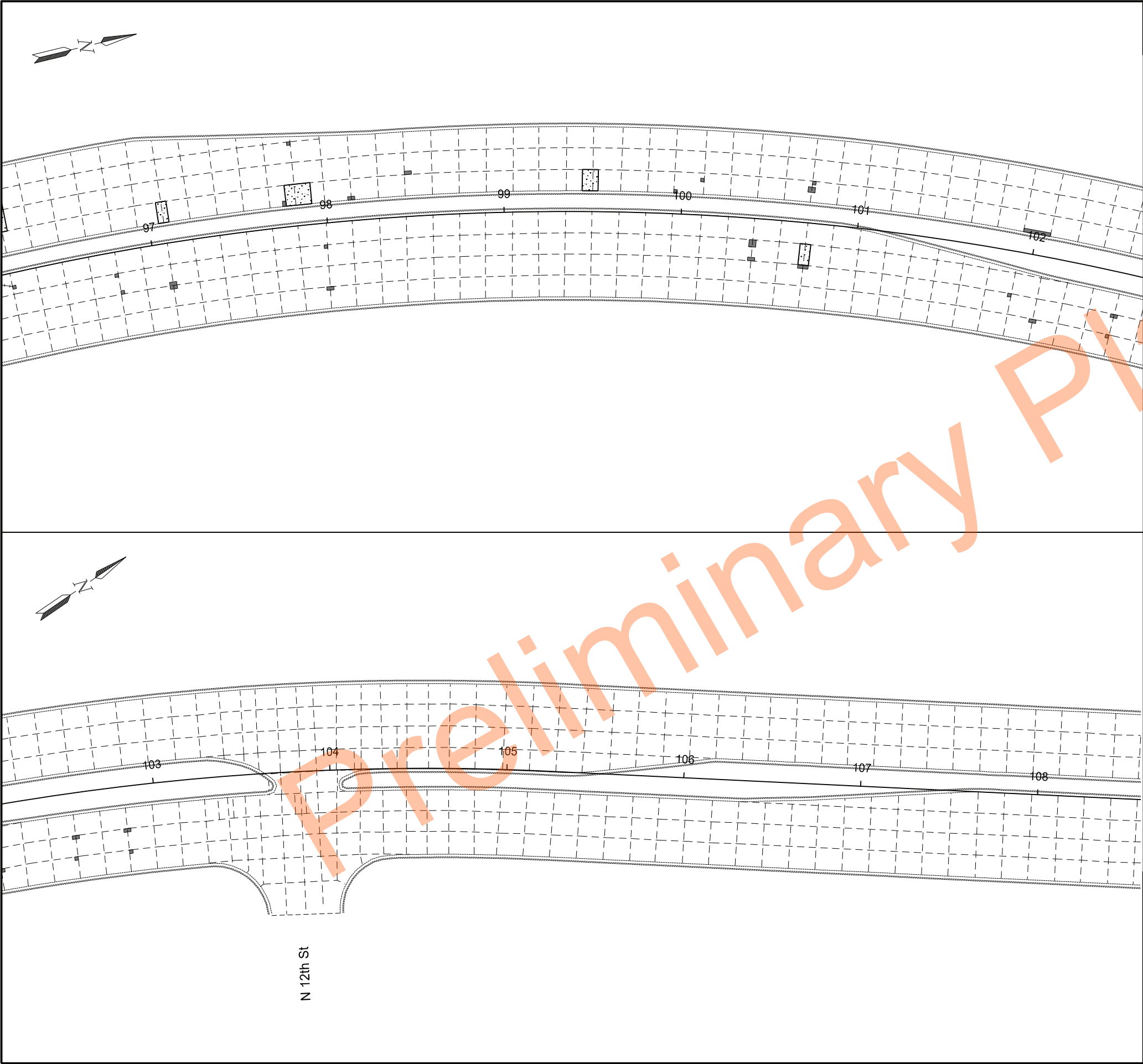
NOTES:

CPR full depth and spall locations are approximate and shown for informational purposes. Refer to Section 11 for quantities and locations.

Paving Layouts

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	90	4

Sidewalk Concrete 4IN

Sidewalk Concrete 6IN

Detectable Warning Panels

Concrete Pavement Repair-
Full Depth Doweled

Spall Repair - Partial Depth

Concrete Median Paving

Commercial Grade Asphalt

Curb & Gutter - Type I

Curb Type I

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.

Paving Layouts

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue

REGISTERED PROFESSIONAL ENGINEER

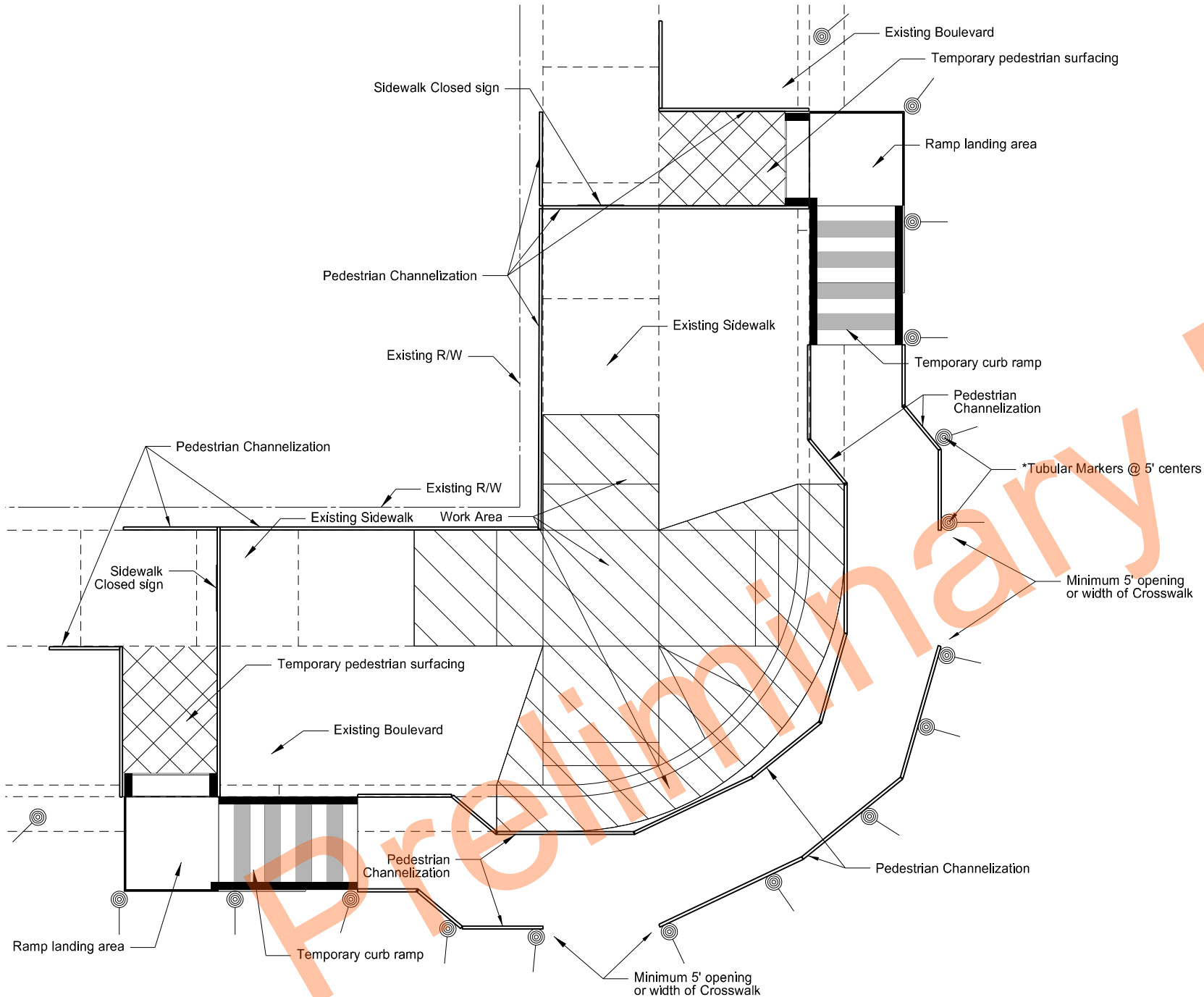
DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	100	3
SU-1-981(136)				



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

Temporary Pedestrian Walkway

Temporary Pedestrian Facilities Estimate Summary

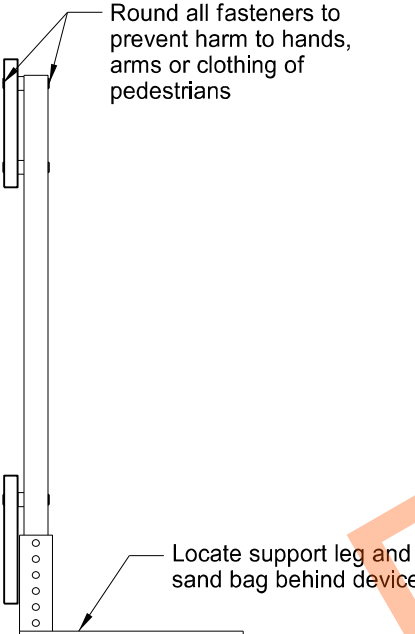
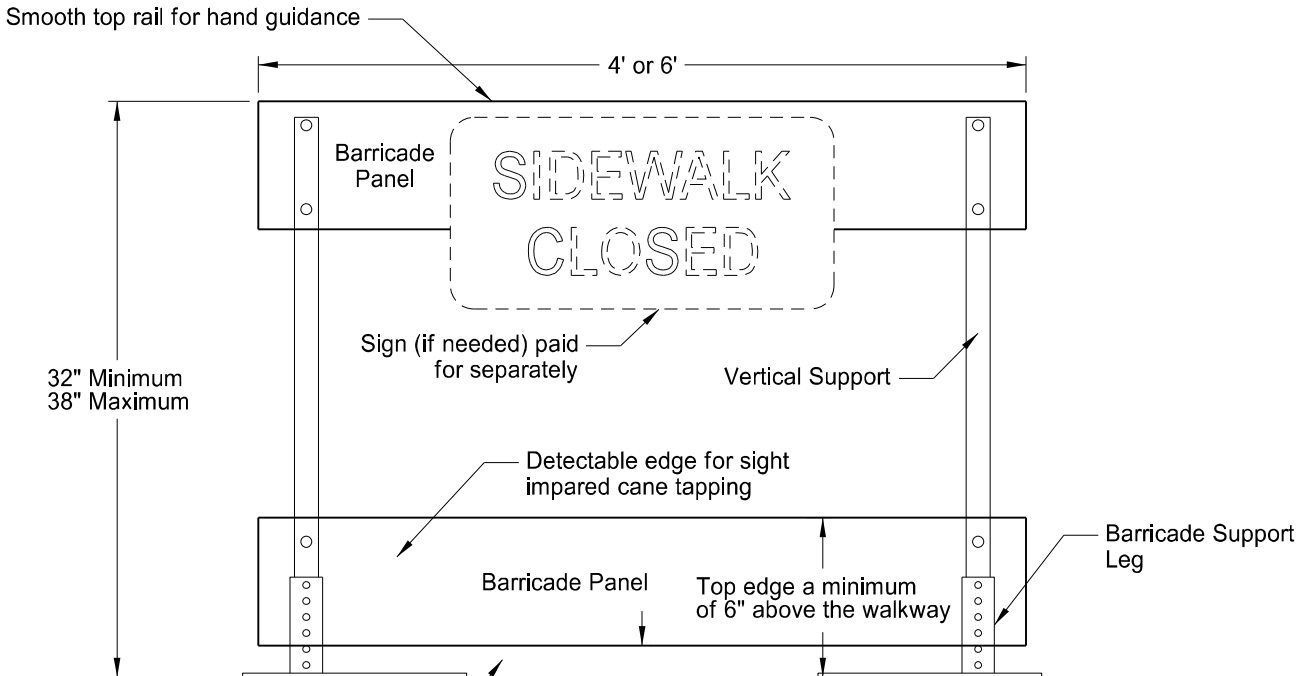
704-1068 Pedestrian Walkway				
Intersection	Pedestrian Channelization	Temporary Pedestrian Surfacing	704-2108 Temporary Curb Ramp	R9-9-24 Sidewalk Closed Sign
Phase 1A				
N 6th St - NE	200 LF	2 SY	1 EA	1 EA
N 6th St - SE	290 LF	13 SY	2 EA	2 EA
N 7th St - N	340 LF	4 SY	2 EA	2 EA
N 7th St - SE	280 LF	6 SY	2 EA	2 EA
N 8th St - NE	150 LF	5 SY	1 EA	1 EA
N 8th St - SW	230 LF	12 SY	2 EA	2 EA
N 9th St - N	110 LF	5 SY	1 EA	1 EA
N 9th St - SW	300 LF	14 SY	2 EA	2 EA
TOTAL	1900 LF	61 SY	13 EA	13 EA
Phase 1B				
N 6th St - NW	180 LF	5 SY	1 EA	1 EA
N 6th St - SW	250 LF	11 SY	2 EA	2 EA
N 7th St - SW	270 LF	12 SY	2 EA	2 EA
N 8th St - NW	350 LF	6 SY	2 EA	2 EA
N 8th St - SE	270 LF	15 SY	2 EA	2 EA
N 9th St - SE	250 LF	13 SY	2 EA	2 EA
TOTAL	1570 LF	62 SY	11 EA	11 EA
Phase 4				
N 10th St	540 LF	26 SY	5 EA	4 EA
TOTAL	540 LF	26 SY	5 EA	4 EA

Temporary Pedestrian Routes
Workzone Traffic Control

E Boulevard Ave
Concrete Repair



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	100	4
		SU-1-981(136)		



NOTES:

Sidewalk Barricades

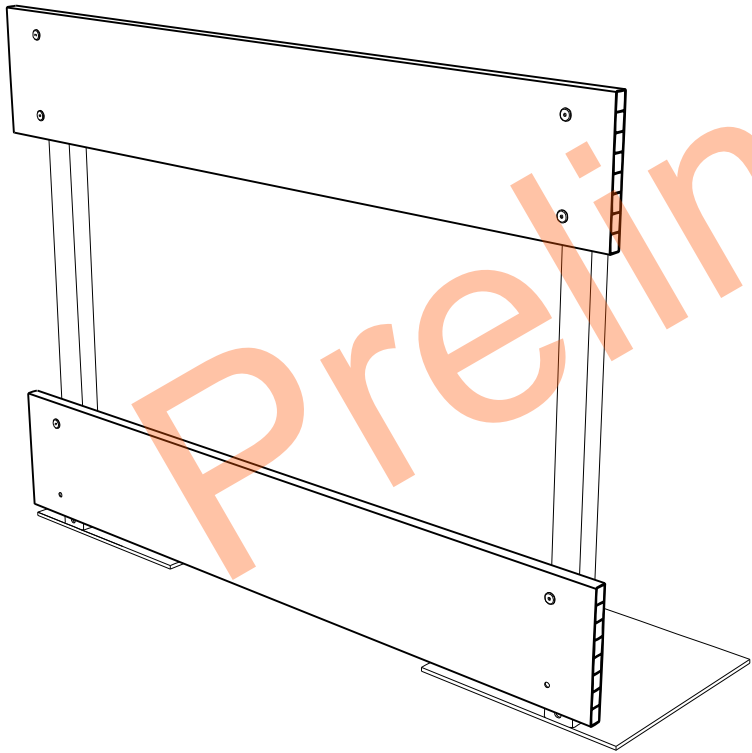
1. Provide self standing sidewalk barricade with no supports extending into the pedestrians path.
2. Use orange or orange and white diagonal striped barricade panels contrasting with the walkway surface.
3. Provide ADA compliant and NCHRP 350 or Mash Test Level 3 (TL3) approved sidewalk barricades.
4.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

Space to allow for water passage

Existing Ground

Front View

End View



Perspective View

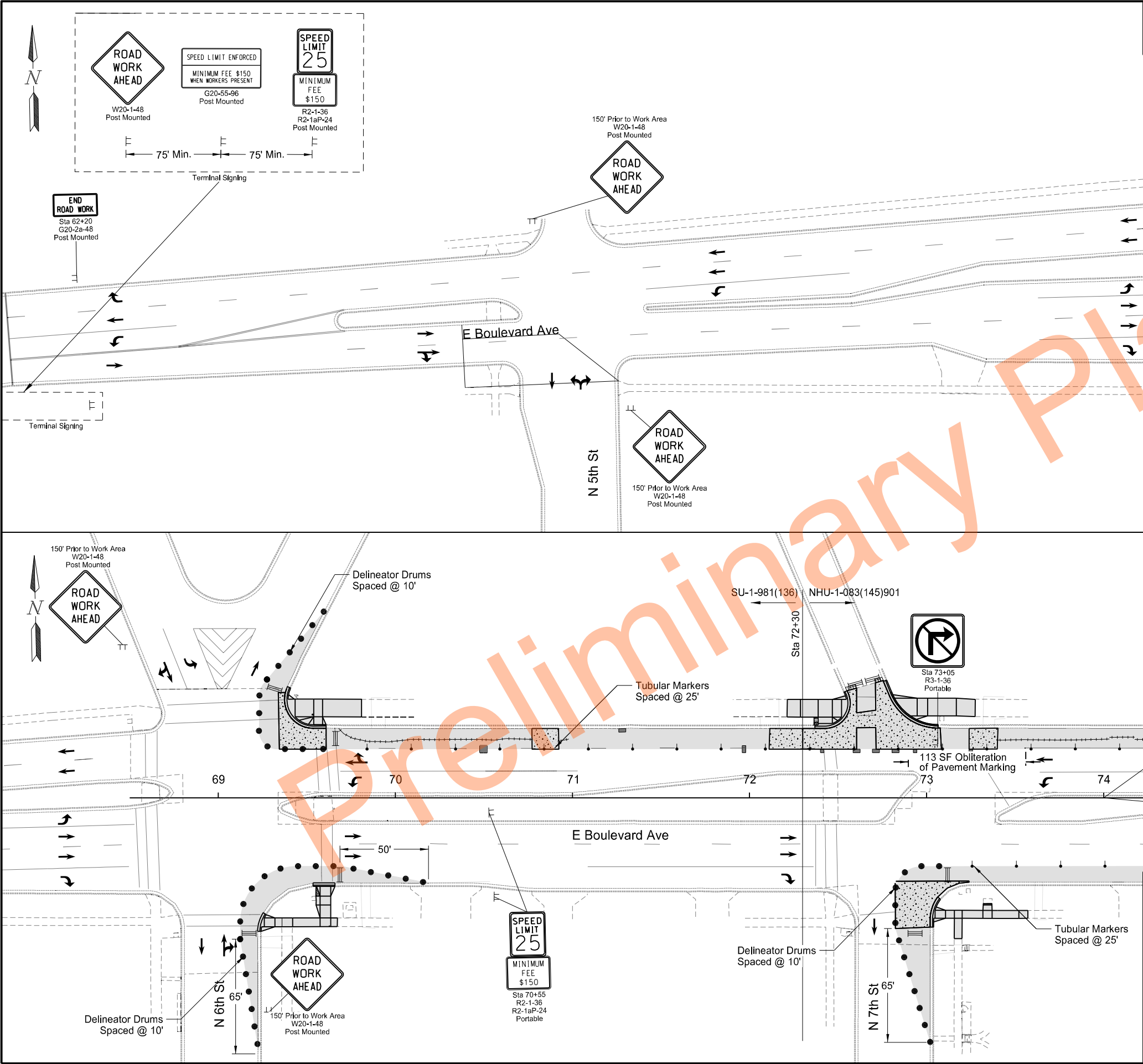
Sidewalk Barricade Detail

Workzone Traffic Control

E Boulevard Ave

Concrete Repair





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	5

SU-1-981(136)

LEGEND

Lane Closure/Work Zone

Delineator Drum

Tubular Marker

Type III Barricade

Sign

Direction of Traffic

Pavement Markings (Existing and Proposed)

Sequencing Arrow Panel

MA

Maintain Access to Driveways
(Unless Otherwise Shown)

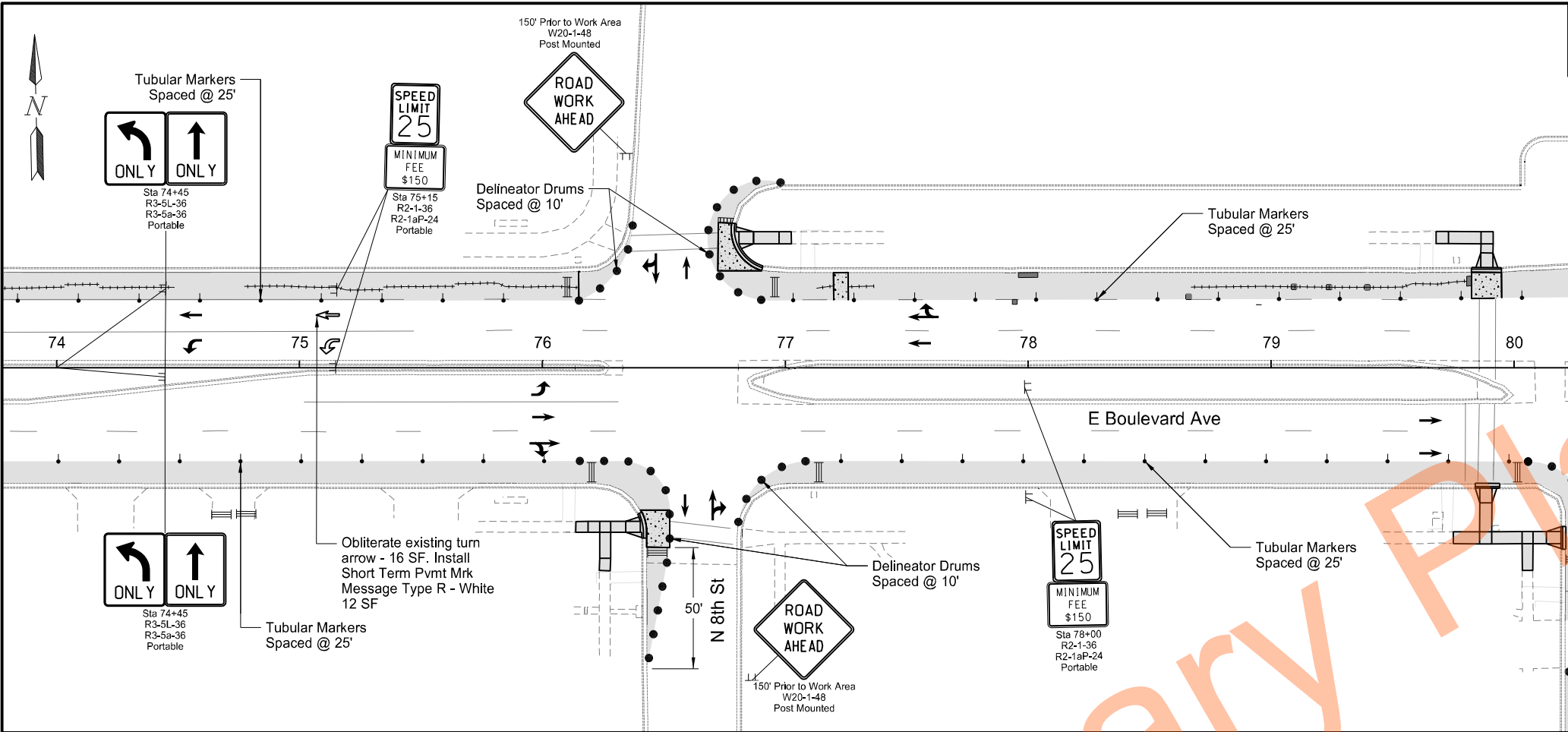
Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Note: On the westbound signal, cover the north left-turn signal head

Temporary Traffic Control
Phase 1A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	6

LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

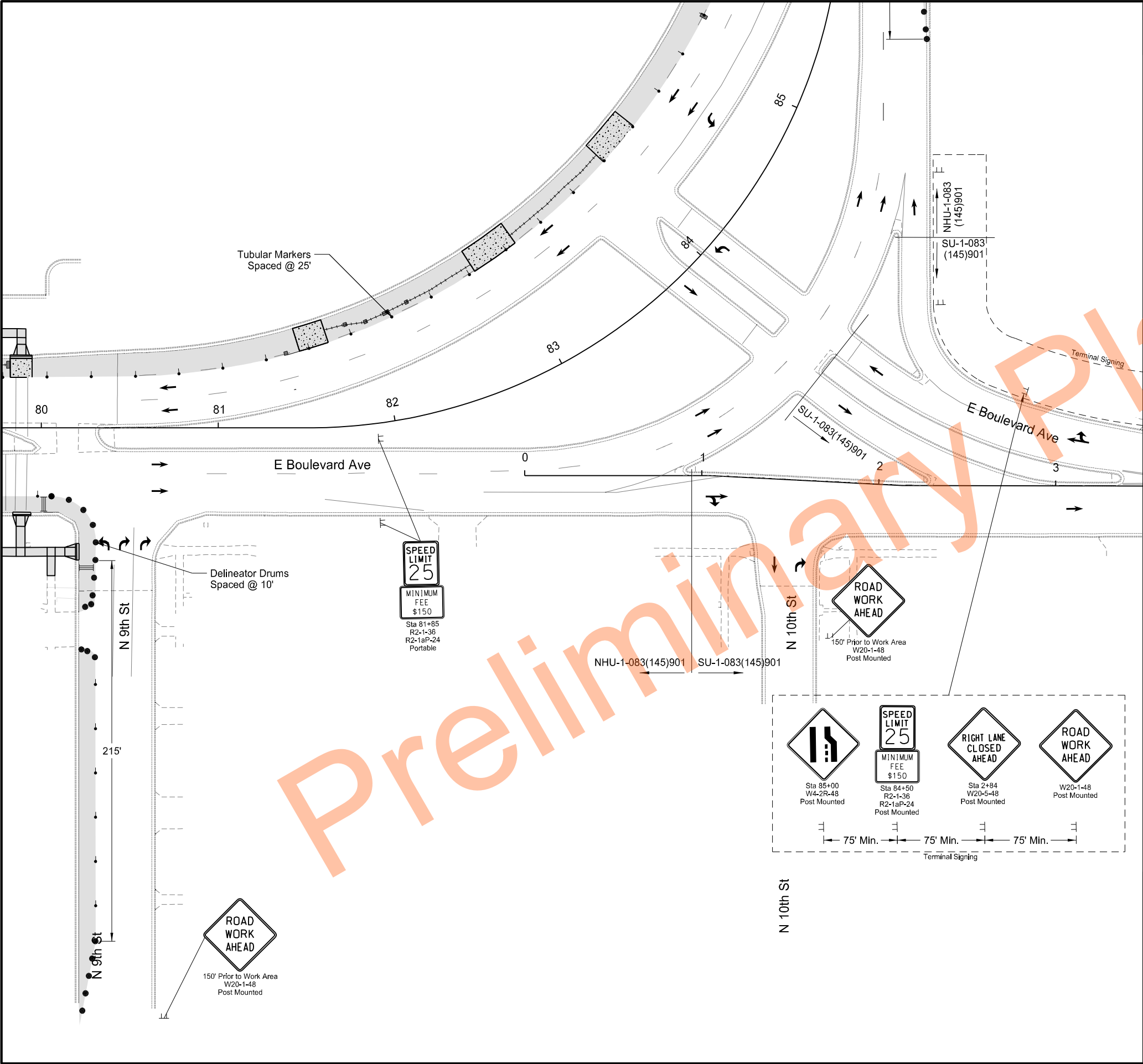
Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Note: Cover overhead signs for outside left-turn lane and through and right combination lane.

Temporary Traffic Control
Phase 1A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	7

LEGEND

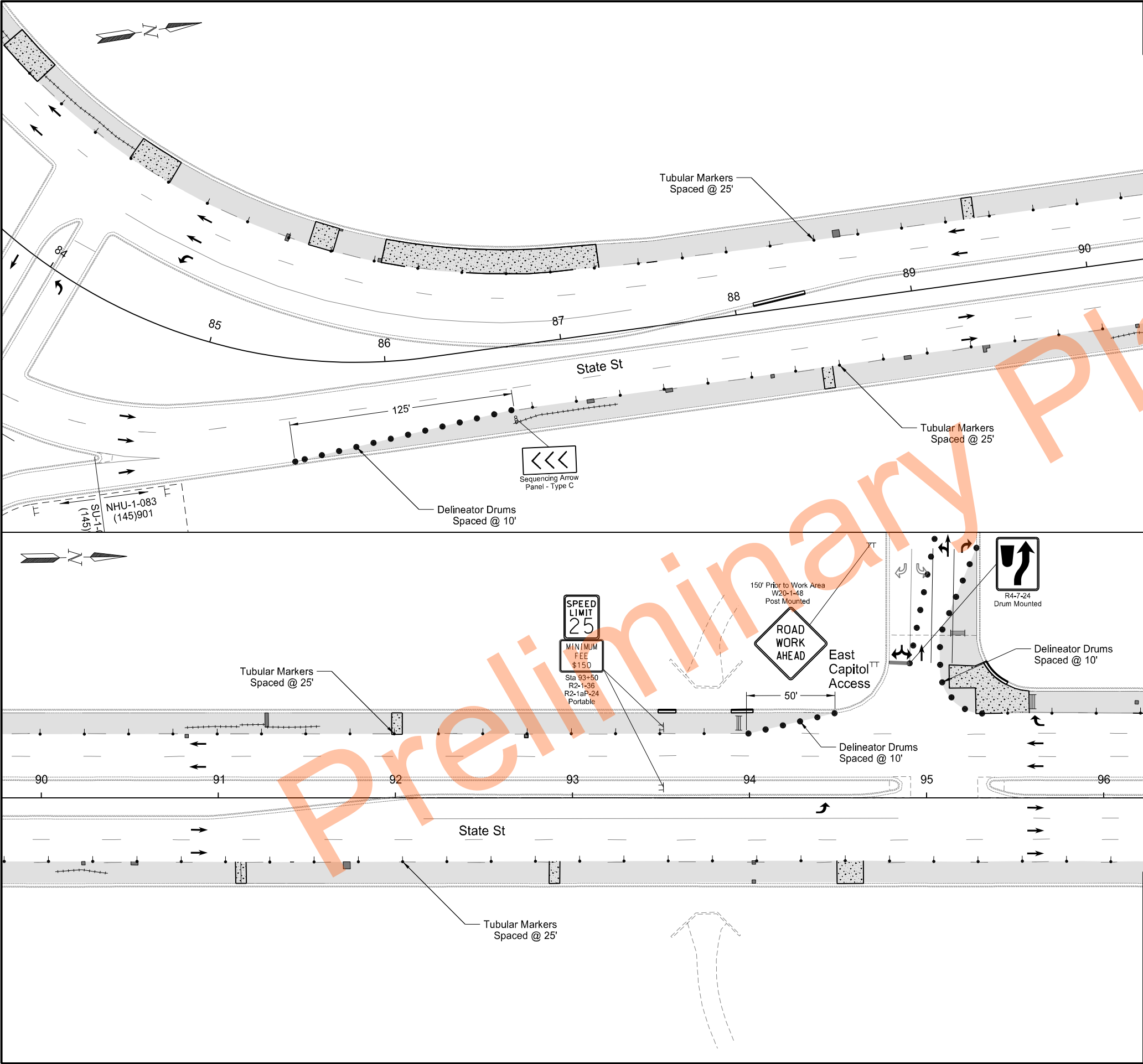
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	8

LEGEND

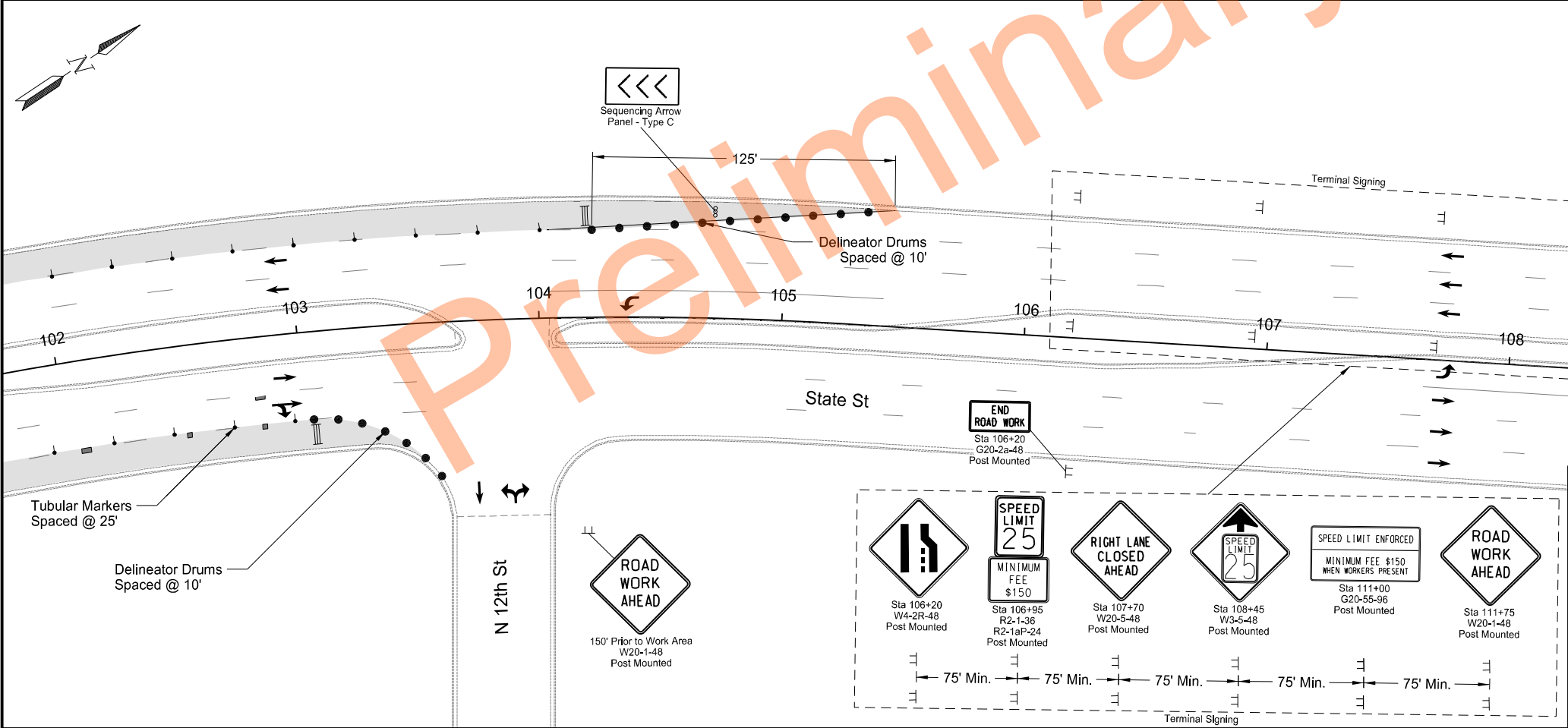
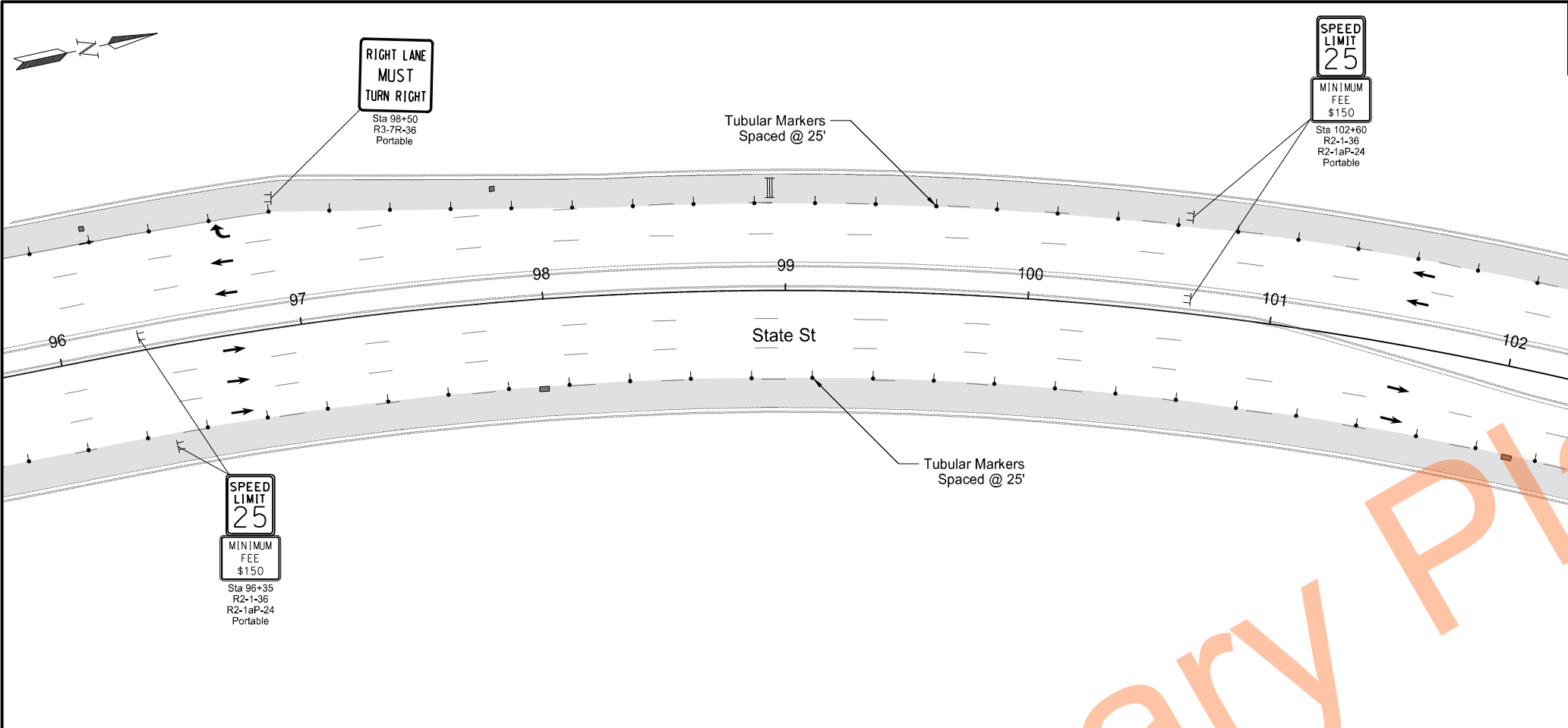
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA: Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1A

State Street
N 10th Street to Divide





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	9

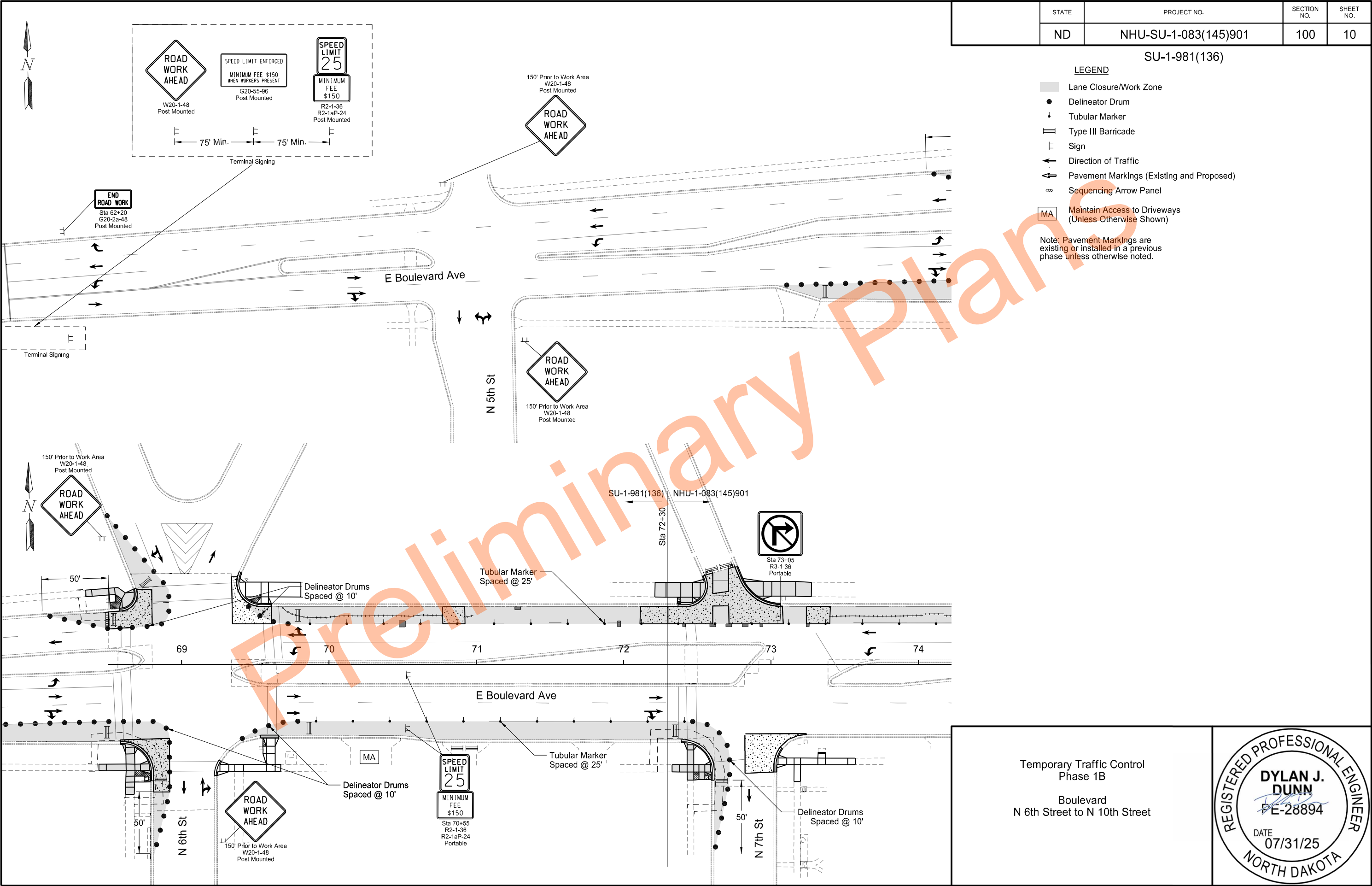
- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

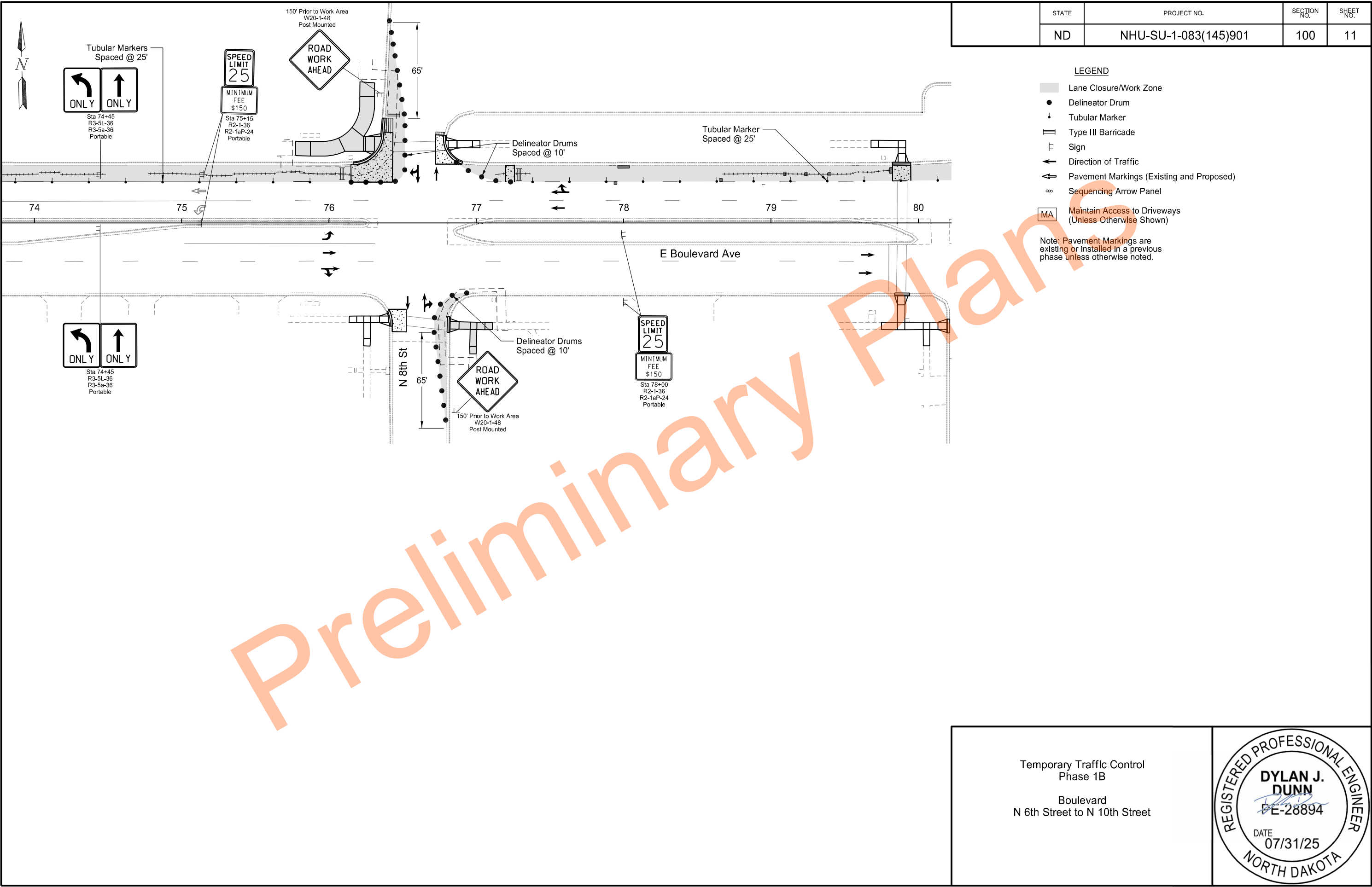
Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1A

