



SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED			TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.					
			1a	1b	1c			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)				6		
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES				34		
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)				26		
<b>G20-2-48</b>	<b>48"x24"</b>	<b>END ROAD WORK</b>	<b>1</b>			<b>19</b>	<b>19</b>	
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)				18		
G20-10-108	108"x48"	CONTRACTOR SIGN				64		
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS				37		
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW				30		
<b>G20-55-96</b>	<b>96"x48"</b>	<b>SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>59</b>	<b>118</b>	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)				10		
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)				10		
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)				10		
M3-1-24	24"x12"	NORTH (Mounted on route marker post)				7		
M3-2-24	24"x12"	EAST (Mounted on route marker post)				7		
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)				7		
M3-4-24	24"x12"	WEST (Mounted on route marker post)				7		
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)				7		
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT				15		
<b>M4-9a-24</b>	<b>24"x30"</b>	<b>PEDESTRIAN &amp; BIKE DETOUR ARROW RT OR LT</b>			<b>9</b>	<b>15</b>	<b>135</b>	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT				23		
M5-1-21	21"x15"	ARROW AHD AND RT or LT (Mounted on route marker post)				7		
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)				7		
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)				7		
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)				7		
<b>M6-2a-21</b>	<b>21"x15"</b>	<b>ARROW DWN AND RT or LT (Mounted on route marker post)</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>49</b>	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)				7		
<b>R1-1-48</b>	<b>48"x48"</b>	<b>STOP</b>	<b>4</b>	<b>3</b>		<b>4</b>	<b>128</b>	
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back				5		
R1-2-60	60"x60"	YIELD				29		
<b>R1-3p-30</b>	<b>30"x12"</b>	<b>ALL WAY (Plaque)</b>	<b>3</b>	<b>3</b>		<b>3</b>	<b>36</b>	
<b>R2-1-48</b>	<b>48"x60"</b>	<b>SPEED LIMIT ___</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>78</b>	
<b>R2-1a-24</b>	<b>24"x18"</b>	<b>MINIMUM FEE \$80 (Mounted on Speed Limit post)</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>20</b>	
<b>R3-7-48</b>	<b>48"x48"</b>	<b>LEFT or RIGHT LANE MUST TURN LEFT or RIGHT</b>			<b>2</b>	<b>2</b>	<b>70</b>	
R4-1-48	48"x60"	DO NOT PASS				39		
R4-7-48	48"x60"	KEEP RIGHT SYMBOL				39		
<b>R4-7-48</b>	<b>48"x60"</b>	<b>KEEP LEFT SYMBOL</b>			<b>1</b>	<b>39</b>	<b>39</b>	
R5-1-48	48"x48"	DO NOT ENTER				35		
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT				13		
R7-1-12	12"x18"	NO PARKING				11		
<b>R9-9-24</b>	<b>24"x12"</b>	<b>SIDEWALK CLOSED</b>			<b>5</b>	<b>12</b>	<b>60</b>	
R9-11a-24	24"x12"	SIDEWALK CLOSED CROSS HERE				12		
R10-6-24	24"x36"	STOP HERE ON RED				16		
R11-2-48	48"x30"	ROAD CLOSED				28		
<b>R11-2a-48</b>	<b>48"x30"</b>	<b>STREET CLOSED</b>	<b>1</b>			<b>28</b>	<b>28</b>	
R11-3a-60	60"x30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY				31		
R11-3c-60	60"x30"	STREET CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY				31		
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC				31		
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW				35		
<b>W1-4-48</b>	<b>48"x48"</b>	<b>RIGHT or LEFT REVERSE CURVE ARROW</b>	<b>2</b>	<b>2</b>		<b>35</b>	<b>70</b>	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW				35		
W1-6-48	48"x24"	LARGE ARROW				26		
W3-1-48	48"x48"	STOP AHEAD SYMBOL				35		
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL				35		
W3-4-48	48"x48"	BE PREPARED TO STOP				35		
W3-5-48	48"x48"	SPEED REDUCTION AHEAD				35		
<b>W4-2-48</b>	<b>48"x48"</b>	<b>RIGHT or LEFT LANE TRANSITION SYMBOL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>35</b>	<b>35</b>	
W5-1-48	48"x48"	ROAD NARROWS				35		
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE				35		
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW				35		
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL				35		
W8-1-48	48"x48"	BUMP				35		
W8-3-48	48"x48"	PAVEMENT ENDS				35		
W8-7-48	48"x48"	LOOSE GRAVEL				35		
W8-9a-48	48"x48"	SHOULDER DROP-OFF				35		
W8-11-48	48"x48"	UNEVEN LANES				35		
W8-12-48	48"x48"	NO CENTER STRIPE				35		
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY				35		
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ___ FT.				35		
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ___ FT.				35		
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY				35		
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL				35		
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL				35		
W13-1-24	24"x24"	___ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)				11		
W13-4-48	48"x60"	RAMP ARROW				39		
W14-3-48	48"x36"	NO PASSING ZONE				23		
<b>W20-1-48</b>	<b>48"x48"</b>	<b>ROAD WORK AHEAD or ___ FT or ___ MILE</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>105</b>	
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT				35		
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.				35		
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.				35		
<b>W20-5-48</b>	<b>48"x48"</b>	<b>RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>35</b>	<b>35</b>	
W20-7a-48	48"x48"	FLAGGING SYMBOL				35		
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)				10		

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED			TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.					
			1a	1b	1c			
W20-8-48	48"x48"	STREET CLOSED					35	
W20-51-48	48"x48"	EQUIPMENT WORKING					35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)					12	
W21-1a-48	48"x48"	WORKERS SYMBOL					35	
W21-2-48	48"x48"	FRESH OIL					35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT					35	
W21-5-48	48"x48"	SHOULDER WORK					35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED					35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.					35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD					35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.					35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY					35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK					35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)					11	

**SPECIAL SIGNS**

SIGN NUMBER	SIGN SIZE	DESCRIPTION	1a	1b	1c	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
SS5	36"x18"	Business Sign (LAKE SIDE DRY CLEANERS)	1			1	22	22
SS6	36"x18"	Business Sign (LAKE SIDE DRY CLEANERS)	1			1	22	22

**SPEC & CODE**

SPEC & CODE	DESCRIPTION	TOTAL UNITS
704-1000	TRAFFIC CONTROL SIGNS	1069

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO.			TOTAL QUANTITY
			1a	1b	1c	
			704-0100	FLAGGING	MHR	
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH				
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH				
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH				
704-1050	TYPE I BARRICADES	EACH				
704-1051	TYPE II BARRICADES	EACH				
<b>704-1052</b>	<b>TYPE III BARRICADES</b>	EACH	<b>7</b>	<b>7</b>	<b>13</b>	<b>13</b>
<b>704-1060</b>	<b>DELINEATOR DRUMS</b>	EACH	<b>44</b>	<b>22</b>	<b>48</b>	<b>48</b>
704-1065	TRAFFIC CONES	EACH				
<b>704-1067</b>	<b>TUBULAR MARKERS</b>	EACH	<b>57</b>	<b>36</b>	<b>28</b>	<b>57</b>
704-1070	DELINEATOR	EACH				
704-1072	FLEXIBLE DELINEATORS	EACH				
704-1081	VERTICAL PANELS - BACK TO BACK	EACH				
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH				
<b>704-1086</b>	<b>SEQUENCING ARROW PANEL - TYPE B</b>	EACH	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH				
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH				
704-1095	TYPE B FLASHERS	EACH				
<b>704-1500</b>	<b>OBLITERATION OF PVMT MK</b>	SF	<b>1999</b>	<b>254</b>		<b>2253</b>
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF				
<b>704-3510</b>	<b>PRECAST CONCRETE MED BARRIER - STATE FURNISHED</b>	EACH			<b>62</b>	<b>62</b>
762-0200	RAISED PAVEMENT MARKERS	EACH				
762-0418	SHORT TERM 4IN LINE-TYPE R	LF				
<b>762-0420</b>	<b>SHORT TERM 4IN LINE - TYPE R</b>	LF	<b>2974</b>	<b>3286</b>	<b>3269</b>	<b>9529</b>
<b>762-0423</b>	<b>SHORT TERM 8IN LINE-TYPE R</b>	LF			<b>85</b>	<b>85</b>
762-0426	SHORT TERM 24IN LINE-TYPE R	LF				
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF				
762-0436	SHORT TERM 24IN LINE-TYPE NR	LF				
<b>762-0441</b>	<b>SHORT TERM MESSAGE-TYPE R</b>	SF			<b>68</b>	<b>68</b>
772-2110	FLASHING BEACON - POST MOUNTED	EACH				

NOTE:  
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.  
<http://www.dot.nd.gov/>

This document was originally issued and sealed by Taylor D. Olson, Registration Number PE-10405, on 8/15/16 and the original document is stored at the North Dakota Department of Transportation.

Traffic Control Devices List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	3

**PROJECT NO.  
NHU-3-020(074)103**

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED					TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			2	3	4	5	6			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)						6		
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES						34		
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)						26		
G20-2-48	48"x24"	END ROAD WORK	2	1	1	3	1	3	19	57
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)						18		
G20-10-108	108"x48"	CONTRACTOR SIGN						64		
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS						37		
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW						30		
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	1	1	3	3	4	4	59	236
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)						10		
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)						10		
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)						26	26	10
M3-1-24	24"x12"	NORTH (Mounted on route marker post)						13	13	7
M3-2-24	24"x12"	EAST (Mounted on route marker post)						7		
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)						13	13	7
M3-4-24	24"x12"	WEST (Mounted on route marker post)						7		
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)						26	26	7
M4-8a-24	24"x18"	END DETOUR						2	2	12
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT						15		
M4-9a-24	24"x30"	PEDESTRIAN & BIKE DETOUR ARROW RT OR LT			7	6	6	7	15	105
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT						23		
M5-1-21	21"x15"	ARROW AHD AND RT or LT (Mounted on route marker post)						8	8	7
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)						7		
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)						8	8	7
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)						7		
M6-2a-21	21"x15"	ARROW DWN AND RT or LT (Mounted on route marker post)	5	3	5	11	9	11	7	77
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)						7		
M6-4-30	30"x21"	ARROW LT AND RT						15		
R1-1-48	48"x48"	STOP	1	2	3	4	4	4	32	128
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back						5		
R1-2-60	60"x60"	YIELD						29		
R1-3p-30	30"x12"	ALL WAY (Plaque)			3	3	1	3	12	36
R2-1-48	48"x60"	SPEED LIMIT	2	2	4	4	4	4	39	156
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	2	2	4	4	4	4	10	40
R3-2-48	48"x48"	NO LEFT TURN					1	1	35	35
R3-5-36	36"x30"	MANDATORY MOVEMENT LANE CONTROL			1	2	2	2	18	36
R3-5a-36	36"x30"	MANDATORY MOVEMENT LANE CONTROL			1			1	18	18
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT			1	1	1	1	35	35
R3-30-36	30"x36"	ADVANCED INTERSECTION LANE CONTROL						18		
R4-1-48	48"x60"	DO NOT PASS						39		
R4-7-48	48"x60"	KEEP RIGHT SYMBOL					1	1	39	39
R4-7-48	48"x60"	KEEP LEFT SYMBOL						39		
R5-1-48	48"x48"	DO NOT ENTER						35		
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT						13		
R7-1-12	12"x18"	NO PARKING						11		
R9-9-24	24"x12"	SIDEWALK CLOSED	1	2	2	2	2	2	12	24
R9-11a-24	24"x12"	SIDEWALK CLOSED CROSS HERE	2	1				2	12	24
R10-6-24	24"x36"	STOP HERE ON RED						16		
R11-2-48	48"x30"	ROAD CLOSED						28		
R11-2a-48	48"x30"	STREET CLOSED	1	3	3	3	3	3	28	84
R11-3a-60	60"x30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY						31		
R11-3c-60	60"x30"	STREET CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY						31		
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC	1	1			1	1	31	31
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW						35		
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW	1	1	3	2		3	35	105
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW						35		
W1-6-48	48"x24"	LARGE ARROW						26		
W1-6-60	48"x24"	ONE-DIRECTION LARGE ARROW				2	2	2	19	38
W1-7-48	48"x24"	TWO-DIRECTION LARGE ARROW	1		1			1	19	19
W3-1-48	48"x48"	STOP AHEAD SYMBOL						35		
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL						35		
W3-4-48	48"x48"	BE PREPARED TO STOP						35		
W3-5-48	48"x48"	SPEED REDUCTION AHEAD						35		
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL	1	1	2	2	3	3	35	105
W5-1-48	48"x48"	ROAD NARROWS						35		
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE						35		
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW						35		
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL						35		
W8-1-48	48"x48"	BUMP						35		
W8-3-48	48"x48"	PAVEMENT ENDS						35		
W8-7-48	48"x48"	LOOSE GRAVEL						35		
W8-9a-48	48"x48"	SHOULDER DROP-OFF						35		
W8-11-48	48"x48"	UNEVEN LANES						35		
W8-12-48	48"x48"	NO CENTER STRIPE						35		
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY						35		
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ___ FT.						35		
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ___ FT.						35		
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY						35		
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL						35		
W11-2-48	48" x 48"	PEDESTRIAN CROSSING	4					4	35	140
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL						35		
W13-1-24	24"x24"	___ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)						11		

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED					TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			2	3	4	5	6			
W13-4-48	48"x60"	RAMP ARROW							39	
W14-3-48	48"x36"	NO PASSING ZONE							23	
W16-7P-24	24" x 12"	AHEAD (plaque)						2	7	14
W16-9P-24	24" x 12"	DOWNWARD DIAGONAL ARROW (Plaque)	2					2	7	14
W20-1-48	48"x48"	ROAD WORK AHEAD or ___ FT or ___ MILE	3	2	4	6	5	6	35	210
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT						2	2	35
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.						2	2	35
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.							35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.	1	1	2	2	4	4	35	140
W20-7a-48	48"x48"	FLAGGING SYMBOL							35	
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)							10	
W20-8-48	48"x48"	STREET CLOSED							35	
W20-51-48	48"x48"	EQUIPMENT WORKING							35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)							12	
W21-1a-48	48"x48"	WORKERS SYMBOL							35	
W21-2-48	48"x48"	FRESH OIL							35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT							35	
W21-5-48	48"x48"	SHOULDER WORK							35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED							35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.							35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD							35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.							35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY							35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK							35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)							11	

**SPECIAL SIGNS**

SS	DESCRIPTION	2	3	4	5	6	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
SS1	36"x18" Business Sign (NAPA AUTO PARTS)								22
SS2	36"x18" Business Sign (NAPA AUTO PARTS)					1	1	1	22
SS3	36"x18" Business Sign (PROZ BAR & GRILL)					1	1	1	22
SS4	36"x18" Business Sign (PROZ BAR & GRILL)					1	1	1	22
SS5	36"x18" Business Sign (LAKE SIDE DRY CLEANERS)					1	1	1	22
SS6	36"x18" Business Sign (LAKE SIDE DRY CLEANERS)					1	1	1	22
SS7	36"x18" Business Sign (VILLAGE WEST APARTMENTS)								22
SS8	36"x18" Business Sign (VILLAGE WEST APARTMENTS)					1	1	1	22

**SPEC & CODE**

704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	2978
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SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO.					TOTAL QUANTITY
			2	3	4	5	6	
704-0100	FLAGGING	MHR						
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH						
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH						
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH						
704-1050	TYPE I BARRICADES	EACH						
704-1051	TYPE II BARRICADES	EACH						
704-1052	TYPE III BARRICADES	EACH	12	15	17	21	26	26
704-1060	DELINEATOR DRUMS	EACH	35	62	90	124	72	124
704-1065	TRAFFIC CONES	EACH						
704-1067	TUBULAR MARKERS	EACH	43	30	53	87	52	87
704-1070	DELINEATOR	EACH						
704-1072	FLEXIBLE DELINEATORS	EACH						
704-1081	VERTICAL PANELS - BACK TO BACK	EACH						
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH						
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	1	1	2	2	3	3
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH						
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH						
704-1095	TYPE B FLASHERS	EACH						
704-1500	OBLITERATION OF PVMT MK	SF	1094	121		211	1805	3231
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF						
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH						
762-0200	RAISED PAVEMENT MARKERS	EACH						
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	1011	1652	3559	2753	2150	11125
762-0422	SHORT TERM 6IN LINE-TYPE R	LF	96					96
762-0423	SHORT TERM 8IN LINE-TYPE R	LF				175	90	265
762-0426	SHORT TERM 24IN LINE-TYPE R	LF						
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	1338		991	158	318	2805
762-0436	SHORT TERM 24IN LINE-TYPE NR	LF						
762-0441	SHORT TERM MESSAGE-TYPE R	SF						
772-2110	FLASHING BEACON - POST MOUNTED	EACH						

NOTE:  
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.  
<http://www.dot.nd.gov/>

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Traffic Control Devices List

**PROJECT NO.  
NHU-3-019(044)155**

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED			TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.					
			7	8	9			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)			23	23	6	138
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES					34	
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)					26	
G20-2-48	48"x24"	END ROAD WORK					19	
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)					18	
G20-10-108	108"x48"	CONTRACTOR SIGN					64	
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS					37	
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW					30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	2	2	1	2	59	118
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)					10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)					10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)	59			59	10	590
M3-1-24	24"x12"	NORTH (Mounted on route marker post)	19			19	7	133
M3-2-24	24"x12"	EAST (Mounted on route marker post)	15	10		15	7	105
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)	12			12	7	84
M3-4-24	24"x12"	WEST (Mounted on route marker post)	13	13		13	7	91
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)	30	21		30	7	210
M4-8a-24	24"x18"	END DETOUR	2	2		2	12	24
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT	3			3	15	45
M4-9a-24	24"x30"	PEDESTRIAN & BIKE DETOUR ARROW RT OR LT	6	7	12	12	15	180
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT					23	
M5-1-21	21"x15"	ARROW AHD AND RT or LT (Mounted on route marker post)	9	5		9	7	63
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)					7	
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)	10	5		10	7	70
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)					7	
M6-2a-21	21"x15"	ARROW DWN AND RT or LT (Mounted on route marker post)	4	3	4	4	7	28
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)	1			1	7	7
M6-4-30	30"x21"	ARROW LT AND RT					15	
R1-1-48	48"x48"	STOP	1	3		3	32	96
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back					5	
R1-2-60	60"x60"	YIELD					29	
R1-3p-30	30"x12"	ALL WAY (Plaque)		3		3	12	36
R2-1-48	48"x60"	SPEED LIMIT	1	2	1	2	39	78
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	1	2	1	2	10	20
R3-2-48	48"x48"	NO LEFT TURN	1			1	35	35
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT	1	2		2	35	70
R4-1-48	48"x60"	DO NOT PASS					39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL	1			1	39	39
R4-7-48	48"x60"	KEEP LEFT SYMBOL					39	
R5-1-48	48"x48"	DO NOT ENTER					35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT					13	
R7-1-12	12"x18"	NO PARKING					11	
R9-9-24	24"x12"	SIDEWALK CLOSED	2	6	5	6	12	72
R9-11a-24	24"x12"	SIDEWALK CLOSED CROSS HERE					12	
R10-6-24	24"x36"	STOP HERE ON RED	2	2		2	16	32
R11-2-48	48"x30"	ROAD CLOSED					28	
R11-2a-48	48"x30"	STREET CLOSED	7	2	3	7	28	196
R11-3a-60	60"x30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY					31	
R11-3c-60	60"x30"	STREET CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY					31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC	6	1	1	6	31	186
W1-2-48	48"x48"	CURVE					35	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW	1	1		1	35	35
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW					35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW					35	
W1-6-48	48"x24"	LARGE ARROW	1			1	26	26
W3-1-48	48"x48"	STOP AHEAD SYMBOL					35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL	2	2		2	35	70
W3-4-48	48"x48"	BE PREPARED TO STOP					35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD					35	
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL	1	2	1	2	35	70
W5-1-48	48"x48"	ROAD NARROWS					35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE					35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW					35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL					35	
W8-1-48	48"x48"	BUMP					35	
W8-3-48	48"x48"	PAVEMENT ENDS					35	
W8-7-48	48"x48"	LOOSE GRAVEL					35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF					35	
W8-11-48	48"x48"	UNEVEN LANES					35	
W8-12-48	48"x48"	NO CENTER STRIPE					35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY					35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ___ FT.					35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ___ FT.					35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY					35	
W9-2-48	48"x48"	LANE ENDS MERGE RIGHT					35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL					35	
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL					35	
W13-1-24	24"x24"	___ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)					11	
W13-4-48	48"x60"	RAMP ARROW					39	
W14-3-48	48"x36"	NO PASSING ZONE					23	
W20-1-48	48"x48"	ROAD WORK AHEAD or ___ FT or ___ MILE	2	2	2	2	35	70
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT	2	1		2	35	70

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED			TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.					
			7	8	9			
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.	3	1		3	35	105
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.	2	2		2	35	70
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.	2	2	1	2	35	70
W20-7a-48	48"x48"	FLAGGING SYMBOL					35	
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)					10	
W20-8-48	48"x48"	STREET CLOSED					35	
W20-51-48	48"x48"	EQUIPMENT WORKING					35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)					12	
W21-1a-48	48"x48"	WORKERS SYMBOL					35	
W21-2-48	48"x48"	FRESH OIL					35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT					35	
W21-5-48	48"x48"	SHOULDER WORK					35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED					35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.					35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD					35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.					35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY					35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK					35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)					11	

**SPECIAL SIGNS**

SS	DESCRIPTION	7	8	9	TOTAL AMOUNT	UNITS PER AMOUNT	UNITS SUB TOTAL
SS1	36"x18" Business Sign (NAPA AUTO PARTS)		1	1	1	22	22
SS2	36"x18" Business Sign (NAPA AUTO PARTS)	1	1	1	1	22	22
SS3	36"x18" Business Sign (PROZ BAR & GRILL)		1		1	22	22
SS4	36"x18" Business Sign (PROZ BAR & GRILL)	1		1	1	22	22
SS5	36"x18" Business Sign (LAKE SIDE DRY CLEANERS)	1			1	22	22
SS6	36"x18" Business Sign (LAKE SIDE DRY CLEANERS)	1			1	22	22
SS7	36"x18" Business Sign (VILLAGE WEST APARTMENTS)			1	1	22	22
SS8	36"x18" Business Sign (VILLAGE WEST APARTMENTS)	1	1	1	1	22	22

**SPEC & CODE**

704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	3508
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SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO.			TOTAL QUANTITY
			7	8	9	
			704-0100	FLAGGING	MHR	
704-1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EACH	2	2		2
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH				
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH				
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH				
704-1050	TYPE I BARRICADES	EACH				
704-1051	TYPE II BARRICADES	EACH				
704-1052	TYPE III BARRICADES	EACH	43	28	22	43
704-1060	DELINEATOR DRUMS	EACH	46	41	36	46
704-1065	TRAFFIC CONES	EACH				
704-1067	TUBULAR MARKERS	EACH	88	28	27	88
704-1070	DELINEATOR	EACH				
704-1072	FLEXIBLE DELINEATORS	EACH				
704-1081	VERTICAL PANELS - BACK TO BACK	EACH				
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH				
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	1	2	1	2
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH				
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH				
704-1095	TYPE B FLASHERS	EACH				
704-1500	OBLITERATION OF PVMT MK	SF				
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF				
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH				
762-0200	RAISED PAVEMENT MARKERS	EACH				
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	3304	3667	3013	9984
762-0424	SHORT TERM 8IN LINE-TYPE R	LF	89	107		196
762-0426	SHORT TERM 24IN LINE-TYPE R	LF		24	25	49
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	351			351
772-2110	FLASHING BEACON - POST MOUNTED	EACH				

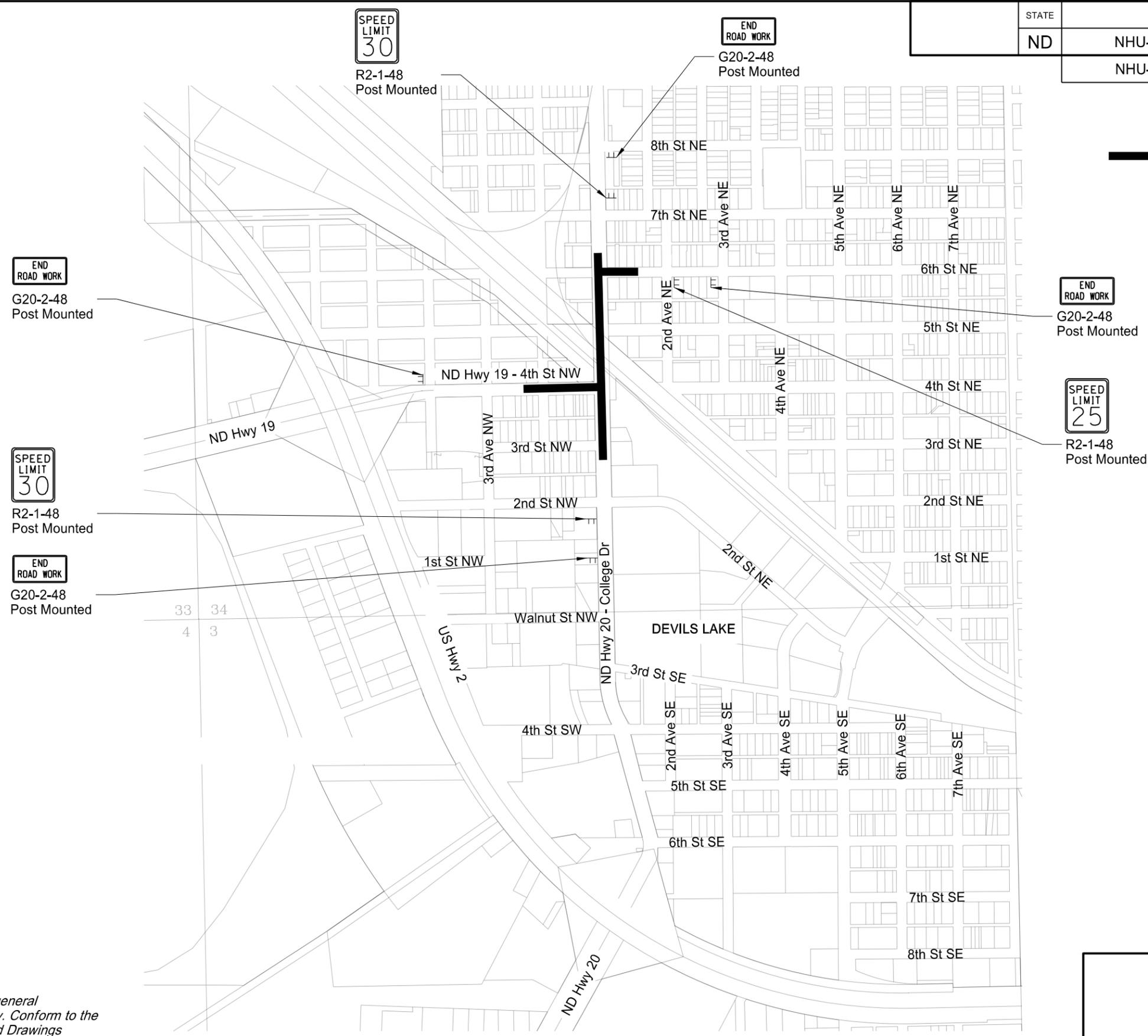
NOTE:  
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.  
<http://www.dot.nd.gov/>

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Traffic Control Devices List



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	6
	NHU-3-020(074)103		



Project Limits



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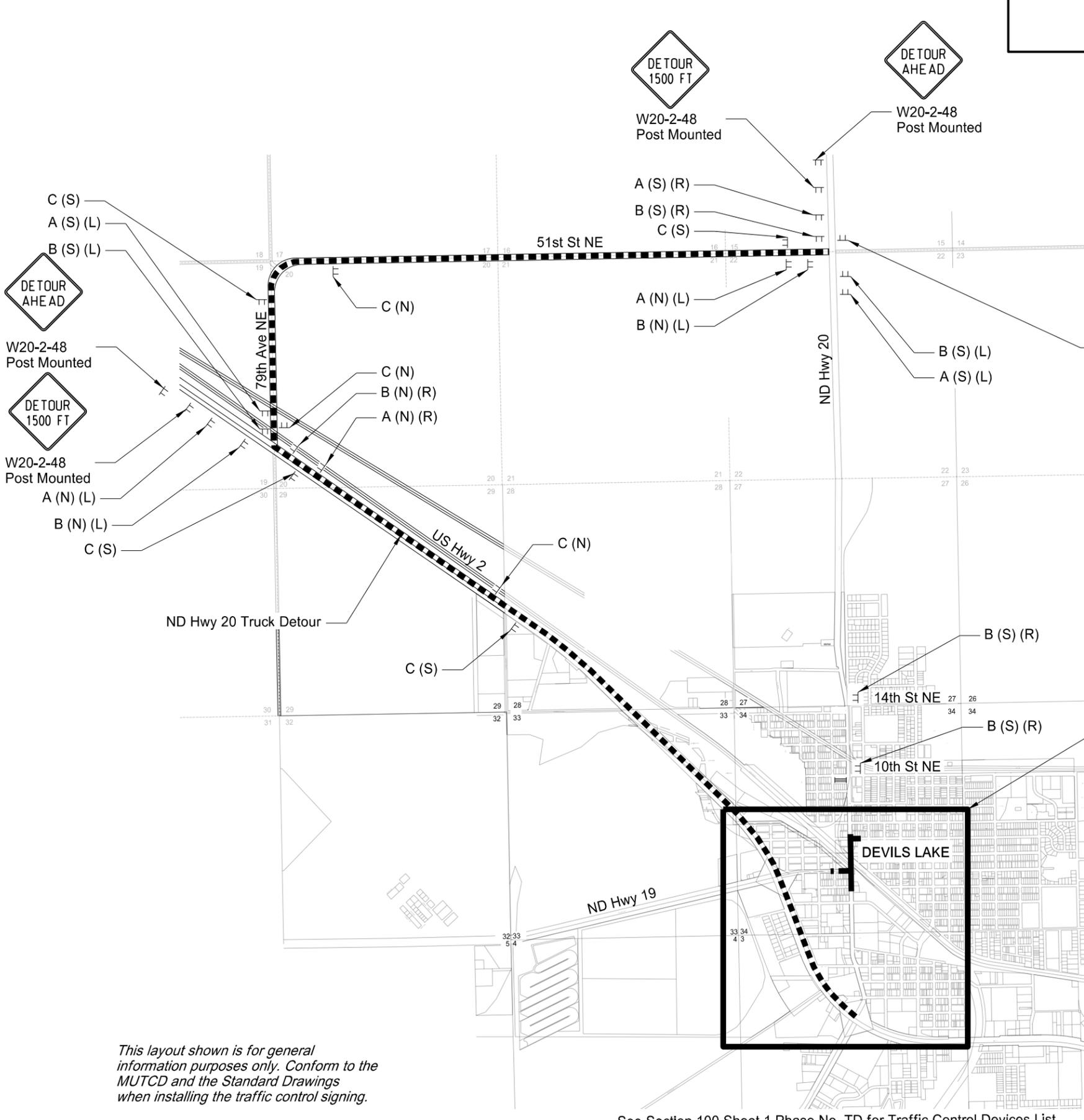
ND Highway 19 & 20  
Work Zone Traffic Control Terminal Signs

*This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.*

See Section 100 Sheet 1 Phase No. TS for Traffic Control Devices List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	7

- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- 20 M1-5-24
- (L)=M5-1-21
- (R)=M5-1-21 Post Mounted
- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- 20 M1-5-24
- (L)=M6-1-21
- (R)=M6-1-21 Post Mounted
- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- 20 M1-5-24 Post Mounted



- END DETOUR M4-8a-24
- TRUCK M4-4-24
- NORTH M3-1-24
- NORTH DAKOTA 20 M1-5-24 Post Mounted

Project Limits  
 Truck Detour



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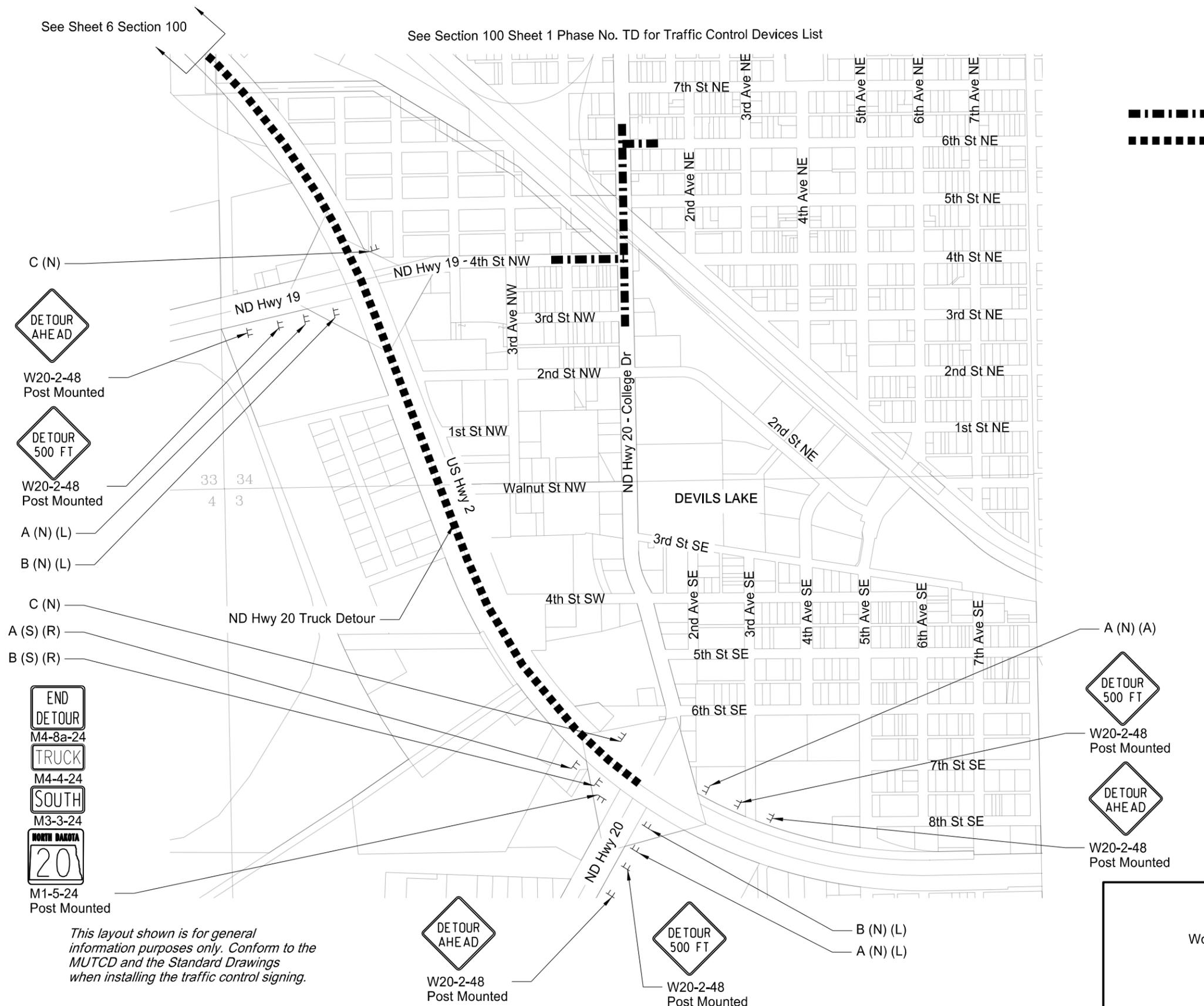
ND Highway 20  
Work Zone Traffic Control  
Truck Detour

*This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.*

See Section 100 Sheet 1 Phase No. TD for Traffic Control Devices List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	8

- A =
- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- NORTH DAKOTA
- 20
- M1-5-24
- ← (L)=M5-1-21
- (R)=M5-1-21
- ↑ (A)=M6-3-21 Post Mounted
- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- NORTH DAKOTA
- 20
- M1-5-24
- ← (L)=M6-1-21
- (R)=M6-1-21 Post Mounted
- DETOUR M4-8-24
- TRUCK M4-4-24
- NORTH (N)=M3-1-24
- SOUTH (S)=M3-3-24
- NORTH DAKOTA
- 20
- M1-5-24 Post Mounted



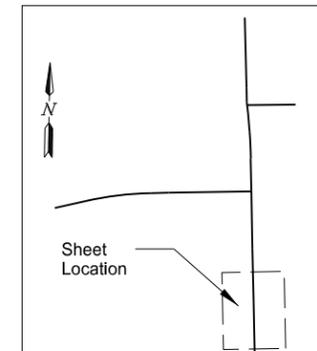
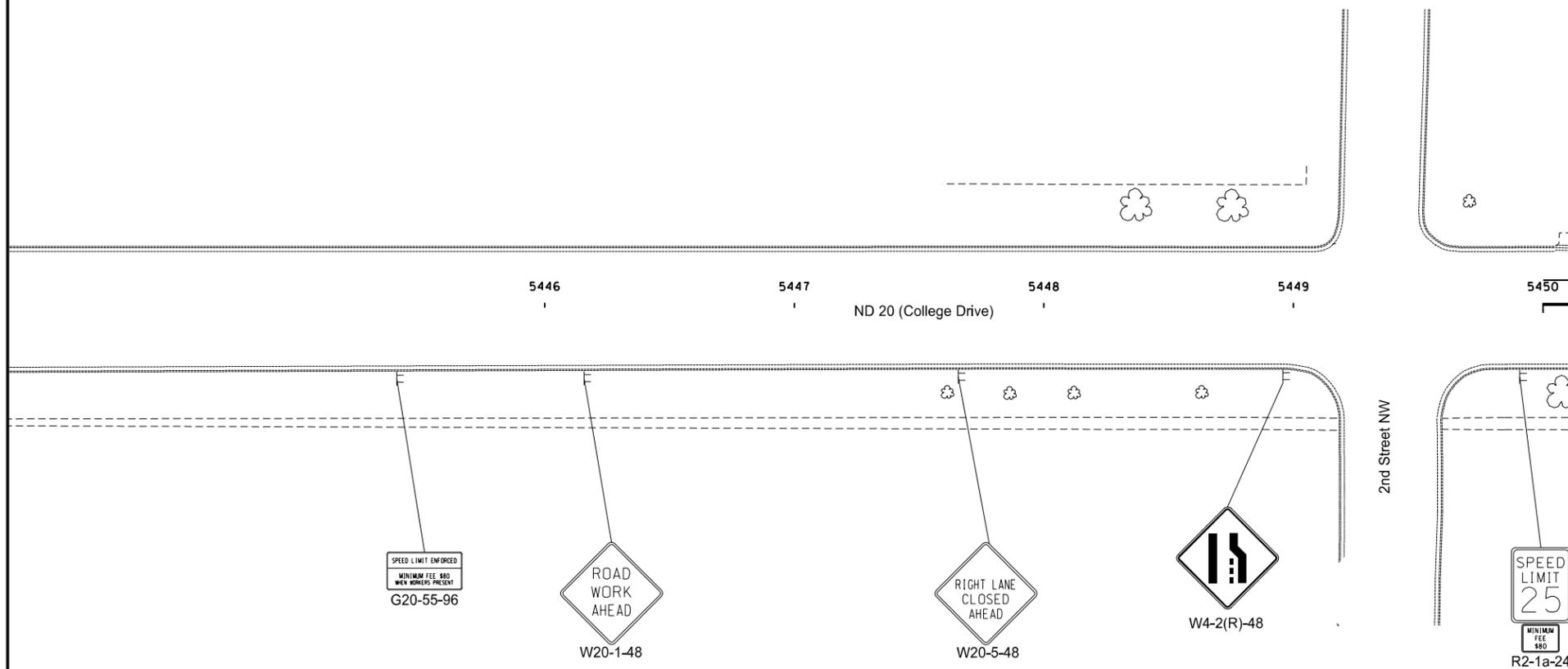
Project Limits  
 Truck Detour

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**ND Highway 20**  
 Work Zone Traffic Control  
 Truck Detour

*This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.*

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	9



- ↑ Tubular Markers
- Delineator Drums
- ▭ Sign
- ≡ Type III Barricade
- ▨ Work Area

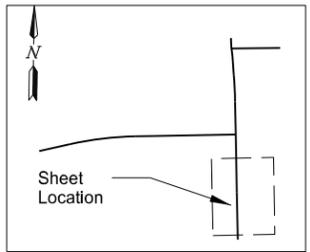
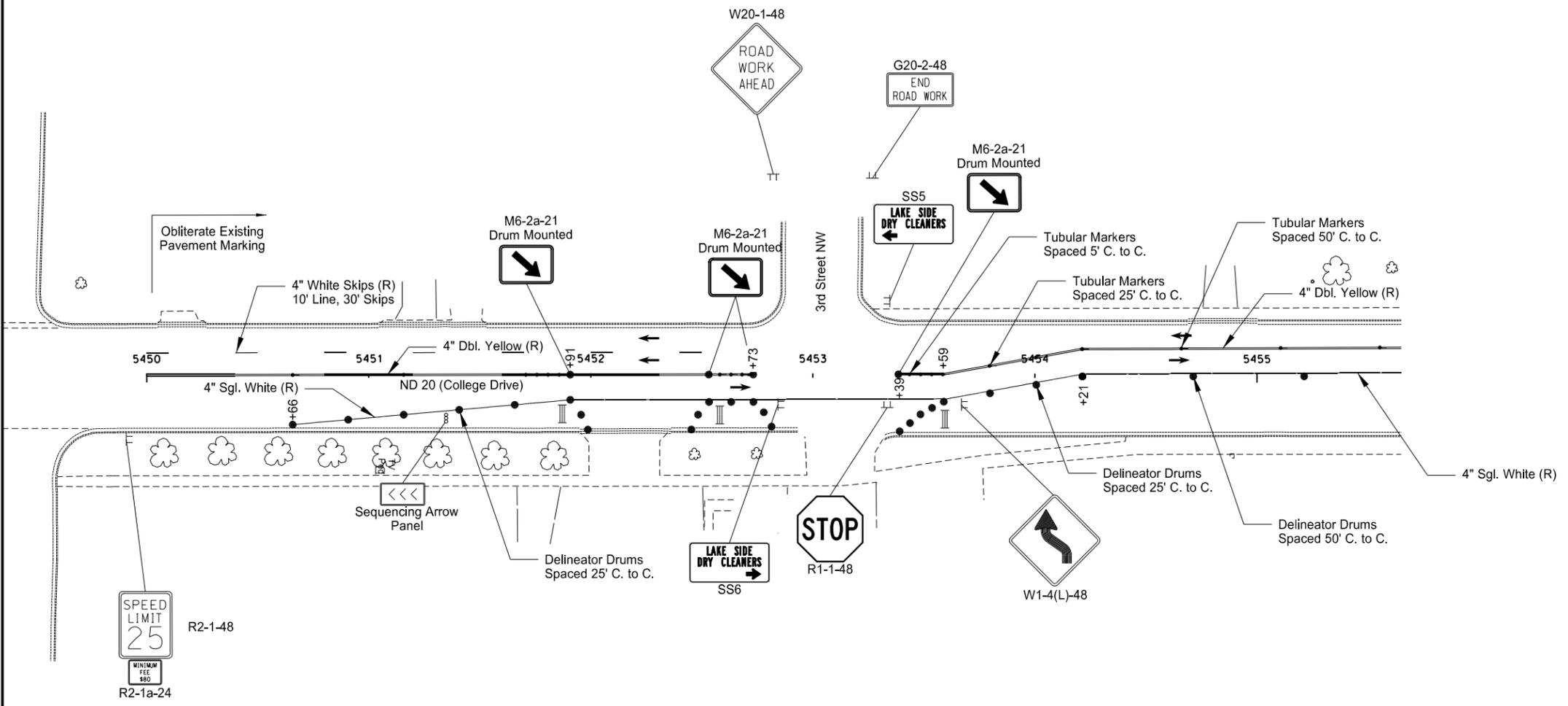
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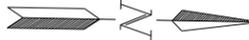
Phase 1a - ND Highway 20  
Work Zone Traffic Control  
Sta. 5446+00 to Sta. 5449+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	10



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area

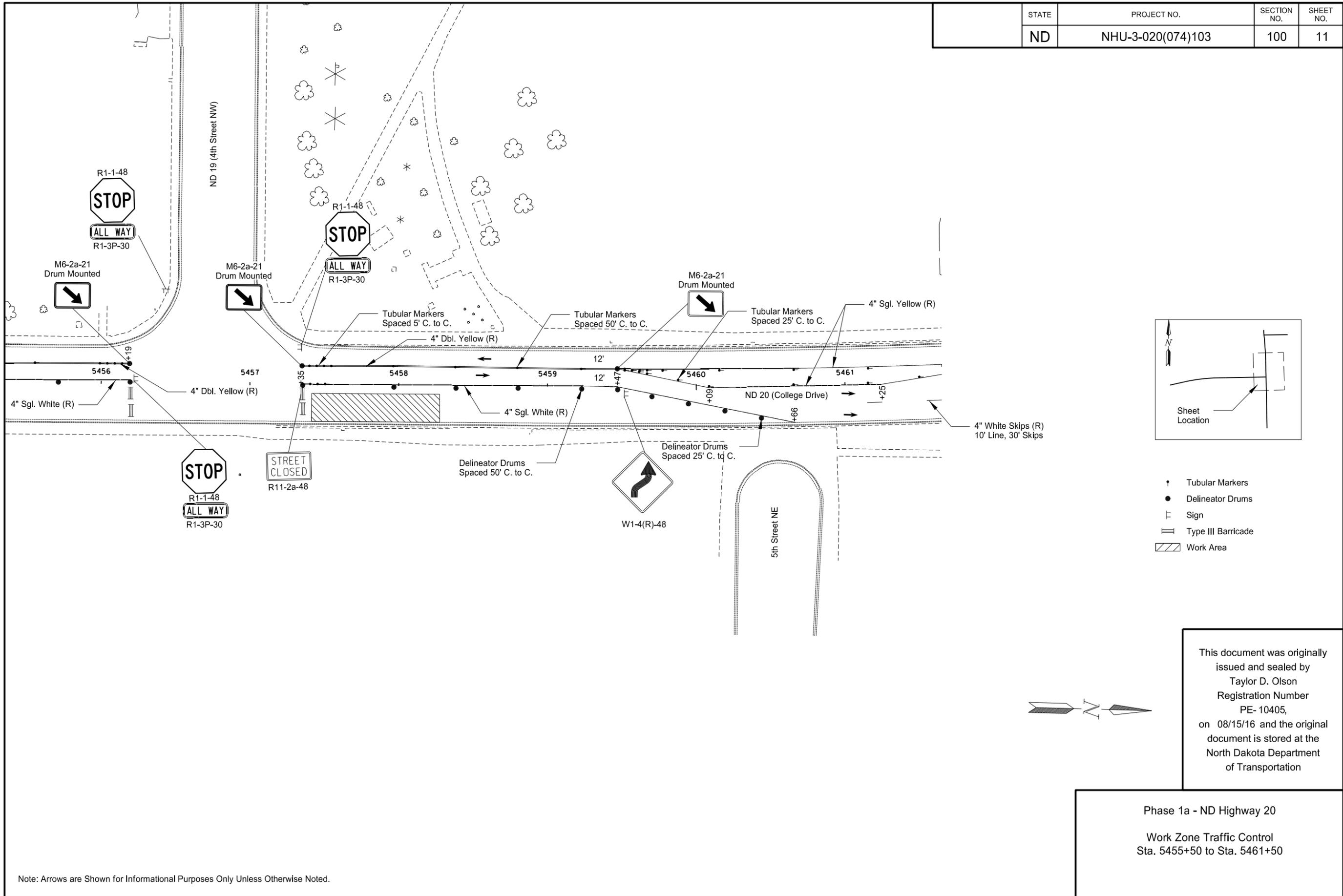


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Phase 1a - ND Highway 20  
Work Zone Traffic Control  
Sta. 5449+50 to Sta. 5455+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	11

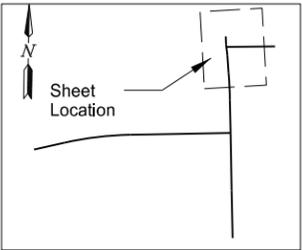
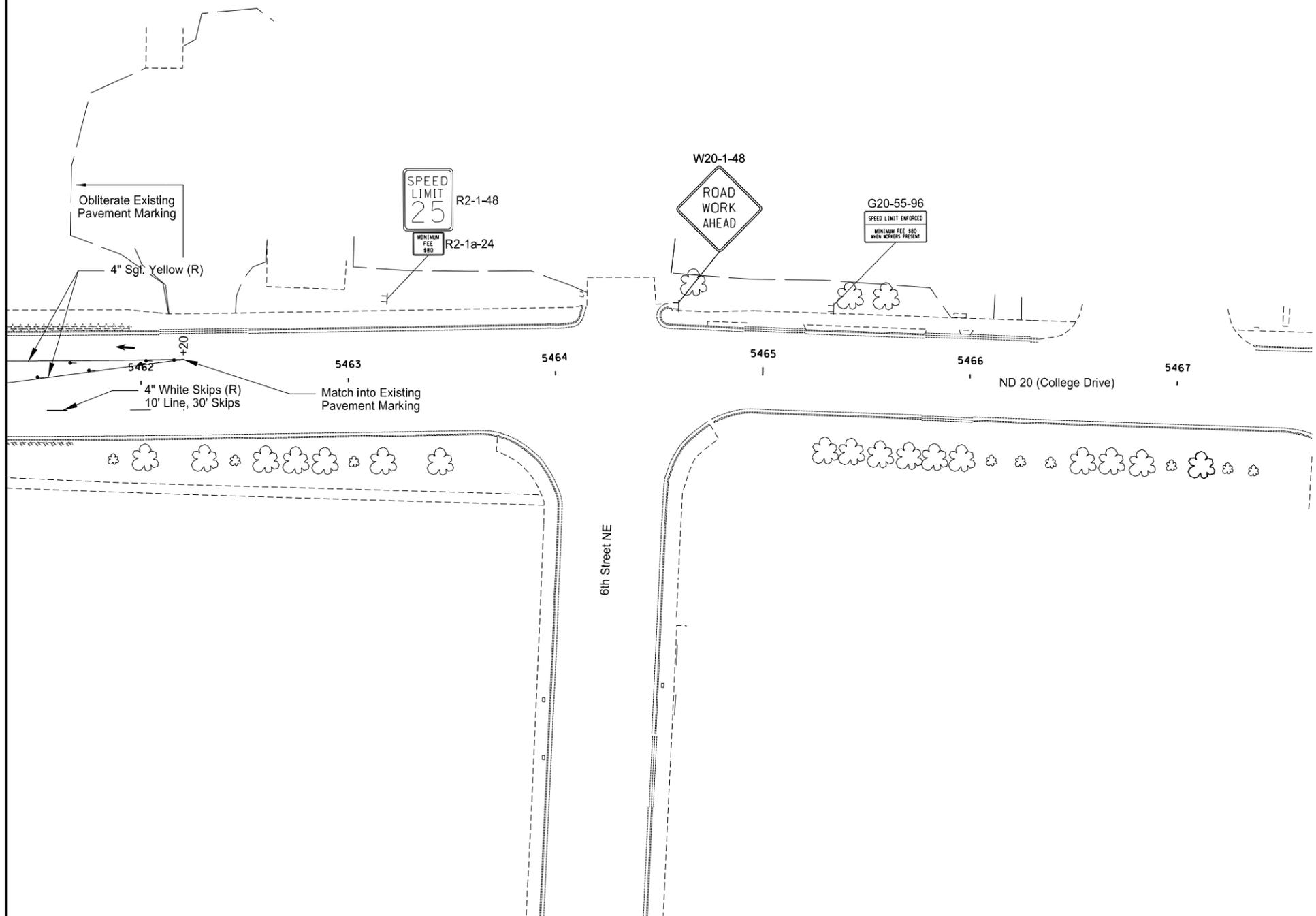


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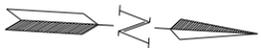
Phase 1a - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5455+50 to Sta. 5461+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	12



- † Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area

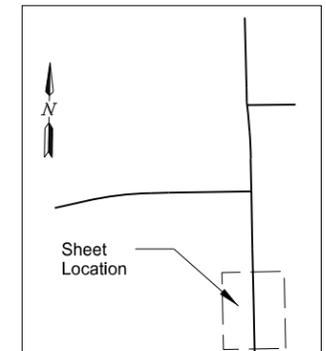
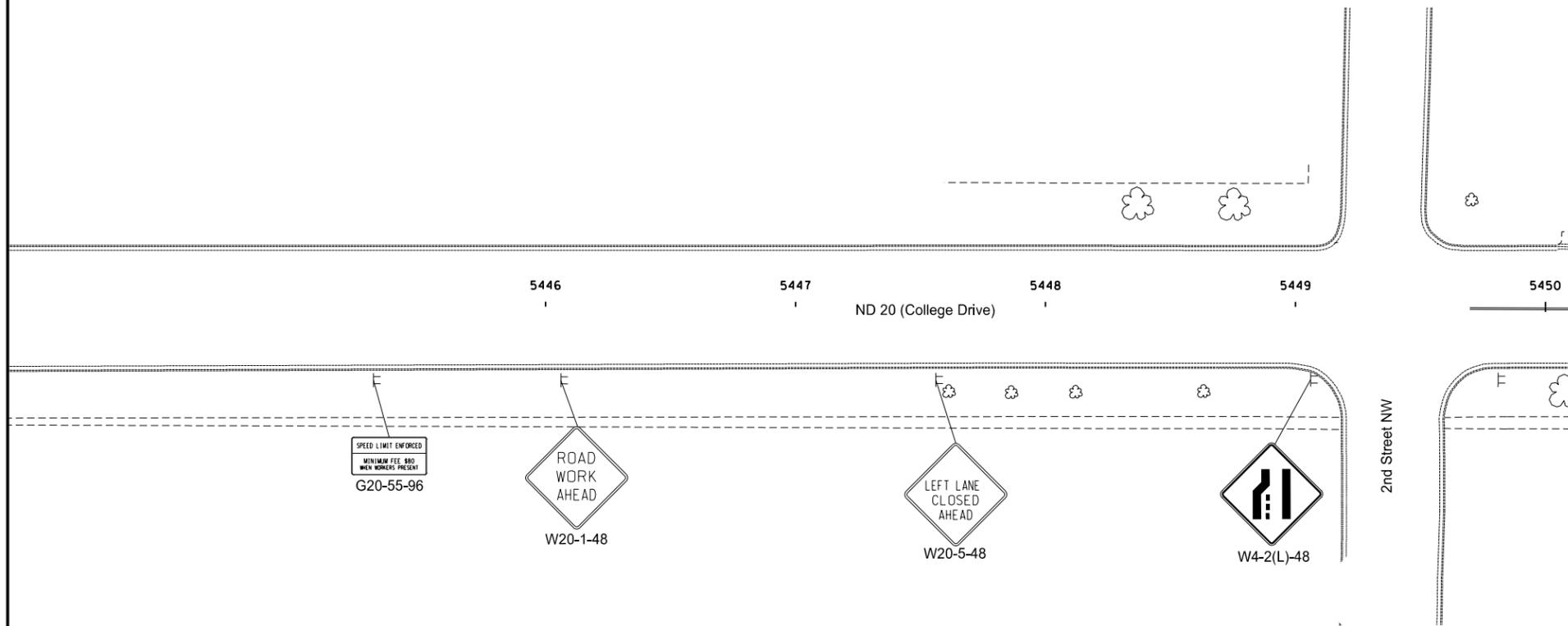


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Phase 1a - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5461+50 to Sta. 5467+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	13



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area

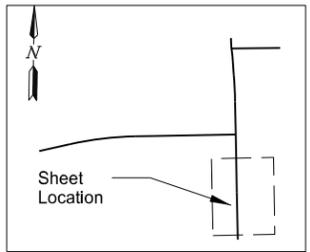
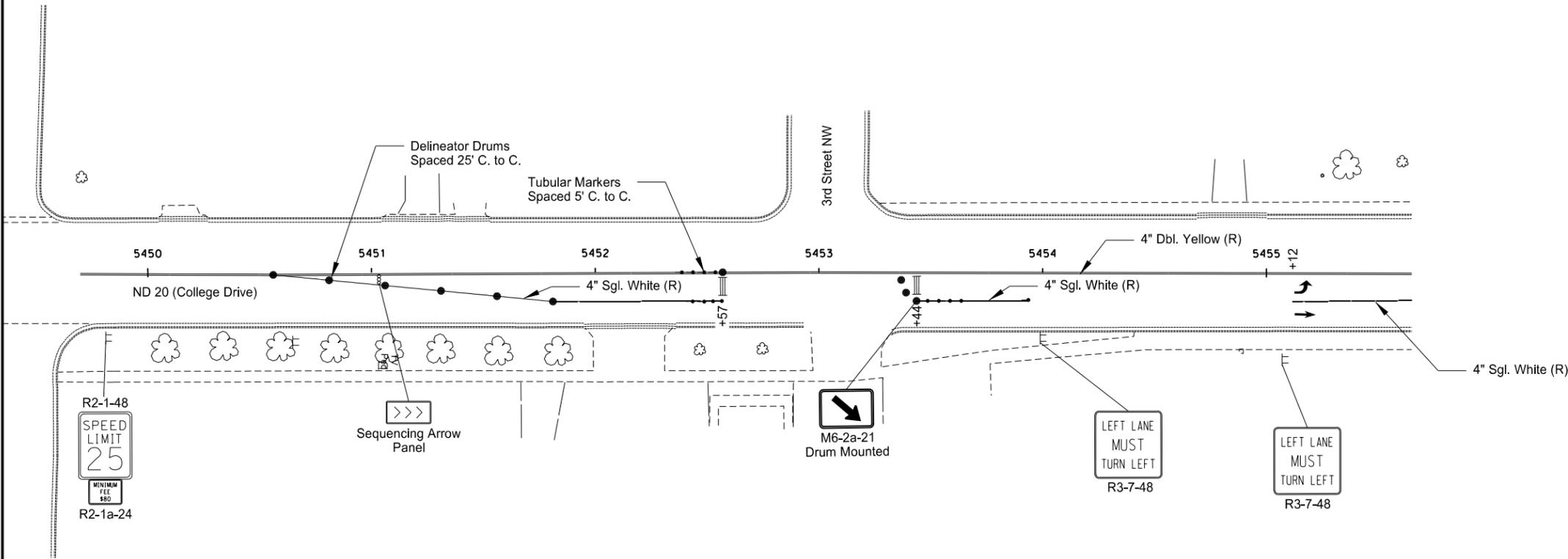
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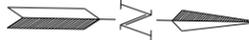
Phase 1b - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5446+00 to Sta. 5449+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	14



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area

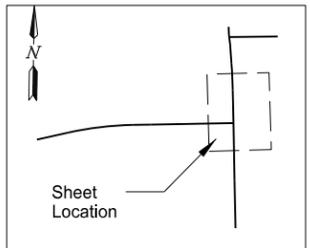
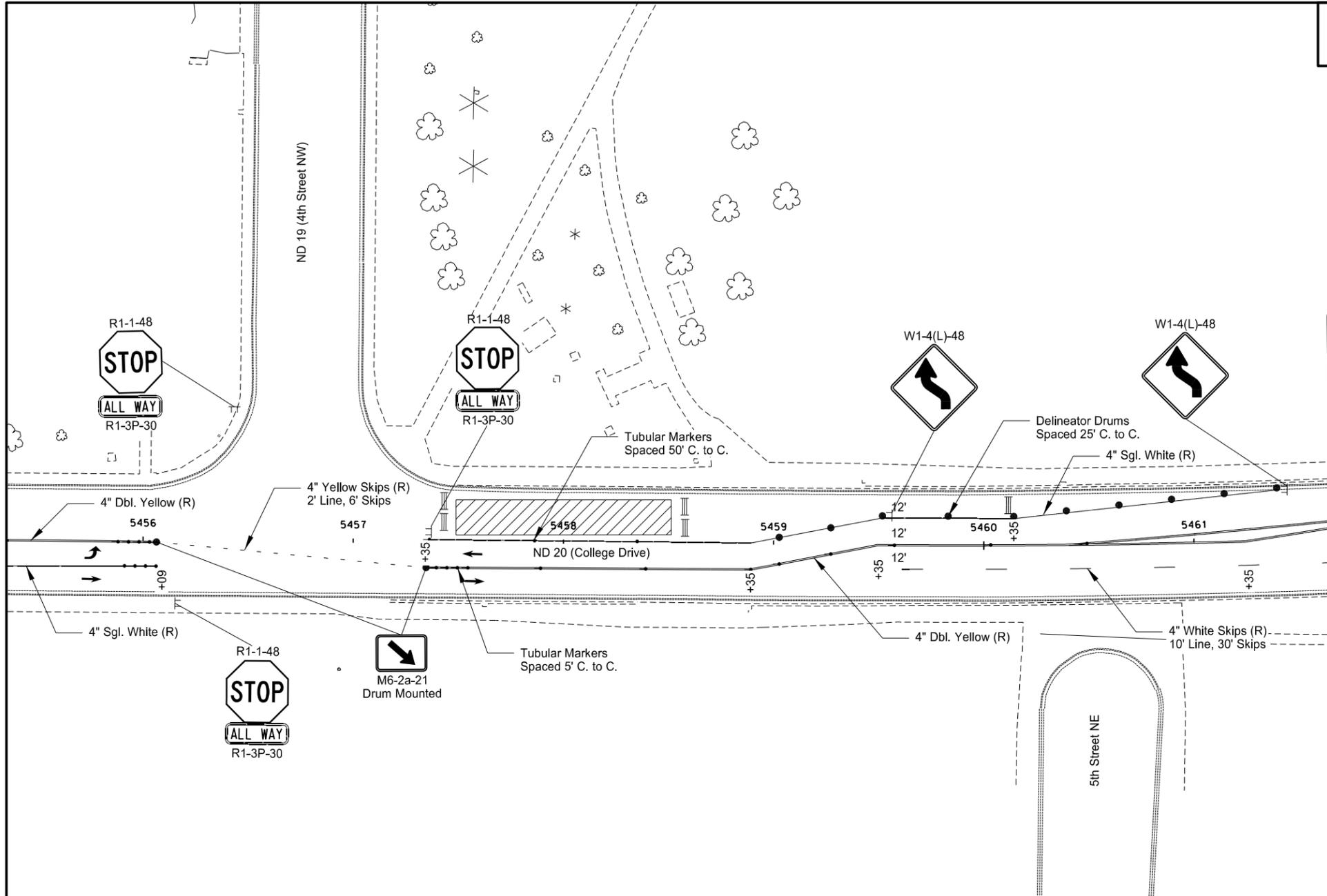


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Phase 1b - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5449+50 to Sta. 5455+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	15



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area

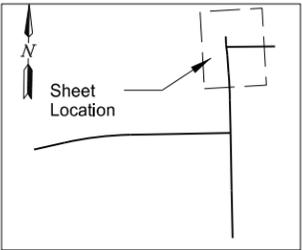
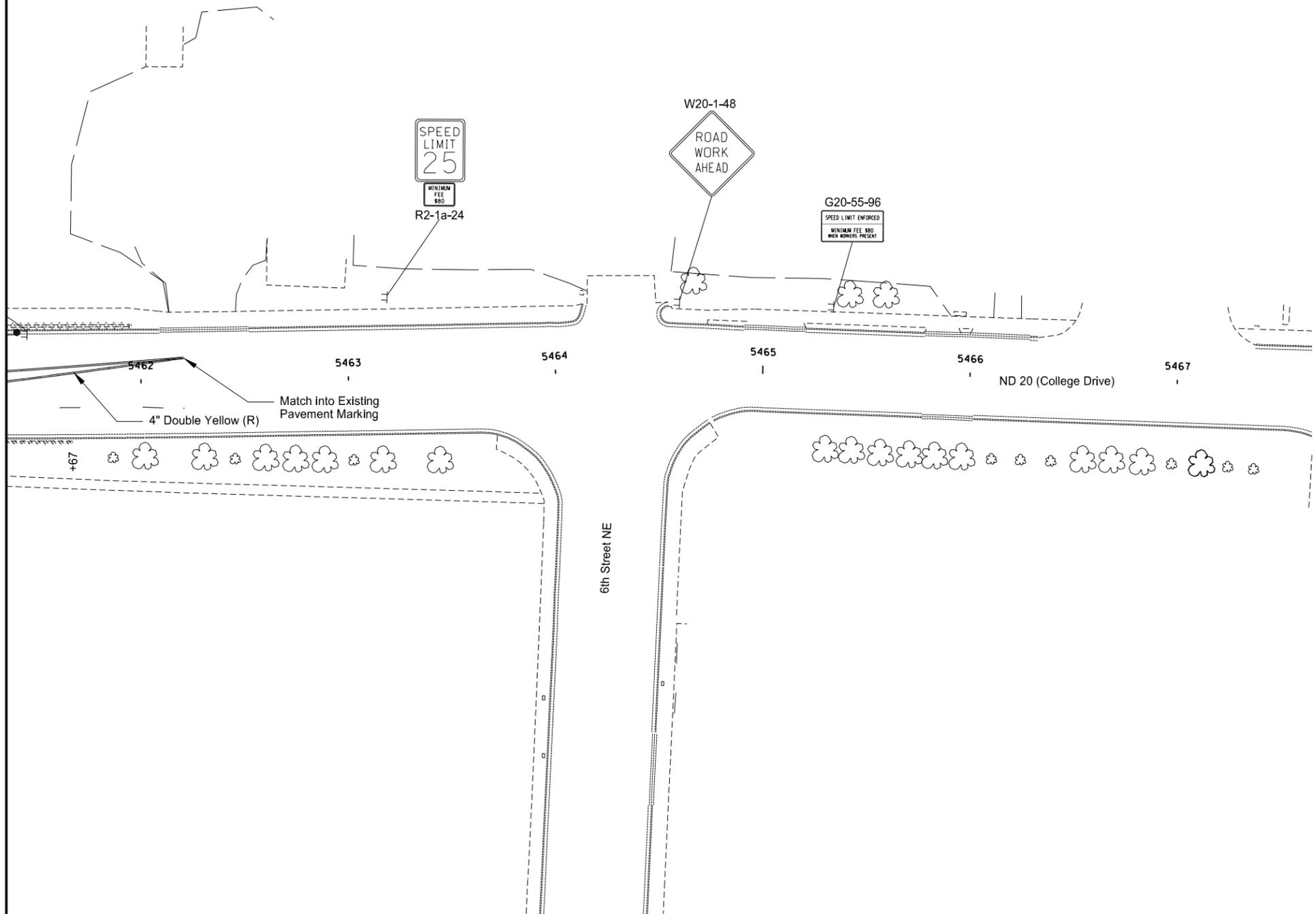