State Street
N 10th Street to E Divide Ave



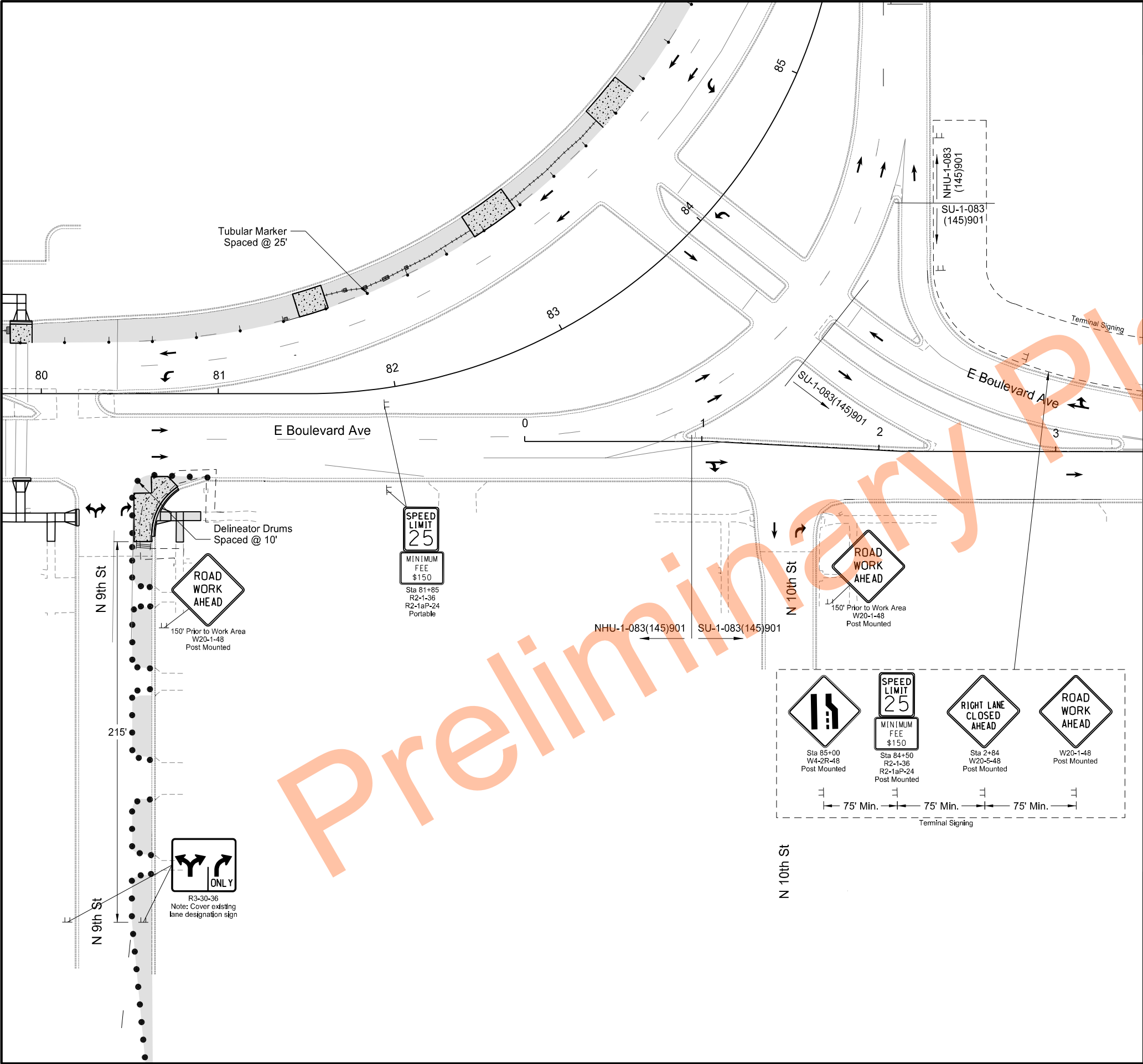




Temporary Traffic Control
Phase 1B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	12

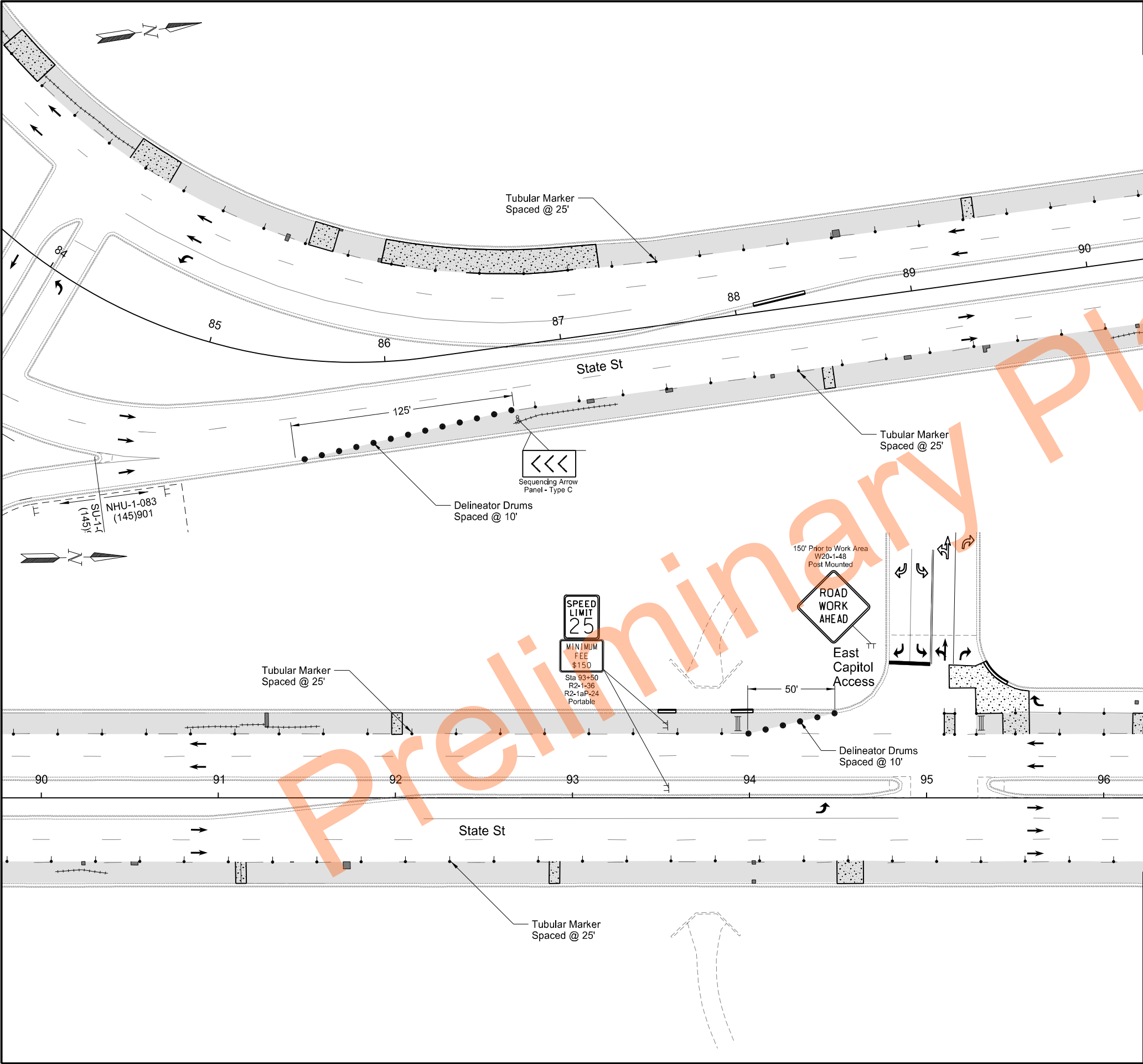
- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	13

LEGEND

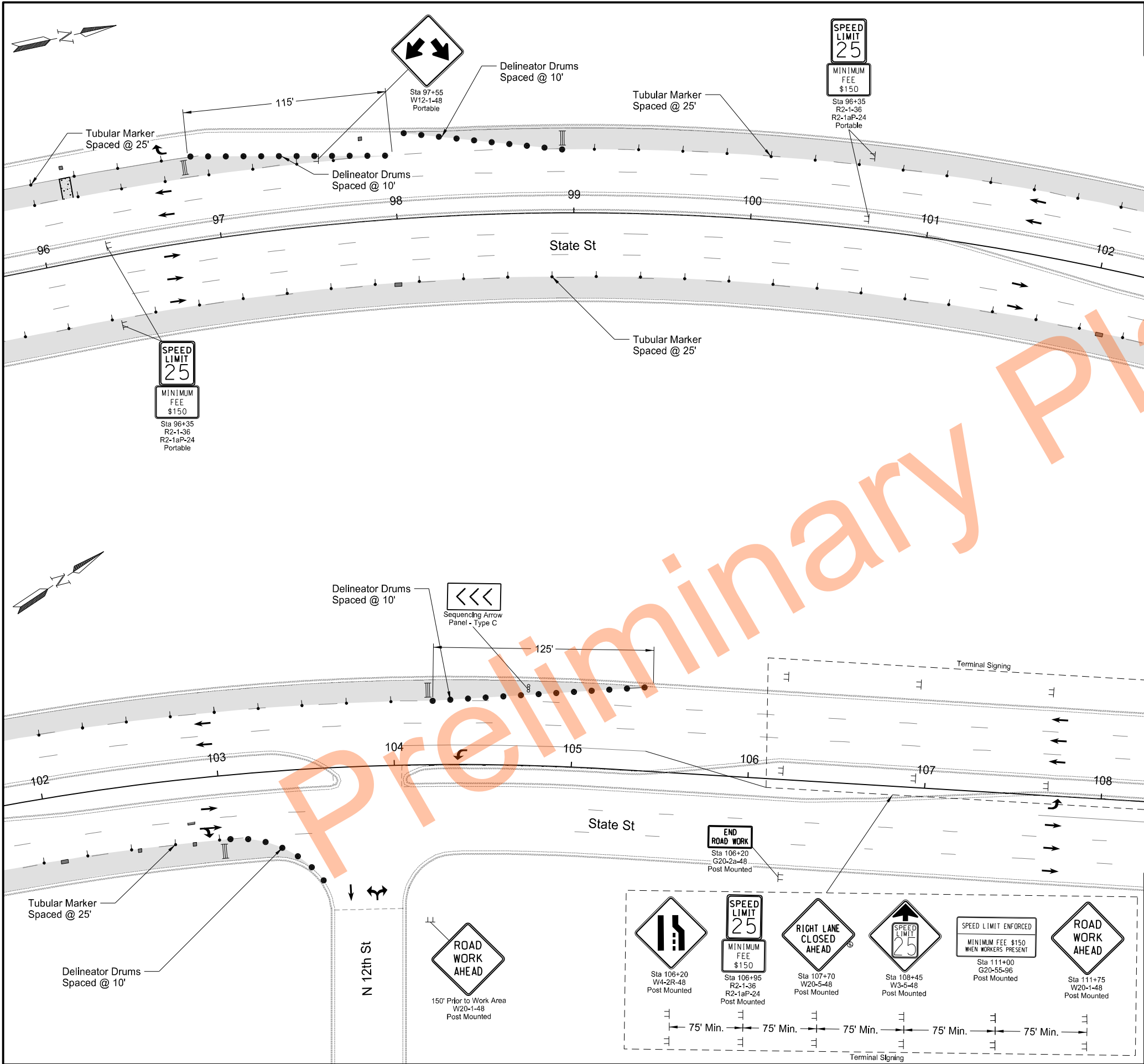
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1B

State Street
N 10th Street to Divide





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	14

LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 1B

State Street
N 10th Street to E Divide Ave

REGISTERED PROFESSIONAL ENGINEER

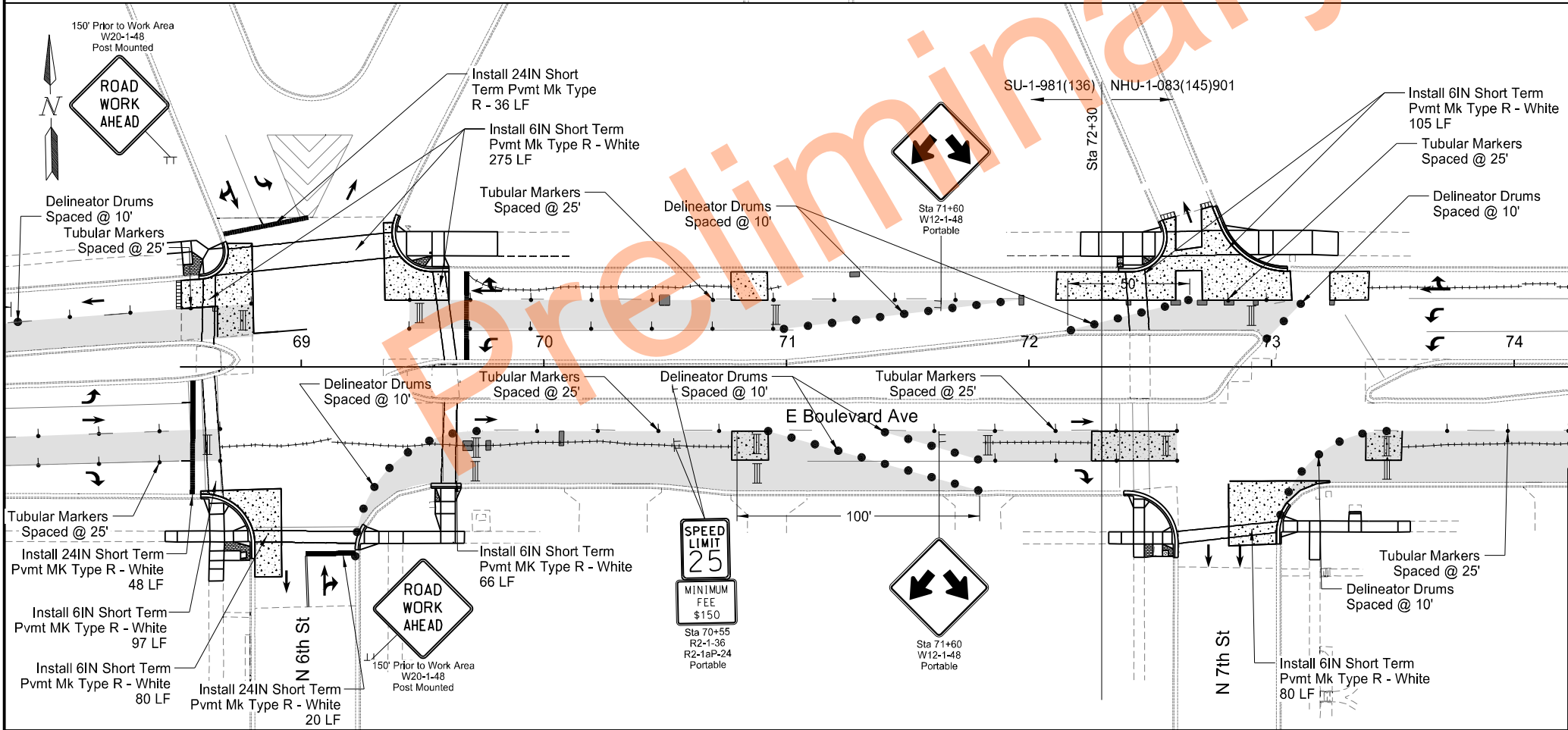
DYLAN J. DUNN

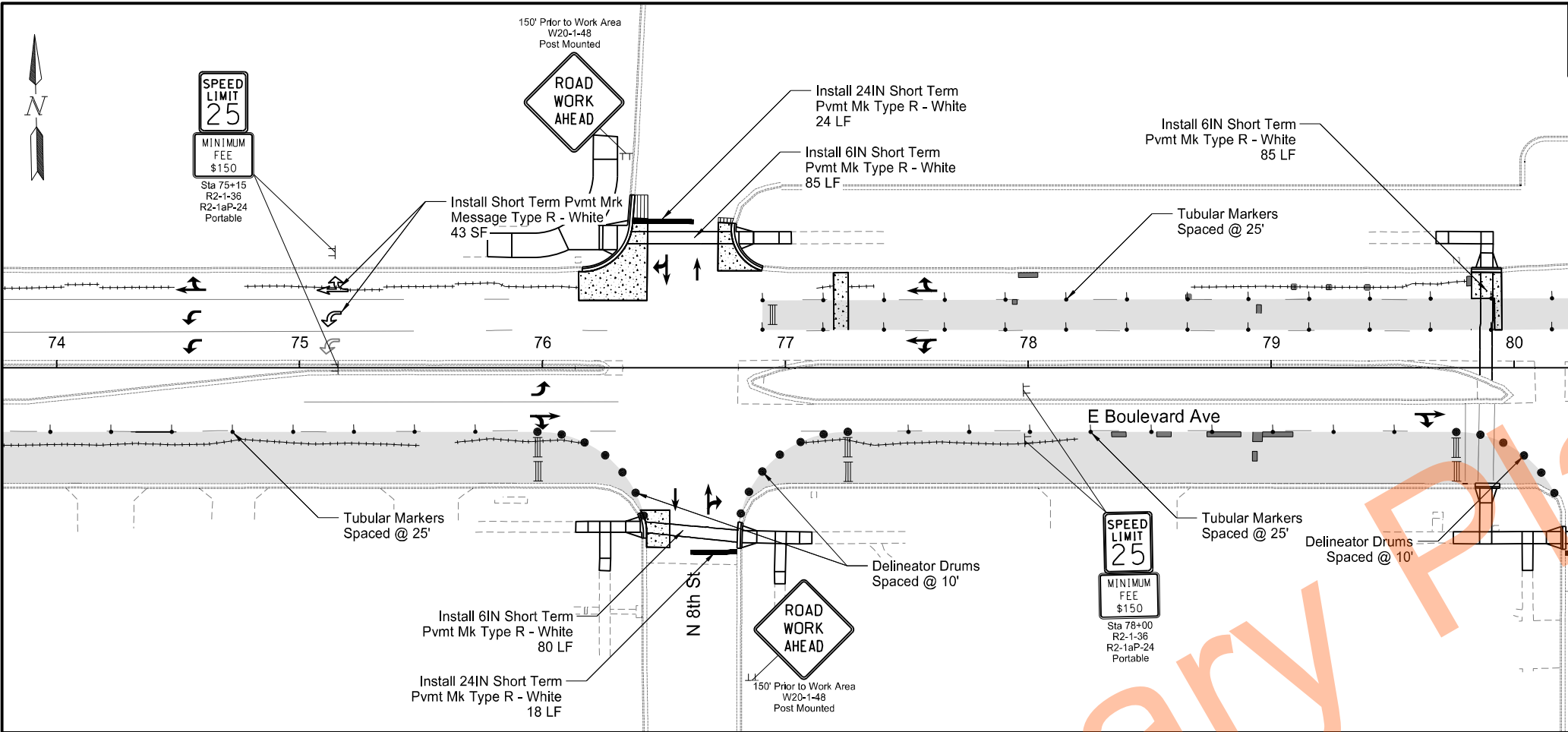
PE-28894

DATE 07/31/25

NORTH DAKOTA

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	16

LEGEND

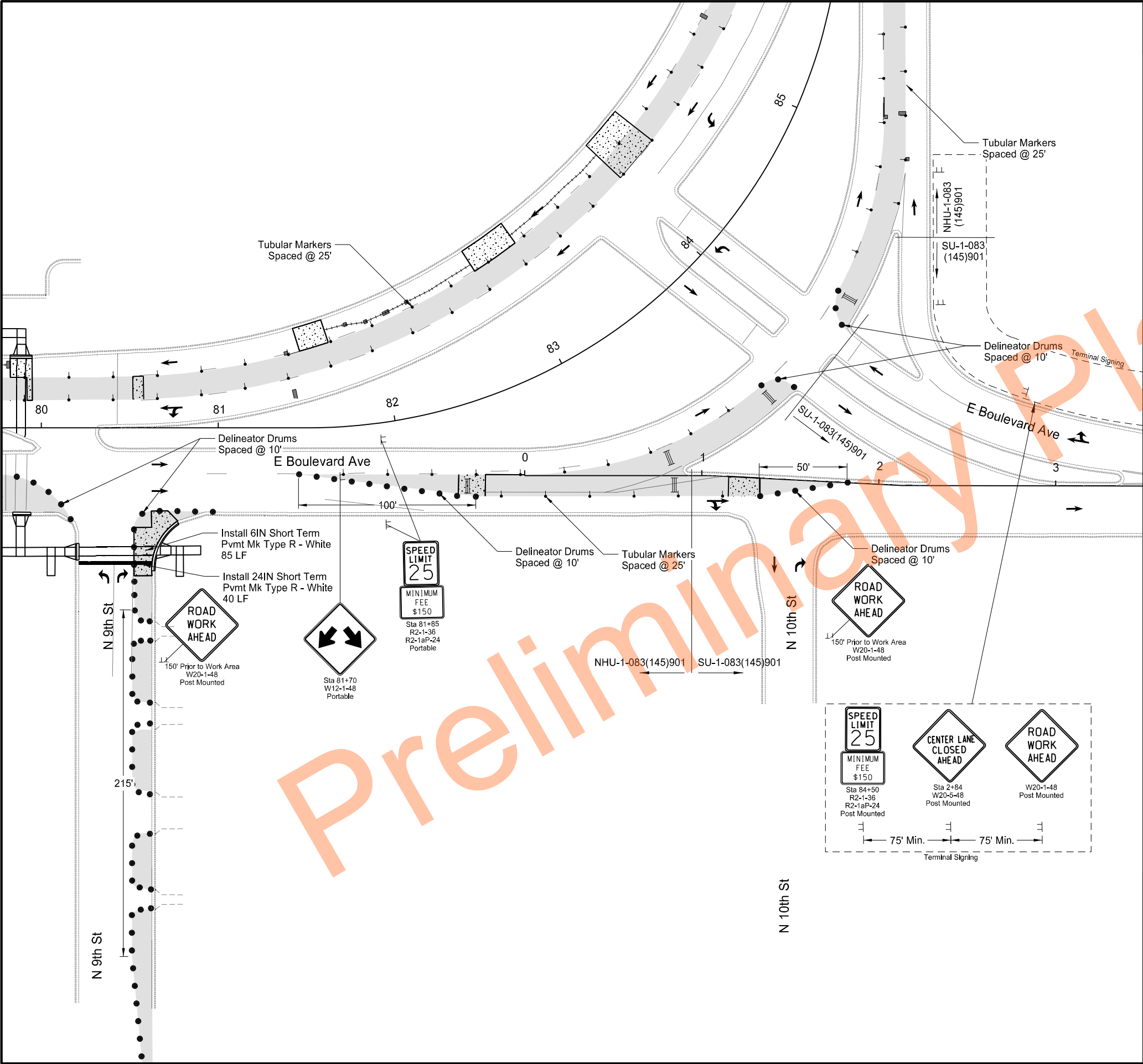
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- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	17

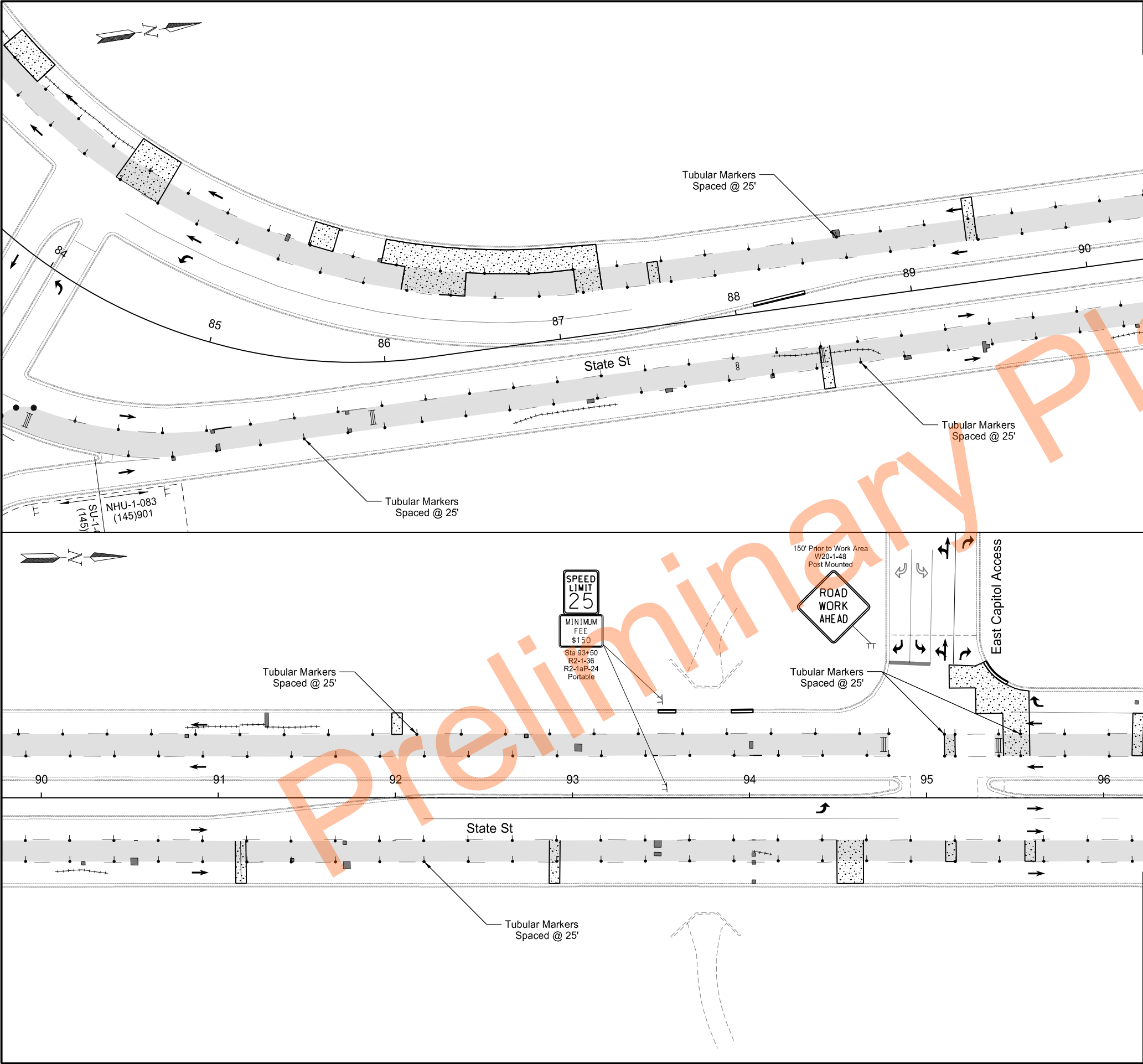
- LEGEND**
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	18

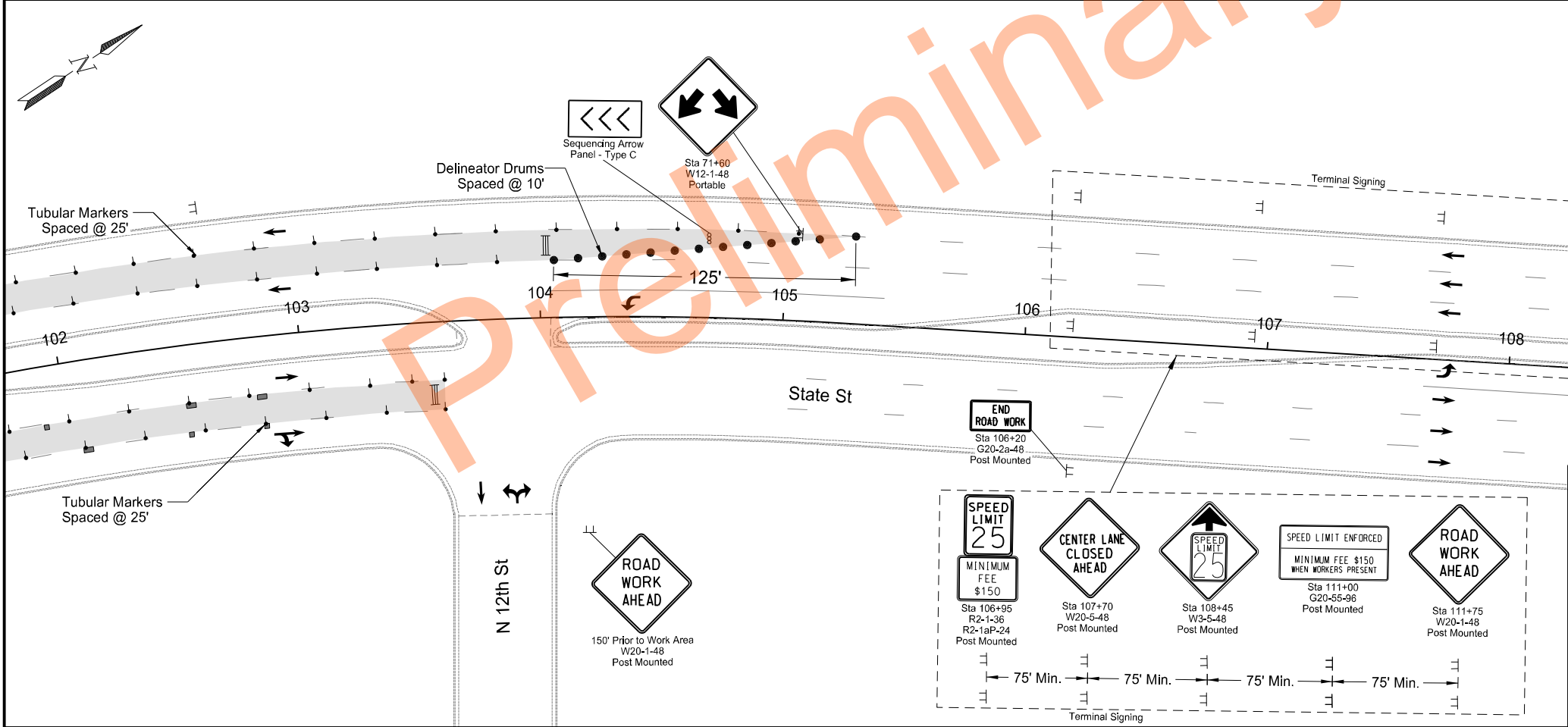
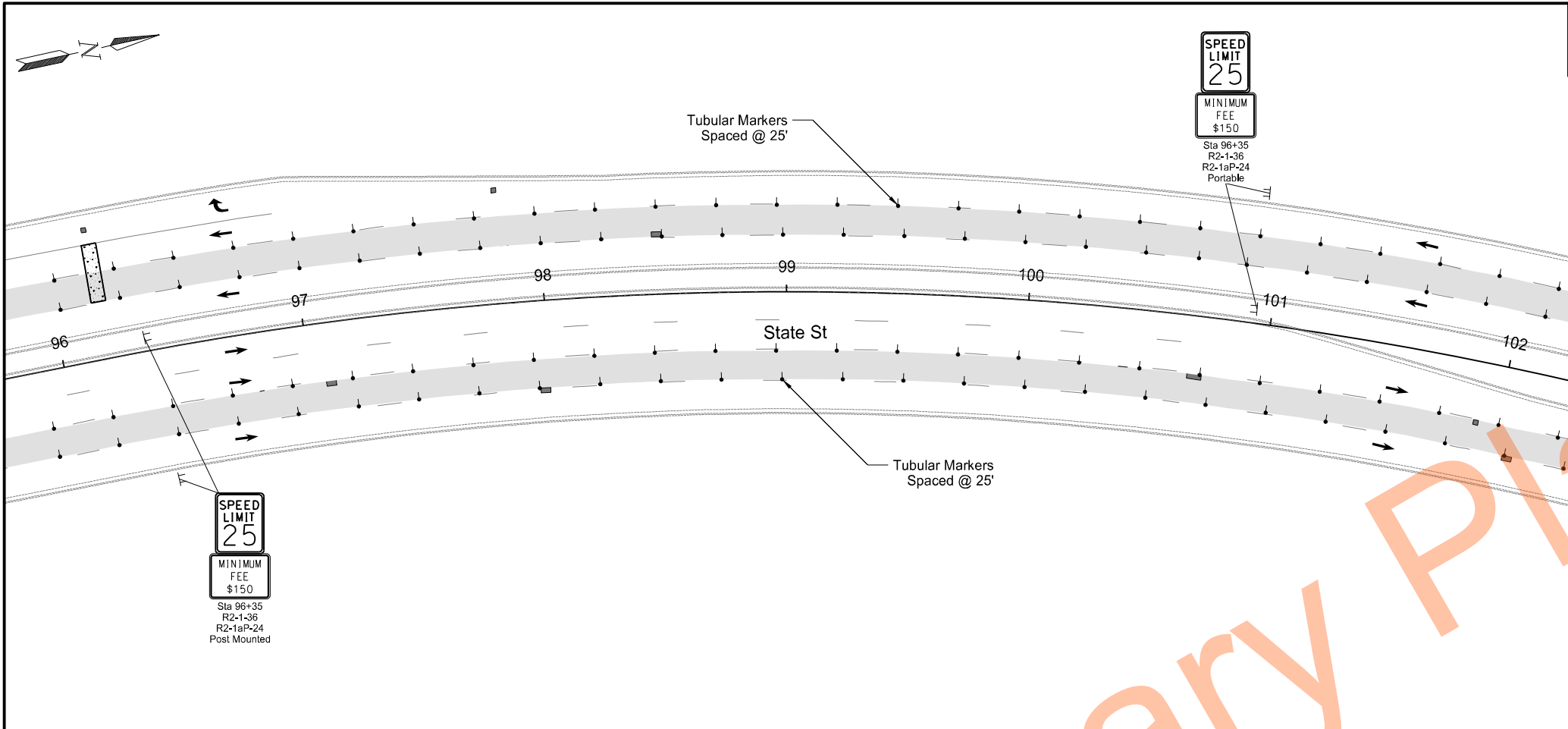
- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2A

State Street
N 10th Street to Divide





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	19

LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2A
State Street
N 10th Street to E Divide Ave

REGISTERED PROFESSIONAL ENGINEER
DYLAN J. DUNN
PE-28894
DATE 07/31/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	100	20

SU-1-981(136)

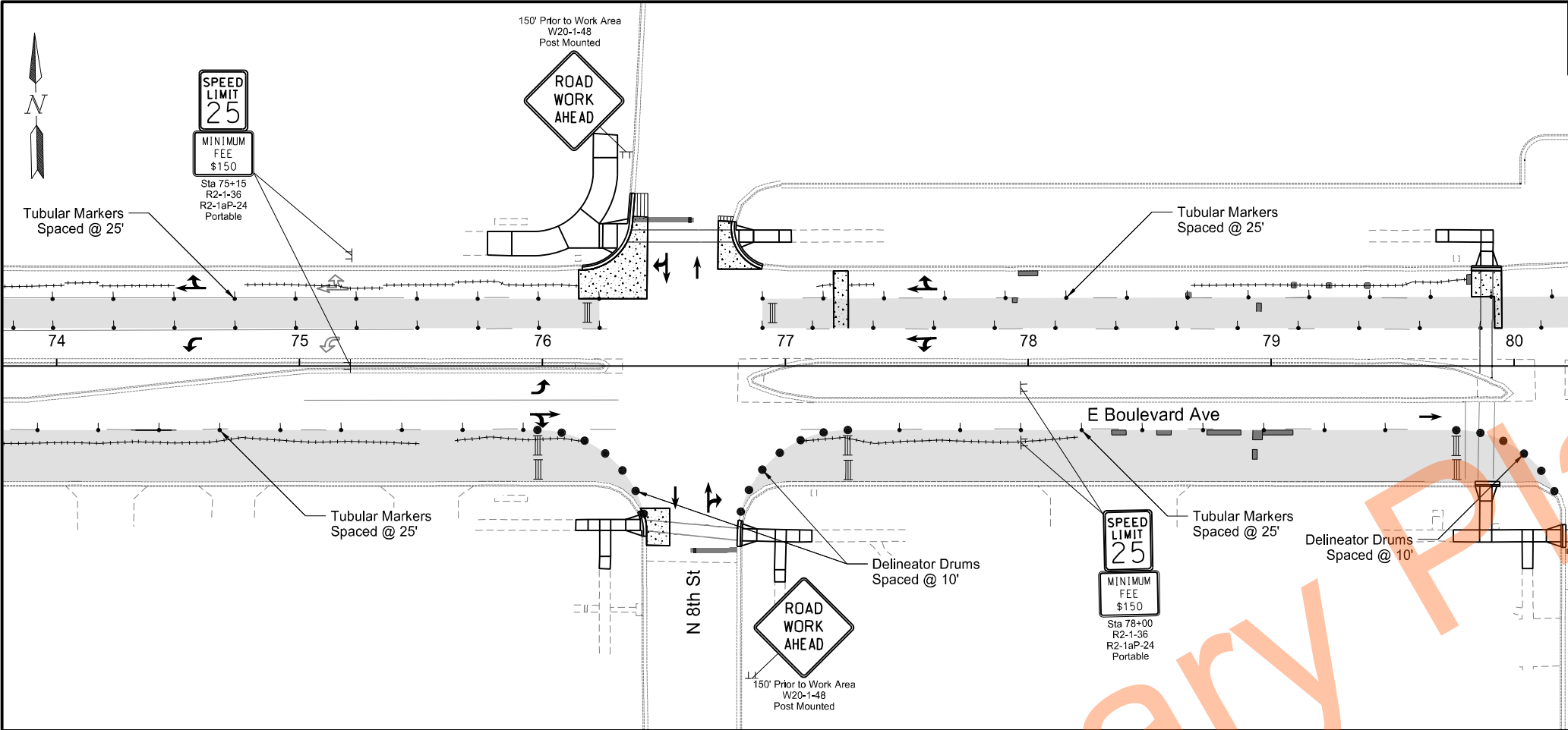
LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2B

Boulevard
N 6th Street to N 10th Street



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	21

LEGEND

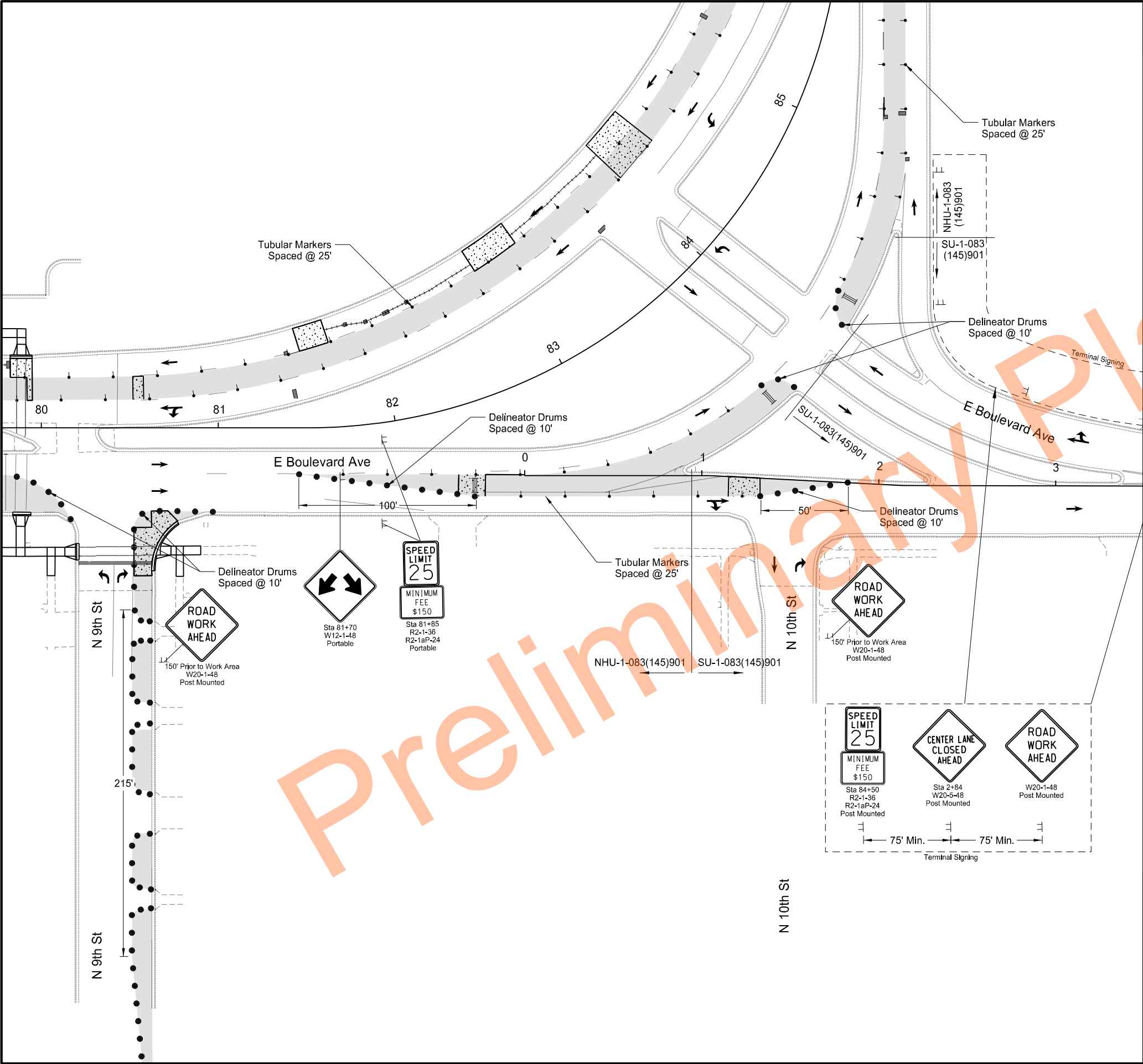
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	22

LEGEND

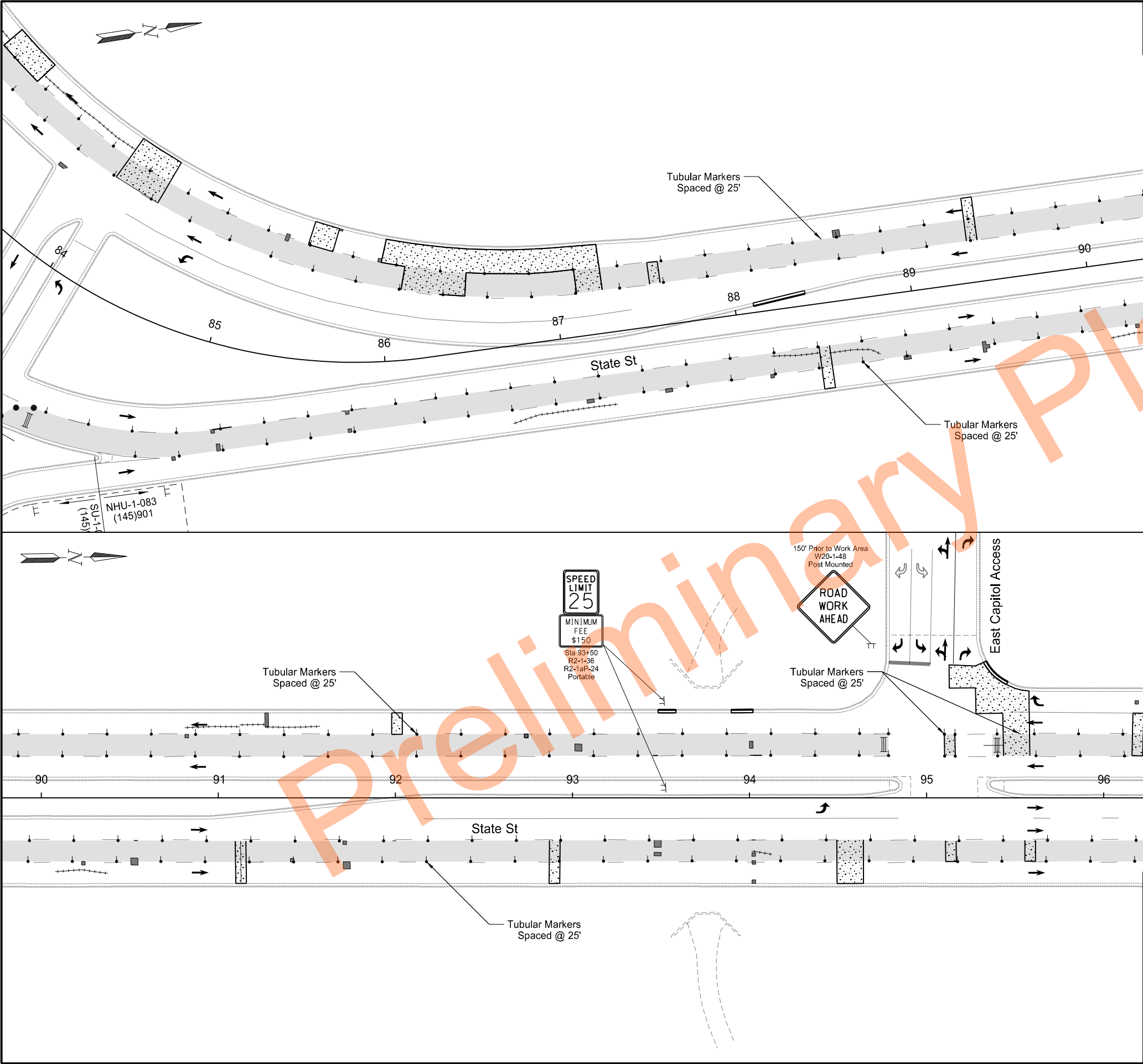
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2B