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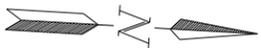
Phase 1b - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5455+50 to Sta. 5461+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	16



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area

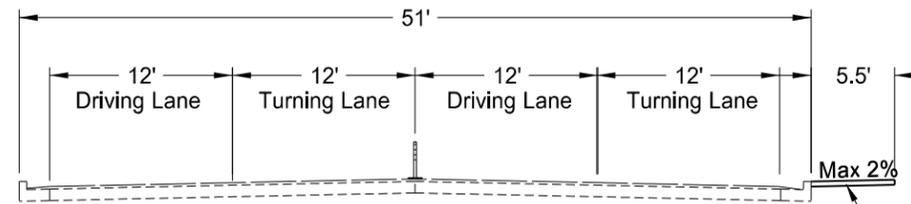


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Phase 1b - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5461+50 to Sta. 5467+50

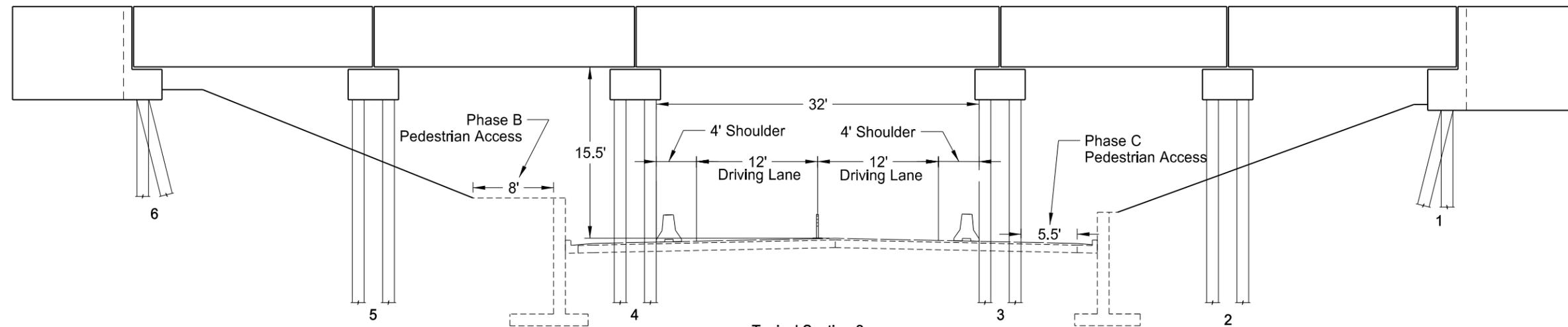
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	17
NHU-3-020(074)103			

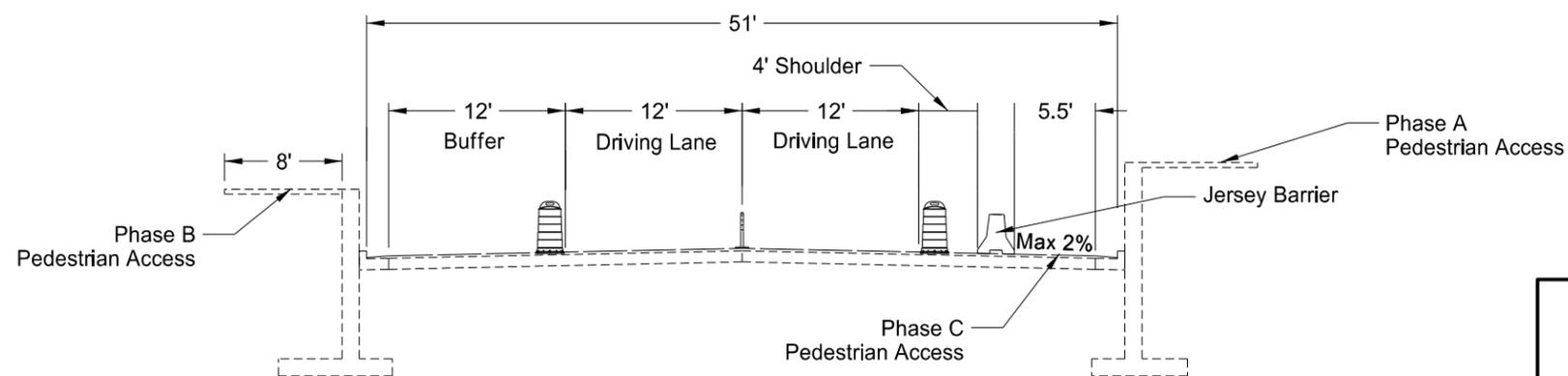


Typical Section 1  
Sta. 5461+67 to Sta. 5463+70

Phase C  
Pedestrian Access  
2" Commercial Grade HMA  
4" Traffic Service Aggregate



Typical Section 2  
(At Shoofly Bridge)

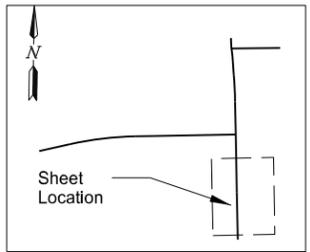
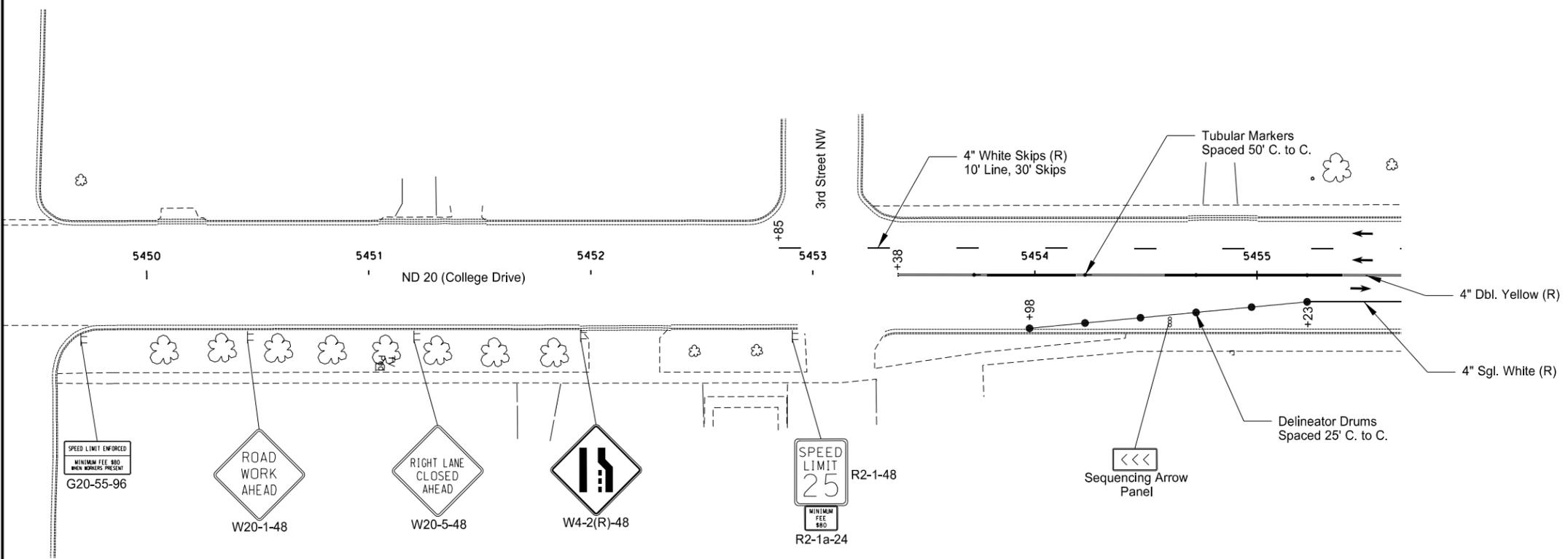


Typical Section 3  
Sta. 5456+61 to Sta. 5463+64

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Phase 1c - ND Highway 20  
Work Zone Traffic Control  
Pedestrian Access Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	18



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Phase A Pedestrian Access
- ▧ Phase B Pedestrian Access
- ▩ Phase C Temporary Pedestrian Asphalt
- ▭ Jersey Barrier



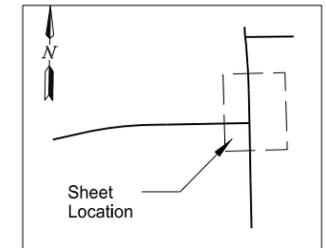
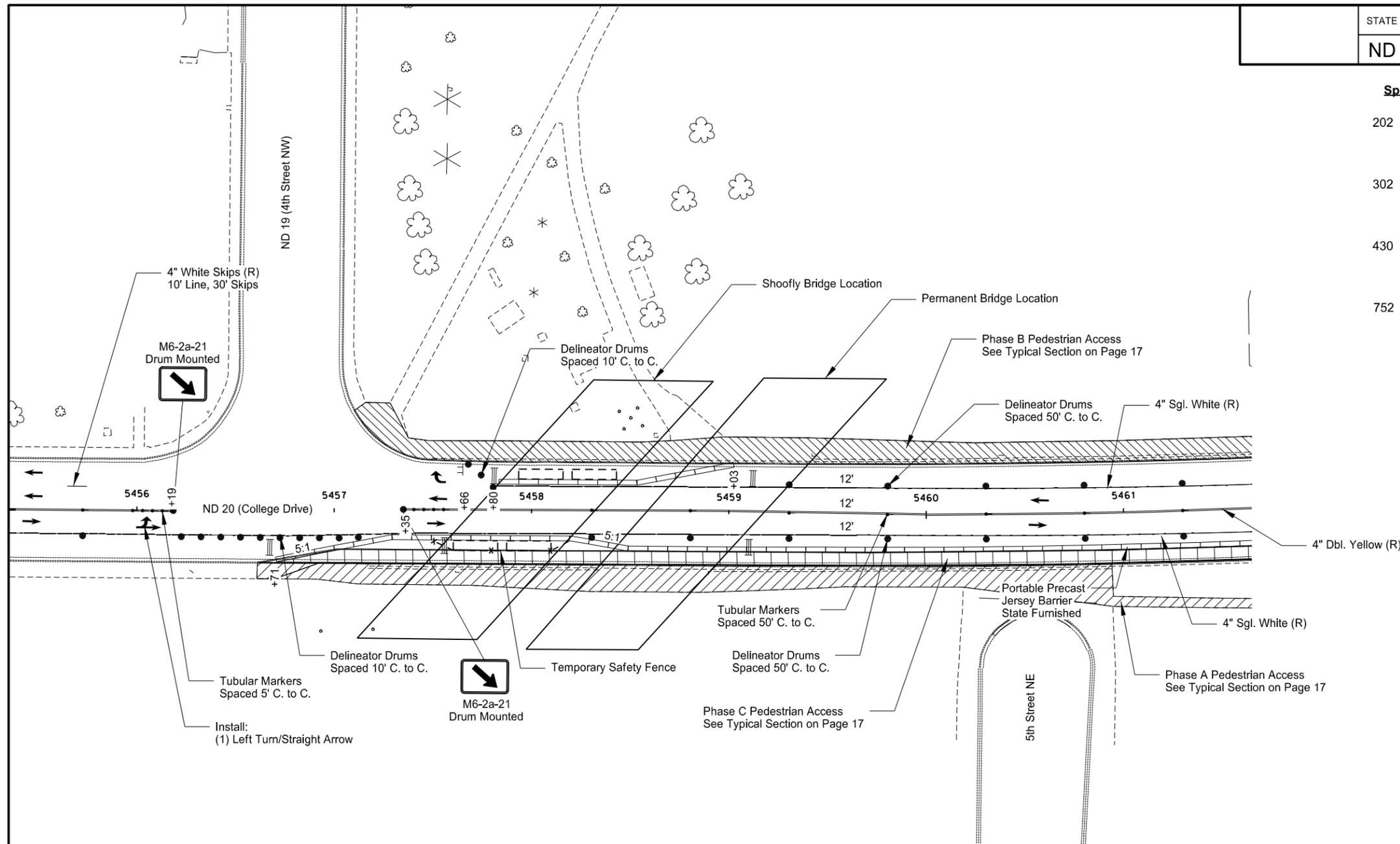
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Phase 1c - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5449+50 to Sta. 5455+50

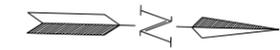
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	19

Spec	Item Description	Qty	Unit
202 0136	REMOVAL OF PAVEMENT		
	Sidewalk Asphalt	165	TON
	Roadway Temporary Surface	1700	TON
302 0314	TEMPORARY TRAFFIC SERVICE AGGREGATE		
	Phase B Pedestrian Path	80	TON
	Roadway Temporary Surface	1100	TON
430 0500	COMMERCIAL GRADE HOT MIX ASPHALT		
	Phase B Pedestrian Path	85	TON
	Roadway Temporary Surface	600	TON
752 0911	TEMPORARY SAFETY FENCE		
	Sta. 5457+50 to 5458+20 ~ Rt	70	LF



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Phase A Pedestrian Access
- ▩ Phase B Pedestrian Access
- ▭ Phase C Temporary Pedestrian Asphalt
- ▭ Jersey Barrier



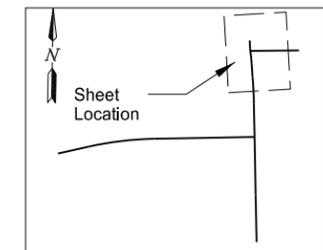
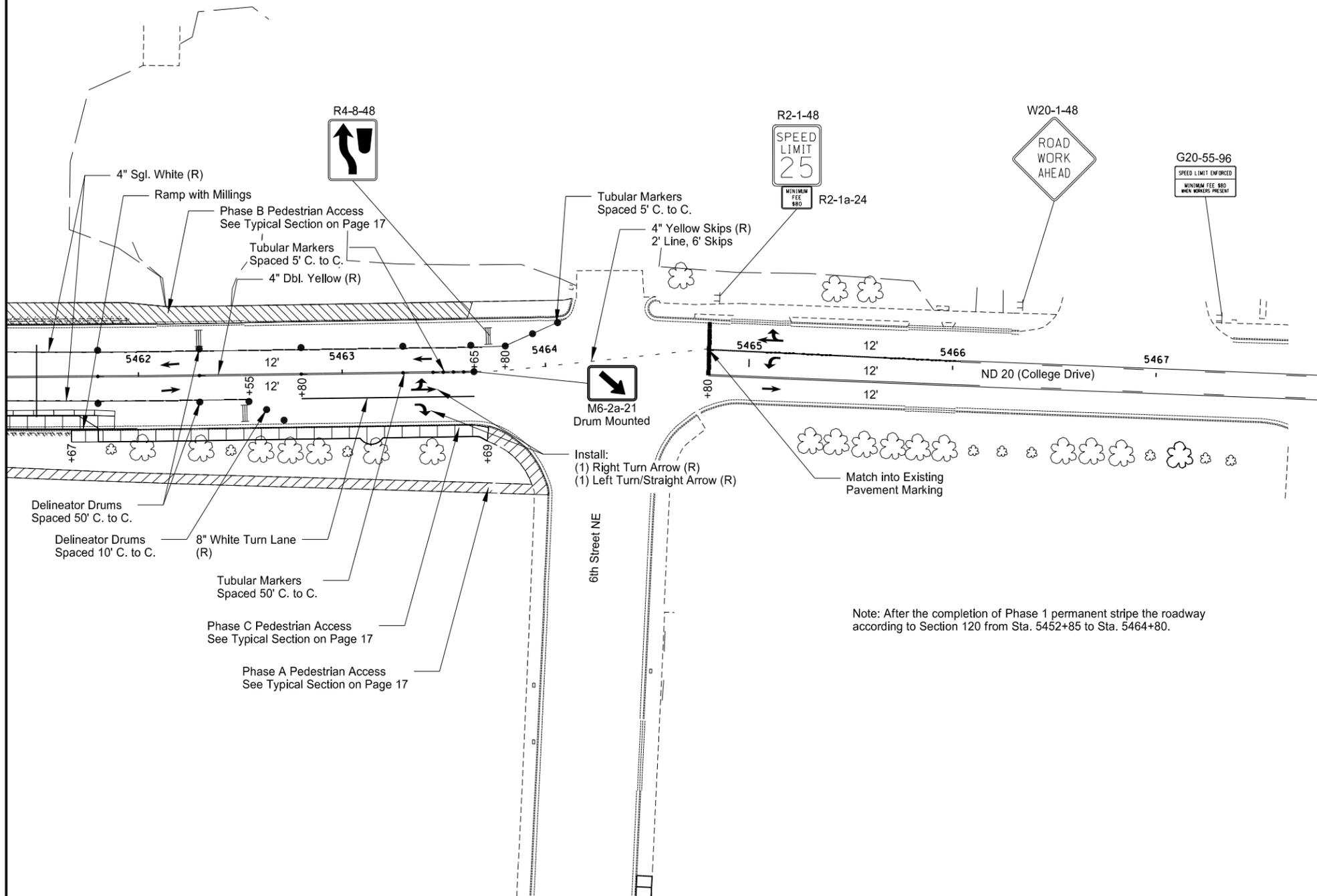
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Phase 1c - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5455+50 to Sta. 5461+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

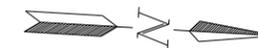
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	20

Spec	Item Description	Qty	Unit
202 0136	REMOVAL OF PAVEMENT Sidewalk Asphalt	43	TON
302 0314	TEMPORARY TRAFFIC SERVICE AGGREGATE Phase B Pedestrian Path	28	TON
430 0500	COMMERCIAL GRADE HOT MIX ASPHALT Phase B Pedestrian Path	15	TON



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Phase A Pedestrian Access
- ▩ Phase B Pedestrian Access
- ▭ Phase C Temporary Pedestrian Asphalt
- ▭ Jersey Barrier

Note: After the completion of Phase 1 permanent stripe the roadway according to Section 120 from Sta. 5452+85 to Sta. 5464+80.



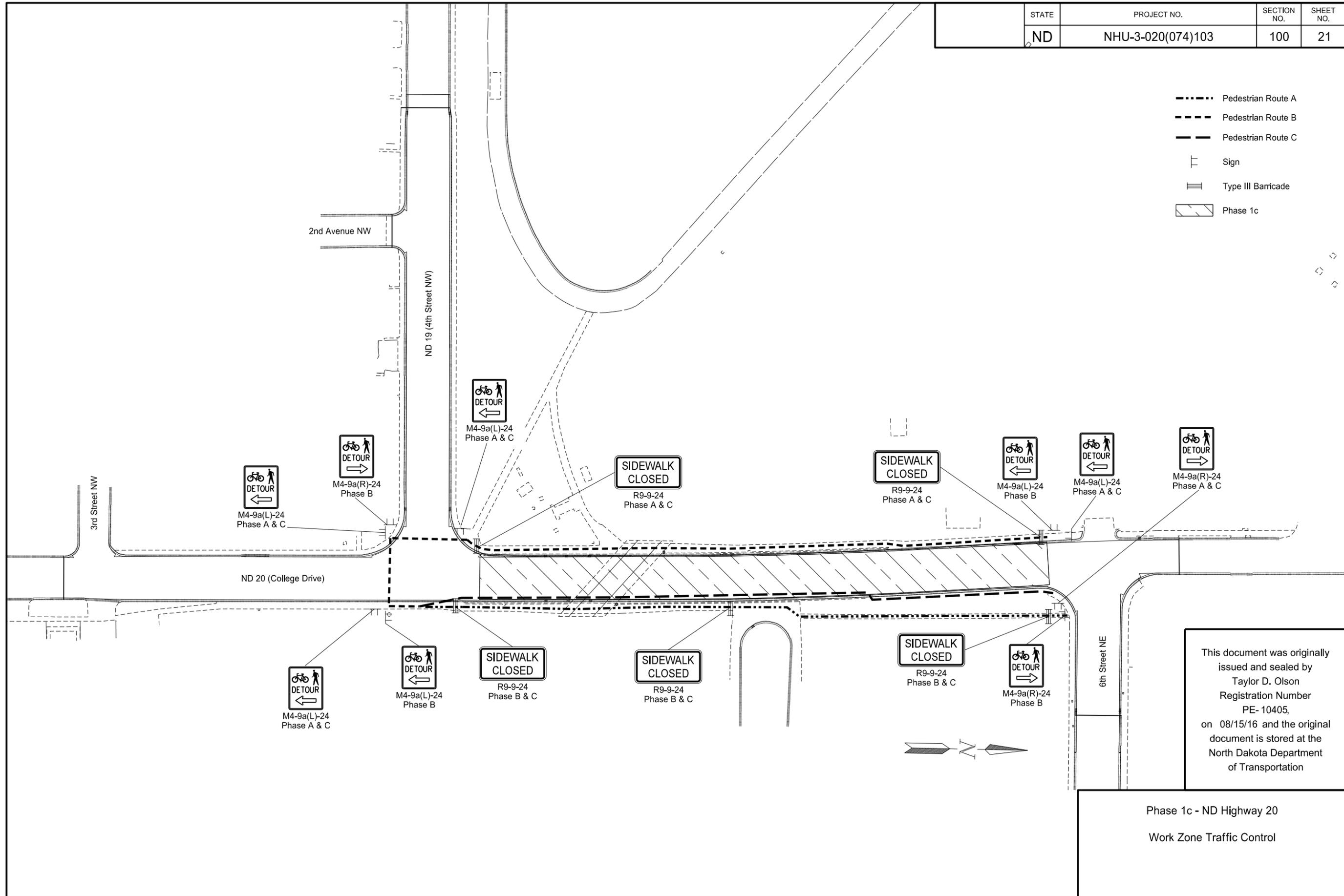
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Phase 1c - ND Highway 20  
Work Zone Traffic Control  
Sta. 5461+50 to Sta. 5467+50

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	21

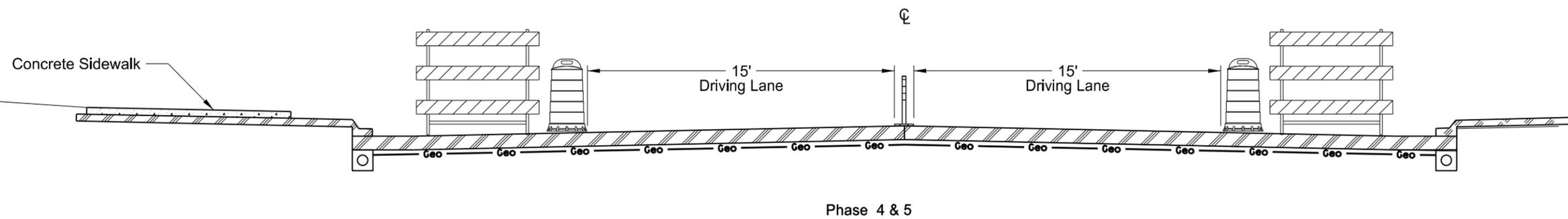
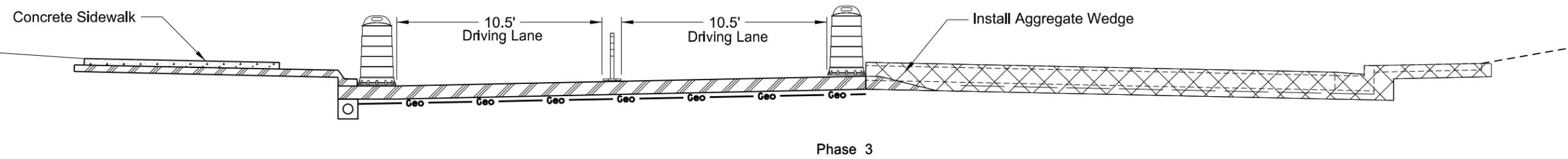
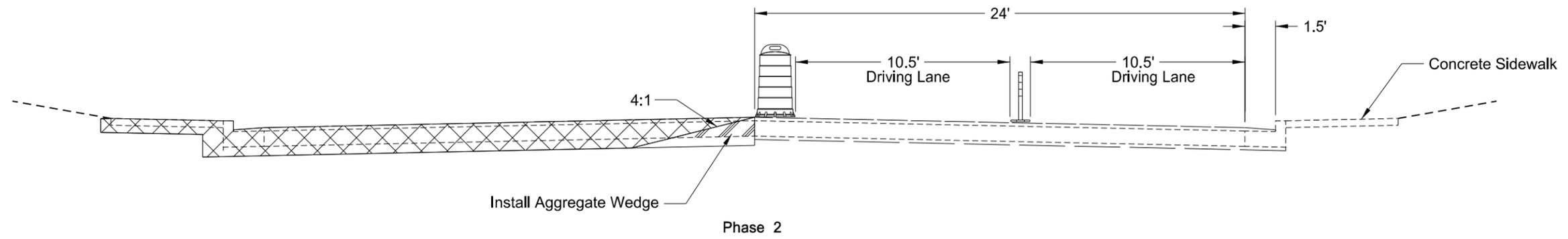
- Pedestrian Route A
- Pedestrian Route B
- Pedestrian Route C
- ⊥ Sign
- ≡ Type III Barricade
- ▨ Phase 1c



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Phase 1c - ND Highway 20  
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	22

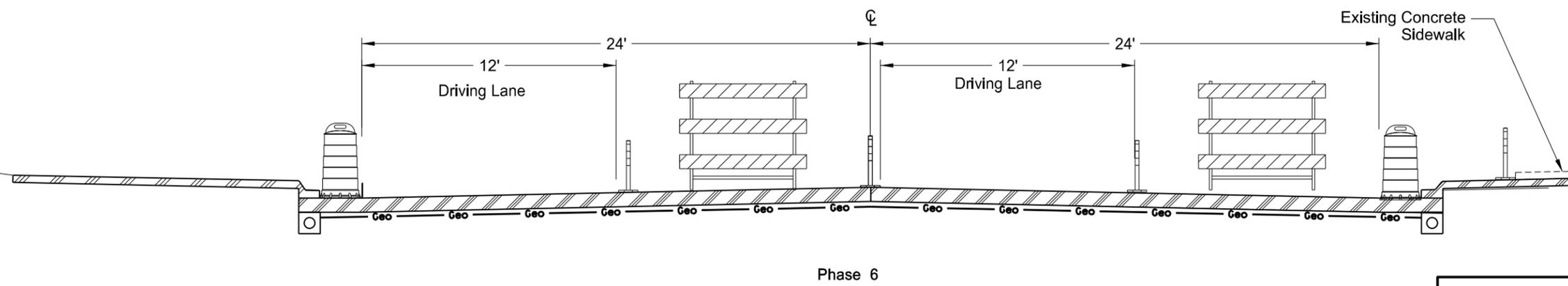
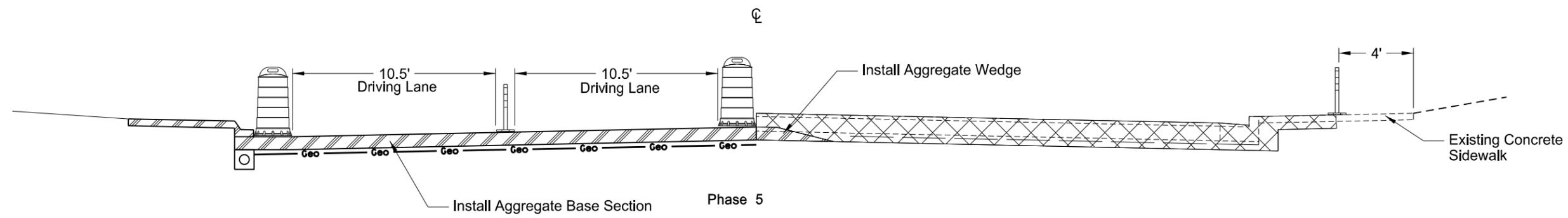
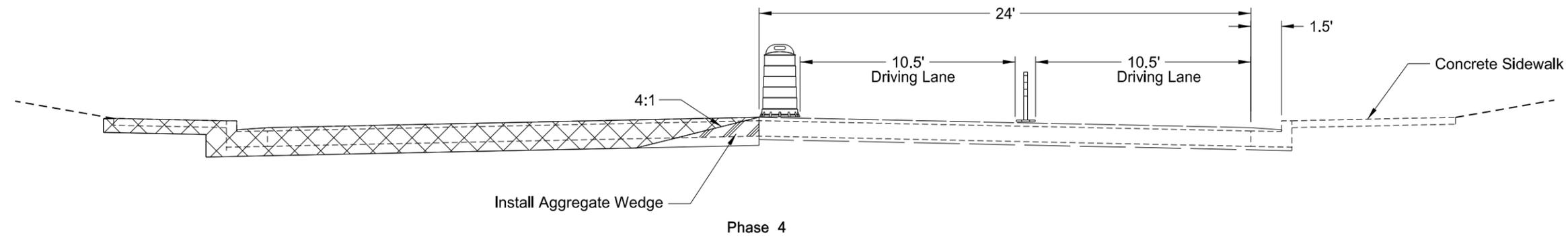


⊠ Removal / Work Area

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ND Highway 19  
Work Zone Traffic Control  
Traffic Control Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	23

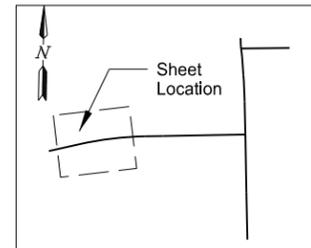
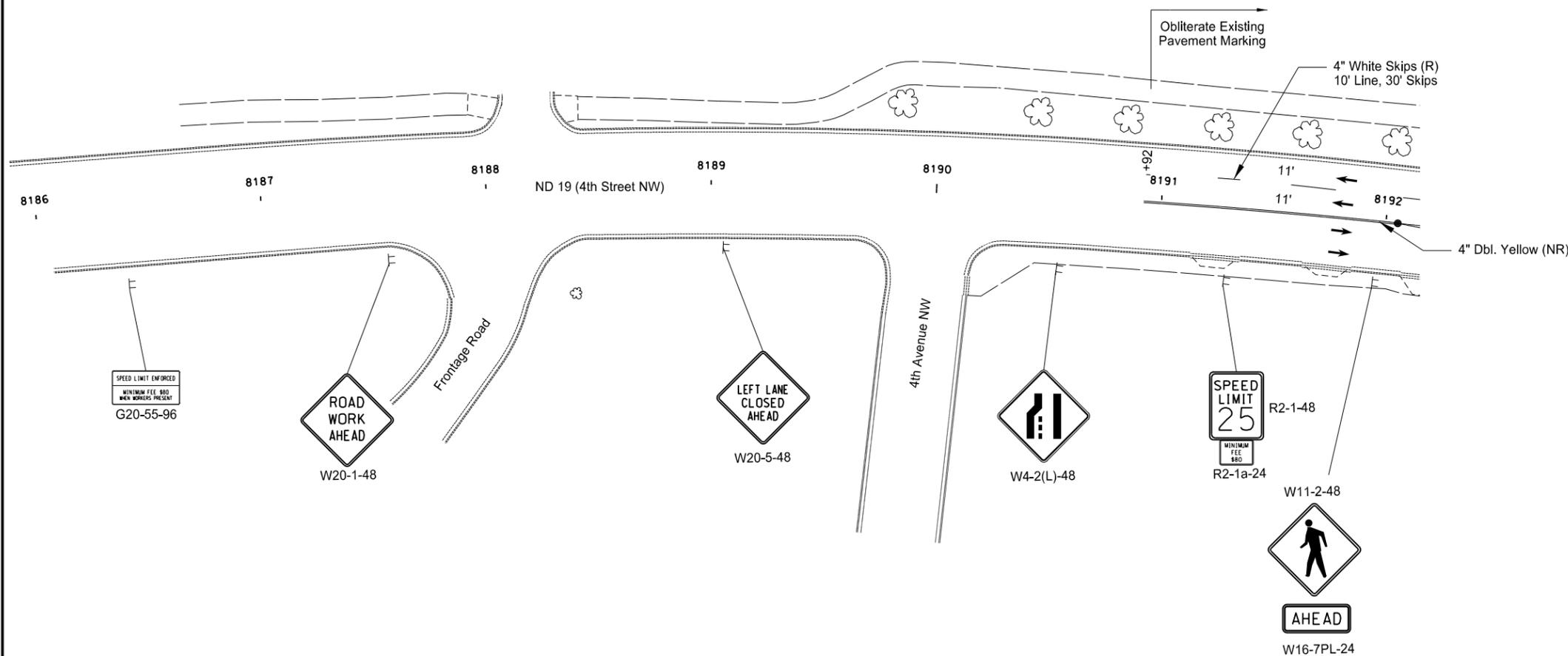


⊗ Removal / Work Area

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ND Highway 20  
Work Zone Traffic Control  
Traffic Control Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	24



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5



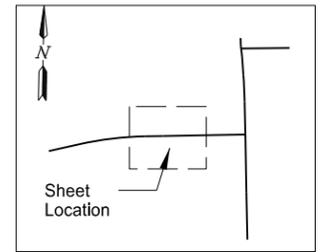
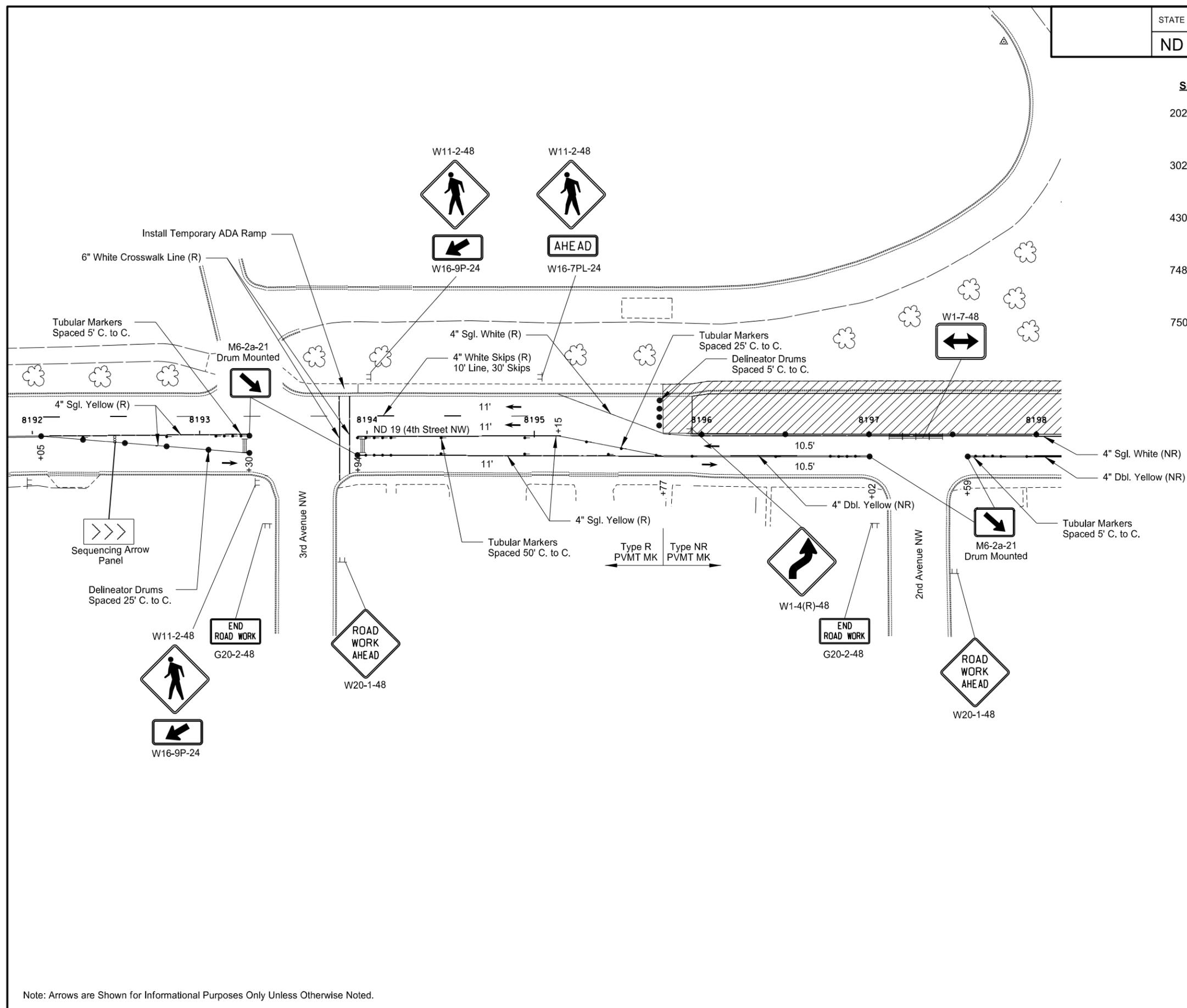
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Phase 2 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8187+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	25

Spec	Item Description	Qty	Unit
202 0136	REMOVAL OF PAVEMENT Sidewalk Asphalt Curb & Gutter	3 2	TON TON
302 0120	AGGREGATE BASE COURSE CL 5 Temporary ADA Ramp	5	TON
430 0500	COMMERCIAL GRADE HOT MIX ASPHALT Temporary ADA Ramp	3	TON
748 0140	CURB & GUTTER-TYPE I Temporary ADA Ramp	20	LF
750 2115	DETECTABLE WARNING PANELS Temporary ADA Ramp	10	SF



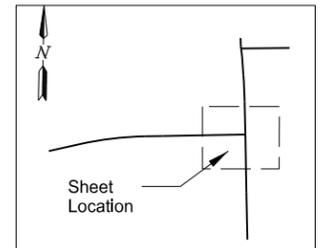
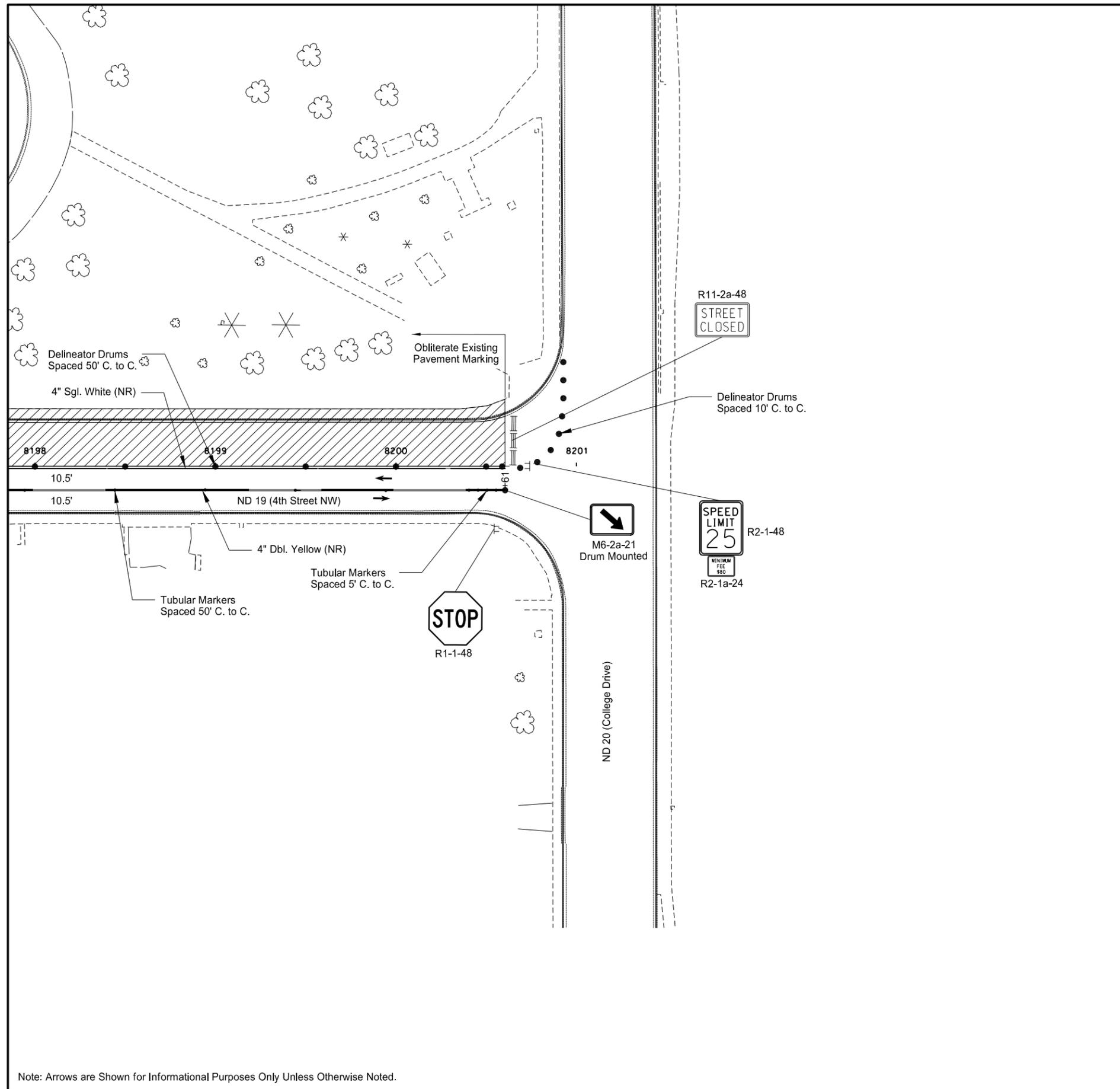
- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

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Phase 2 - ND Highway 19  
Work Zone Traffic Control  
Sta. 8192+00 to Sta. 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	26



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

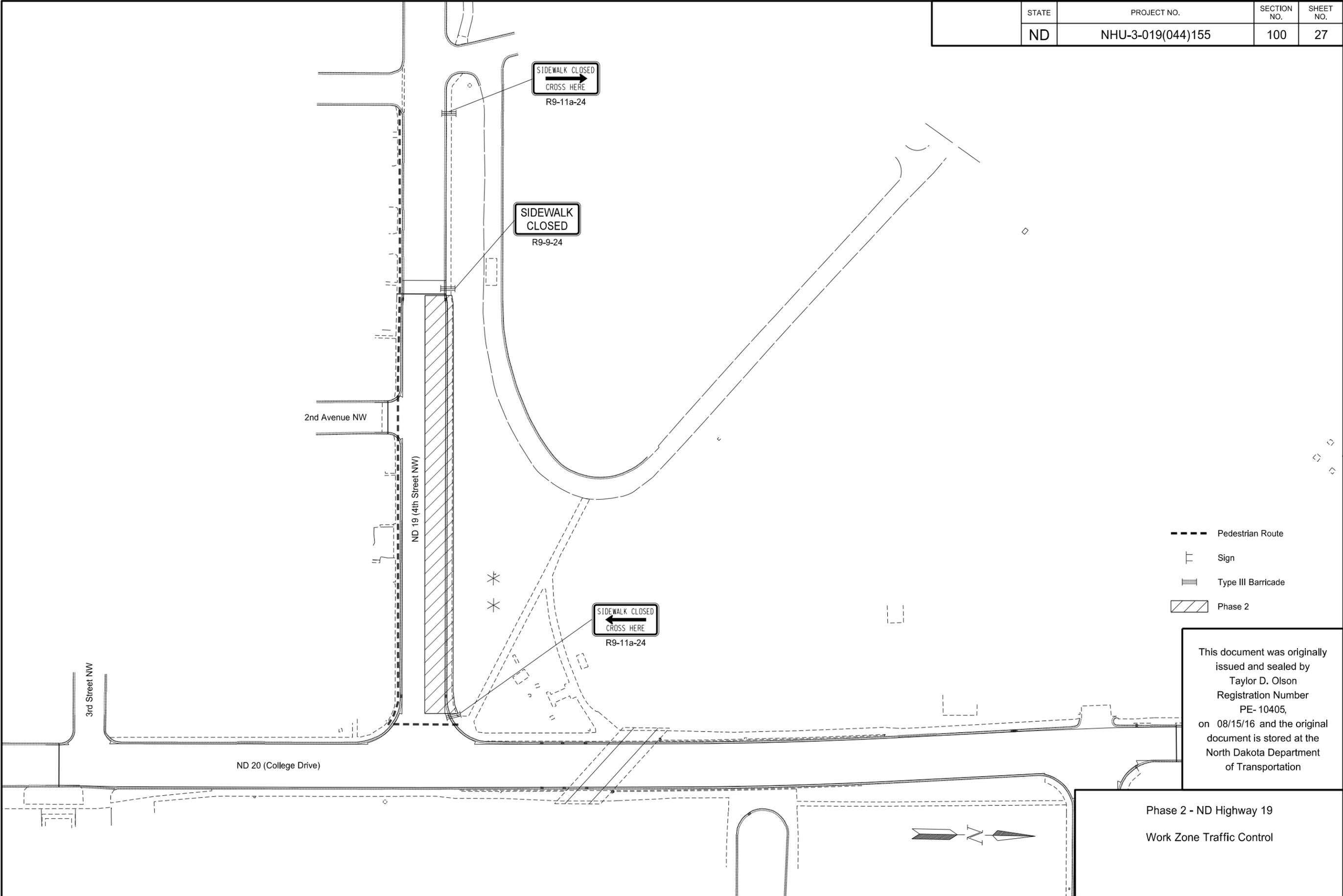


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Phase 2 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8198+00 to Sta. 8200+61

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	27

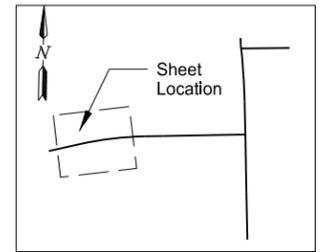
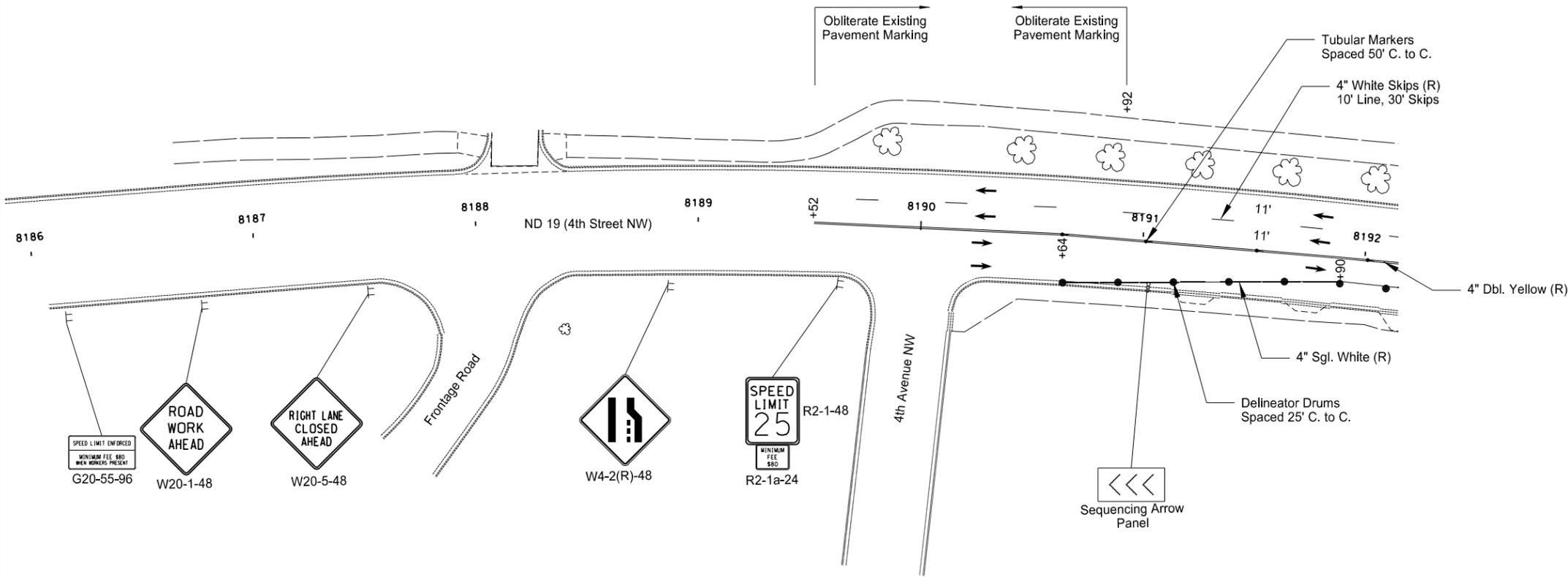


- Pedestrian Route
- ⊥ Sign
- ≡ Type III Barricade
- ▨ Phase 2

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Phase 2 - ND Highway 19  
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	28



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

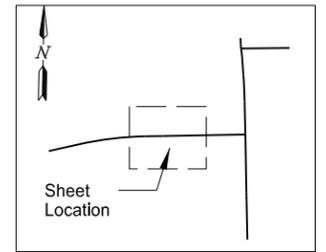
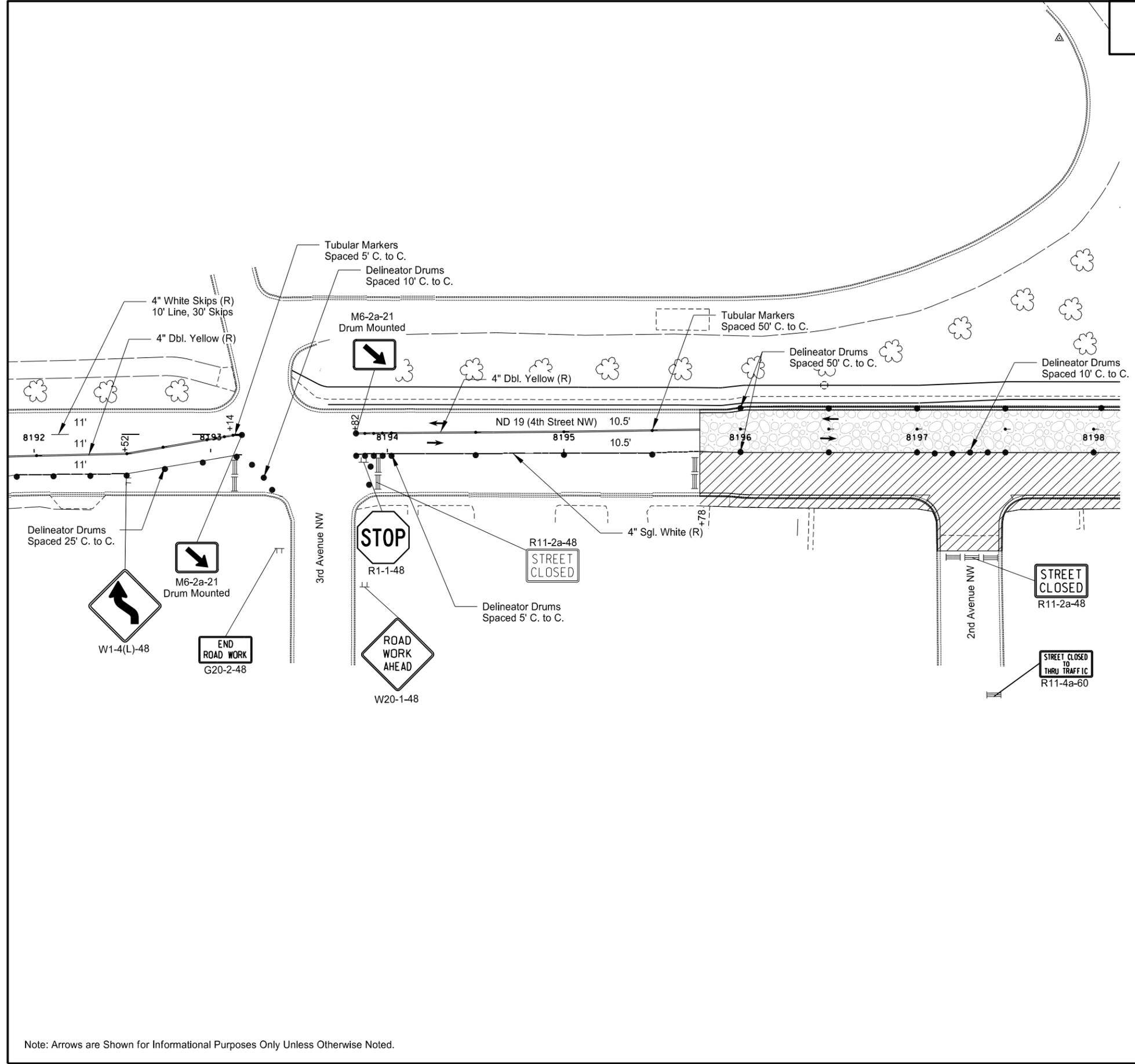


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Phase 3 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8186+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	29



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

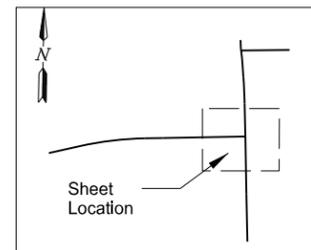
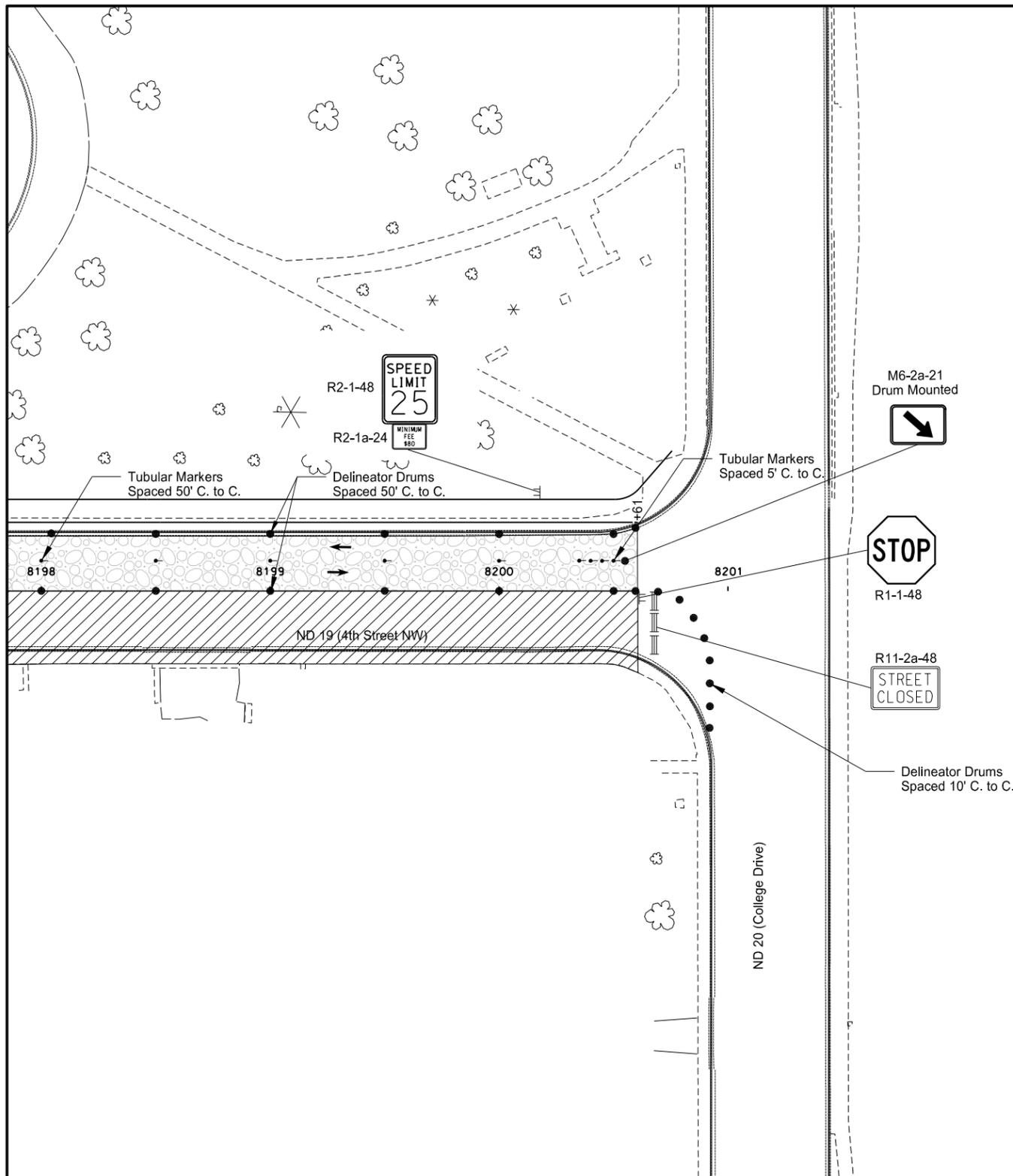


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Phase 3 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8192+00 to Sta 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	30



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5



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Phase 3 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8198+00 to Sta. 8200+61

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	31

SIDEWALK CLOSED

R9-9-24

2nd Avenue NW

ND 19 (4th Street NW)

SIDEWALK CLOSED  
CROSS HERE

R9-11a-24

3rd Street NW

ND 20 (College Drive)

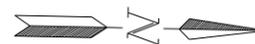
6th Street NE

- Pedestrian Route
- ⊥ Sign
- ≡ Type III Barricade
- ▨ Phase 3

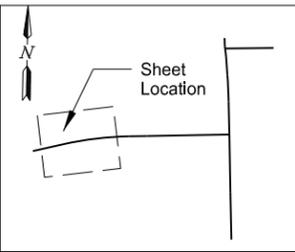
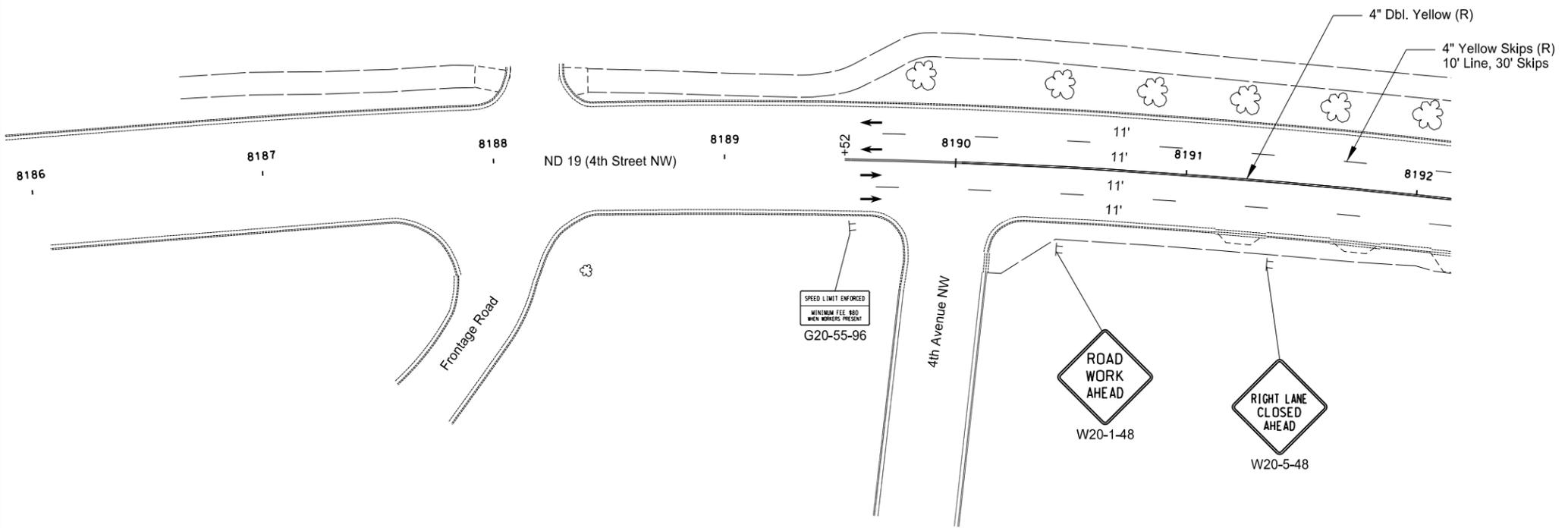
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Phase 3 - ND Highway 19

Work Zone Traffic Control



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	32



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▤ Newly Constructed Roadway
- ▩ Aggregate Base Course CL 5

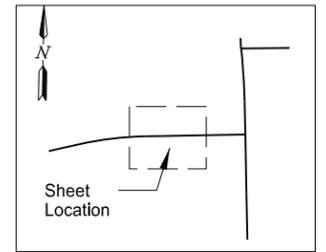
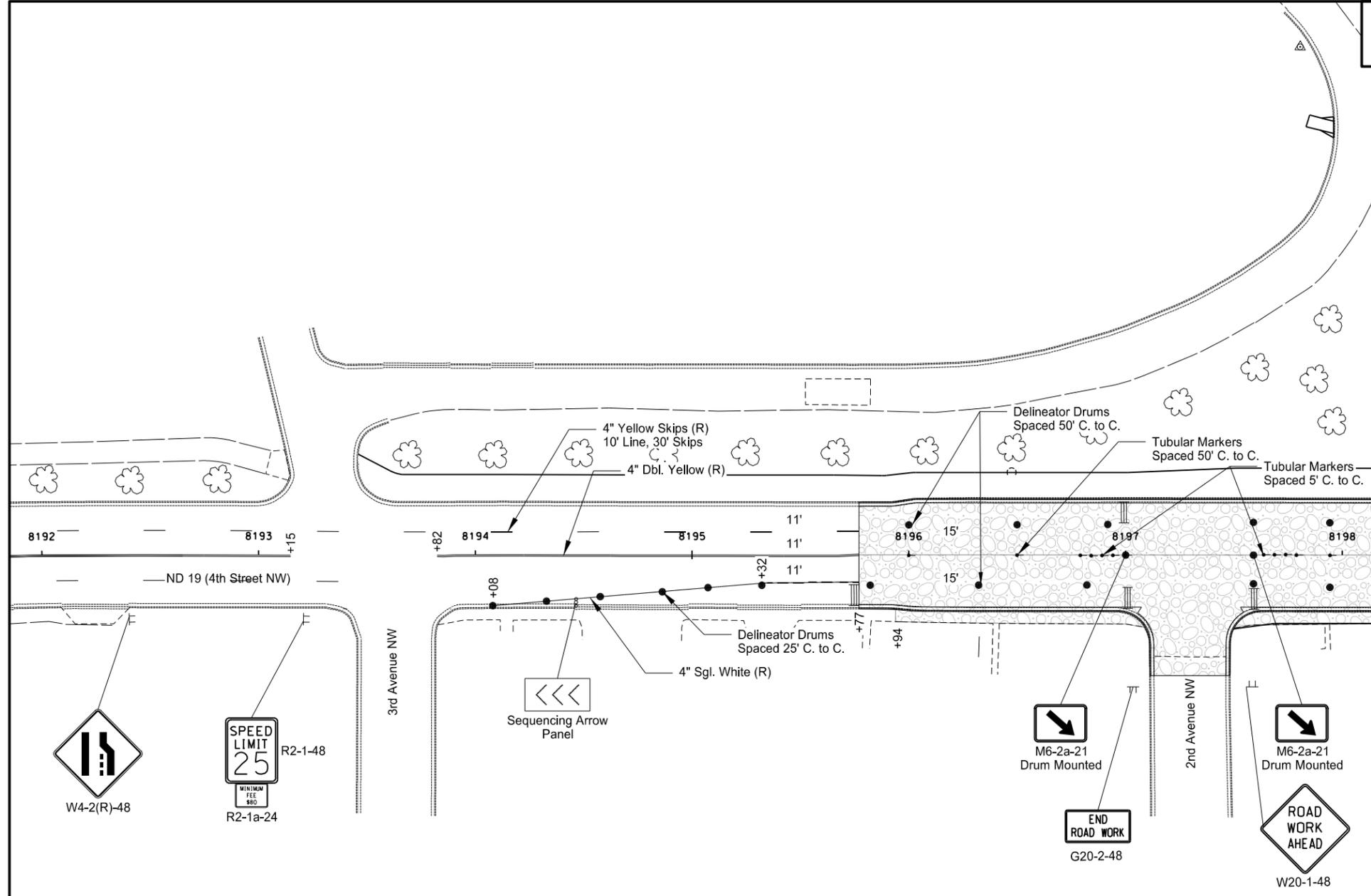


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Phase 4 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8186+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	33



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▩ Aggregate Base Course CL 5