Boulevard
N 6th Street to N 10th Street

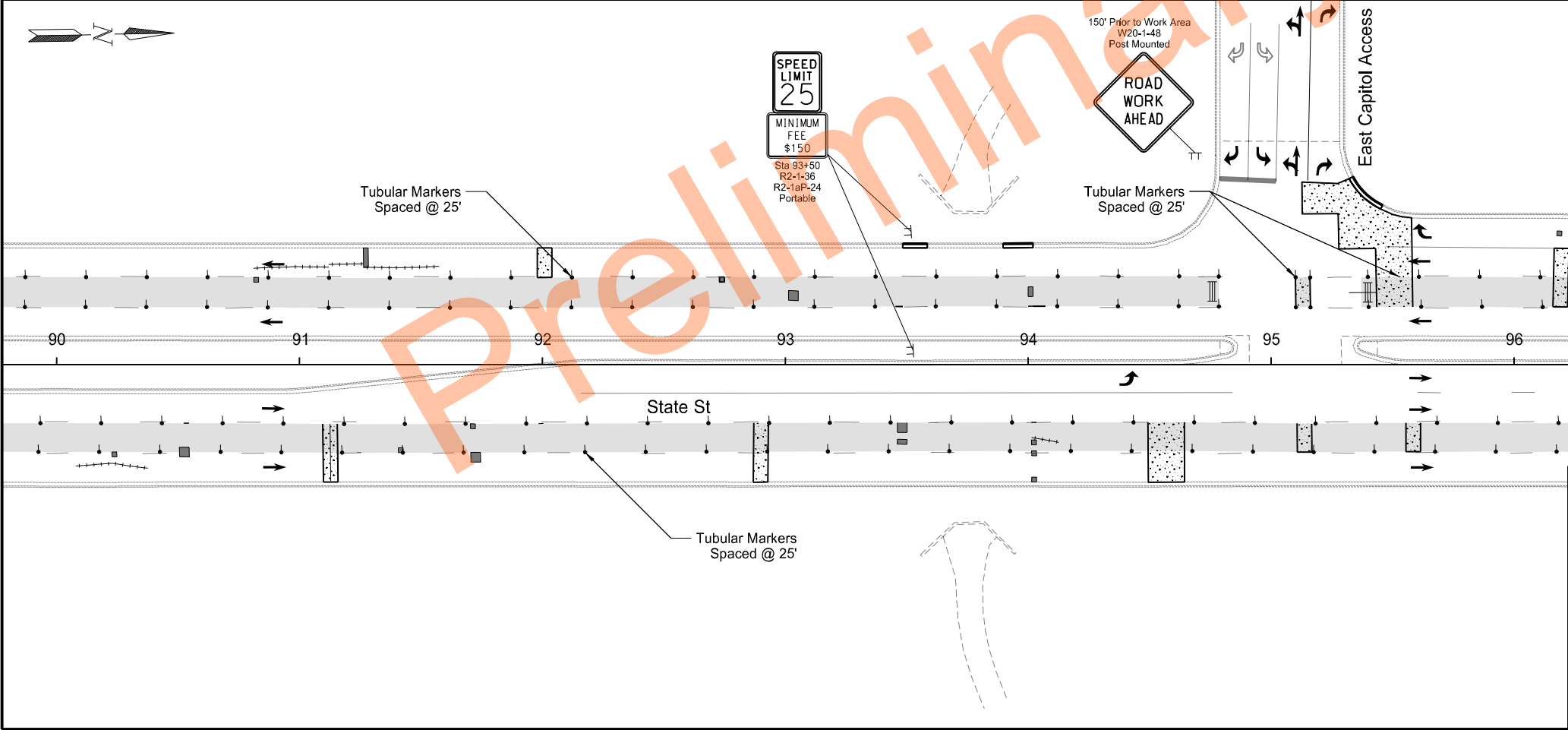




STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	23

- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

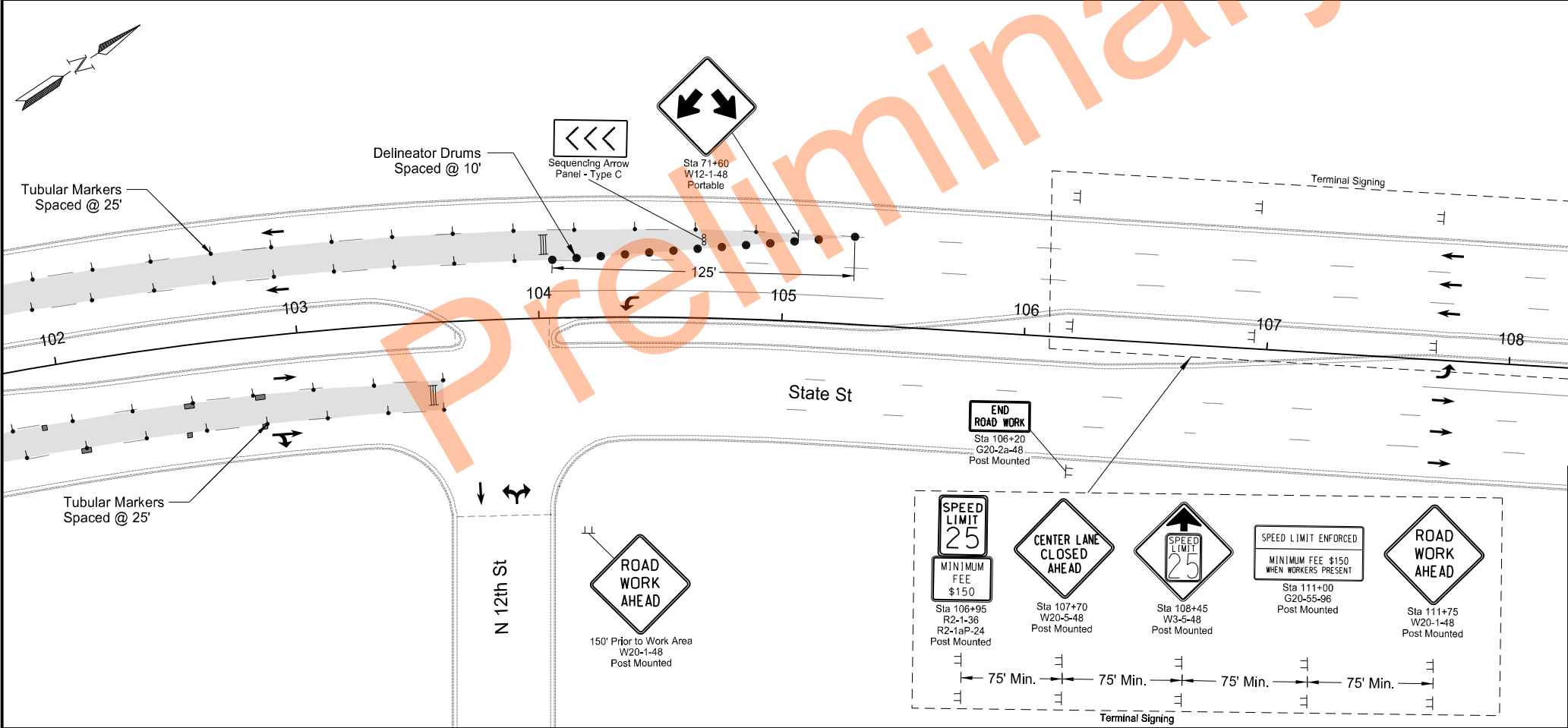
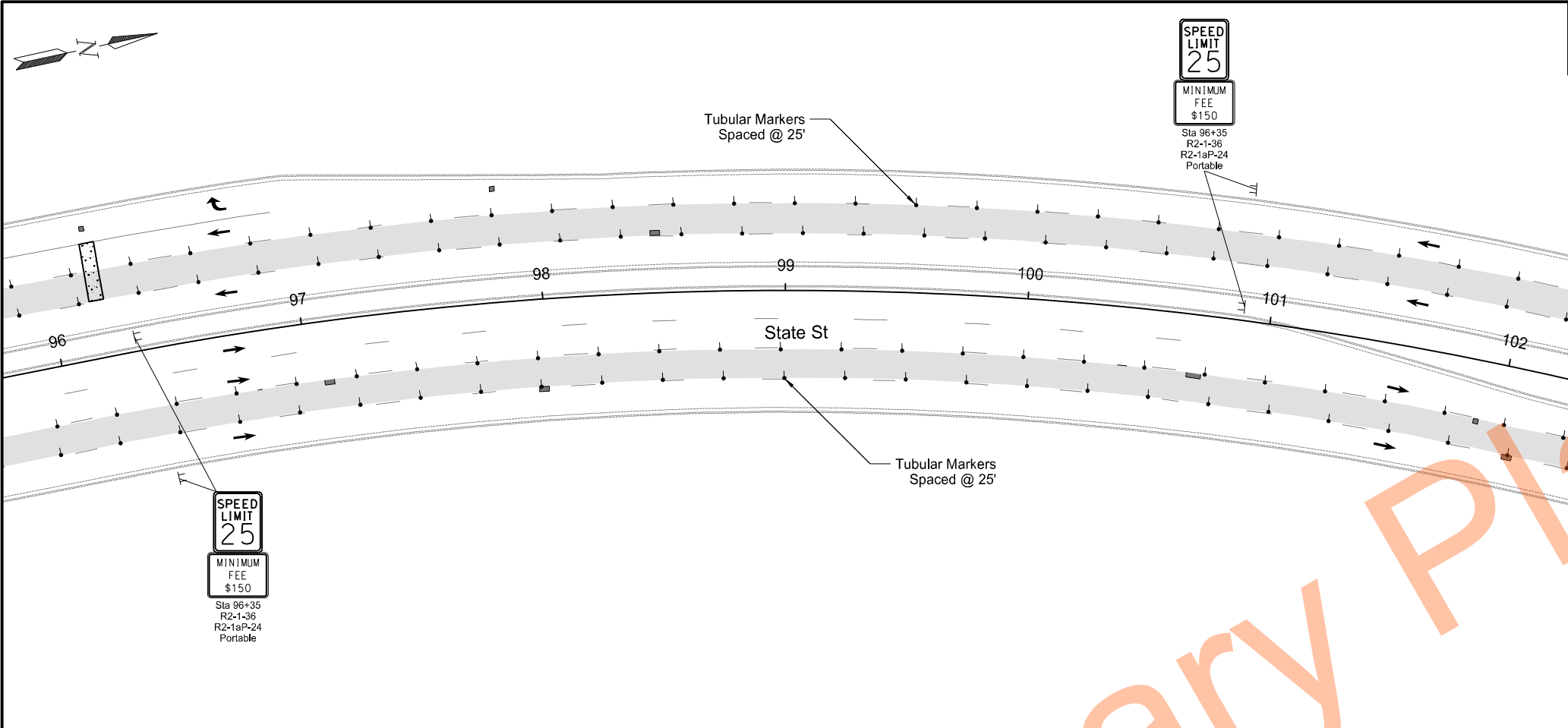
Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.



Temporary Traffic Control
Phase 2B

State Street
N 10th Street to Divide





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	24

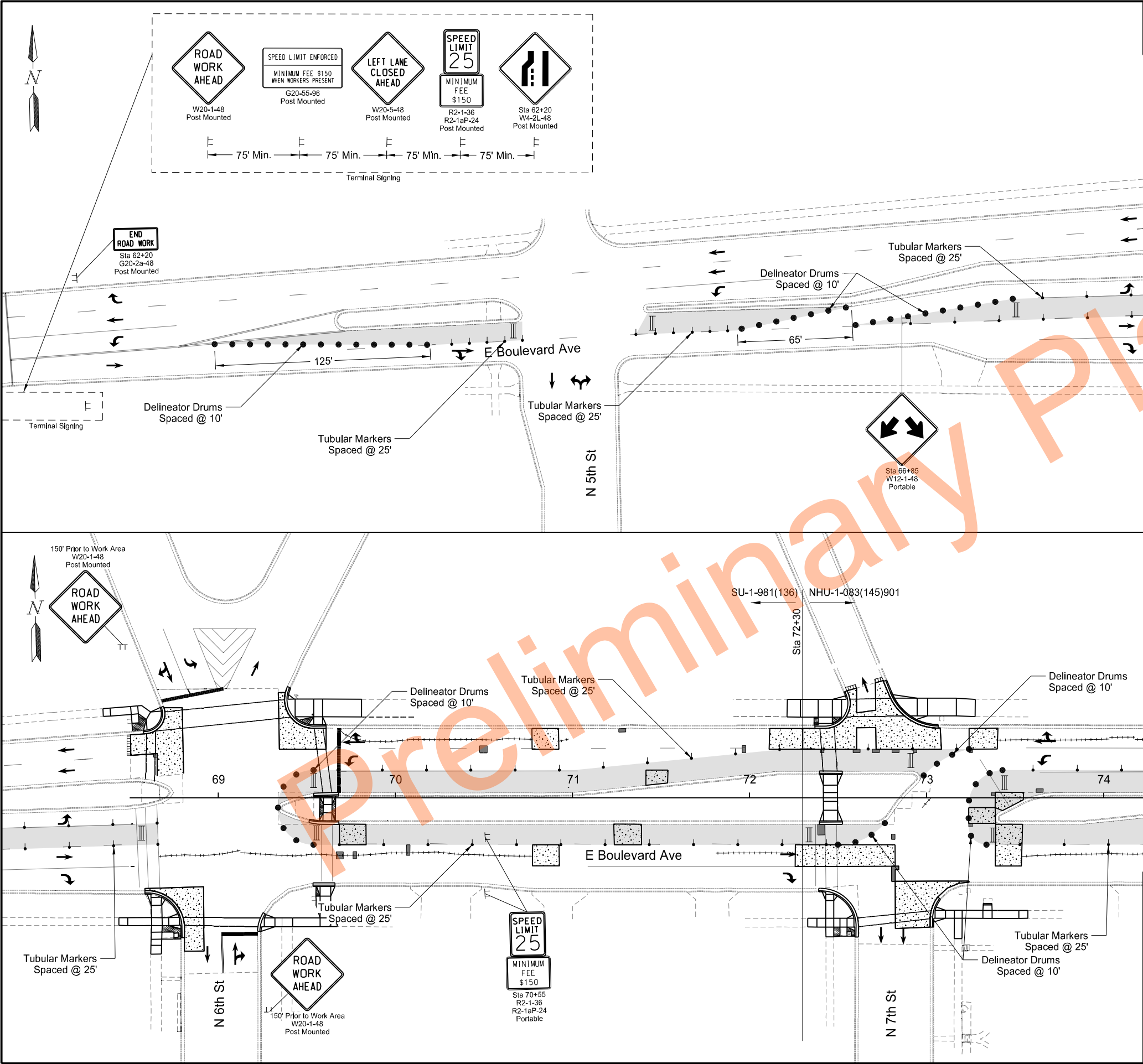
LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 2B
State Street
N 10th Street to E Divide Ave





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	25

SU-1-981(136)

LEGEND

Lane Closure/Work Zone

●

Delineator Drum

↓

Tubular Marker

≡

Type III Barricade

⊥

Sign

←

Direction of Traffic

↔

Pavement Markings (Existing and Proposed)

∞

Sequencing Arrow Panel

MA

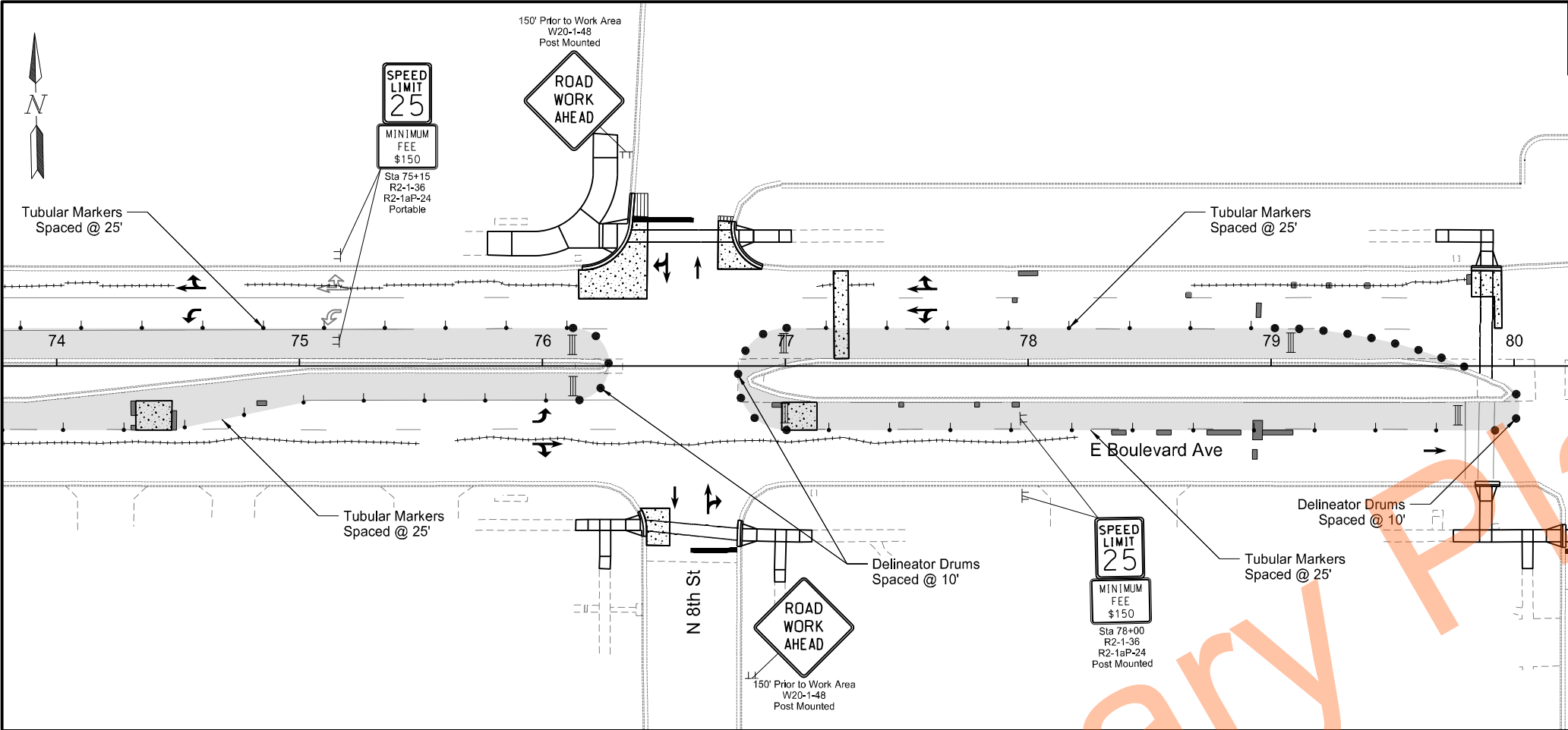
Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	26

LEGEND

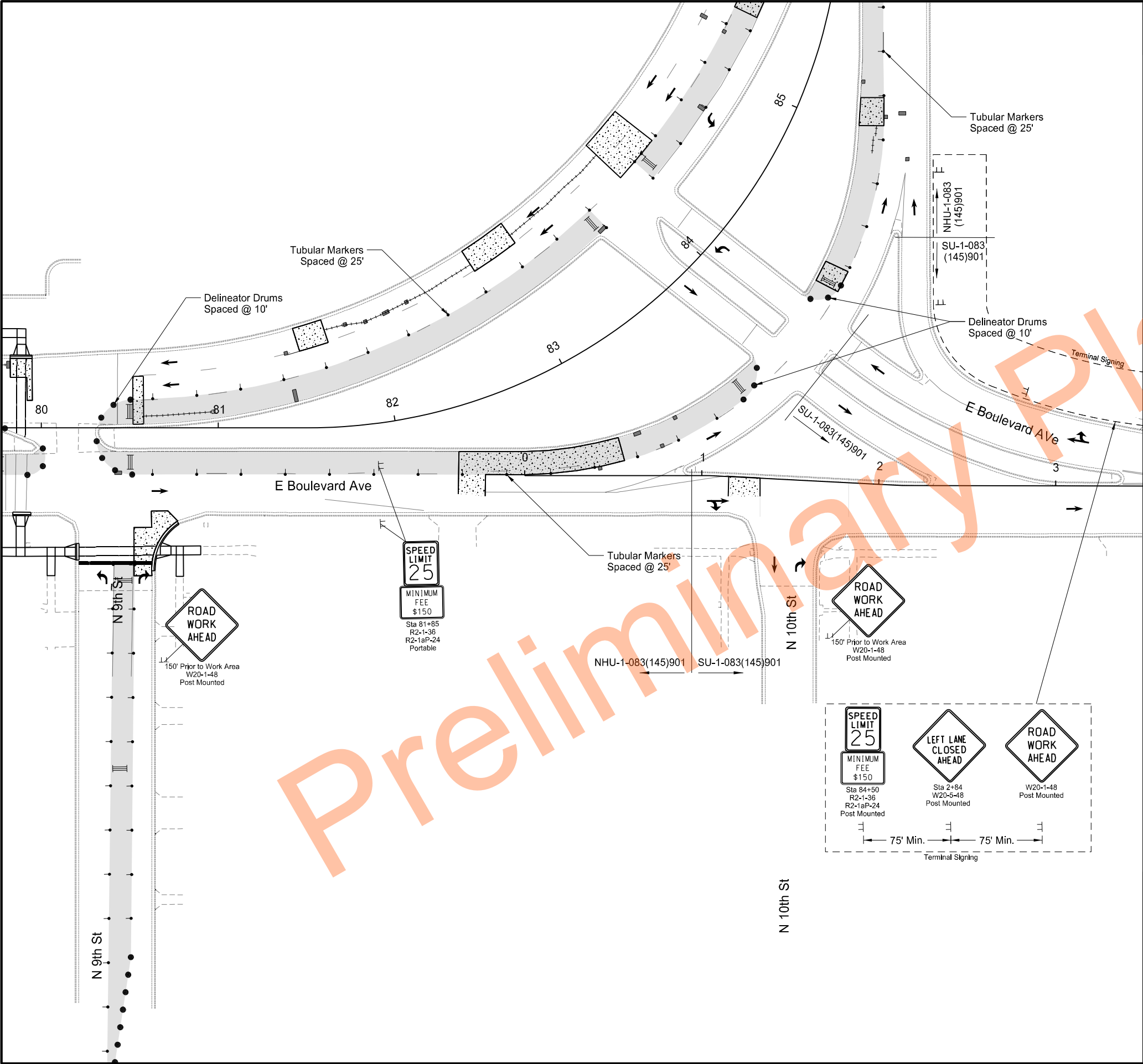
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	27

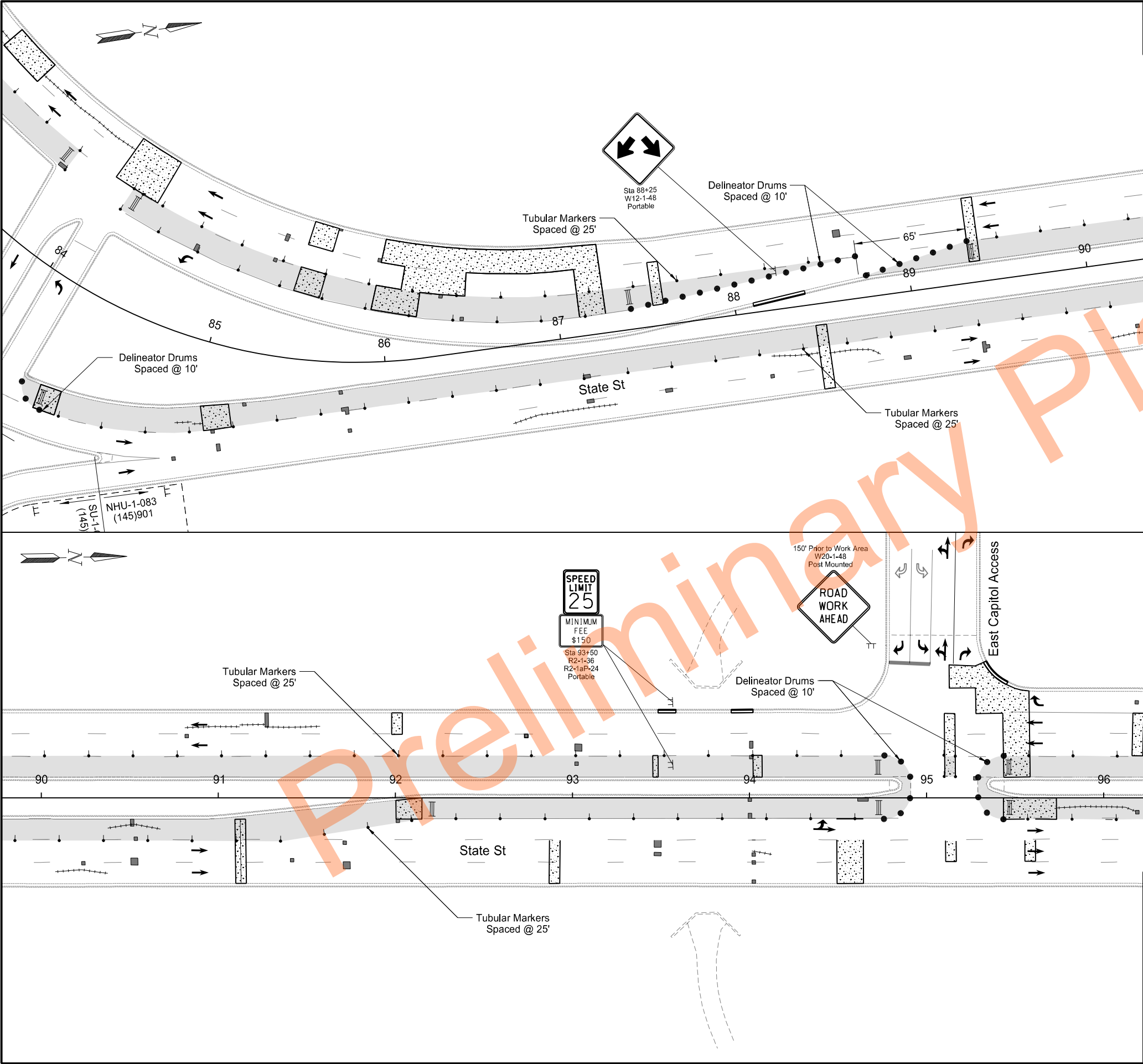
- LEGEND**
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3A

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	28

LEGEND

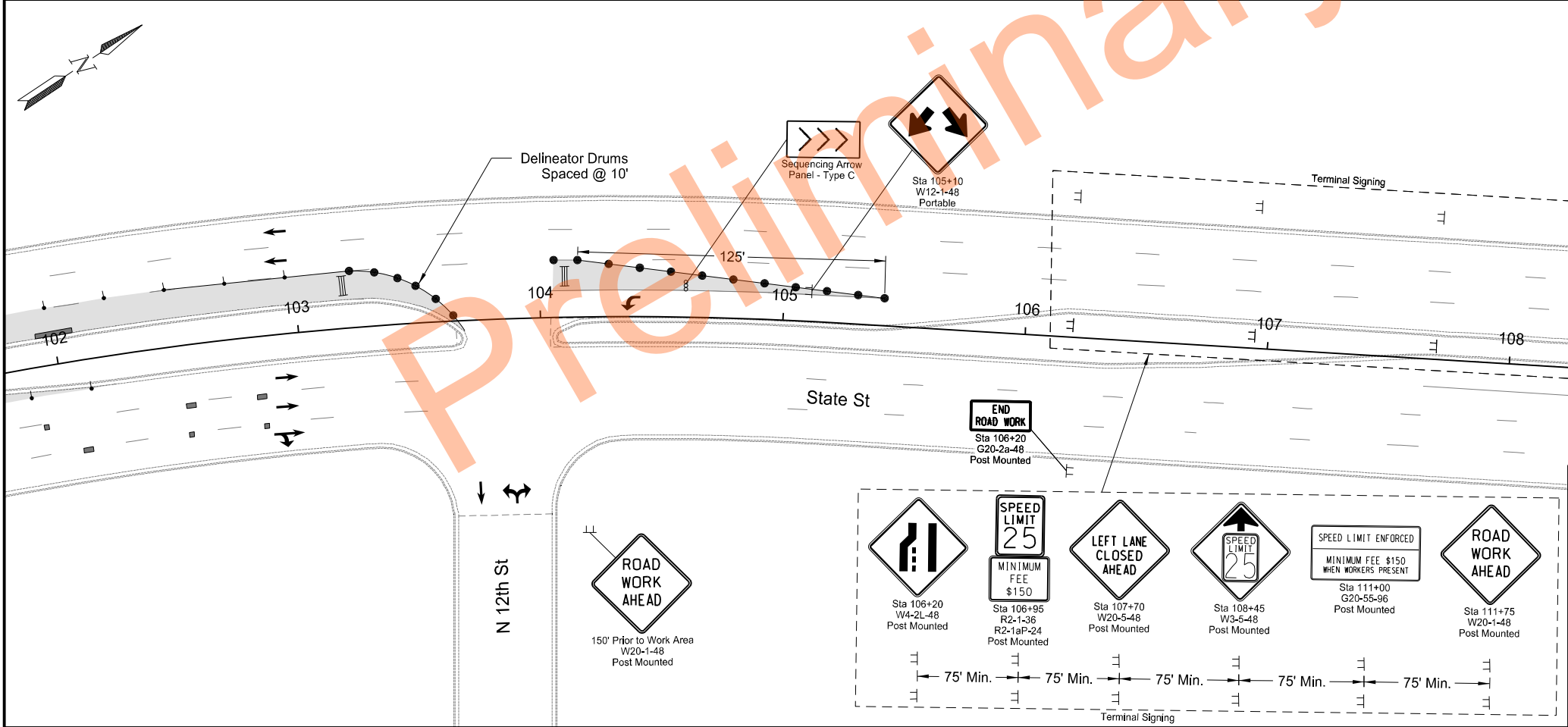
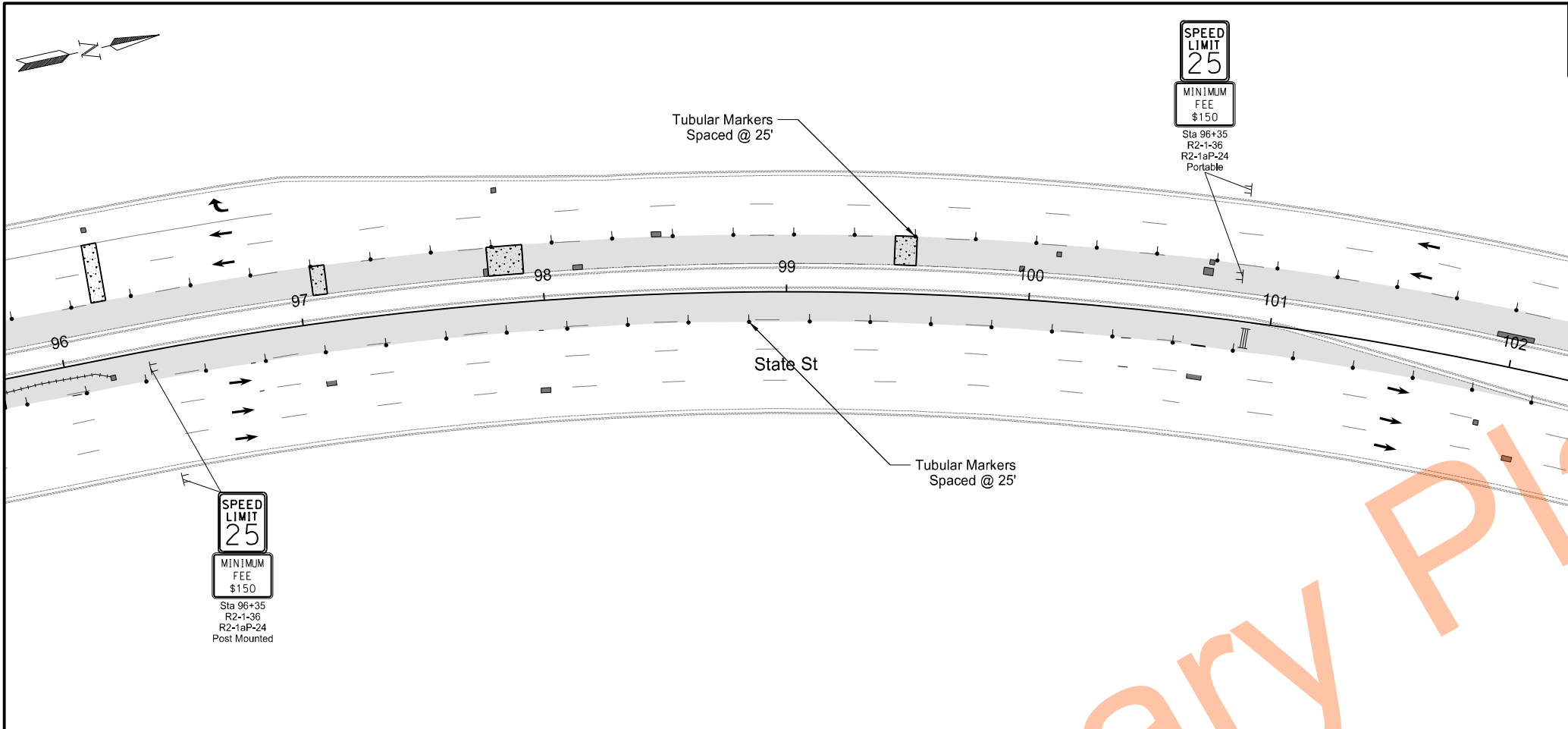
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3A

State Street
N 10th Street to Divide





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	29

LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3A

State Street
N 10th Street to E Divide Ave

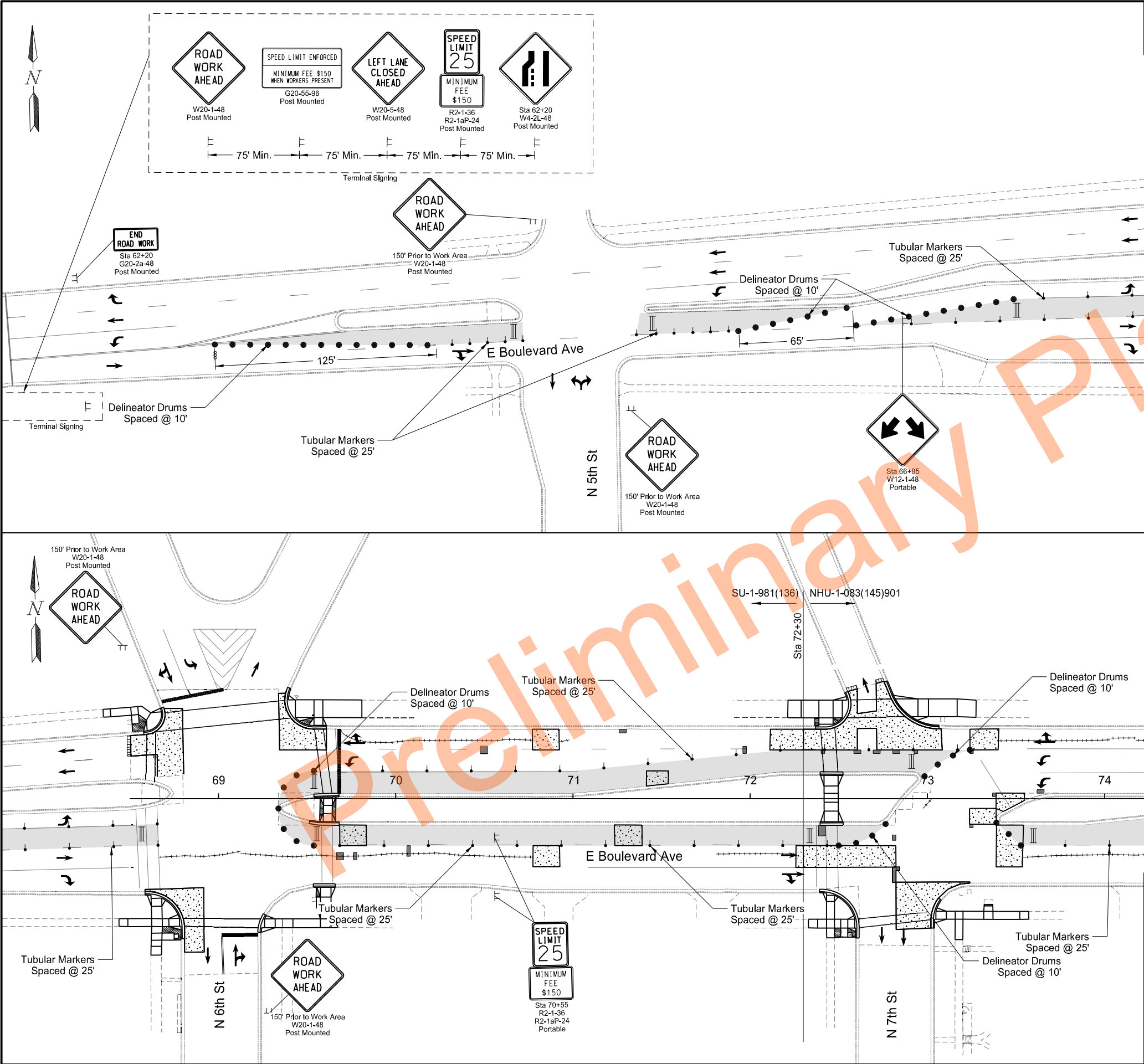
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

E-28894

DATE
07/31/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	100	30

SU-1-981(136)

LEGEND

- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3B

Boulevard
N 6th Street to N 10th Street

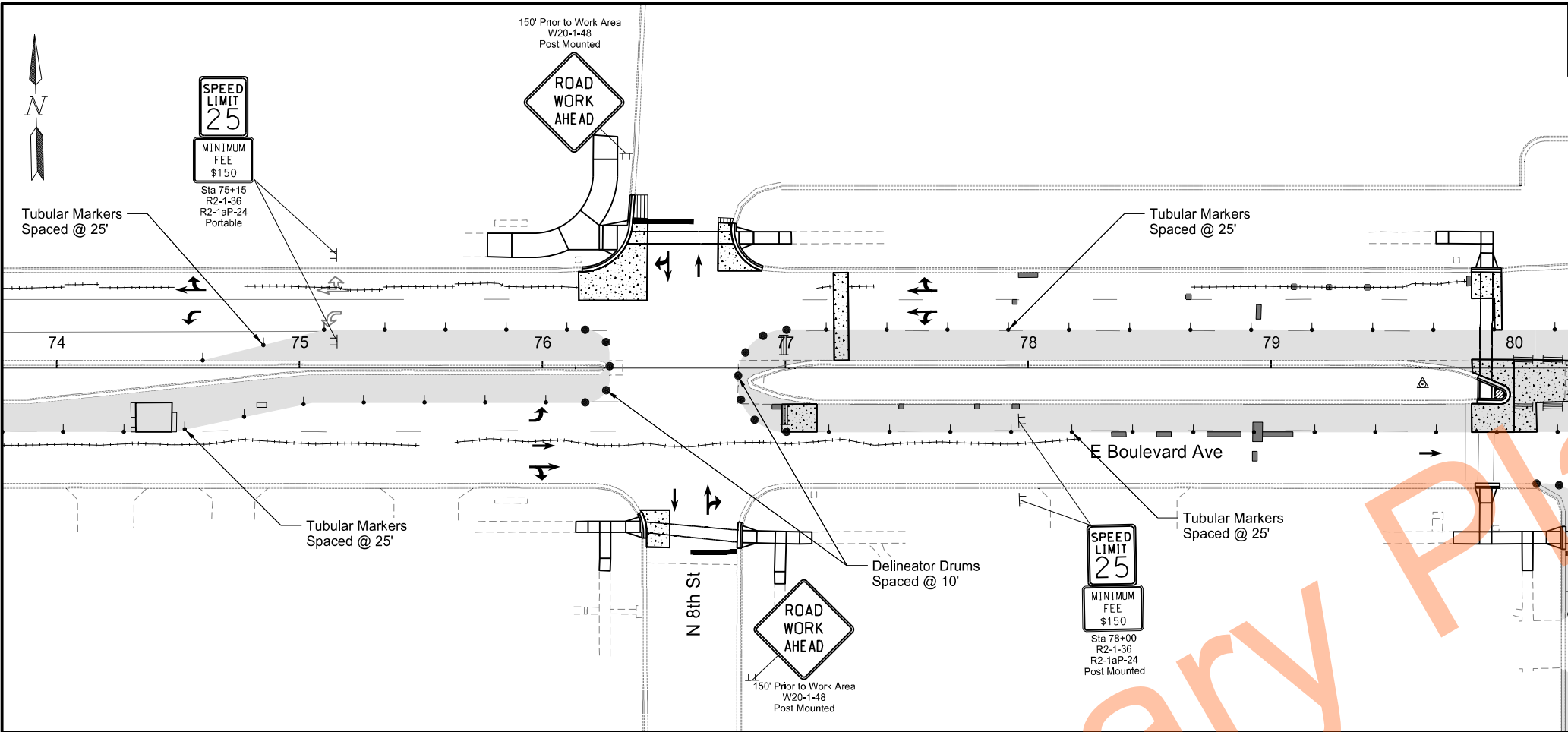
REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

E-28894

DATE
07/31/25

NORTH DAKOTA



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	31

LEGEND

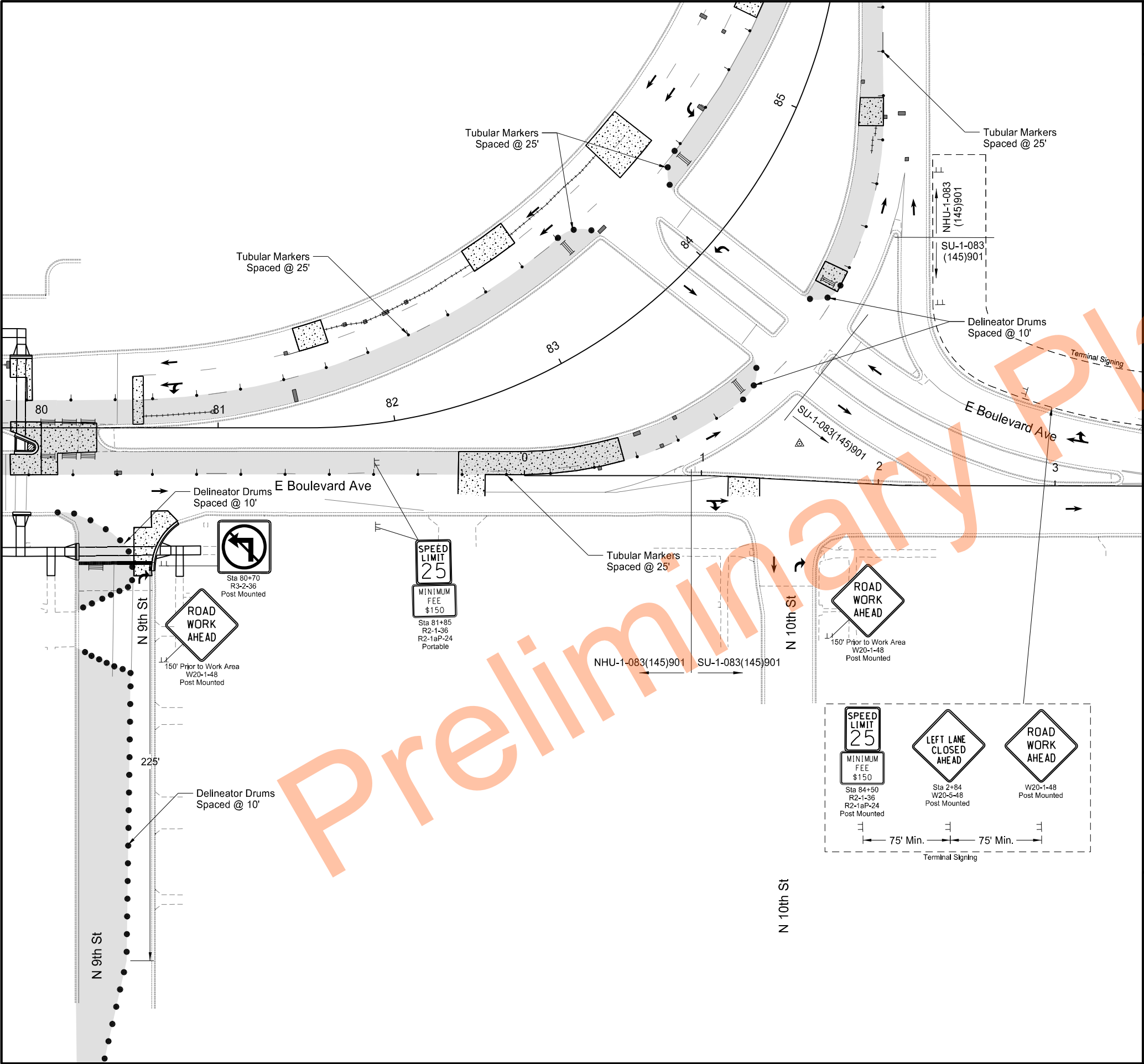
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	32