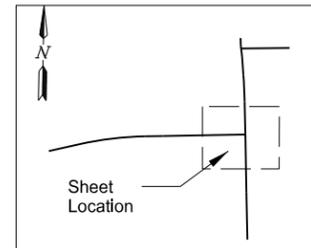
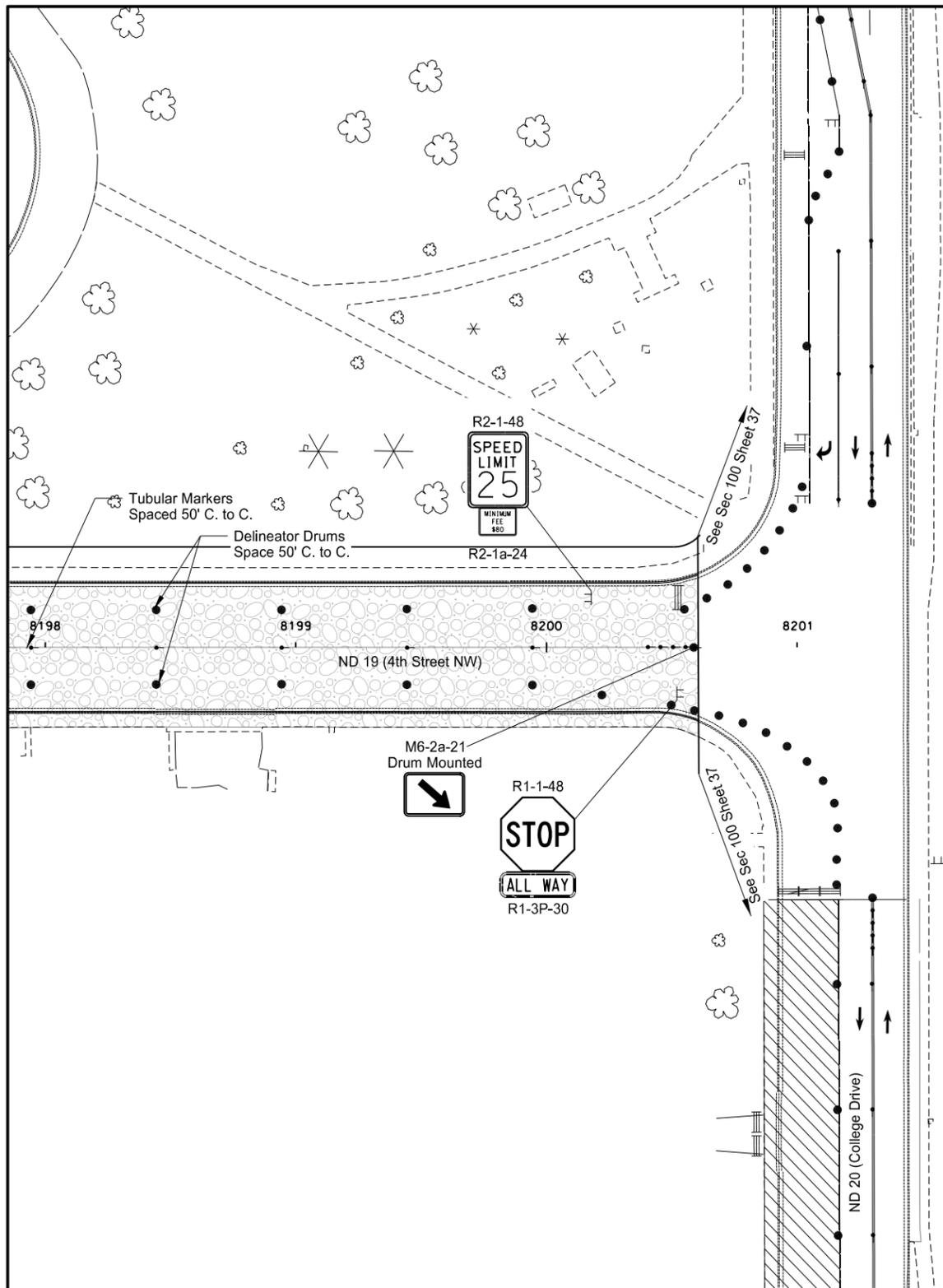


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Phase 4 - ND Highway 19  
Work Zone Traffic Control  
Sta. 8192+00 to Sta. 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	34



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

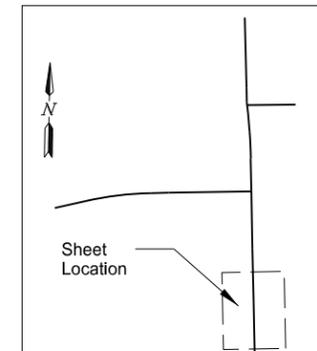
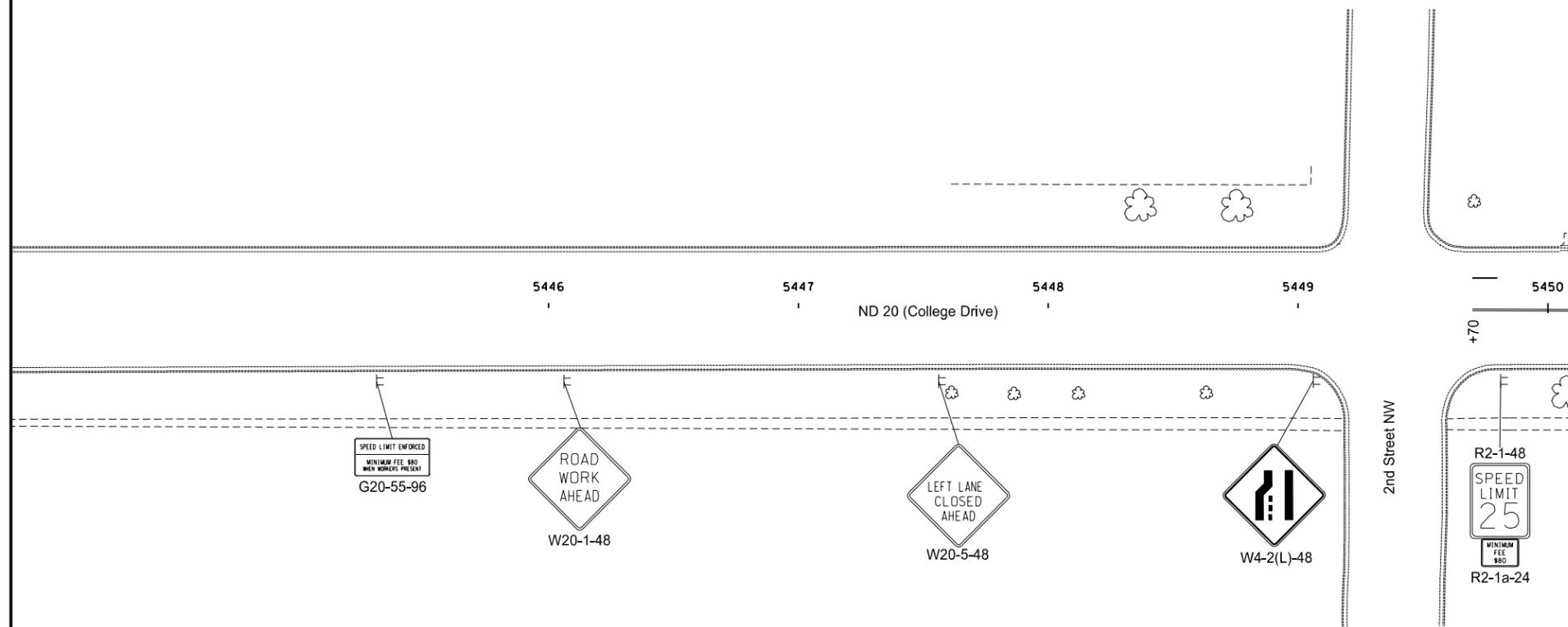


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Phase 4 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8198+00 to Sta. 8200+61

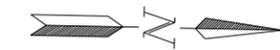
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	35



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

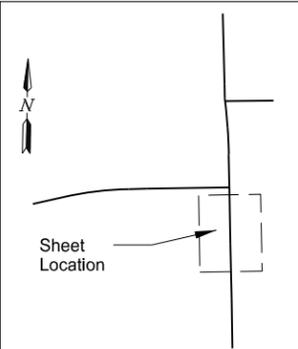
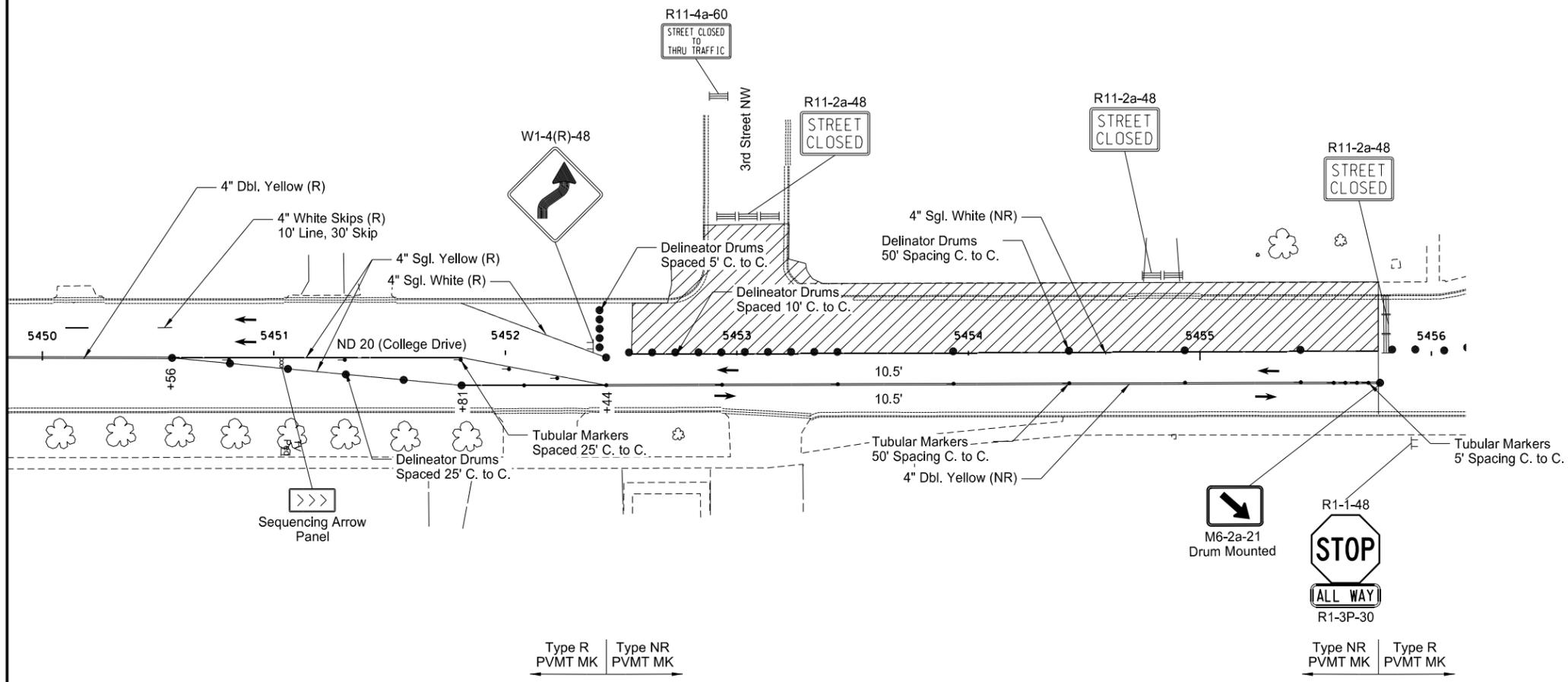
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Phase 4 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5446+00 to Sta. 5450+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	36



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

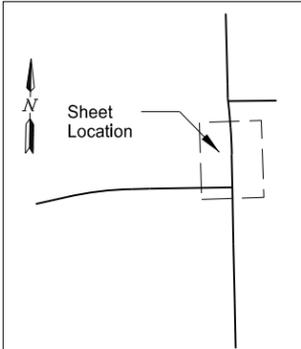
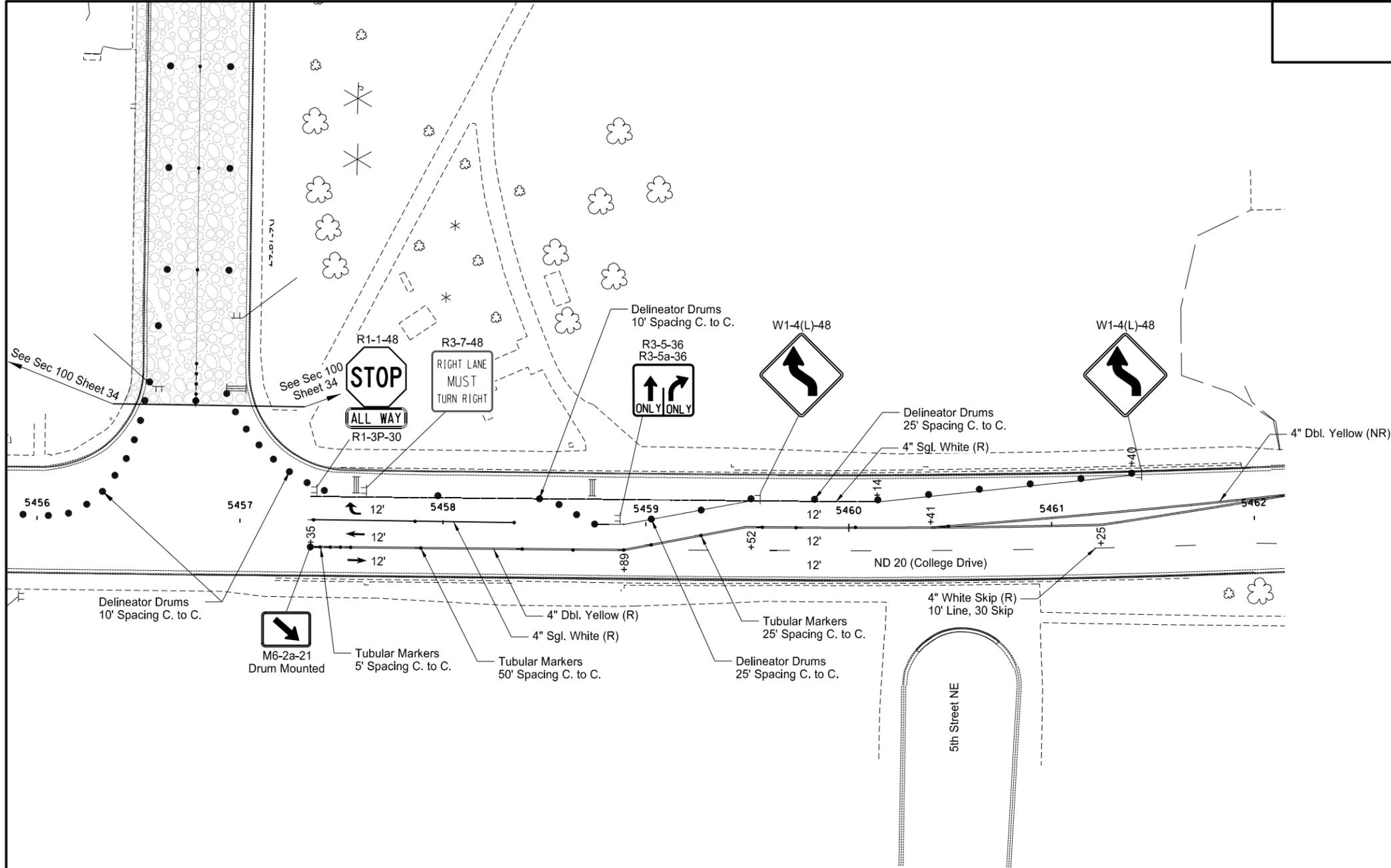
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Phase 4 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5450+00 to Sta. 5456+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	37



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

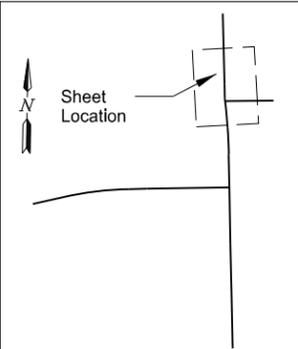
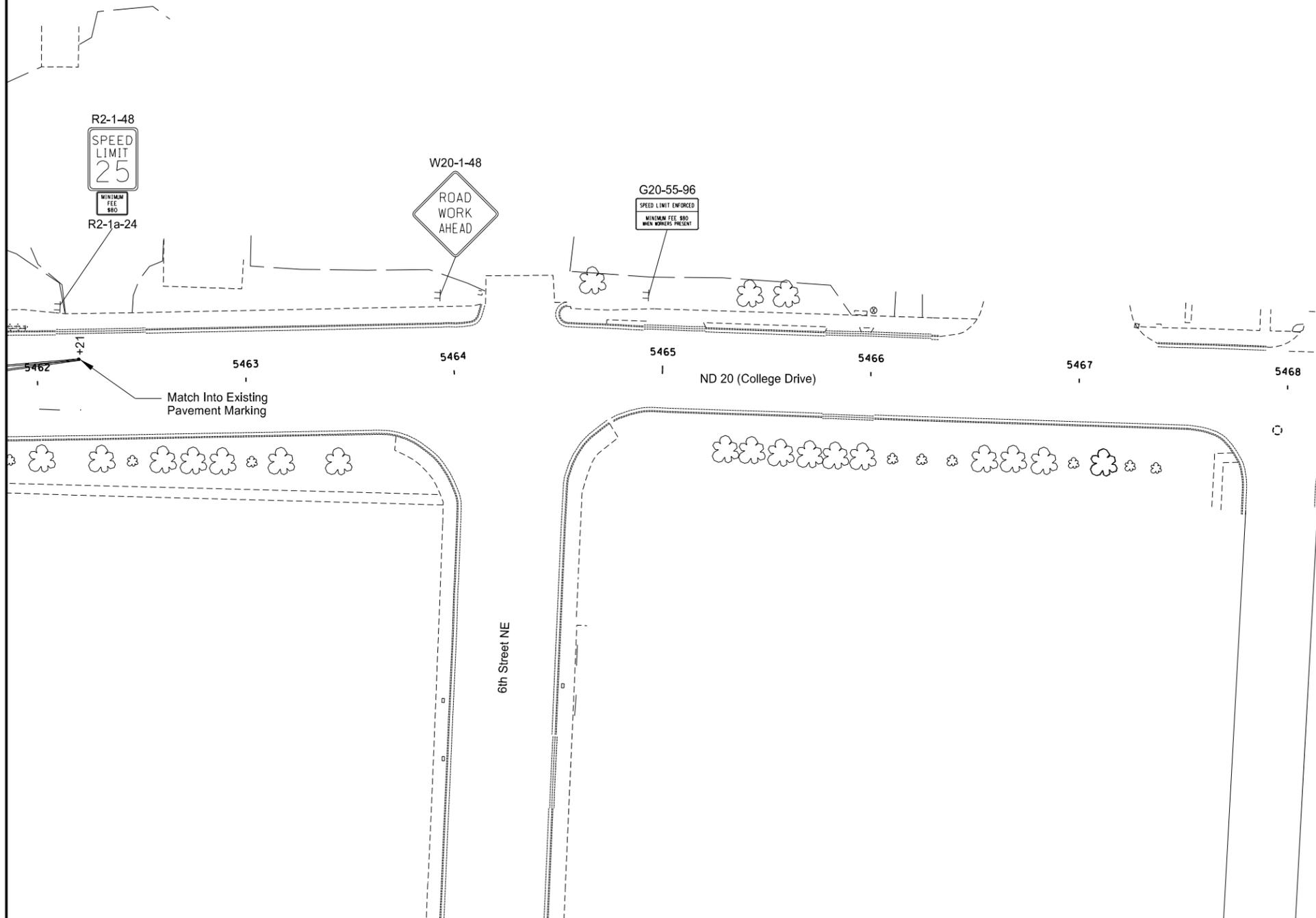
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Phase 4 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5456+00 to Sta. 5462+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	38



- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

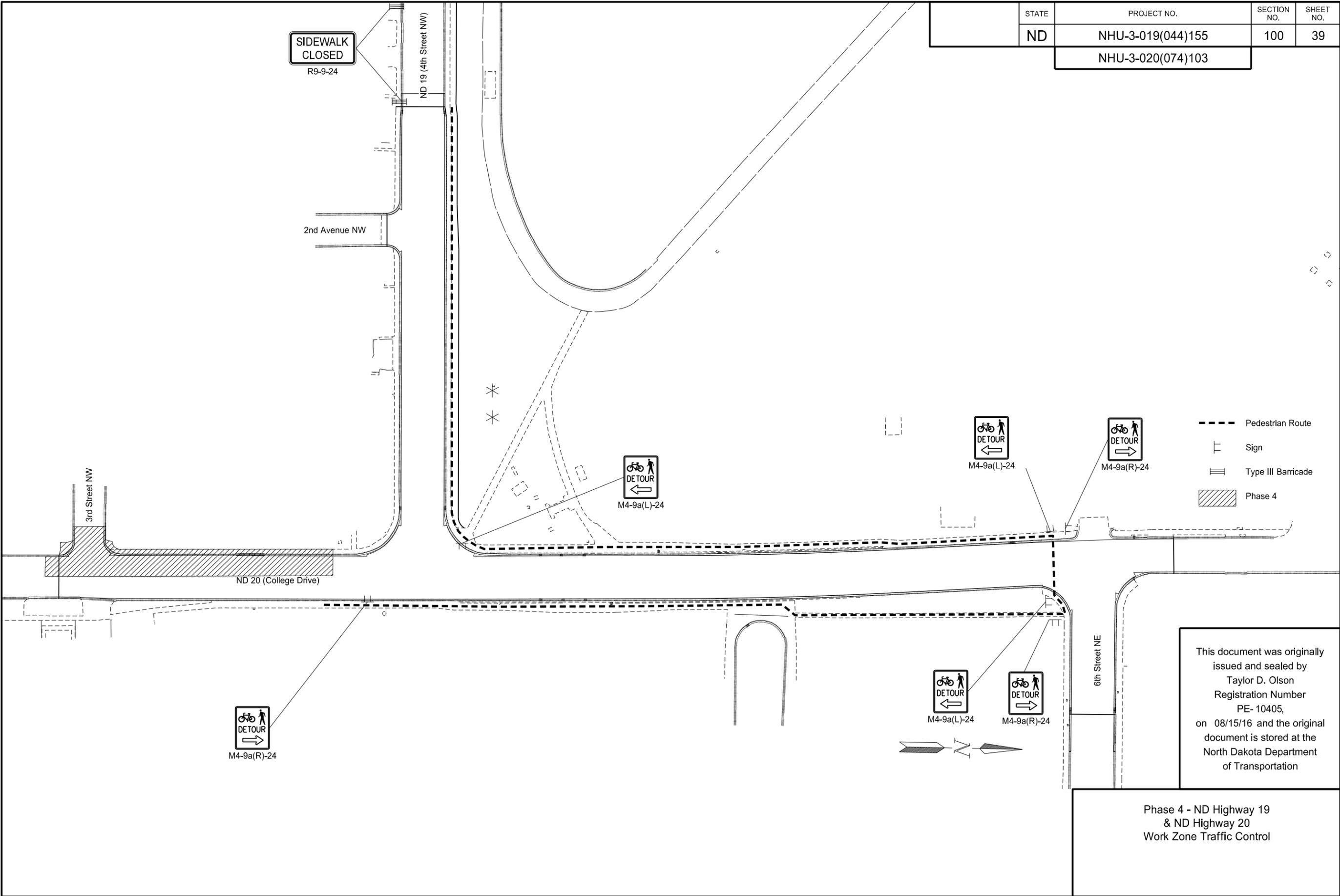


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Phase 4 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5462+00 to Sta. 5468+00

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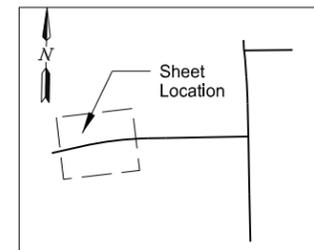
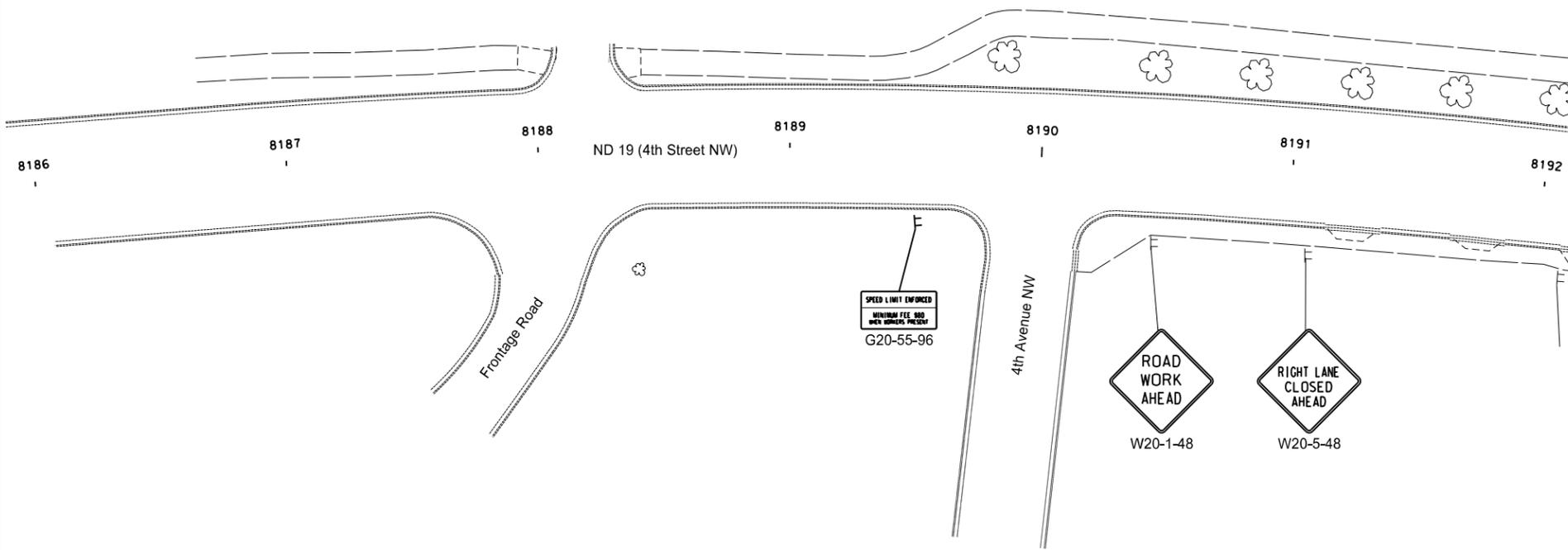
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	39
NHU-3-020(074)103			



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Phase 4 - ND Highway 19 & ND Highway 20 Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	40



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▩ Aggregate Base Course CL 5

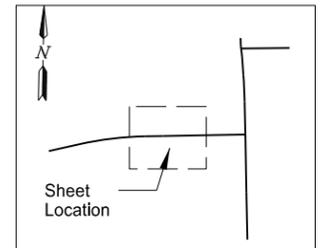
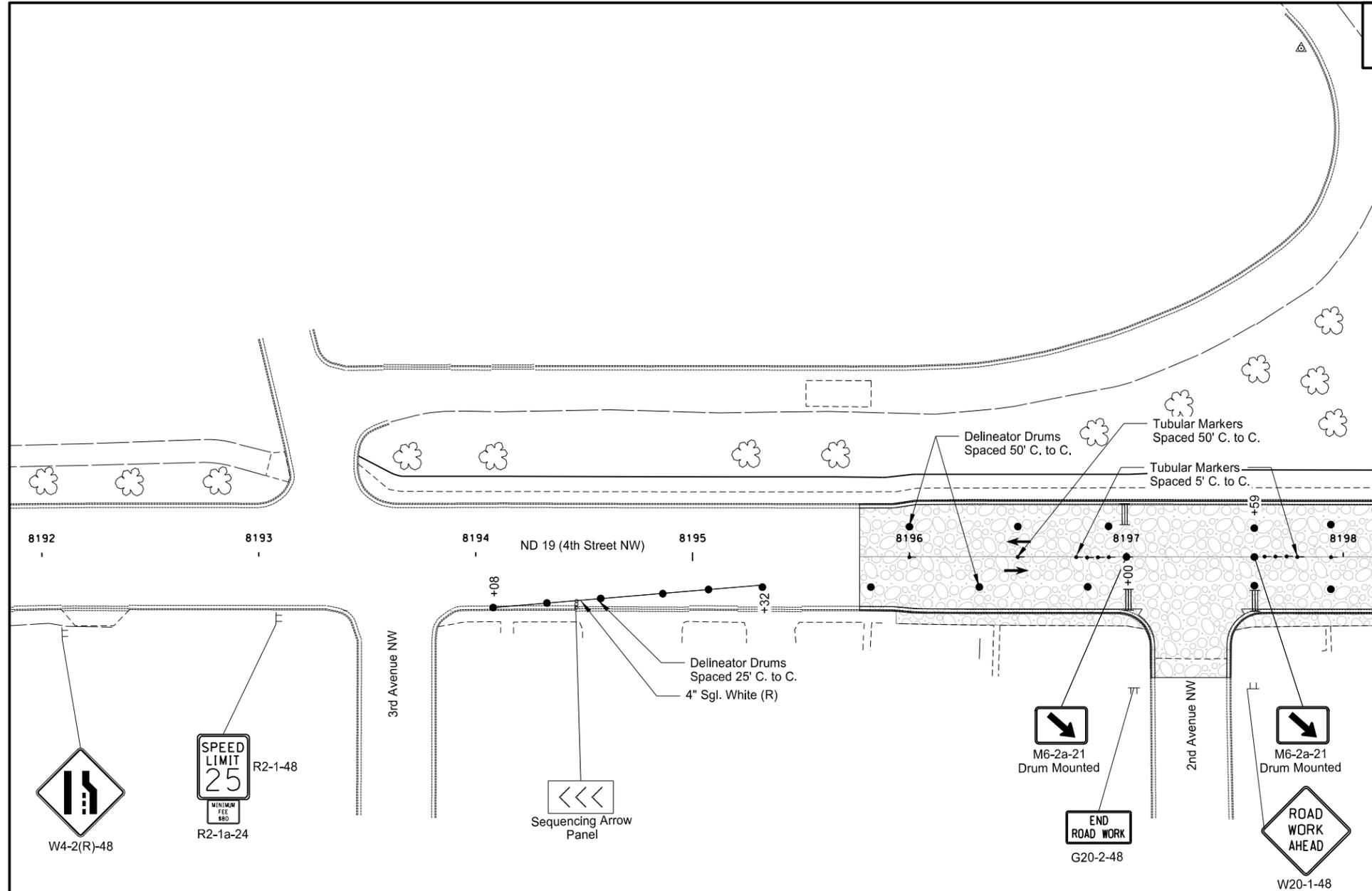


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Phase 5 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8186+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	41



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

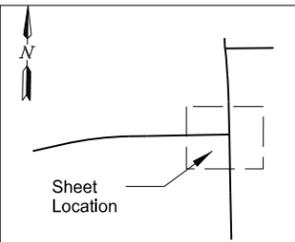
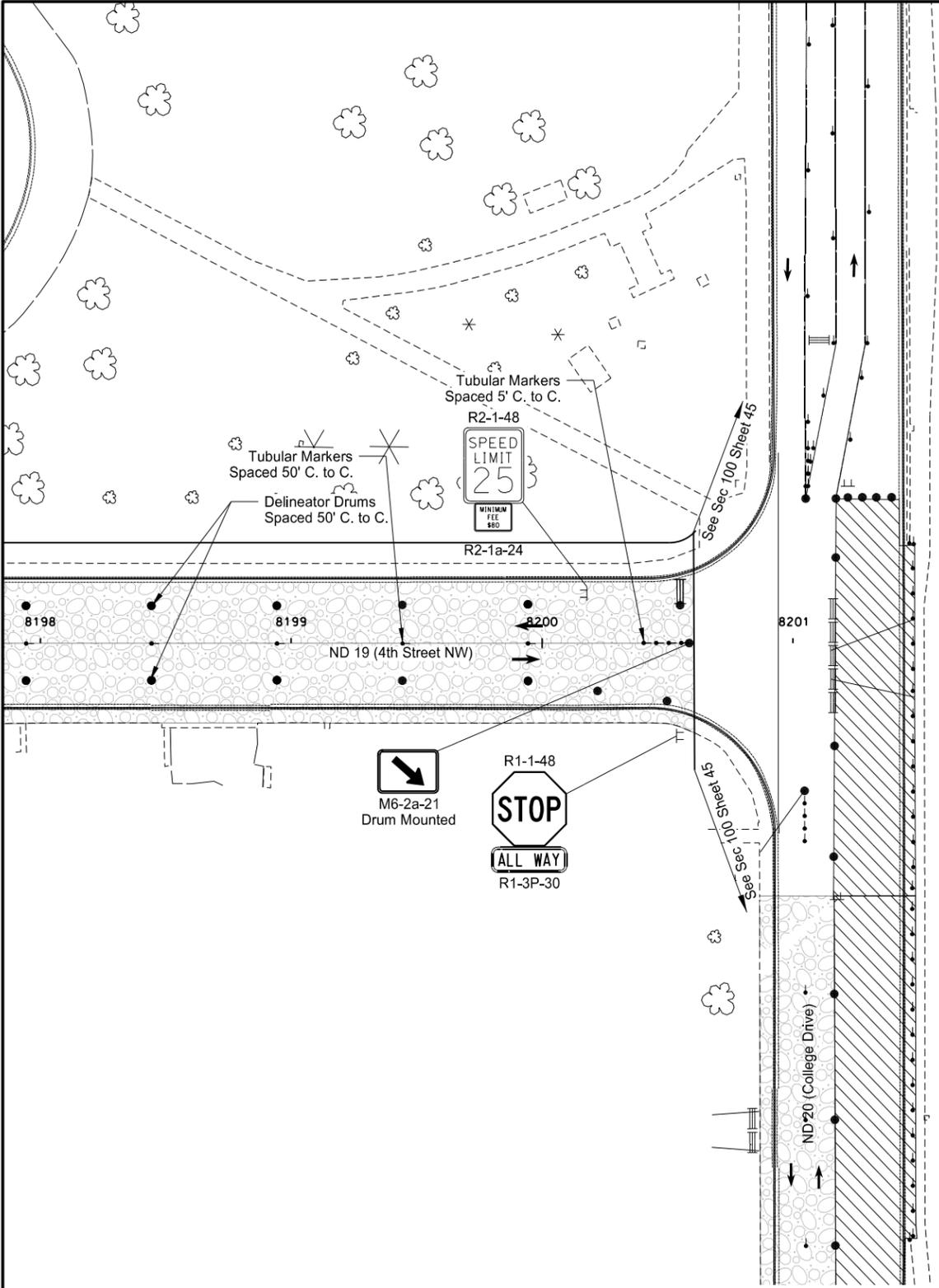


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Phase 5 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8192+00 to Sta. 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	42



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

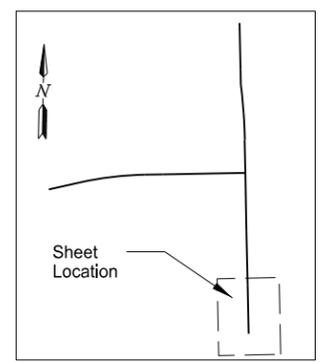
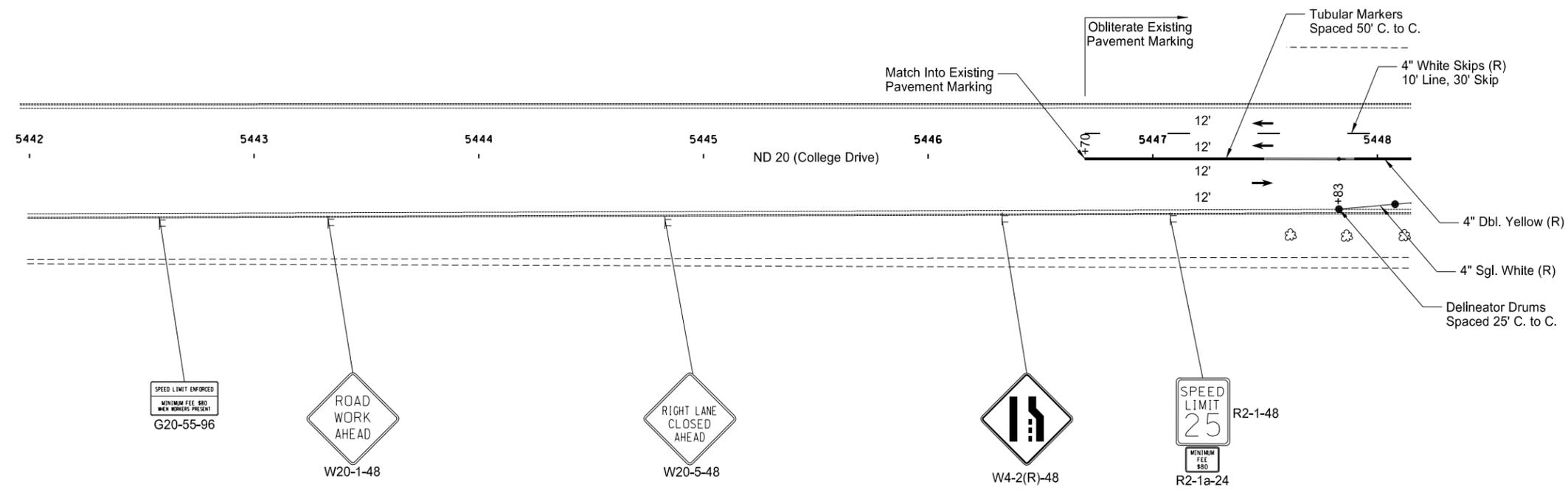


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Phase 5 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8198+00 to Sta. 8200+61

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	43



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

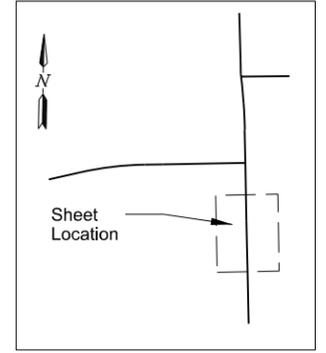
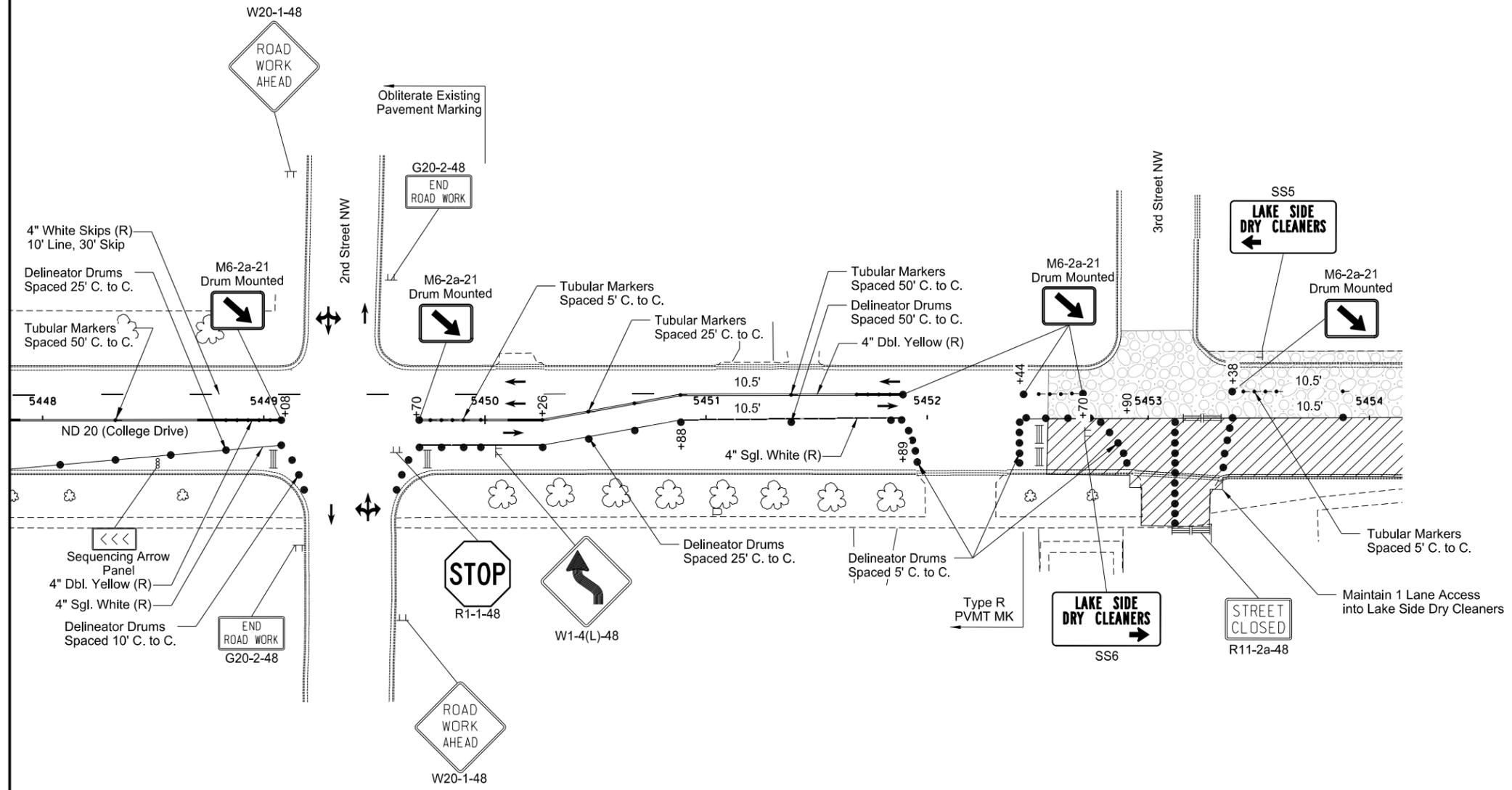
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Phase 5 - ND Highway 20  
Work Zone Traffic Control  
Sta. 5442+00 to Sta. 5448+00

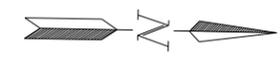
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	44



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

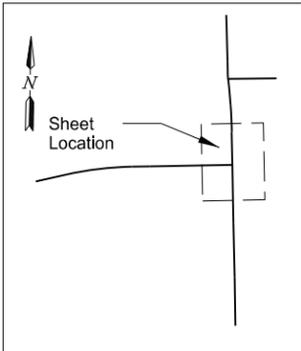
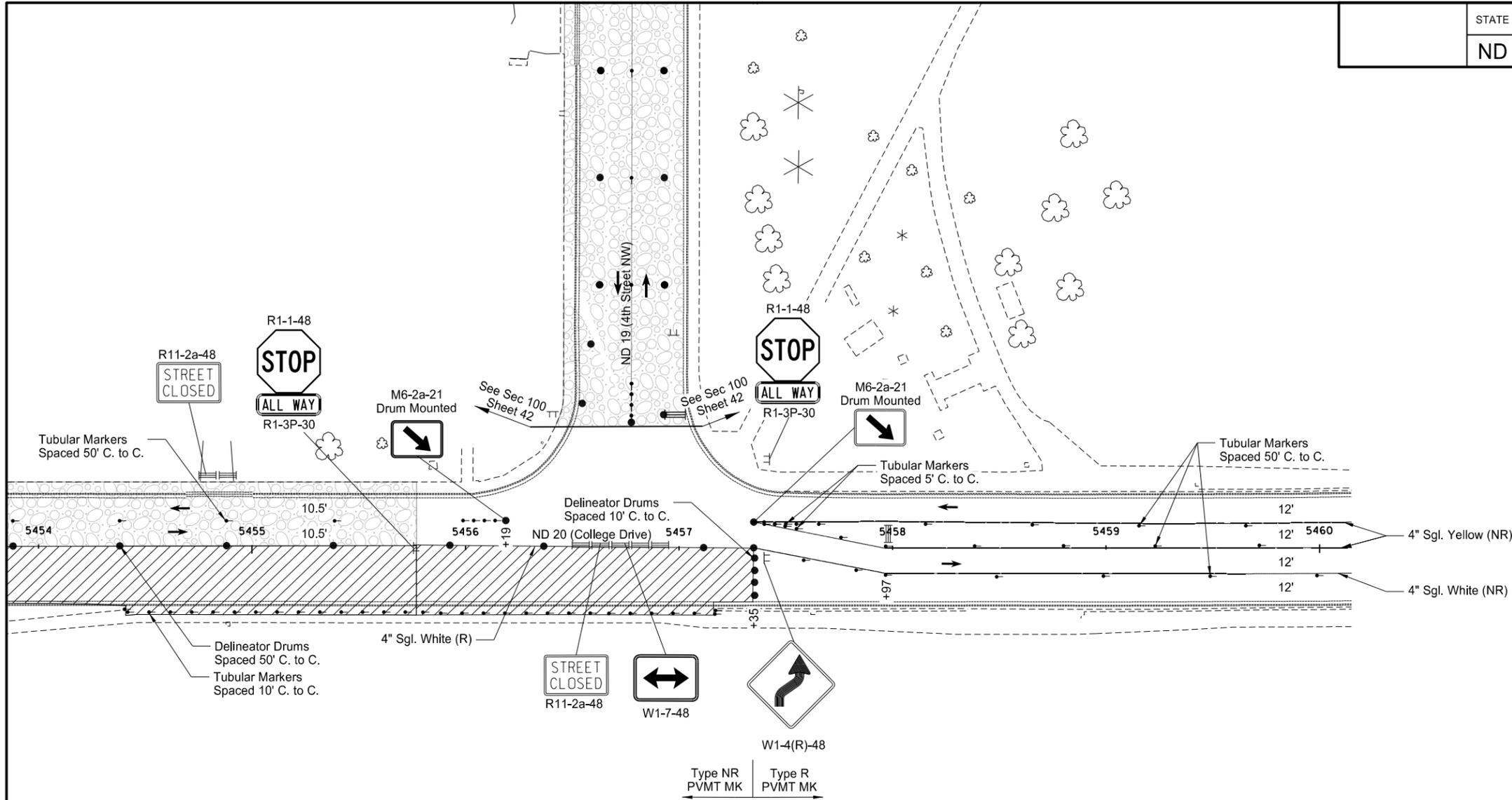
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Phase 5 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5448+00 to Sta. 5454+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	45



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

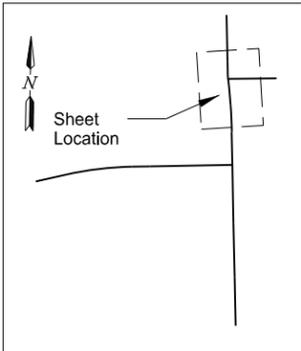
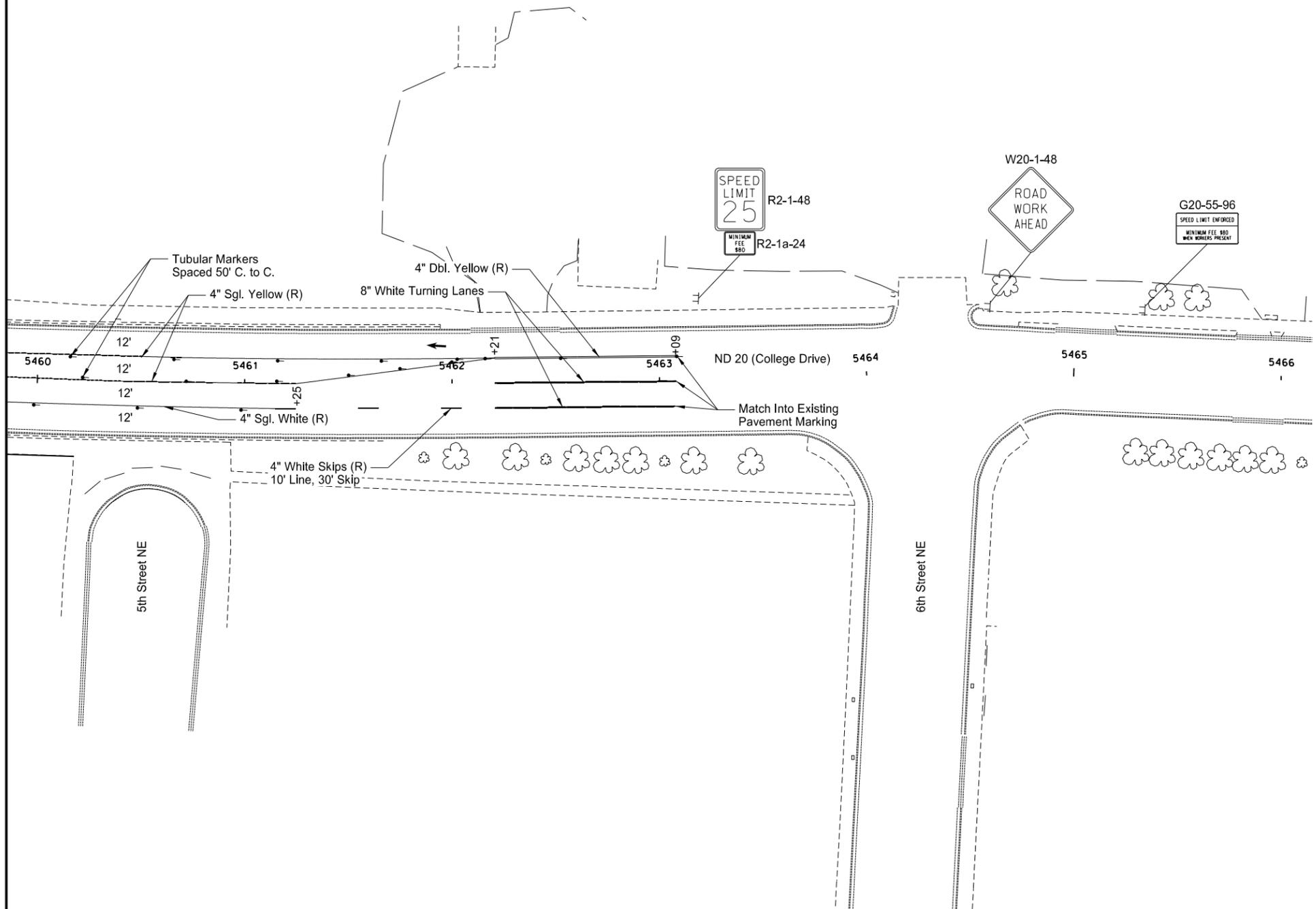
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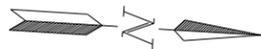
Phase 5 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5454+00 to Sta. 5460+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	46



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▭ Aggregate Base Course CL 5

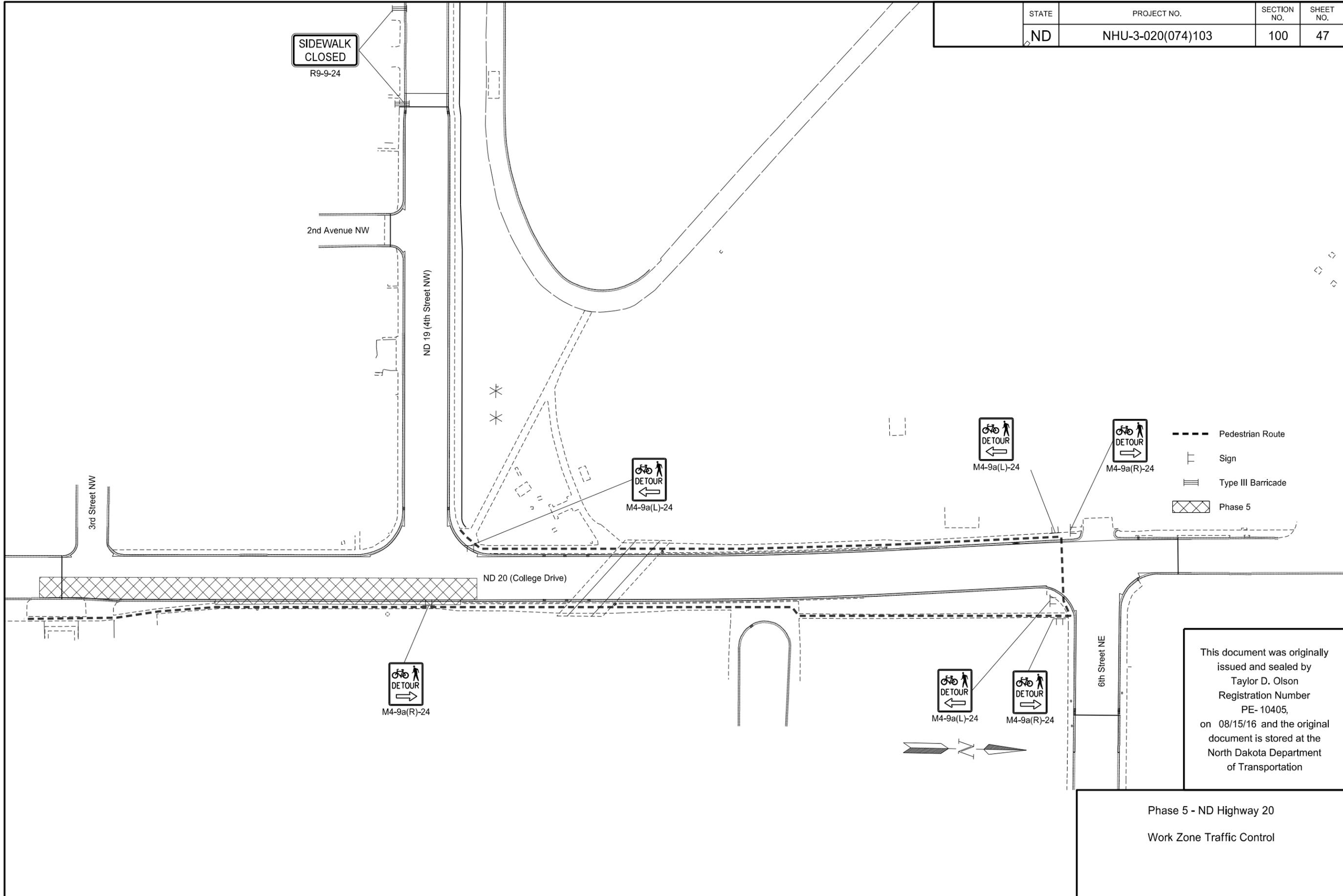


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Phase 5 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5460+00 to Sta. 5466+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

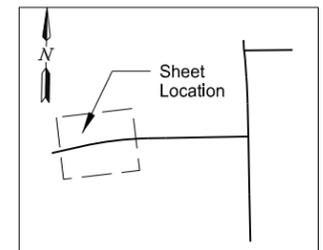
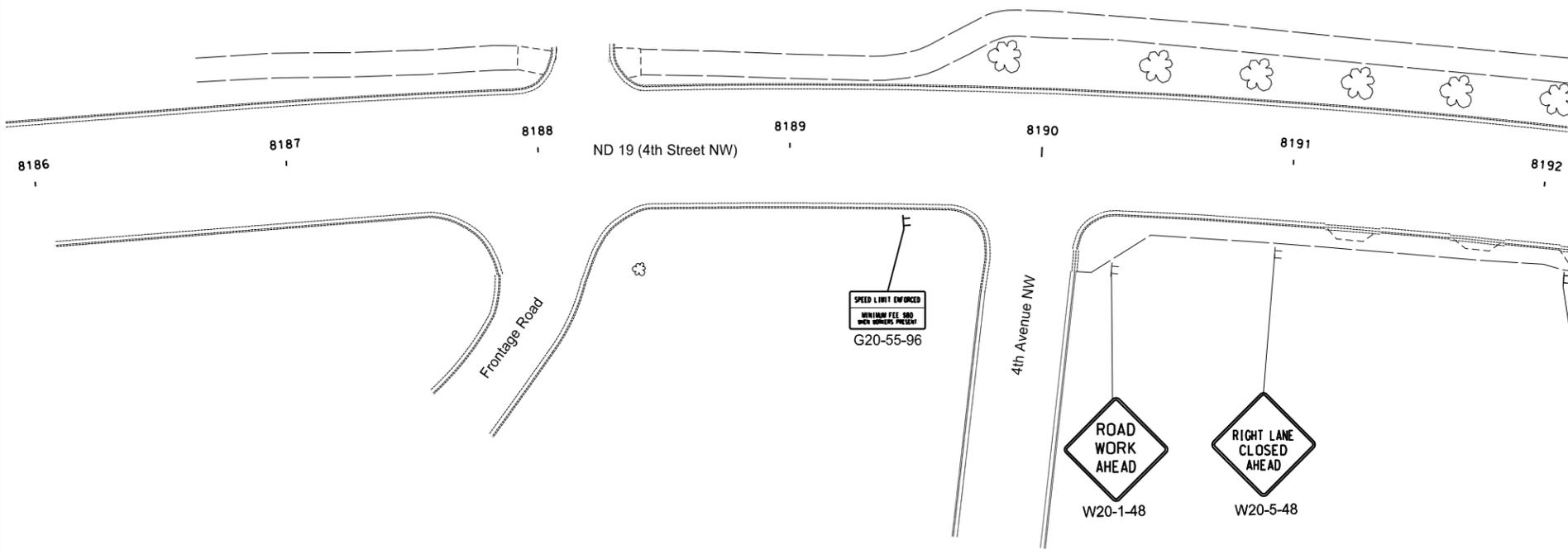
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	47



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Phase 5 - ND Highway 20  
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	48



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

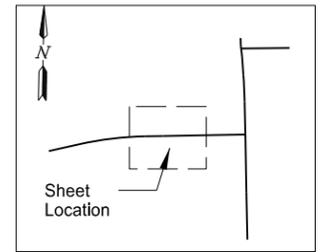
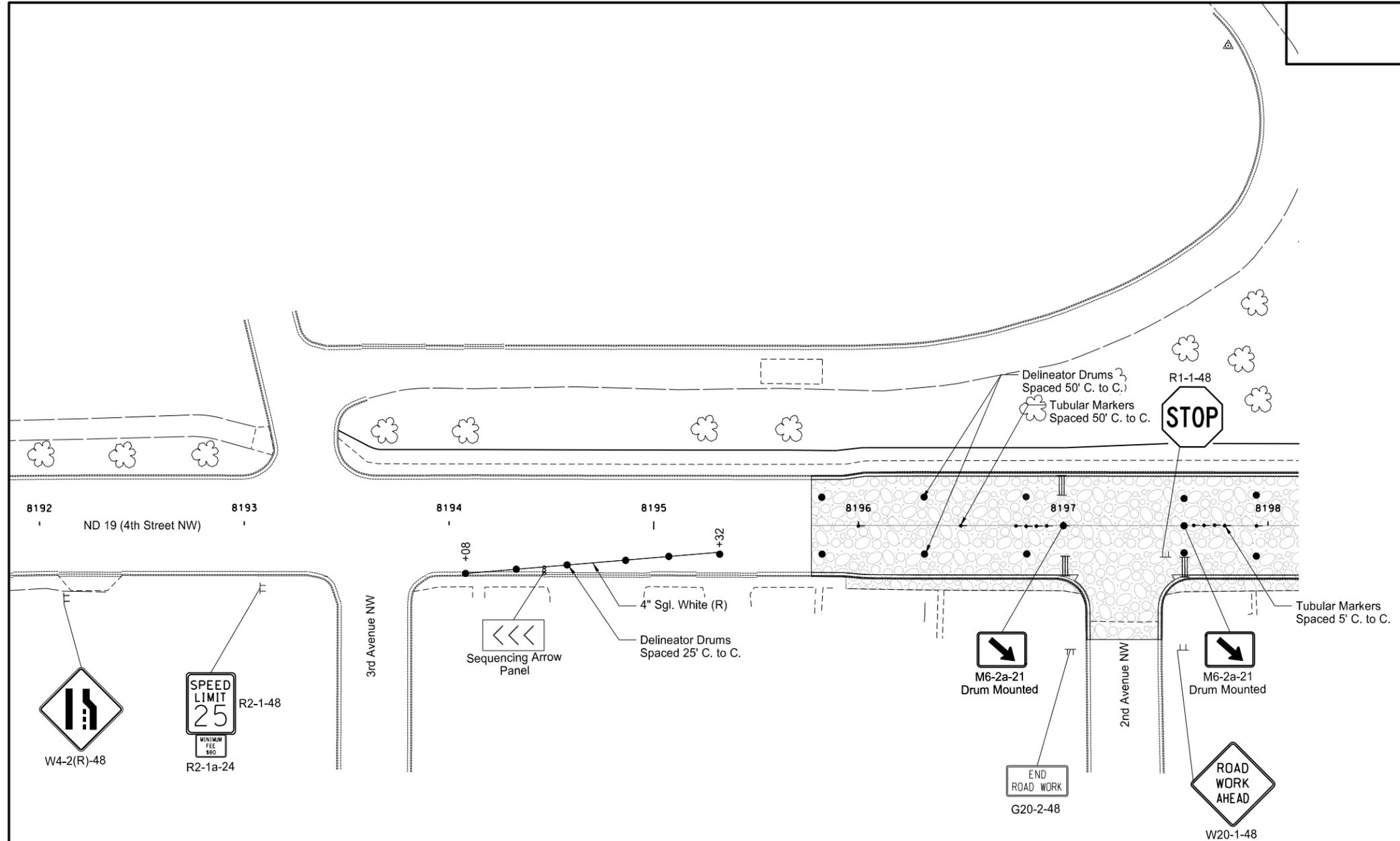


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Phase 6 - ND Highway 19  
Work Zone Traffic Control  
Sta. 8186+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	49



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▩ Aggregate Base Course CL 5

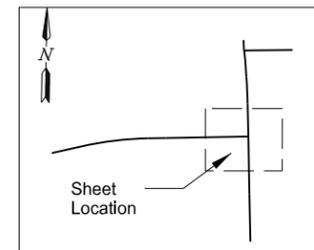
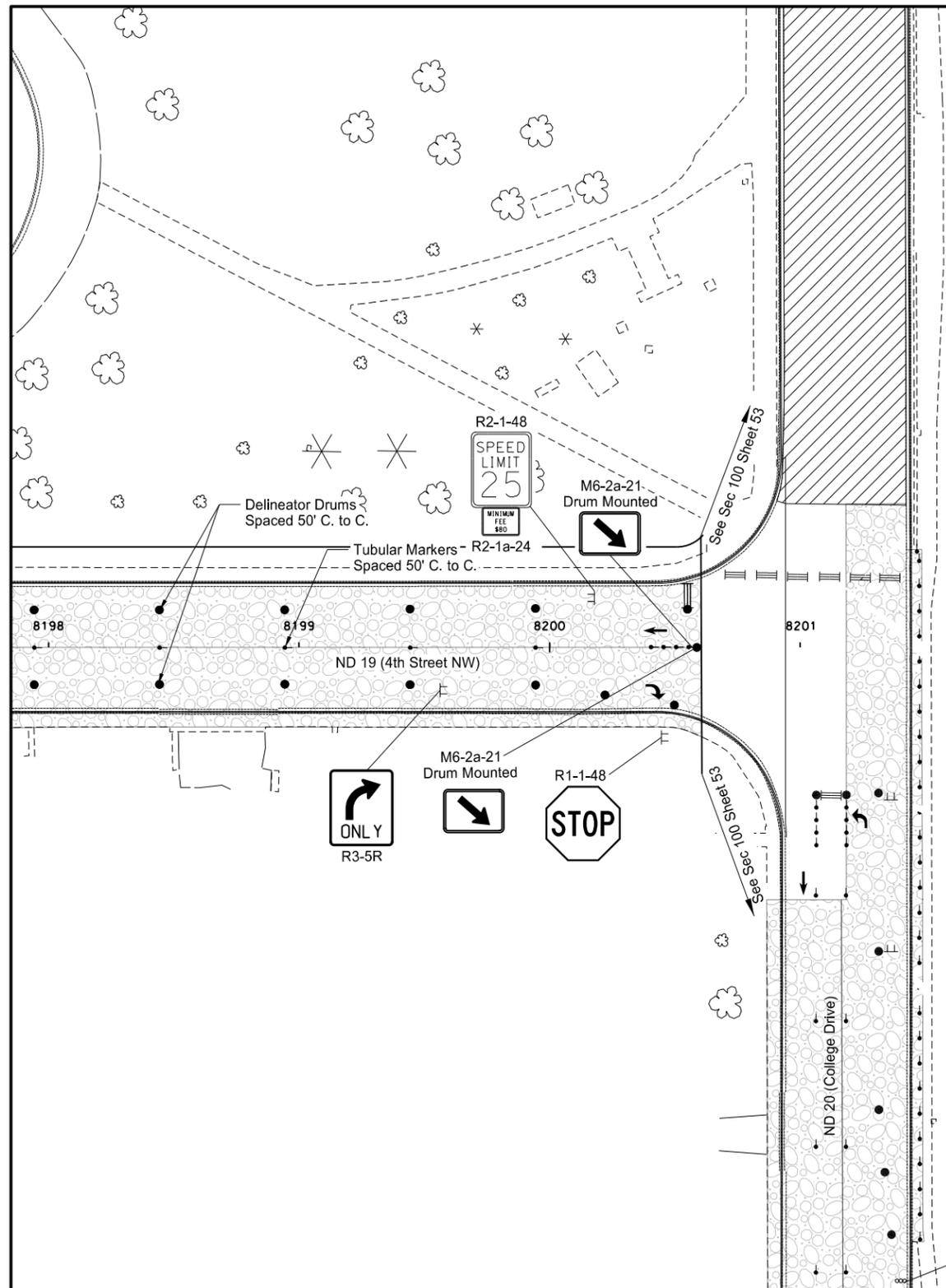


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Phase 6 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8192+00 to Sta. 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	50