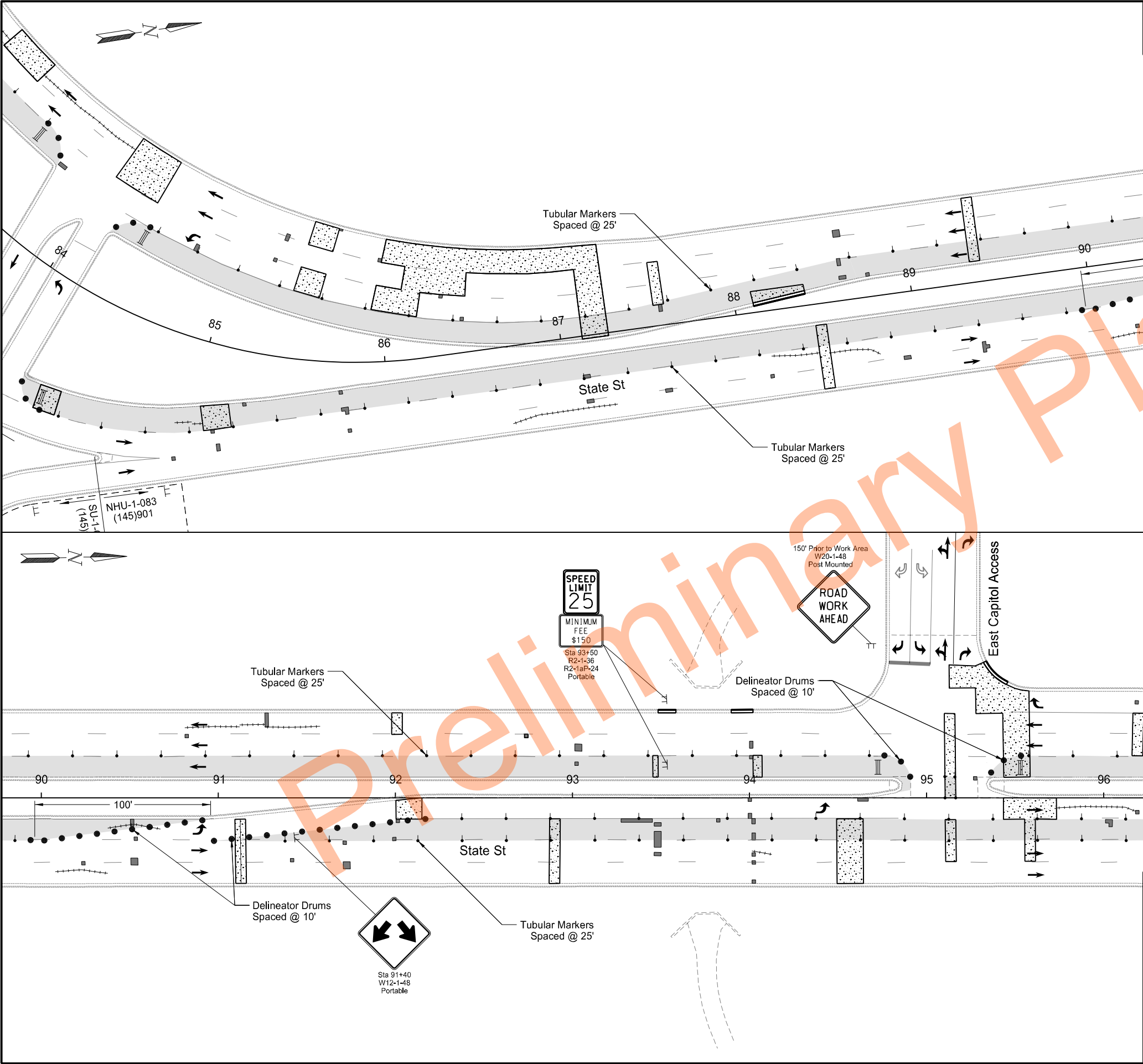
- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	33

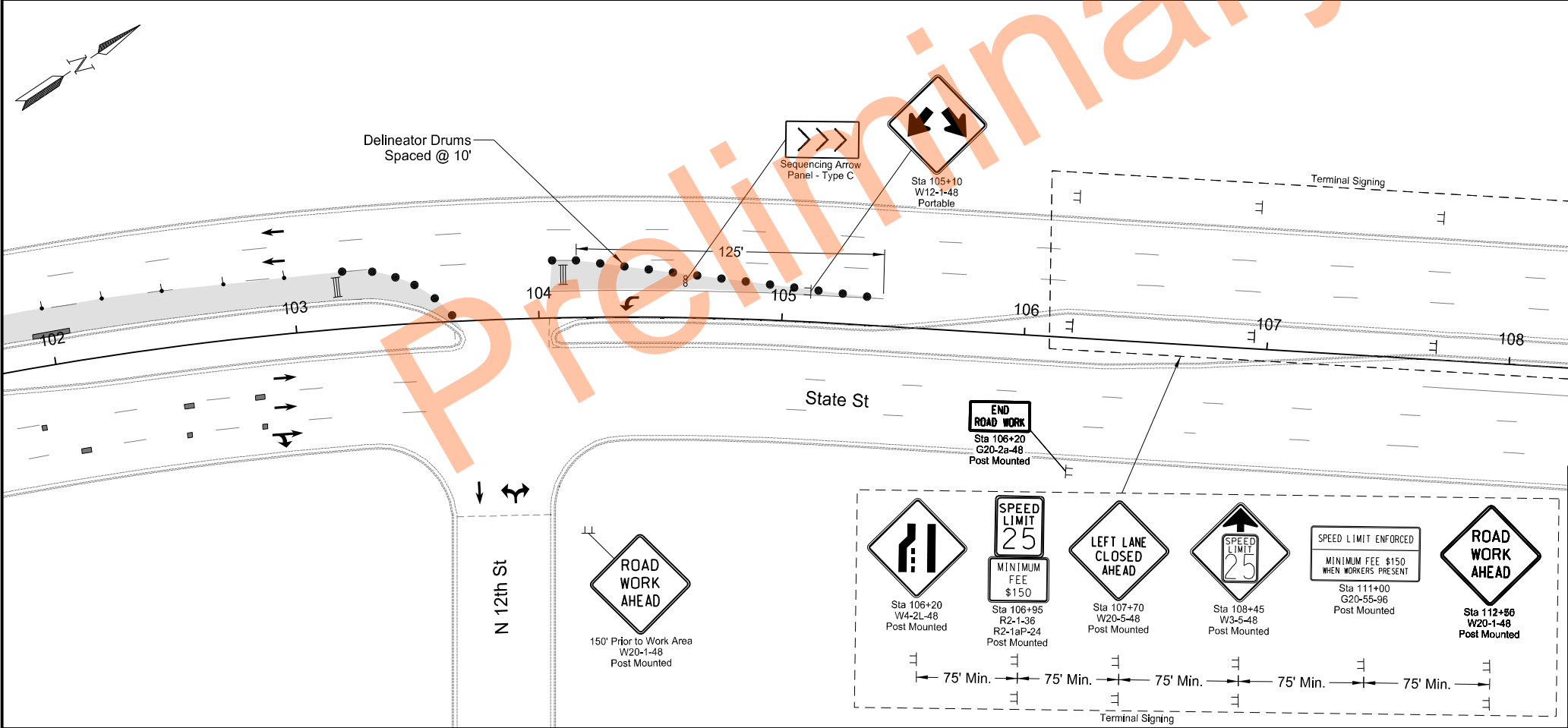
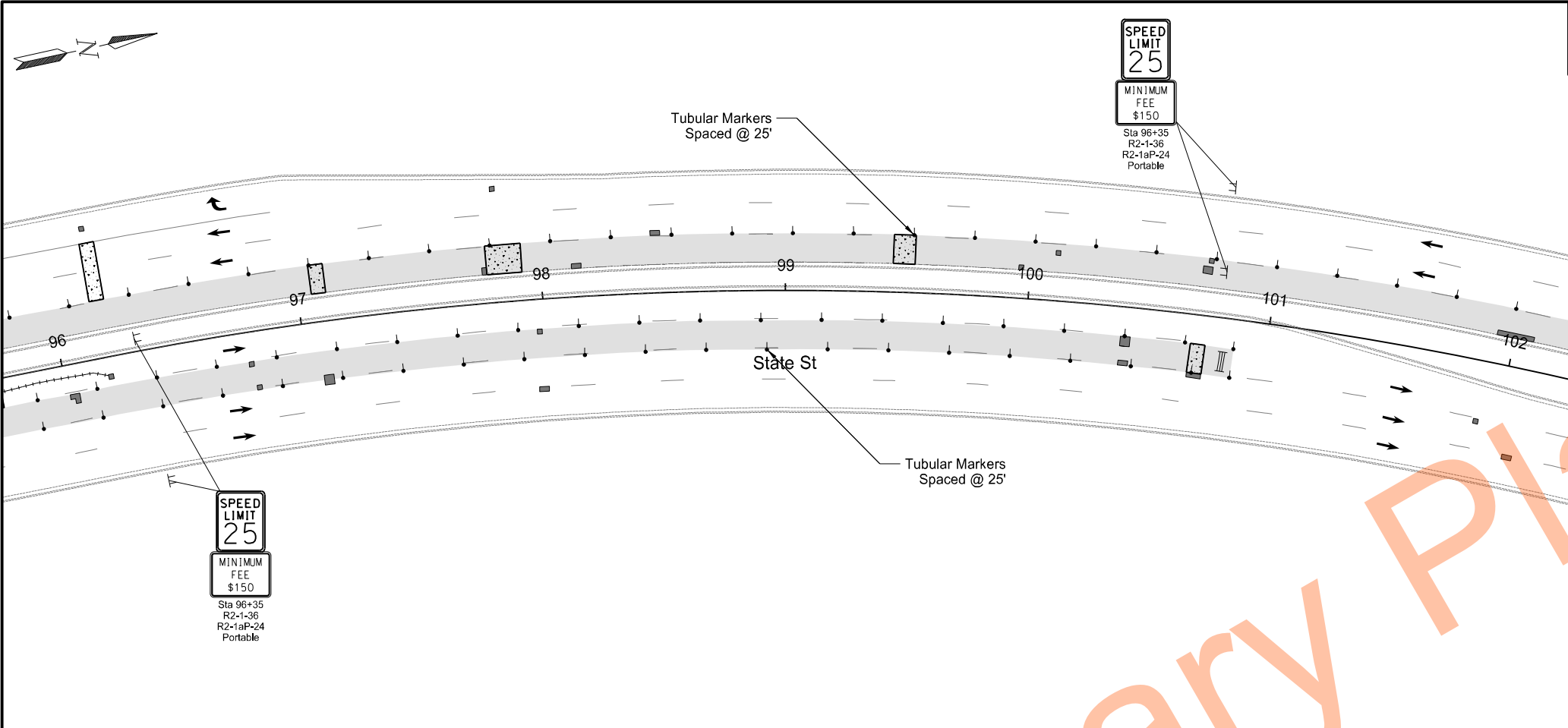
- LEGEND**
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3B

State Street
N 10th Street to Divide





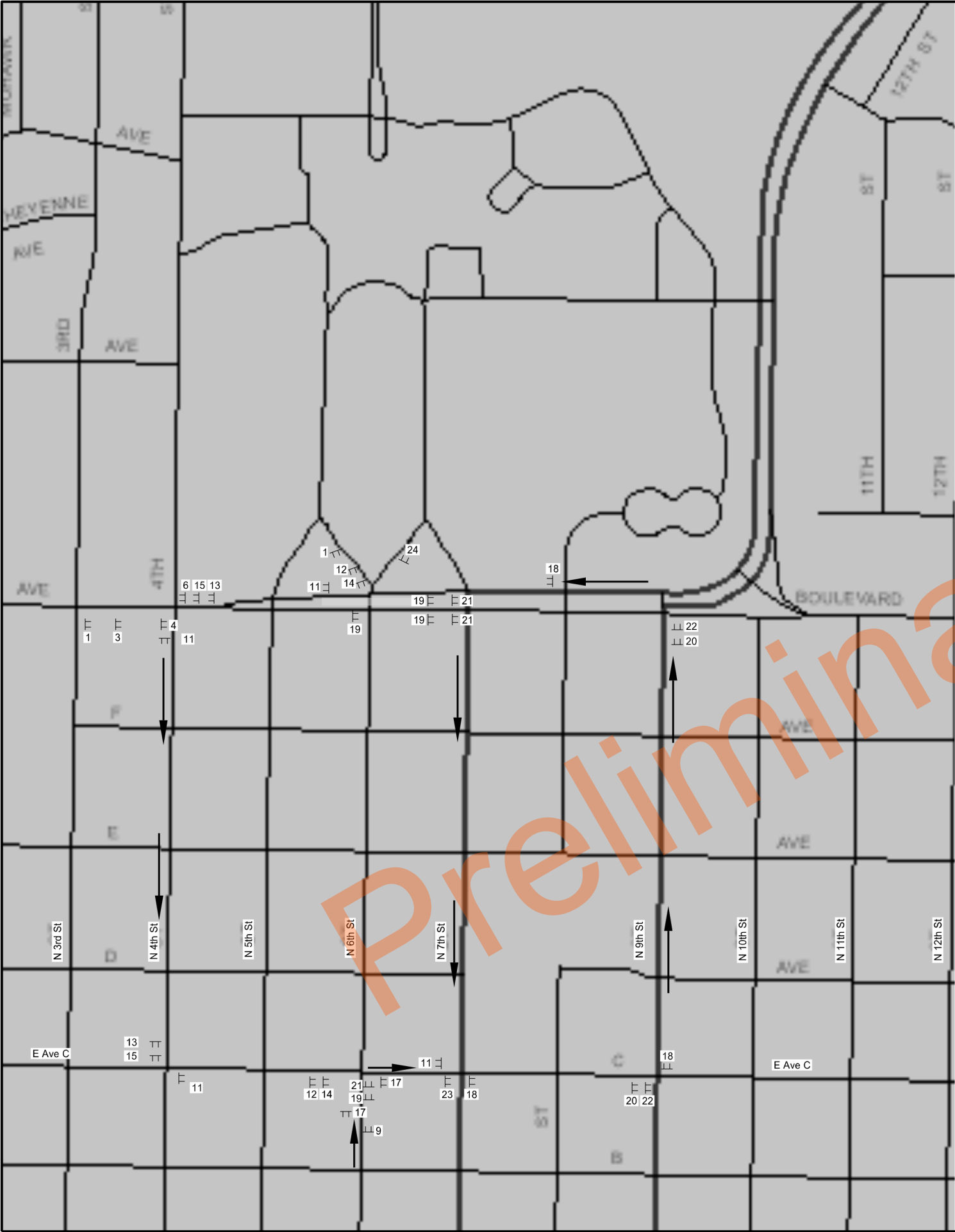
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	34

- LEGEND
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 3B
State Street
N 10th Street to E Divide Ave





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	100	35

SU-1-981(136)

LEGEND

1

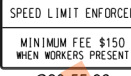


W20-1-48
Post Mounted

2

Not Shown

3



MINIMUM FEE \$150
WHEN WORKERS PRESENT
G20-55-96
Post Mounted

4

Not Shown

5



MINIMUM FEE \$150
R2-1-36
R2-1aP-24
Post Mounted

6



G20-2a-48
Post Mounted

7

Not Shown

8

Not Shown

9



W20-2-48
Post Mounted

10

Not Shown

11



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

12



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

13



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

14



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

15



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

16

Not Shown

17



M4-8-24
M3-3-24
CONSIGN 1
Post Mounted

18



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

19



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

20



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

21



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

22



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

23



M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

24

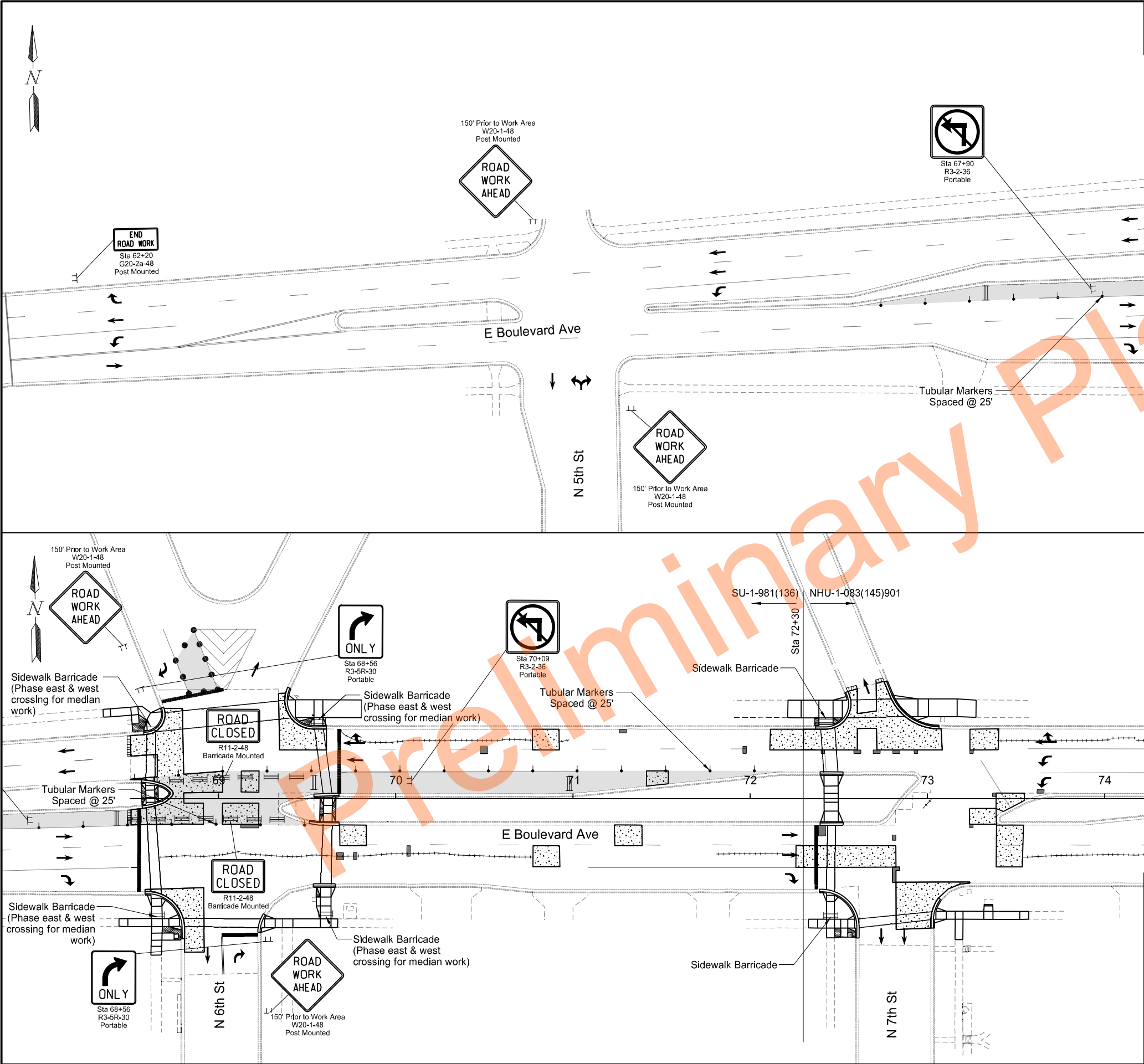


M4-8-24
M3-1-24
CONSIGN 1
Post Mounted

Temporary Traffic Control
Phase 4A - Detour

Boulevard & State Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	36

SU-1-981(136)

LEGEND

Lane Closure/Work Zone

Delineator Drum

Tubular Marker

Type III Barricade

Sign

Direction of Traffic

Pavement Markings (Existing and Proposed)

Sequencing Arrow Panel

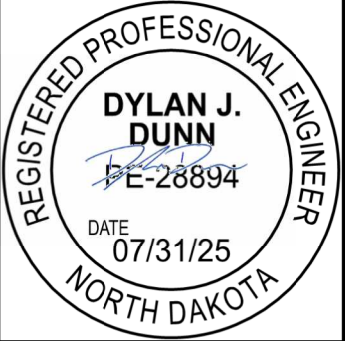
MA

Maintain Access to Driveways
(Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 4A

Boulevard
N 6th Street to N 10th Street



1



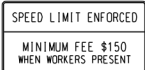
ROAD
WORK
AHEAD

W20-1-48
Post Mounted

2

Not Shown

3



SPEED LIMIT ENFORCED
MINIMUM FEE \$150
WHEN WORKERS PRESENT

G20-55-96
Post Mounted

4

Not Shown

4



SPEED
LIMIT
25

MINIMUM
FEE
\$150

R2-1-36
R2-1aP-24
Post Mounted

5



END
ROAD WORK

G20-2a-48
Post Mounted

6



ROAD
CLOSED
AHEAD

W20-3-48
Portable

7

Not Shown

8



ROAD
CLOSED

R11-2-60
Barricade Mounted

9



DETOUR
AHEAD

W20-2-48
Post Mounted

10



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

11

Not Shown

12



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

13



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

14



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

15



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

16

Not Shown

17



DETOUR
NORTH
STATE ST

M4-8-24
M3-1-24
CONSIGN 3
Post Mounted

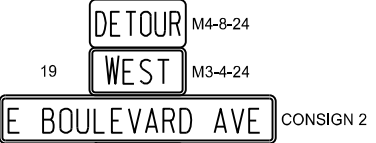
18



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

19



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

20



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

21



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

22



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

23

Not Shown

24



DETOUR
WEST
E BOULEVARD AVE

M4-8-24
M3-4-24
CONSIGN 2
Post Mounted

25



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

26



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

27



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

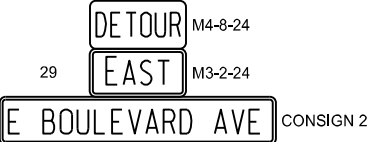
28



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

29



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

30



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

31



DETOUR
EAST
E BOULEVARD AVE

M4-8-24
M3-2-24
CONSIGN 2
Post Mounted

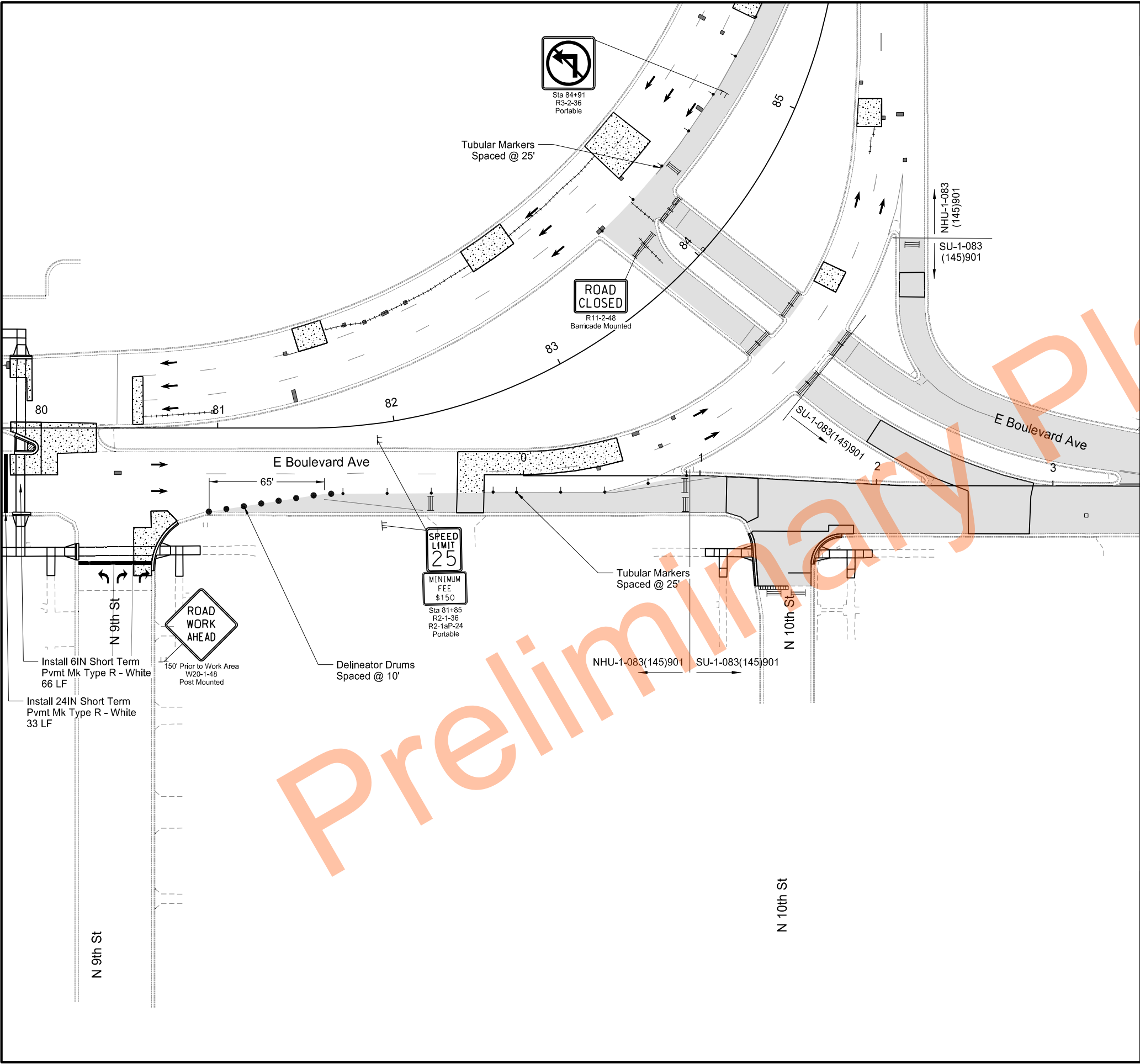
Temporary Traffic Control
Phase 4B - Detour

Boulevard & State Street





7/31/2025 3:58:00 PM loganJund R:\Projects\22000\22900\22942\NDDOT\Project_Number\Design\100_WZTC\100WZ_037_PH4B_Detour_Signing.dgn



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	38

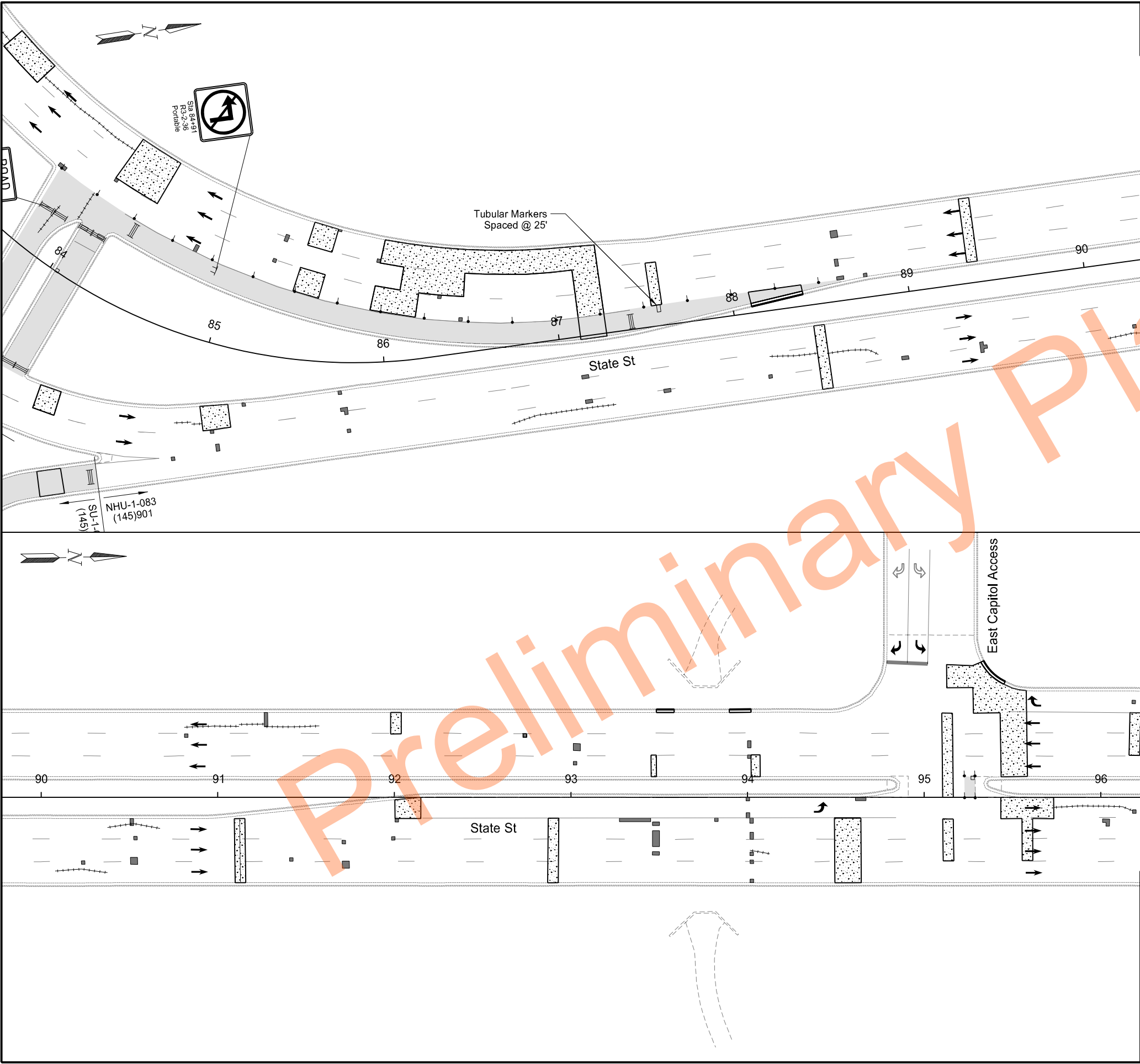
- LEGEND**
- Lane Closure/Work Zone
 - Delineator Drum
 - Tubular Marker
 - Type III Barricade
 - Sign
 - Direction of Traffic
 - Pavement Markings (Existing and Proposed)
 - Sequencing Arrow Panel
 - MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

Temporary Traffic Control
Phase 4B

Boulevard
N 6th Street to N 10th Street





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-SU-1-083(145)901	100	39

LEGEND

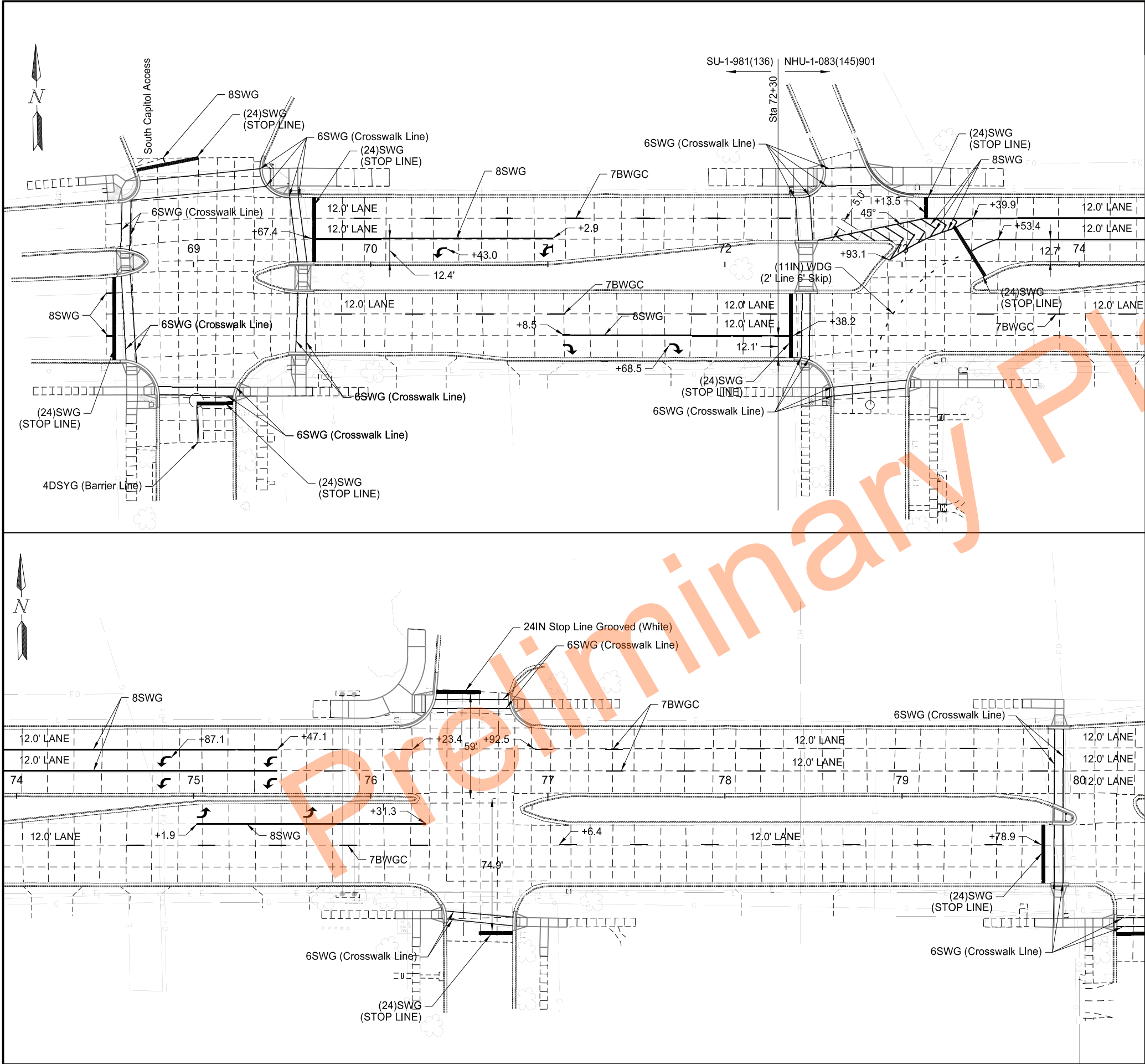
- Lane Closure/Work Zone
- Delineator Drum
- Tubular Marker
- Type III Barricade
- Sign
- Direction of Traffic
- Pavement Markings (Existing and Proposed)
- Sequencing Arrow Panel
- MA Maintain Access to Driveways (Unless Otherwise Shown)

Note: Pavement Markings are existing or installed in a previous phase unless otherwise noted.

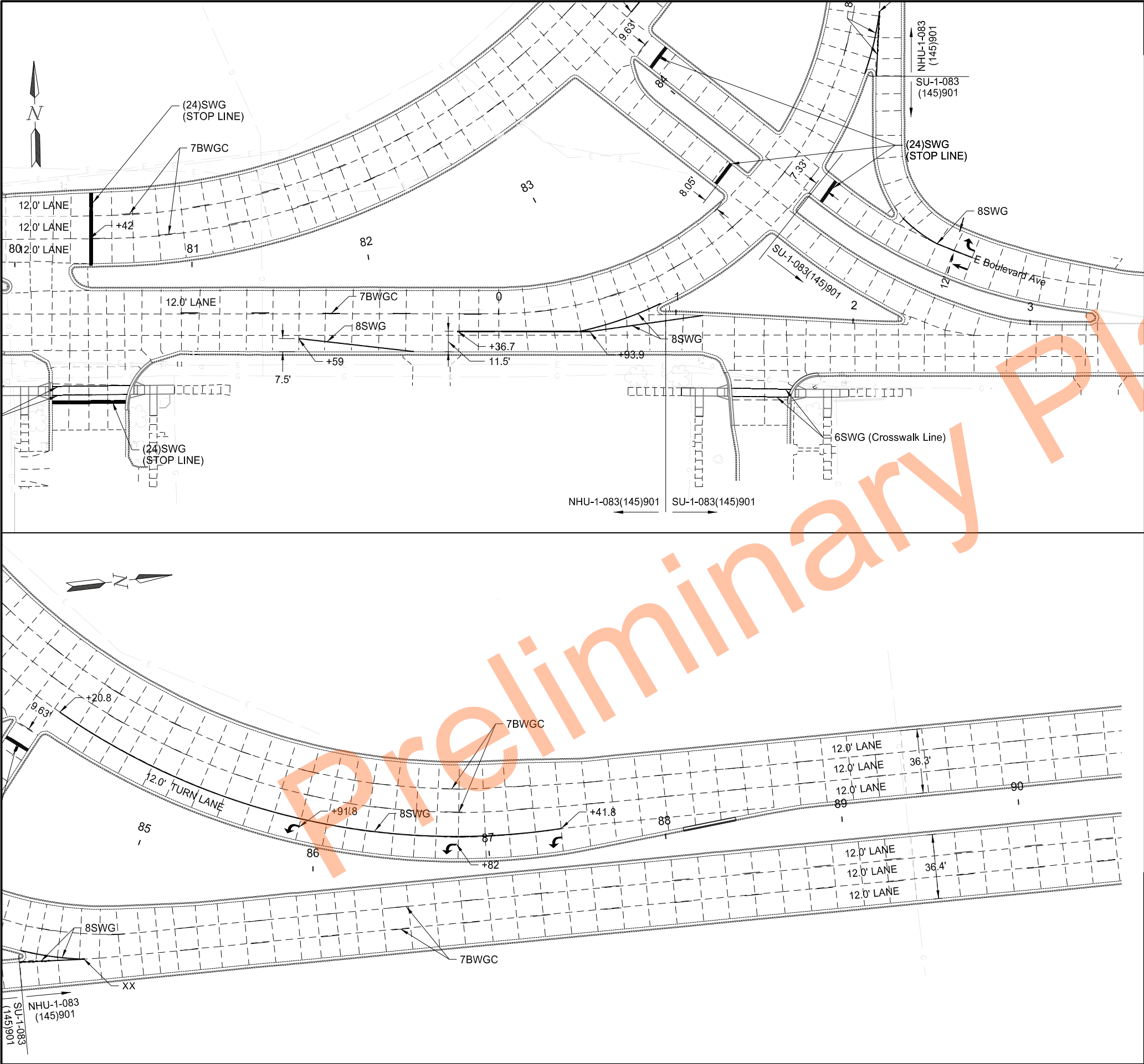
Temporary Traffic Control
Phase 4B

State Street
N 10th Street to Divide





		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	NHU-SU-1-083(145)901	120	1
SU-1-981(136)					
SPEC CODE PAY ITEM				QTY UNIT	
SU-1-981(136)					
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)				
Sta 68+50 to Sta 72+30				64	SF
762 1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE				
Sta 68+50 to Sta 72+30				521	LF
762 1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE				
Sta 68+50 to Sta 72+30				140	LF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED				
Sta 68+50 to Sta 72+30				42	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED				
Sta 68+50 to Sta 72+30				263	LF
762 1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED				
Sta 68+50 to Sta 72+30				125	LF
NHU-1-083(145)901					
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)				
Sta 74+00 to Sta 80+00				96	SF
762 1255	PREFORMED THERMO PLASTIC PVMT MK 6IN LINE				
Sta 72+30 to Sta 74+00				262	LF
Sta 74+00 to Sta 80+00				313	LF
762 1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE				
Sta 72+30 to Sta 74+00				80	LF
Sta 74+00 to Sta 80+00				76	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED				
Sta 72+30 to Sta 74+00				403	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	
1ST DIGIT (WIDTH INCHES) 4, 6, 8, (11), (12), (24)				5TH DIGIT (IF PRESENT) C - Contrast	
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 Boulevard Avenue N 6th St to N 7th St Boulevard Avenue & State Street N 7th St to Divide Avenue					



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	120	2

SPEC	CODE	PAY ITEM	QTY	UNIT
NHU-1-083(145)901				
762 0122		PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Sta 84+35 to Sta 90+35	48	SF
762 1255		PREFORMED THERMO PLASTIC PVMT MK 6IN LINE Sta 80+00 to Sta 84+35	86	LF
762 1270		PREFORMED THERMO PLASTIC PVMT MK 24IN LINE Sta 80+00 to Sta 84+35	96	LF
762 1309		PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED Sta 80+00 to Sta 84+35 Sta 84+35 to Sta 90+35	65 370	LF LF
762 1344		PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED Sta 80+00 to Sta 84+35 Sta 84+35 to Sta 90+35	202 570	LF LF
SU-1-083(145)901				
762 0122		PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Sta 0+00 to Sta 3+64	28	SF
762 1255		PREFORMED THERMO PLASTIC PVMT MK 6IN LINE Sta 0+00 to Sta 3+64	66	LF
762 1270		PREFORMED THERMO PLASTIC PVMT MK 24IN LINE Sta 0+00 to Sta 3+64	28	LF
762 1309		PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED Sta 0+00 to Sta 3+64	232	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

Boulevard Avenue
N 6th St to N 7th St

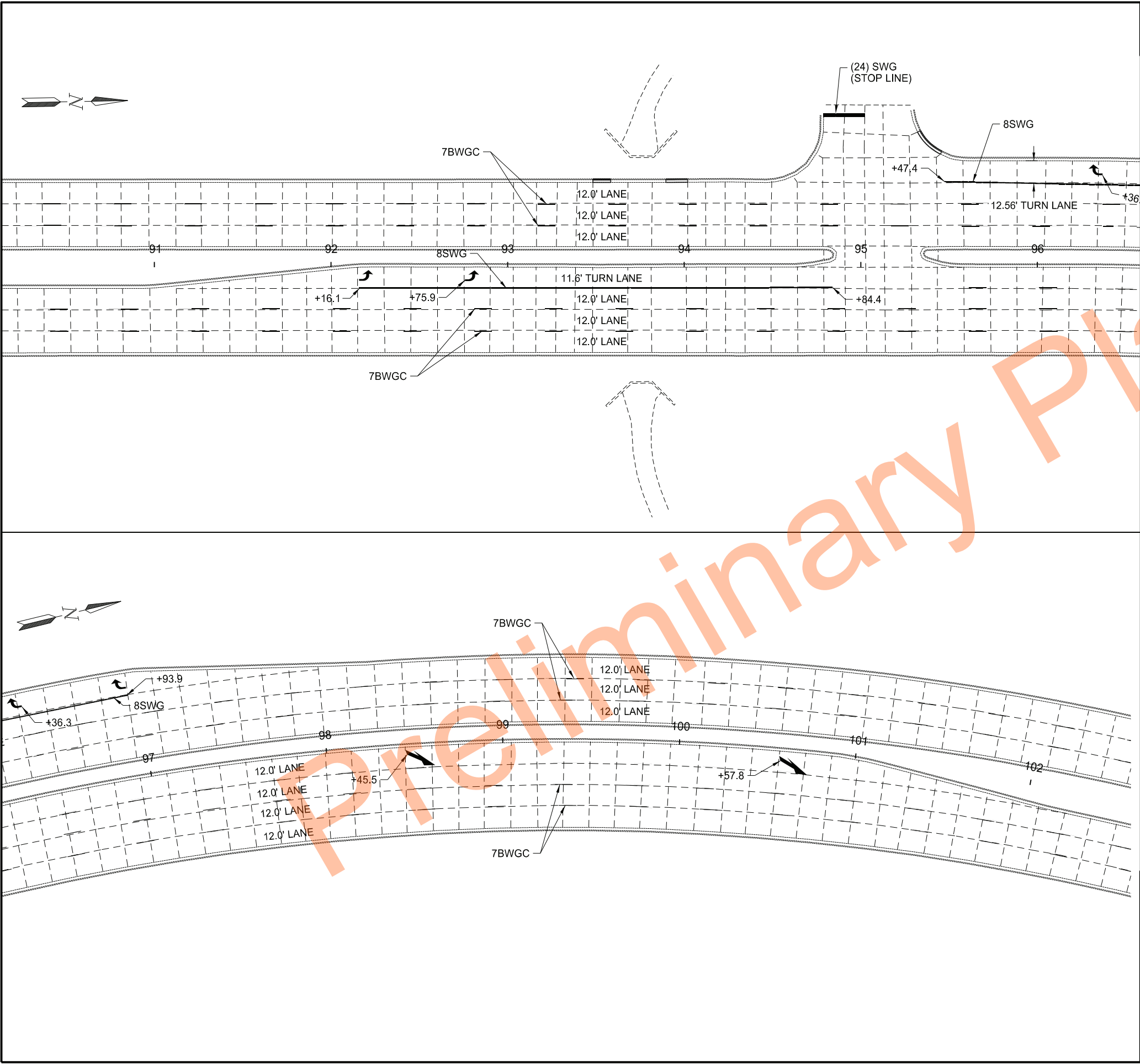
Boulevard Avenue & State Street
N 7th St to Divide Avenue

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN
PE-28894

DATE
07/22/25

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	120	3

SPEC	CODE	PAY ITEM	QTY	UNIT
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Sta 90+35 to Sta 96+35	48	SF
		Sta 96+35 to Sta 102+35	98	SF
762	1270	PREFORMED THERMO PLASTIC PVMT MK 24IN LINE		
		Sta 94+79 to Sta 95+03	24	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		Sta 90+35 to Sta 96+35	356	LF
		Sta 96+35 to Sta 102+35	61	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Sta 90+35 to Sta 96+35	601	LF
		Sta 96+35 to Sta 102+35	648	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

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue

REGISTERED PROFESSIONAL ENGINEER

DYLAN J. DUNN

PE-28894

DATE 07/22/25

NORTH DAKOTA

SPEC	CODE	PAY ITEM	QTY	UNIT
762 0122		PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Sta 102+35 to Sta 104+91.95	16	SF
762 1309		PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		Sta 102+35 to Sta 104+91.95	90	LF
762 1344		PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Sta 102+35 to Sta 104+91.95	187	LF

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

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

5TH DIGIT
(IF PRESENT)
C - Contrast

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

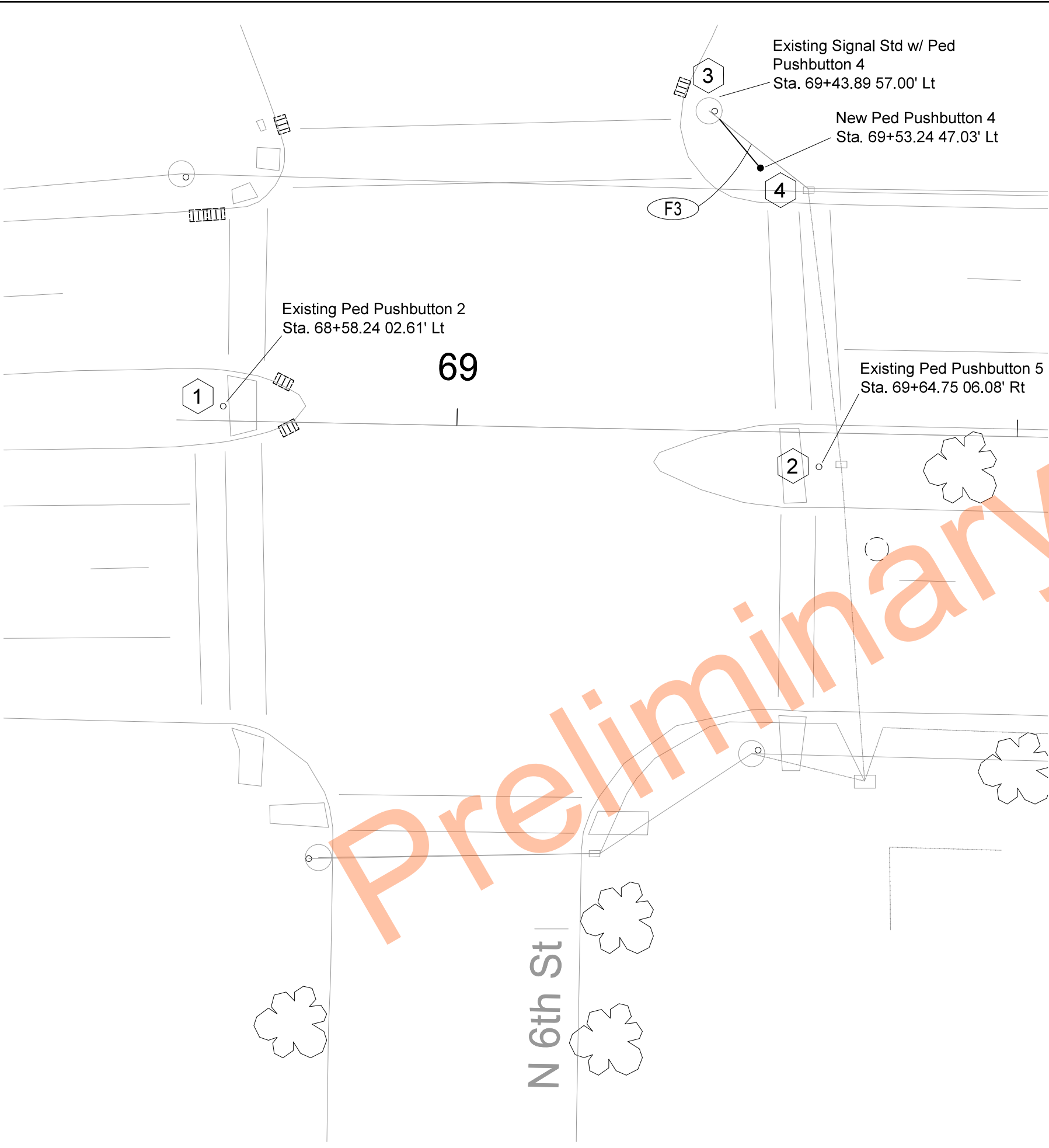
Notes:

- 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.