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

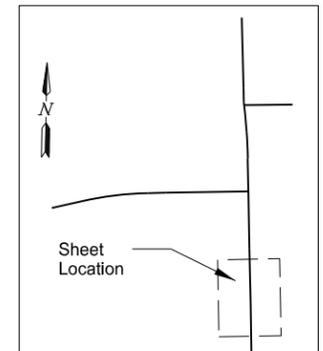
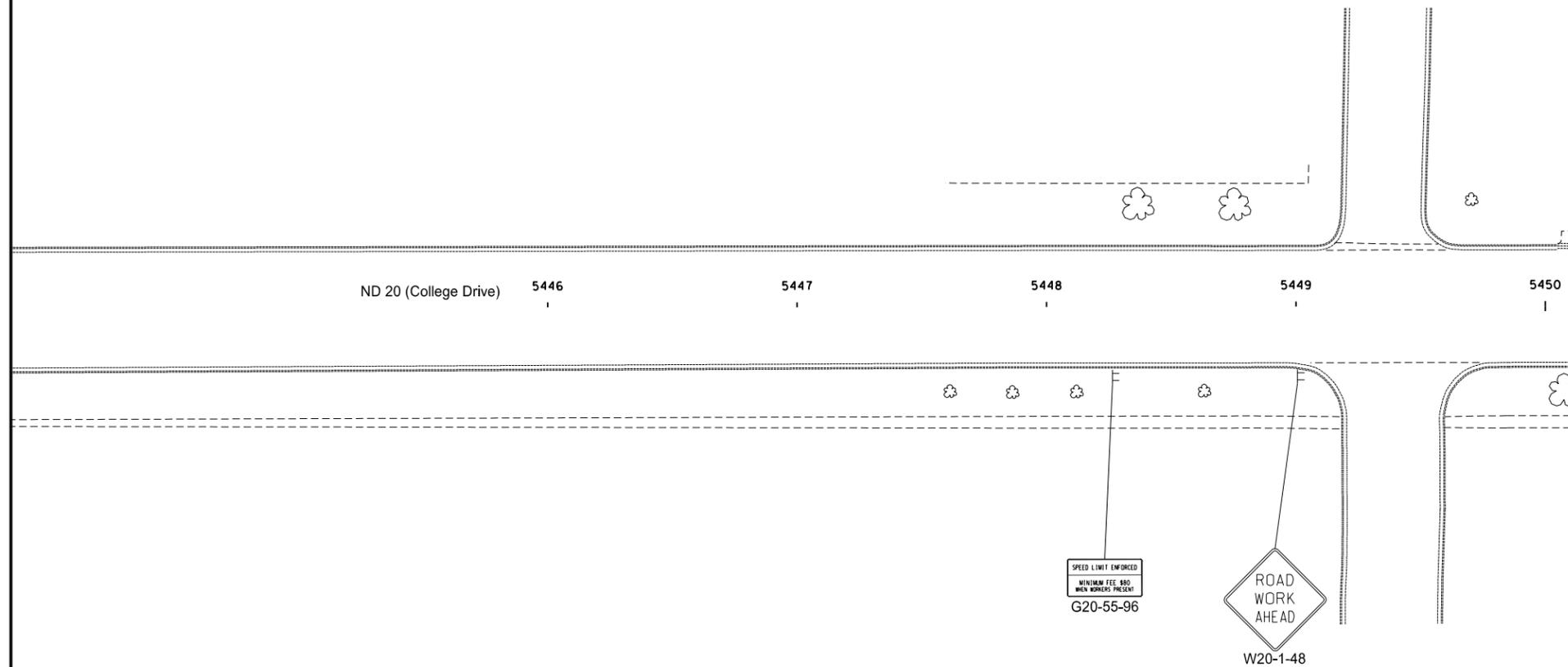


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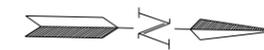
Phase 6 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8198+00 to Sta. 8200+61

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	51



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▤ Aggregate Base Course CL 5

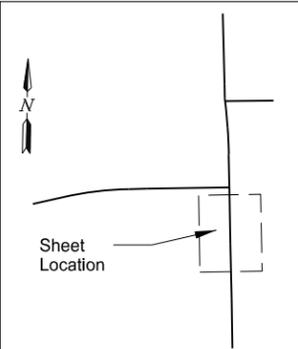
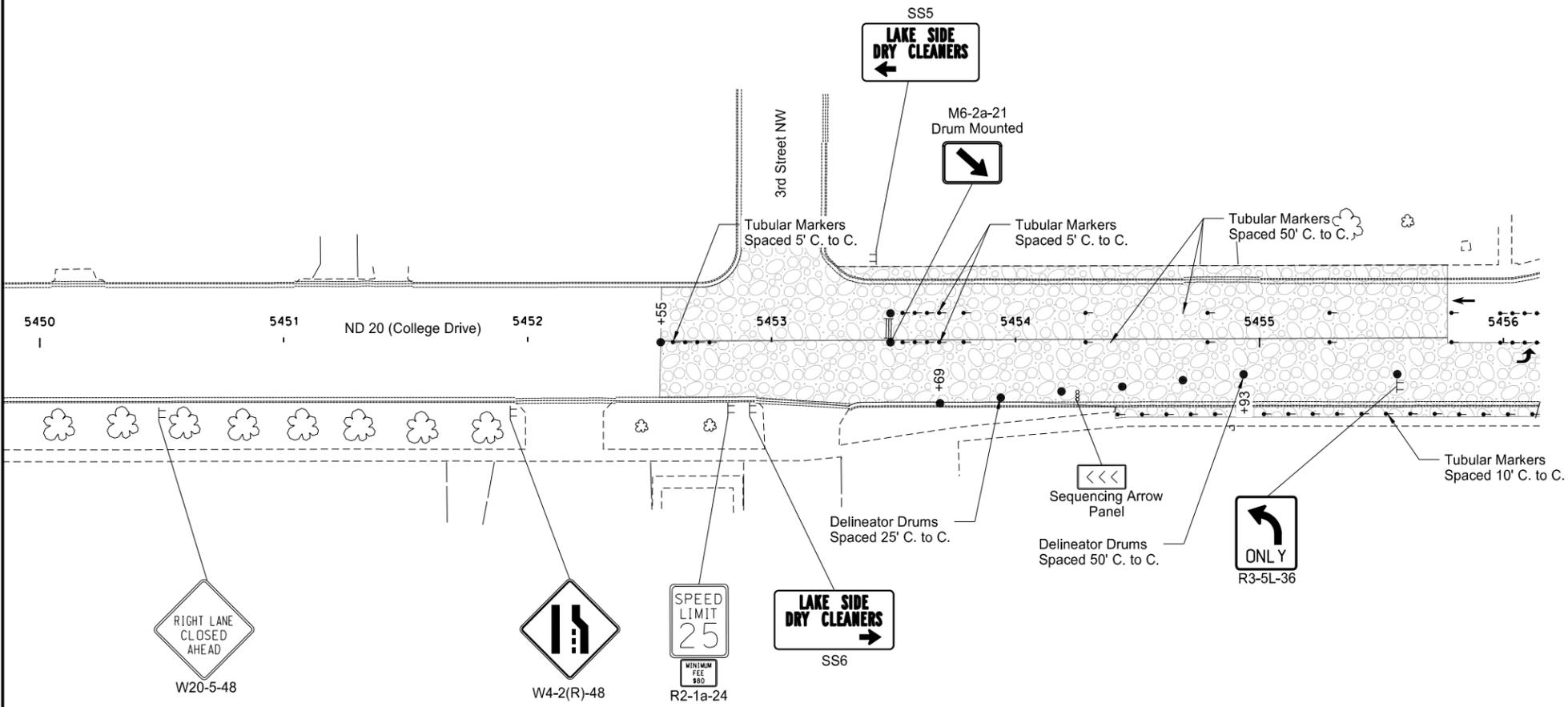


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Phase 6 - ND Highway 20  
Work Zone Traffic Control  
Sta. 5446+00 to Sta. 5450+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	52



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

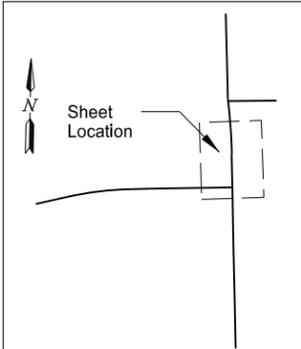
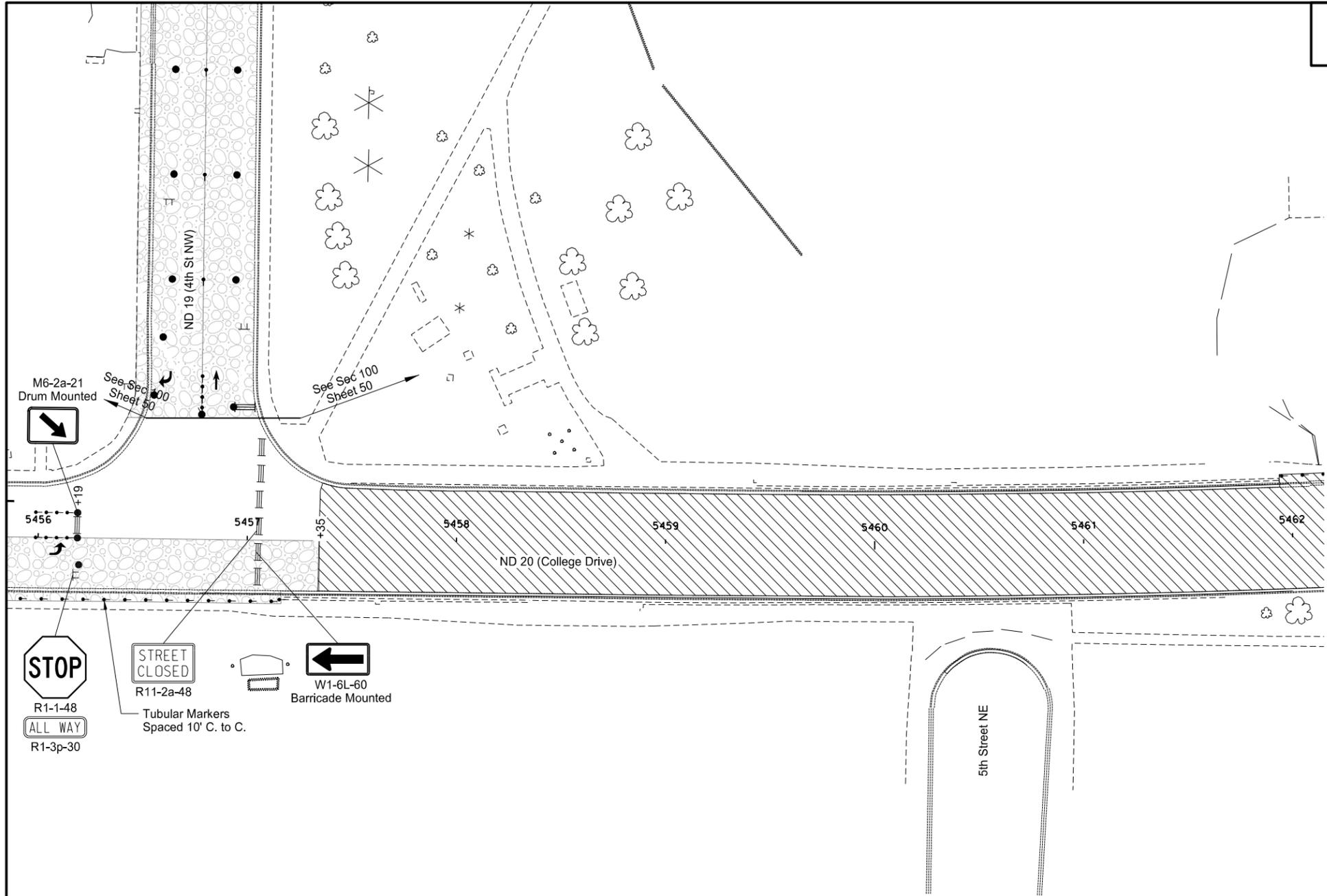
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Phase 6 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5450+00 to Sta. 5456+00

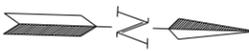
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	53



- R1-1-48  
R1-3p-30
- R11-2a-48
- Tubular Markers  
Spaced 10' C. to C.
- W1-6L-60  
Barricade Mounted

- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

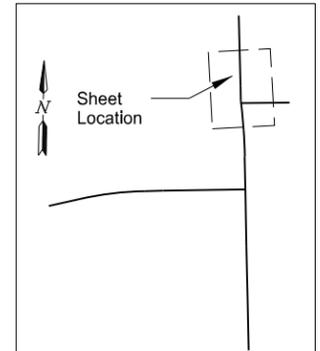
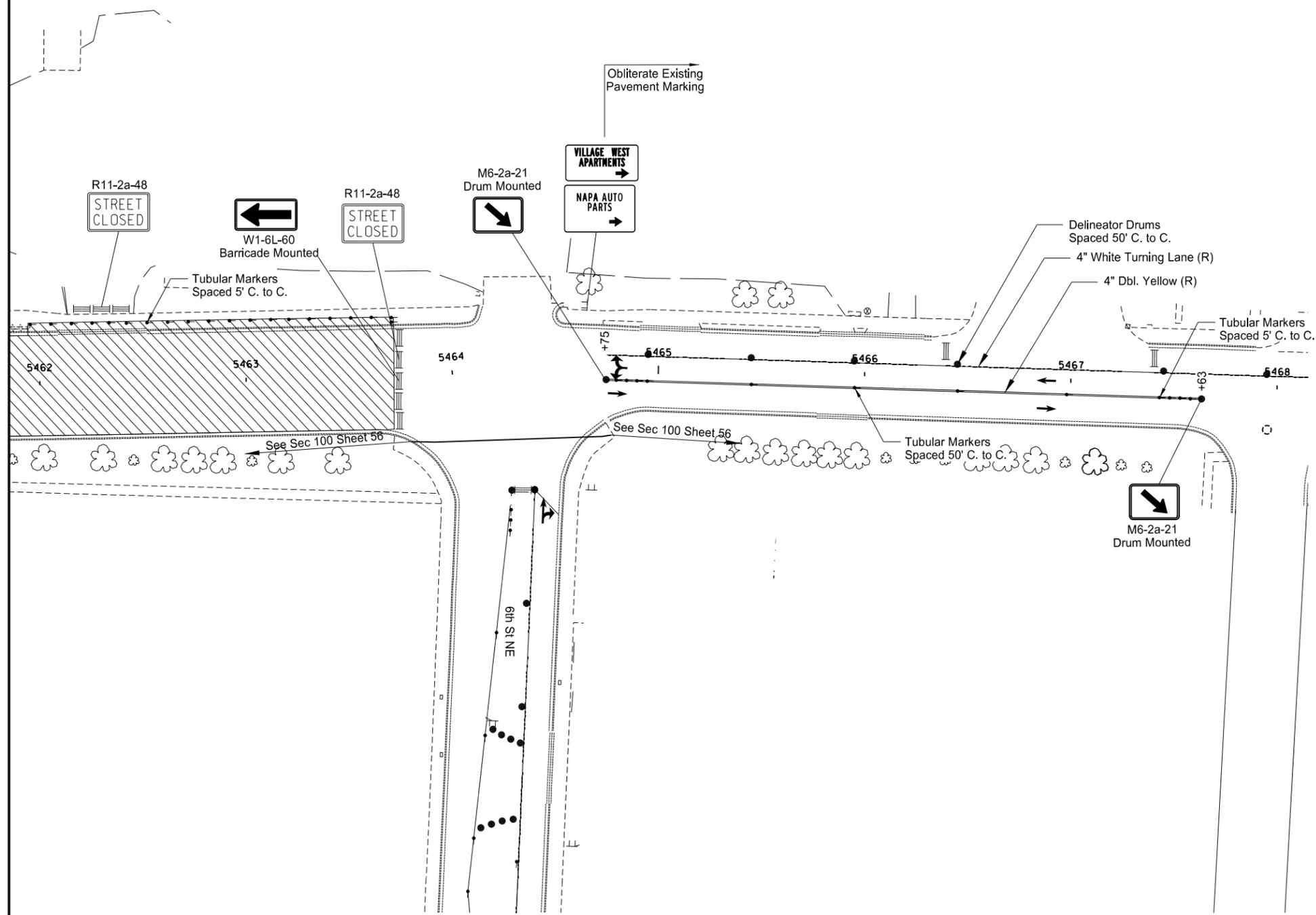


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Phase 6 - ND Highway 20  
Work Zone Traffic Control  
Sta. 5456+00 to Sta. 5462+00

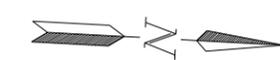
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	54



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

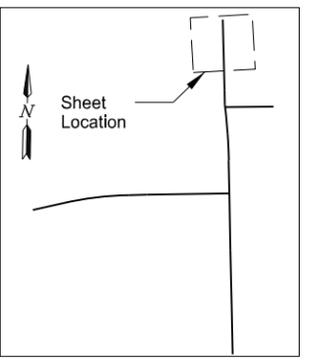
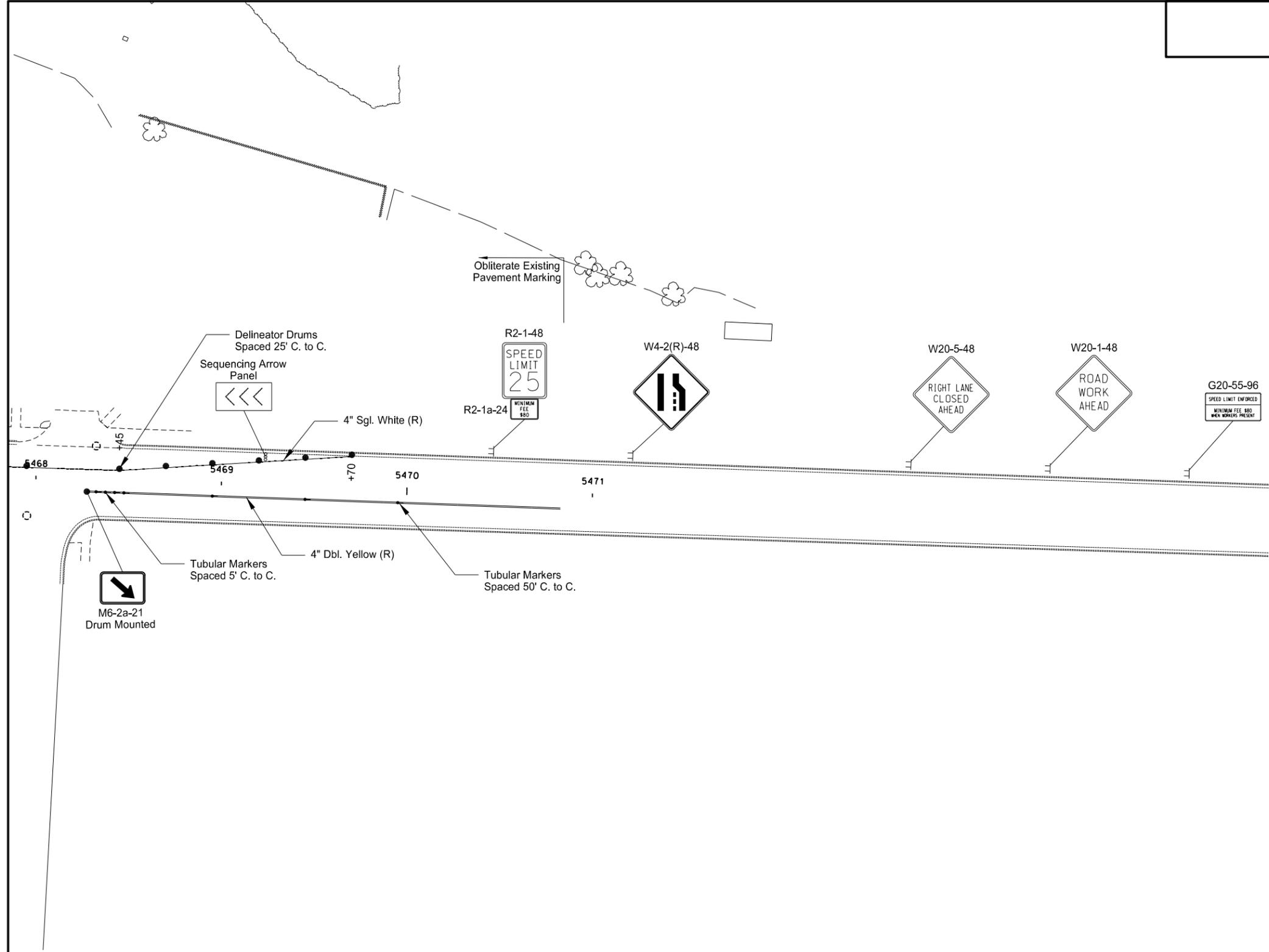
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Phase 6 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5462+00 to Sta. 5467+00

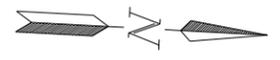
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	55



- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

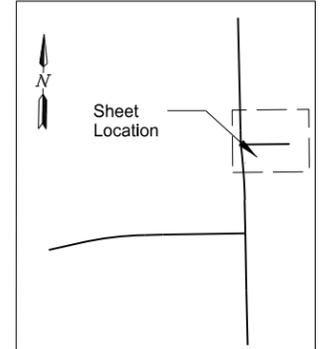
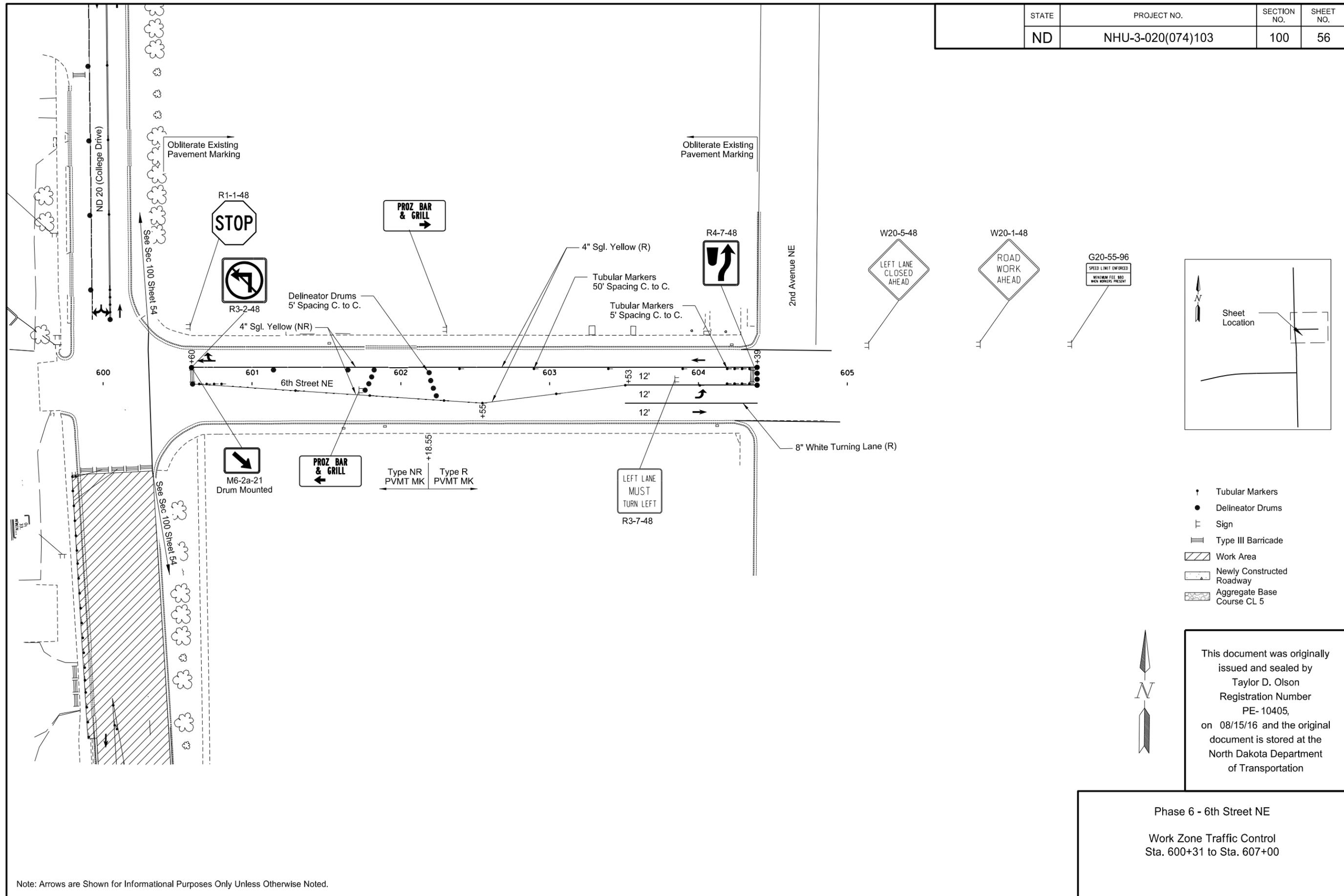
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Phase 6 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5468+00 to Sta. 5474+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	56



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▭ Aggregate Base Course CL 5

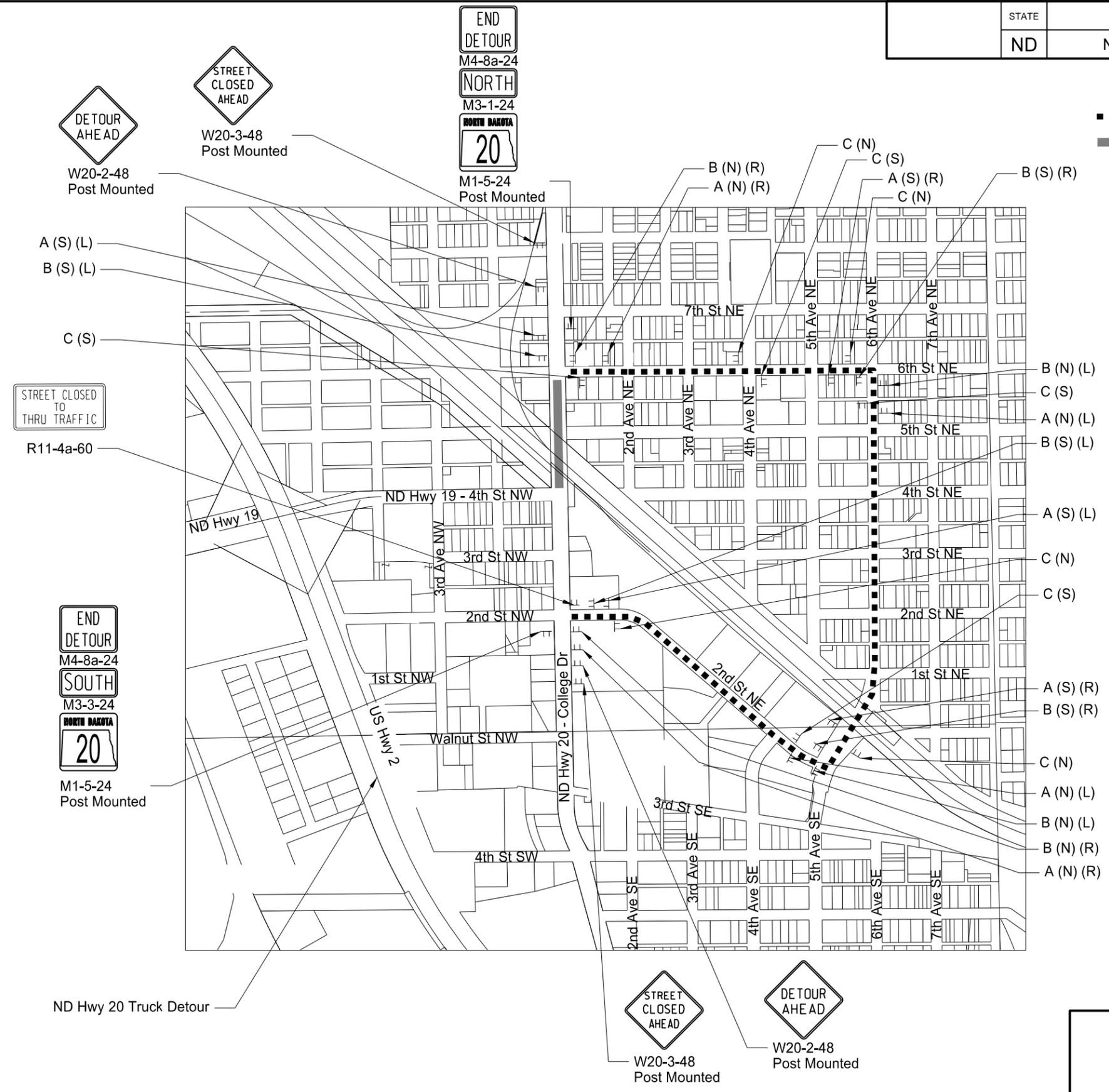
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Phase 6 - 6th Street NE  
 Work Zone Traffic Control  
 Sta. 600+31 to Sta. 607+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	57

- A =
- DETOUR M4-8-24
  - NORTH (N)=M3-1-24
  - SOUTH (S)=M3-3-24
  - NORTH DAKOTA 20 M1-5-24
  - Left Arrow (L)=M5-1-21
  - Right Arrow (R)=M5-1-21 Post Mounted
- B =
- DETOUR M4-8-24
  - NORTH (N)=M3-1-24
  - SOUTH (S)=M3-3-24
  - NORTH DAKOTA 20 M1-5-24
  - Left Arrow (L)=M6-1-21
  - Right Arrow (R)=M6-1-21 Post Mounted
- C =
- DETOUR M4-8-24
  - NORTH (N)=M3-1-24
  - SOUTH (S)=M3-3-24
  - NORTH DAKOTA 20 M1-5-24 Post Mounted



Local Vehicle Detour  
Phase 6



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Phase 6 - ND Highway 20  
Work Zone Traffic Control  
Detour Route

*This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.*

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	58

**SIDEWALK CLOSED**  
R9-9-24

Second Avenue NW

ND 19 (Fourth Street NW)

Third Street NW

ND 20 (College Drive)

Sixth Street NE



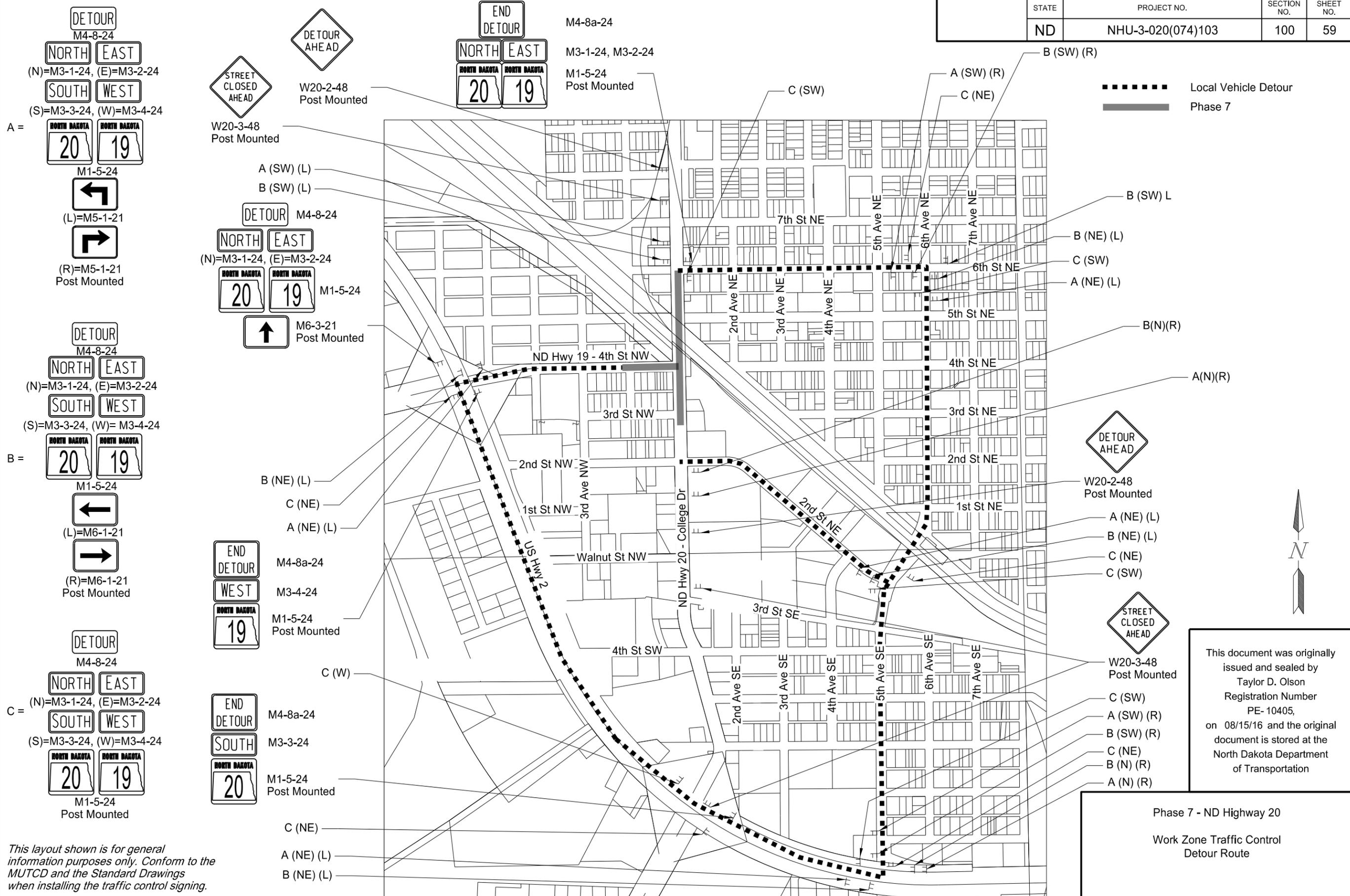
- Pedestrian Route
- ⊥ Sign
- ≡ Type III Barricade
- ▨ Phase 6

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Phase 6 - ND Highway 20  
Work Zone Traffic Control



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	59



**A =**

DETOUR M4-8-24

NORTH EAST (N)=M3-1-24, (E)=M3-2-24

SOUTH WEST (S)=M3-3-24, (W)=M3-4-24

North Dakota 20 19

M1-5-24

Left Turn Arrow (L)=M5-1-21

Right Turn Arrow (R)=M5-1-21 Post Mounted

**B =**

DETOUR M4-8-24

NORTH EAST (N)=M3-1-24, (E)=M3-2-24

SOUTH WEST (S)=M3-3-24, (W)=M3-4-24

North Dakota 20 19

M1-5-24

Left Turn Arrow (L)=M6-1-21

Right Turn Arrow (R)=M6-1-21 Post Mounted

**C =**

DETOUR M4-8-24

NORTH EAST (N)=M3-1-24, (E)=M3-2-24

SOUTH WEST (S)=M3-3-24, (W)=M3-4-24

North Dakota 20 19

M1-5-24

Left Turn Arrow (L)=M6-1-21

Right Turn Arrow (R)=M6-1-21 Post Mounted

DETOUR AHEAD

STREET CLOSED AHEAD

W20-2-48 Post Mounted

W20-3-48 Post Mounted

A (SW) (L)

B (SW) (L)

DETOUR M4-8-24

NORTH EAST (N)=M3-1-24, (E)=M3-2-24

North Dakota 20 19

M1-5-24

M6-3-21 Post Mounted

Up Arrow

END DETOUR

WEST

North Dakota 19

M4-8a-24

M3-4-24

M1-5-24 Post Mounted

END DETOUR

SOUTH

North Dakota 20

M4-8a-24

M3-3-24

M1-5-24 Post Mounted

END DETOUR

SOUTH

North Dakota 20

M4-8a-24

M3-3-24

M1-5-24 Post Mounted

C (NE)

A (NE) (L)

B (NE) (L)

Local Vehicle Detour (dashed line)

Phase 7 (solid line)

DETOUR AHEAD

W20-2-48 Post Mounted

STREET CLOSED AHEAD

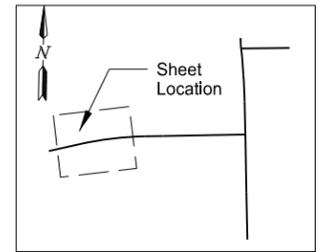
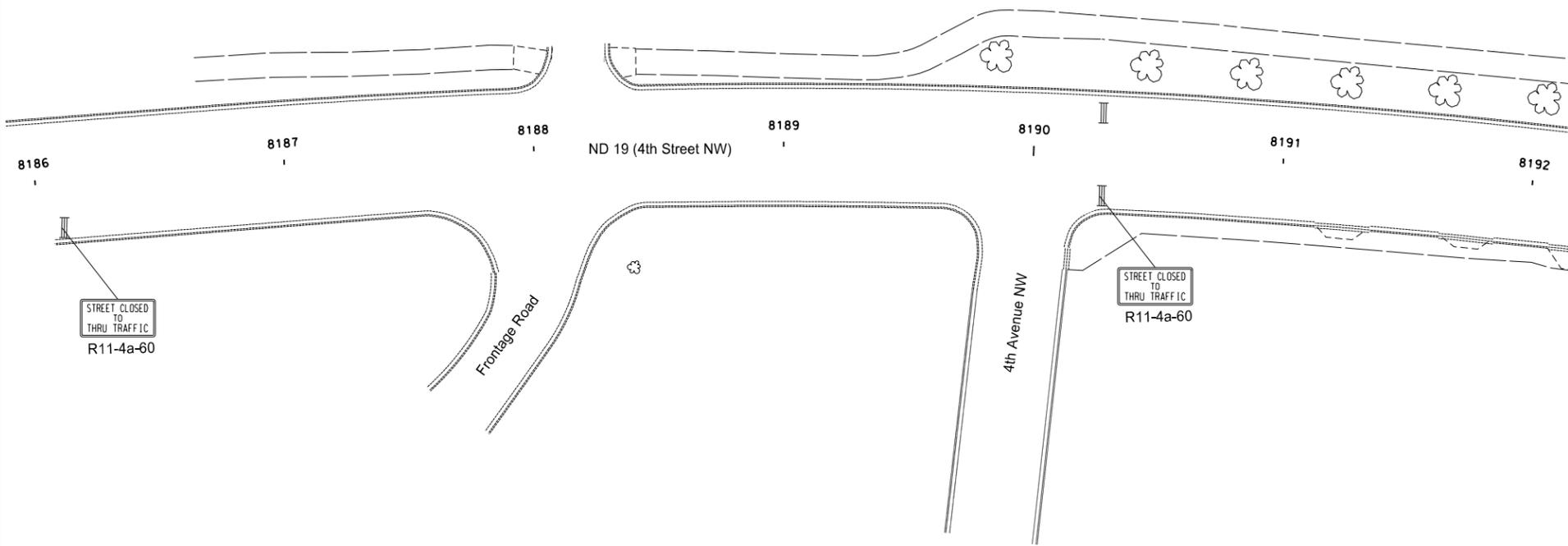
W20-3-48 Post Mounted

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Phase 7 - ND Highway 20 Work Zone Traffic Control Detour Route

This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	60



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

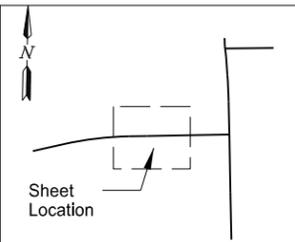
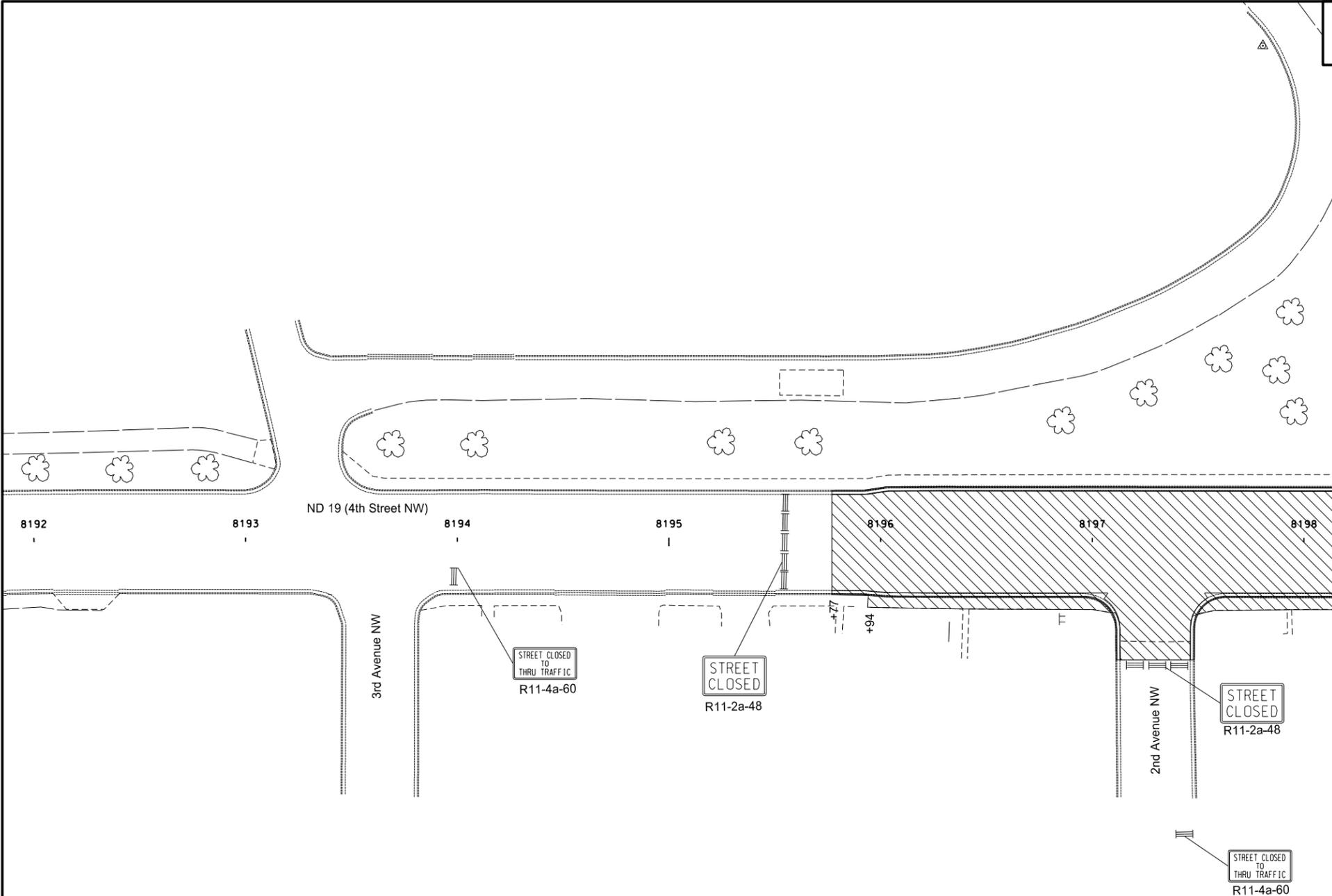


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Phase 7 - ND Highway 19  
Work Zone Traffic Control  
Sta. 8186+00 to Sta. 8192+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	61



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▩ Aggregate Base Course CL 5

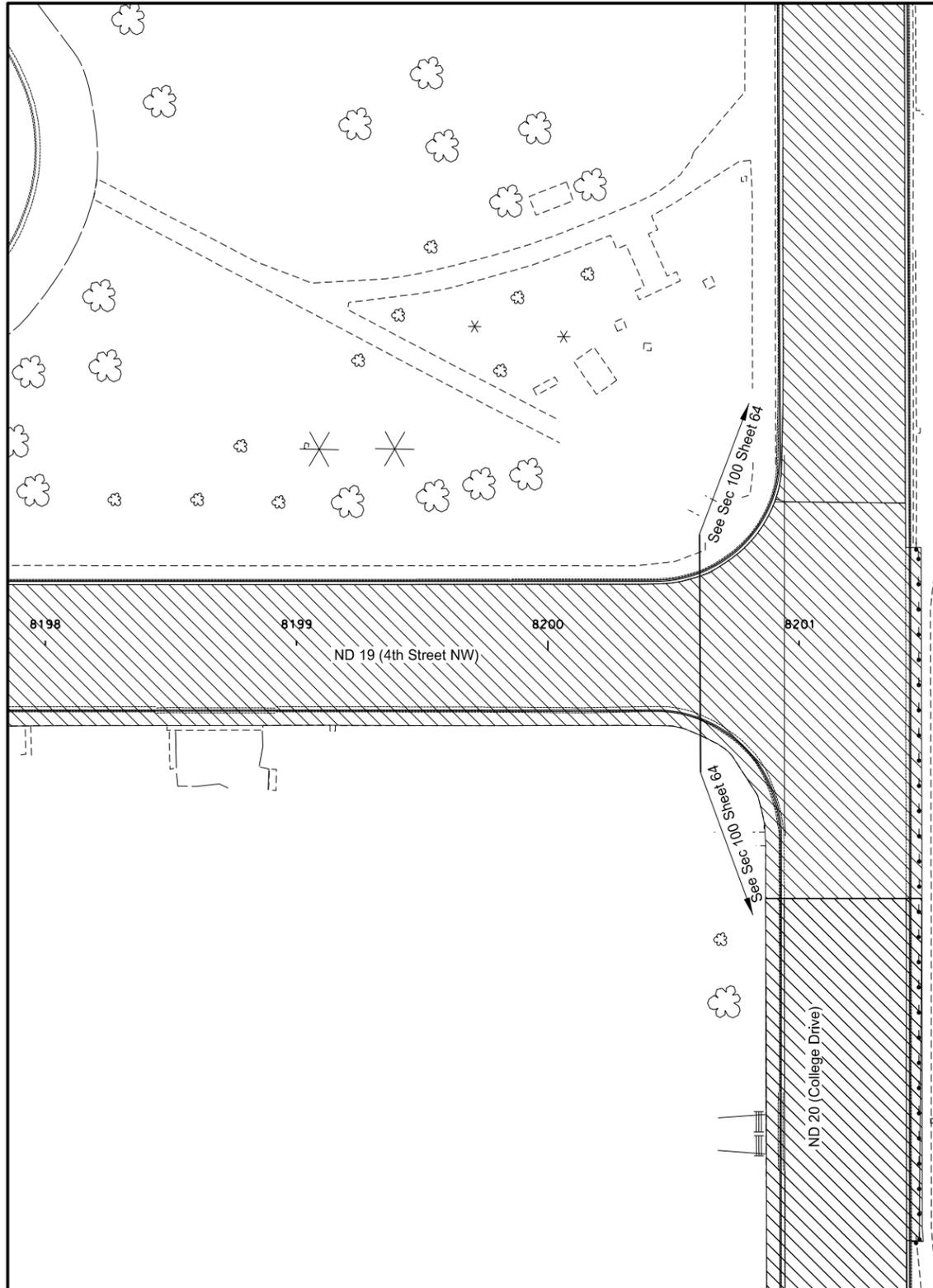
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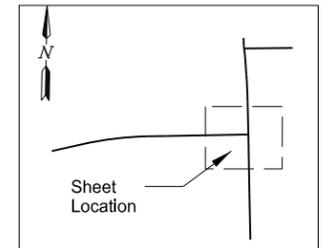
Phase 7 - ND Highway 19  
 Work Zone Traffic Control  
 Sta. 8192+00 to Sta. 8198+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	62



Note: After the completion of Phase 7 permanent stripe the roadway according to Section 120 from Sta. 8189+52 to Sta. 8200+61.



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

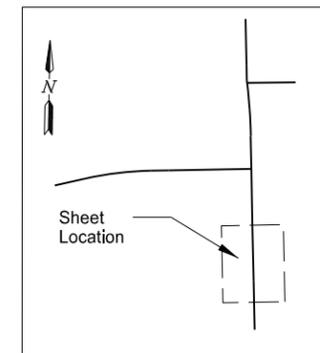
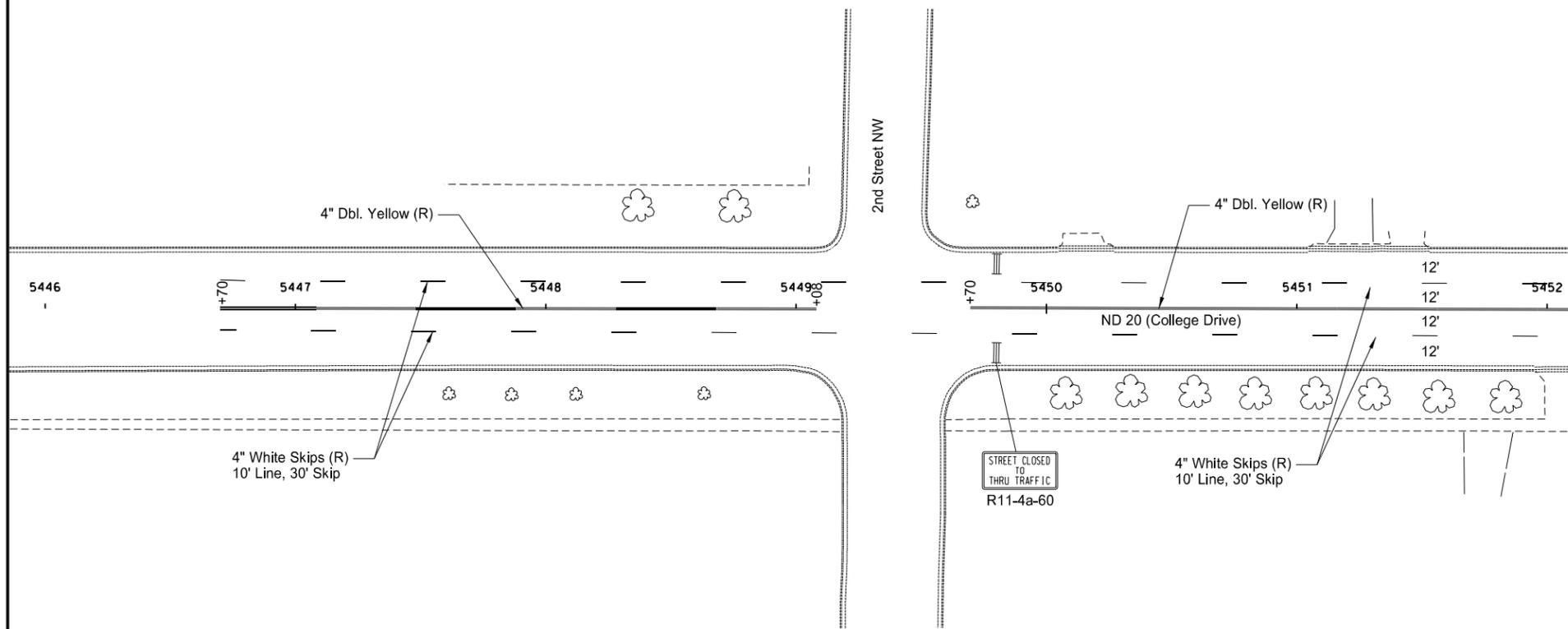


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Phase 7 - ND Highway 19  
Work Zone Traffic Control  
Sta. 8198+00 to Sta. 8200+61

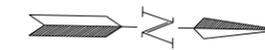
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	63



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

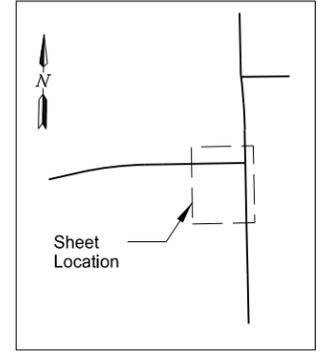
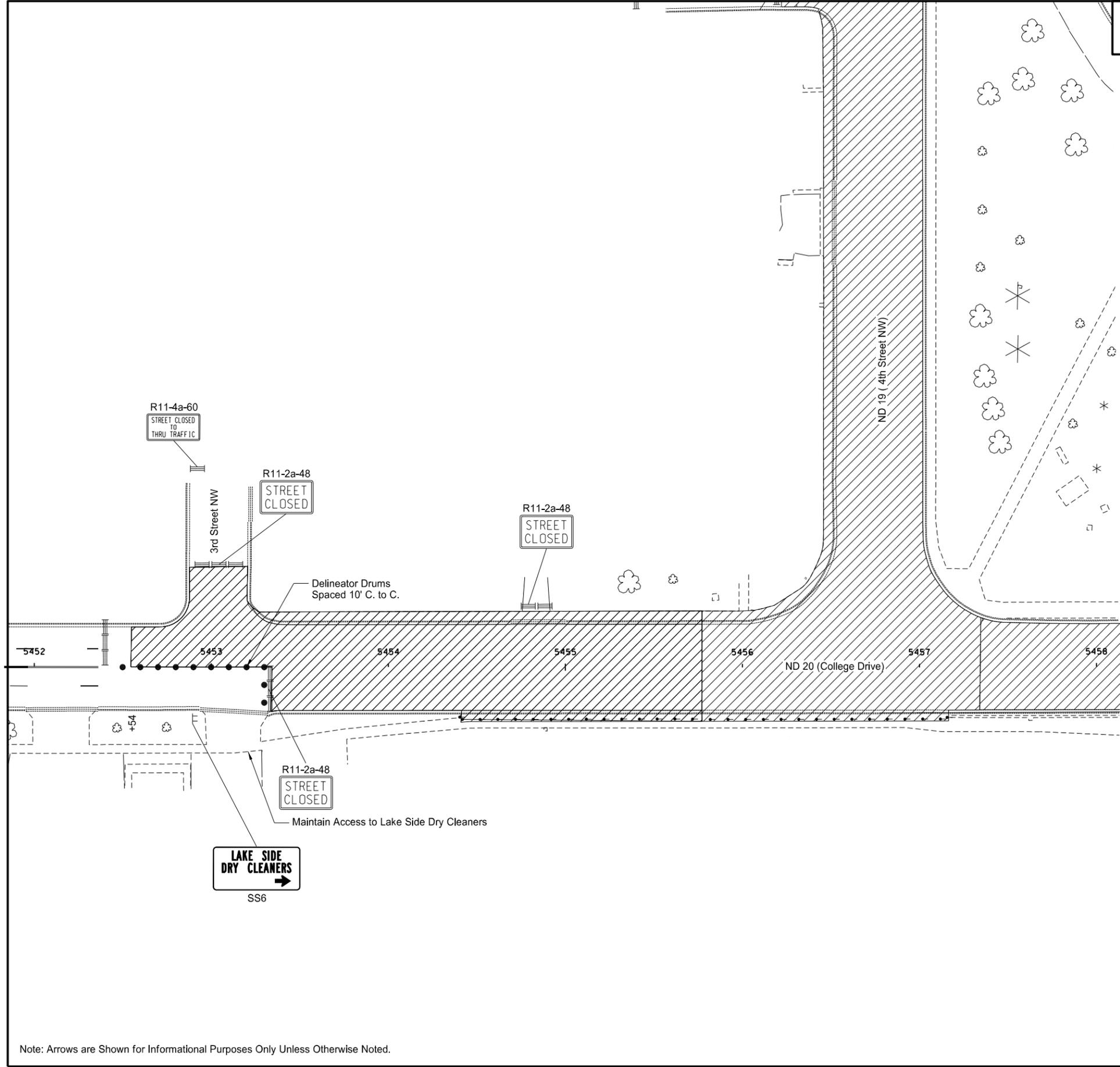
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Phase 7 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5446+00 to Sta. 5452+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	64



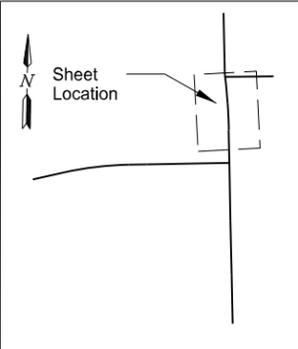
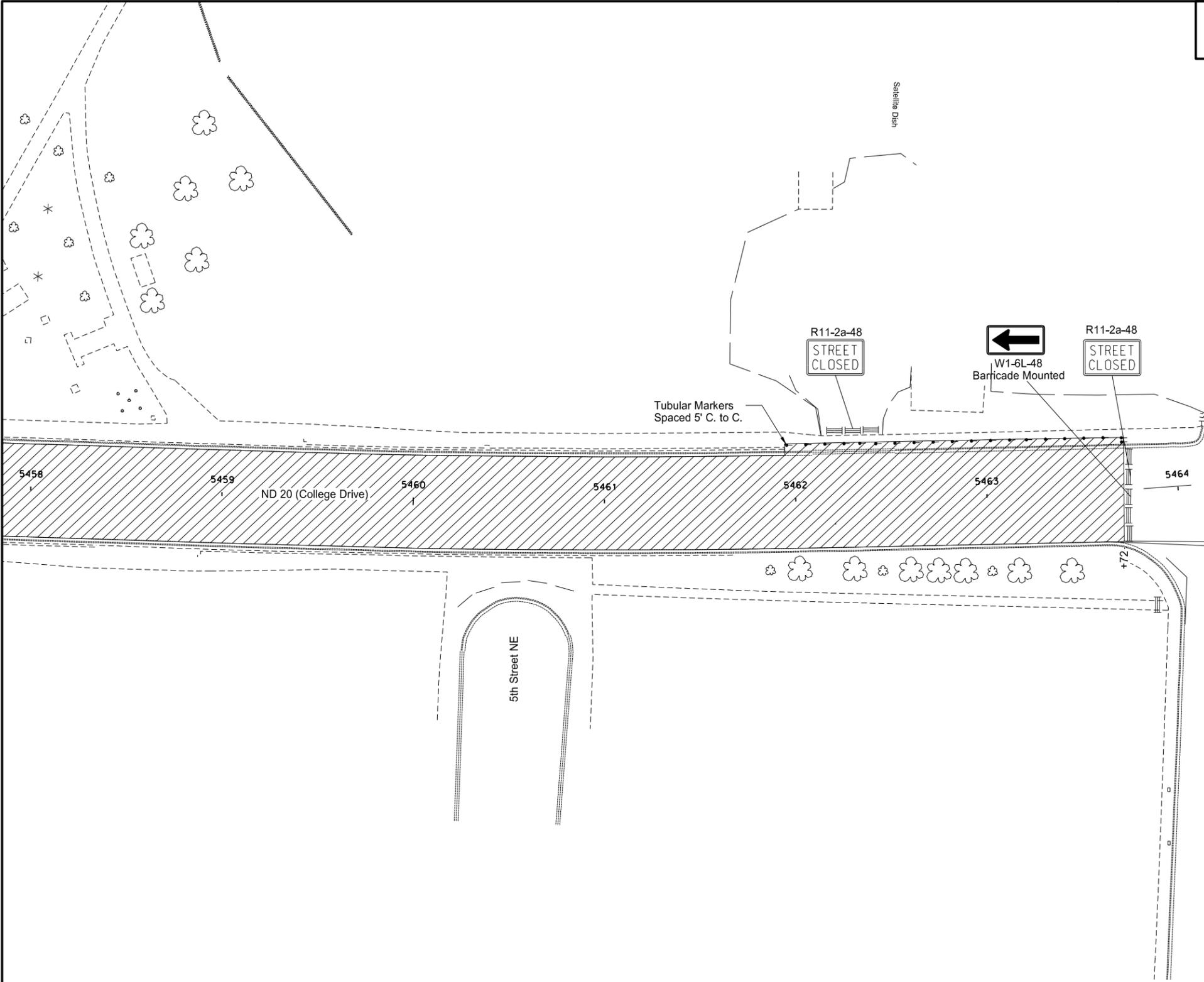
- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

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Phase 7 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5452+00 to Sta. 5458+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	65



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

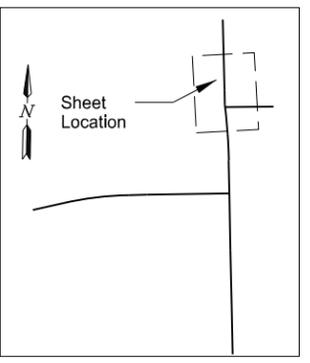
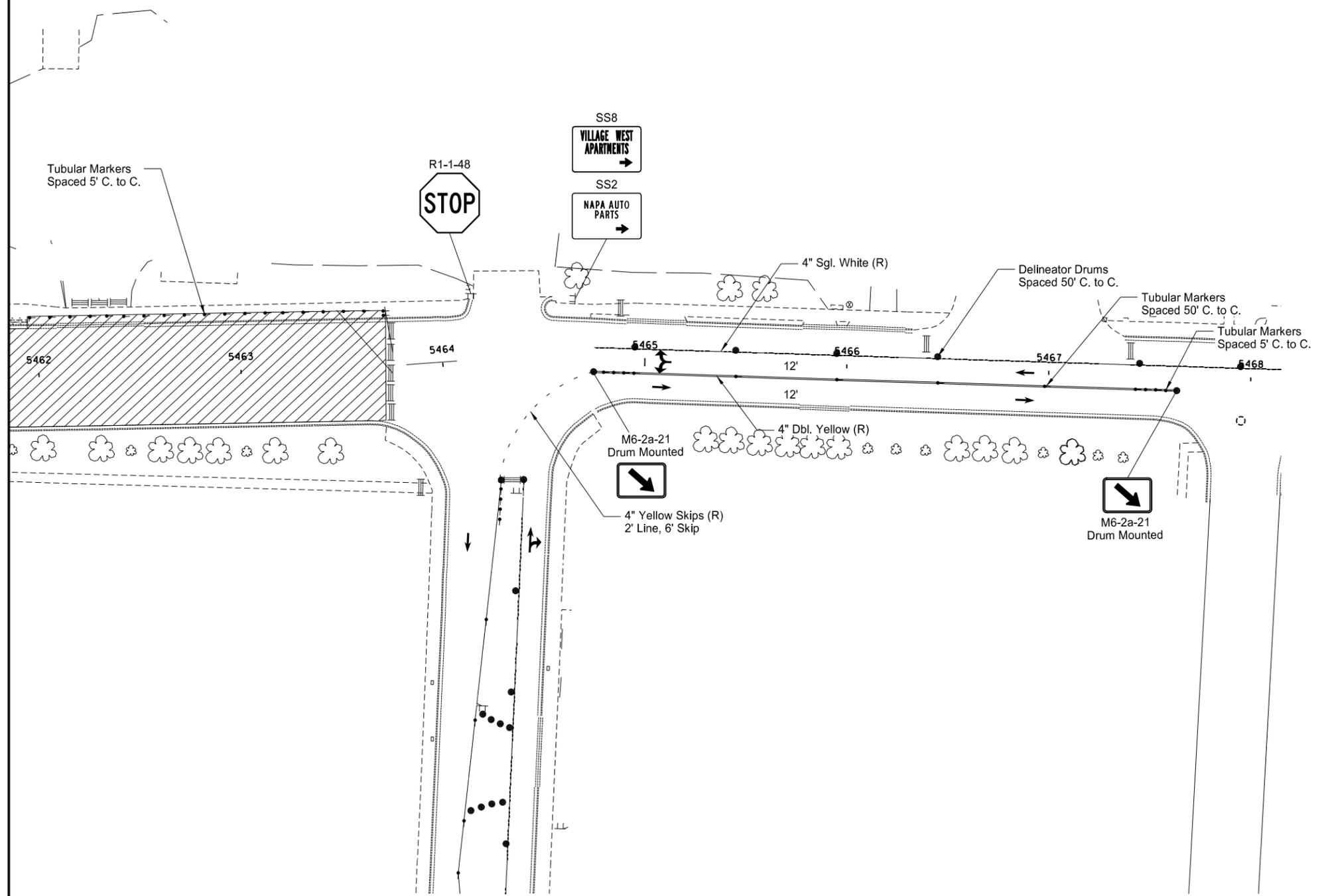


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Phase 7 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5458+00 to Sta. 5464+00

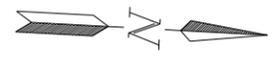
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	66



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⊞ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

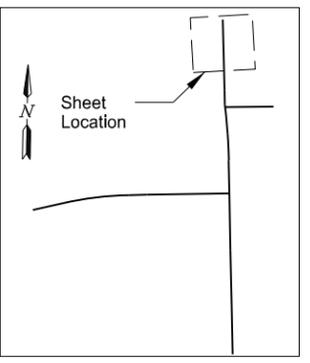
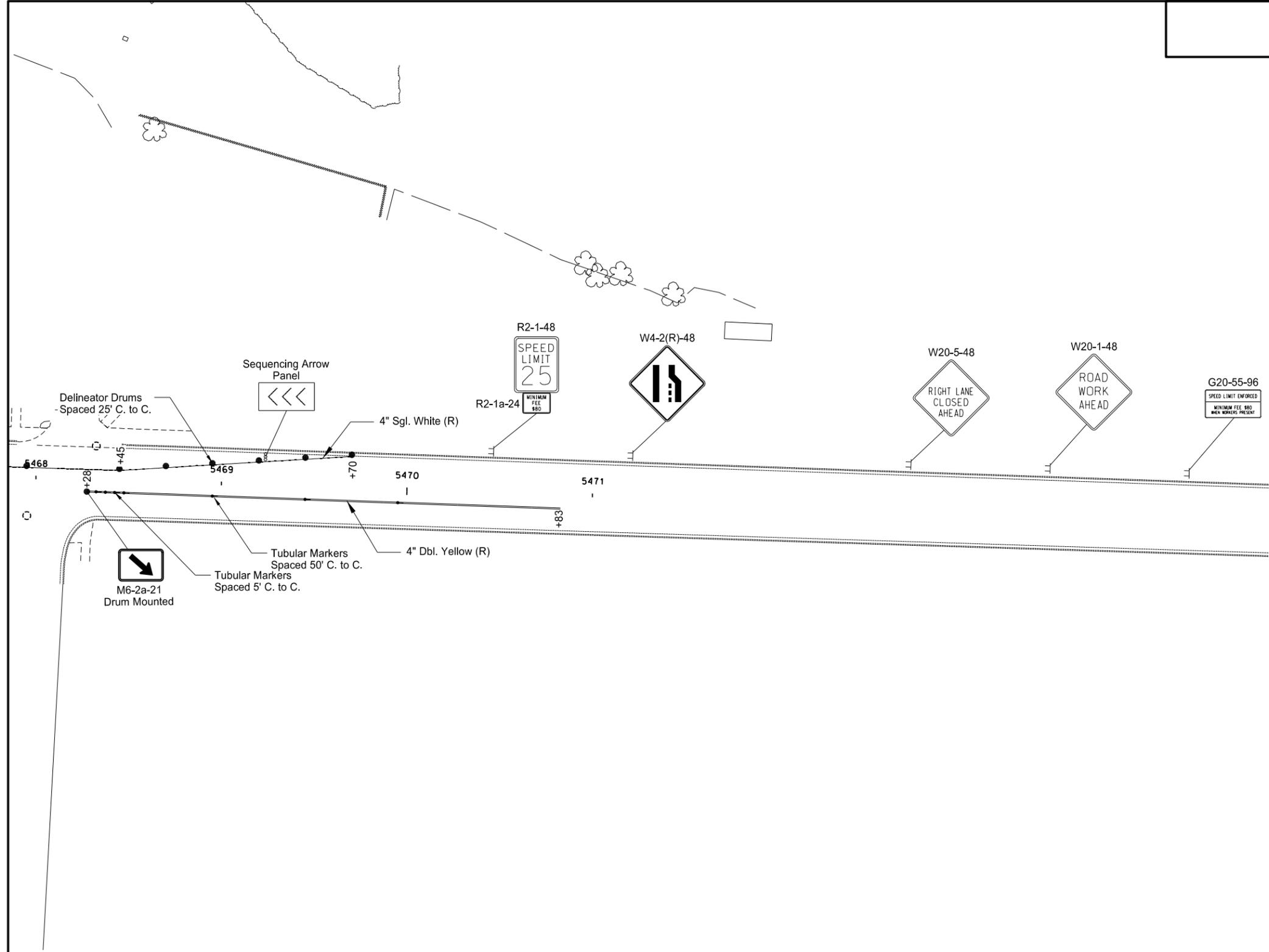
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Phase 7 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5464+00 to Sta. 5468+00