Boulevard Avenue
N 6th St to N 7th St

Boulevard Avenue & State Street
N 7th St to Divide Avenue





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	150	1
	SU-1-981(136)			

KEYNOTES

- Existing PED pushbutton 2 in west median. Remove existing pushbutton and post. Pull back existing circuitry into existing feed point and coil. Label for future use. Cap existing conduit underground. Re-program cabinet to increase time delay for crosswalk as directed by NDDOT.
- Existing PED pushbutton 5 in east median. Remove existing pushbutton and post. Pull back existing circuitry into existing feed point and coil. Label for future use. Cap existing conduit underground. Re-program cabinet to increase time delay for crosswalk as directed by NDDOT.
- Existing PED pushbutton 4 on existing signal standard. Remove existing PED pushbutton 4 from signal standard and seal signal standard penetrations as required. See note 4 for new pushbutton location.
- Provide new pedestrian pushbutton post and pushbutton. Provide new circuitry indicated. Splice conductors in existing signal standard as required.

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	69+43.89 57.00'Lt to 69+53.24 47.03'Lt	Existing signal standard to New PED Pushbutton 4		19 LF		31 LF	31 LF



Push Button Adjustments

Boulevard
N 6th St to N 10th St

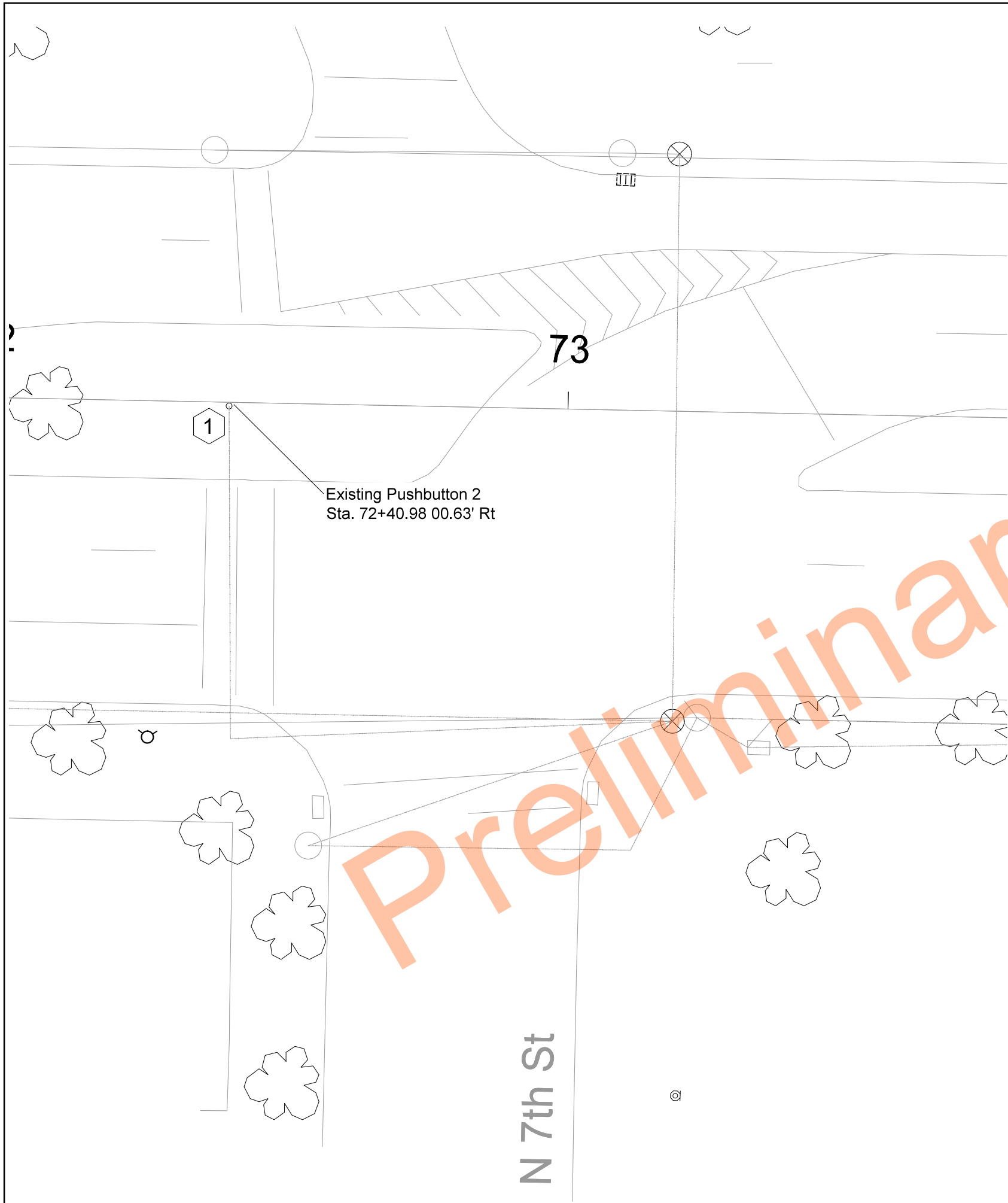
6th and Boulevard Intersection

REGISTERED PROFESSIONAL ENGINEER

JEREMY J. BUTMAN
PE-5943

DATE 07/22/2025

NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-SU-1-083(145)901	150	2
SU-1-981(136)				

KEYNOTES

- Existing PED pushbutton 2 in west median. Remove existing pushbutton and post. Pull back existing circuitry into existing feed point and coil. Label for future use. Cap existing conduit underground. Re-program cabinet to increase time delay for crosswalk as directed by NDDOT.

Push Button Adjustments

Boulevard
N 6th St to N 10th St

7th and Boulevard Intersection

A circular professional seal for a registered professional engineer in North Dakota. The outer ring contains the text 'REGISTERED PROFESSIONAL ENGINEER' and 'NORTH DAKOTA'. The inner circle contains the name 'JEREMY J. BUTMAN', the license number 'PE-5943', and the date '07/22/2025'. A blue ink signature is written across the seal.

NDDOT ABBREVIATIONS

D-101-1

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

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12-18-20	General Revisions
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NDDOT ABBREVIATIONS

D-101-3

Salv	salvage(d)	Tel	telephone
San	sanitary sewer line	Tel B	Telephone Booth
Sec	section	Tel P	telephone pole
SL	section line	Tv	television
Sep	separation	Temp	temperature
Seq	sequence	Temp	temporary
Serv	service	TBM	temporary bench mark
Sht	sheet	T	thinwall tube sample
Shtng	sheeting	Ts	topsoil
Shldr	shoulder	Traf	traffic
Sw or Sdwk	sidewalk	TSCB	traffic signal control box
SD	sight distance	Tr	trail
SN	sign number	Transf	transformer
Sig	signal	Trans	transition
Sgl	single	TT	transmission tower
SRCP	slotted reinforced concrete pipe	TES	traversable end section
SC	slow curing	Trans	transverse
SS	slow setting	Trtd	treated
Sm	small	Trmt	treatment
S	South	Qc	triaxial compression
SE	Southeast	TERO	tribal employment rights ordinance
SW	Southwest	Tpl	triple
SB	Southbound	Typ	typical
Sp	spaces		
Spcl	special	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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NDDOT ABBREVIATIONS

D-101-4

MEASUREMENTS

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

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

SURVEY DESCRIPTIONS

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

SOIL TYPES

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

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NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

D-101-10

702COM
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

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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	
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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	Added and Revised Items, Organized by Functional Groups
12-18-20	General Revisions

KIRK J. HOFF

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PROFESSIONAL

PE-4683

ENGINEER

NORTH DAKOTA

12 18 2020

SYMBOLS

D-101-30

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

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

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NORTH DAKOTA
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



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

KIRK J. HOFF

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Kirk J Hoff

PROFESSIONAL

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

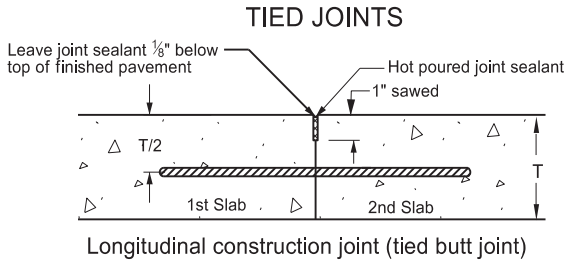
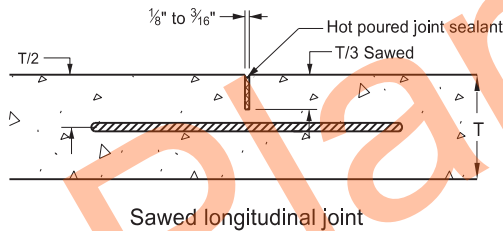
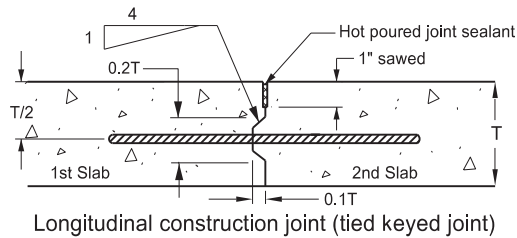


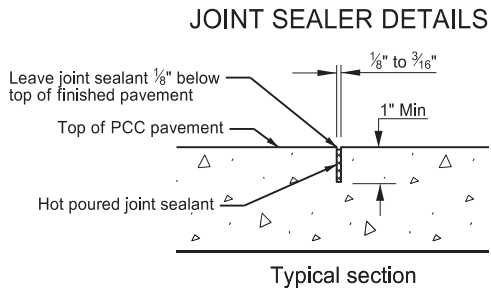
Diagram illustrating a contraction joint in a concrete slab. The joint is shown as a vertical line. The sealant is applied to the joint surface. The joint width is specified as $\frac{1}{8}"$ to $\frac{3}{16}"$. The sealant is applied to the joint surface, and the joint is sealed with hot poured joint sealant. The sealant is applied to the joint surface, and the joint is sealed with hot poured joint sealant. The sealant is applied to the joint surface, and the joint is sealed with hot poured joint sealant.

[illegible]

Hot poured joint sealant

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

Curb and gutter sections

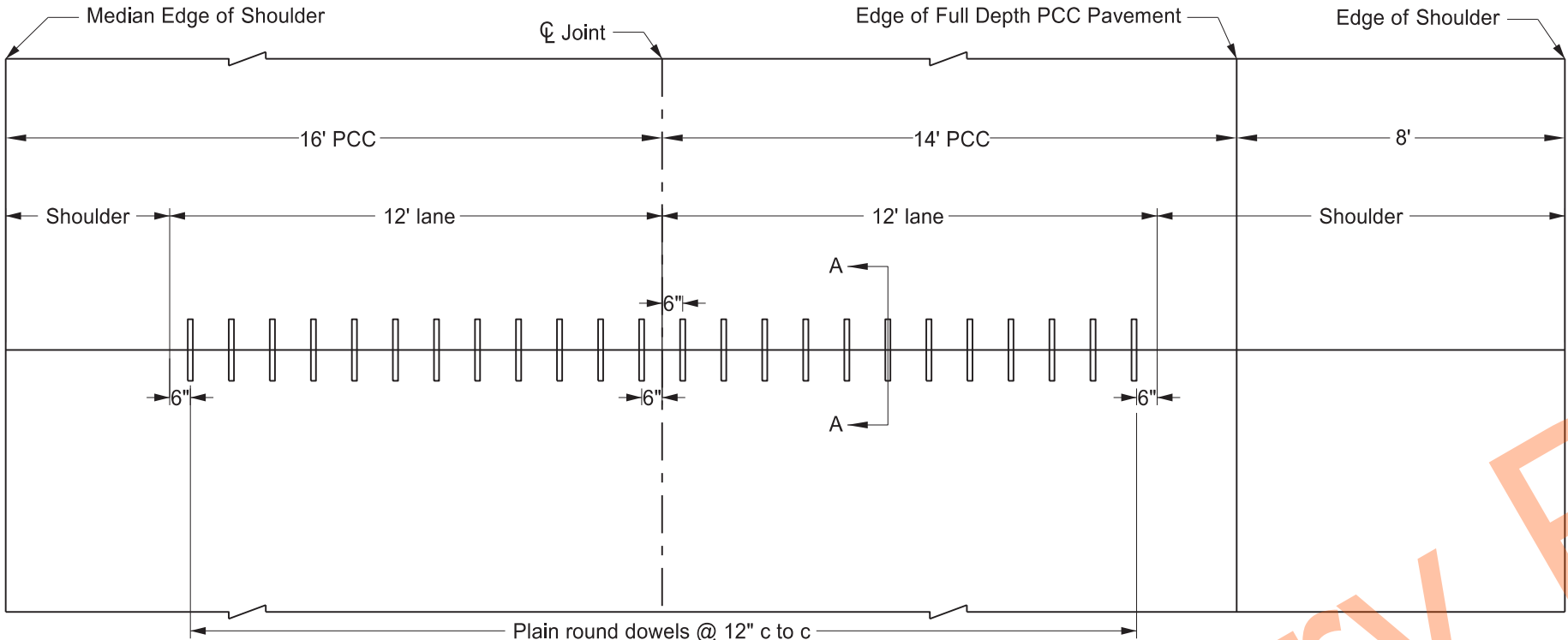
[illegible]

03/13/25

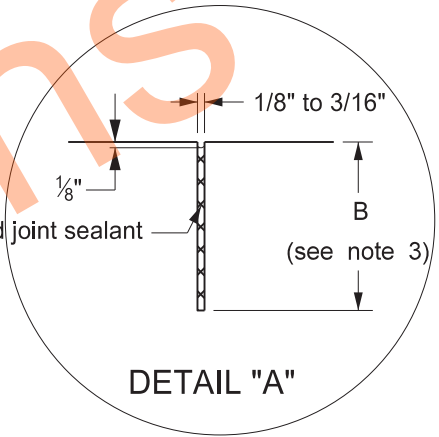
TRANSVERSE CONTRACTION JOINT DETAILS

Notes

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

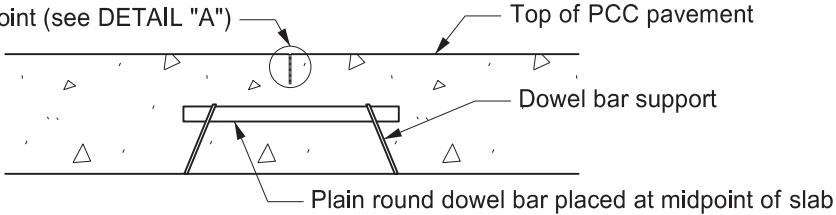


CONTRACTION JOINT DOWEL ASSEMBLY
INTERSTATE

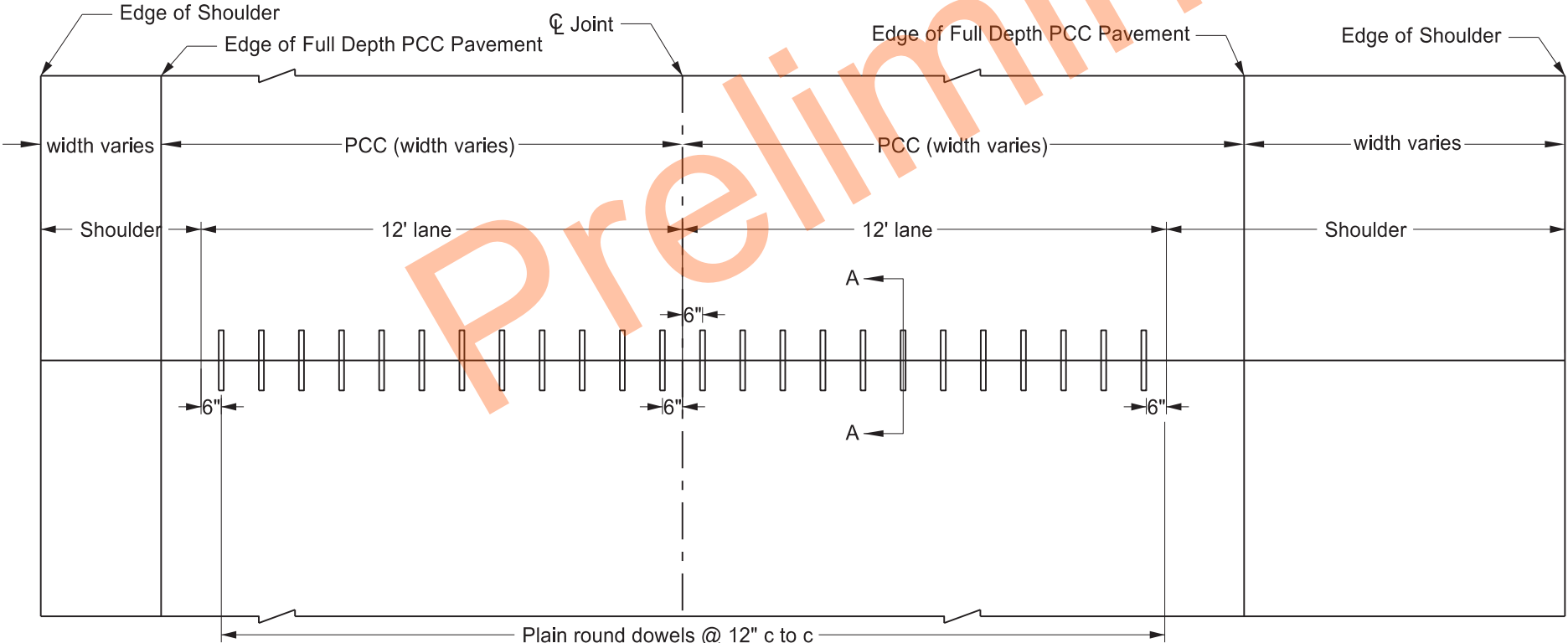


DETAIL "A"

Sawed and sealed transverse contraction joint (see DETAIL "A")



SECTION A-A

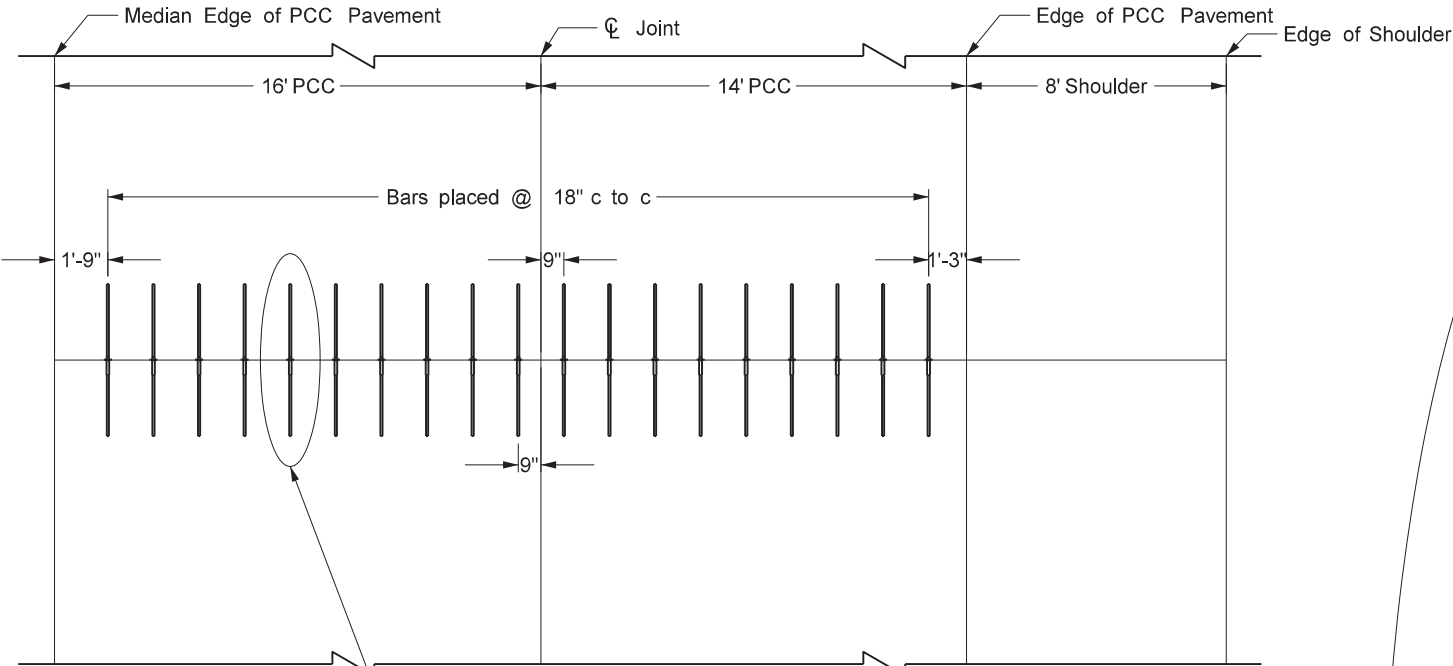


CONTRACTION JOINT DOWEL ASSEMBLY
NON-INTERSTATE

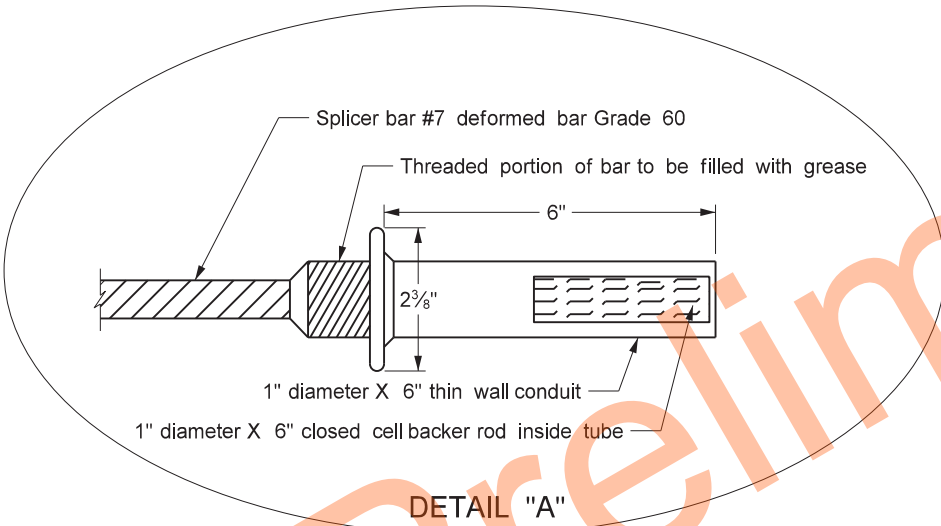
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-10	
REVISIONS	
DATE	CHANGE
6/23/2014	Removed dowel size reference
3/16/2016	Revised Joint Details and notes
10/25/2019	Expanded Details for clarity
03/13/2025	Revised # of Dowels & Note 3.



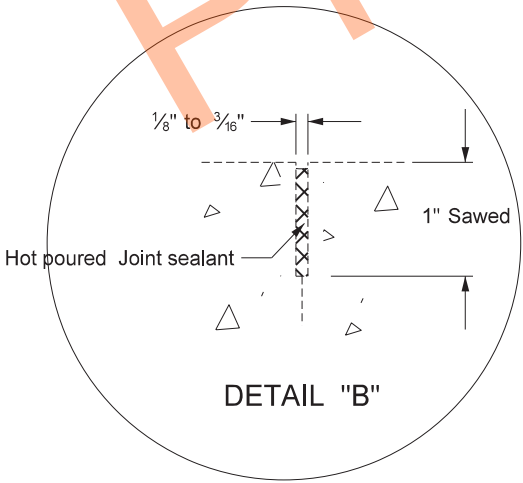
TRANSVERSE CONSTRUCTION JOINT



PLAN VIEW

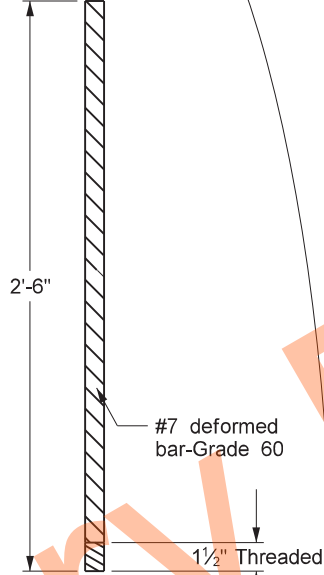


DETAIL "A"

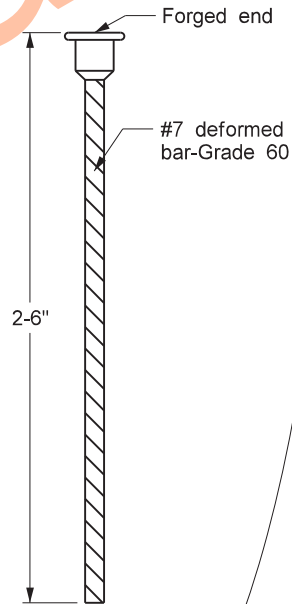


DETAIL "B"

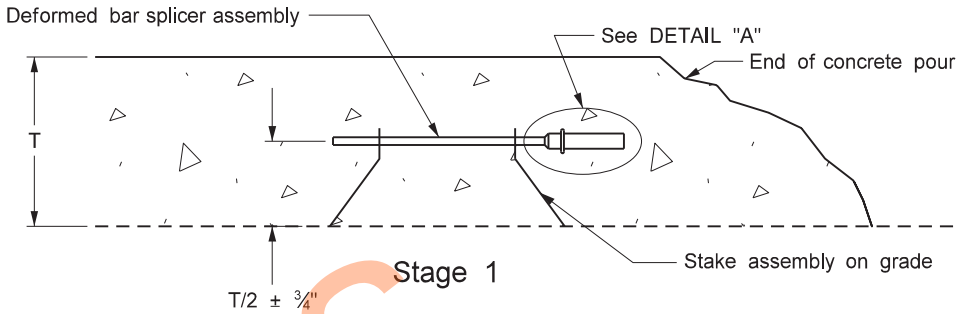
DEFORMED INSERT



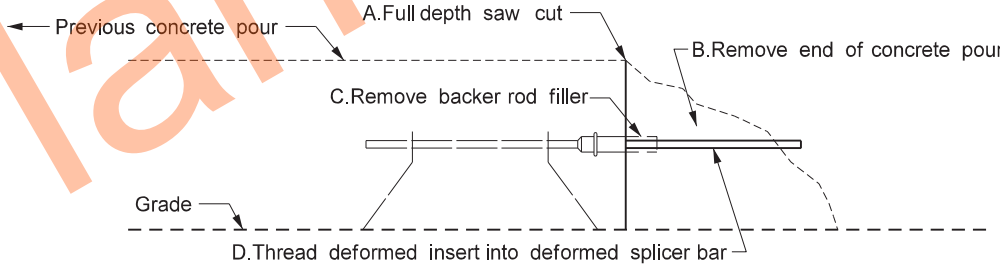
DEFORMED SPLICER BAR



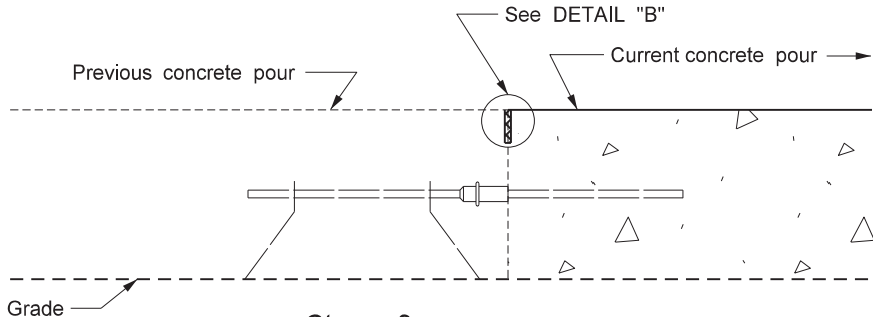
STAGES OF CONSTRUCTION



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.

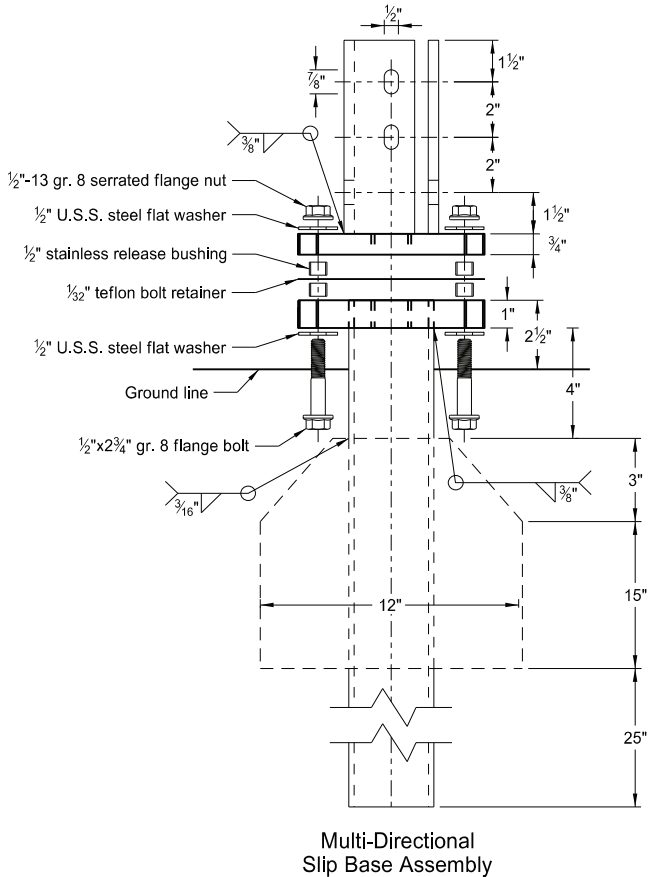
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-2010	
REVISIONS	
DATE	CHANGE
3-16-16	Revised Joint Details & notes.
8-27-19	New Design Engr PE Stamp.
8-09-24	Electronic Stamp/Signature.



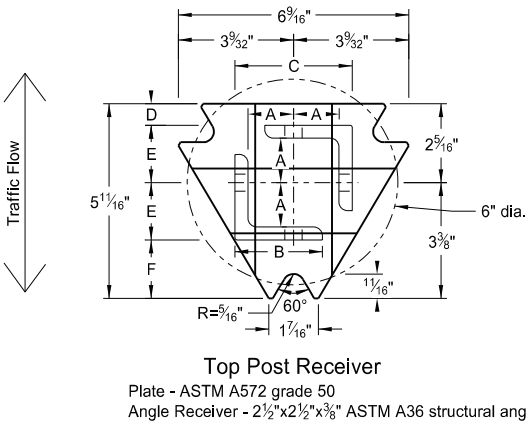
08/09/24

BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS

D-704-7



Perforated Tube



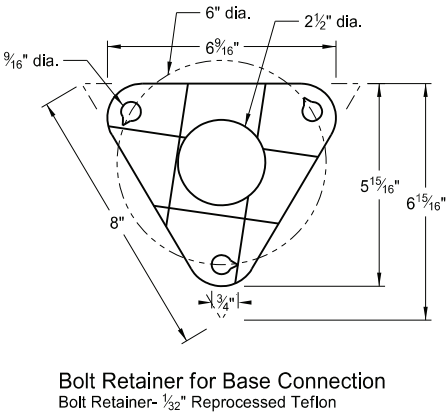
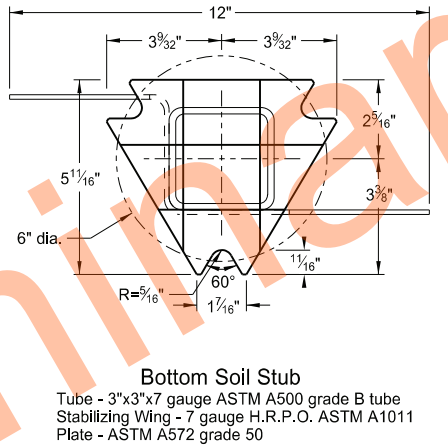
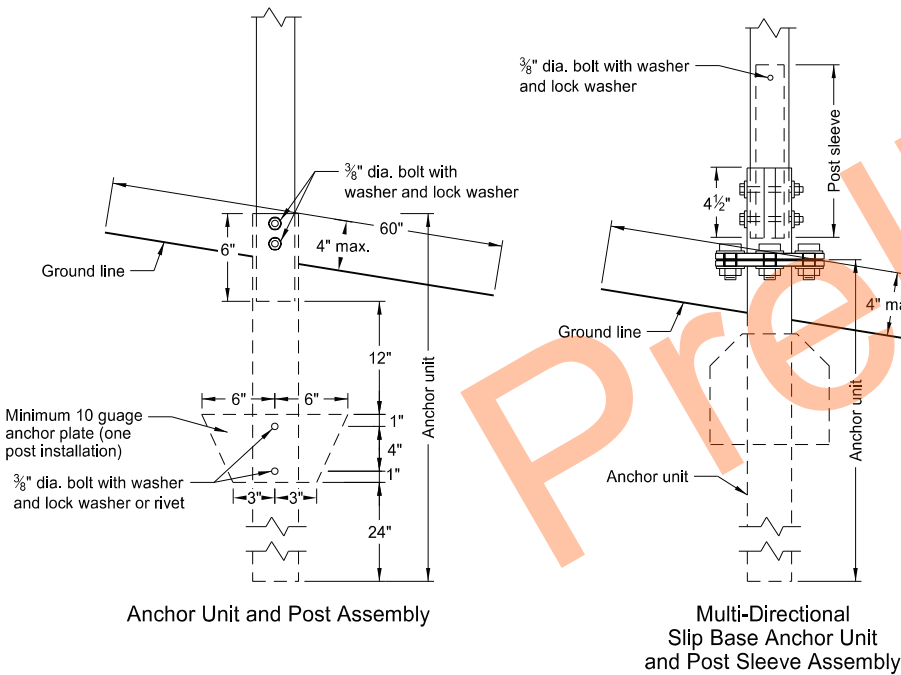
- Notes:
1. Torque slip base bolts as specified by manufacturer.
 2. Use anchor with 43.9 KSI yield strength and 59.3 KSI tensile strength.
 3. Provide 4" vertical clearance for anchor or breakaway base. Measure the 4"x60" measurement above and below post location and back and ahead of post.
 4. In concrete sidewalk, use same anchor without wings.
 5. Provide more than 7' between the first and fourth posts of a four post sign.

Telescoping Perforated Tube						
Number of Posts	Post Size in.	Wall Thickness Gauge	Sleeve Size in.	Wall Thickness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2 1/4
1	2 1/4	12			No	2 1/2
1	2 1/2	12			(A)	3
1	2 1/2	10			Yes	
1	2 1/4	12	2	12	Yes	
1	2 1/2	12	2 1/4	12	Yes	
2	2	12			No	2 1/4
2	2 1/4	12			No	2 1/2
2	2 1/2	12			Yes	
2	2 1/2	12			Yes	
2	2 1/4	10	2	12	Yes	
2	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/2	12			Yes	
3 & 4	2 1/2	10			Yes	
3 & 4	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/4	12	2	12	Yes	
3 & 4	2 1/2	10	2 3/16	10	Yes	

Properties of Telescoping Perforated Tube						
Tube Size in.	Wall Thickness in.	U.S. Standard Gauge	Weight per Foot lbs.	Moment of Inertia in. ⁴	Cross Sec. Area in. ²	Section Modulus in. ³
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499
2 3/16 x 2 3/16	0.135	10	3.432	0.605	0.841	0.590
2 1/2 x 2 1/2	0.105	12	3.141	0.804	0.803	0.643
2 1/2 x 2 1/2	0.135	10	4.006	0.979	1.010	0.785

Top Post Receiver Data Table						
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16"x10 ga.	1 5/16"	2 1/2"	3 1/32"	2 5/32"	1 33/64"	1 7/8"
2 1/2"x10 ga.	1 3/32"	2 1/2"	3 5/16"	5/8"	1 21/32"	1 3/4"

- (A) Use breakaway base when support is placed in weak soils. Engineer determines if soils are weak.
- (B) For additional wind load, insert the 2 3/16"x10 ga. into 2 1/2"x10 ga.



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

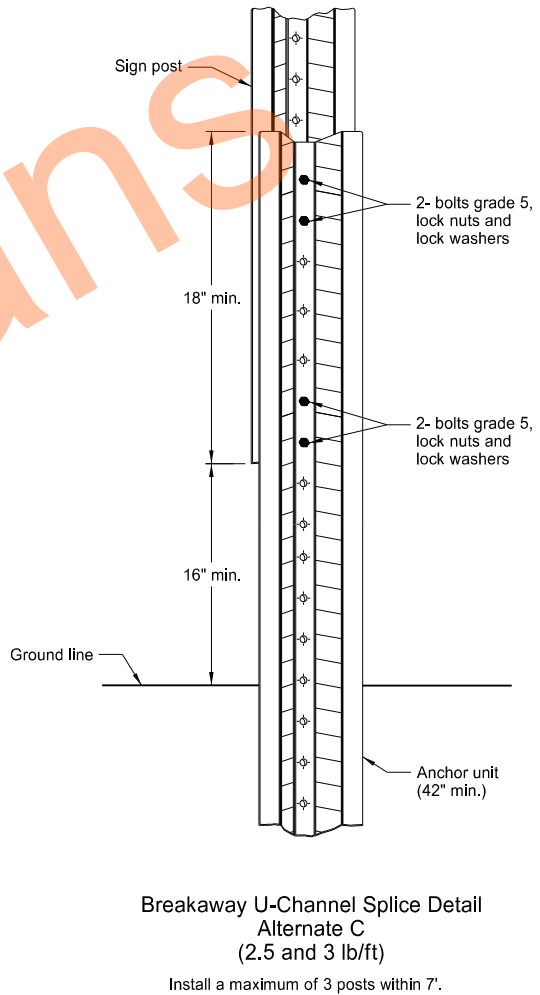
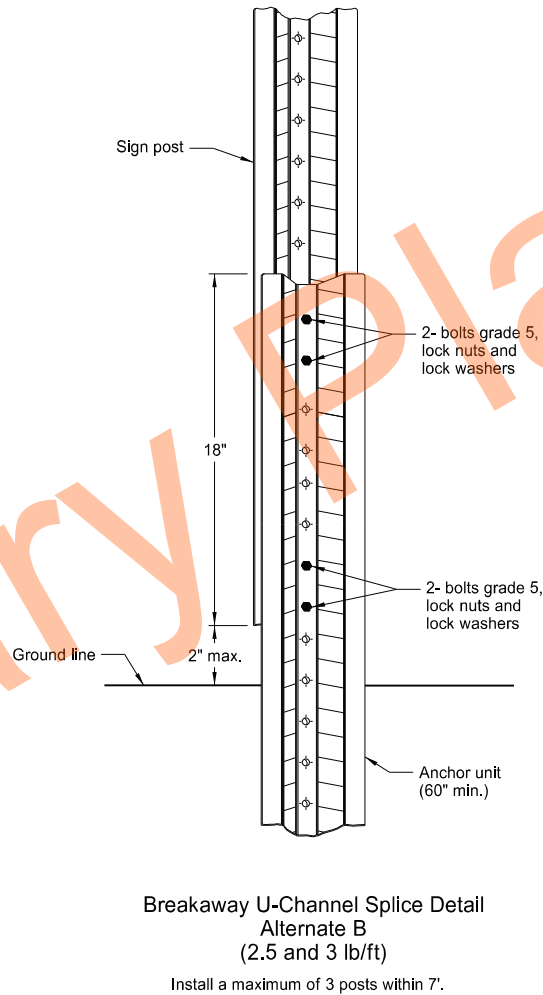
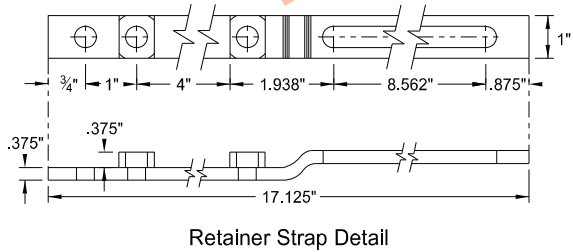
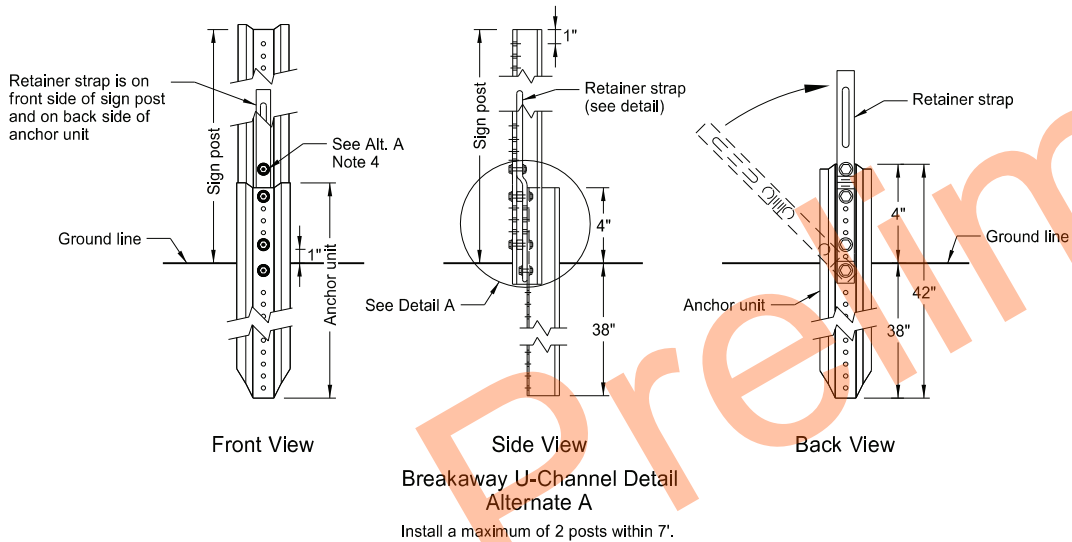
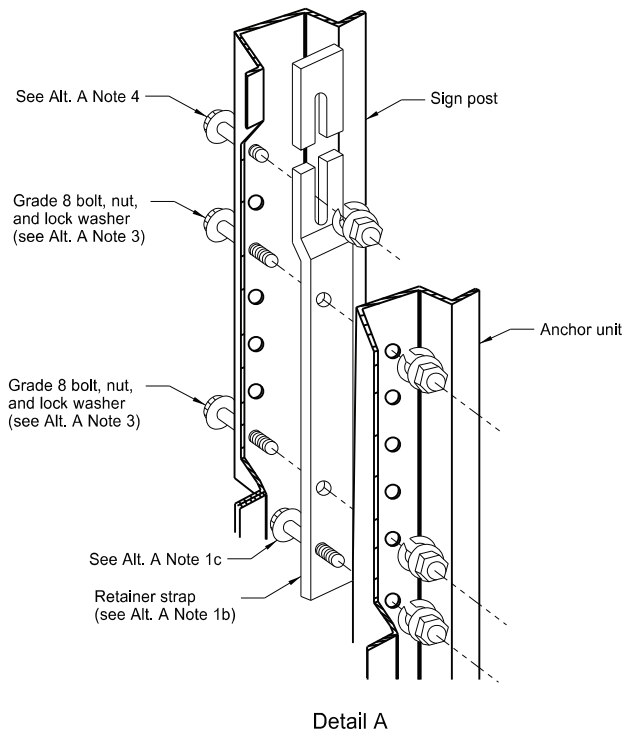


08/01/24

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 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 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 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

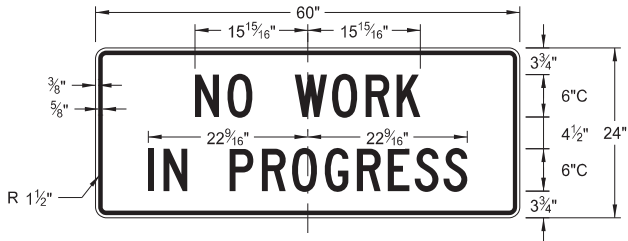


08/01/24

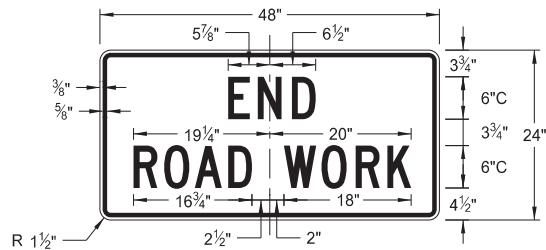
CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS



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



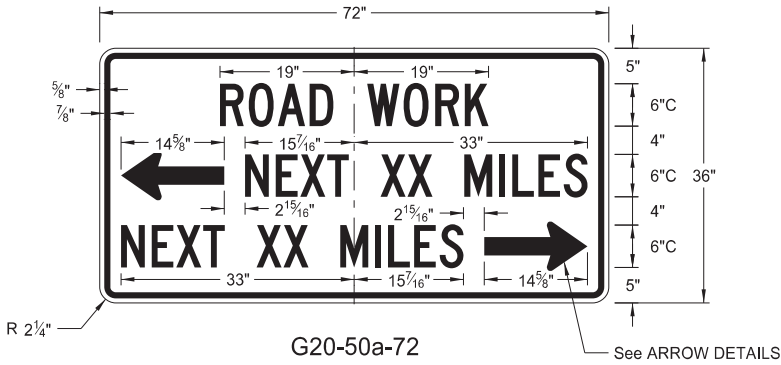
G20-1b-60
Legend: black (non-refl)
Background: orange



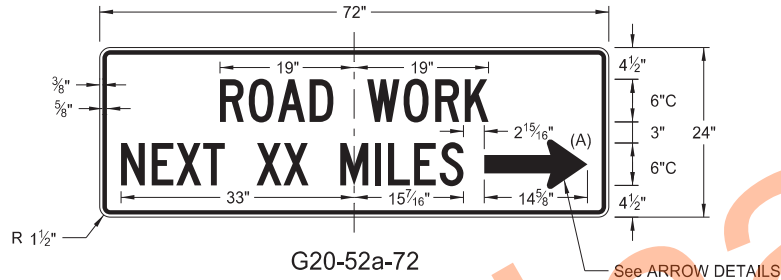
G20-2-48
Legend: black (non-refl)
Background: orange



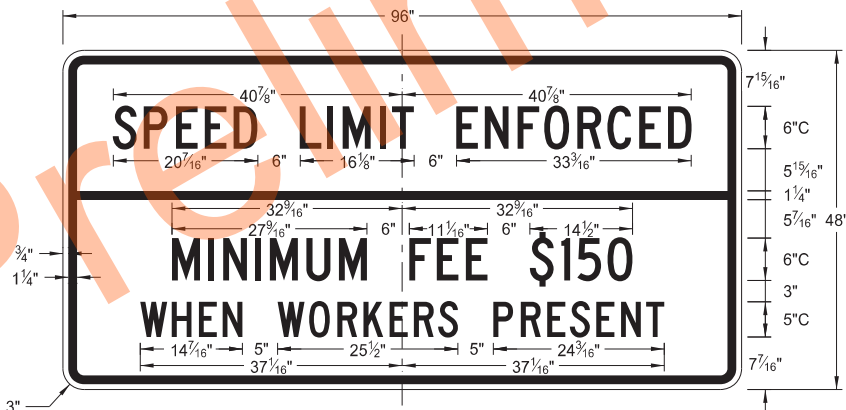
G20-4b-36
Legend: black (non-refl)
Background: orange



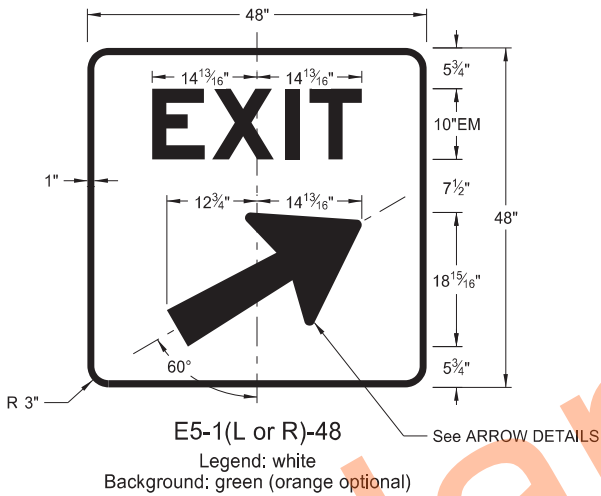
G20-50a-72
Legend: black (non-refl)
Background: orange



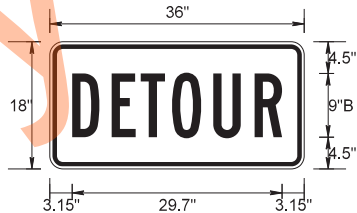
G20-52a-72
Legend: black (non-refl)
Background: orange



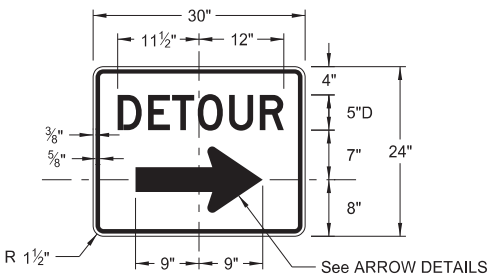
G20-55-96
Legend: black (non-refl)
Background: orange



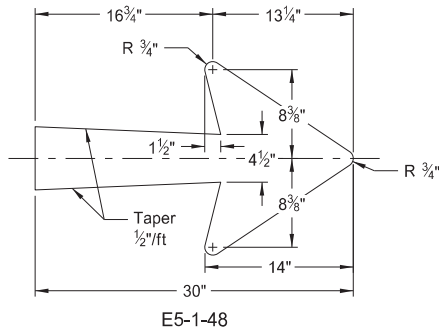
E5-1(L or R)-48
Legend: white
Background: green (orange optional)



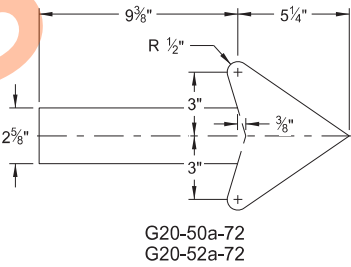
M4-8-36
Legend: black (non-refl)
Background: orange



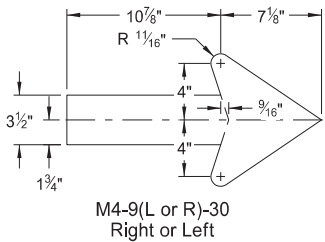
M4-9(L or R)-30 & M4-9-30
Legend: black (non-refl)
Background: orange



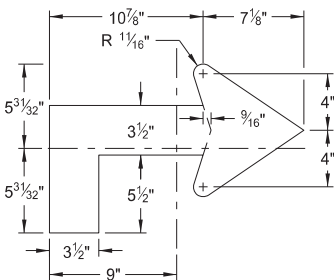
E5-1-48



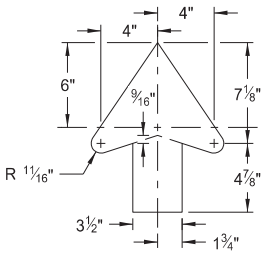
G20-50a-72
G20-52a-72



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:

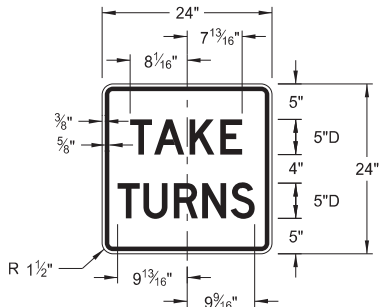
(A) Arrow may be right or left of the legend to indicate construction to the right or left.

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

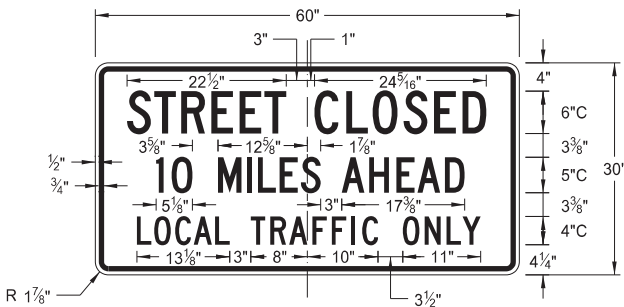


CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

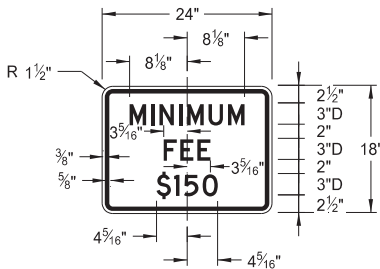
D-704-10



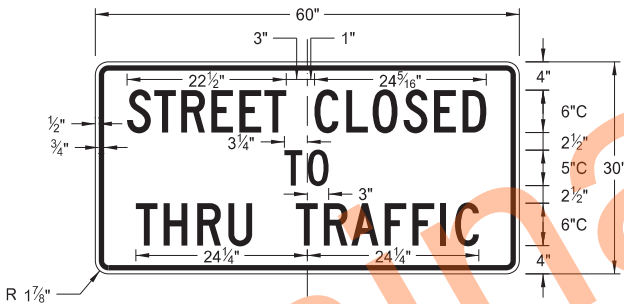
R1-50P-24
Legend: black (non-refl)
Background: white



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

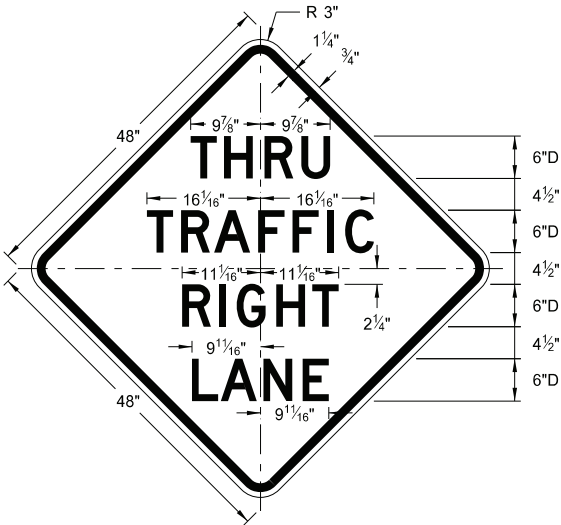
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
08-17-17	Revised sign number
10-03-19	New Design Engineer PE Stamp
08-01-24	Electronic Stamp/Signature
06-30-25	Legislative Changes



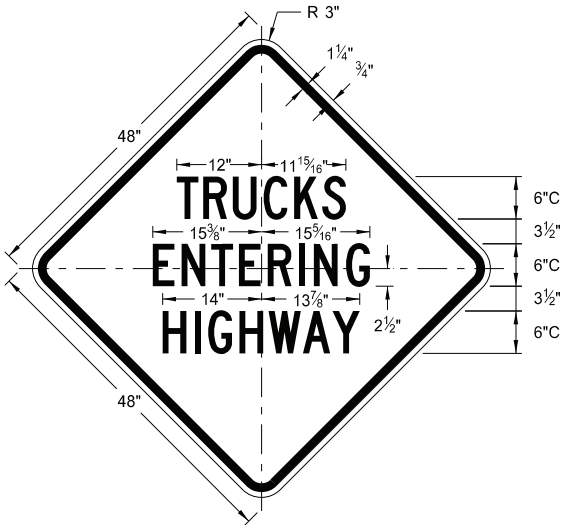
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

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

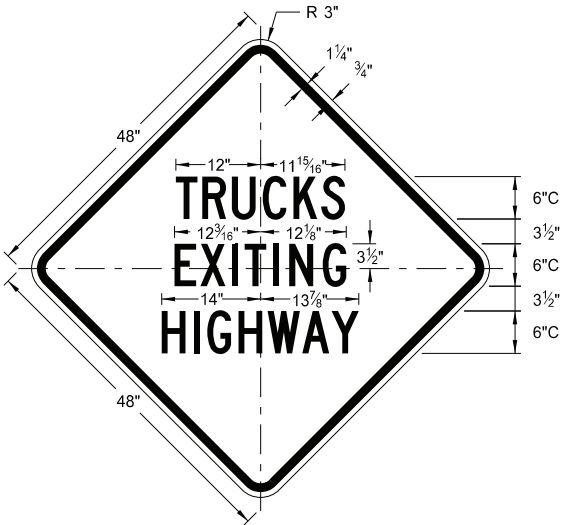
* DISTANCE MESSAGES



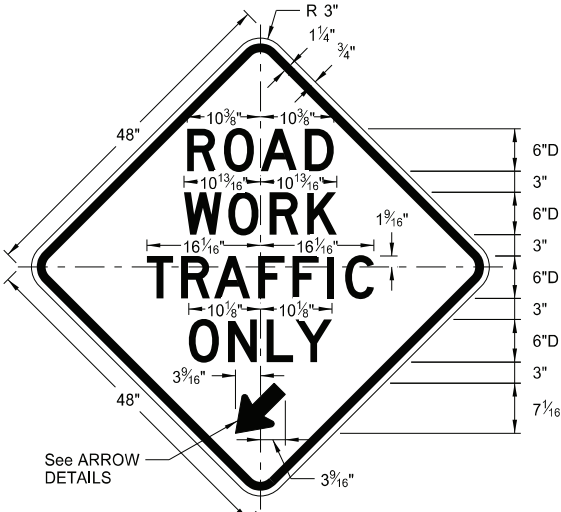
W5-8-48
Legend: black (non-refl)
Background: orange



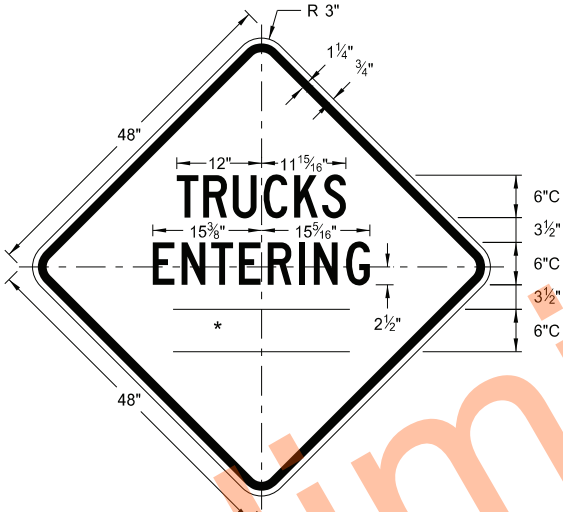
W8-53-48
Legend: black (non-refl)
Background: orange



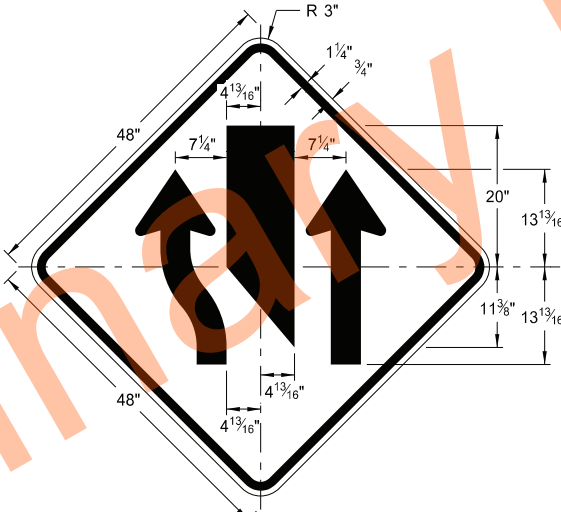
W8-56-48
Legend: black (non-refl)
Background: orange



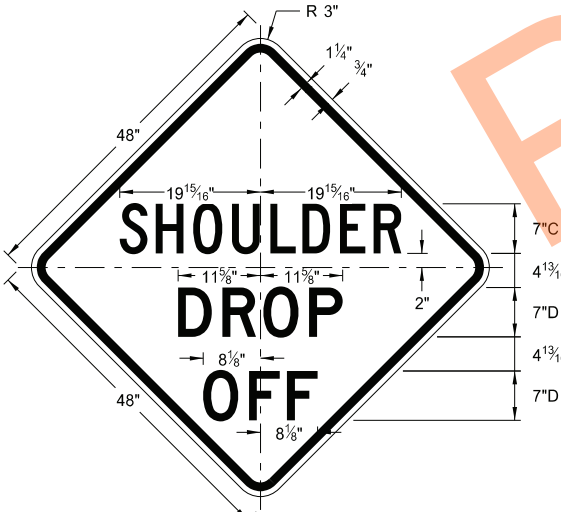
W5-9-48
Legend: black (non-refl)
Background: orange



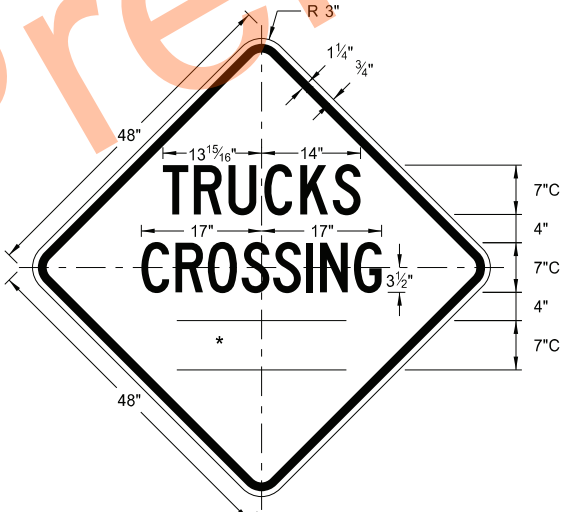
W8-54-48
Legend: black (non-refl)
Background: orange



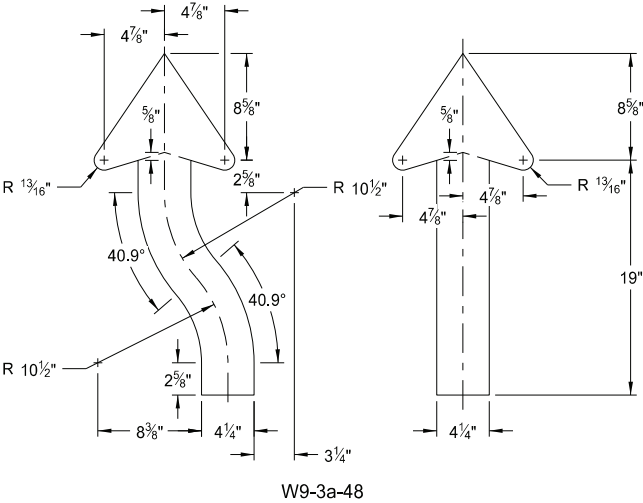
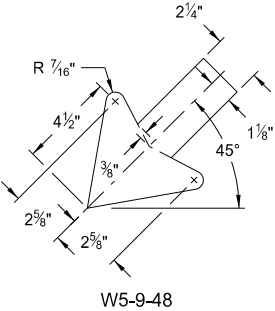
W9-3a-48
Legend: black (non-refl)
Background: orange



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

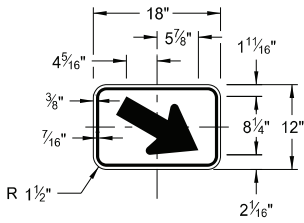


08/01/24

CONSTRUCTION SIGN DETAILS
WARNING SIGNS

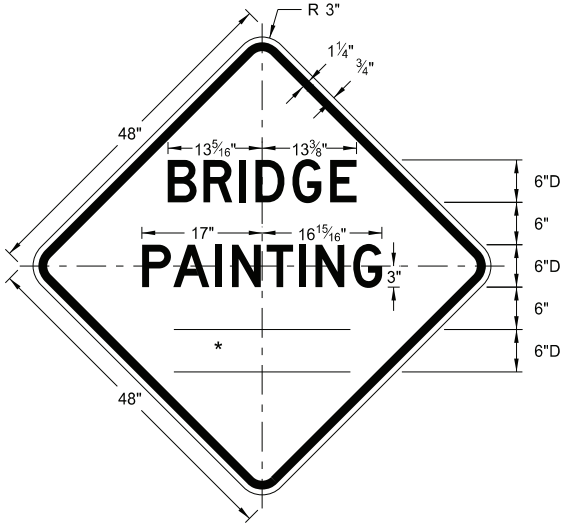
WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

* DISTANCE MESSAGES



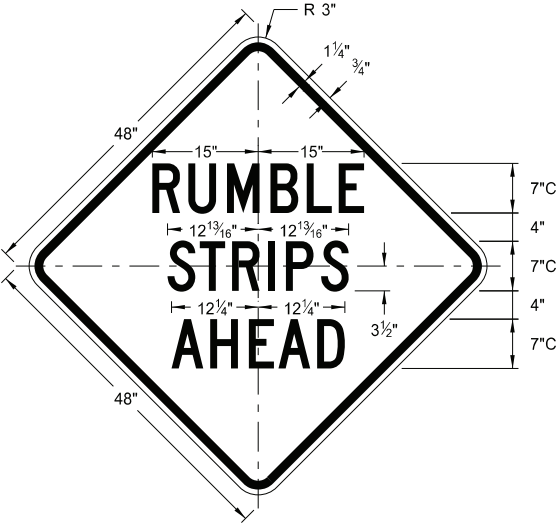
W16-7aP-18

Legend: black (non-refl)
Background: orange



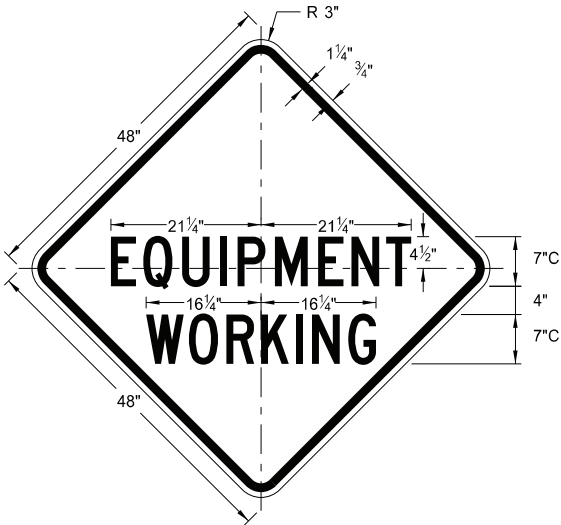
W21-50-48

Legend: black (non-refl)
Background: orange



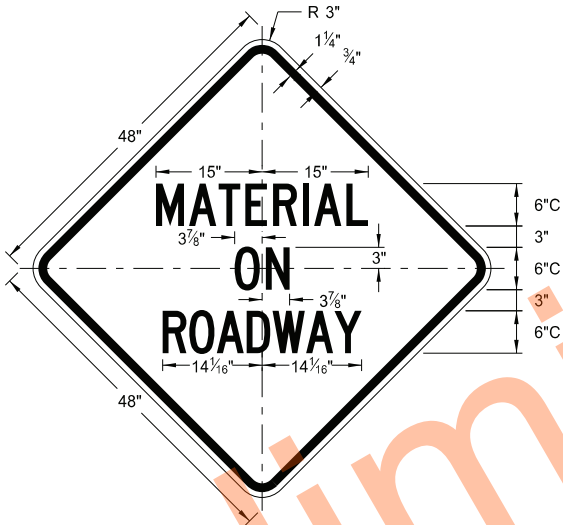
W21-53-48

Legend: black (non-refl)
Background: orange



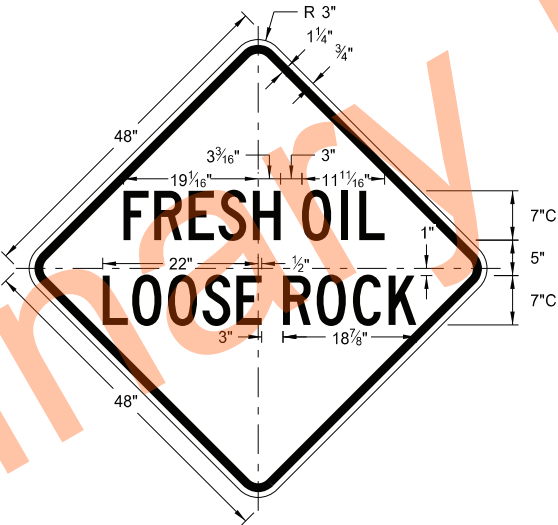
W20-51-48

Legend: black (non-refl)
Background: orange



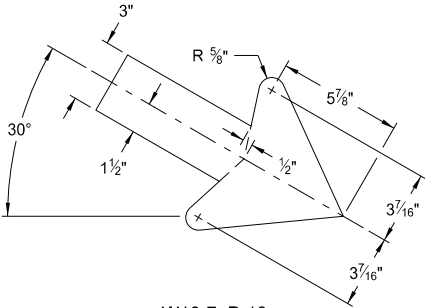
W21-51-48

Legend: black (non-refl)
Background: orange

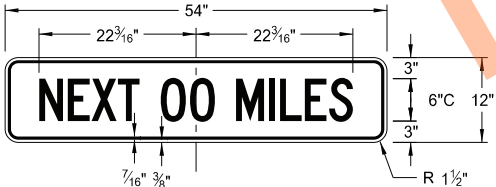


W22-8-48

Legend: black (non-refl)
Background: orange

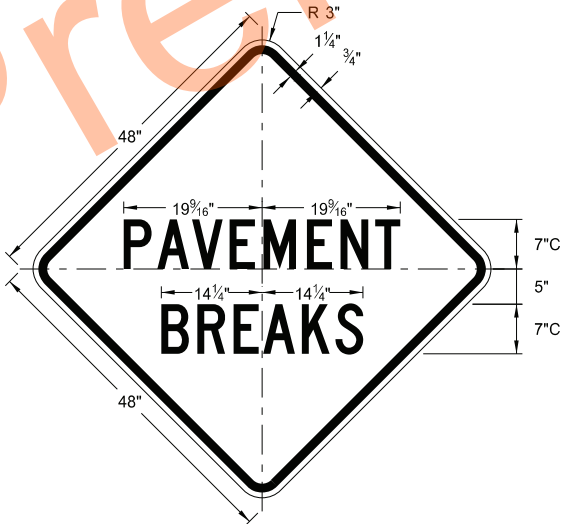


W16-7aP-18



W20-52P-54

Legend: black (non-refl)
Background: orange



W21-52-48

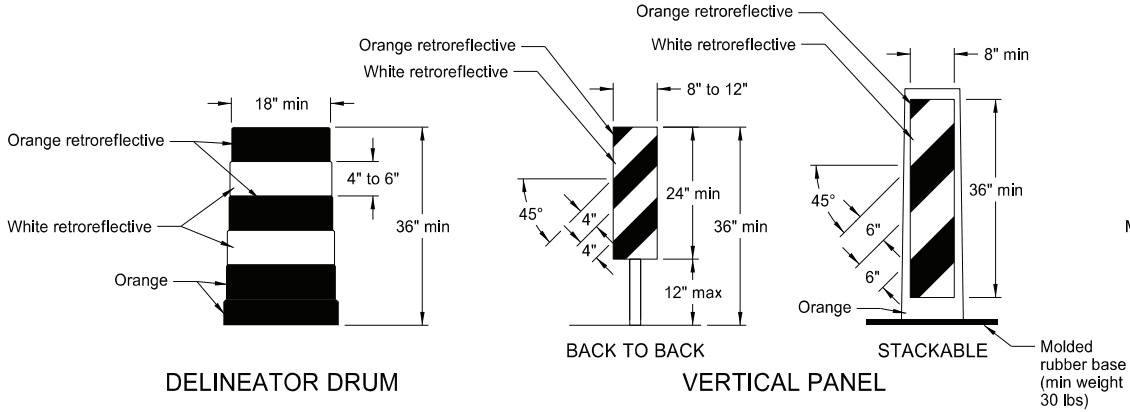
Legend: black (non-refl)
Background: orange

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.



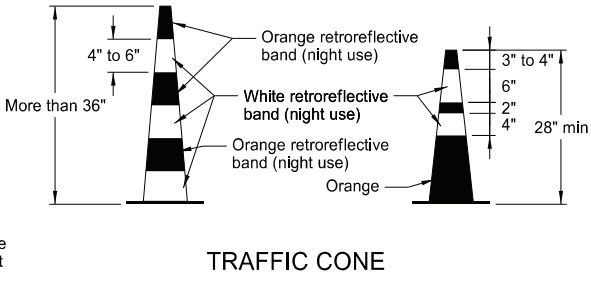
08/01/24

BARRICADE AND CHANNELIZING DEVICE DETAILS

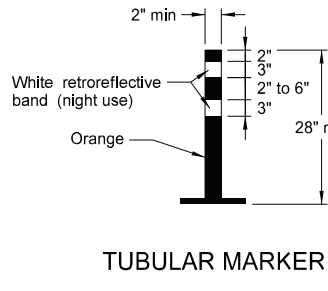


Provide horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide for drum markings. Use a minimum of two orange and two white stripes with the top stripe being orange for each drum. Do not exceed 3" nonretroreflectORIZED spaces between the horizontal orange and 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.

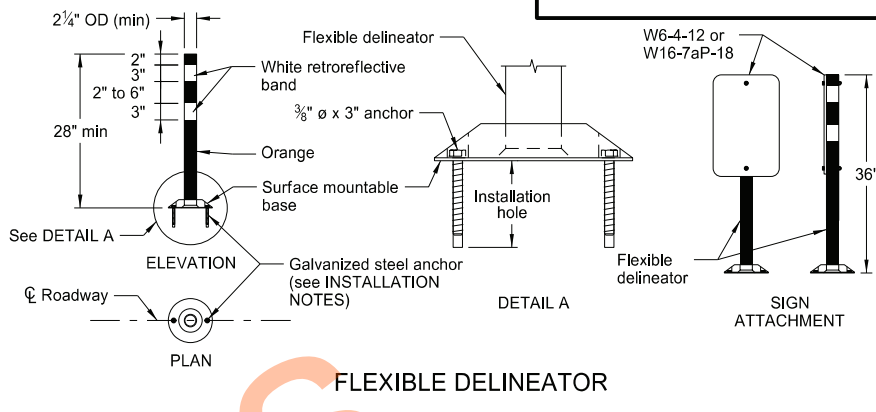
Provide alternating orange and white retroreflective stripes, sloping downward in direction vehicular traffic is to pass. Place retroreflective sheeting on both sides of panel with a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective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



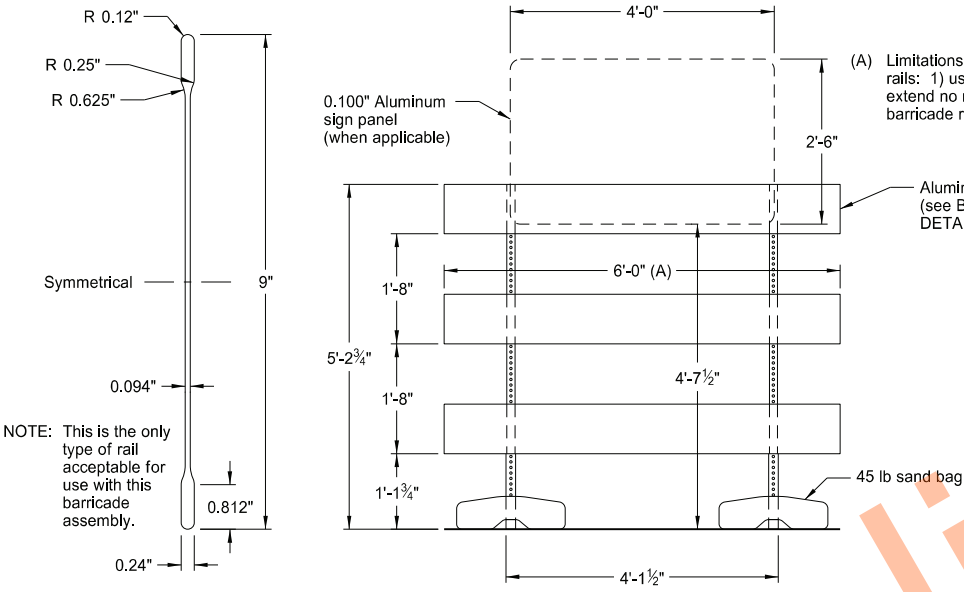
Provide retroreflectORIZATION of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectORIZED space between the orange and white stripes.



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.



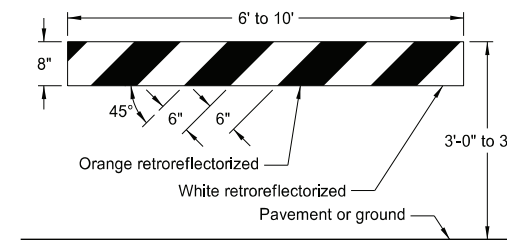
- INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.
 2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
 3. In lieu of bolted down base, use an 8" x 8" butyl pad or hot melt butyl.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



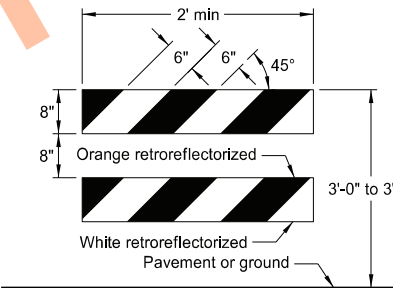
BARRICADE BLADE DETAIL

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".

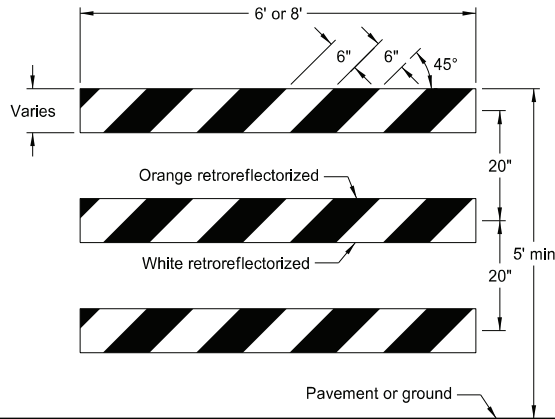


TYPE I BARRICADE

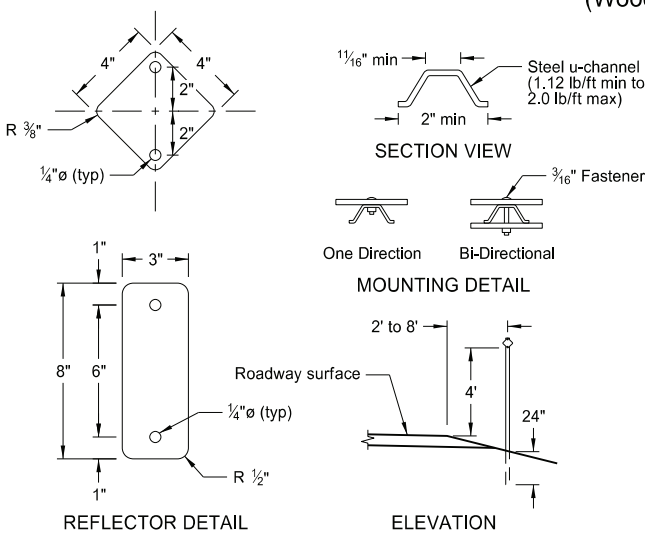


TYPE II BARRICADE

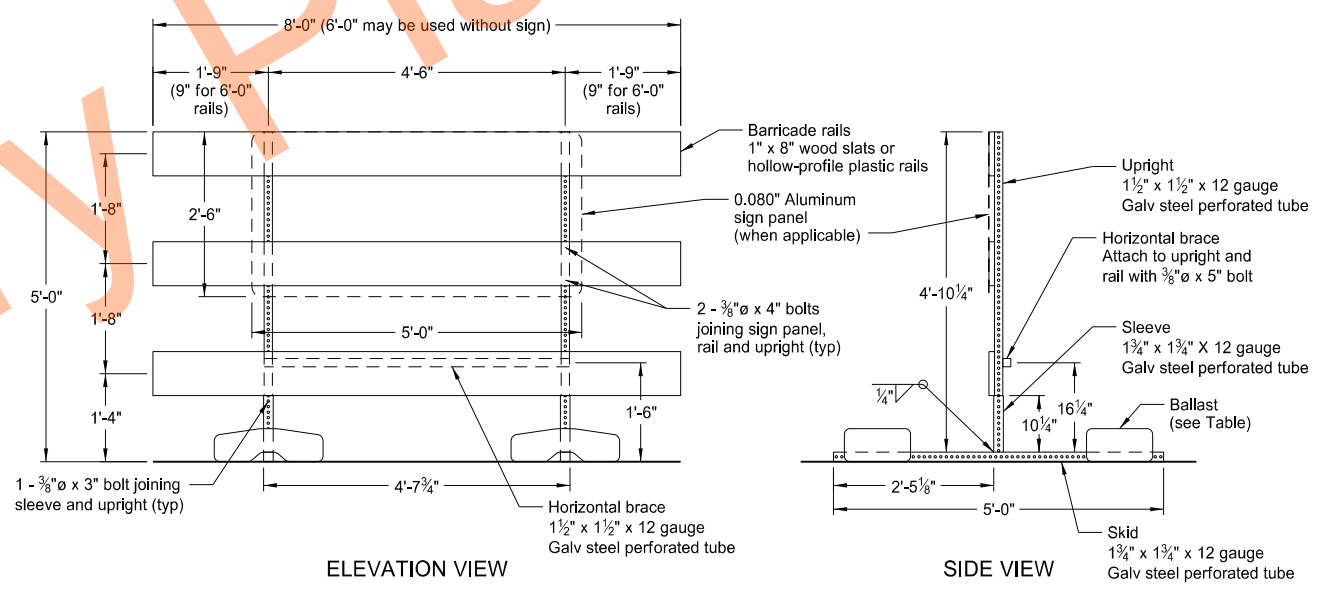
BARRICADE RAIL DETAILS



TYPE III BARRICADE



DELINEATORS



BARRICADE ASSEMBLY DETAIL (Wood or Plastic Rails)

MINIMUM BALLAST (For each side of barricade support)

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

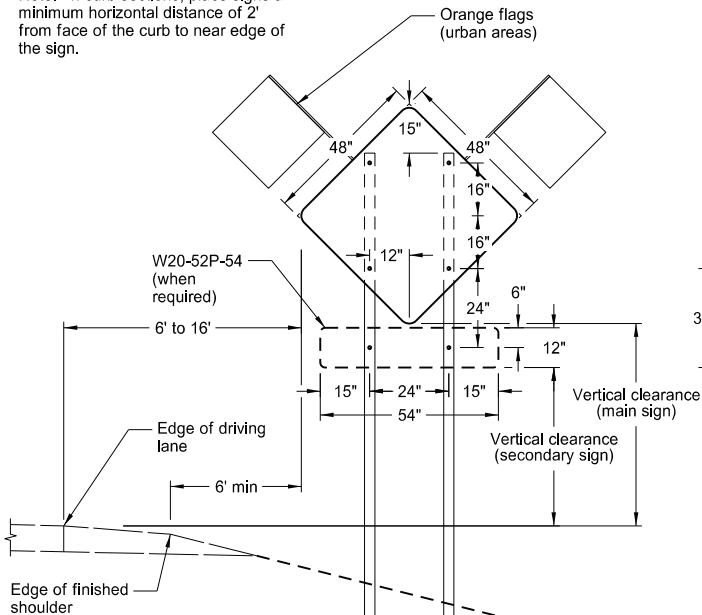
Note: Number of sandbags based on a wind speed of 55 MPH. Sandbags assumed to be placed at or near the ends of the skids.