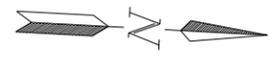
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	67



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▤ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

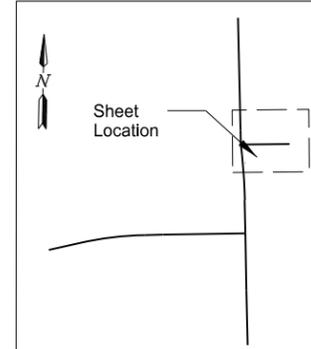
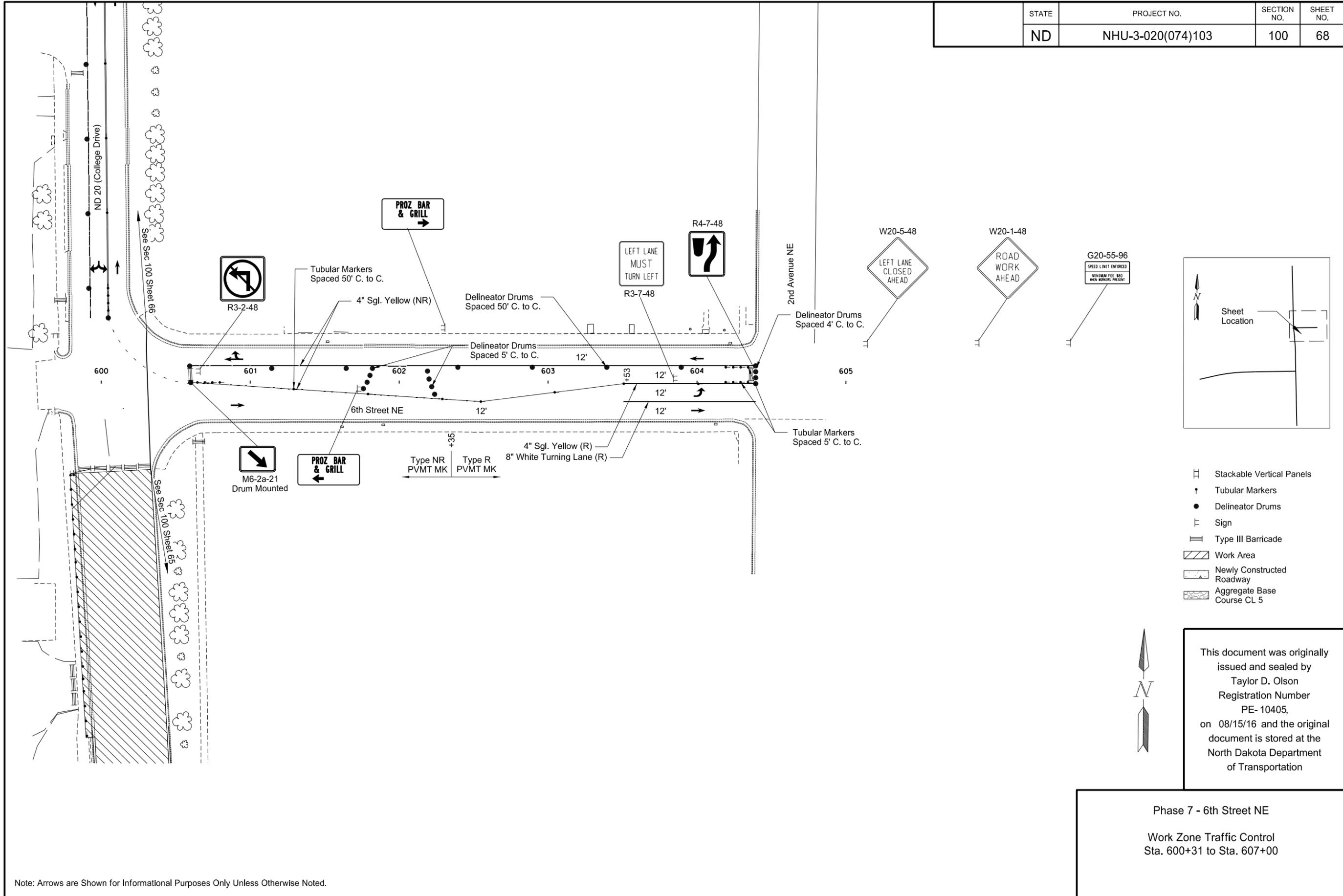
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Phase 7 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5468+00 to Sta. 5474+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	68



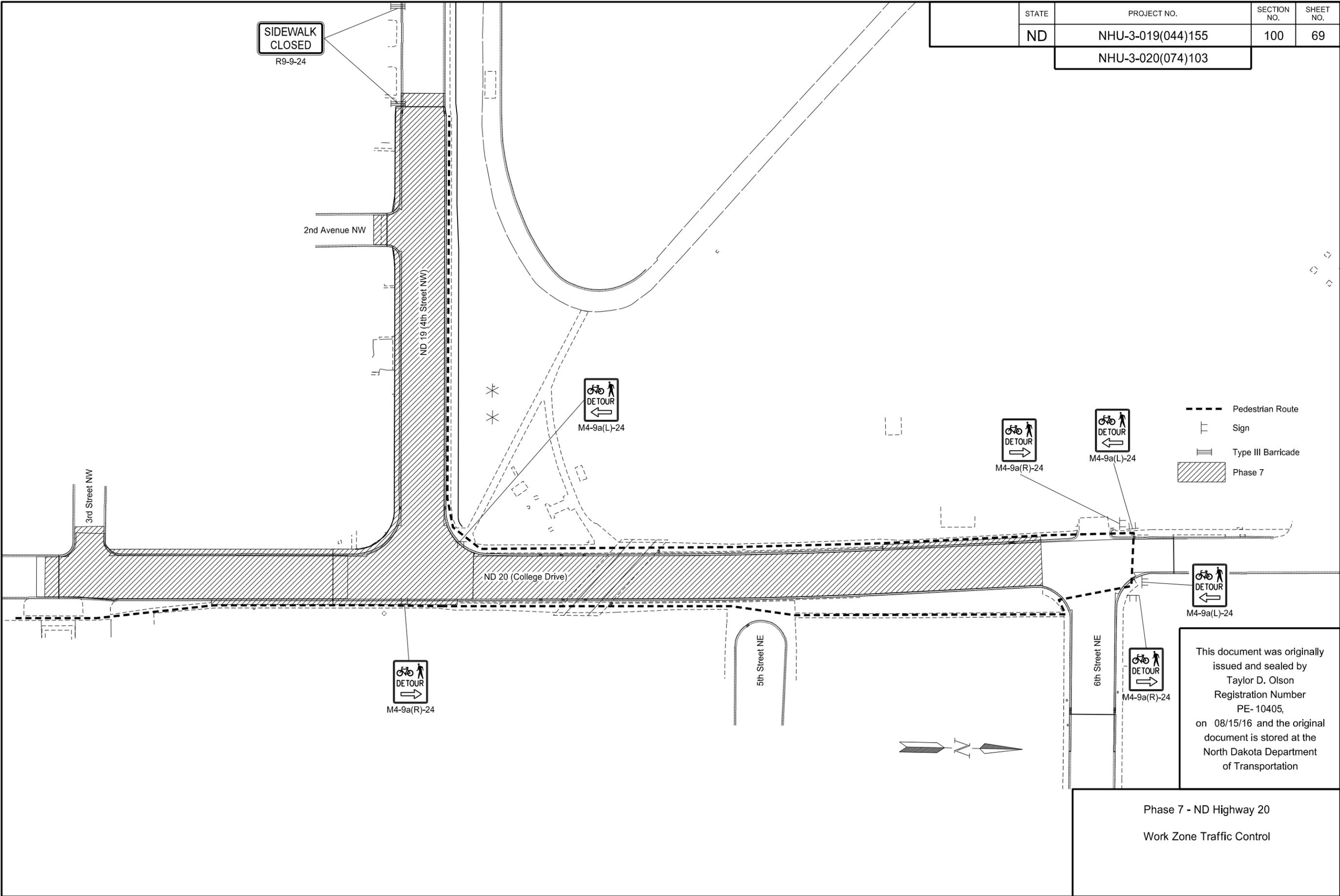
- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

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Phase 7 - 6th Street NE  
 Work Zone Traffic Control  
 Sta. 600+31 to Sta. 607+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	100	69
NHU-3-020(074)103			



SIDEWALK  
CLOSED  
R9-9-24

2nd Avenue NW

ND 19 (4th Street NW)

DETOUR  
M4-9a(L)-24

DETOUR  
M4-9a(R)-24

DETOUR  
M4-9a(L)-24

- Pedestrian Route
- ⊥ Sign
- ≡ Type III Barricade
- ▨ Phase 7

3rd Street NW

ND 20 (College Drive)

DETOUR  
M4-9a(R)-24

5th Street NE

DETOUR  
M4-9a(L)-24

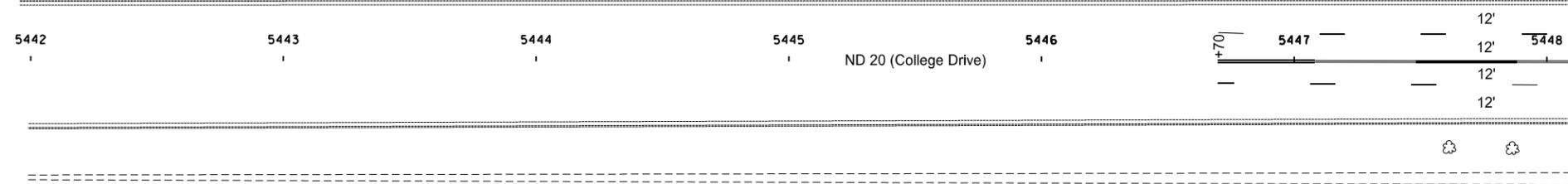
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6th Street NE

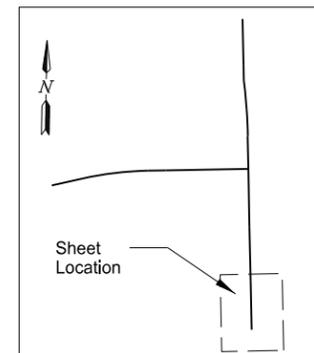
DETOUR  
M4-9a(R)-24

Phase 7 - ND Highway 20  
Work Zone Traffic Control

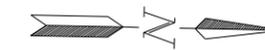
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-3-020(074)103	100	70



Note: After the completion of Phase 7 permanent stripe the roadway according to Section 120 from Sta. 5446+70 to Sta. 5452+36.



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

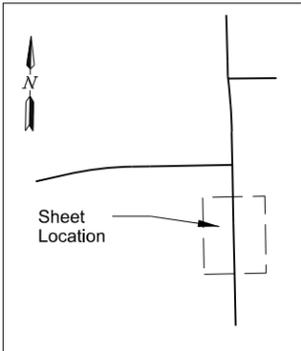
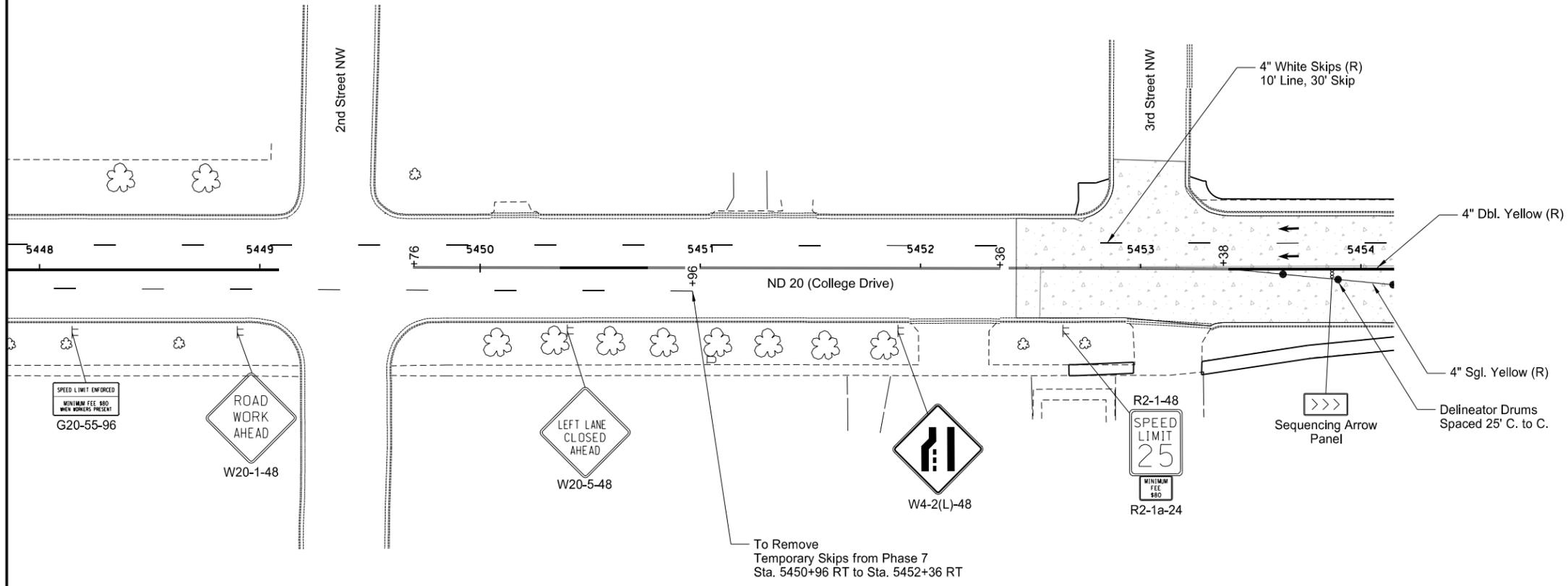


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Phase 8 - ND Highway 20  
Work Zone Traffic Control  
Sta. 5442+00 to Sta. 5448+00

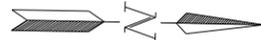
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	71



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ⊞ Aggregate Base Course CL 5

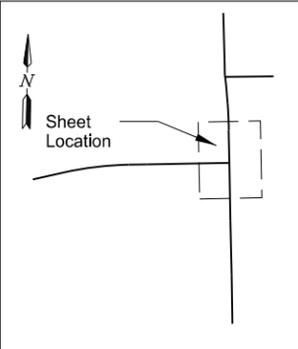
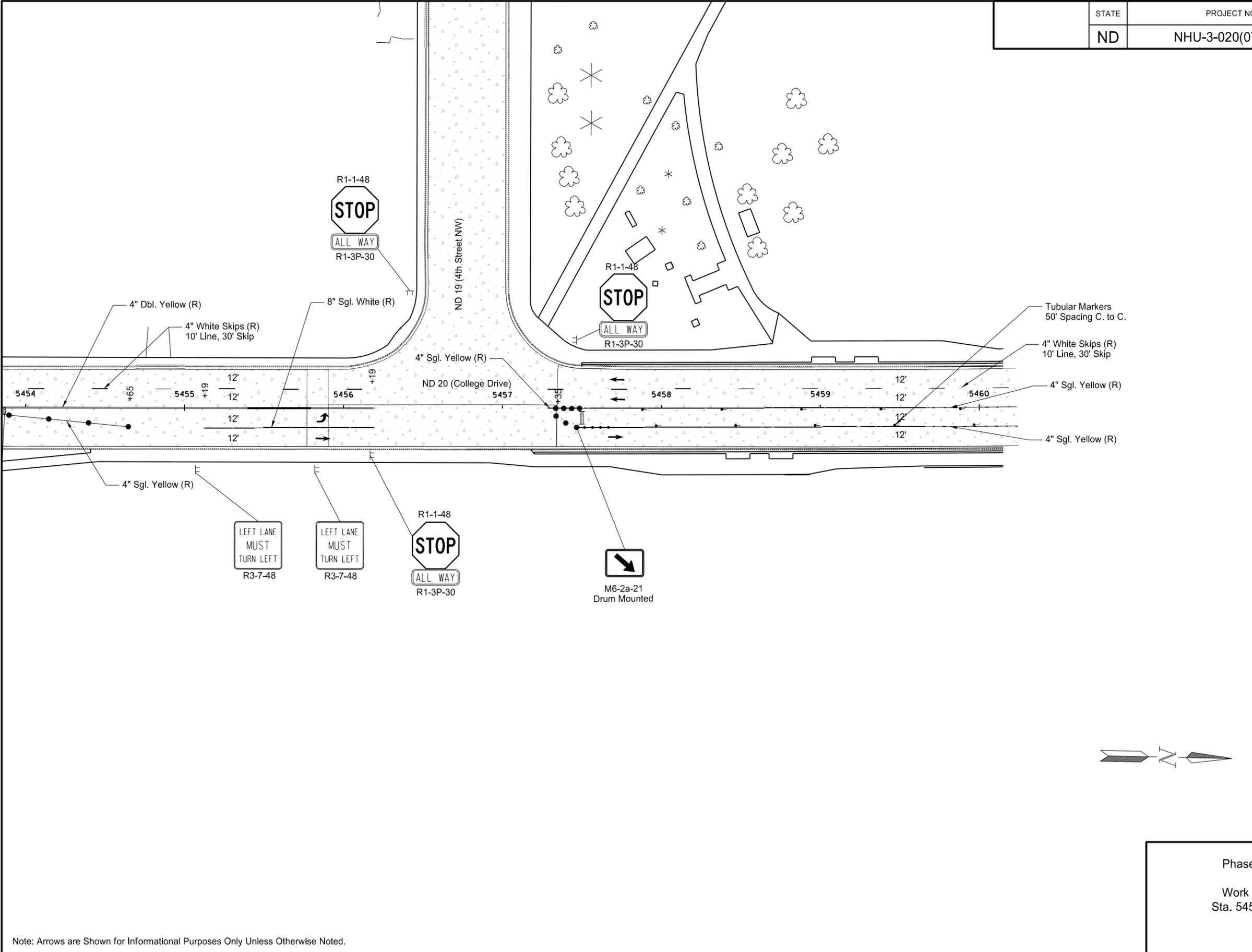
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Phase 8 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5448+00 to Sta. 5454+00

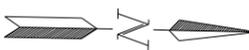
Note: Arrows are shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	72



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▤ Aggregate Base Course CL 5

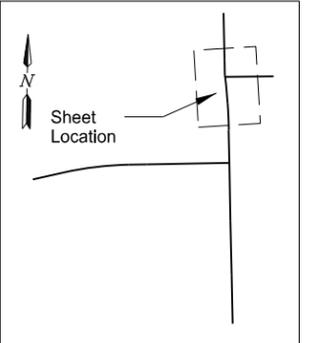
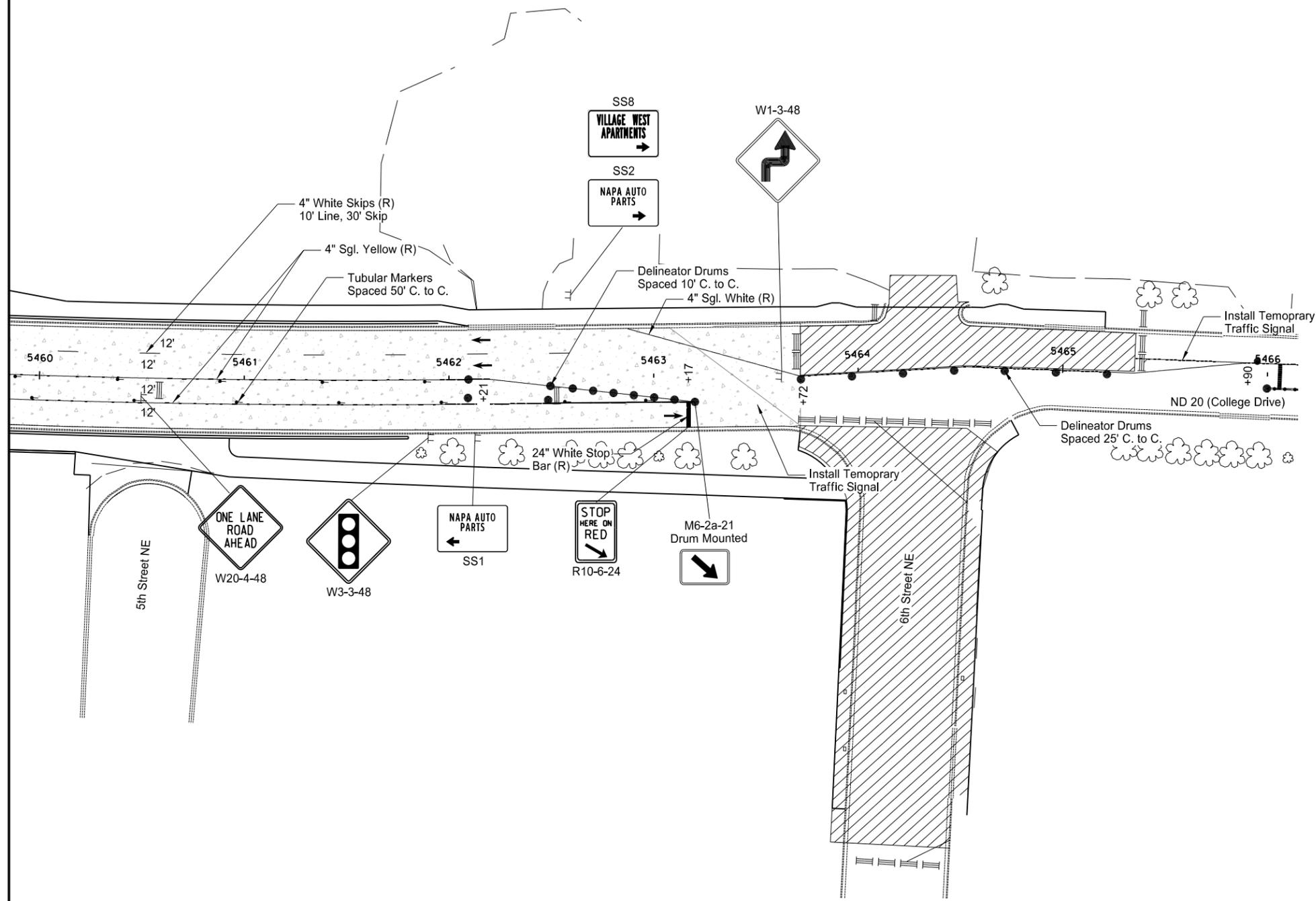
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Phase 8 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5454+00 to Sta. 5460+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	73



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▨ Aggregate Base Course CL 5

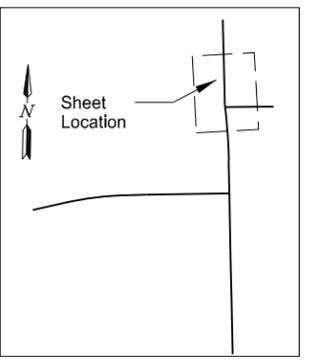
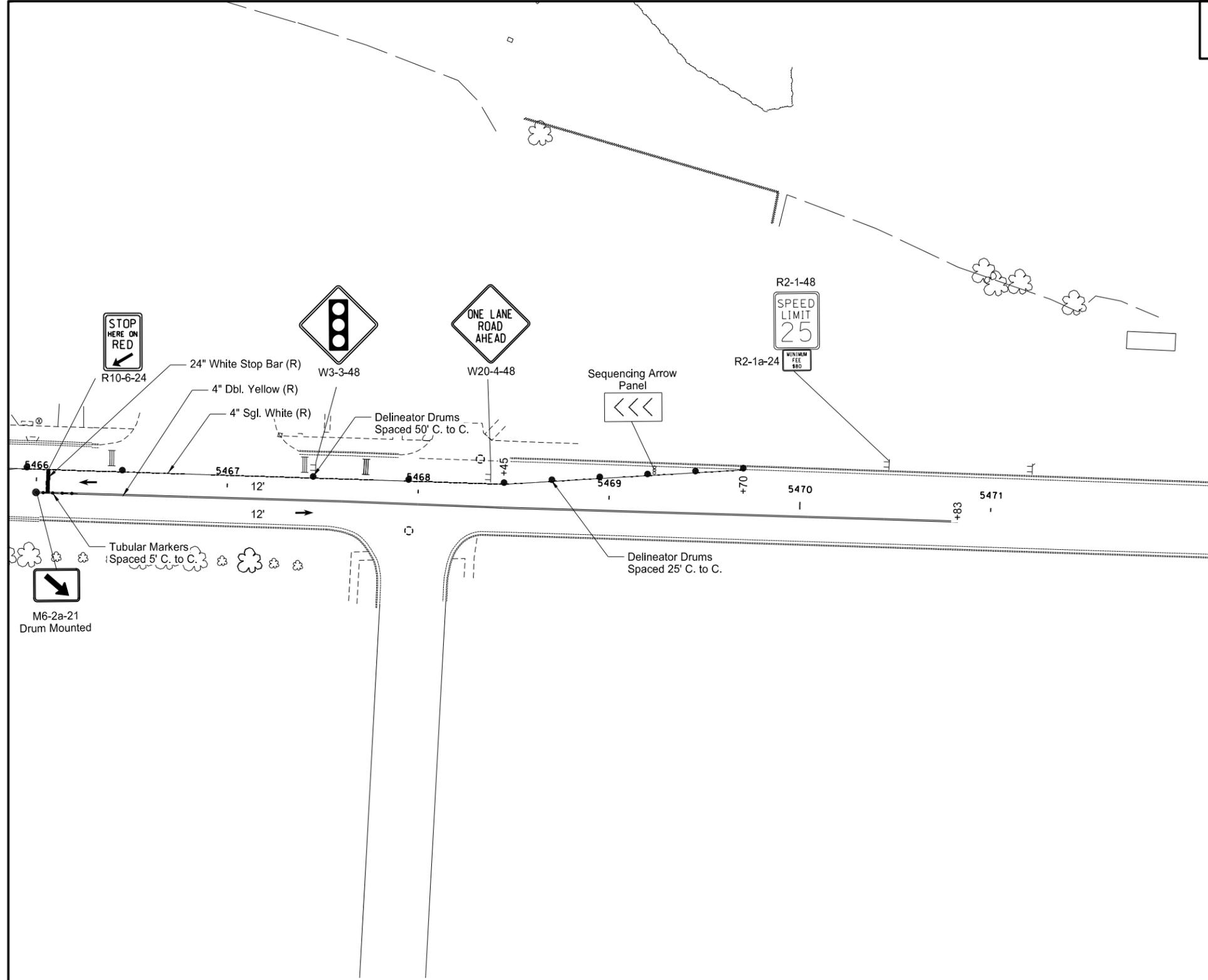
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Phase 8 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5460+00 to Sta. 5466+00

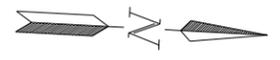
Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	74



- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▬ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

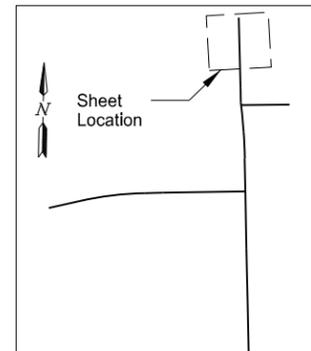
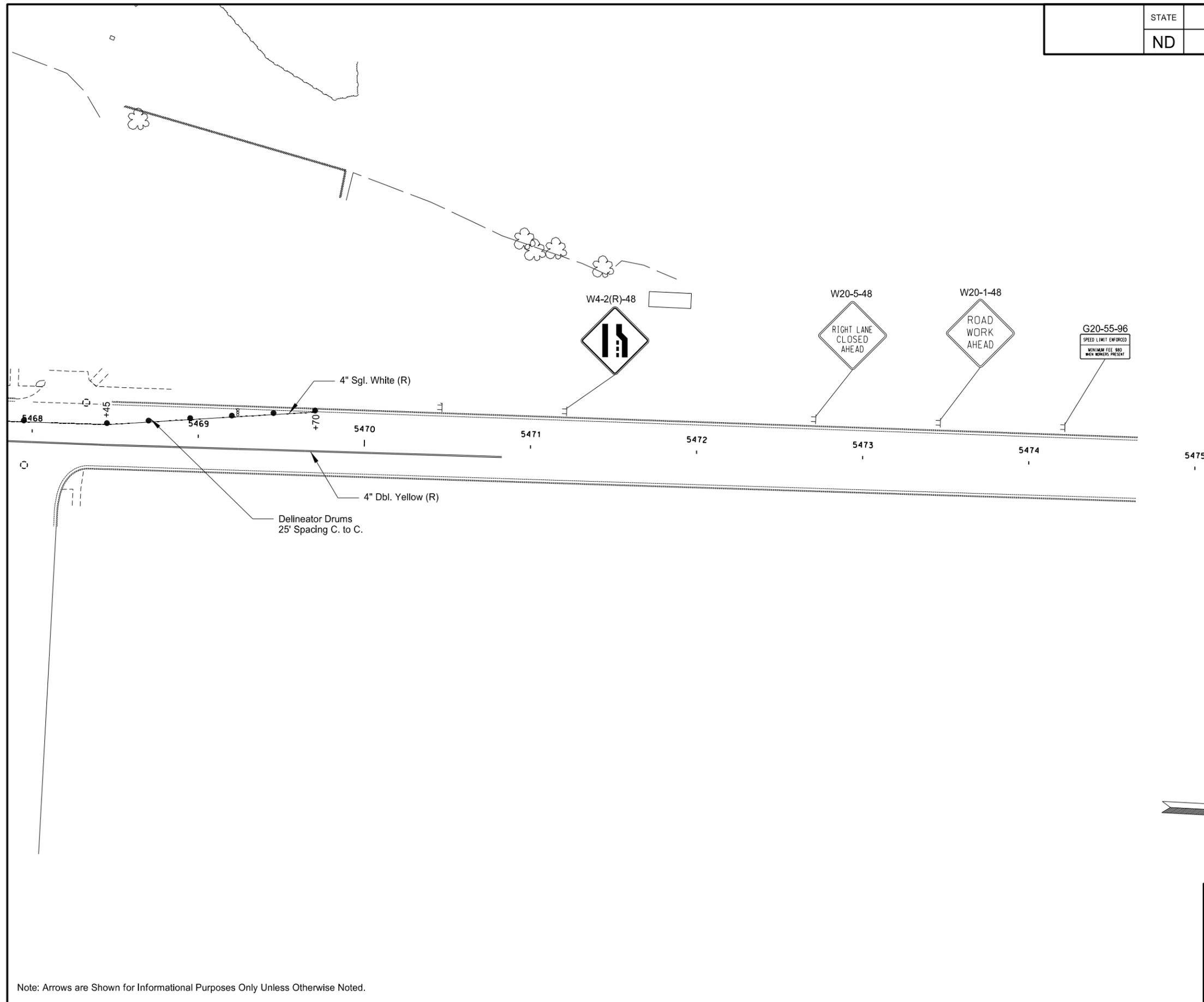
This document was originally issued and sealed by Taylor D. Olson, Registration Number PE-10405, on 08/17/16 and the original document is stored at the North Dakota Department of Transportation.



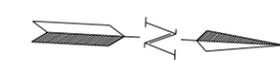
Phase 8 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5466+00 to Sta. 5471+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	75



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▧ Aggregate Base Course CL 5

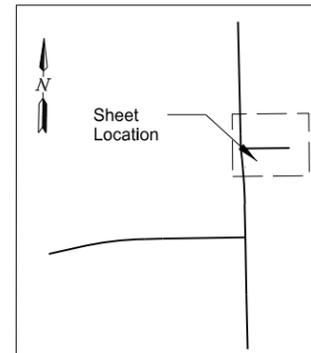
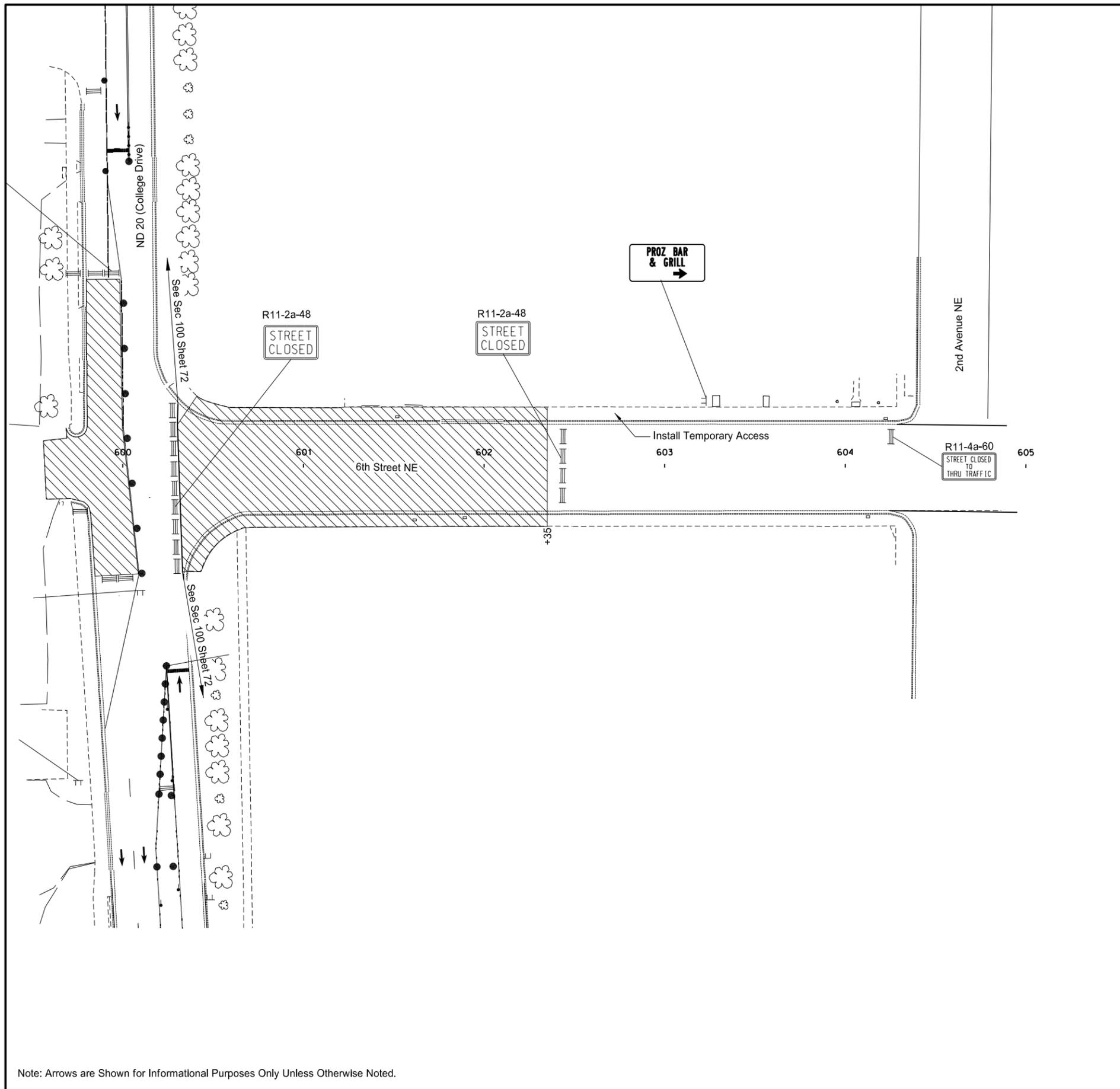


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Phase 8 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5471+00 to Sta. 5475+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	76



- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

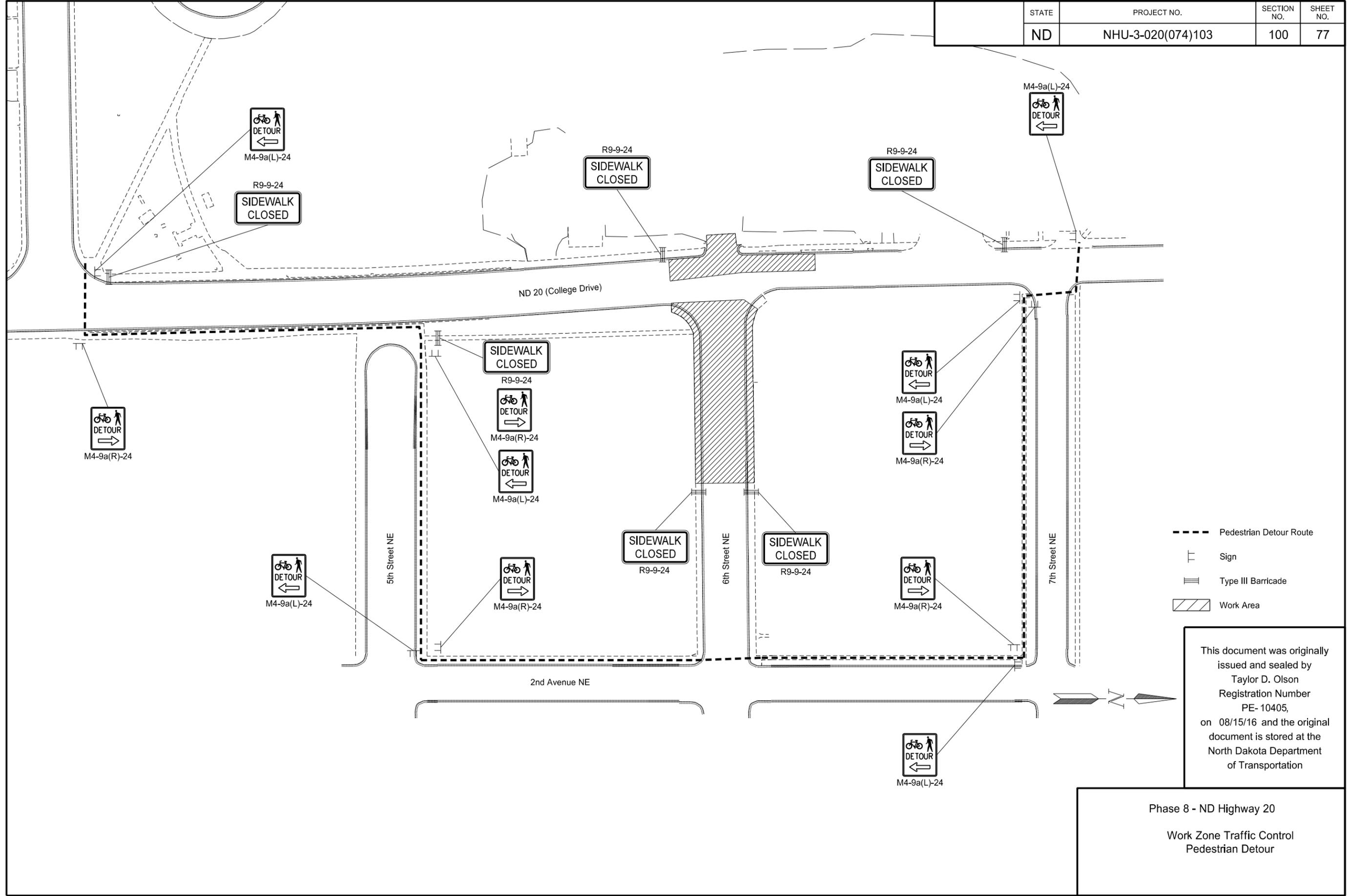


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Phase 8 - 6th Street NE  
 Work Zone Traffic Control  
 Sta. 600+31 to Sta. 604+27

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	77



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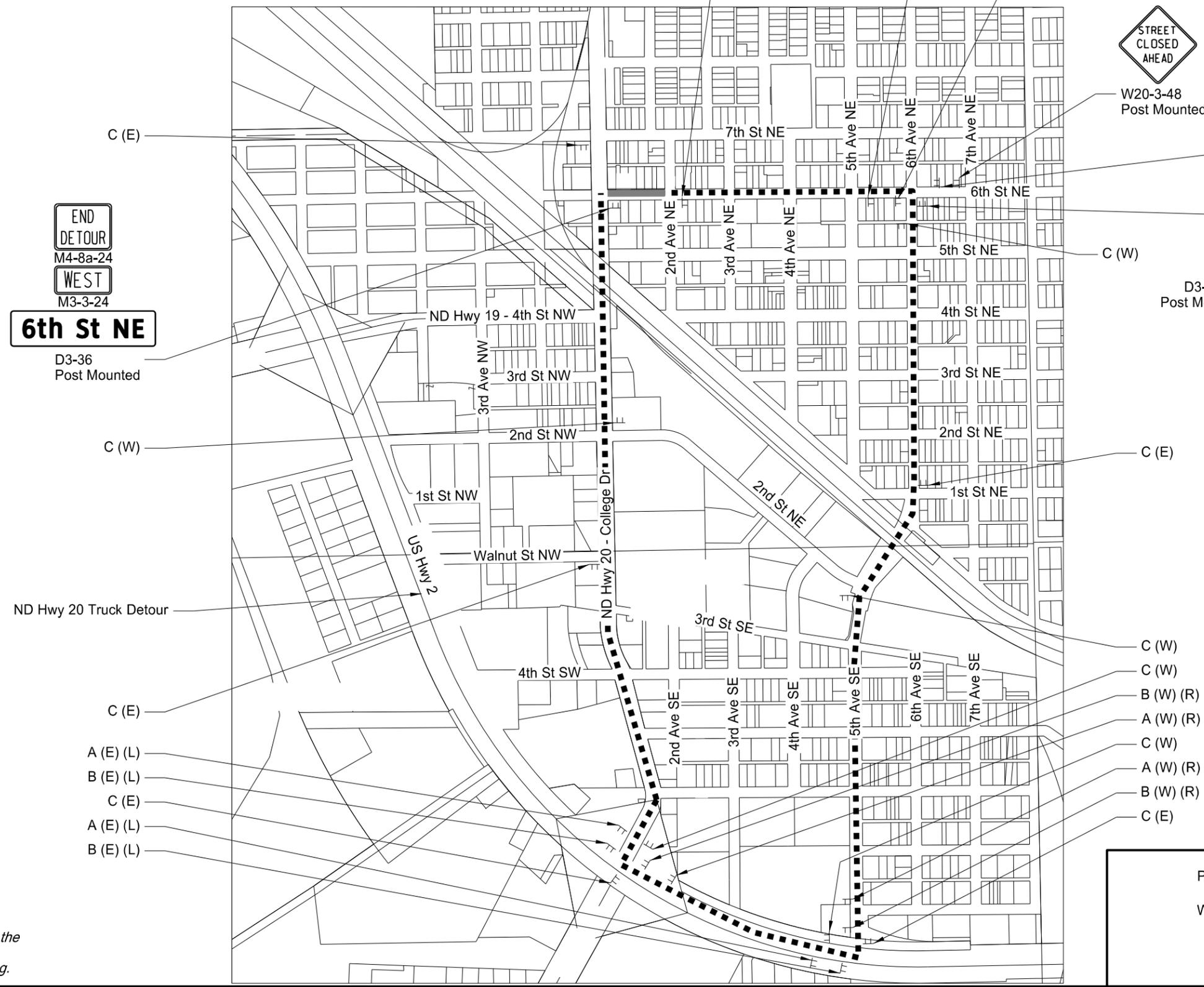
Phase 8 - ND Highway 20  
Work Zone Traffic Control  
Pedestrian Detour

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	78

**DETOUR**  
 M4-8-24  
**EAST**  
 (E)=M3-2-24  
**WEST**  
 A = (W)=M3-4-24  
**6th St NE**  
 D3-36  
  
 (L)=M5-1-21  
  
 (R)=M5-1-21  
 Post Mounted  
  
**DETOUR**  
 M4-8-24  
**EAST**  
 (E)=M3-2-24  
**WEST**  
 B = (W)=M3-4-24  
**6th St NE**  
 D3-36  
  
 (L)=M6-1-21  
  
 (R)=M6-1-21  
 Post Mounted  
  
**DETOUR**  
 M4-8-24  
**EAST**  
 (E)=M3-2-24  
**WEST**  
 C = (W)=M3-4-24  
**6th St NE**  
 D3-36  
 Post Mounted

**END**  
**DETOUR**  
 M4-8a-24  
**WEST**  
 M3-3-24  
**6th St NE**  
 D3-36  
 Post Mounted

 Local Vehicle Detour  
 Phase 8 & 9  
 W20-3-48  
 Post Mounted  
 W20-2-48  
 Post Mounted  
 M4-8a-24  
 M3-3-24  
 D3-36  
 Post Mounted  
**6th St NE**

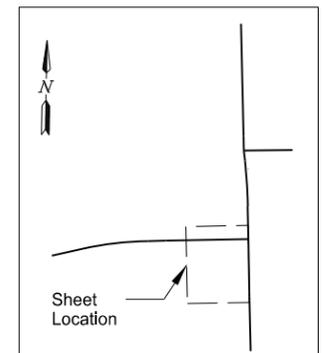
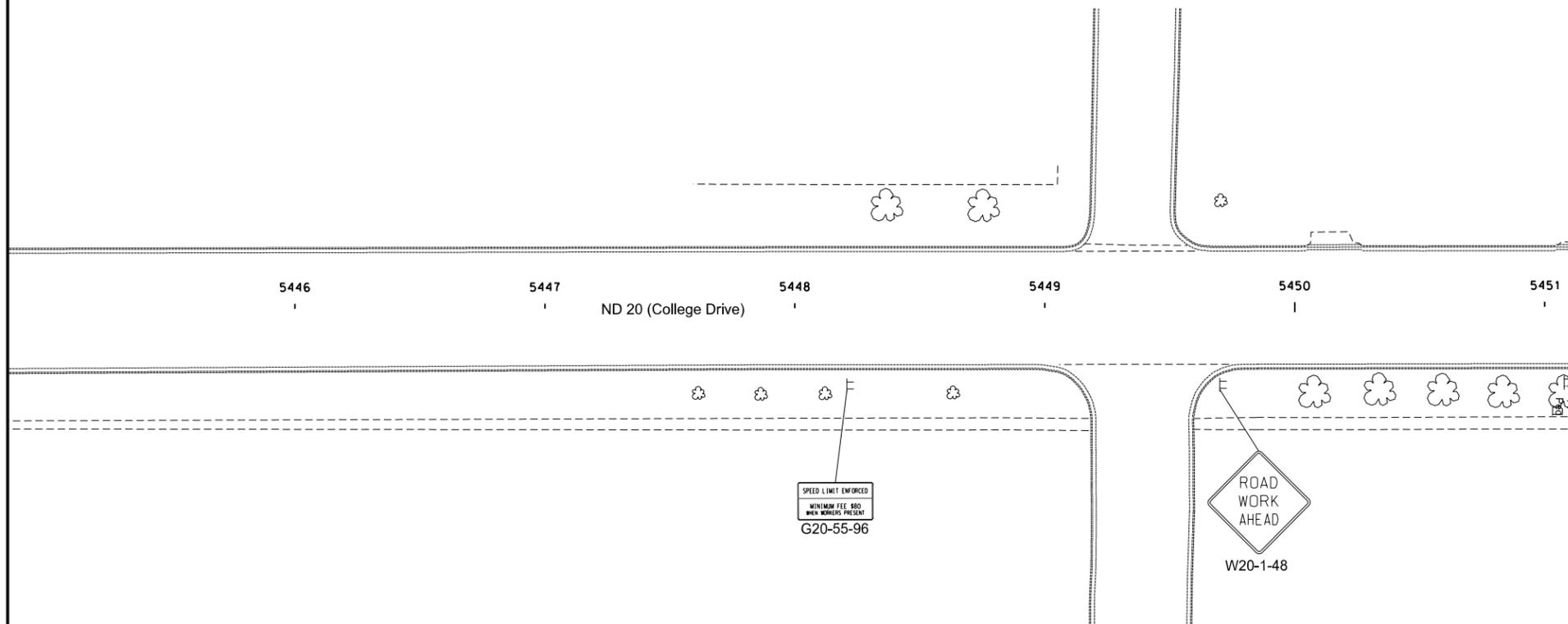


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Phase 9 - ND Highway 20  
 Work Zone Traffic Control Detour Route

This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	79



- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

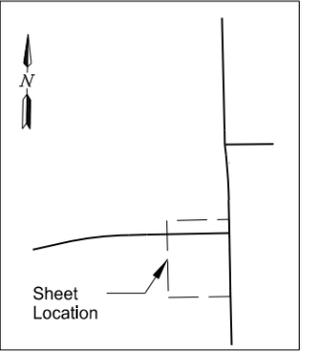
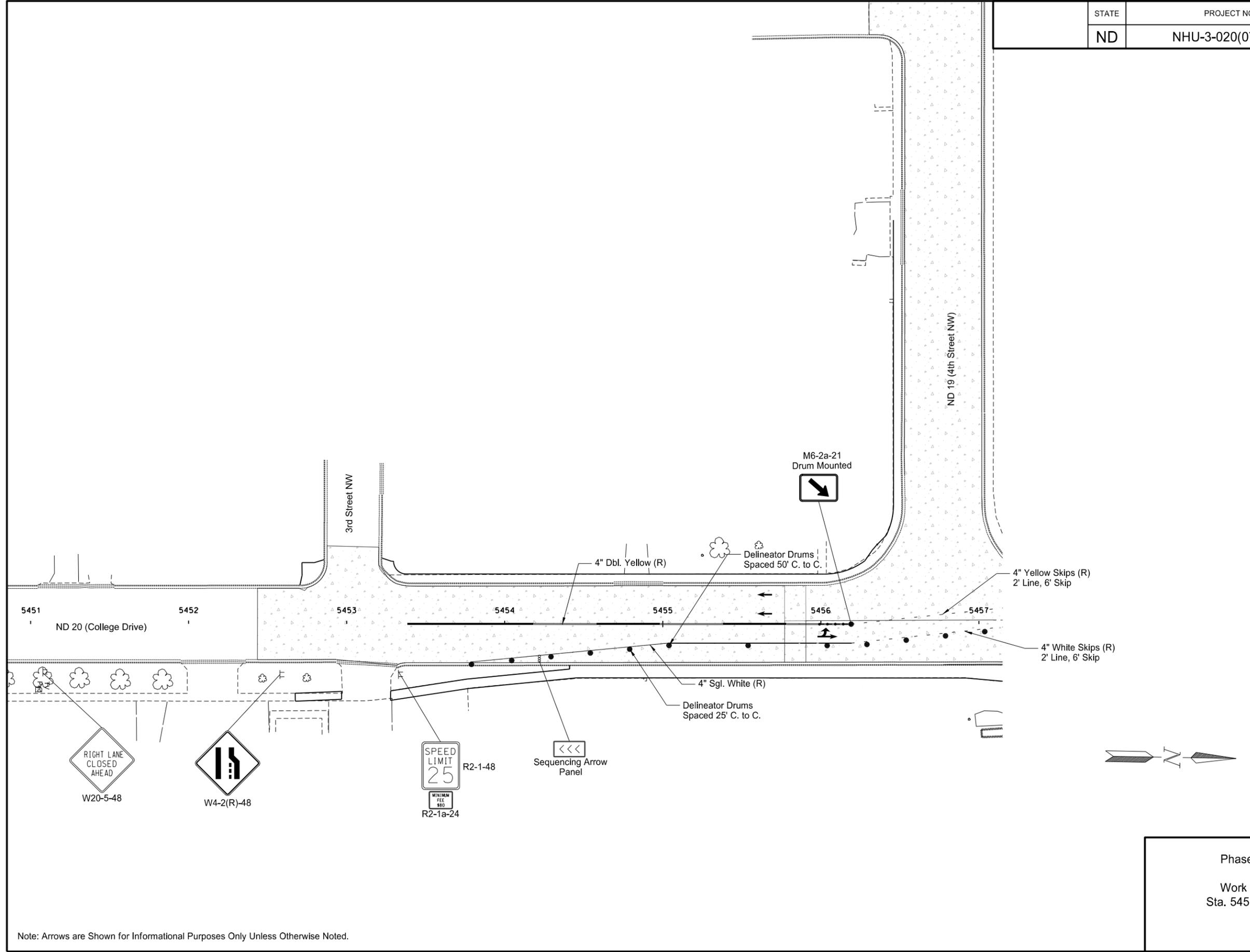


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Phase 9 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5446+00 to Sta. 5451+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	80



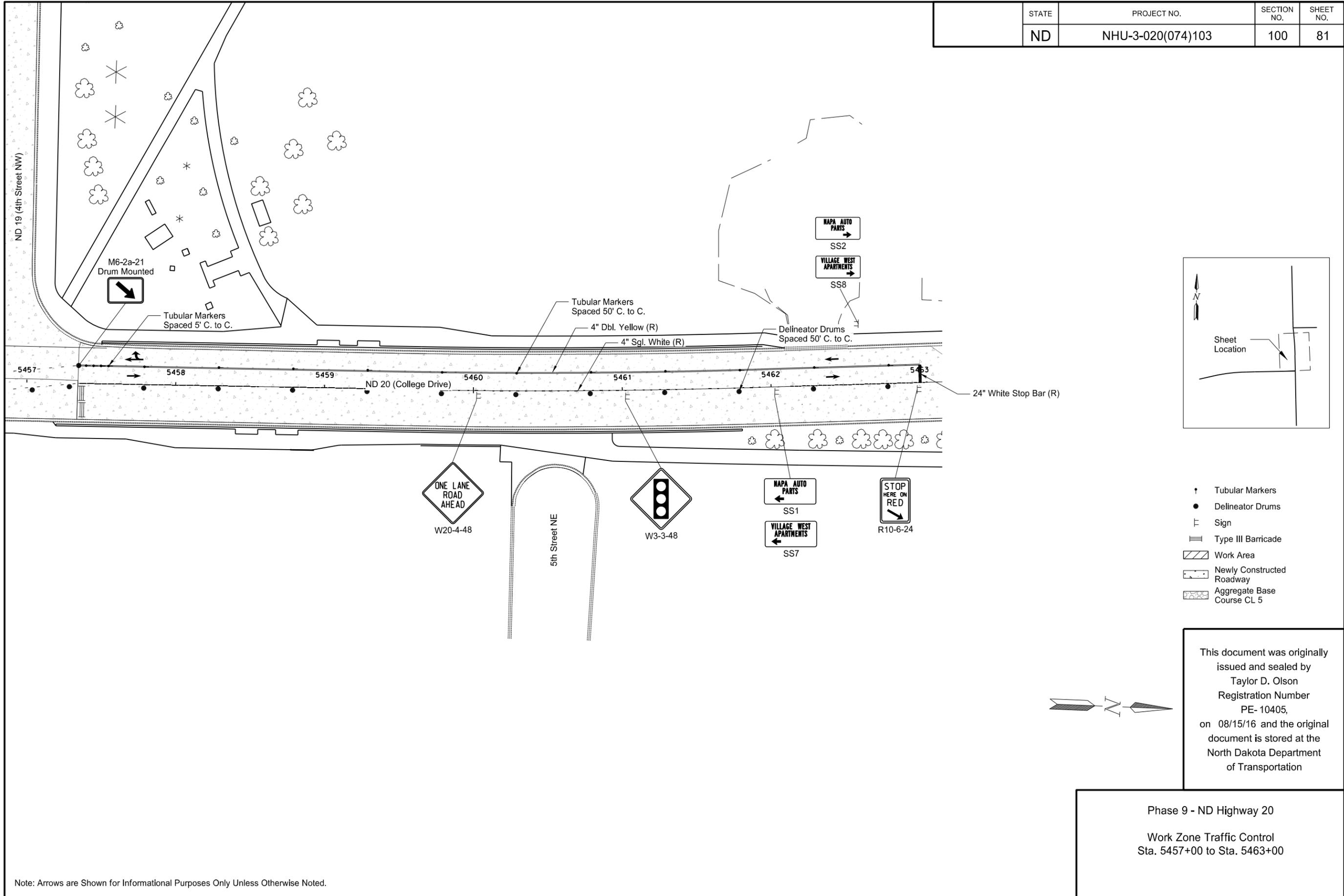
- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

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Phase 9 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5451+00 to Sta. 5457+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	81

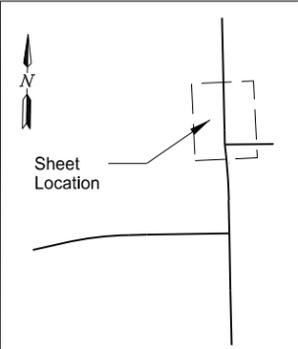
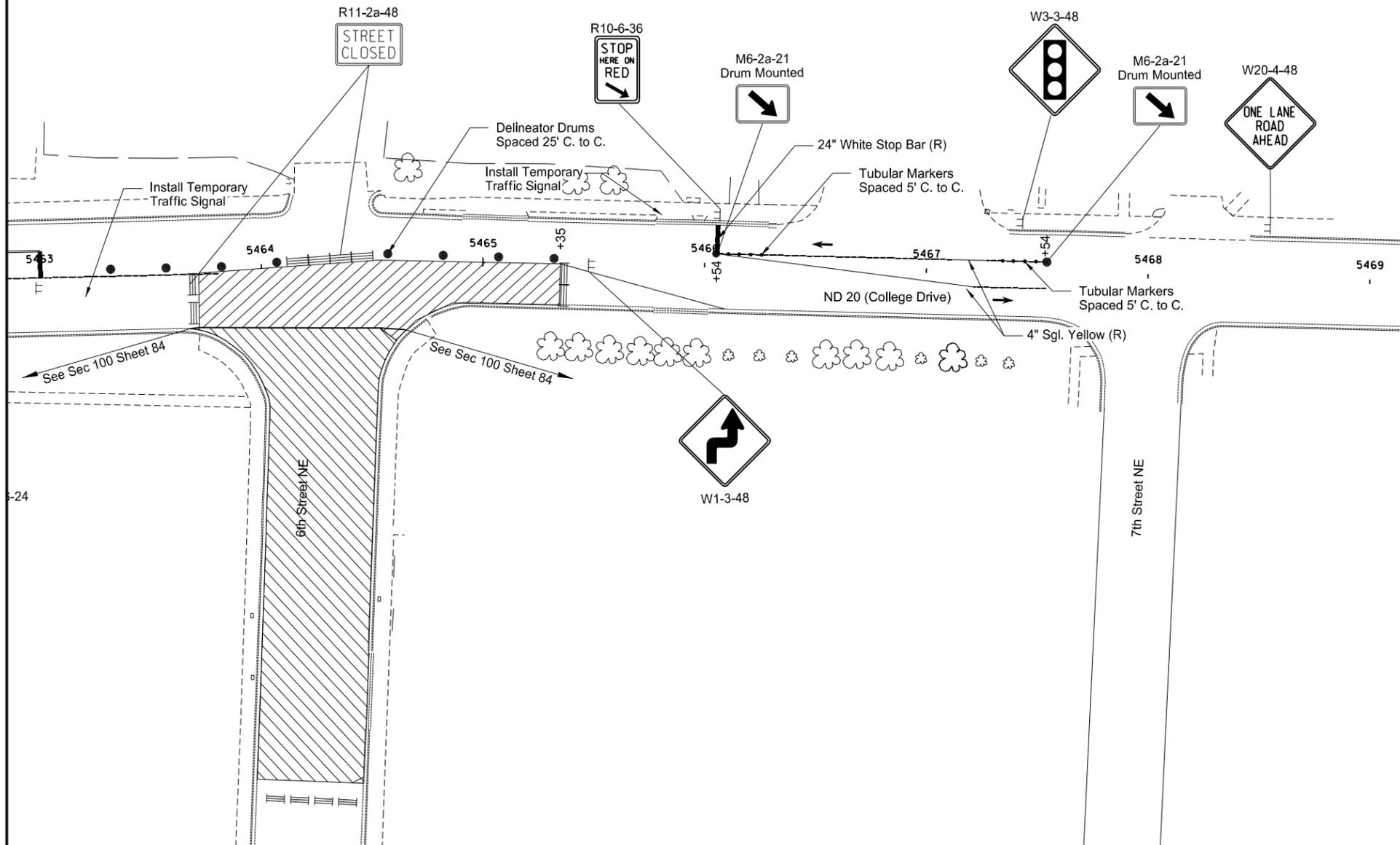


Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

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Phase 9 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5457+00 to Sta. 5463+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	82



- ↑ Tubular Markers
- Delineator Drums
- ⊢ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ⋯ Newly Constructed Roadway
- ▤ Aggregate Base Course CL 5

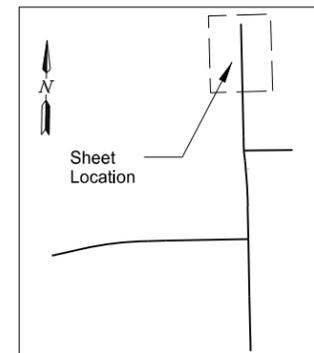
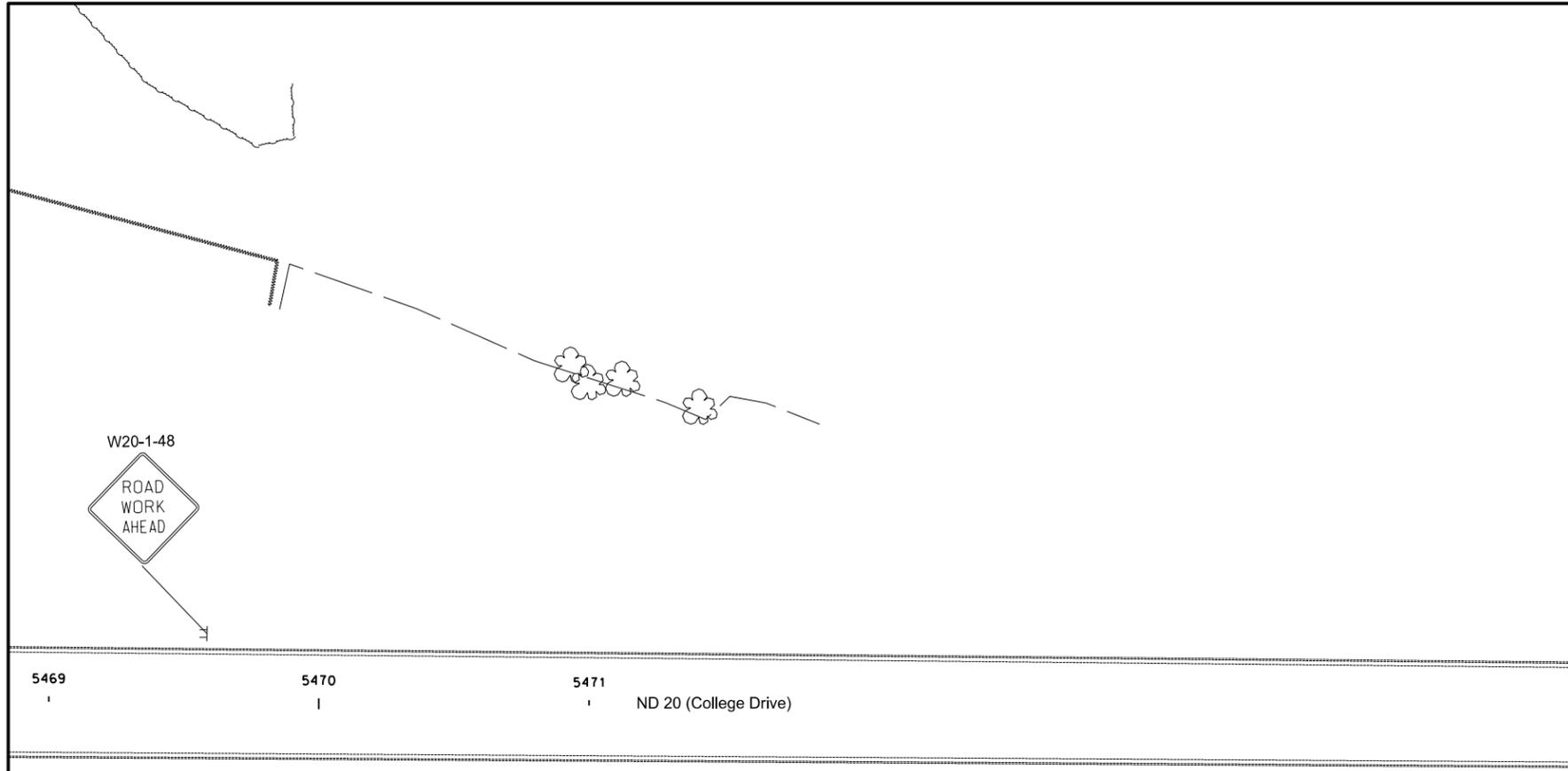
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Phase 9 - ND Highway 20  
 Work Zone Traffic Control  
 Sta. 5463+00 to Sta. 5469+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	83



- Stackable Vertical Panels
- Tubular Markers
- Delineator Drums
- Sign
- Type III Barricade
- Work Area
- Newly Constructed Roadway
- Aggregate Base Course CL 5