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

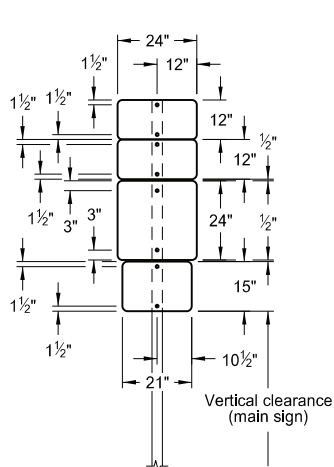


CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

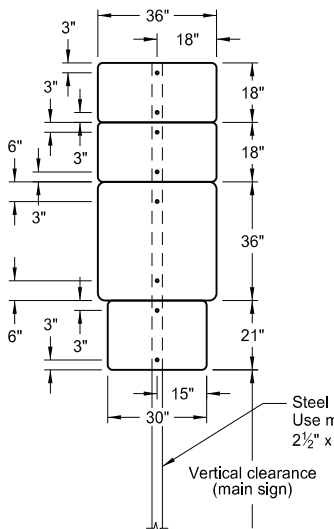
Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



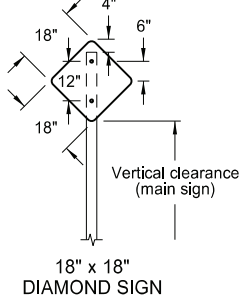
TYPICAL SECTION
(48" x 48" diamond warning sign shown)



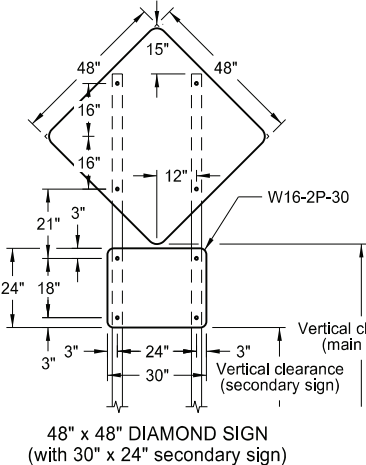
24" x 24" ROUTE MARKER ASSEMBLY



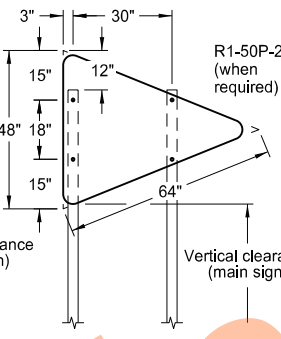
36" x 36" ROUTE MARKER ASSEMBLY



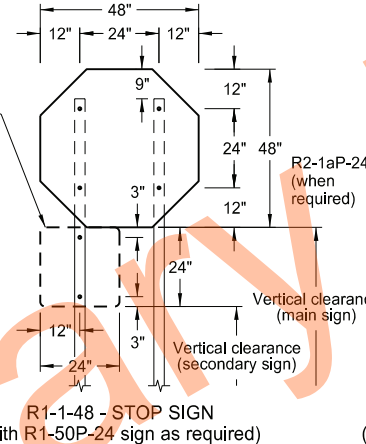
18" x 18" DIAMOND SIGN



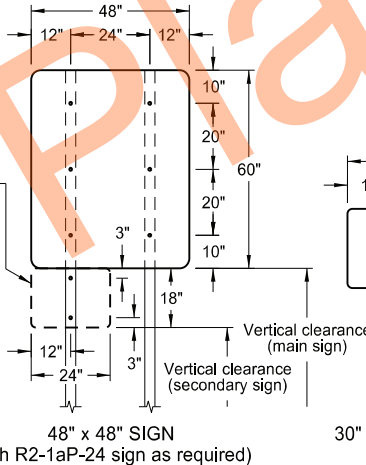
48" x 48" DIAMOND SIGN
(with 30" x 24" secondary sign)



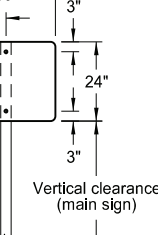
W14-3-64 - PENNANT SIGN



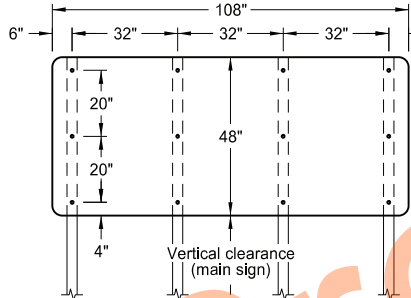
R1-1-48 - STOP SIGN
(with R1-50P-24 sign as required)



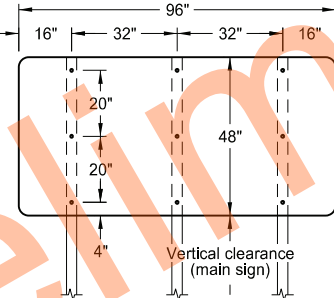
48" x 48" SIGN
(with R2-1aP-24 sign as required)



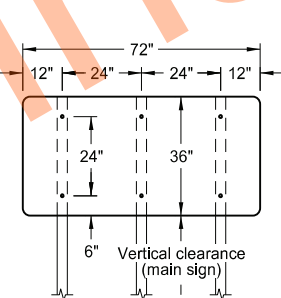
30" x 24" SIGN



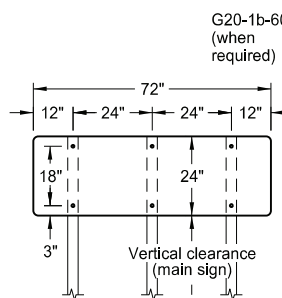
108" x 48" SIGN



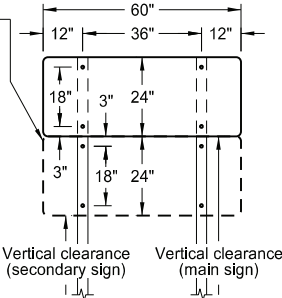
96" x 48" SIGN



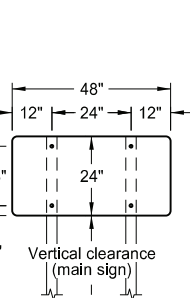
72" x 36" SIGN



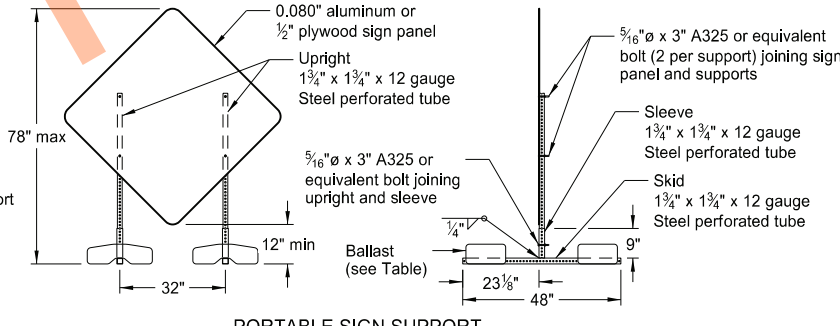
72" x 24" SIGN



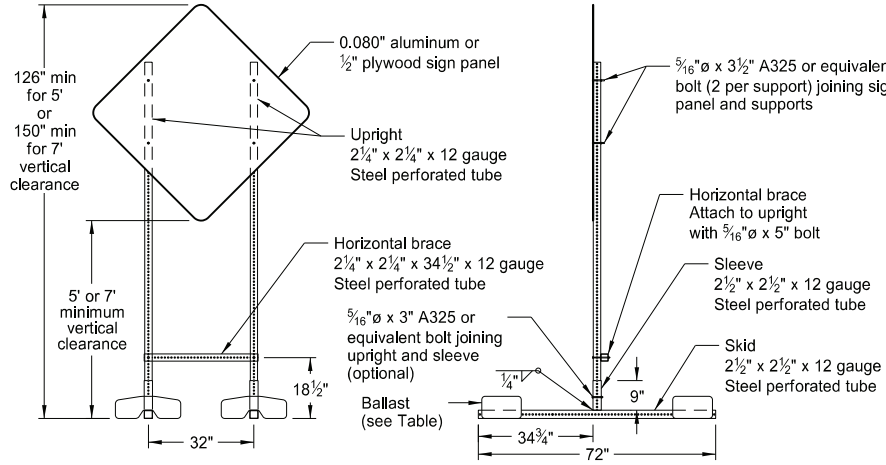
60" x 24" SIGN



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.

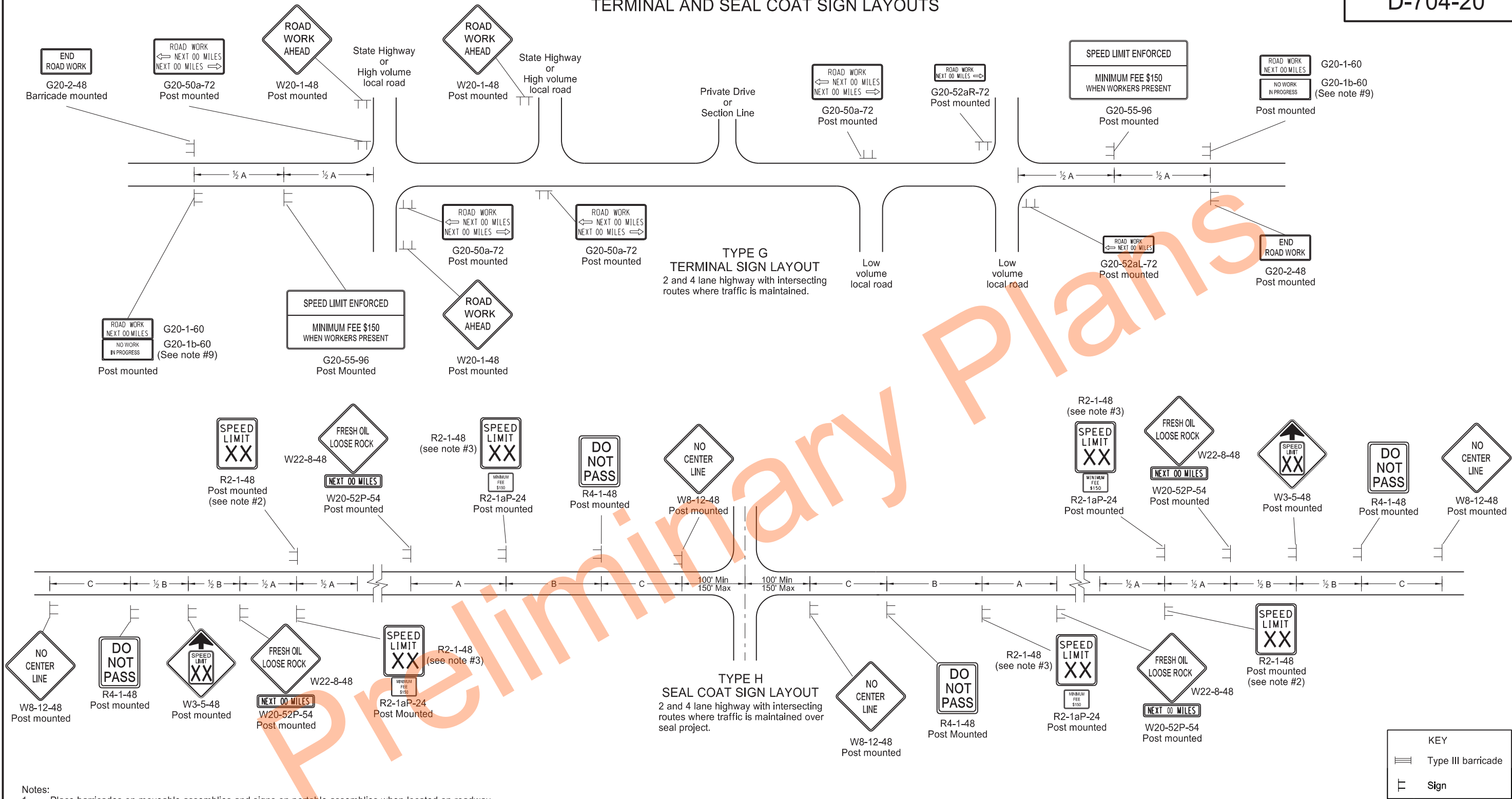
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	
REVISIONS	
DATE	CHANGE
11-14-13	Revised Note 6
9-27-17	Updated to active voice
11-01-19	Revised 60"x24" sign detail
8-01-24	Electronic Stamp/Signature



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.

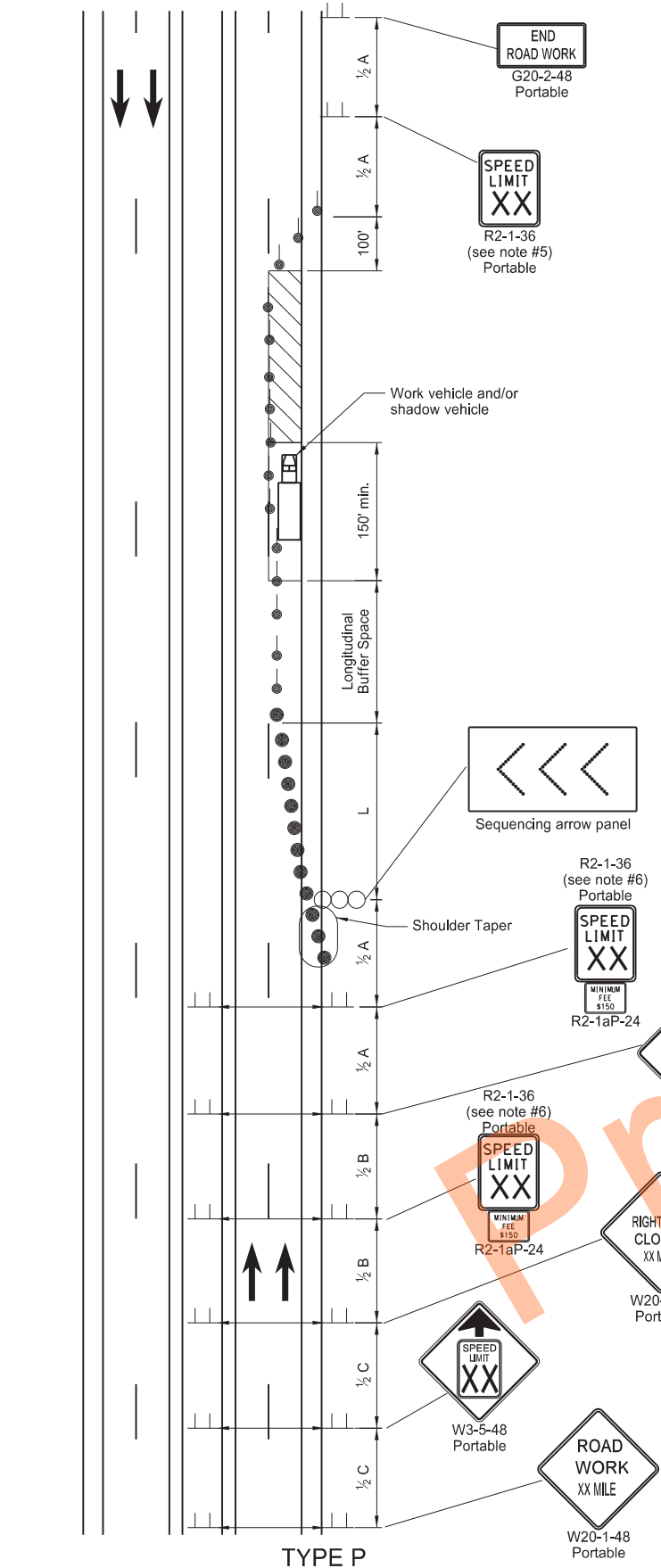
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
08-17-17	Updated notes & sign numbers
11-01-19	Updated note & sign
12-08-21	Switched order of Road Work and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work
06-30-25	Legislative Changes



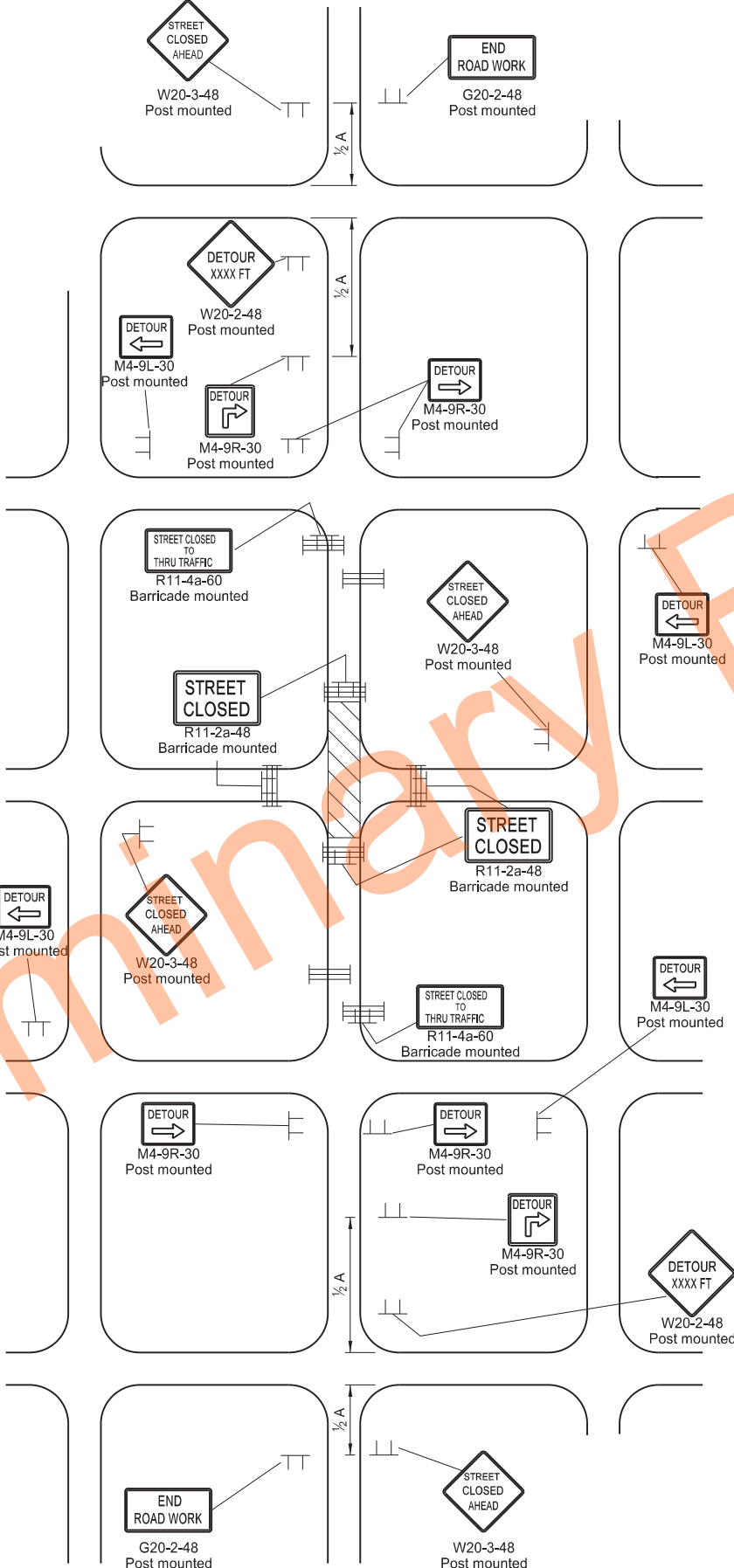


SHORT TERM URBAN DETOUR AND LANE CLOSURE ON A DIVIDED HIGHWAY LAYOUTS

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

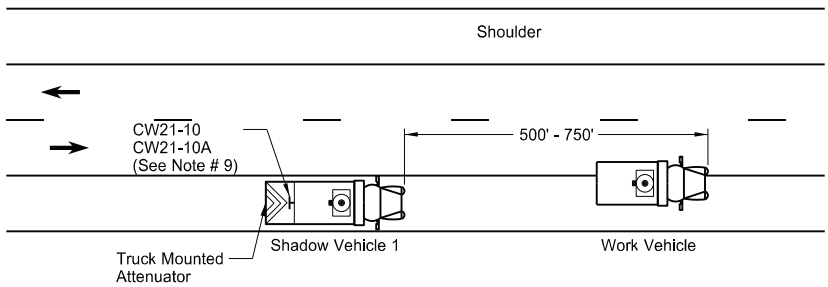
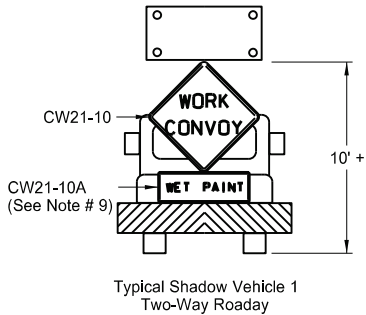
Longitudinal Buffer Space	
Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

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

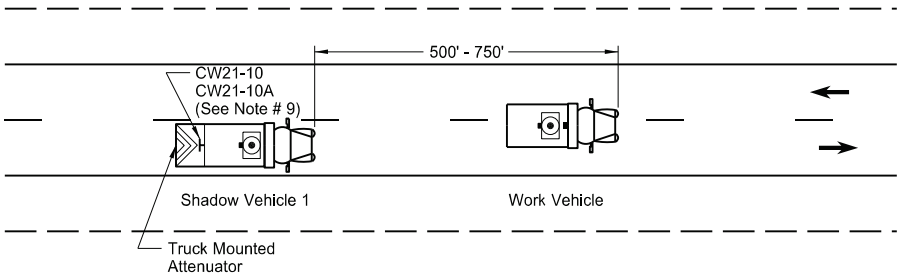


MOBILE OPERATION
(PAVEMENT MARKING)

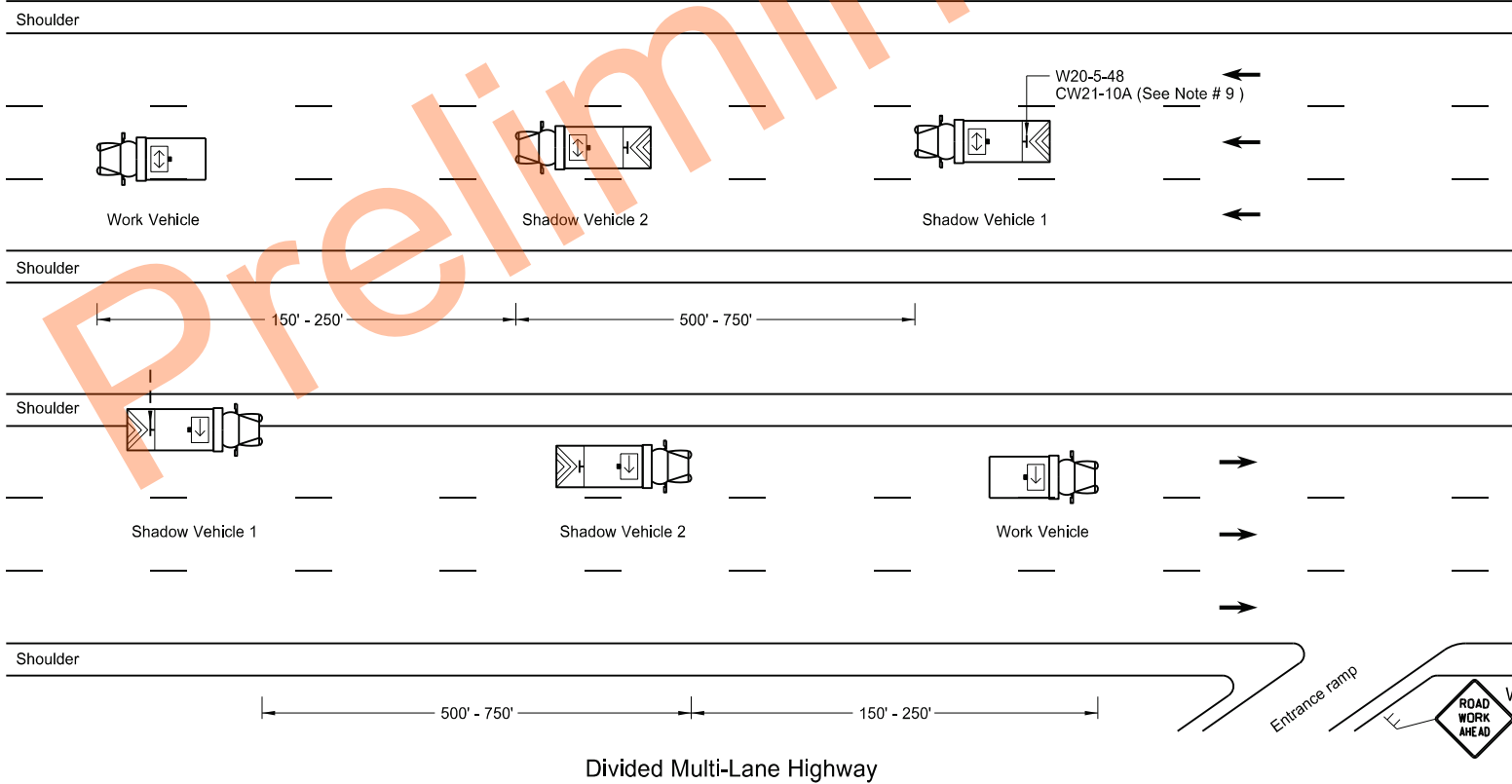
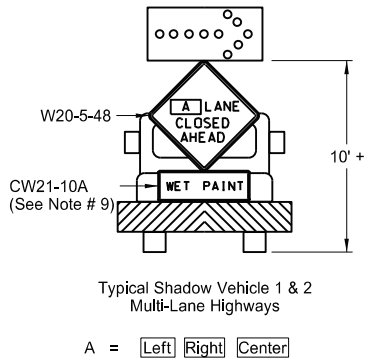
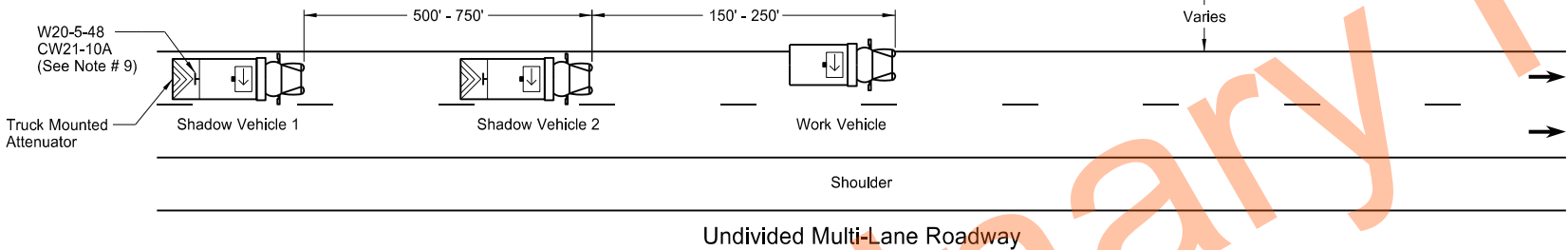
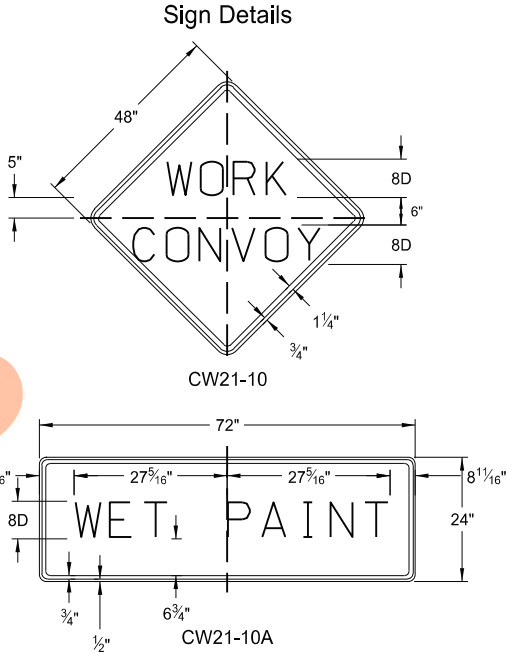
D-704-27



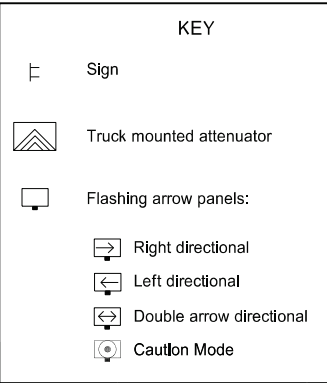
Two-Way Roadway with Paved Shoulders



Two-Way Roadway without Paved Shoulders



- 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.



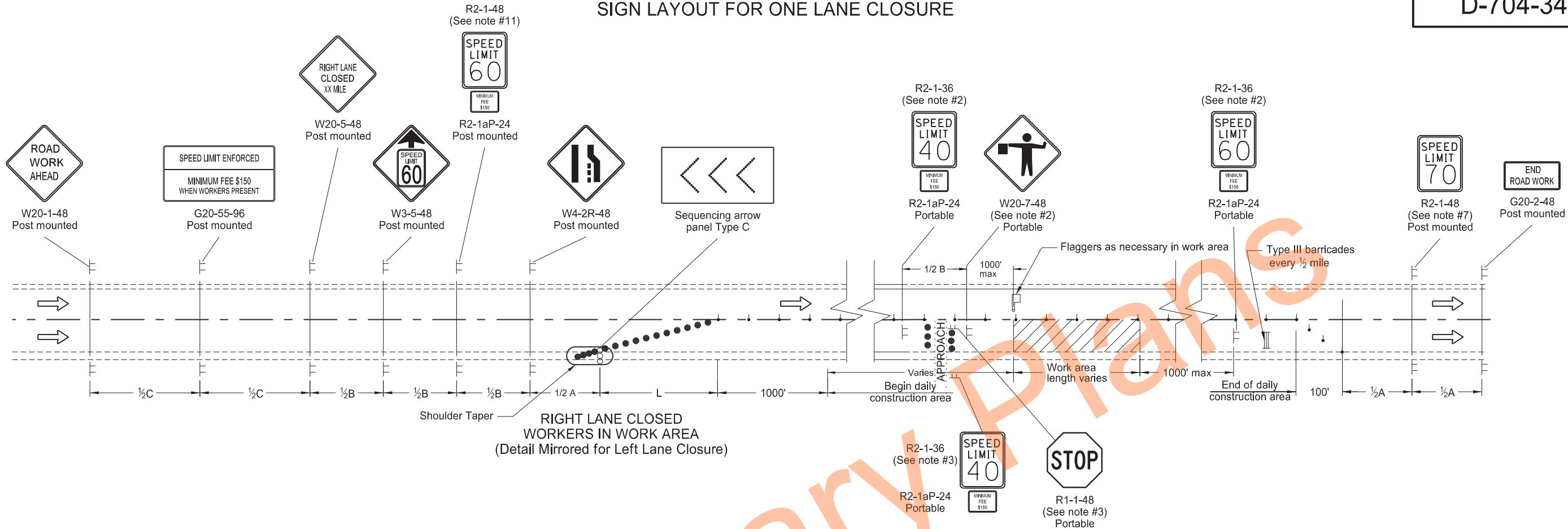
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
6-18-14	Removed shadow vehicle 2 on two lane roadways
9-27-17	Updated to active voice
11-08-19	Changed Standard Heading
6-02-24	Electronic Stamp/Signature.



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

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

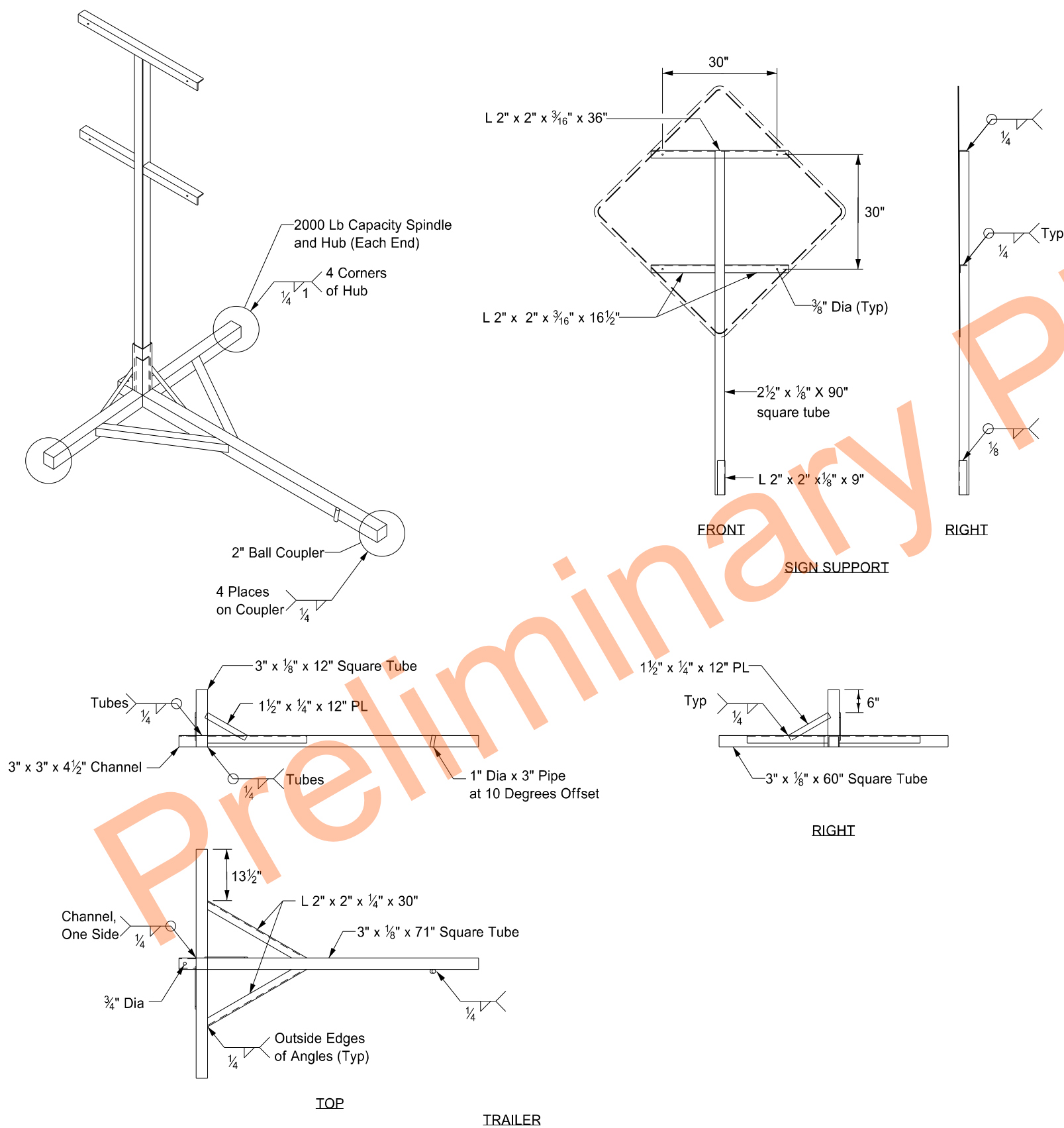
ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway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

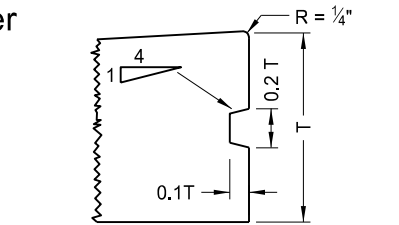
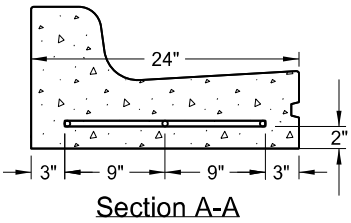
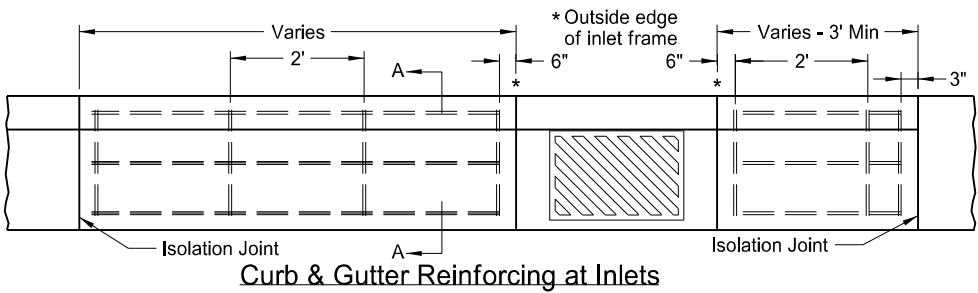


- Notes:
- 1. Maximum 250 pound weight of assembly.
 - 2. Use a 14" wheel and tire.
 - 3. Use no automotive and equipment axle assemblies for trailer-mounted sign supports.
 - 4. Other NCHRP 350 or MASH crash tested assemblies are acceptable.

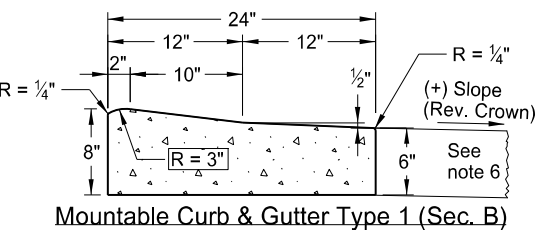
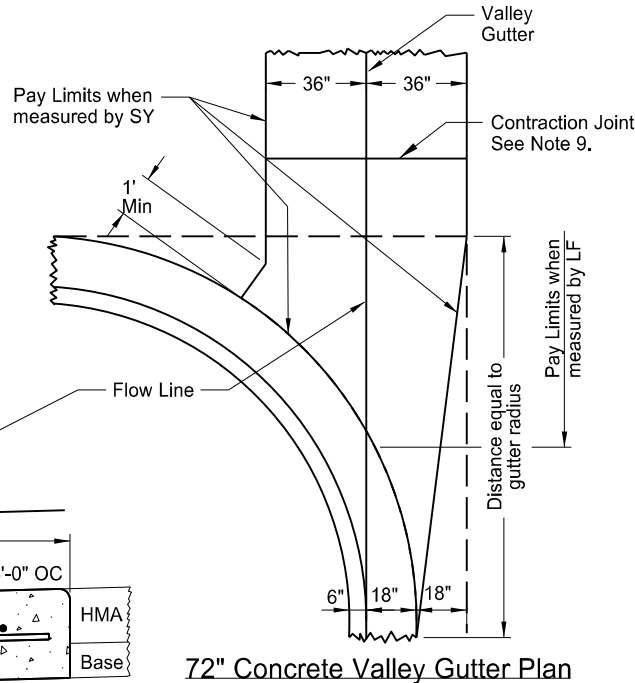
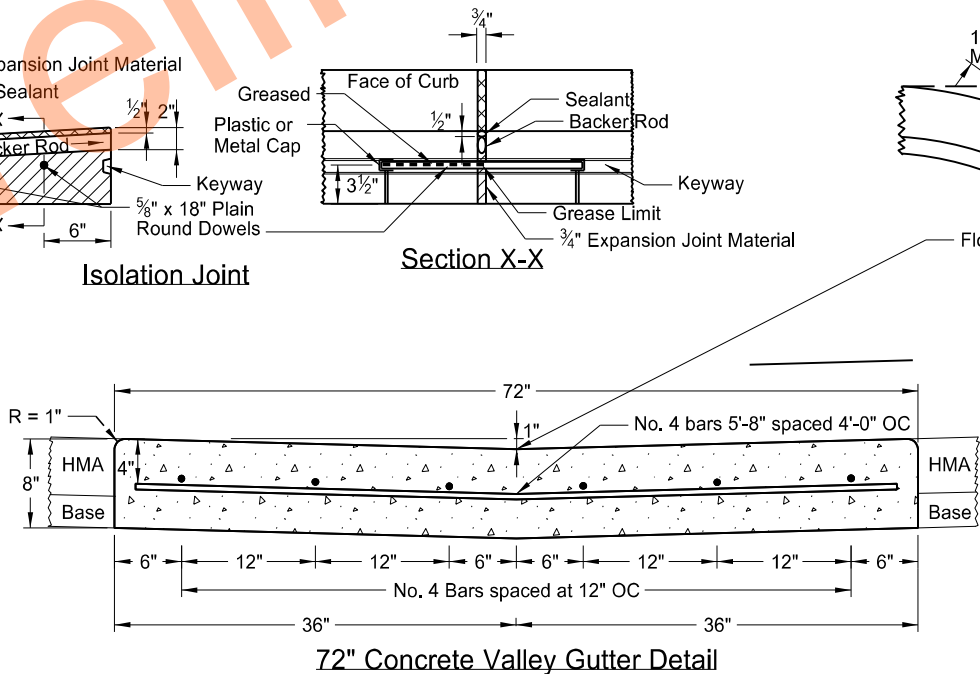
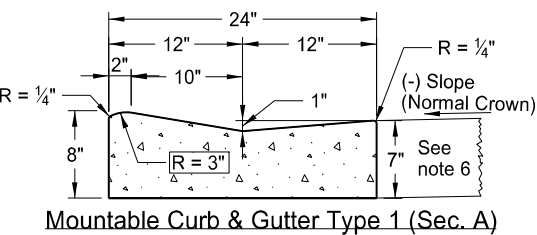
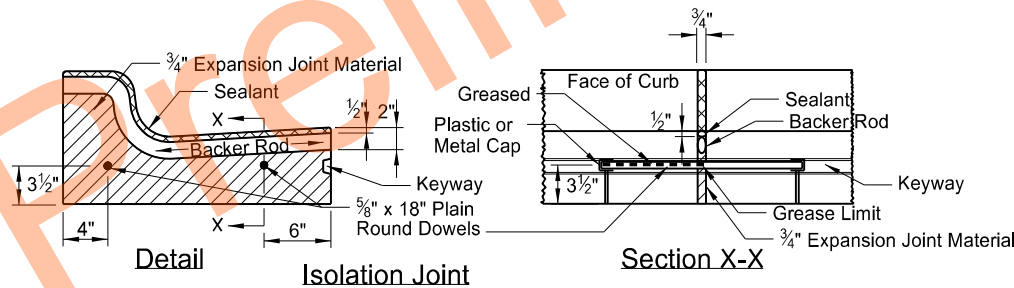
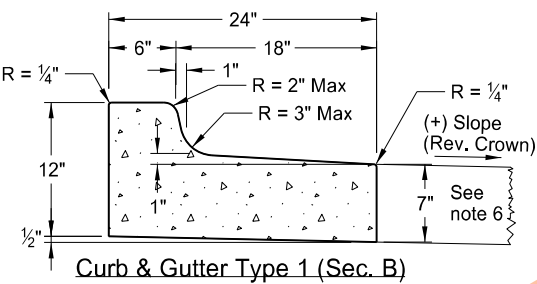
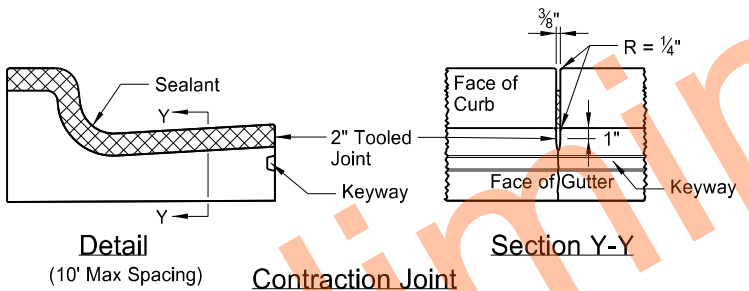
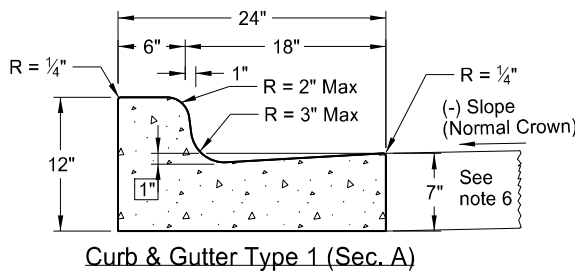
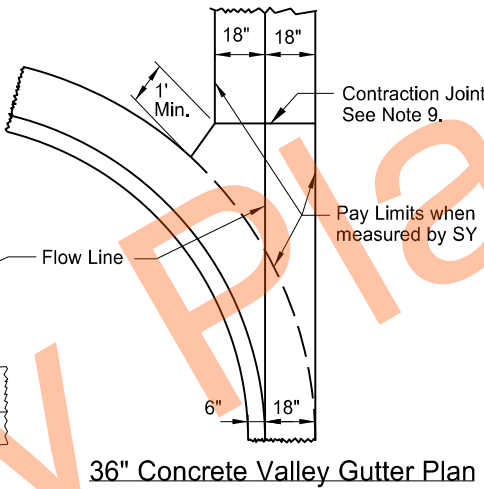
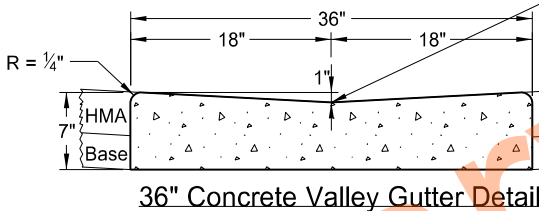
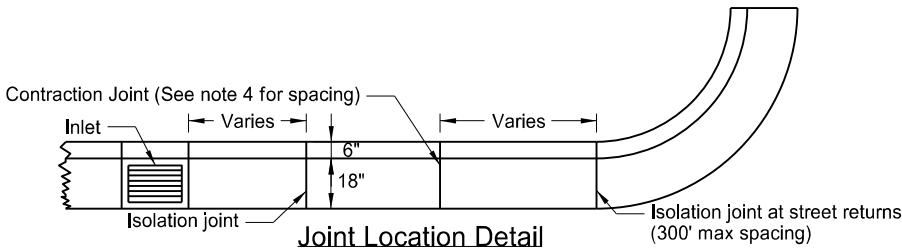
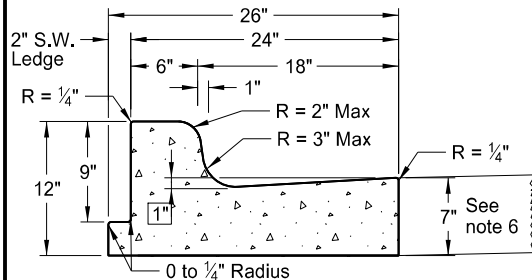
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-23-10	
REVISIONS	
DATE	CHANGE
12/02/2020	Updated Note to active voice.