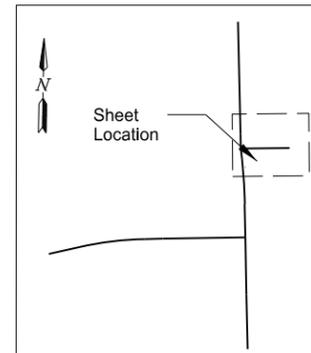
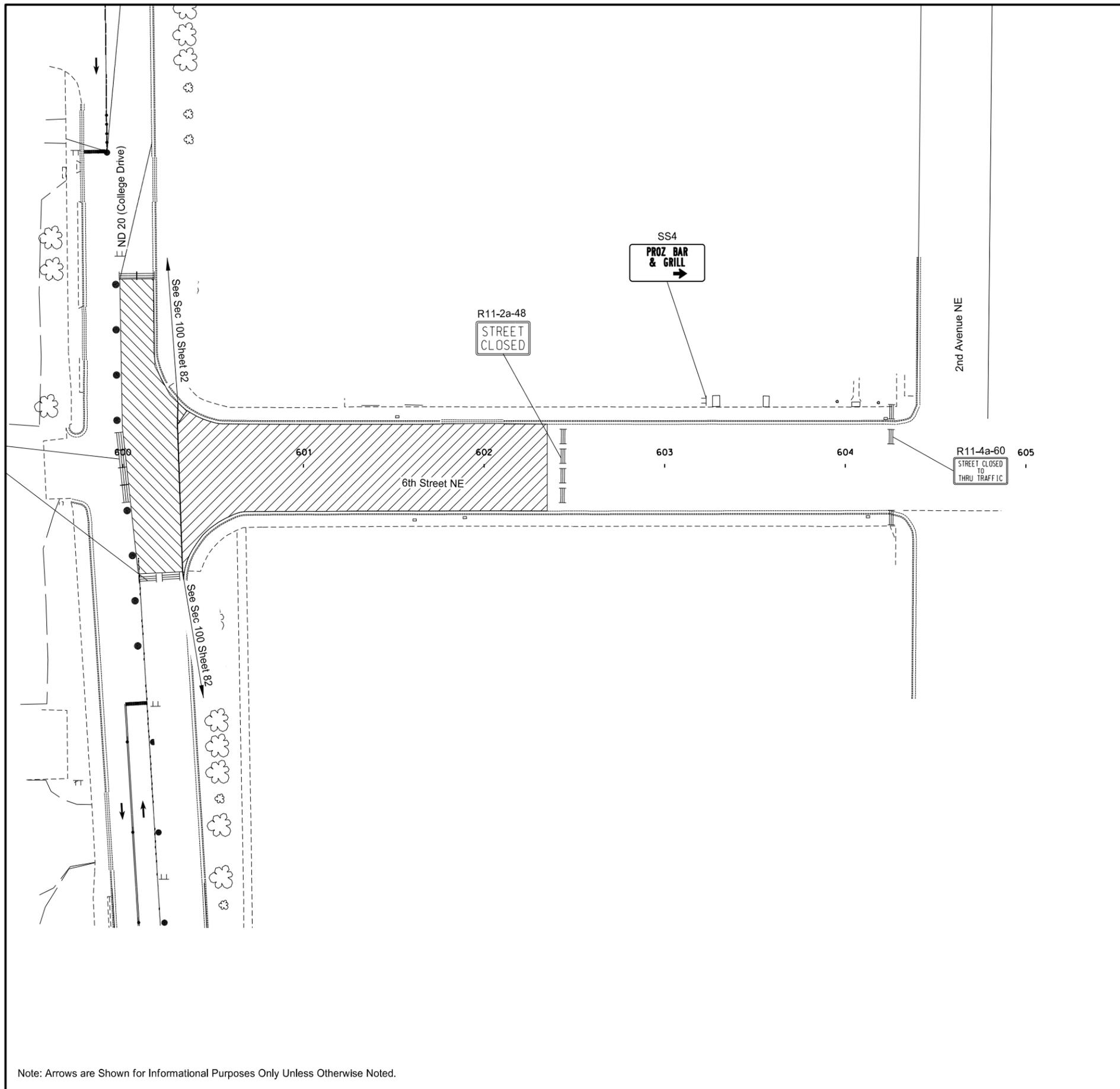


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of Transportation

Phase 9 - ND Highway 20  
Work Zone Traffic Control  
Sta. 5469+00 to Sta. 5471+00

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	84



- ▤ Stackable Vertical Panels
- ↑ Tubular Markers
- Delineator Drums
- ⊞ Sign
- ≡ Type III Barricade
- ▨ Work Area
- ▭ Newly Constructed Roadway
- ▭ Aggregate Base Course CL 5

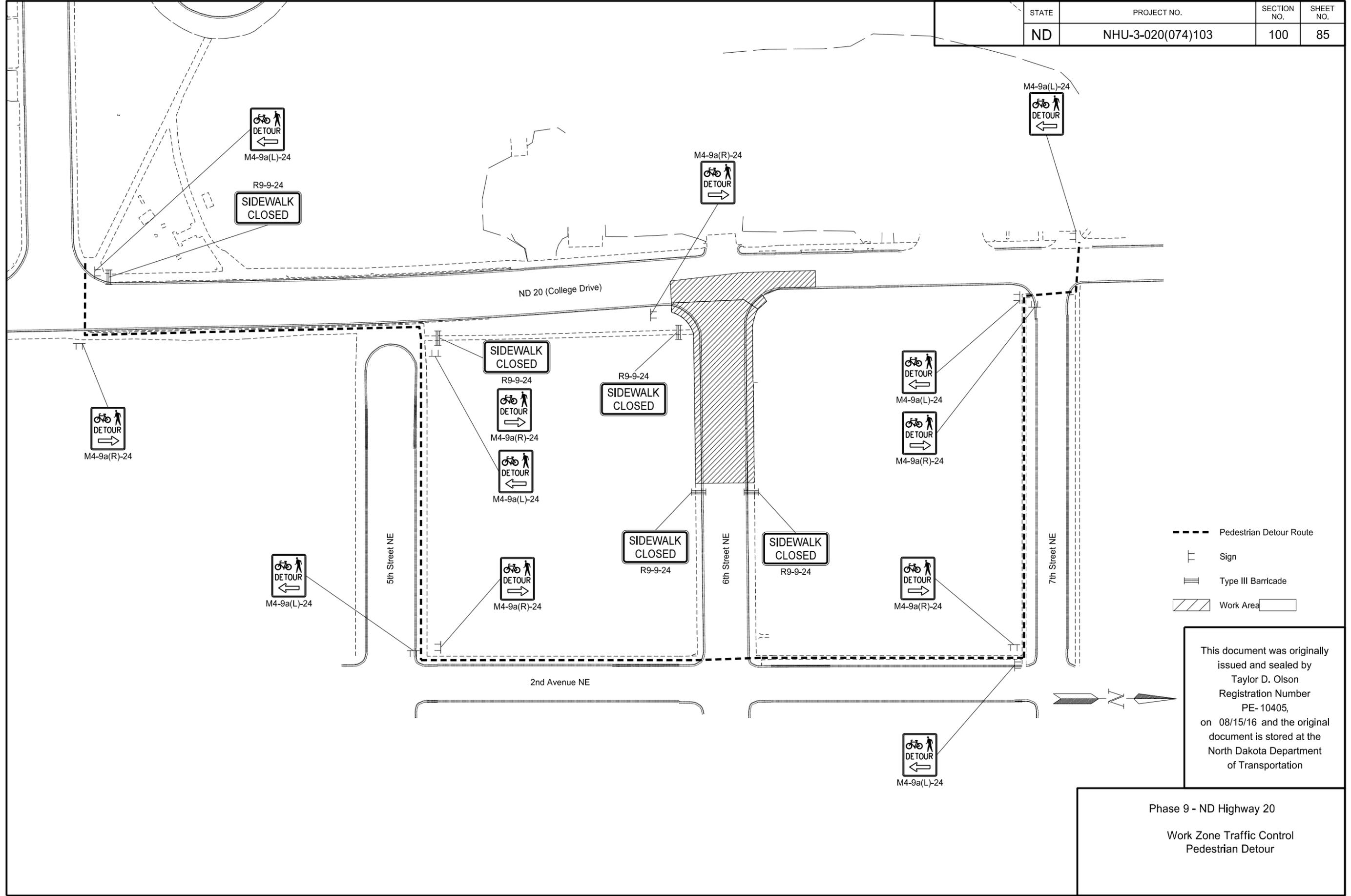


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Phase 9 - 6th Street NE  
 Work Zone Traffic Control  
 Sta. 600+31 to Sta. 604+27

Note: Arrows are Shown for Informational Purposes Only Unless Otherwise Noted.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	100	85



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Phase 9 - ND Highway 20  
Work Zone Traffic Control  
Pedestrian Detour

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-3-982(031)035	100	86

- (A)  ROAD WORK  
NEXT 0.0 MILES  
G20-1-60  
Post Mounted
- (B)  ROAD WORK  
NEXT 0.0 MILES  
G20-50a-72  
Post Mounted
- (C)  END  
ROAD WORK  
G20-2-48  
Post Mounted

 Detour Route

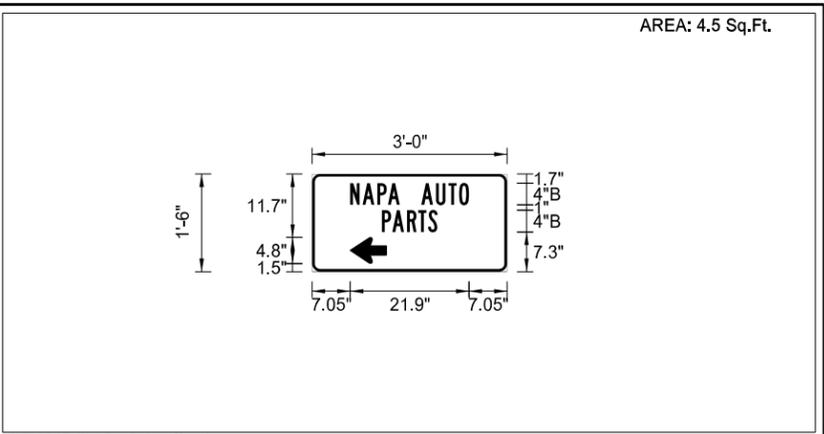


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Sixth Street NE & Sixth Avenue NE  
Work Zone Traffic Control

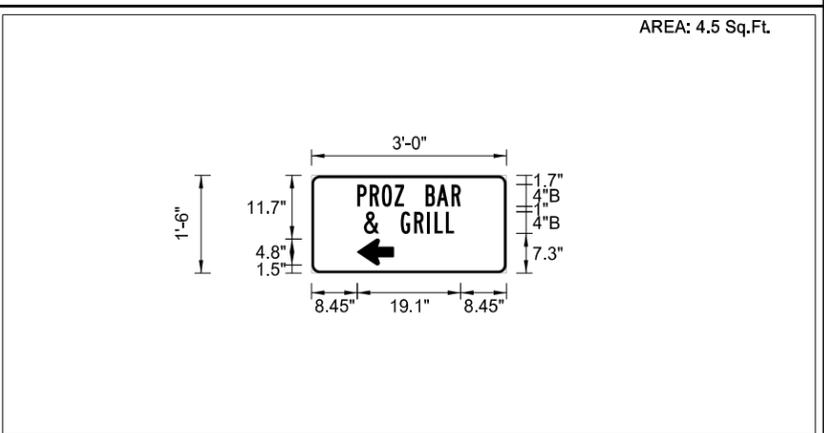
*This layout shown is for general information purposes only. Conform to the MUTCD and the Standard Drawings when installing the traffic control signing.*

SIGN NUMBER	SS1
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 7 Y 1.5 WID 4.8 HT 6.7 ANGLE 90



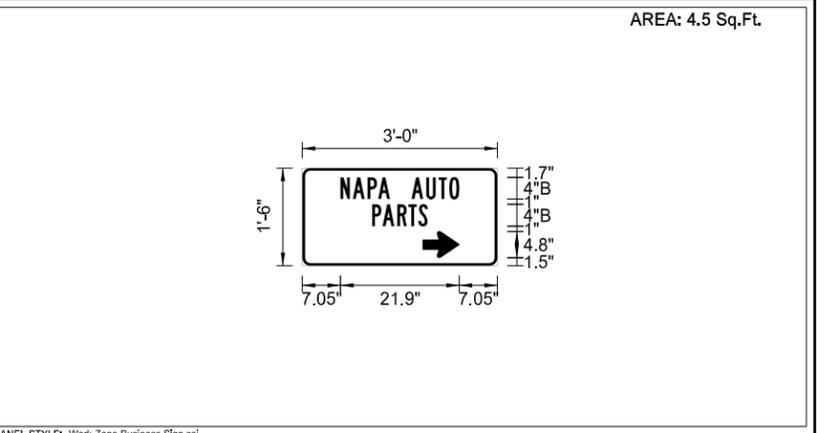
LETTER POSITION (X)										LENGTH	SIZE	SERIES
N	A	P	A		A	U	T	O		21.9	4	B 2000
7	9.3	12	14	16.2	20.2	22.9	25.2	27.1				
P	A	R	T	S						10.3	4	B 2000
12.9	14.8	17.5	19.6	21.4								

SIGN NUMBER	SS3
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 8.5 Y 1.5 WID 4.8 HT 6.7 ANGLE 90



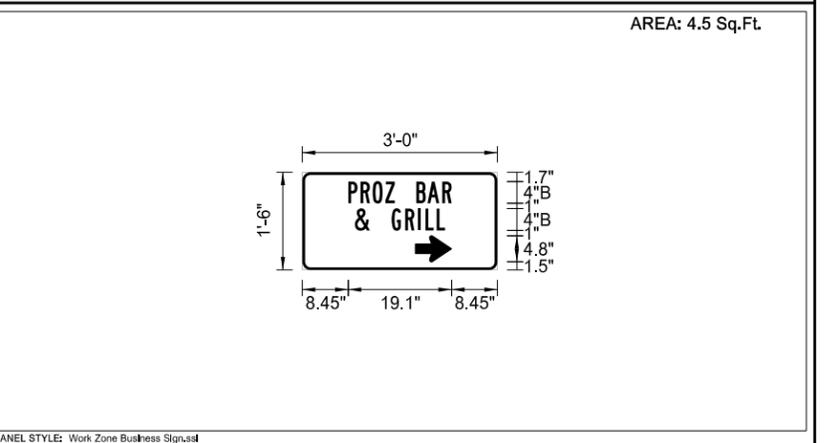
LETTER POSITION (X)										LENGTH	SIZE	SERIES
P	R	O	Z		B	A	R			19.1	4	B 2000
8.5	10.7	13	15.3	17.1	21.1	23.1	25.8					
&		G	R	I	L	L				16.6	4	B 2000
9.7	12.5	16.5	19	21.3	22.7	24.8						

SIGN NUMBER	SS2
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 22.3 Y 1.5 WID 4.8 HT 6.7 ANGLE 270



LETTER POSITION (X)										LENGTH	SIZE	SERIES
N	A	P	A		A	U	T	O		21.9	4	B 2000
7	9.3	12	14	16.2	20.2	22.9	25.2	27.1				
P	A	R	T	S						10.3	4	B 2000
12.9	14.8	17.5	19.6	21.4								

SIGN NUMBER	SS4
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 20.9 Y 1.5 WID 4.8 HT 6.7 ANGLE 270

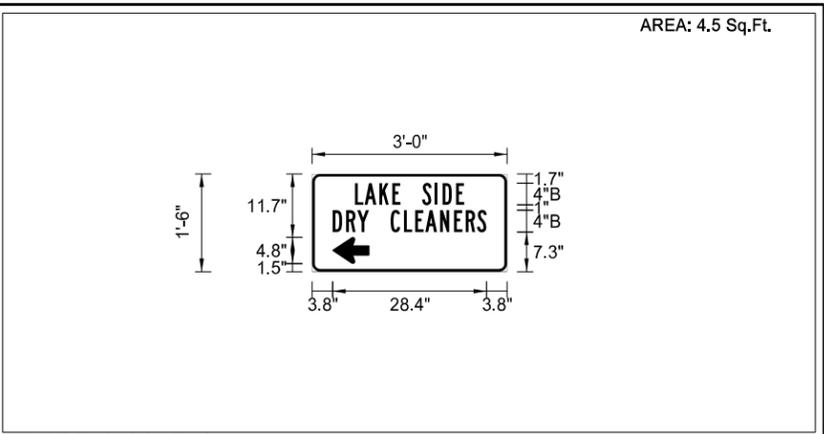


LETTER POSITION (X)										LENGTH	SIZE	SERIES
P	R	O	Z		B	A	R			19.1	4	B 2000
8.5	10.7	13	15.3	17.1	21.1	23.1	25.8					
&		G	R	I	L	L				16.6	4	B 2000
9.7	12.5	16.5	19	21.3	22.7	24.8						

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ND Highway 20  
Work Zone Traffic Control  
Special Signs

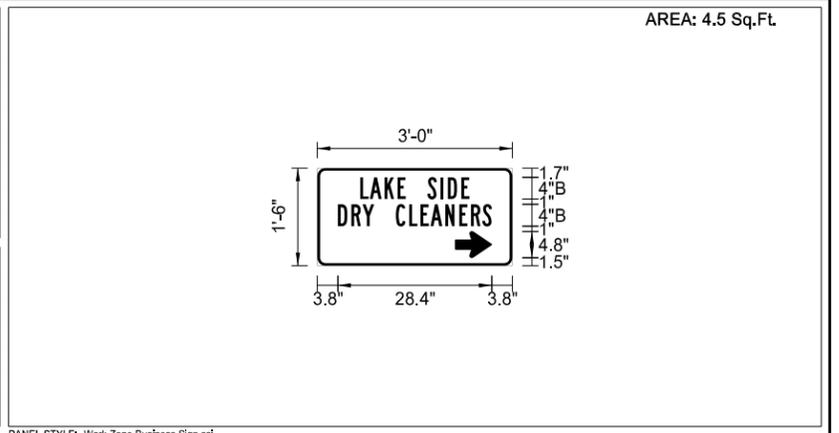
SIGN NUMBER	SS5
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 3.8 Y 1.5 WID 4.8 HT 6.7 ANGLE 90



PANEL STYLE: Work Zone Business Sign.asd

LETTER POSITION (X)											LENGTH	SIZE	SERIES	
L	A	K	E	S	I	D	E				20.2	4	B 2000	
7.9	9.7	12.4	14.8	16.3	20.3	22.7	24.1	26.6						
D	R	Y	C	L	E	A	N	E	R	S	28.4	4	B 2000	
3.8	6.3	8.3	10.5	14.5	17	19	20.9	23.6	26.2	28.4	30.5			

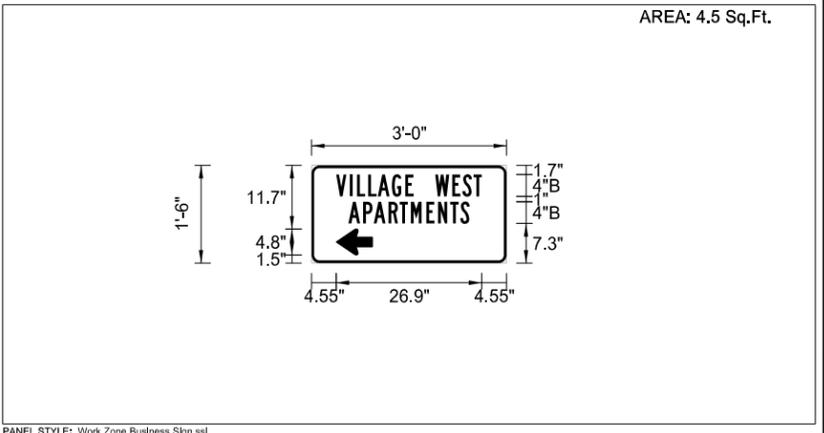
SIGN NUMBER	SS6
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 25.5 Y 1.5 WID 4.8 HT 6.7 ANGLE 270



PANEL STYLE: Work Zone Business Sign.asd

LETTER POSITION (X)											LENGTH	SIZE	SERIES	
L	A	K	E	S	I	D	E				20.2	4	B 2000	
7.9	9.7	12.4	14.8	16.3	20.3	22.7	24.1	26.6						
D	R	Y	C	L	E	A	N	E	R	S	28.4	4	B 2000	
3.8	6.3	8.3	10.5	14.5	17	19.1	20.9	23.6	26.2	28.4	30.5			

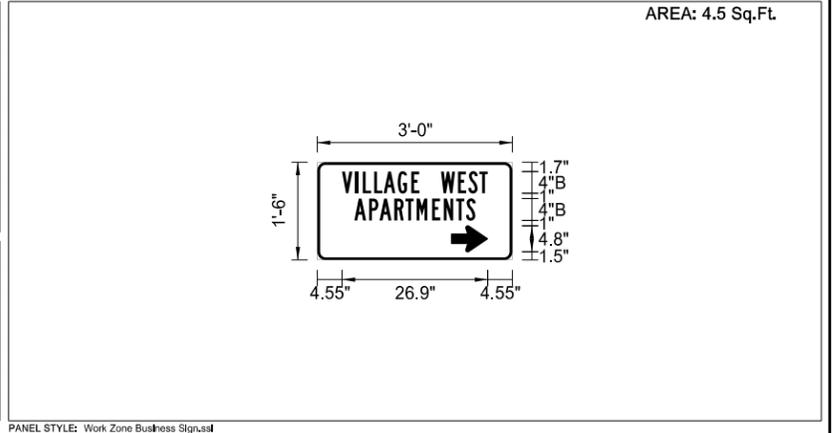
SIGN NUMBER	SS7
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 4.6 Y 1.5 WID 4.8 HT 6.7 ANGLE 90



PANEL STYLE: Work Zone Business Sign.asd

LETTER POSITION (X)											LENGTH	SIZE	SERIES	
V	I	L	L	A	G	E	W	E	S	T	26.9	4	B 2000	
4.6	7	8.4	10.5	12.2	14.8	17.3	18.8	22.8	26	27.9	29.9			
A	P	A	R	T	M	E	N	T	S		22.4	4	B 2000	
6.8	9.5	11.5	14.2	16.3	18.3	21.2	23.3	25.6	27.5					

SIGN NUMBER	SS8
WIDTH x HEIGHT	3'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White
SYMBOL	
Work Zone Business	X 24.8 Y 1.5 WID 4.8 HT 6.7 ANGLE 270



PANEL STYLE: Work Zone Business Sign.asd

LETTER POSITION (X)											LENGTH	SIZE	SERIES	
V	I	L	L	A	G	E	W	E	S	T	26.9	4	B 2000	
4.6	7	8.4	10.5	12.2	14.8	17.3	18.8	22.8	26	27.9	29.9			
A	P	A	R	T	M	E	N	T	S		22.4	4	B 2000	
6.8	9.5	11.5	14.2	16.3	18.3	21.2	23.3	25.6	27.5					

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ND Highway 20  
Work Zone Traffic Control  
Special Signs

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	NHU-3-019(044)155	110	1
NHU-3-020(074)103			

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF		LF	1st LF	2nd LF	3rd LF	4th LF								
<b>ND Hwy 19</b>																						
8190+68 Lt	R7-1																		1		Mount on Light Standard	
8191+94 Lt	DL EL																		2		Mount on Light Standard	
8193+57 Lt	RV PW																		1	2		
8193+64 Lt	R7-1R	7																	1	1		
8195+87 Lt	R7-1	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
8197+00 Rt	R7-1R			1.5																	Mount on Light Standard	
8197+07 Rt	SA-1E		17.0		9.2												1	4	3 x 3 7 ga			
8197+51 Rt	R1-1	1		5.2	9.7												1	4	2.25 x 2.25 12 ga			
8197+69 Rt	R7-1L	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
8198+08 Lt	R7-1	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
8198+30 Rt	M1-5		6.2																		Mount on Light Standard	
8198+95 Rt	R7-1	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
8199+33 Lt	M1-5	371	6.0		10.2												1	4	2.5 x 2.5 12 ga			
8199+64 Rt	D9-2		6.2																		Mount on Light Standard	
8199+99 Rt	M1-5	401	12.2		10.0												1	4	3 x 3 7 ga		1	
8200+33 Lt	R7-1L	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
8200+35 Rt	R7-1R	7		1.5	8.7												1	4	2.25 x 2.25 12 ga			
<b>Sub Total</b>			47.6	15.7		<b>Total</b>	91.0										<b>Total</b>	40		5	3	1

Basis of Estimate  
Sign Support Lengths

The sign support lengths have been calculated using the following vertical clearances:

- Areas where parking and/or pedestrian movement will occur - 84"
- Urban/rural expressway and freeway - 84" (Offset - 60")
- Bike route - 60"

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Sign Summary  
Perforated Tube  
  
ND Highway 19 &  
ND Highway 20  
  
Devils Lake, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	NHU-3-019(044)155	110	2
NHU-3-020(074)103			

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Support Size	Max Post Len LF	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF			1st LF	2nd LF	3rd LF	4th LF								
<b>ND Hwy 20</b>																						
5449+83 Rt	SA B			8.3	11.8				2.5 x 2.5 12 ga	13.0					1	4	3 x 3 7 ga					
5451+54 Rt	R7-1			1.5																	Mount on Light Standard	
5452+66 Lt	R7-1L	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5452+82 Lt	R1-1	1		5.2	9.7				2 x 2 12 ga	10.5					1	4	2.25 x 2.25 12 ga					
5453+32 Lt	SA-1E		17.0		9.2				2.5 x 2.5 12 ga	10.1					1	4	3 x 3 7 ga					
5453+67 Lt	R7-1R	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5453+87 Rt	M1-5		6.2																		Mount on Light Standard	
5454+21 Rt	R7-1	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5454+59 Lt	R7-1	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5455+09 Lt	M1-5		6.0																		Mount on Light Standard	
5455+51 Lt	SA B			8.3	11.8				2.5 x 2.5 12 ga	13.0					1	4	3 x 3 7 ga					
5455+77 Lt	R7-1L	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5455+81 Rt	M1-5	379	8.2		11.5				2.5 x 2.5 12 ga	12.9					1	4	3 x 3 7 ga					
5456+33 Lt	SS6		15.0																		Mount on Mast Arm	
5456+44 Rt	SS5		18.0																		Mount on Mast Arm	
5456+77 Rt	SS8		18.0		9.2				2.5 x 2.5 10 ga	10.7	2.6			2.19 x 2.19 10 ga	1	4	3 x 3 7 ga				1	
5457+13 Rt	SS6		15.0																		Mount on Mast Arm	
5457+61 Rt	M1-5	371	6.0		10.2				2.25 x 2.25 12 ga	12.9					1	4	2.5 x 2.5 12 ga					
5458+21 Lt	M1-5		8.2																		Mount on Light Standard	
5458+45 Rt	R3-5R			7.5																	Mount on Bridge	
5461+65 Rt	R3-7R	15		6.3	9.7				2.25 x 2.25 12 ga	11.6					1	4	2.5 x 2.5 12 ga					
5462+00 Rt	SS9		18.0		9.2				2.5 x 2.5 10 ga	10.7	2.6			2.19 x 2.19 10 ga	1	4	3 x 3 7 ga				1	
5462+06 Lt	R2-1	9		5.0	9.7				2 x 2 12 ga	11.5					1	4	2.25 x 2.25 12 ga					
5462+62 Lt	SA C		12.2		9.9				2.25 x 2.25 12 ga	10.3	3.3			2 x 2 12 ga	1	4	3 x 3 7 ga				1	
5462+79 Rt	R7-1			1.5																	Mount on Light Standard	
5463+09 Rt	SA A		5.2		10.0				2 x 2 12 ga	11.3					1	4	2.25 x 2.25 12 ga					
5463+62 Lt	R7-1	7		1.5	8.7				2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
5463+91 Lt	SS7		15.0																		Mount on Mast Arm	
5464+52 Lt	SS5		18.0																		Mount on Mast Arm	
5464+72 Rt	SS7		15.0																		Mount on Mast Arm	
5465+60 Rt	M1-5	371	6.0		10.2				2.25 x 2.25 12 ga	12.9					1	4	2.5 x 2.5 12 ga					
<b>Sub Total</b>			207.0	52.6		<b>Total</b>	183.8								<b>Total</b>	76			0	0	3	

Basis of Estimate  
Sign Support Lengths

The sign support lengths have been calculated using the following vertical clearances:

- Areas where parking and/or pedestrian movement will occur - 84"
- Urban/rural expressway and freeway - 84" (Offset - 60")
- Bike route - 60"

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Sign Summary  
Perforated Tube  
ND Highway 19 & ND Highway 20  
Devils Lake, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	NHU-3-019(044)155	110	3
NHU-3-020(074)103			

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF		LF	1st LF	2nd LF	3rd LF	4th LF								
<b>6th Street NE</b>																						
600+52 Rt	SS5		18.0																		Mount on Mast Arm	
<b>Sub Total</b>			18.0	0.0	<b>Total</b> 0.0						<b>Total</b> 0							0	0	0		
<b>Grand Total</b>			272.6	68.3	<b>Total</b> 274.8						<b>Total</b> 116							5	3	4		

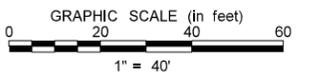
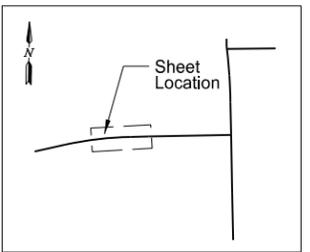
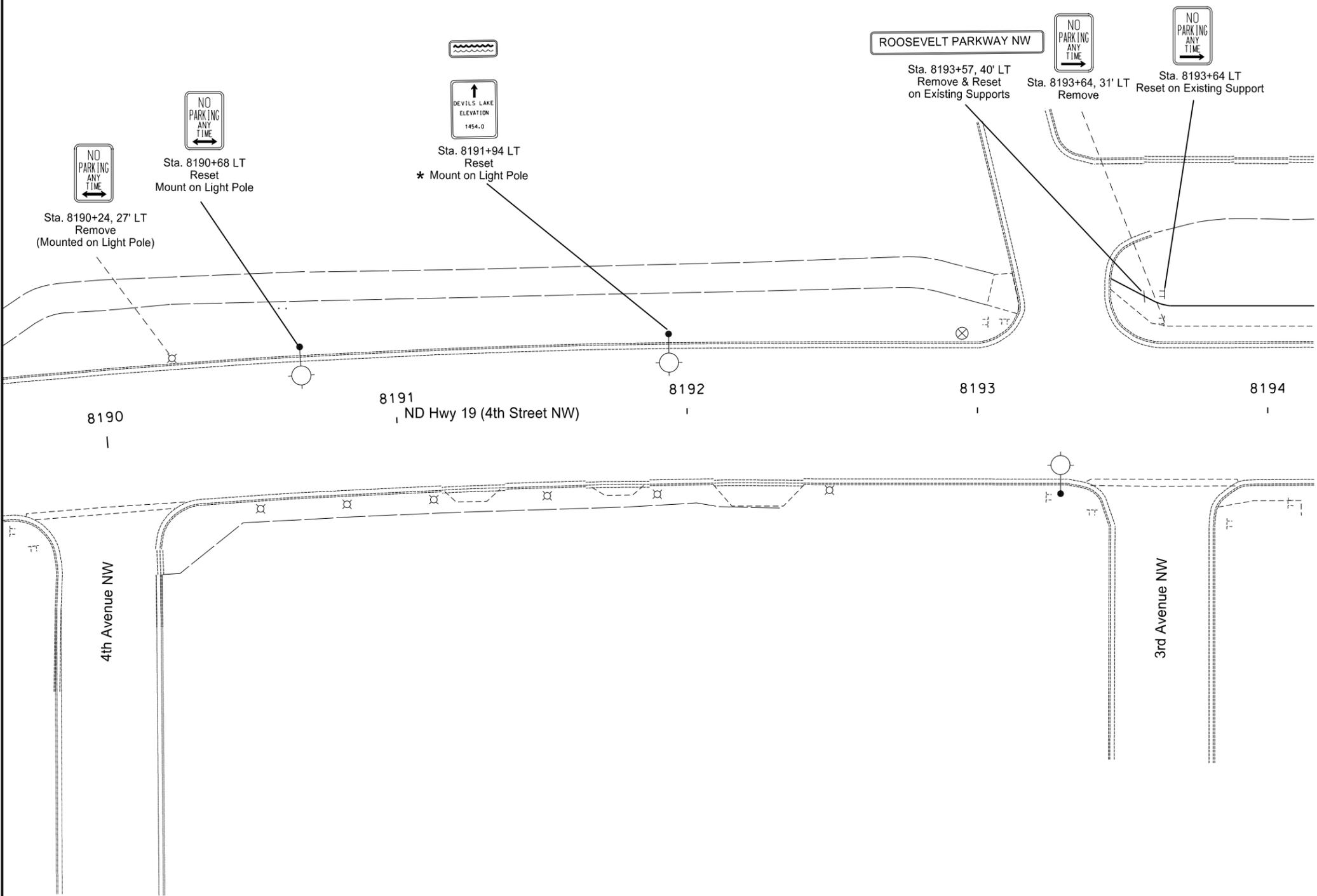
Basis of Estimate  
Sign Support Lengths

The sign support lengths have been calculated using the following vertical clearances:

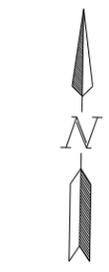
- Areas where parking and/or pedestrian movement will occur - 84"
- Urban/rural expressway and freeway - 84" (Offset - 60")
- Bike route - 60"

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	110	4



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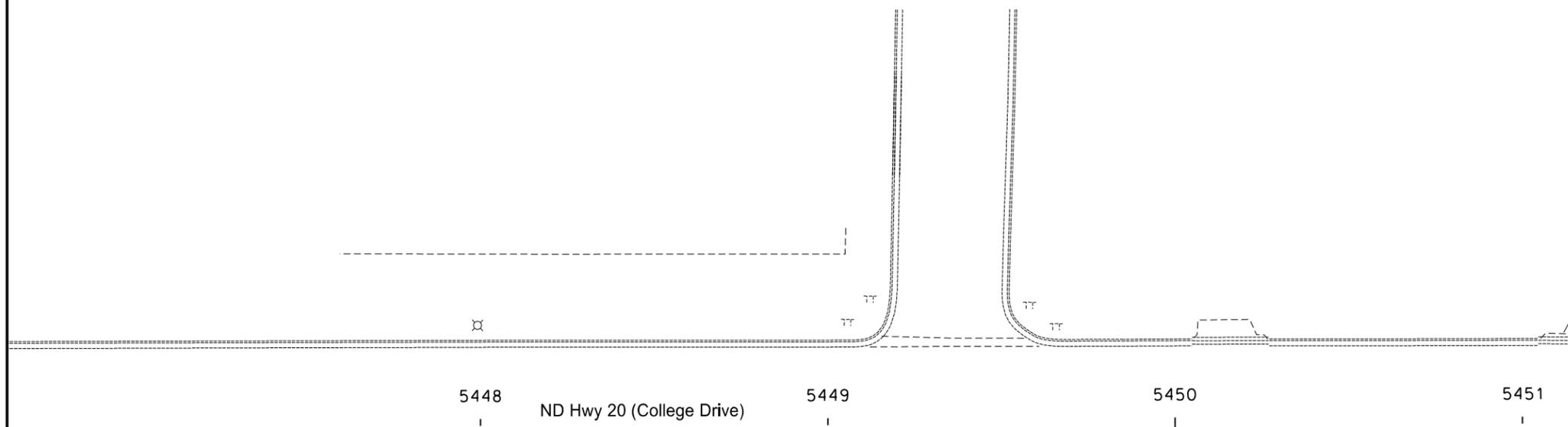
ND Highway 19  
 Signing Layout  
 Sta. 8190+24 to Sta. 8194+00

\* Field Engineer to Provide 1454.00 Elevation for Sign Elevation.





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	7



5448 ND Hwy 20 (College Drive) 5449 5450 5451

2nd Street NE

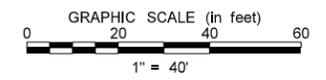
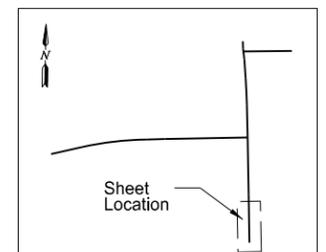


**AHEAD**

W11-2-30  
W16-9P-24  
Sta. 5449+83 RT  
Special Assembly B  
(Fluorescent Yellow Green)



Sta. 5449+73, 26' RT  
Remove  
(Mounted on Light Pole)



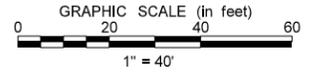
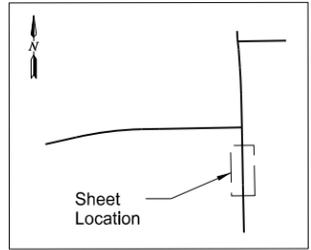
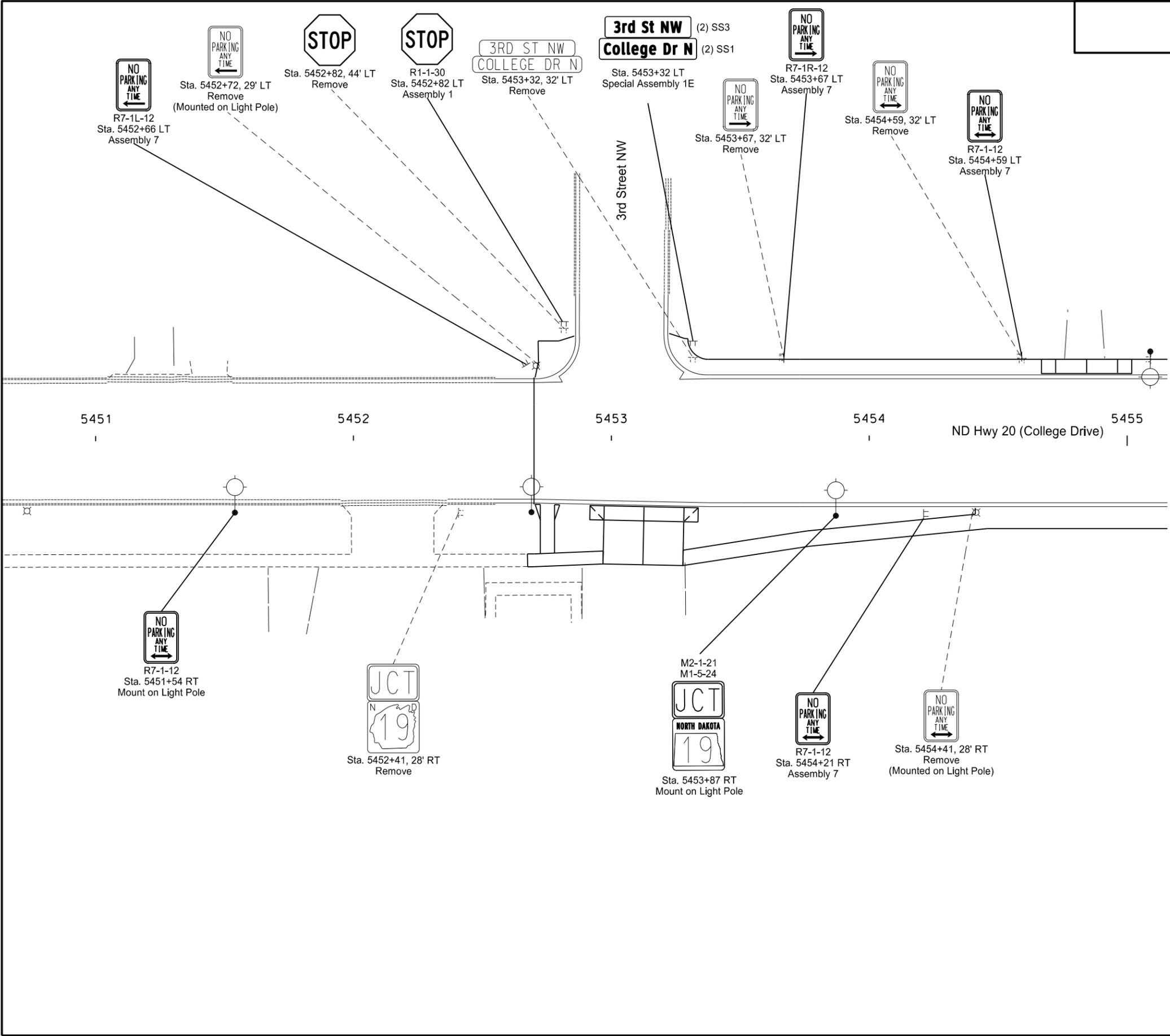
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ND Highway 20  
Signing Layout  
Sta 5449+83 to Sta. 5451+00

Note: Arrows are Shown for Informational Purposes Only.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	8

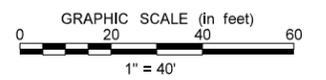
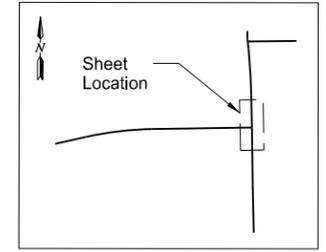
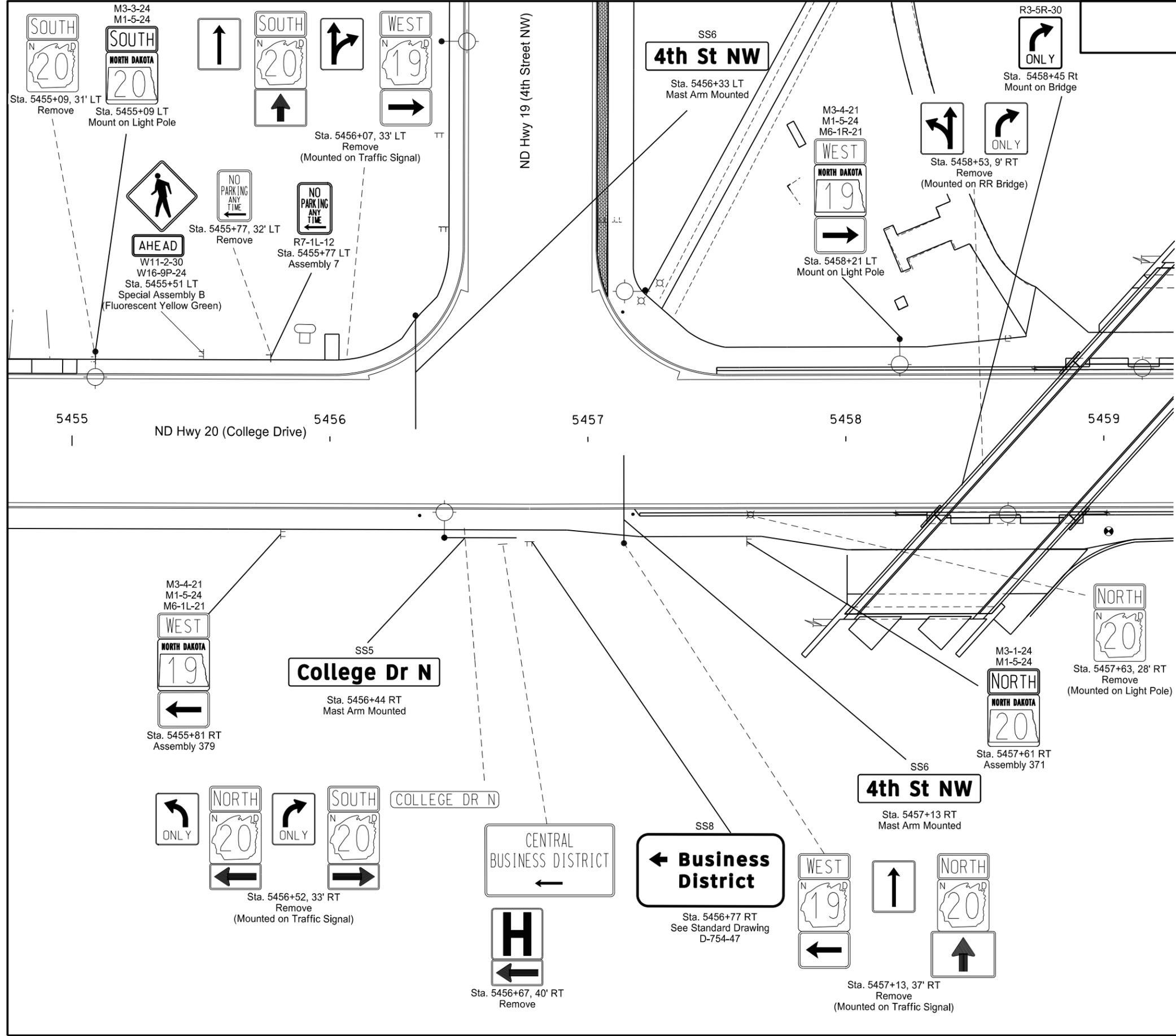


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ND Highway 20  
 Signing Layout  
 Sta 5451+00 to Sta. 5455+00

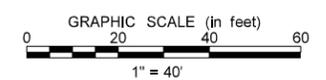
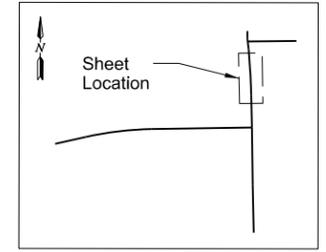
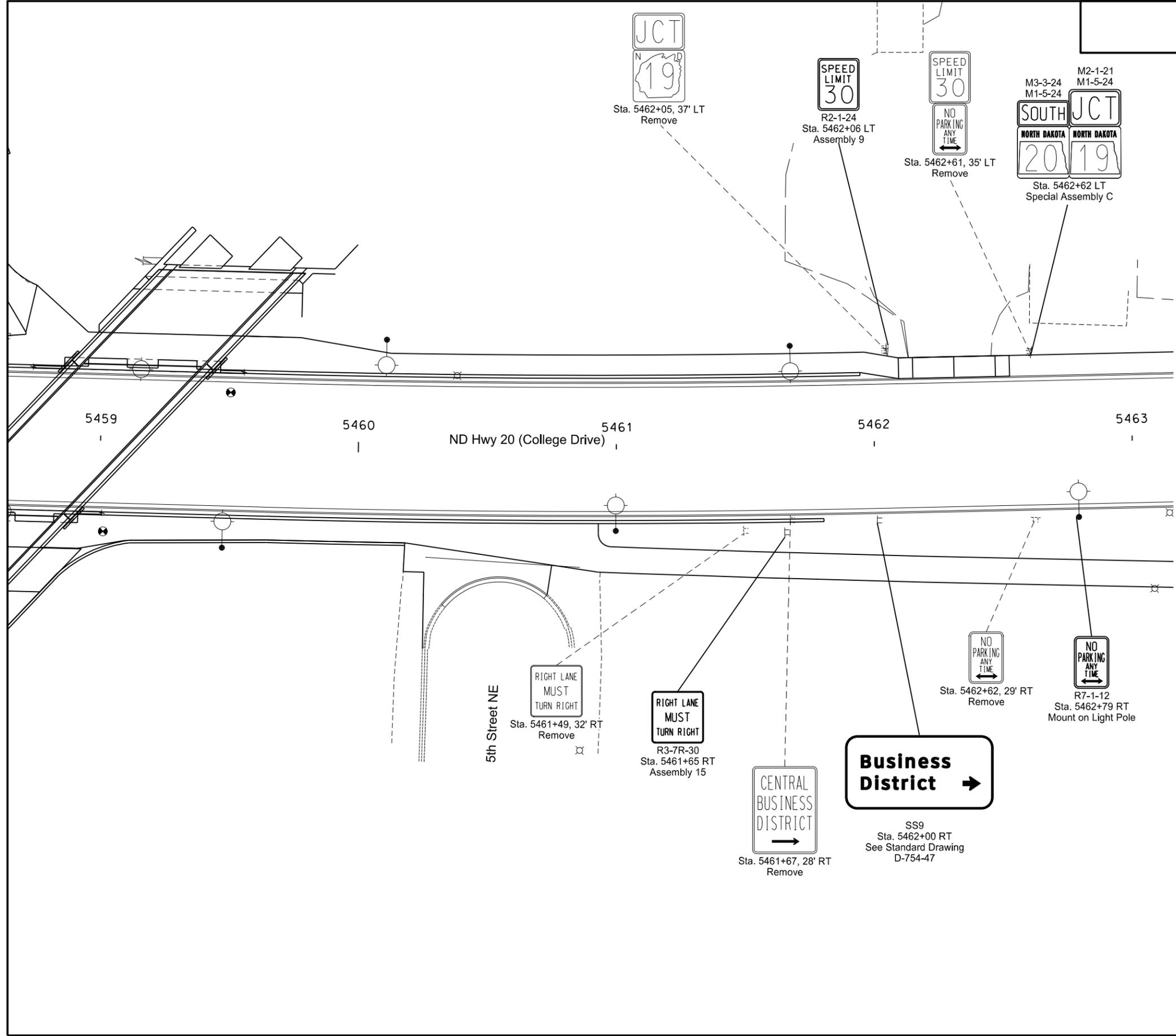
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	9



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ND Highway 20  
 Signing Layout  
 Sta 5455+00 to Sta. 5459+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	10

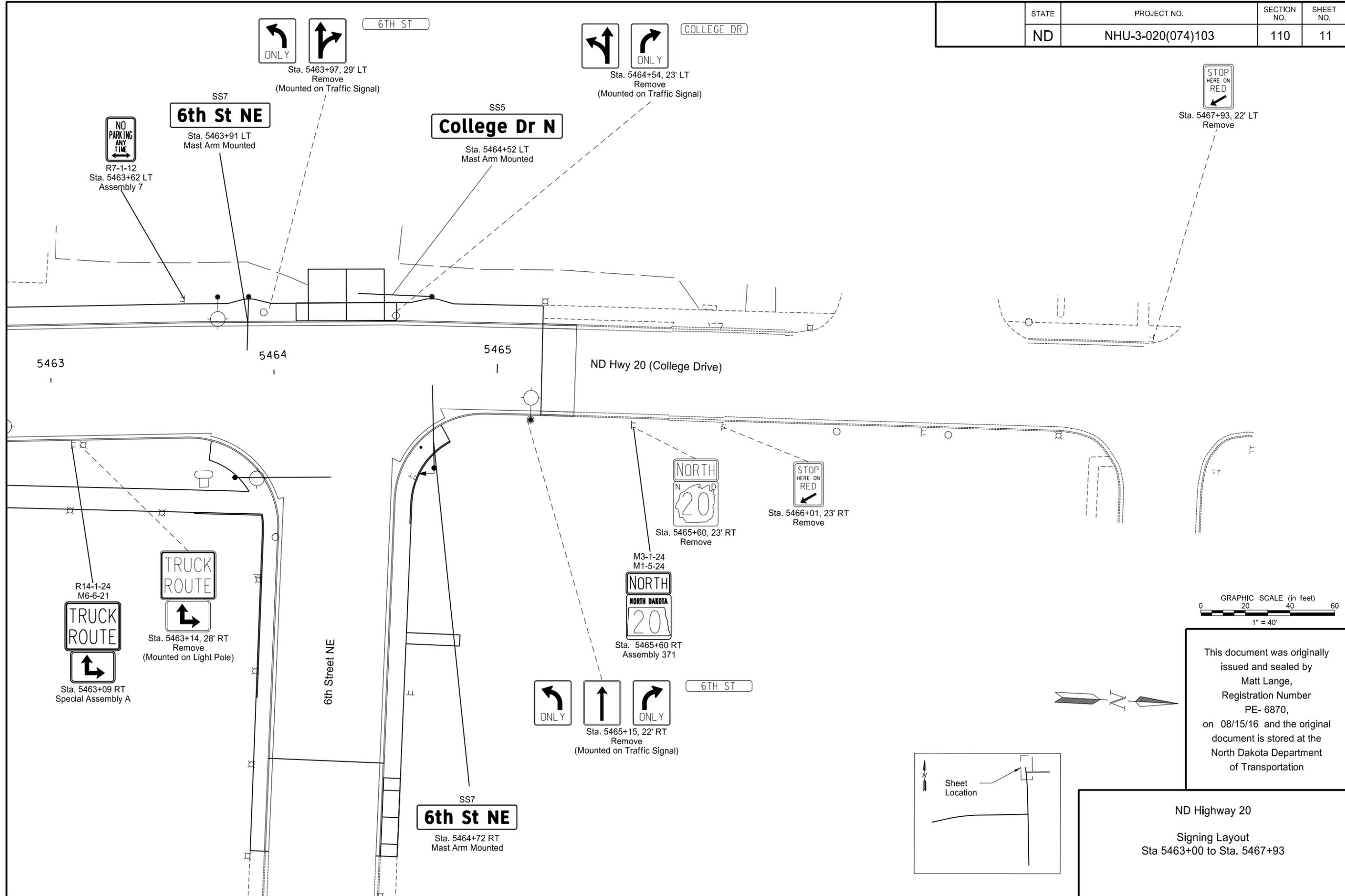


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ND Highway 20  
 Signing Layout  
 Sta 5459+00 to Sta. 5463+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	11

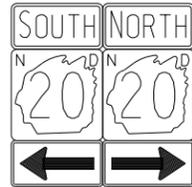


GRAPHIC SCALE (in feet)  
0 20 40 60  
1" = 40'

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ND Highway 20  
Signing Layout  
Sta 5463+00 to Sta. 5467+93

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	12



Sta. 600+49, 32' LT  
Remove

ND Hwy 20 (College Drive)

600

601

6th Street NE

602

603

60



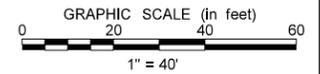
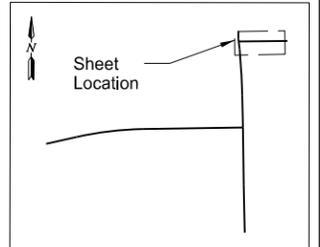
Sta. 600+95, 35' RT  
To Remain

**College Dr N** SS5

Sta. 600+52 RT  
Mast Arm Mounted

COLLEGE DR

Sta. 600+78, 25' RT  
Remove  
(Mounted on Traffic Signal)



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Sixth Street NE  
Signing Layout  
Sta. 600+49 to Sta. 602+18.55

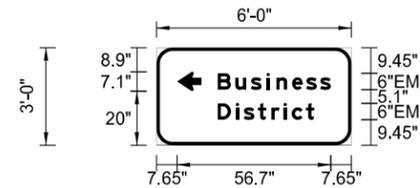




STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	110	15
NHU-3-019(044)155			

SIGN NUMBER	SS8
WIDTH x HEIGHT	6'-0" x 3'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

STATION(S): 5456+77 RT  
AREA: 18.0 Sq.Ft.



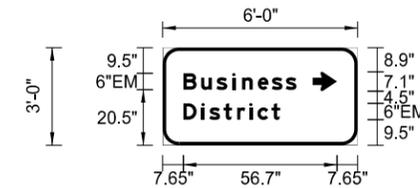
SYMBOL	X	Y	WID	HT	ANGLE
ARDD	7.6	20	7.1	9	180

PANEL STYLE: ND\_Conv\_Distance.ssi

LETTER POSITION (X)										LENGTH	SIZE	SERIES
B	u	s	i	n	e	s	s			41.8	6/4.5	EM 2000
22.6	29.2	34.9	40.7	44.3	50.1	55.3	60.4					
D	i	s	t	r	i	c	t			35.7	6/4.5	EM 2000
22.6	29.3	32.2	37.4	42.5	46.9	50	55.2					

SIGN NUMBER	SS9
WIDTH x HEIGHT	6'-0" x 3'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

STATION(S): 5461+81 RT  
AREA: 18.0 Sq.Ft.



SYMBOL	X	Y	WID	HT	ANGLE
ARDD	55.4	20	7.1	9	0

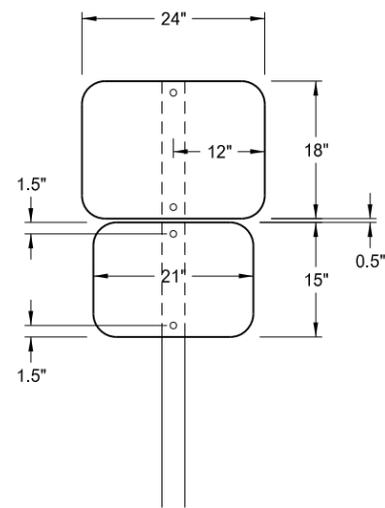
PANEL STYLE: ND\_Conv\_Destination.ssi

LETTER POSITION (X)										LENGTH	SIZE	SERIES
B	u	s	i	n	e	s	s			41.8	6/4.5	EM 2000
7.6	14.2	19.9	25.7	29.3	35.1	40.3	45.4					
D	i	s	t	r	i	c	t			35.7	6/4.5	EM 2000
7.6	14.3	17.2	22.4	27.5	31.9	35	40.2					

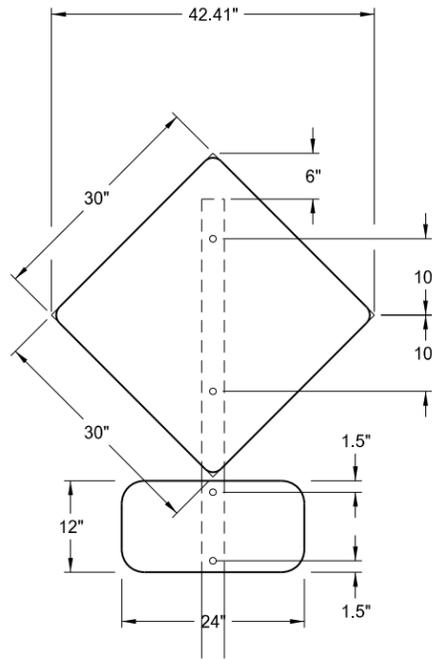
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ND Highway 19 & ND Highway 20  
Permanent Signing Sign Details

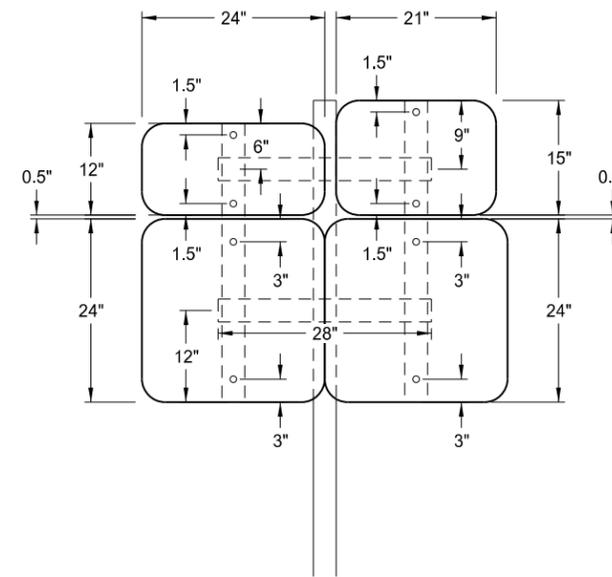
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-3-019(044)155	110	16
		NHU-3-020(074)103		



Special Assembly A  
Area = 5.20 SF (Design Area)  
(Perforated Steel Tube)



Special Assembly B  
Area = 8.25 SF (Design Area)  
(Perforated Steel Tube)

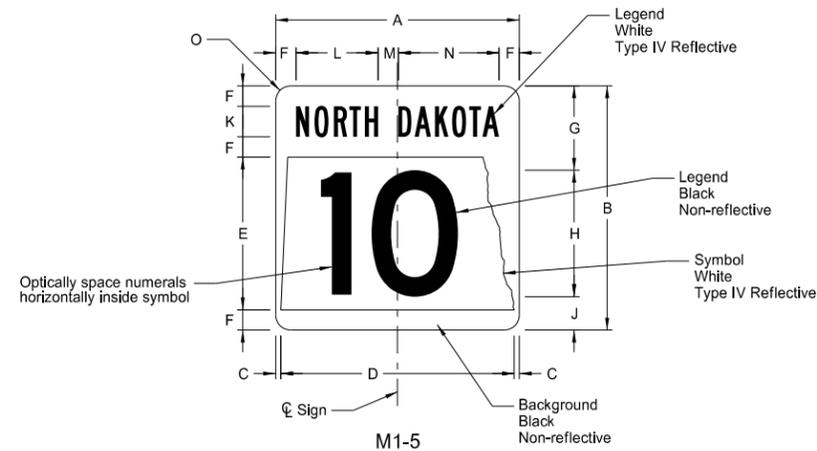


Special Assembly C  
Area = 12.19 SF (Design Area)  
(Perforated Steel Tube)

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ND Highway 19 &  
ND Highway 20  
  
Permanent Signing  
Special Assemblies

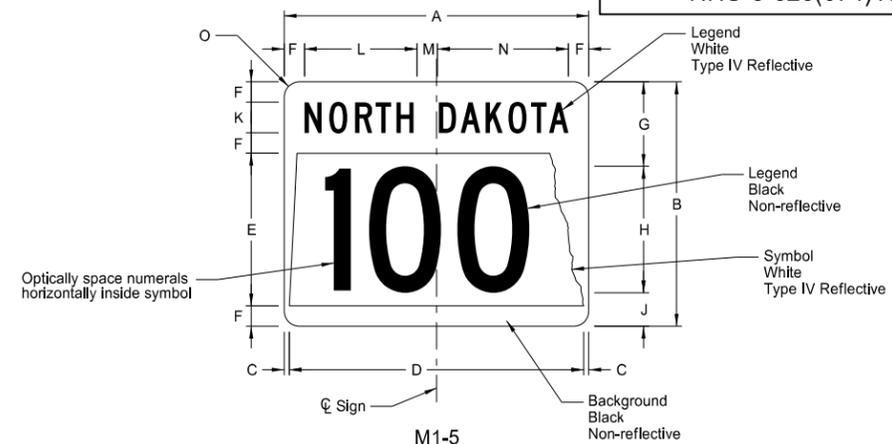
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-3-019(044)155	110	17
		NHU-3-020(074)103		



STATE ROUTE MARKER

SIGN	DIMENSION (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	O
1, 2 digits	18*	18*	0.38	17.25	11.25	1.5	6.38	9 D**	2.63	2.25 B	6.1	1.5	7.4	1.5
1, 2 digits	24	24	0.5	23	15	2	8.5	12 D**	3.5	3 B	8.1	2	9.9	1.5
1, 2 digits	36	36	0.75	34.5	22.5	3	12.75	18 D**	5.25	4.5 B	12.1	3	14.9	2.25
1, 2 digits	48*	48*	1	46	30	4	17	24 D**	7	6 B	16.2	4	19.8	3

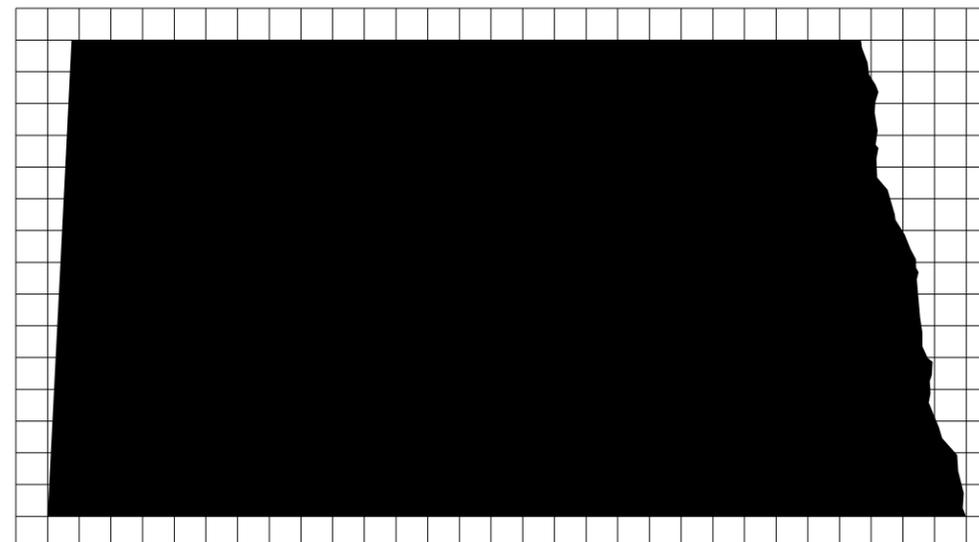
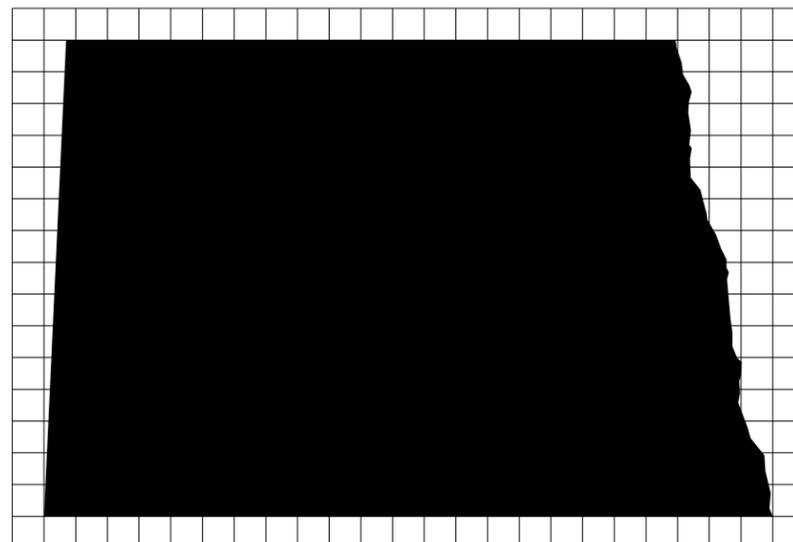
\* Size not for independent use (only for use within a guide sign)  
 \*\* Reduce numeral spacing by 25%



STATE ROUTE MARKER

SIGN	DIMENSION (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	O
3 digits	24*	18*	1.13	21.75	11.25	1.5	6.38	9 C**	2.63	2.25 C	8.8	2	10.2	1.5
3 digits	30	24	0.5	29	15	2	8.5	12 C**	3.5	3 C	10.7	2.5	12.8	1.5
3 digits	45	36	0.75	43.5	22.5	3	12.75	18 C**	5.25	4.5 C	16.1	3.8	19.1	2.25
3 digits	60*	48*	1	58	30	4	17	24 C**	7	6 C	21.5	5	25.5	3
4 digits	24*	18*	1.13	21.75	11.25	1.5	6.38	9 B***	2.63	2.25 C	8.8	2	10.2	1.5
4 digits	30	24	0.5	29	15	2	8.5	12 B***	3.5	3 C	10.7	2.5	12.8	1.5
4 digits	45	36	0.75	43.5	22.5	3	12.75	18 B***	5.25	4.5 C	16.1	3.8	19.1	2.25
4 digits	60*	48*	1	58	30	4	17	24 B***	7	6 C	21.5	5	25.5	3

\* Size not for independent use (only for use within a guide sign)  
 \*\* Reduce numeral spacing by 25%  
 \*\*\* Reduce numeral spacing by 50%



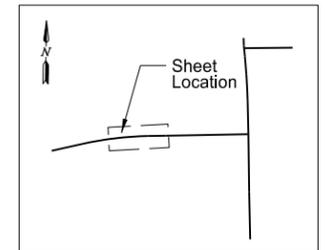
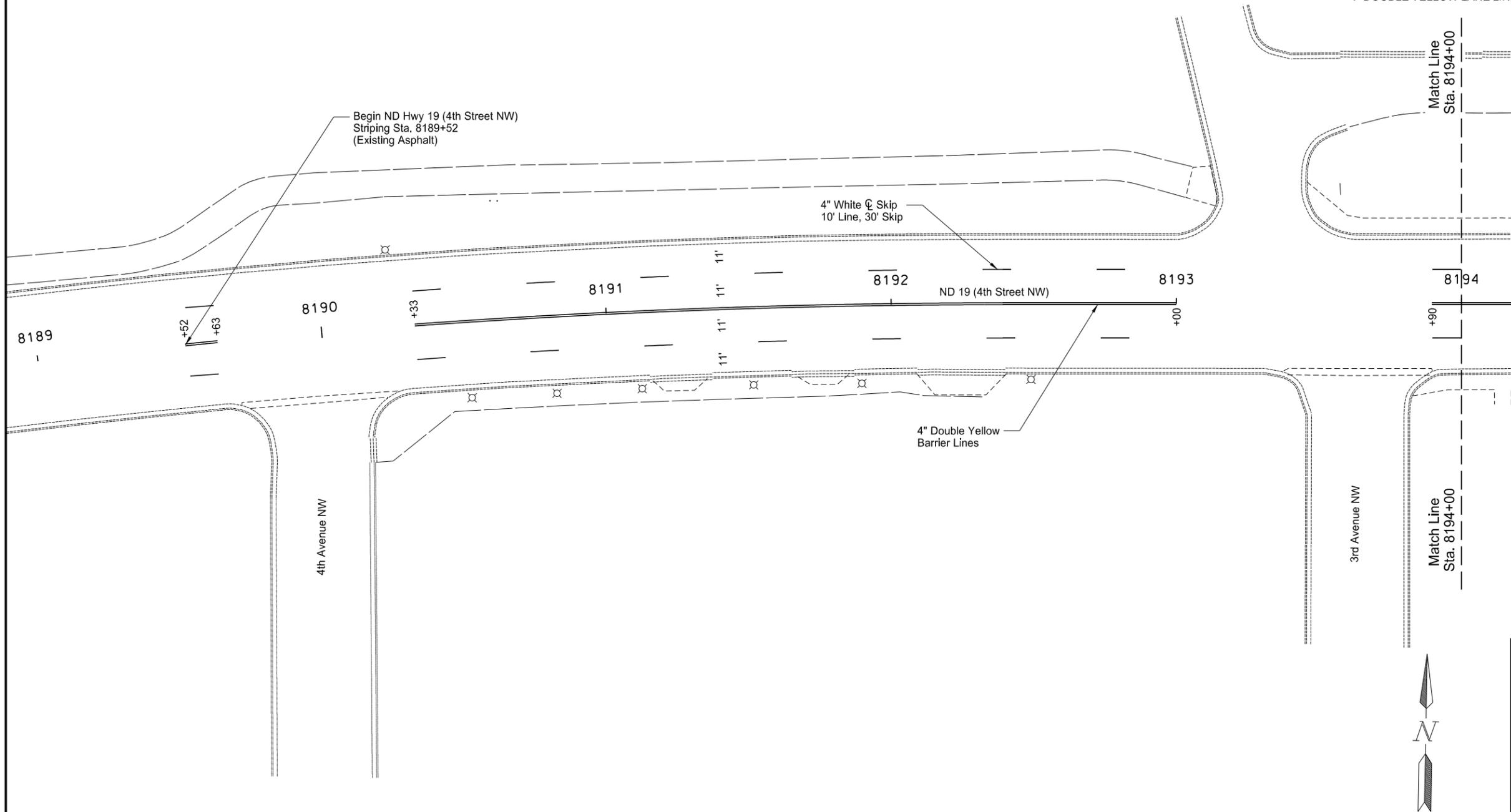
Note: North Dakota symbol graphics file can be obtained from the Design Division of North Dakota Department of Transportation.

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ND Highway 19 & ND Highway 20  
 ND Highway Shield Details for Route Markers and Guide Signs

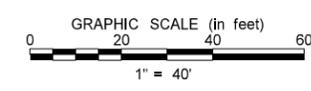
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	120	1

Spec	Item Description	Qty	Unit
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
	4" WHITE LANE LINE		
	10' LINE, 30' SKIP	180	LF
	4" DOUBLE YELLOW LANE LINE	578	LF



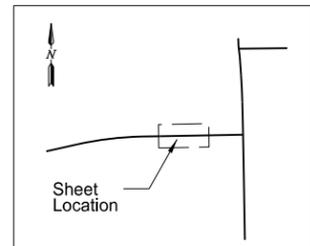
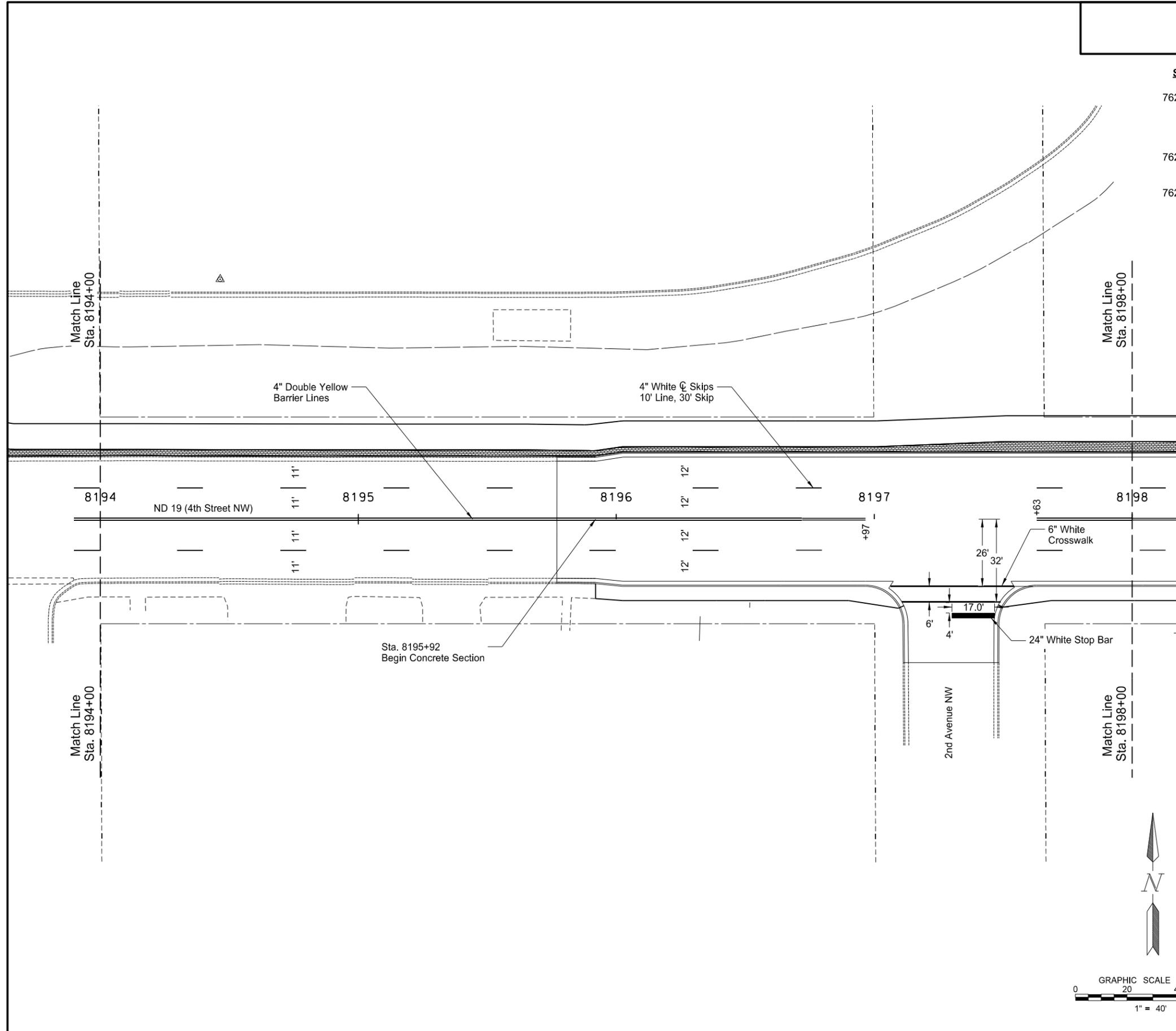
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ND Highway 19  
 Pavement Marking Layout  
 Sta. 8189+52 to Sta. 8194+00

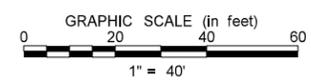


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	120	2

Spec	Item Description	Qty	Unit
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" WHITE LANE LINE 10' LINE, 30' SKIP 4" DOUBLE YELLOW LANE LINE	160	LF
762 1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED 6" WHITE CROSSWALK LINE	86	LF
762 1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" WHITE STOP BAR	17	LF



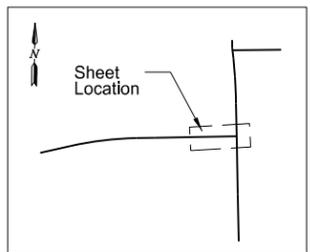
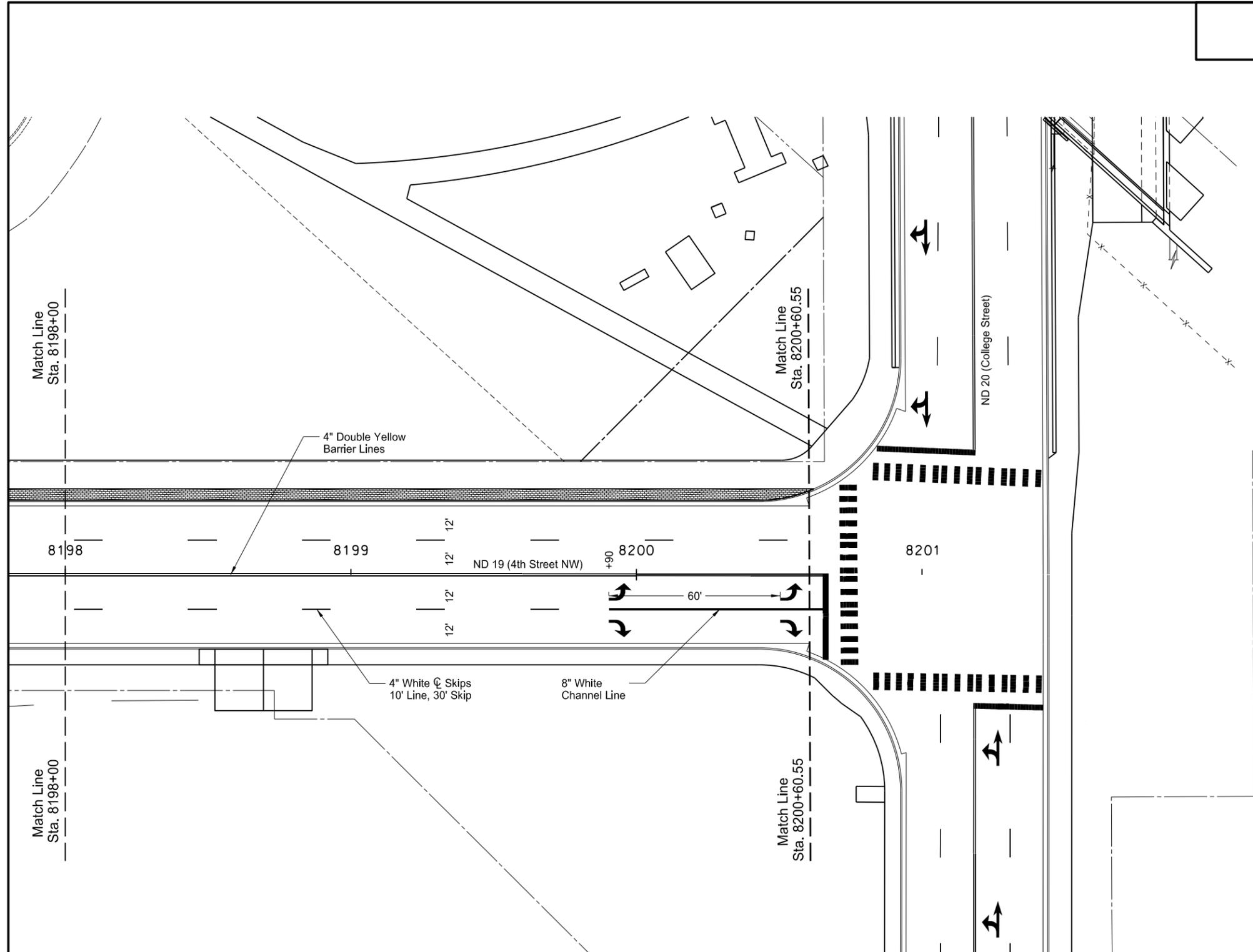
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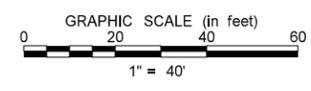
ND Highway 19  
 Pavement Marking Layout  
 Sta. 8194+00 to Sta. 8198+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	120	3

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) RIGHT ARROW (2) LEFT ARROW (2)	32	SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" WHITE LANE LINE 10' LINE, 30' SKIP 4" DOUBLE YELLOW LANE LINE	120 522	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED 8" WHITE CHANNEL LINE	70	LF



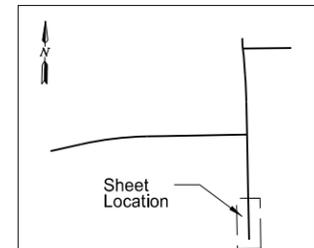
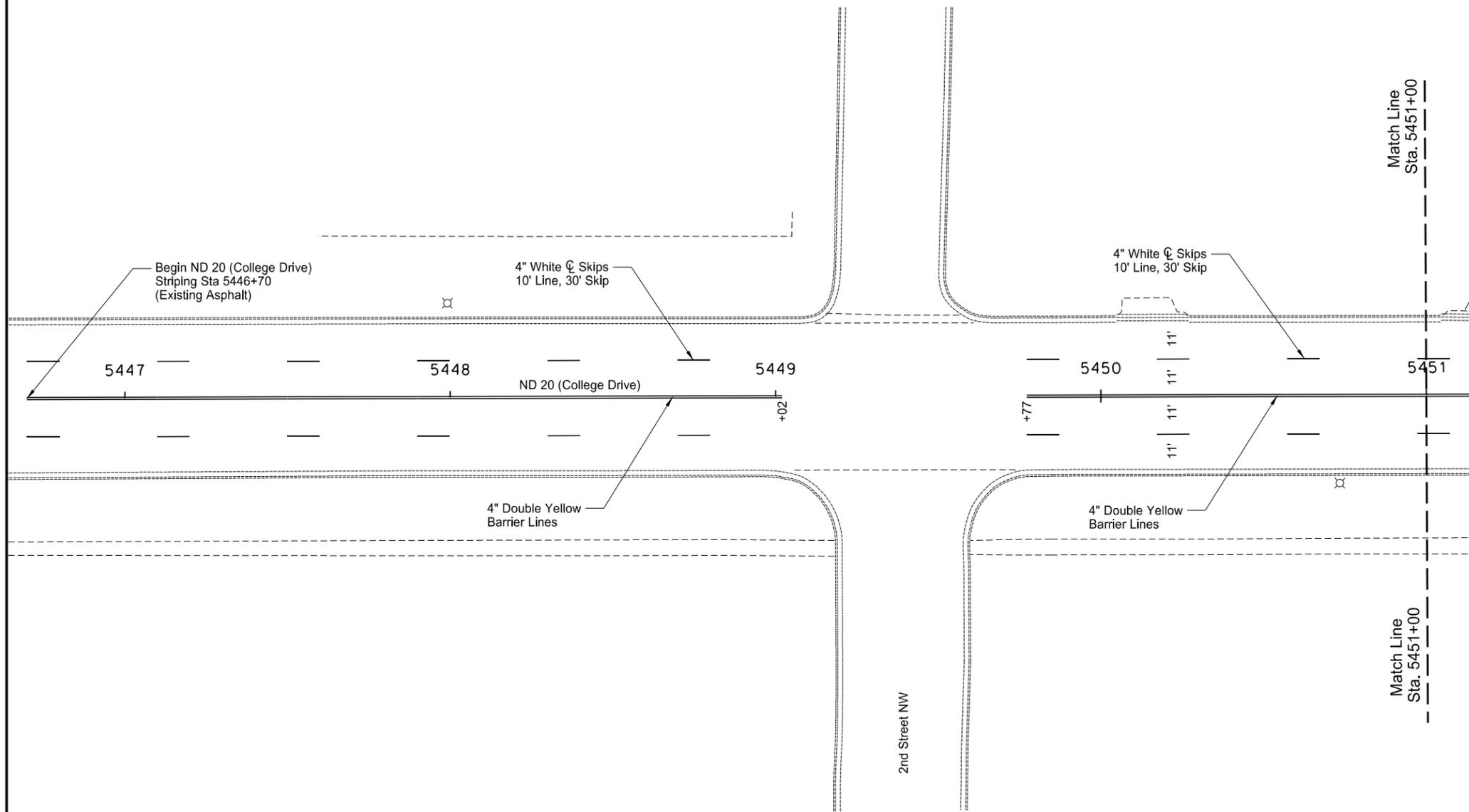
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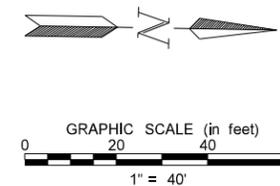
ND Highway 19  
 Pavement Marking Layout  
 Sta. 8198+00 to Sta. 8200+60.55

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	4

Spec	Item Description	Qty	Unit
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
	4" WHITE LANE LINE		
	10' LINE, 30' SKIP	180	LF
	4" DOUBLE YELLOW LANE LINE	710	LF



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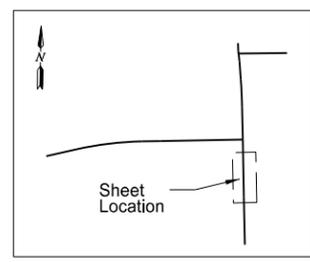
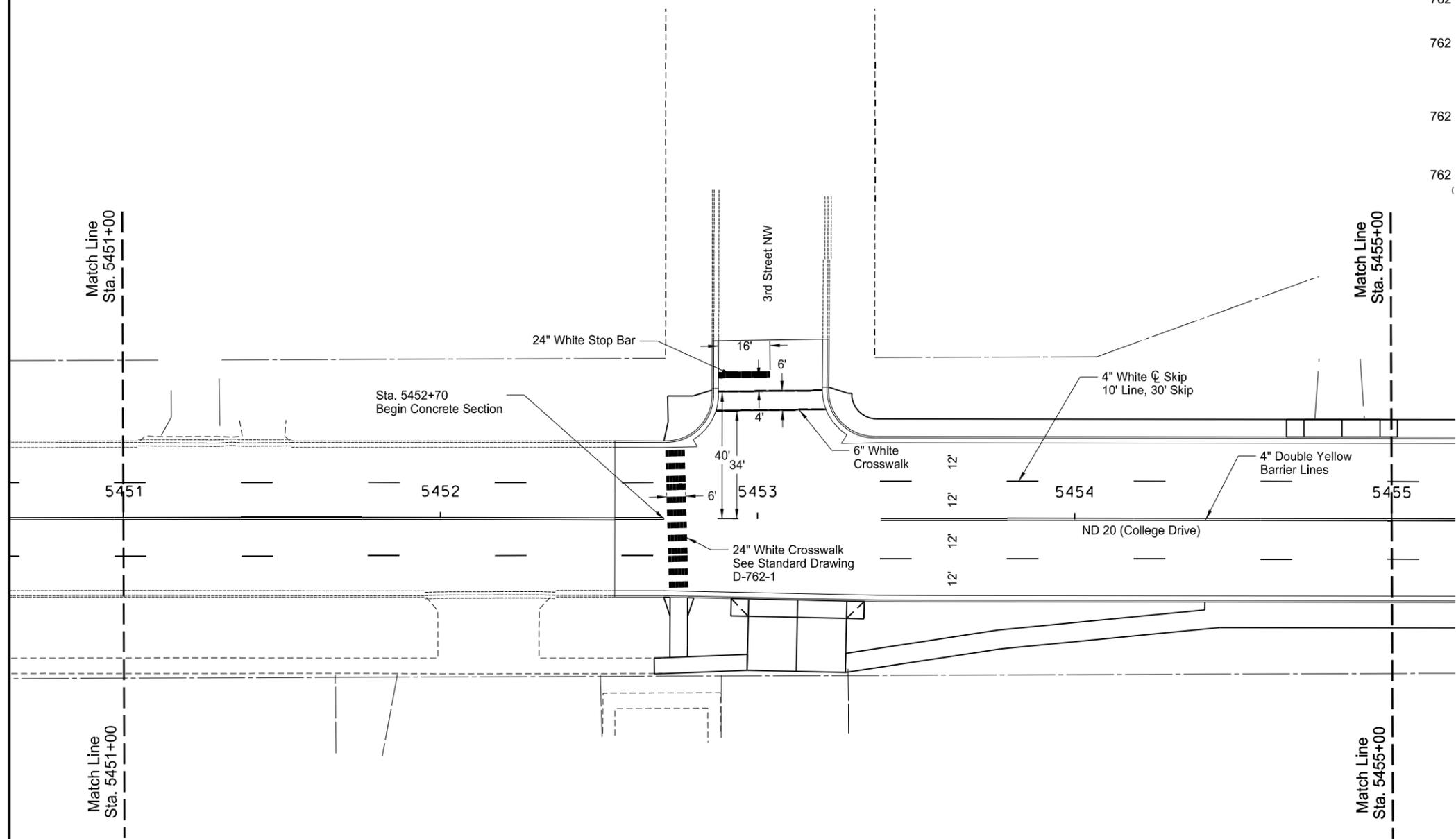


ND Highway 20  
 Pavement Marking Layout  
 Sta 5446+70 to Sta. 5451+00

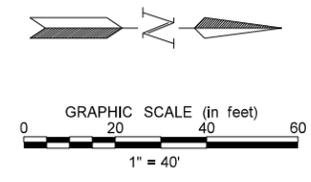
Note: Arrows are Shown for Informational Purposes Only.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	5

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) 24" WHITE CROSSWALK	144	SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" WHITE LANE LINE 10' LINE, 30' SKIP 4" DOUBLE YELLOW LANE LINE	180 663	LF LF
762 1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED 6" WHITE CROSS WALK LINE	67	LF
762 1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" WHITE STOP BAR	16	LF



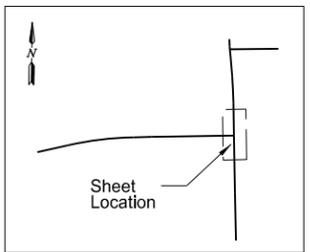
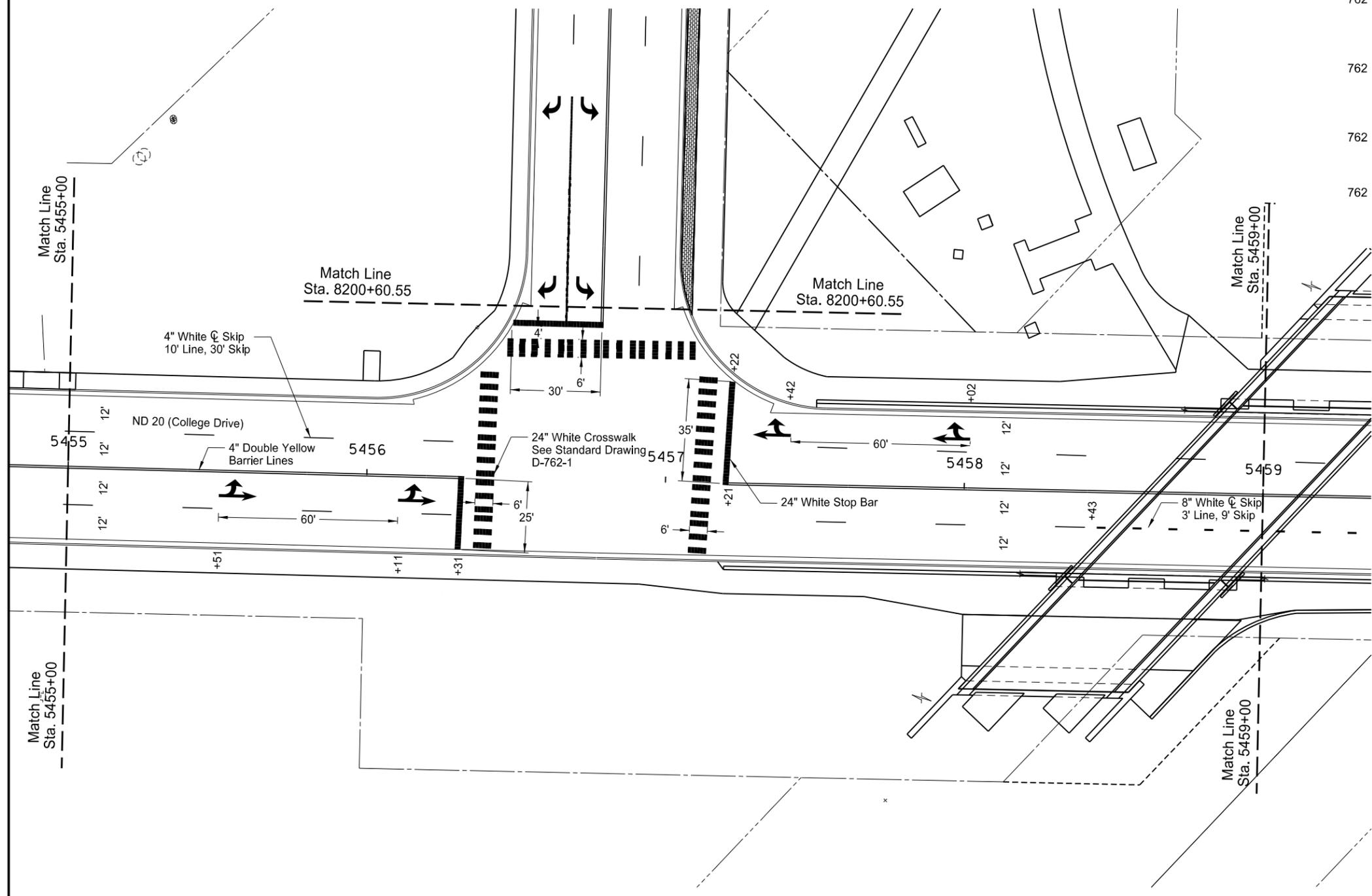
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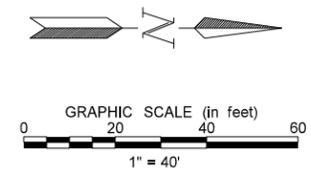
ND Highway 20  
Pavement Marking Layout  
Sta. 5451+00 to Sta. 5455+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	6

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
	STRAIGHT AND LEFT ARROW (2)	54	SF
	STRAIGHT AND RIGHT ARROW (2)	54	SF
	24" WHITE CROSSWALK	552	SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
	4" WHITE LANE LINE		
	10' LINE, 30' SKIP	150	LF
	4" DOUBLE YELLOW LANE LINE	633	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
	8" WHITE CHANNEL LINE	5	LF
	8" WHITE 3' LINE, 9' SKIP	15	LF
762 1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
	24" WHITE STOP BAR	90	LF



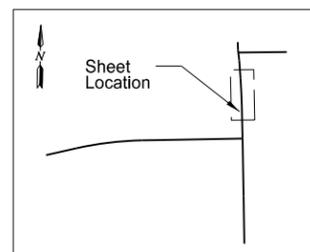
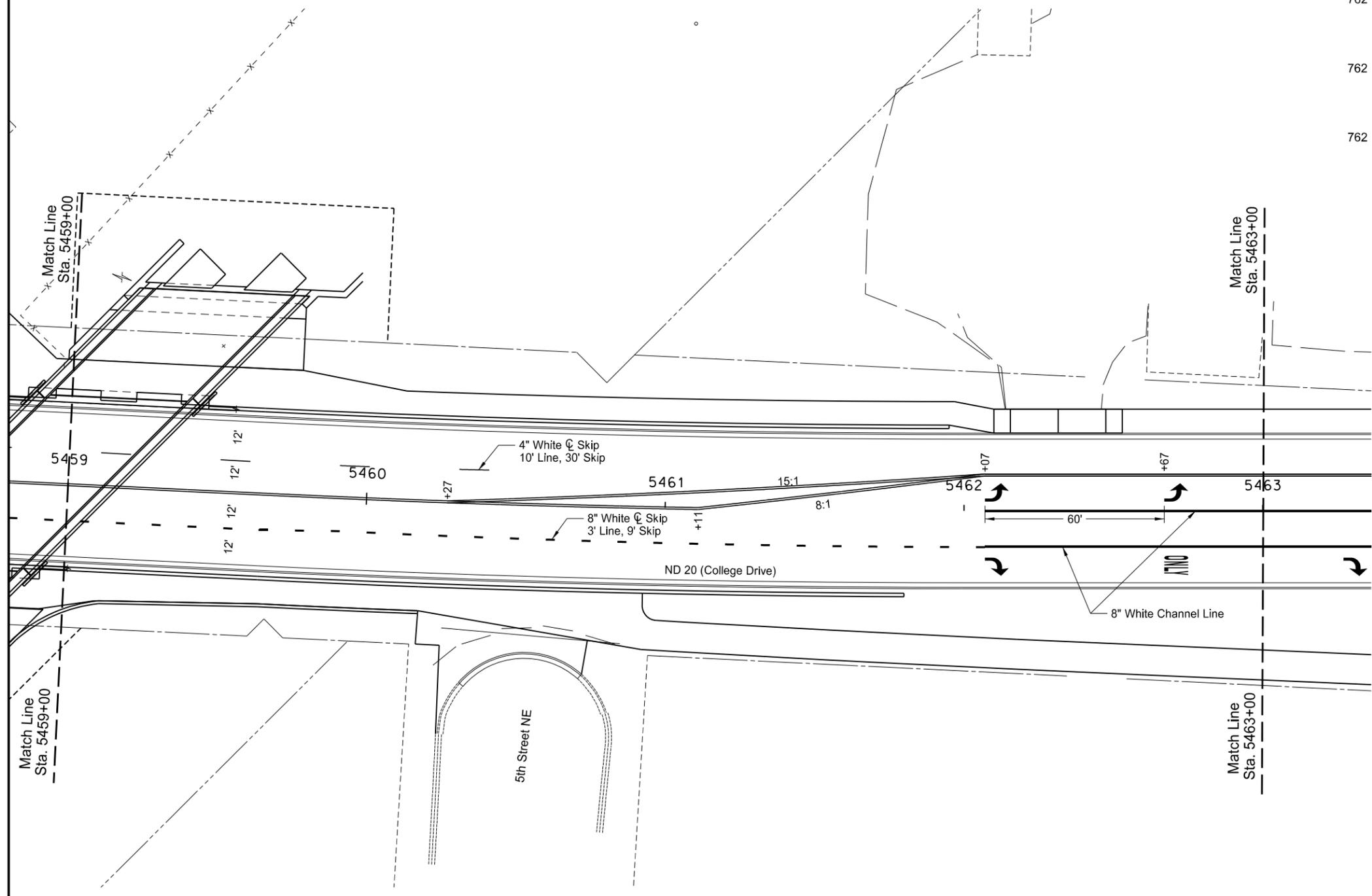
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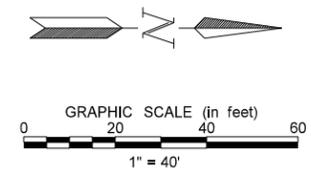
ND Highway 20  
 Pavement Marking Layout  
 Sta. 5455+00 to Sta. 5459+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	7

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
	LEFT ARROW (2)	32	SF
	RIGHT ARROW	16	SF
	ONLY MESSAGE DETAIL	22	SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
	4" WHITE LANE LINE		
	10' LINE, 30' SKIP	40	LF
	4" DOUBLE YELLOW LANE LINE	1162	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
	8" WHITE CHANNEL LINE	186	LF
	8" WHITE 3' LINE, 9' SKIP	78	LF



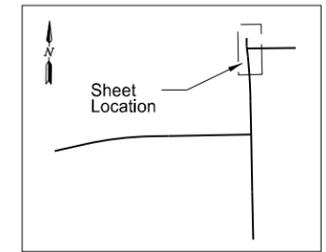
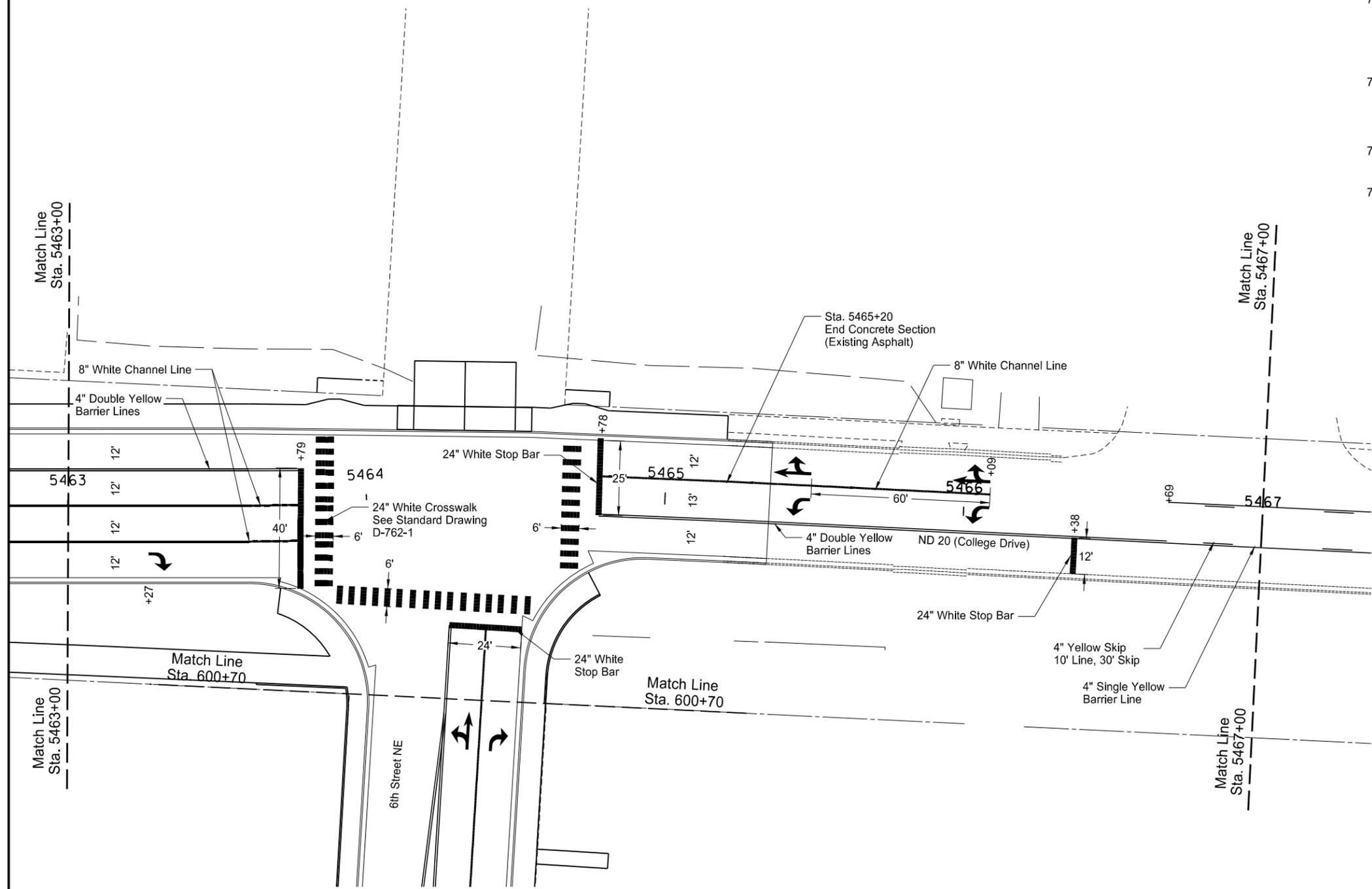
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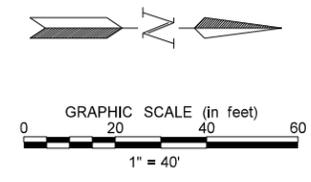
ND Highway 20  
 Pavement Marking Layout  
 Sta. 5459+00 to Sta. 5463+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	8

Spec	Item Description	Qty	Unit
762-0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
	24" WHITE CROSSWALK	468	SF
	STRAIGHT AND RIGHT ARROW (2)	54	SF
	LEFT ARROW (2)	32	SF
	RIGHT ARROW	16	SF
762-1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
	4" YELLOW LANE LINE	63	LF
	10' LINE, 30' SKIP	20	LF
	4" DOUBLE YELLOW LANE LINE	584	LF
762-1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
	8" WHITE CHANNEL LINE	309	LF
762-1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
	24" WHITE STOP BAR	101	LF



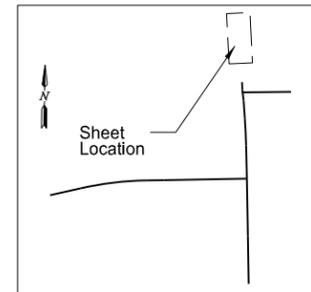
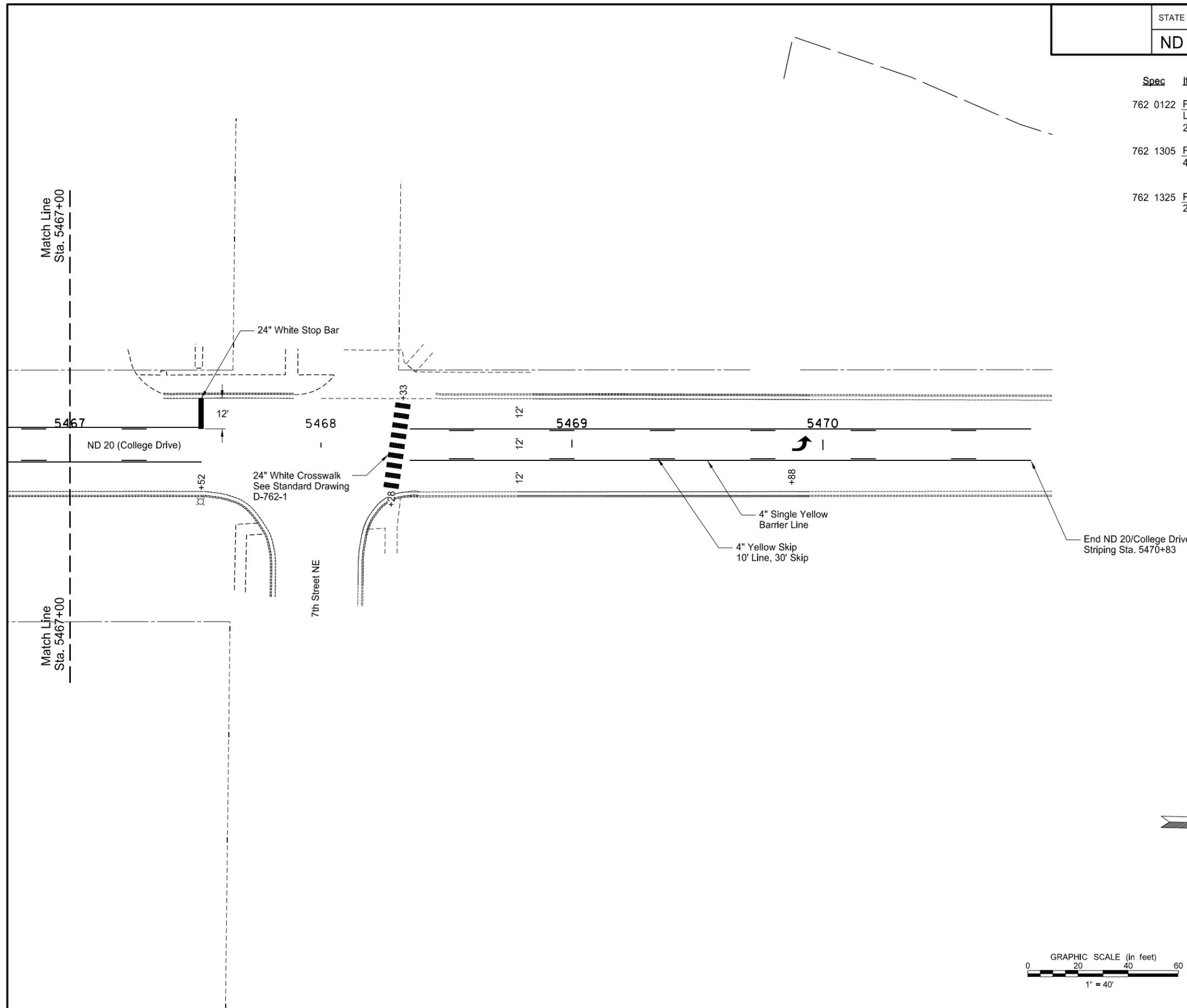
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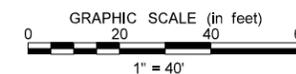
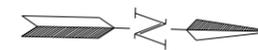
ND Highway 20  
 Pavement Marking Layout  
 Sta. 5463+00 to Sta. 5467+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	9

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) LEFT ARROW 24" WHITE CROSSWALK	16 108	SF SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" YELLOW LANE LINE 10' LINE, 30' SKIP	599 140	LF LF
762 1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" WHITE STOP BAR	12	LF



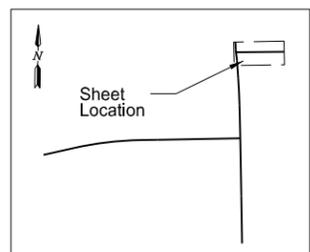
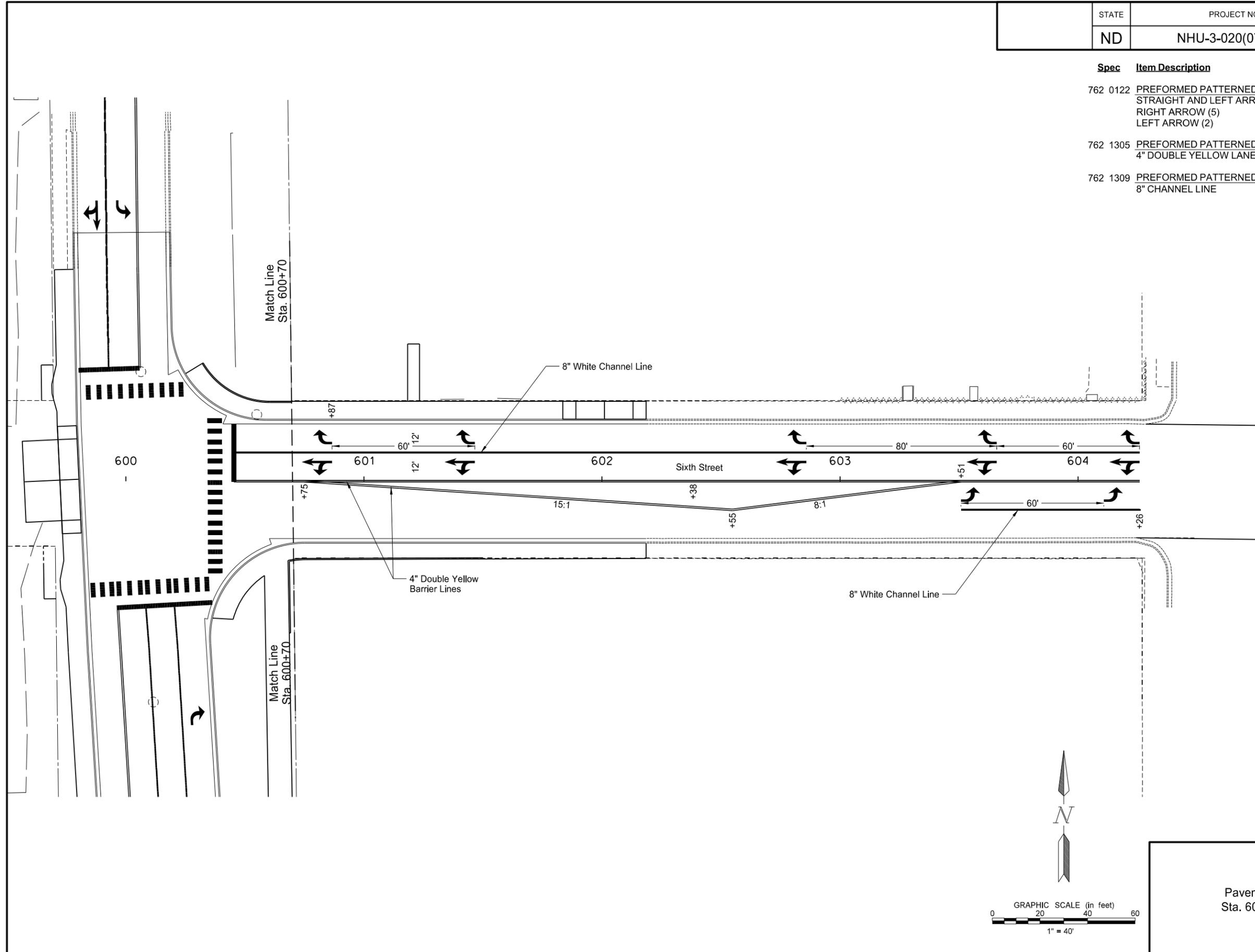
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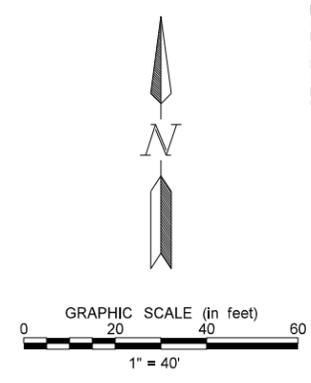
ND Highway 20  
 Pavement Marking Layout  
 Sta 5467+00 to Sta. 5470+83

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	120	10

Spec	Item Description	Qty	Unit
762 0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) STRAIGHT AND LEFT ARROW (5) RIGHT ARROW (5) LEFT ARROW (2)	135	SF
762 1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" DOUBLE YELLOW LANE LINE	1266	LF
762 1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED 8" CHANNEL LINE	431	LF



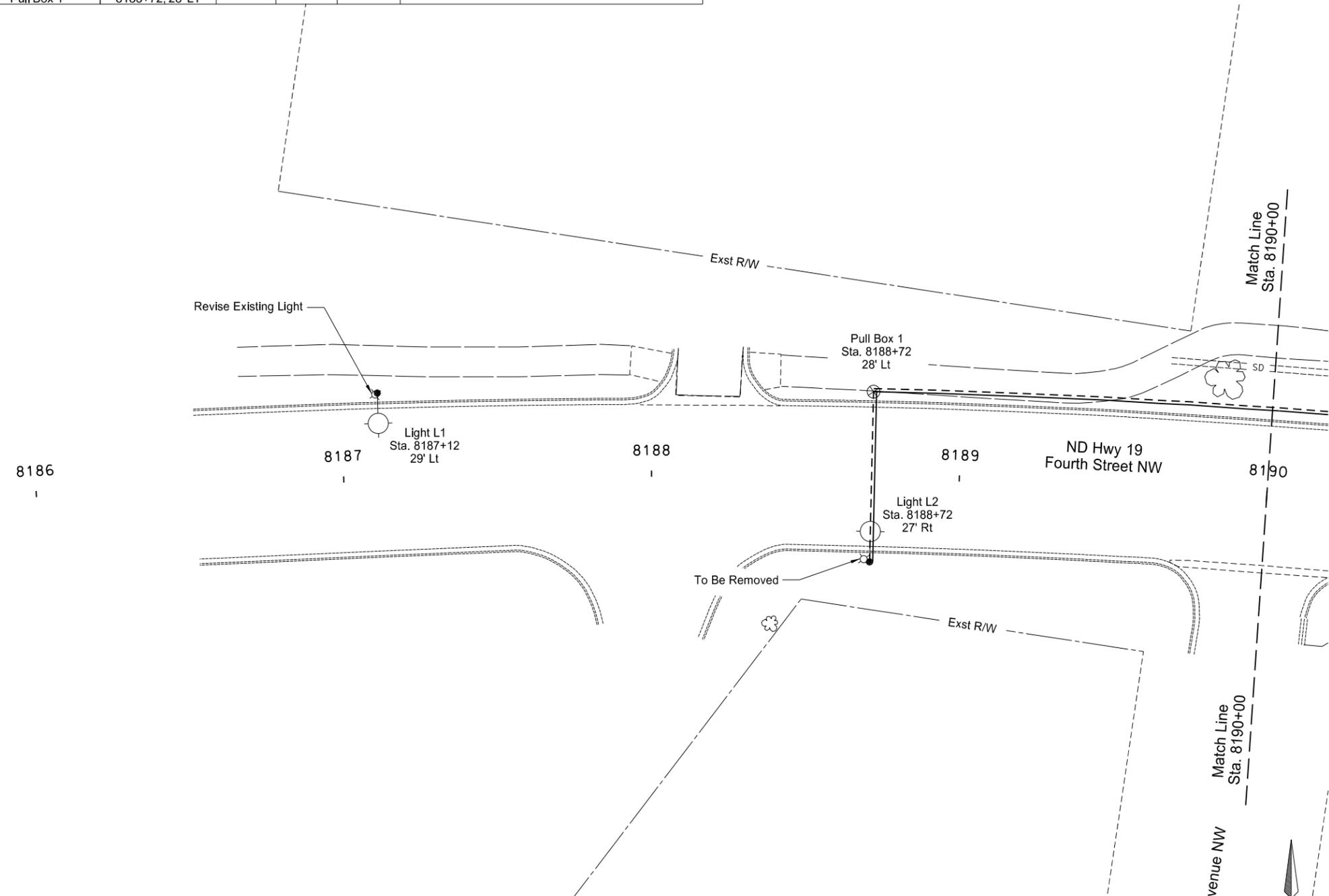
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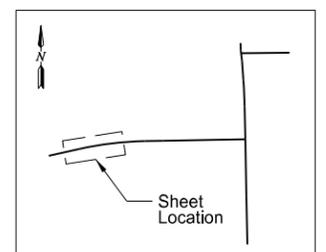
Sixth Street  
 Pavement Marking Layout  
 Sta. 600+70 to Sta. 604+26

ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYP
Light L2 to Pull Box 1	8188+72, 27' RT 8188+72, 28' LT	55	2"	124 62	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

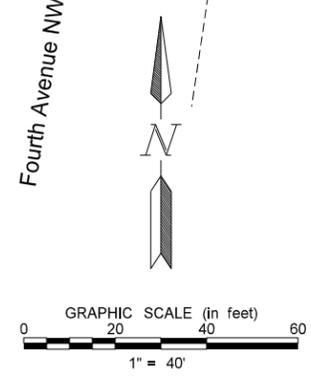
Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	1	EA
770 0100	PULL BOX	1	EA
770 0330	2IN DIAMETER RIGID CONDUIT	55	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	124	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	62	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	1	EA
770 4210	LED LUMINAIRE	2	EA
770 4560	REMOVE LIGHT STANDARD	1	EA



LIGHT NUMBER	WATTS/TYP	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L1	LED	II	Existing	Existing	Existing	Mount new LED fixture on existing pole, utilizing existing circuit. Verify operational voltage.
L2	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.



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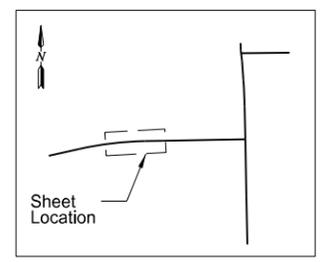
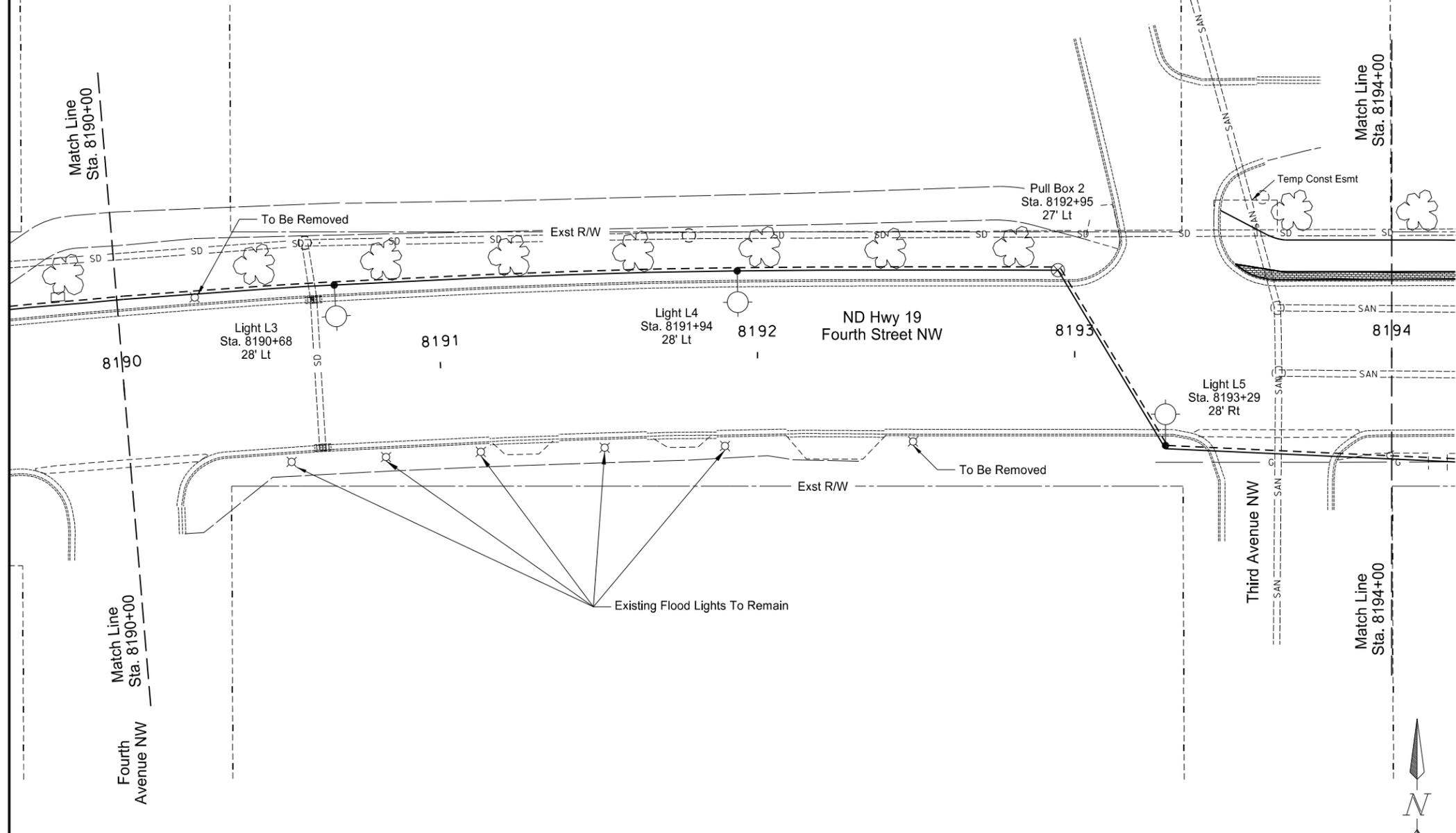


ND Highway 19  
Lighting Layout  
Sta. 8187+12 to Sta. 8190+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	140	2

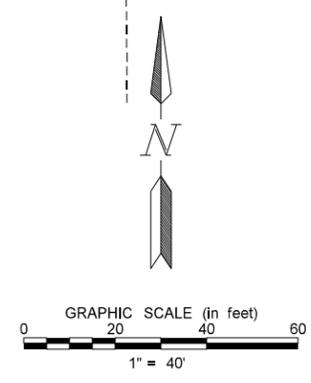
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Pull Box 1 to Light L3	8188+72, 28' LT to 8190+68, 28' LT	199	2"	412	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L3 to Light L4	8190+68, 28' LT to 8191+94, 28' LT	129	2"	274	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L4 to Pull Box 2	8191+94, 28' LT to 8192+95, 27' LT	103	2"	220	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Pull Box 2 to Light L5	8192+95, 27' LT to 8193+29, 28' RT	65	2"	144	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	3	EA
770 0100	PULL BOX	1	EA
770 0330	2IN DIAMETER RIGID CONDUIT	496	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	1050	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	525	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	3	EA
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	2	EA



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LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L3, L4, L5	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.

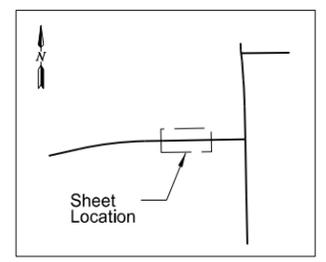
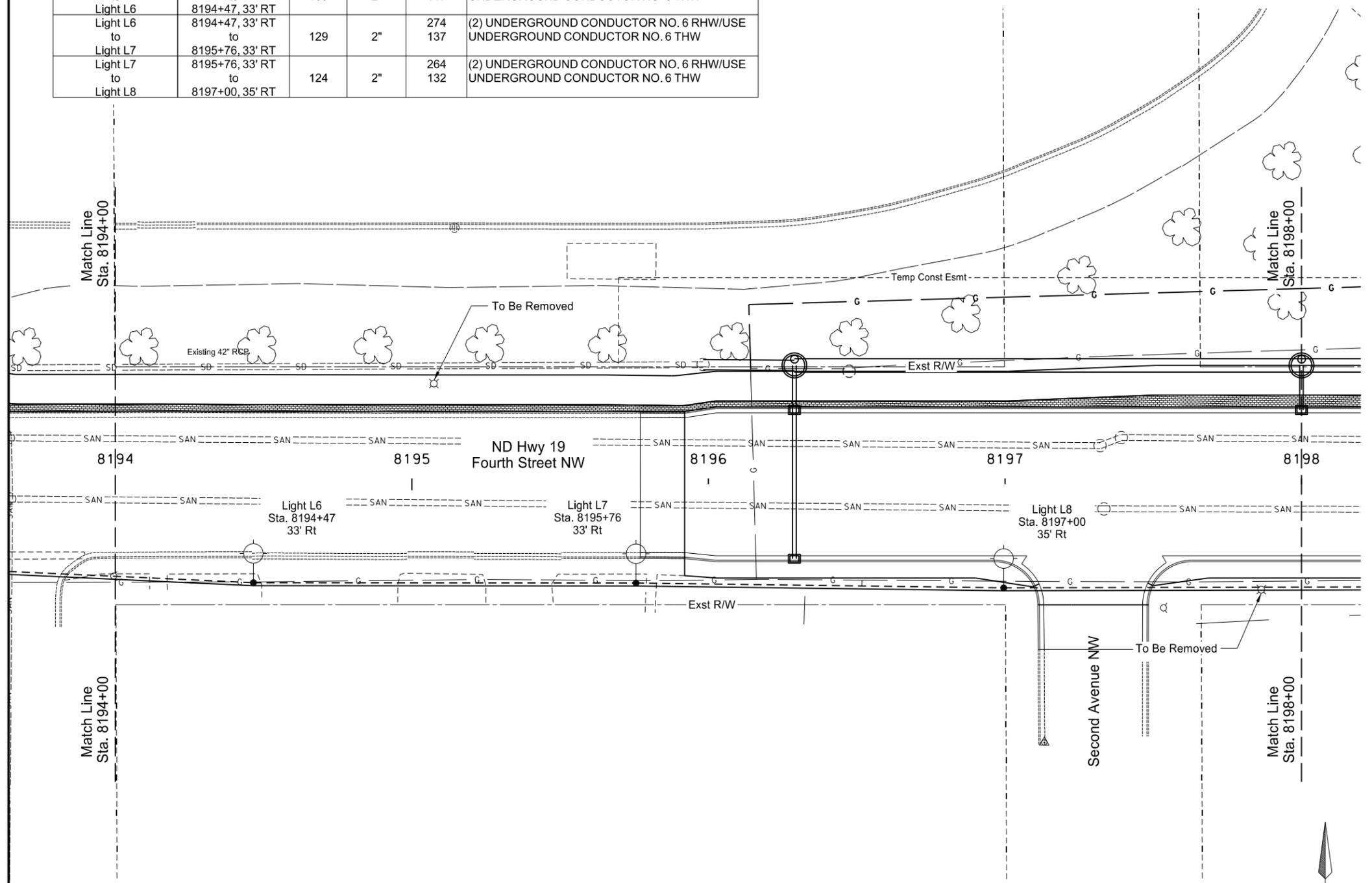


ND Highway 19  
Lighting Layout  
Sta. 8190+00 to Sta. 8194+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-019(044)155	140	3

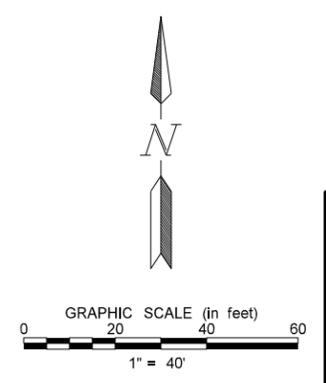
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Light L5 to Light L6	8193+29, 28' RT to 8194+47, 33' RT	109	2"	234	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L6 to Light L7	8194+47, 33' RT to 8195+76, 33' RT	129	2"	274	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L7 to Light L8	8195+76, 33' RT to 8197+00, 35' RT	124	2"	264	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	3	EA
770 0330	2IN DIAMETER RIGID CONDUIT	362	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	772	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	386	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	3	EA
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	2	EA



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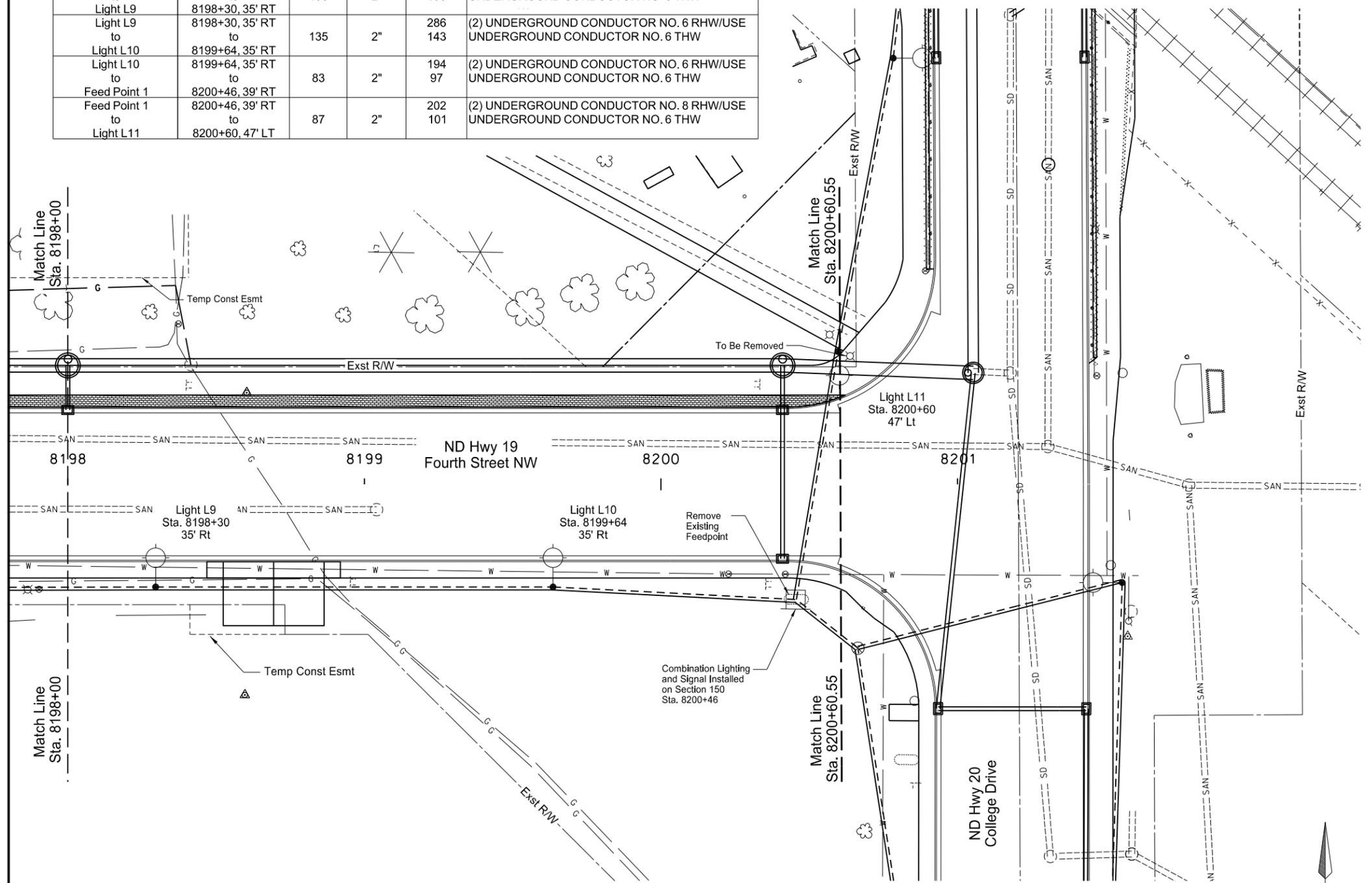
LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L6, L7, L8	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.