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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.

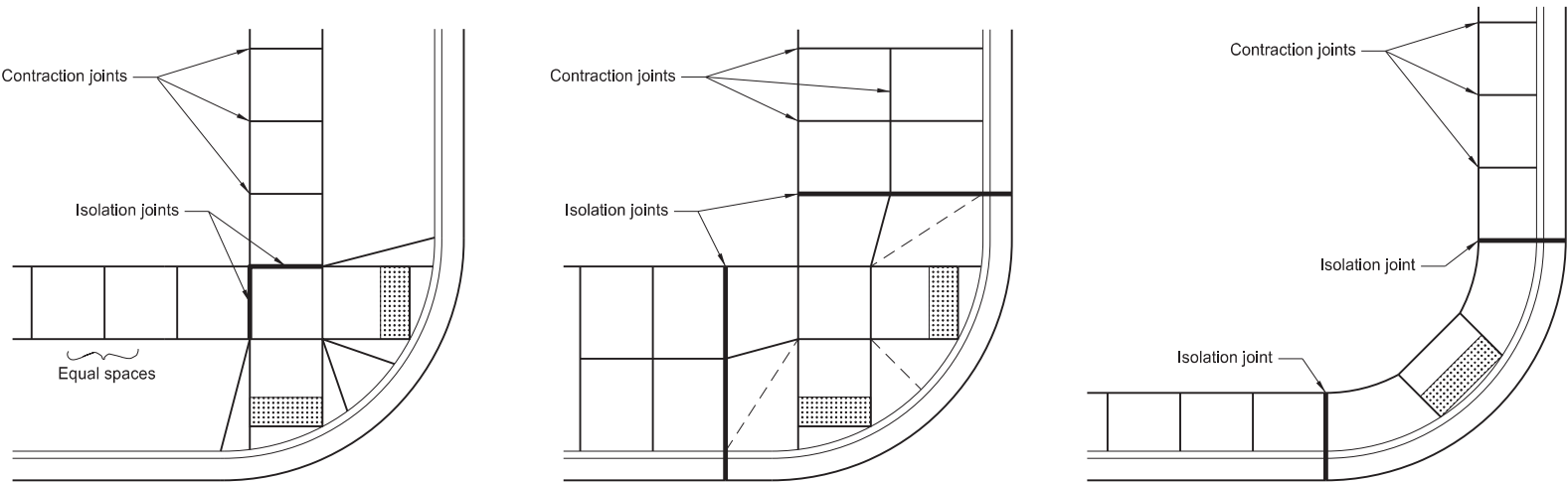
Saw or groove contraction joints to a minimum depth of 1/3 the depth of the concrete.

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

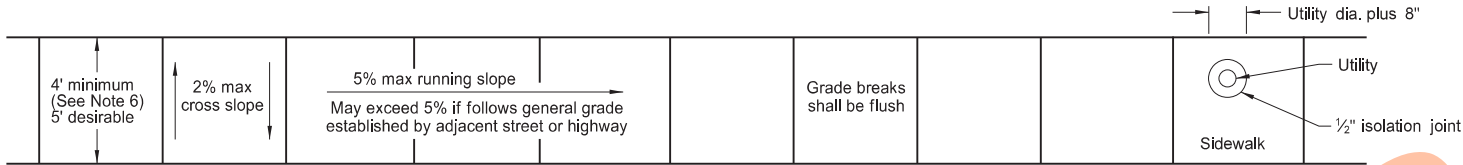
Use isolation joints between separate concrete pours, or between old and new concrete.
3. Include all costs for labor, equipment, and material necessary to construct contraction and isolation joints in the price bid for sidewalk concrete.
4. Use 4" sidewalk concrete thickness unless otherwise specified.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

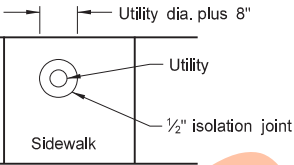
When clear width of pedestrian access routes is less than 5.0', provide passing spaces at a maximum of 200' with a minimum size of 5.0' by 5.0'.



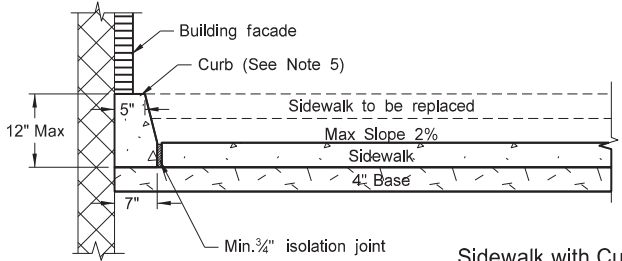
Typical Joint Layouts



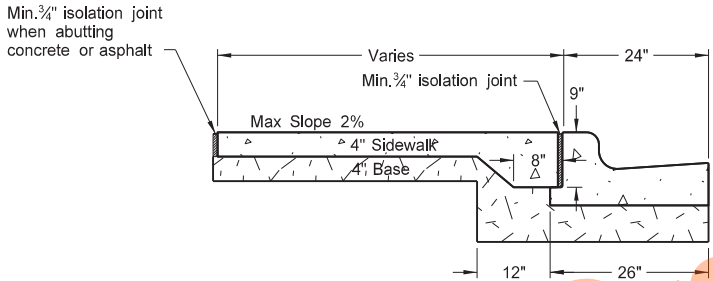
Sidewalk Width and Grade



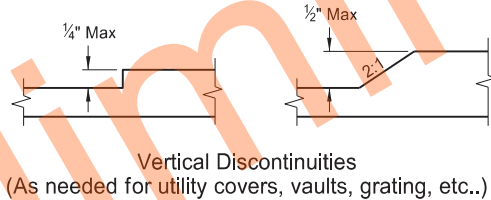
Utility Blockout



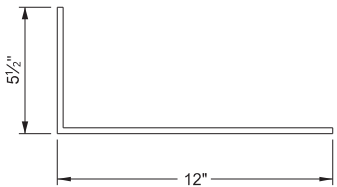
Sidewalk with Curb Detail
(Building face application)



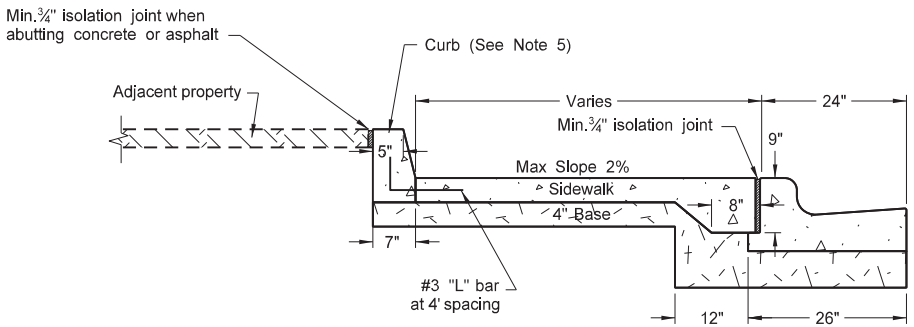
Sidewalk Detail
(Installed adjacent to curb and gutter)



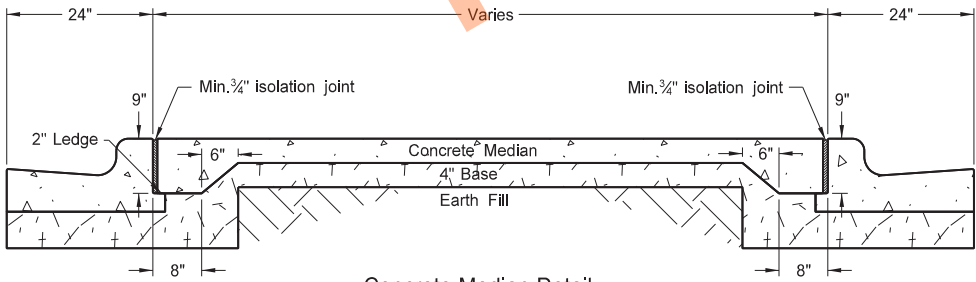
Vertical Discontinuities
(As needed for utility covers, vaults, grating, etc..)



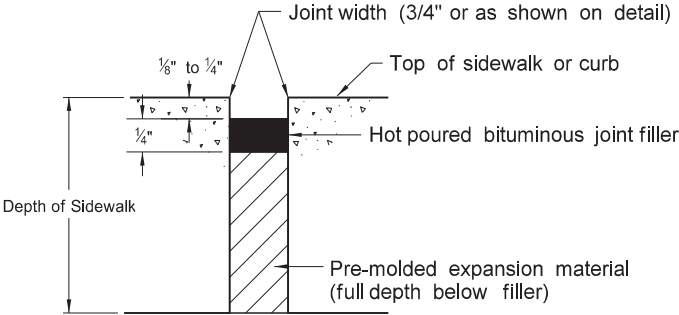
"L" Bar Detail
#3 Bar



Sidewalk with Curb Detail
(Adjacent property application)



Concrete Median Detail



Typical Isolation Joint Seal
(longitudinal and transverse)

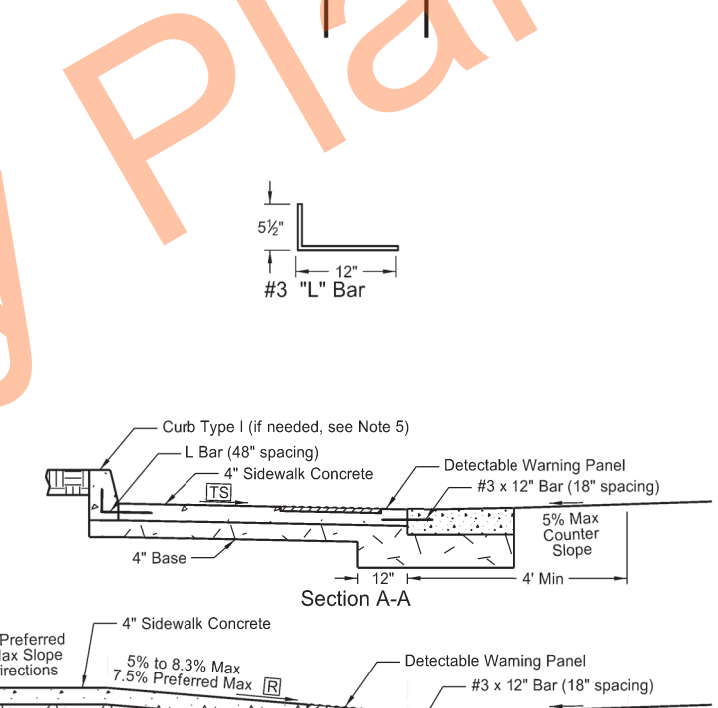
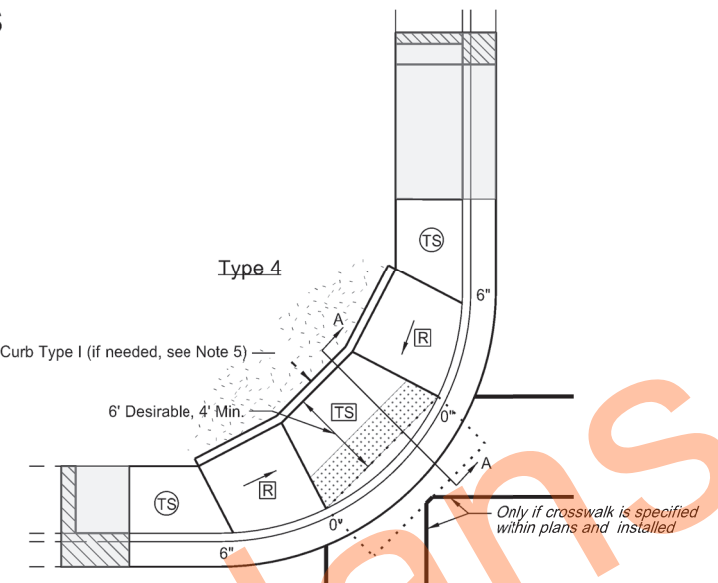
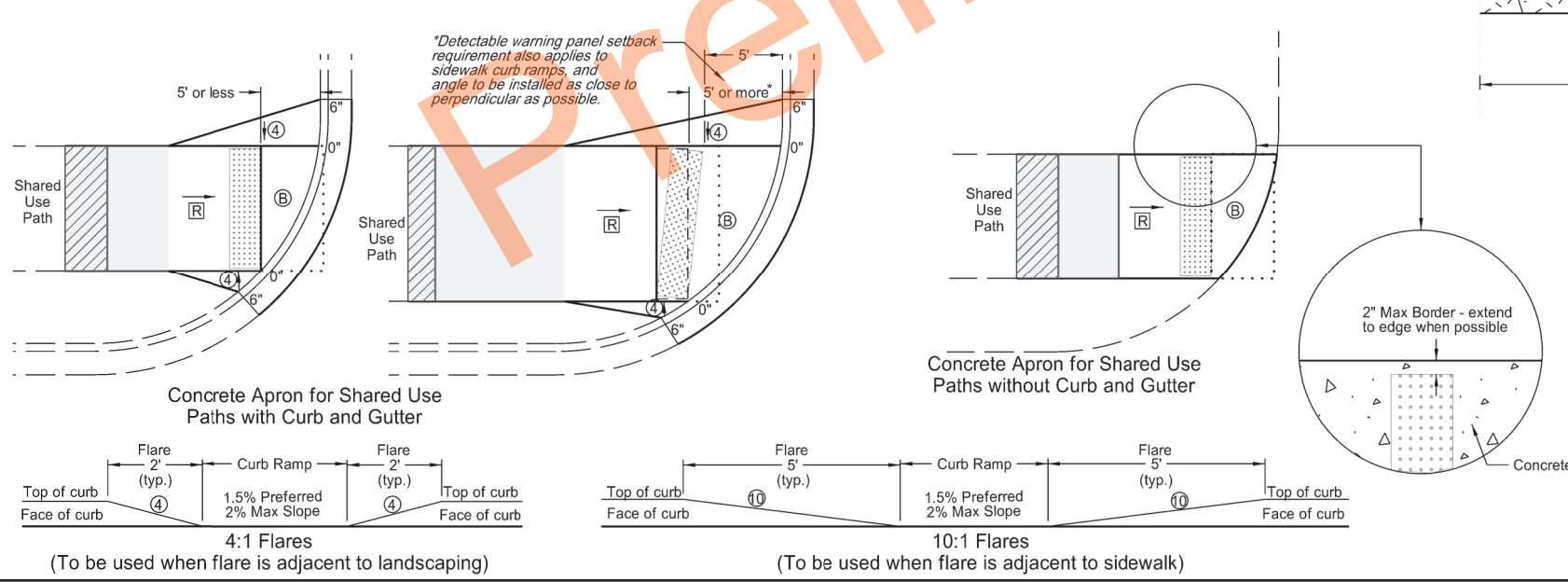
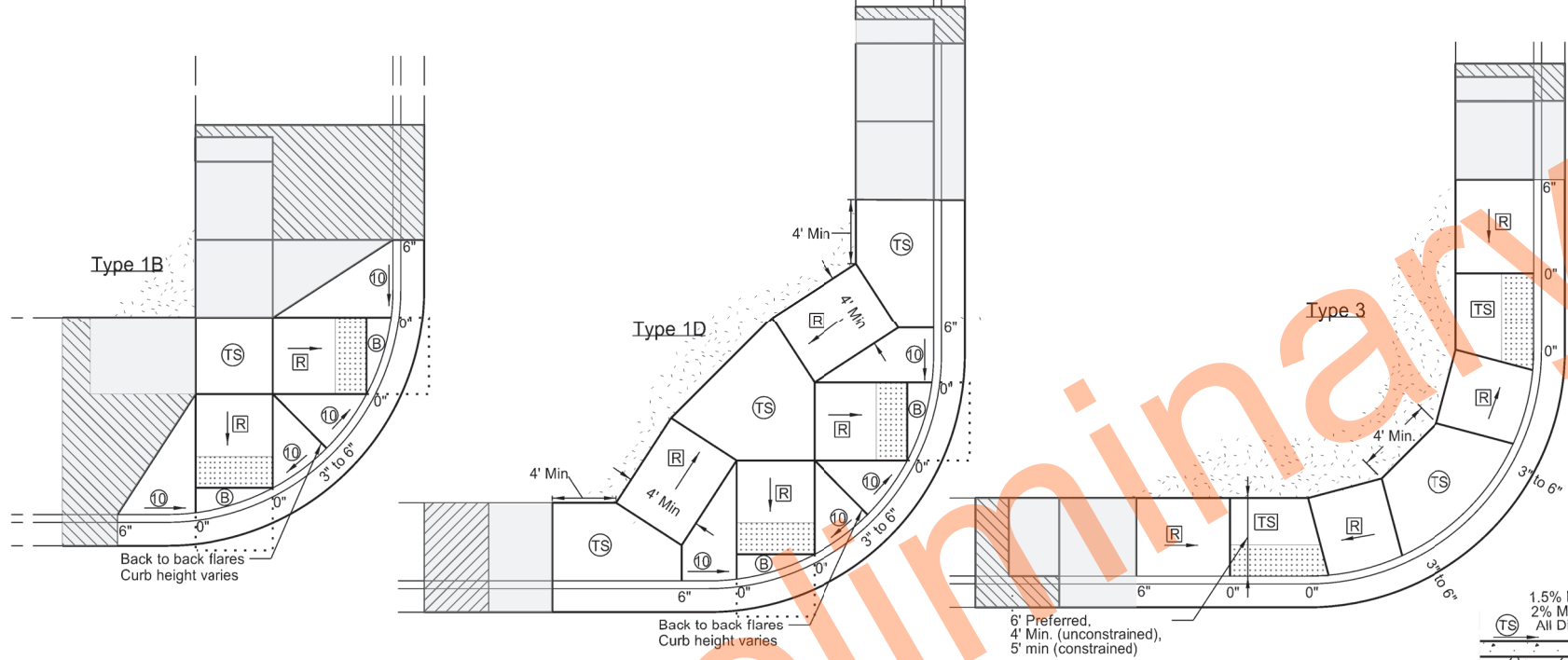
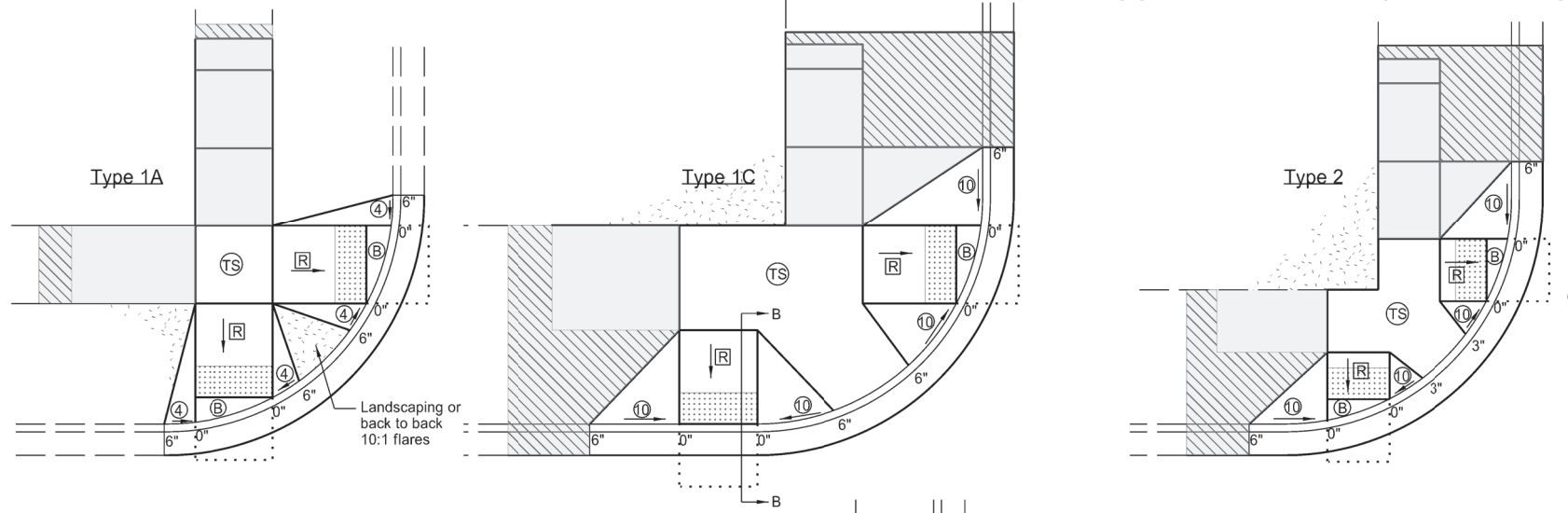
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
11-26-13	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.
09-05-18	Added sidewalk details for width & grade & passing lane requirements.
08-27-19	New Design Engineer PE Stamp.
08-09-24	Electronic Stamp/Signature.



08/09/24

CURB RAMP RETROFIT DETAILS

D-750-3



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

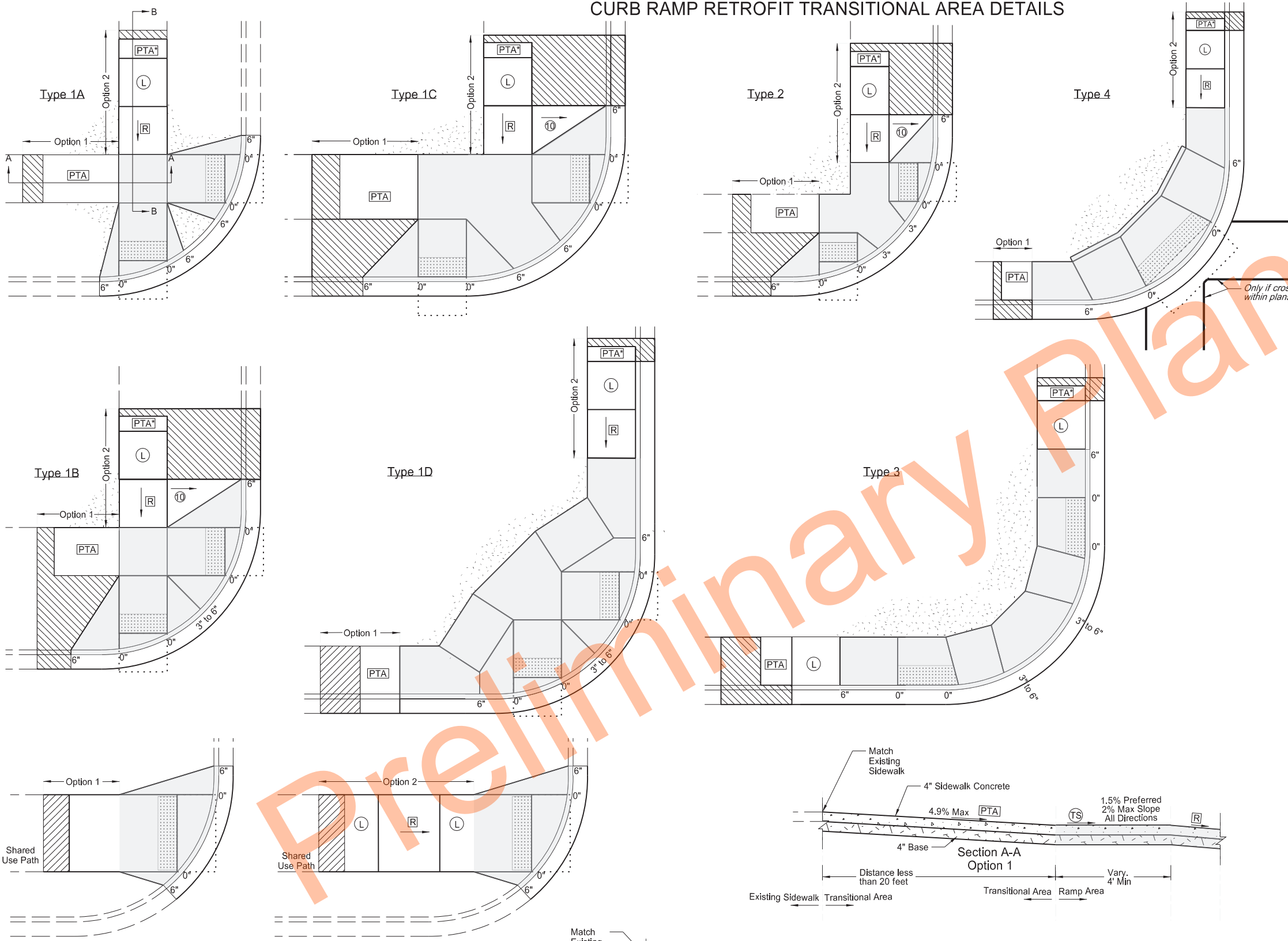
- LEGEND:
- Detectable Warning Panel.
 - Landscaping.
 - Transitional tie-in to nearest joint, if needed.
 - Curb Ramp Retrofit Transitional Area (See Standard Drawing D750-4)
 - 4' long x width of EPF or 4' minimum Clear space outside traffic lanes of travel. 1.5% preferred cross slope 2% maximum cross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

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



CURB RAMP RETROFIT TRANSITIONAL AREA DETAILS

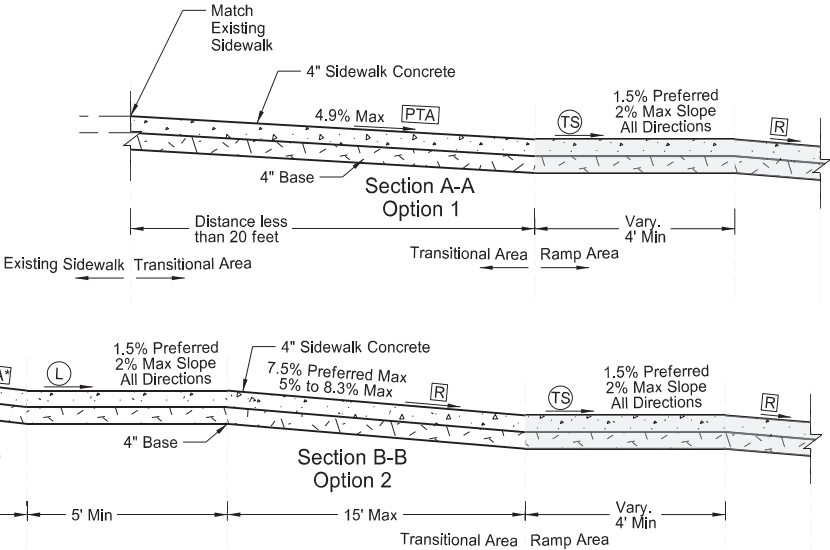
D-750-4



- 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

KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
ENGINEER
NORTH DAKOTA
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 horizontal dimension: 3'-0"
- Top-left vertical dimension: 2'-8"
- Top-left internal horizontal dimension: 8"
- Top-left internal vertical dimension: 1'-8"
- Top-left radius: $R \approx 3'-4"$
- Top-right horizontal dimension: 1'-8"
- Top-right vertical dimension: 2'-4"
- Bottom-left horizontal dimension: 5'-4"
- Bottom-left vertical dimension: 3'-8"
- Bottom-left internal horizontal dimension: 2'-8"
- Bottom-left internal vertical dimension: 2'-0"
- Bottom-left internal horizontal dimension: 4"
- Bottom-left internal vertical dimension: 4"
- Bottom-left radius: $R \approx 2'-4"$
- Bottom horizontal dimension: 1'-0"
- Bottom-right horizontal dimension: 5'-4"
- Bottom-right vertical dimension: 2'-4"
- Bottom-right internal horizontal dimension: 8"
- Bottom-right internal vertical dimension: 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. Dimensions include overall width 7'-6", overall height 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 vertical handle with a curved top and a tapered base. Dimensions are indicated on the left and bottom. The total height is 6'-0". The top section is 1'-0 3/4" high. The middle section is 1'-9 3/4" high. The bottom section is 1'-0 3/4" high. The base section is 2'-0 3/4" high. The width of the handle is 1'-1". A 3/4" slope is indicated on the tapered base.

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 the lettering:

- Overall Dimensions:**
 - Width: 6'-3"
 - Height: 8'-0"
- Lettering Dimensions:**
 - Top Spacing:** 16" between the top of the sign and the top of the 'S', 4" between the 'S' and 'T', 16" between the 'T' and 'O', 2" between the 'O' and 'P', 16" between the 'P' and the top edge, and 5" between the 'P' and the bottom edge.
 - Letter Widths:**
 - 'S': 16"
 - 'T': 16"
 - 'O': 16"
 - 'P': 16"
 - Letter Heights and Positions:**
 - 'S':** Total height 8'-0". The top curve has a radius of 6". The bottom curve has a radius of 4". The vertical stem is 4" wide.
 - 'T':** The vertical stem is 4" wide. The top horizontal bar is 4" high and 16" wide.
 - 'O':** The vertical stem is 4" wide. The top horizontal bar is 4" high and 16" wide. The bottom horizontal bar is 4" high and 16" wide.
 - 'P':** The vertical stem is 4" wide. The top horizontal bar is 4" high and 16" wide. The bottom horizontal bar is 4" high and 16" wide.

[illegible][illegible]

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. The road is shown with a central travel lane labeled "10'" and a total width labeled "30'". The edges of the road are labeled "Edge line".

[illegible]

W10-1 

R15-1

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

Diagram illustrating the dimensions and markings for a 12-foot 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.
- 24"**: Dimension for the first blacked-out section.
- 24"**: Dimension for the second blacked-out section.
- 24"**: Dimension for the third blacked-out section.
- 24"**: Dimension for the fourth blacked-out section.
- Wheel track**: Dimension for the wheel track.
- 30"**: Dimension for the wheel track.
- 12" min to 30" max**: Dimension for the bottom section of the road.
- 30" max**: Dimension for the wheel track.
- 6" min to 15" max**: Dimension for the bottom section of the road.

Labels and dimensions include:

- 2'x6', 2'x8', 2'x10' or 2'x12' white line**: Label for the white line.
- 24"**: Dimension for the white line.
- Wheel track**: Label for the wheel track.
- 30"**: Dimension for the wheel track.
- 12" min to 30" max**: Dimension for the bottom section of the road.
- 30" max**: Dimension for the wheel track.
- 6" min to 15" max**: Dimension for the bottom section of the road.

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.

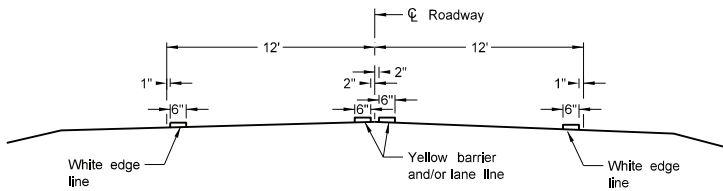
Advance Placement Distance for Railroad Warning Signs	
Posted or 85th Percentile Speed	Advance Distance
20 mph	min. 100 ft
25 mph	min. 100 ft
30 mph	min. 100 ft
35 mph	min. 100 ft
40 mph	125 ft
45 mph	175 ft
50 mph	250 ft
55 mph	325 ft
60 mph	400 ft
65 mph	475 ft
70 mph	550 ft

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

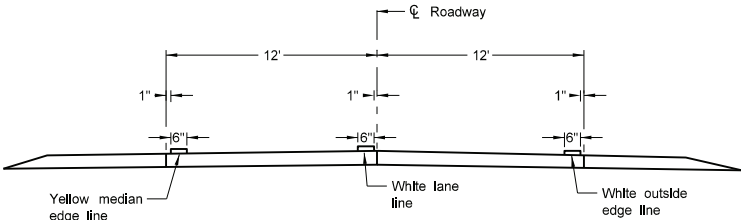


PAVEMENT MARKING

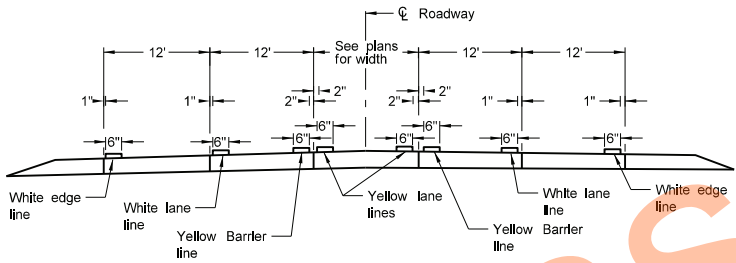
D-762-4



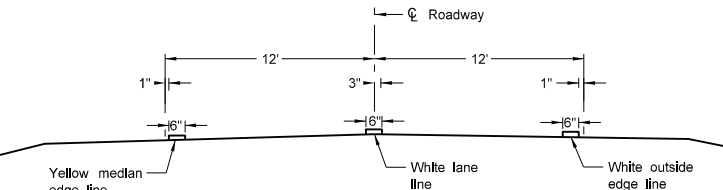
Two Lane Two Way
RURAL ROADWAY



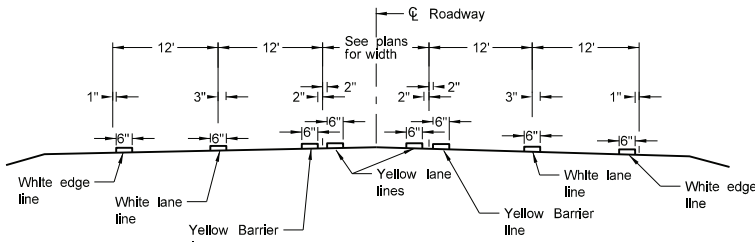
Two Lane Roadway
INTERSTATE HIGHWAY
Concrete Section



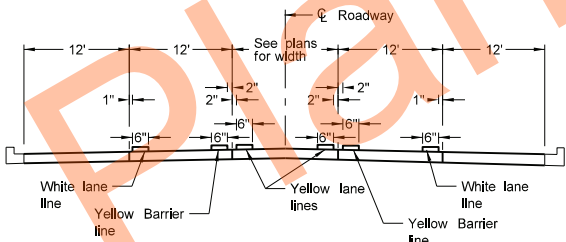
RURAL FIVE LANE ROADWAY
Concrete Section



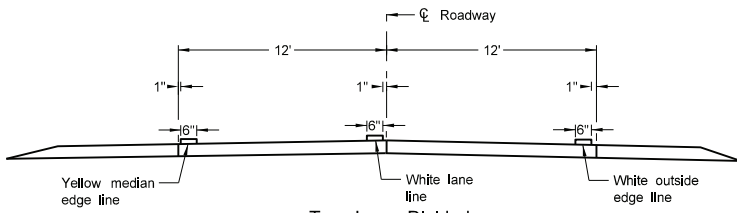
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Asphalt Section



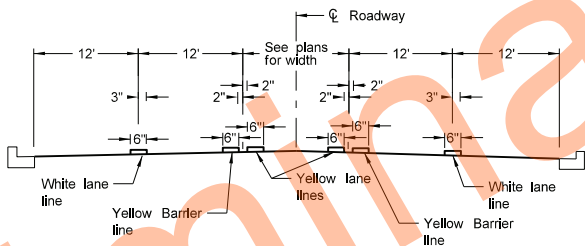
RURAL FIVE LANE ROADWAY
Asphalt Section



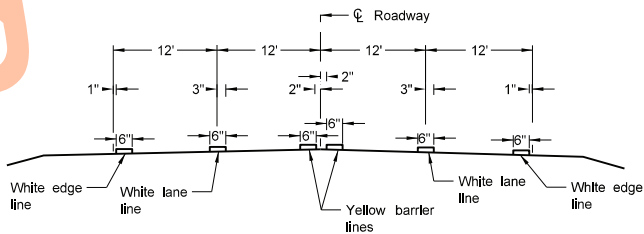
URBAN FIVE LANE SECTION
Concrete Section



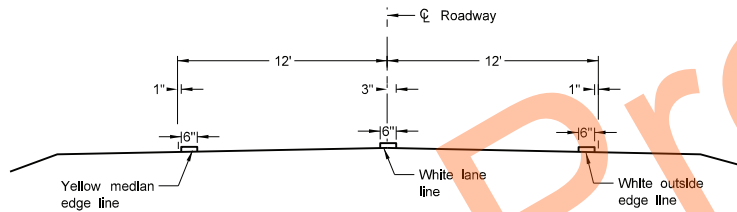
Two Lane Divided
Rural Roadway
PRIMARY HIGHWAY
Concrete Section



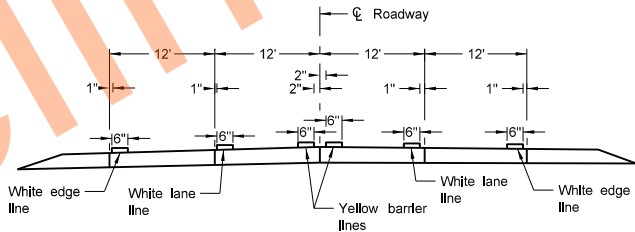
URBAN FIVE LANE SECTION
Asphalt Section



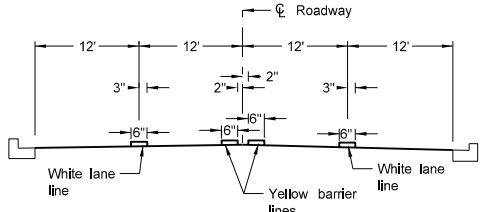
RURAL FOUR LANE ROADWAY
Asphalt Section



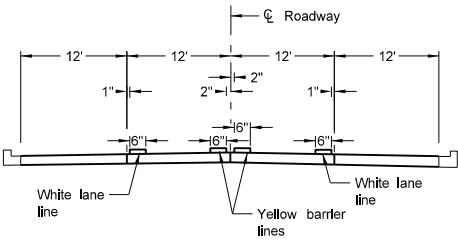
Two Lane Roadway
INTERSTATE HIGHWAY
Asphalt Section



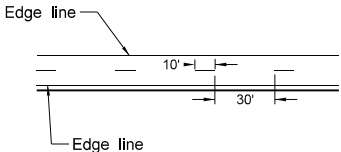
RURAL FOUR LANE ROADWAY
Concrete Section



URBAN FOUR LANE SECTION
Asphalt Section



URBAN FOUR LANE SECTION
Concrete Section



CENTERLINE PAVEMENT MARKING SKIP SPACING DETAIL

NOTES:

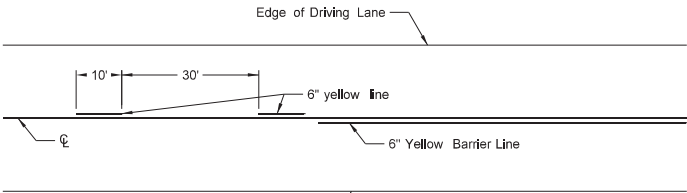
1. Continue edge lines through private drives and field drives. Break edge lines for intersections.
For section lines, county roads, and street approaches, stripe the radii and edge lines of the paved surface within the right of way except where curb and gutter is present.
2. Normal width line - 6 inches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

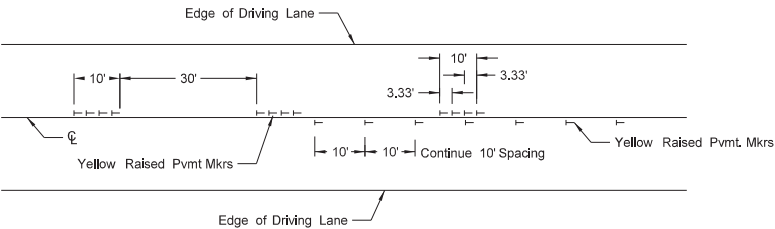


SHORT-TERM PAVEMENT MARKING

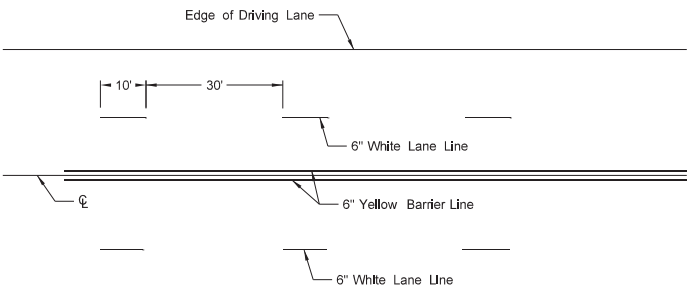
D-762-11



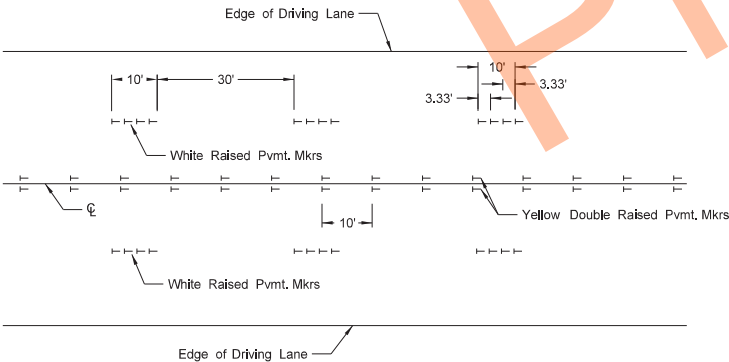
Painted or Tape Lines



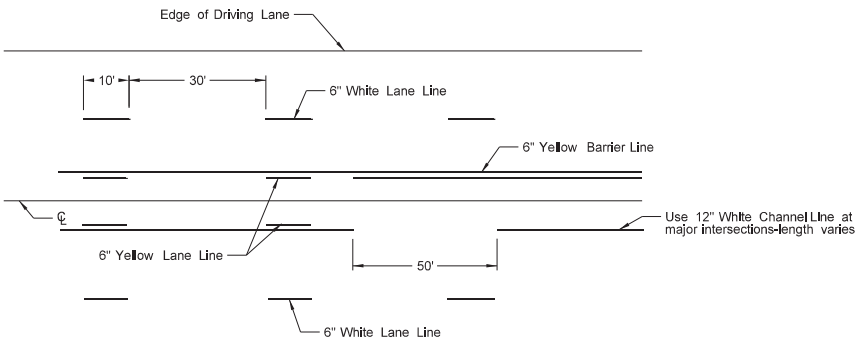
Raised Pavement Markers
TWO-LANE TWO-WAY ROADWAY



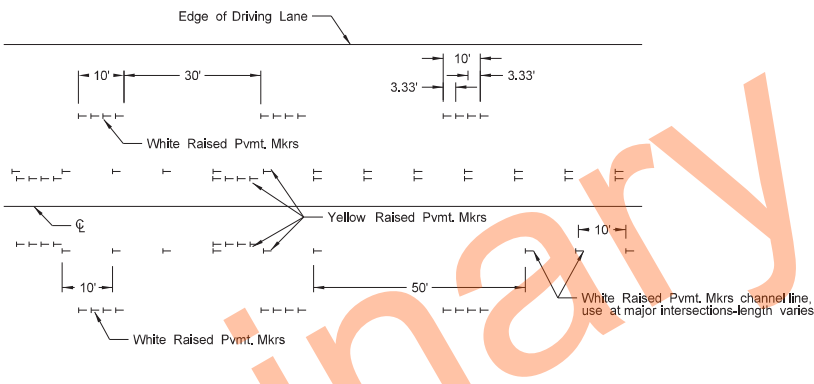
Painted or Tape Lines



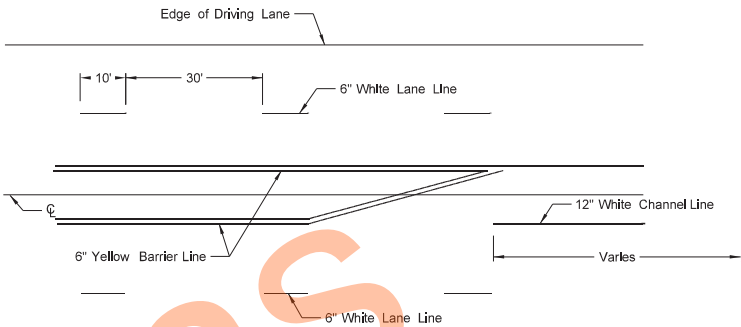
Raised Pavement Markers
FOUR LANE ROADWAY



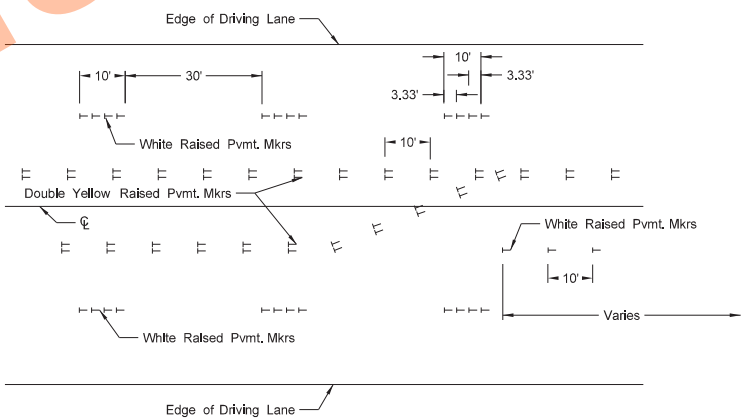
Painted or Tape Lines



Raised Pavement Markers
FIVE LANE ROADWAY TWO WAY LEFT TURN



Painted or Tape Lines



Raised Pavement Markers
FIVE LANE ROADWAY WITH MARKED ISLANDS

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

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