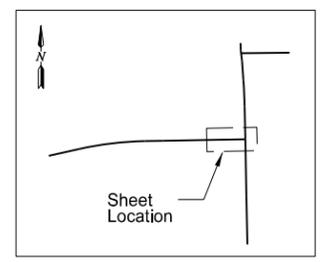
ND Highway 19  
Lighting Layout  
Sta. 8194+00 to Sta. 8198+00

ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Light L8 to Light L9	8197+00, 35' RT to 8198+30, 35' RT	130	2"	276	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L9 to Light L10	8198+30, 35' RT to 8199+64, 35' RT	135	2"	286	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L10 to Feed Point 1	8199+64, 35' RT to 8200+46, 39' RT	83	2"	194	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Feed Point 1 to Light L11	8200+46, 39' RT to 8200+60, 47' LT	87	2"	202	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	2	EA
770 0330	2IN DIAMETER RIGID CONDUIT	435	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	756	LF
770 0506	UNDERGROUND CONDUCTOR NO8-TYPE RHW	202	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	479	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	2	EA
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	1	EA
770 4590	REMOVE FEED POINT	1	EA

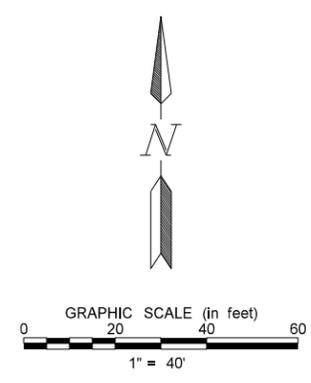


LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L9, L10	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.
L11	LED	II	Signal Std. Extension	40'	8'	Install luminaire on combination signal standard light standard extension. Luminaire operated at 240V.



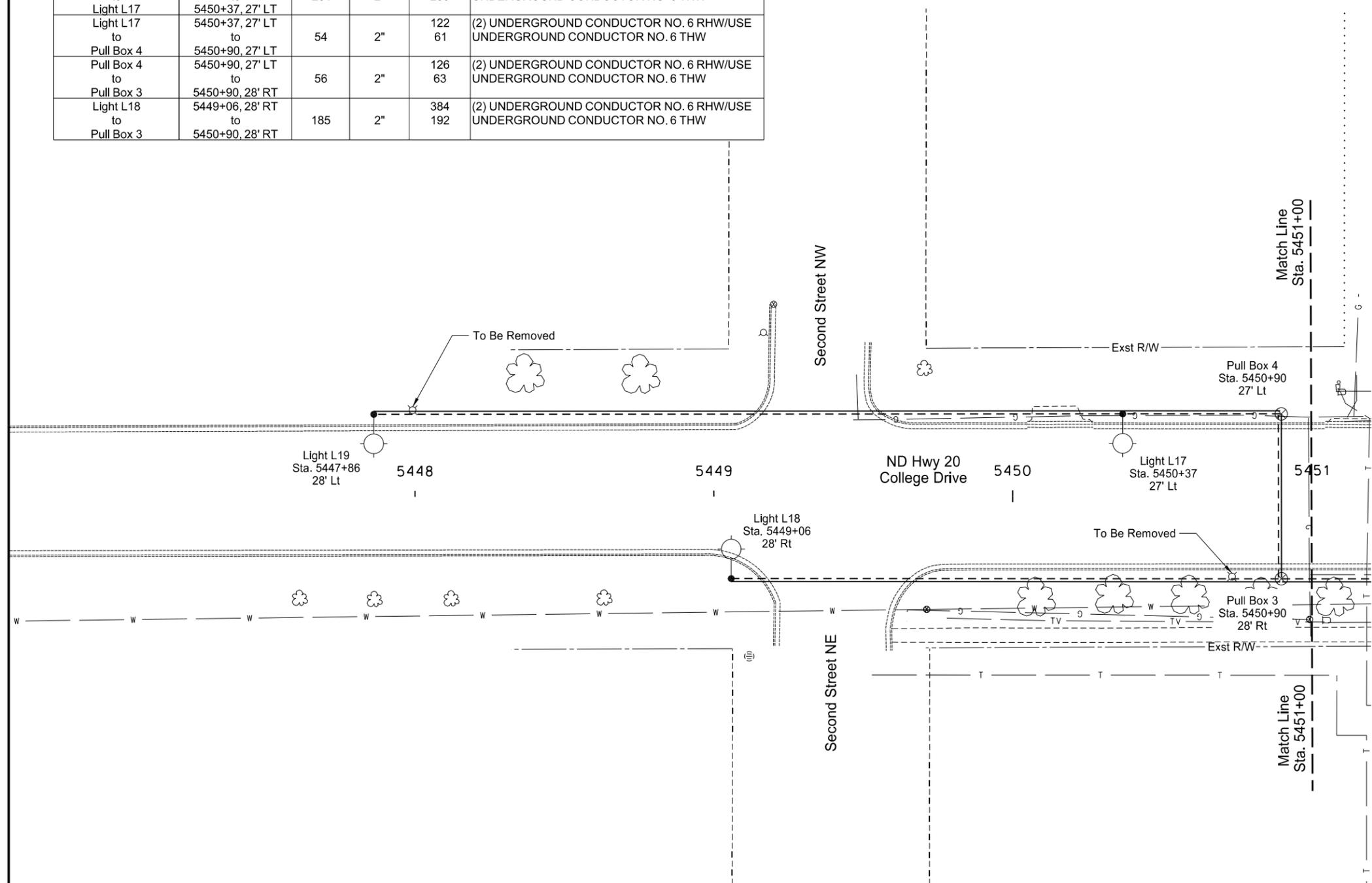
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ND Highway 19  
Lighting Layout  
Sta. 8198+00 to Sta. 8200+60.55

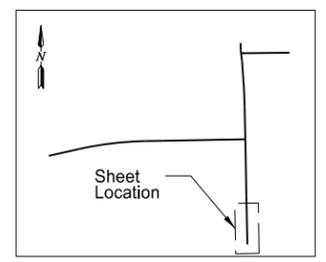
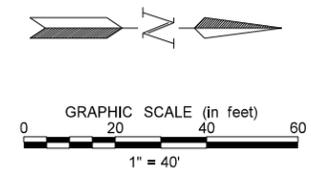


ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Light L19 to Light L17	5447+86, 28' LT to 5450+37, 27' LT	251	2"	518	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L17 to Pull Box 4	5450+37, 27' LT to 5450+90, 27' LT	54	2"	122	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Pull Box 4 to Pull Box 3	5450+90, 27' LT to 5450+90, 28' RT	56	2"	126	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L18 to Pull Box 3	5449+06, 28' RT to 5450+90, 28' RT	185	2"	384	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	3	EA
770 0100	PULL BOX	2	EA
770 0330	2IN DIAMETER RIGID CONDUIT	546	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	1150	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	575	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	3	EA
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	2	EA



LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L17, L18, L19	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.

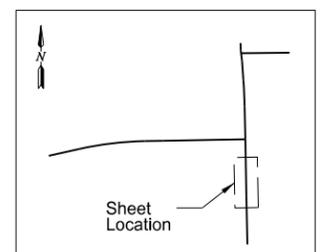
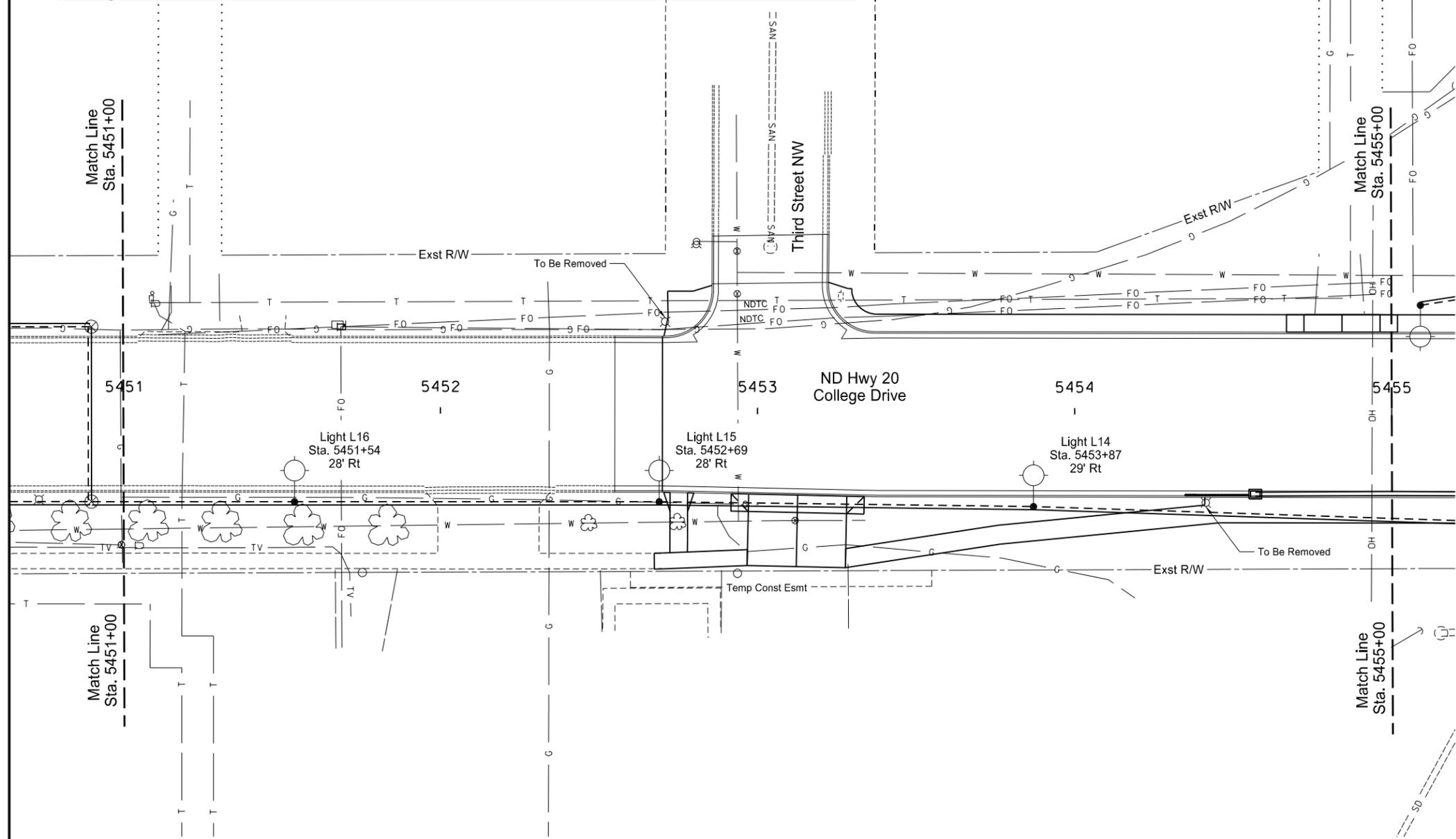


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ND Highway 20  
Lighting Layout  
Sta. 5447+86 to Sta. 5451+00

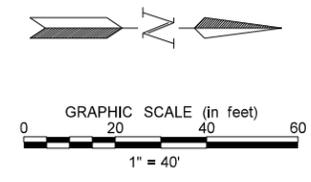
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYP
Pull Box 3 to Light L16	5450+90, 28' RT to 5451+54, 28' RT	65	2"	292	(4) UNDERGROUND CONDUCTOR NO. 6 RHW/USE (2) UNDERGROUND CONDUCTOR NO. 6 THW
Light L16 to Light L15	5451+54, 28' RT to 5452+69, 28' RT	115	2"	246	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L15 to Light L14	5452+69, 28' RT to 5453+87, 29' RT	118	2"	252	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	3	EA
770 0330	2IN DIAMETER RIGID CONDUIT	298	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	790	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	395	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	3	EA
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	2	EA



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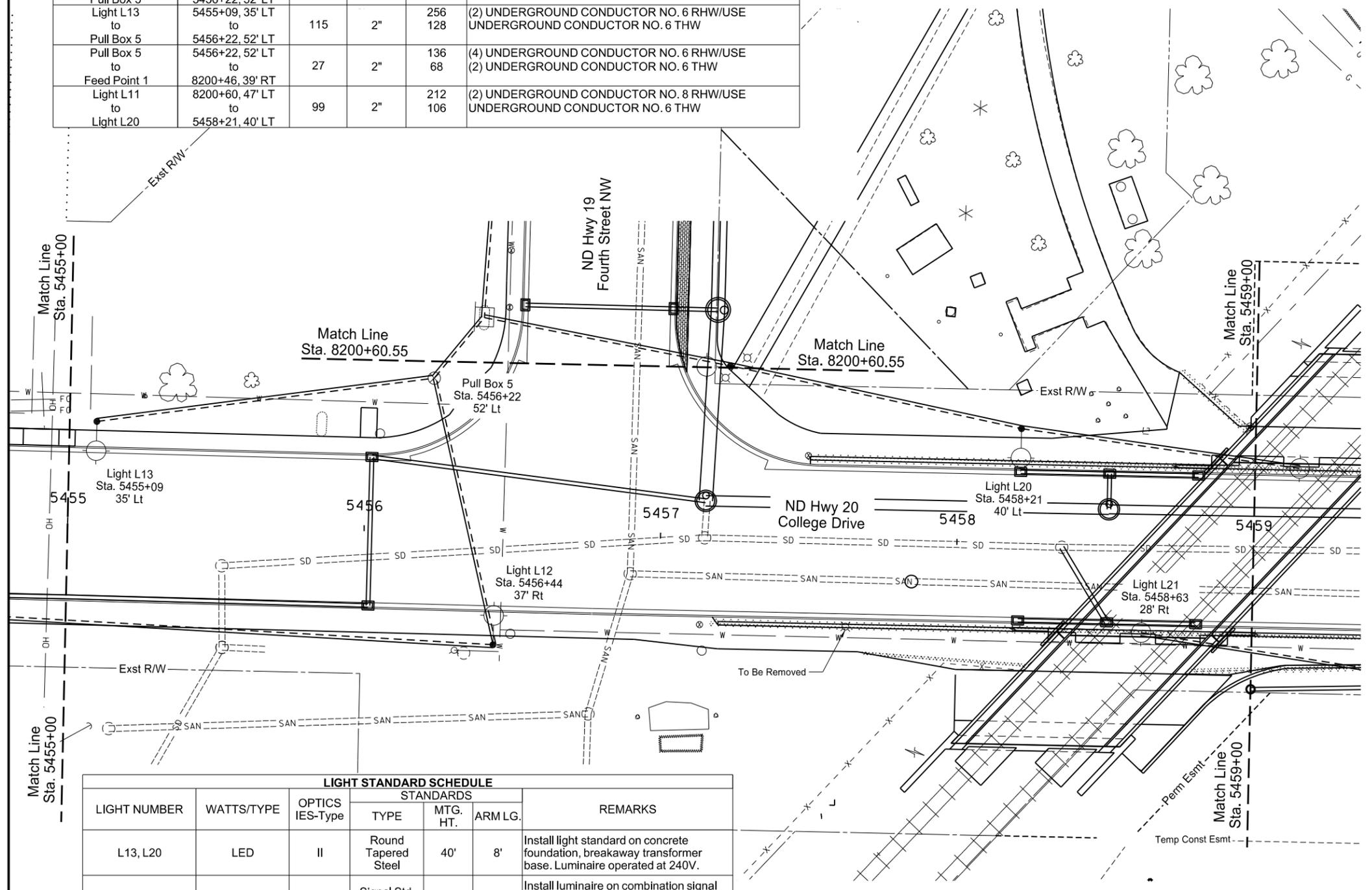
LIGHT NUMBER	WATTS/TYP	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L14, L15, L16	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.



ND Highway 20  
Lighting Layout  
Sta. 5451+00 to Sta. 5455+00

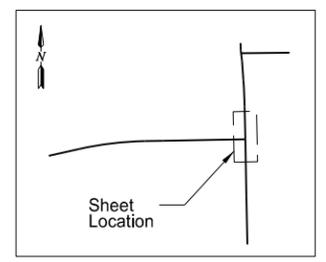
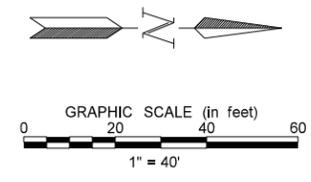
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Light L14 to Light L12	5453+87, 29' RT to 5456+44, 37' RT	258	2"	532 266	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L12 to Pull Box 5	5456+44, 37' RT to 5456+22, 52' LT	92	2"	198 99	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L13 to Pull Box 5	5455+09, 35' LT to 5456+22, 52' LT	115	2"	256 128	(2) UNDERGROUND CONDUCTOR NO. 6 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Pull Box 5 to Feed Point 1	5456+22, 52' LT to 8200+46, 39' RT	27	2"	136 68	(4) UNDERGROUND CONDUCTOR NO. 6 RHW/USE (2) UNDERGROUND CONDUCTOR NO. 6 THW
Light L11 to Light L20	8200+60, 47' LT to 5458+21, 40' LT	99	2"	212 106	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	3	EA
770 0100	PULL BOX	1	EA
770 0330	2IN DIAMETER RIGID CONDUIT	591	LF
770 0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	1122	LF
770 0506	UNDERGROUND CONDUCTOR NO8-TYPE RHW	212	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	667	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	3	EA
770 4210	LED LUMINAIRE	4	EA
770 4560	REMOVE LIGHT STANDARD	1	EA



LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L13, L20	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.
L12	LED	II	Signal Std. Extension	40'	8'	Install luminaire on combination signal standard light standard extension. Luminaire operated at 240V.
L21	LED	II	-	-	-	Mount luminaire to bridge support. Coordinate mounting equipment and location with field Engineer and structural Contractor. Luminaire operated at 240V.

Note:  
Locate 1" Conduit Provided on Bridge Structure for Pedestrian Lighting circuits. Provide Necessary Connectors to Bridge Mounted Conduit.

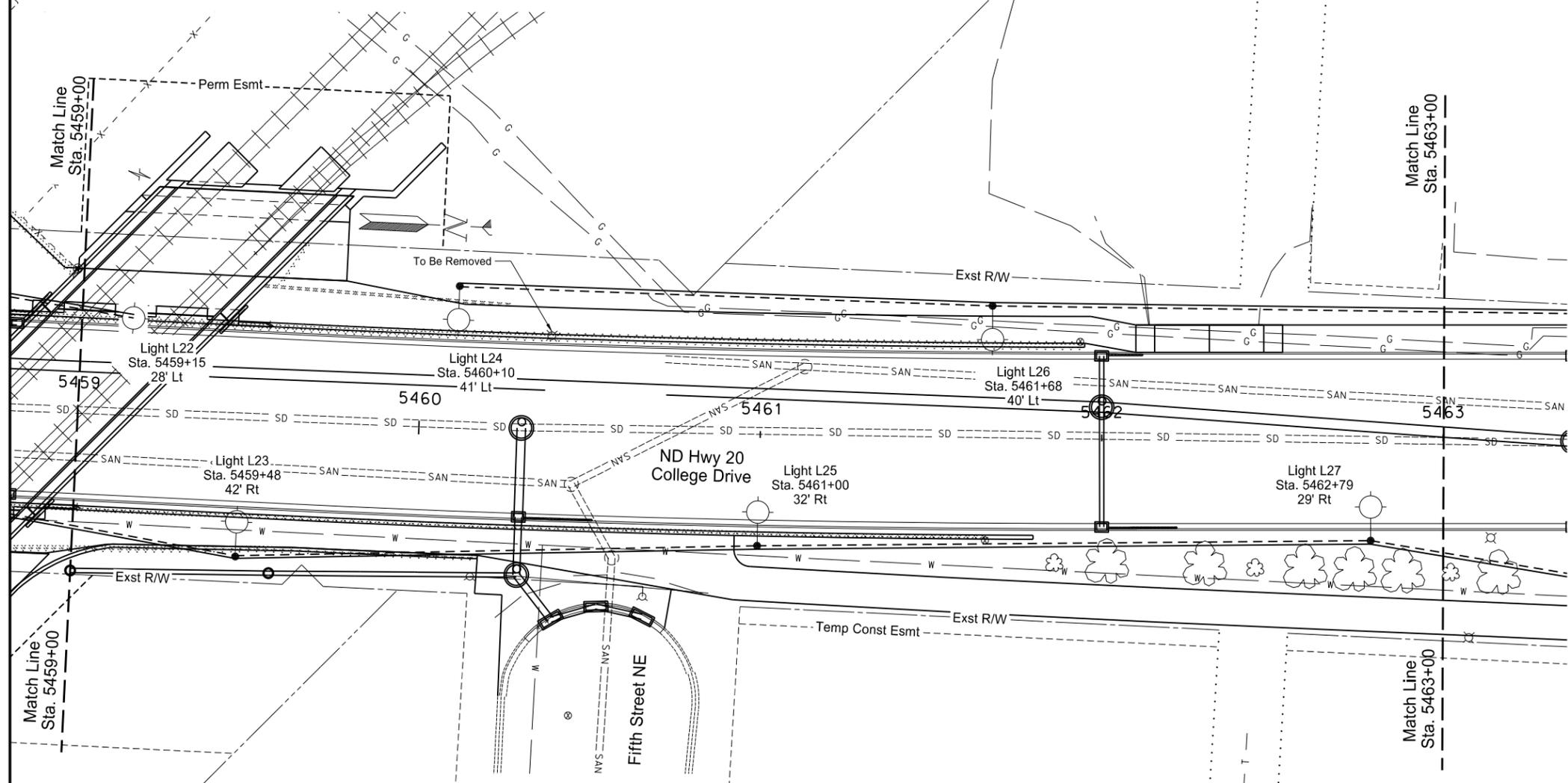


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ND Highway 20  
Lighting Layout  
Sta. 5455+00 to Sta. 5459+00

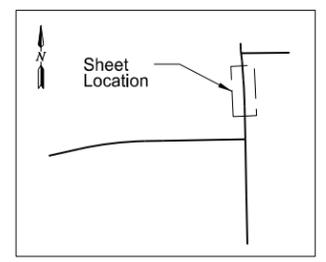
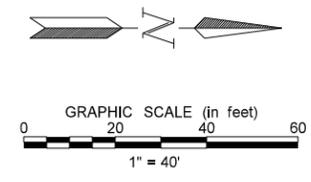
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPE
Light L20 to Light L22	5458+21, 40' LT to 5459+15, 28' LT	70	1"	206	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L21 to Light L23	5458+63, 28' RT to 5459+48, 42' RT	37	1"	130	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L24 to Light L26	5460+10, 41' LT to 5461+68, 40' LT	177	2"	370	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L23 to Light L25	5459+48, 42' RT to 5461+00, 32' RT	183	2"	382	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L25 to Light L27	5461+00, 32' RT to 5462+79, 29' RT	180	2"	376	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	5	EA
770 0300	1IN DIAMETER RIGID CONDUIT	107	LF
770 0330	2IN DIAMETER RIGID CONDUIT	540	LF
770 0506	UNDERGROUND CONDUCTOR NO8-TYPE RHW	1464	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	732	LF
770 1726	LT STD 8FT MA 40FT MT HT BREAKAWAY	5	EA
770 4210	LED LUMINAIRE	6	EA
770 4560	REMOVE LIGHT STANDARD	1	EA



LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L23, L24, L25, L26, L27	LED	II	Round Tapered Steel	40'	8'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.
L22	LED	III	-	-	-	Mount luminaire to bridge support. Coordinate mounting equipment and location with field Engineer and structural Contractor. Luminaire operated at 240V.

Note:  
Locate 1" Conduit Provided on Bridge Structure for Pedestrian Lighting circuits. Provide Necessary Connectors to Bridge Mounted Conduit.



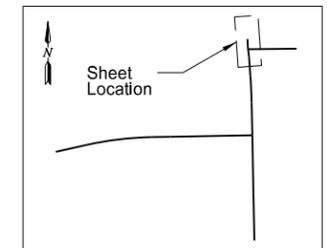
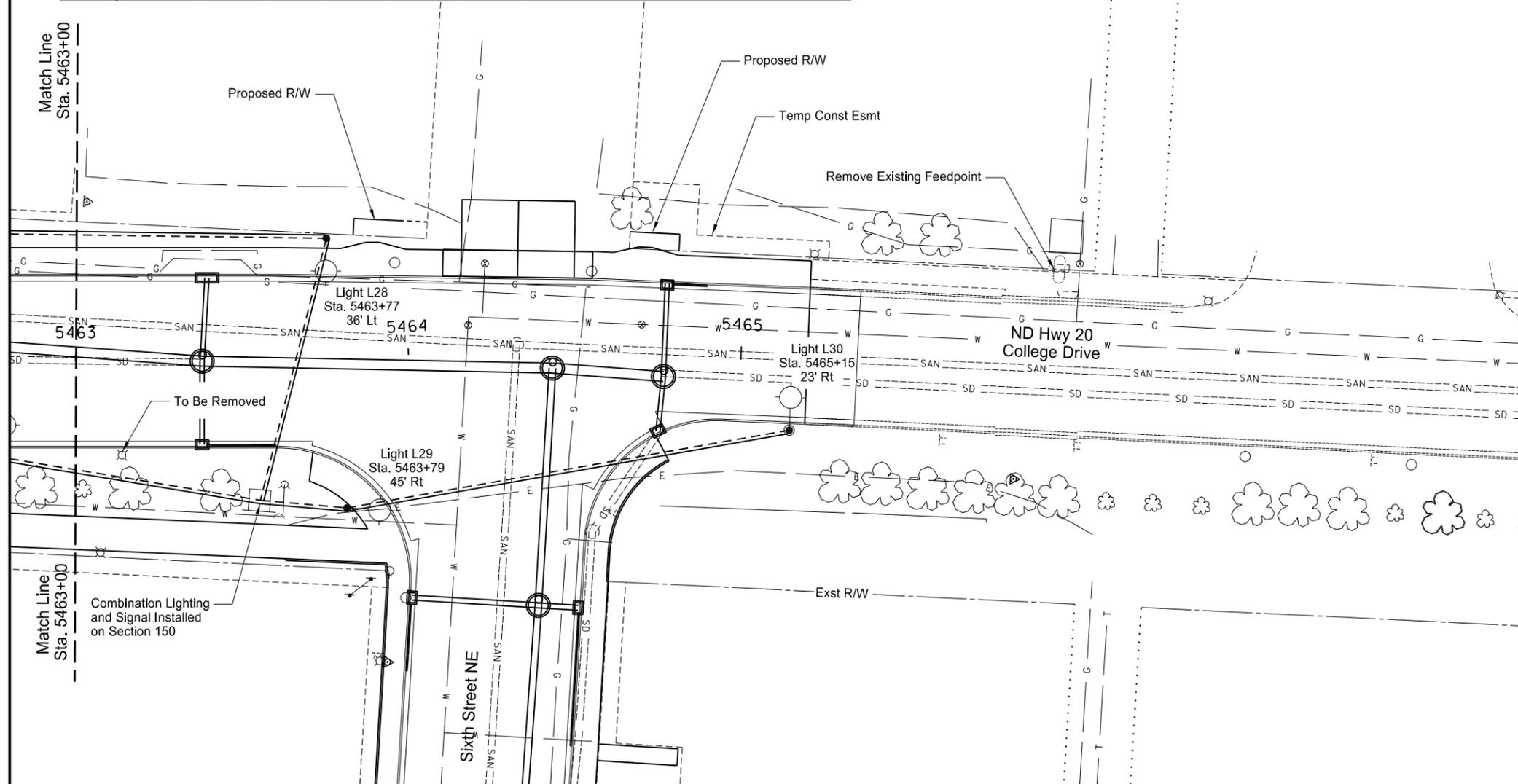
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ND Highway 20  
Lighting Layout  
Sta. 5459+00 to Sta. 5463+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	140	9

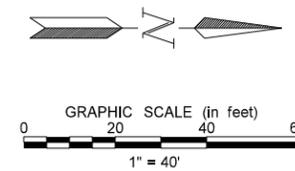
ITEM	STATION OFFSET	CONDUIT RUN		CABLE RUN	
		TOTAL LF	SIZE (IN)	TOTAL LF	SIZE/TYPER
Light L27 to Feed Point 2	5462+79, 29' RT to 5463+55, 42' RT	78	2"	184	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L26 to Light L28	5461+68, 40' LT to 5463+77, 36' LT	208	2"	432	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L28 to Feed Point 2	5463+77, 36' LT to 5463+55, 42' RT	81	2"	190	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Feed Point 2 to Light L29	5463+55, 42' RT to 5463+79, 45' RT	27	2"	62	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW
Light L29 to Light L30	5463+79, 45' RT to 5465+15, 23' RT	135	2"	286	(2) UNDERGROUND CONDUCTOR NO. 8 RHW/USE UNDERGROUND CONDUCTOR NO. 6 THW

Spec	Item Description	Qty	Unit
770 0330	2IN DIAMETER RIGID CONDUIT	529	LF
770 0506	UNDERGROUND CONDUCTOR NO8-TYPE RHW	1154	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	577	LF
770 4210	LED LUMINAIRE	3	EA
770 4560	REMOVE LIGHT STANDARD	1	EA
770 4590	REMOVE FEED POINT	1	EA



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LIGHT NUMBER	WATTS/TYPER	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L28, L29, L30	LED	II	Signal Std. Extension	40'	8'	Install luminaire on combination signal standard light standard extension. Luminaire operated at 240V.



ND Highway 20  
Lighting Layout  
Sta. 5463+00 to Sta. 5465+20

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-3-019(044)155	140	10
NHU-3-020(074)103				

### FEED POINT 2 PANEL SCHEDULE

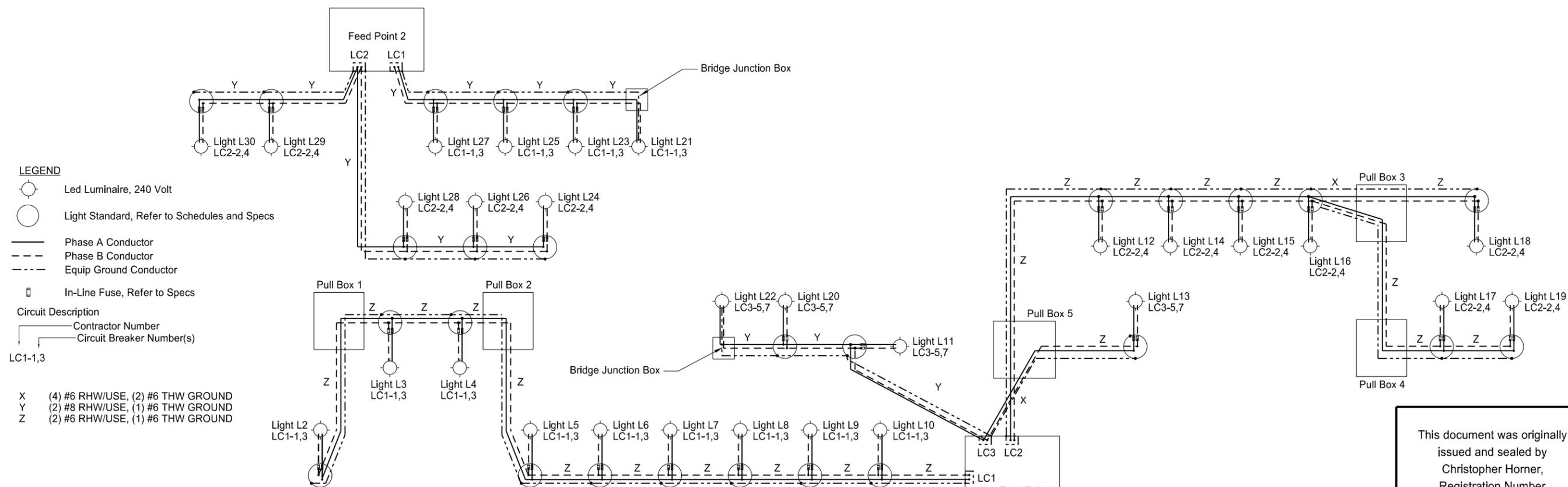
200 Amp Main Breaker, 120/240 Volt, 1Ø, All breakers 22 kAIC minimum.  
 NEMA 1 enclosure (inside cabinet). 12 space minimum loadcenter. Fed from Utility Metersocket. UL SUSE Rated.  
 (3) - #3/0 AWG Cu RHW/USE feeder conductors in Conduit from Utility Metersocket.  
 Install loadcenter main service conductors in conduit inside feed point cabinet. Provide Typed Identifications according to NEC 408 & 110.  
 Per NEC provide and bond #4 AWG ground electrodes to 2 ground rods minimum 6' apart along with cabinet.

CKT	DESCRIPTION	BRK	V-A	AMPS	Φ	AMPS	V-A	BRK	DESCRIPTION	CKT
1	LC1 - ND HWY 20 East Side	50	1,296	5.4	A	7.9	1900.8	50	LC2 - ND HWY 20 West Side	2
3				5.4	B	7.9				4
5				10.0	A					6
7	Traffic Signal Controller Cabinet	45	2,400	10.0	B			50	Spare	8
9	GFCI Receptacle (Feedpoint Internal)	20	600	5.0	A				(Space)	10
11	Photoeye	15	12	0.1	B				(Space)	12
<b>Total Connected VA and Amps</b>			6,209	28.3		23.4				

### FEED POINT 1 PANEL SCHEDULE

200 Amp Main Breaker, 120/240 Volt, 1Ø, All breakers 22 kAIC minimum.  
 NEMA 1 enclosure (inside cabinet). 12 space minimum loadcenter. Fed from Utility Metersocket. UL SUSE Rated.  
 (3) - #3/0 AWG Cu RHW/USE feeder conductors in Conduit from Utility Metersocket.  
 Install loadcenter main service conductors in conduit inside feed point cabinet. Provide Typed Identifications according to NEC 408 & 110.  
 Per NEC provide and bond #4 AWG ground electrodes to 2 ground rods minimum 6' apart along with cabinet.

CKT	DESCRIPTION	BRK	V-A	AMPS	Φ	AMPS	V-A	BRK	DESCRIPTION	CKT
1	LC1 - ND HWY 19	50	2,854	11.9	A	9.1	2184	50	LC2 - ND HWY 20	2
3				11.9	B	9.1				4
5				4.2	A	10.0	2400	45	Traffic Signal Controller Cabinet	6
7	LC3 - ND HWY 19	50	1,008	4.2	B	10.0				8
9	GFCI Receptacle (Feedpoint Internal)	20	600	5.0	A				(Space)	10
11	Photoeye	15	12	0.1	B				(Space)	12
<b>Total Connected VA and Amps</b>			9,058	40.2		35.3				



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ND Highway 19 &  
 ND Highway 20  
 Lighting Schematic Details

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-3-019(044)155	140	11
		NHU-3-020(074)103		

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
770	0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	22
770	0100	PULL BOX	EA	5
770	0305	1IN DIAMETER RIGID CONDUIT-BRIDGE MOUNTED	LF	107
770	0330	2IN DIAMETER RIGID CONDUIT	LF	3852
770	0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	5764
770	0506	UNDERGROUND CONDUCTOR NO8-TYPE RHW	LF	3032
770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	4398
770	1726	LT STD 8FT MA 40FT POLE BREAKAWAY	EA	22
770	4210	LED LUMINAIRE	EA	28
770	4300	UNDERPASS LIGHT UNIT CEILING MTD-50 WATT	EA	2
770	4560	REMOVE LIGHT STANDARD	EA	13
770	4590	REMOVE FEED POINT	EA	2

<b>770</b>	<b>0001</b>	<b>LIGHTING SYSTEM</b>	<b>EA</b>	<b>1</b>
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Items shown above are for informational purposes, provide all labor and equipment necessary for the lighting system to be fully operational as shown in the plans.

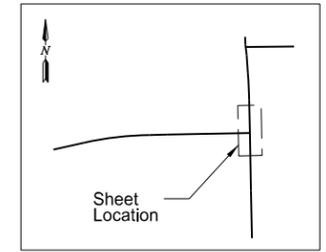
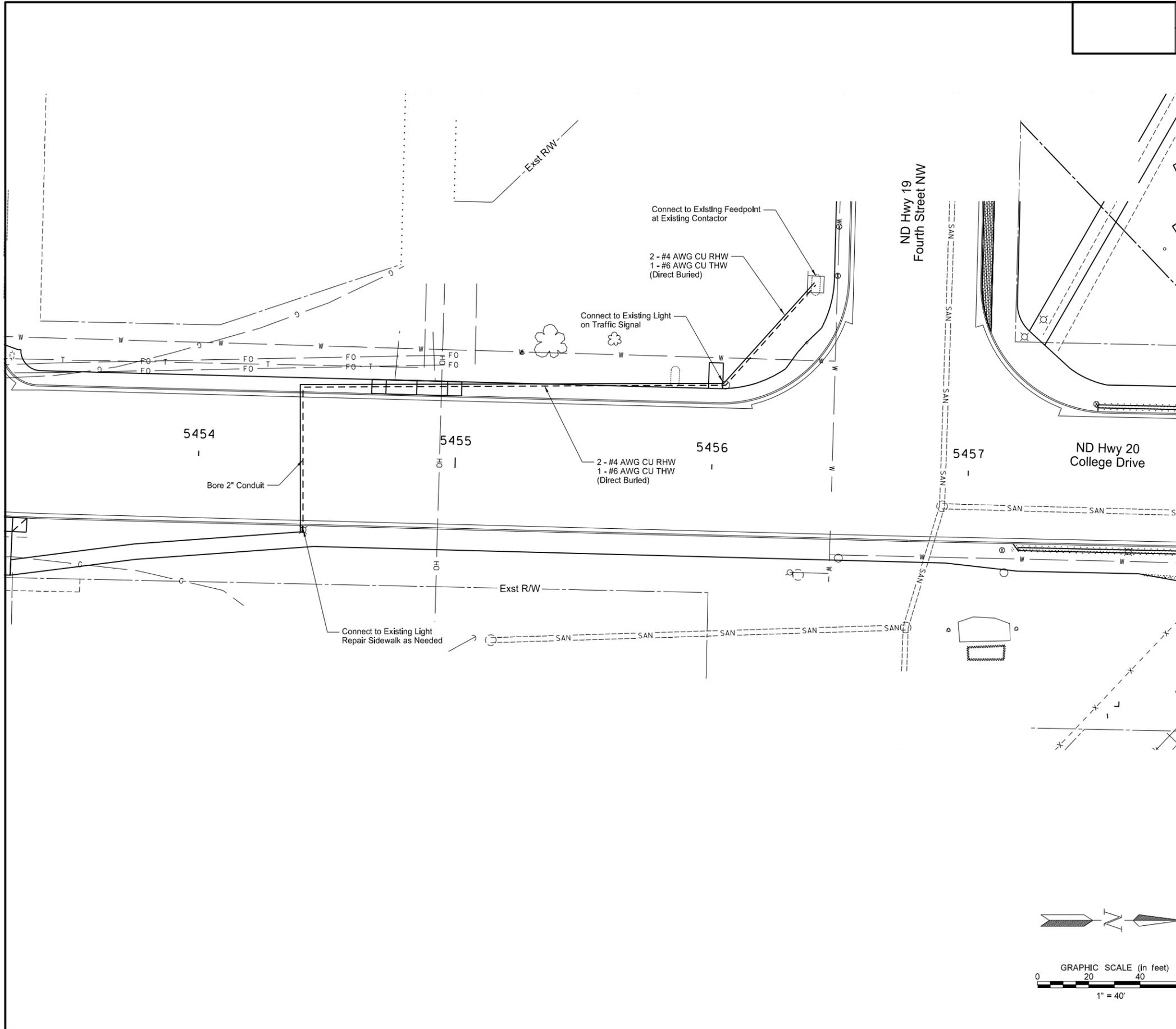
Items shall be included in the corresponding price bid for "LIGHTING SYSTEM".

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ND Highway 19 &  
ND Highway 20  
Lighting Estimate of Quantities

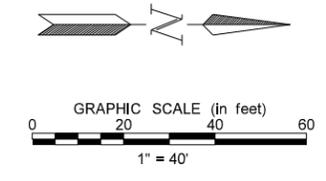
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	140	12

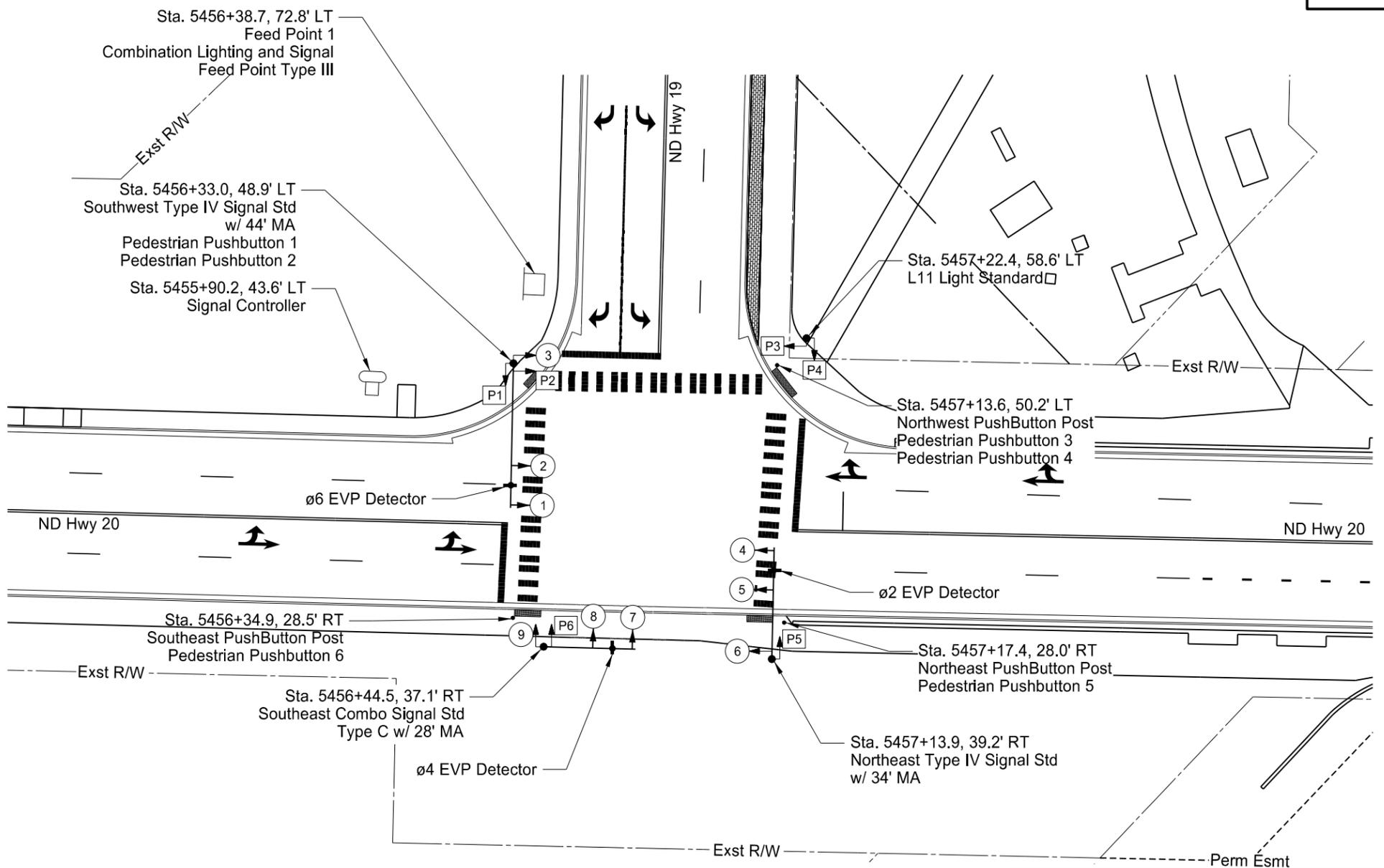
Spec	Item Description	Qty	Unit
770 0330	2IN DIAMETER RIGID CONDUIT	57	LF
770 0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	546	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	273	LF



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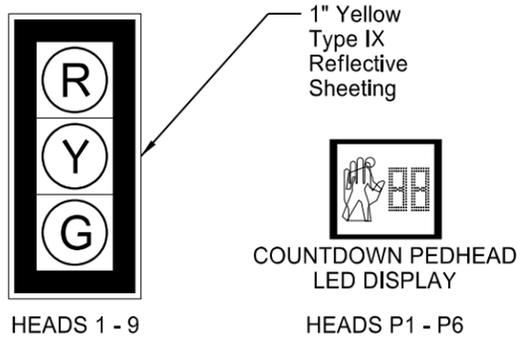
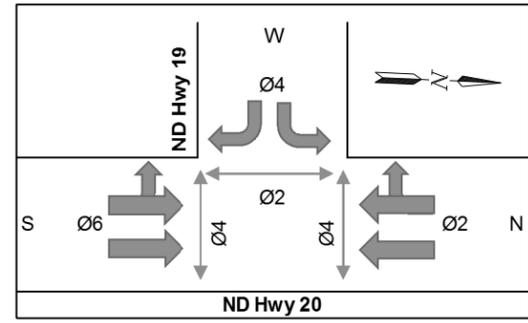
**ND Highway 20  
Temporary Lighting System**



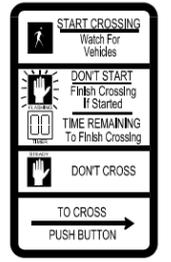


**LEGEND**

- Signal Controller
- Signal Head
- Pedestrian Head
- EVP Detector
- Feed Point
- Signal Foundation
- Pedestrian Pushbutton

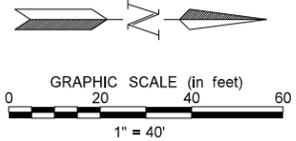


All Signal Heads  
12" LED Lenses &  
5" Louvered Backplates



R10-3e Sign  
Direction of Arrow Varies  
(see Pedestrian Pushbutton Schedule)

Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Pole	Direction of Arrow on Sign
Pushbutton 1	East	Right
Pushbutton 2	North	Left
Pushbutton 3	North	Left
Pushbutton 4	East	Left
Pushbutton 5	South	Left
Pushbutton 6	North	Right

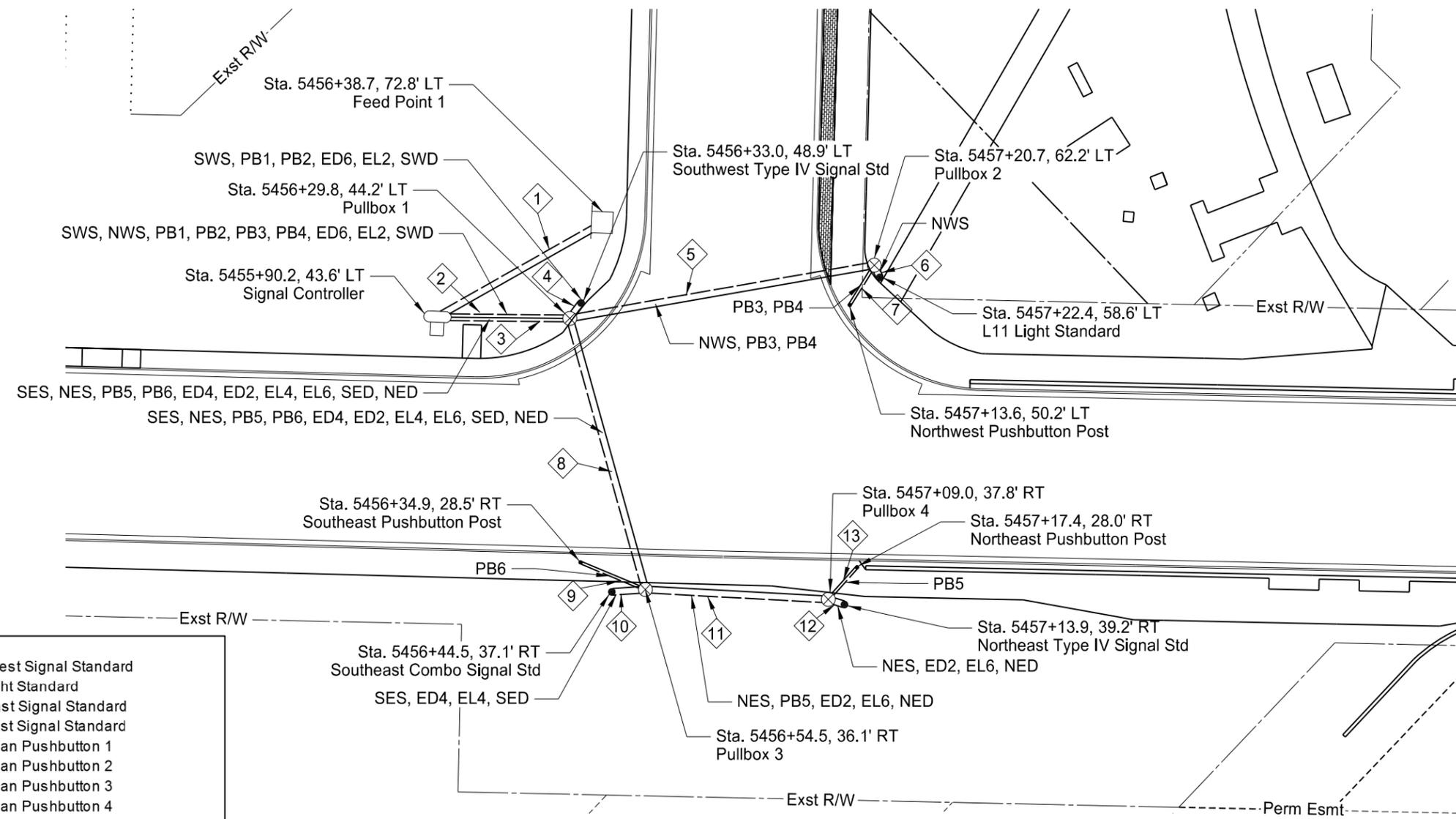


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ND Highway 20  
Signal Layout  
Intersection of ND 20 and ND 19  
Site 1

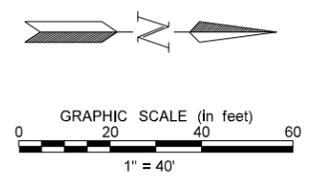
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	2

LEGEND	
	Signal controller
	Cable & Conduit Run
	Pull Box
	Feed Point
	Signal Pole
	Pedestrian Pushbutton



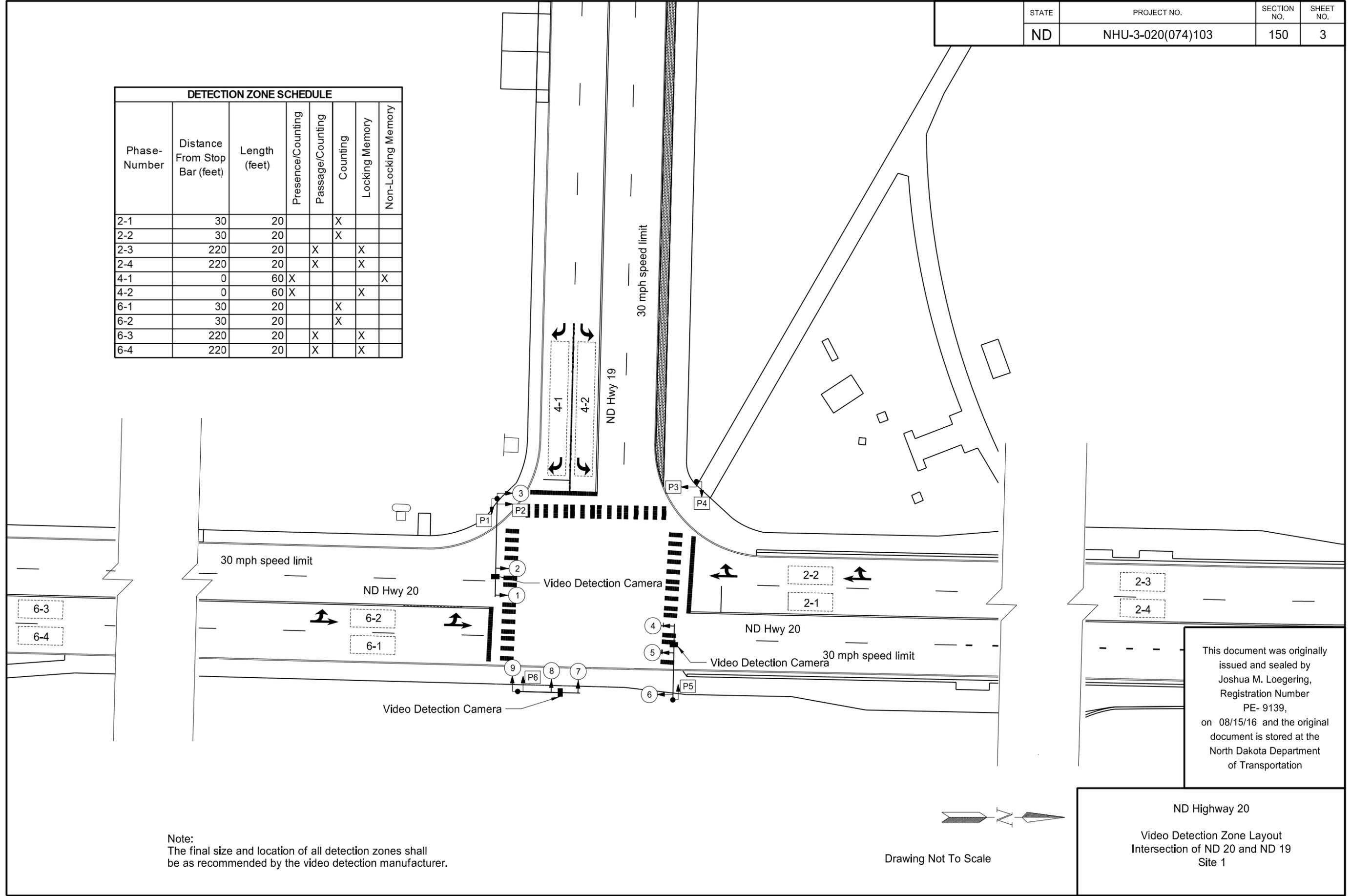
Cable Titles	
SWS	= Southwest Signal Standard
NWS	= L11 Light Standard
SES	= Southeast Signal Standard
NES	= Northeast Signal Standard
PB1	= Pedestrian Pushbutton 1
PB2	= Pedestrian Pushbutton 2
PB3	= Pedestrian Pushbutton 3
PB4	= Pedestrian Pushbutton 4
PB5	= Pedestrian Pushbutton 5
PB6	= Pedestrian Pushbutton 6
ED2	= Φ2 EVP Detector
ED4	= Φ4 EVP Detector
ED6	= Φ6 EVP Detector
EL2	= Φ2 EVP Light
EL4	= Φ4 EVP Light
EL6	= Φ6 EVP Light
SWD	= Southwest Video Detection Unit
SED	= Southeast Video Detection Unit
NED	= Northeast Video Detection Unit

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ND Highway 20  
 Conduit and Conductor Layout  
 Intersection of ND 20 and ND 19  
 Site 1

DETECTION ZONE SCHEDULE						
Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting	Passage/Counting	Counting	Locking Memory
2-1	30	20			X	
2-2	30	20			X	
2-3	220	20	X			X
2-4	220	20	X			X
4-1	0	60	X			X
4-2	0	60	X			X
6-1	30	20			X	
6-2	30	20			X	
6-3	220	20	X			X
6-4	220	20	X			X

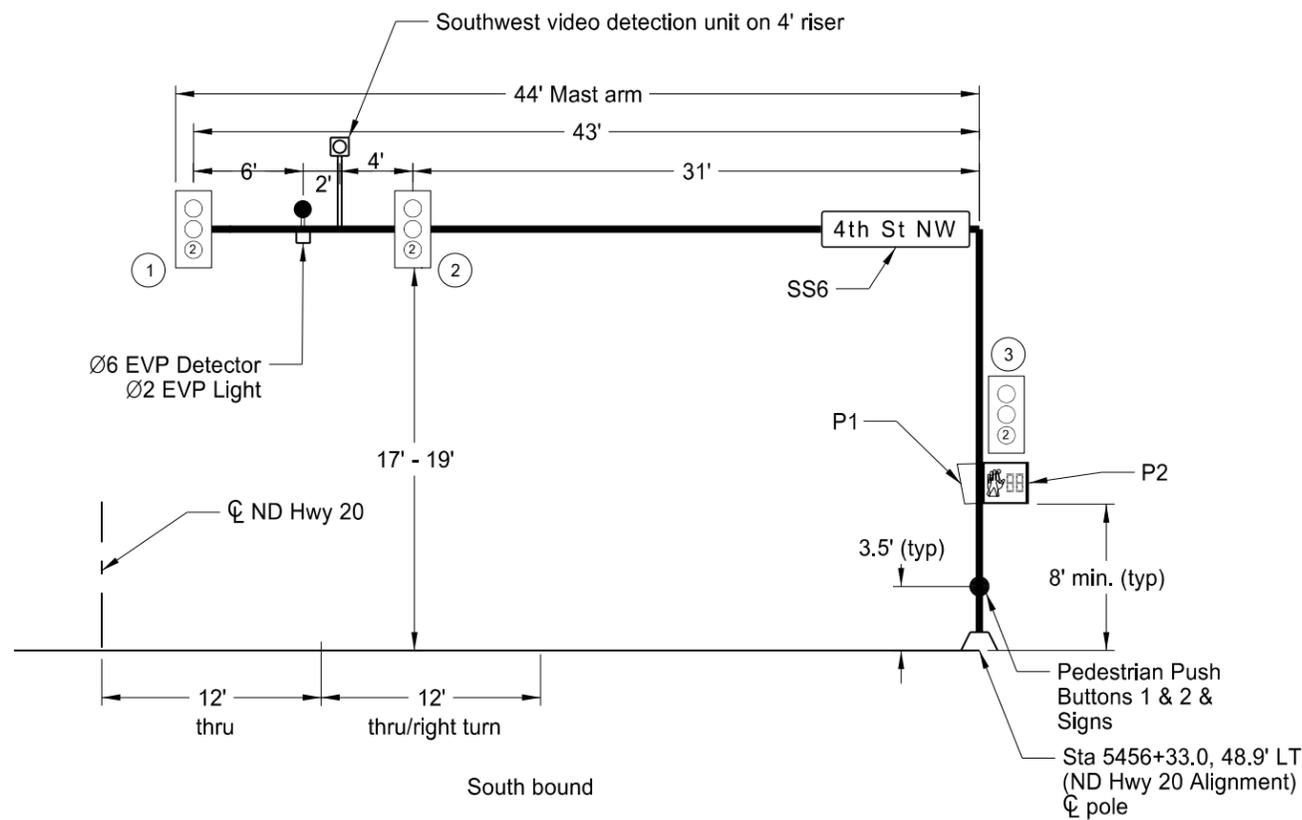


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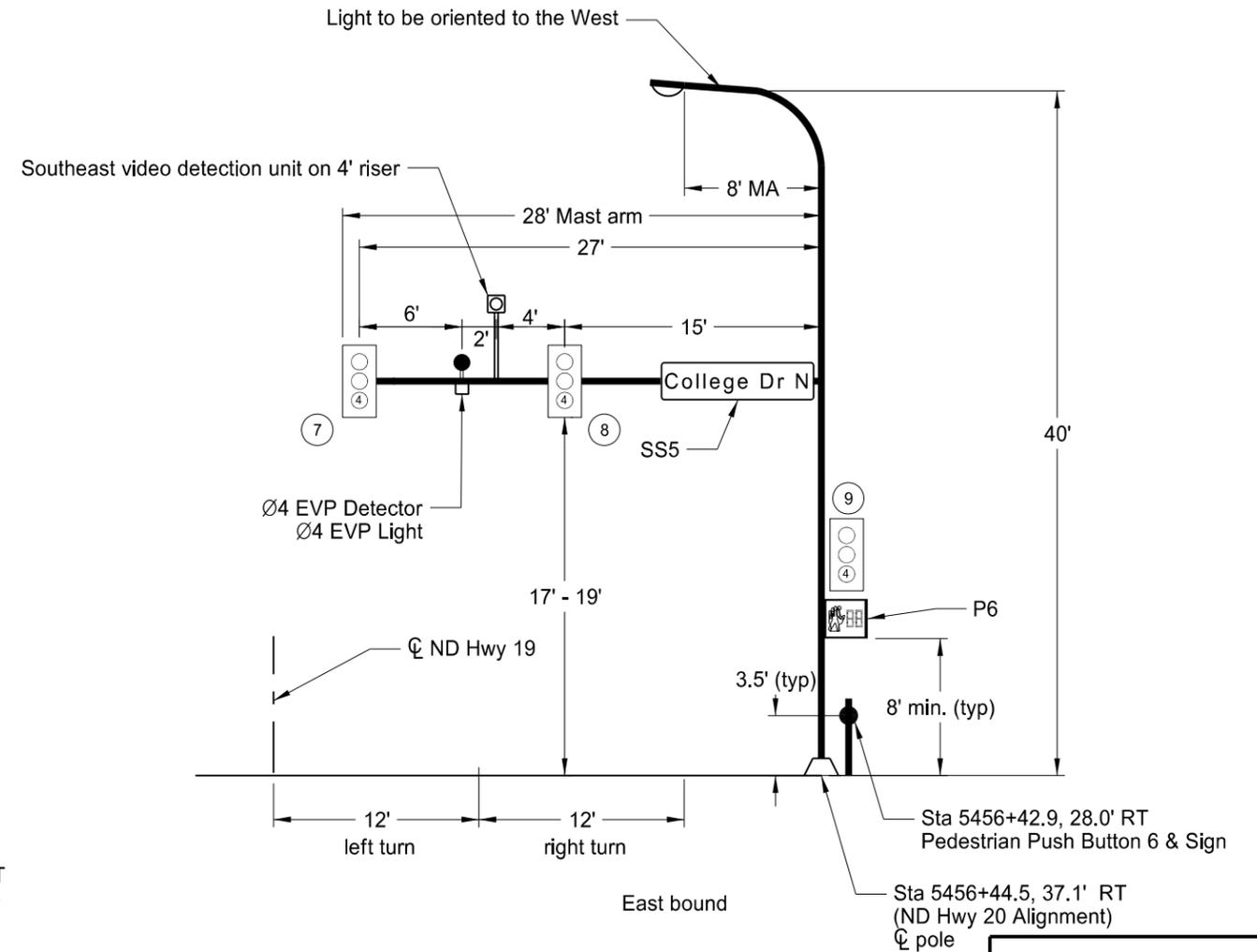
ND Highway 20  
Video Detection Zone Layout  
Intersection of ND 20 and ND 19  
Site 1

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	4

Southwest signal standard



Southeast combination signal standard



LEGEND

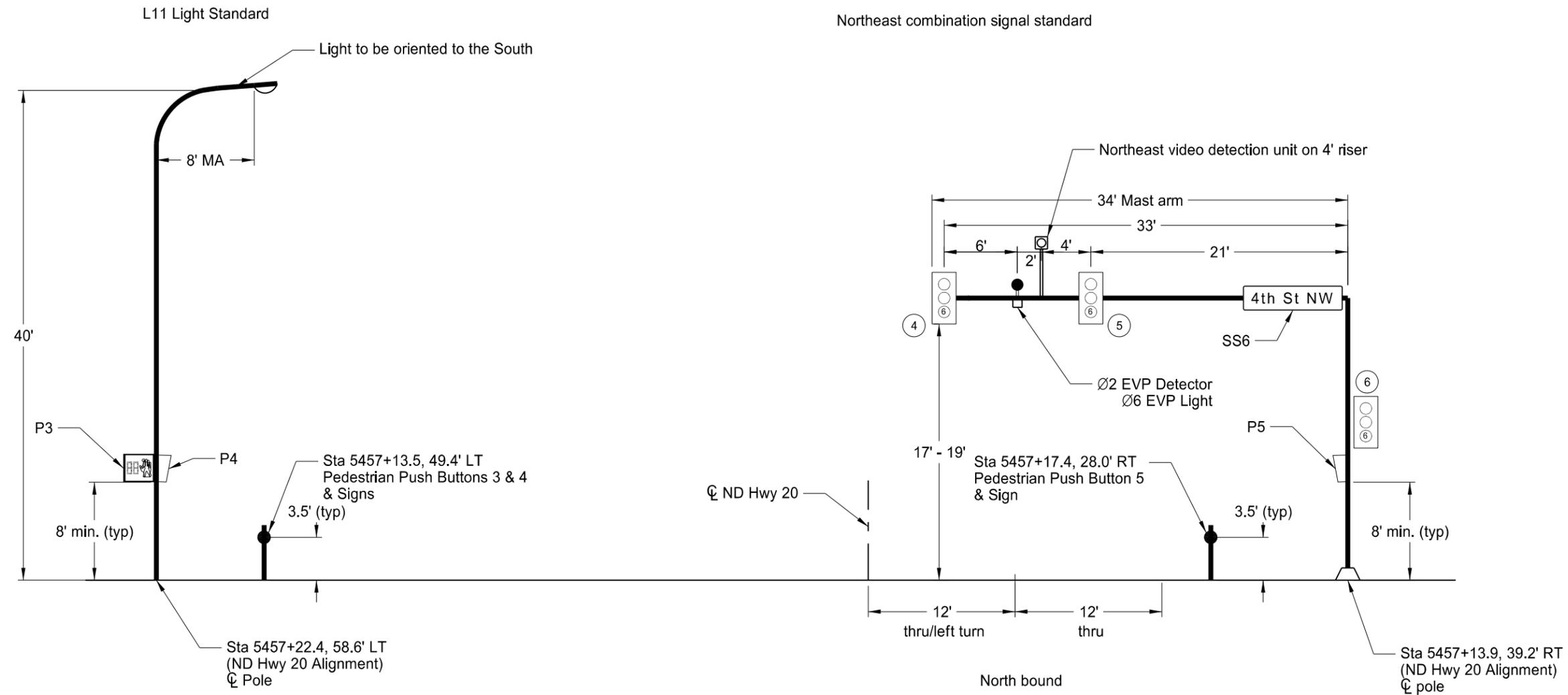
- Video Detection Camera
- Pedestrian Head
- Traffic Signal Head w/ associated phase
- Signal Head Number
- EVP Light
- EVP Detector

Note:  
Face the ø6 EVP detector the opposite direction of signal heads on the corresponding mast arm.

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ND Highway 20  
Signal Standards and Head Locations  
Intersection of ND 20 and ND 19  
Site 1

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	5



**LEGEND**

-  Video Detection Camera
-  Pedestrian Head
-  Traffic Signal Head w/ associated phase
-  Signal Head Number
-  EVP Light
-  EVP Detector

Note:  
Face the EVP detector in the opposite direction of signal heads on the corresponding mast arm.

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ND Highway 20  
Signal Standards and Head Locations  
Intersection of ND 20 and ND 19  
Site 1

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
<b>SIGNAL INDICATIONS &amp; PHASING</b>		SB Thru		EB Left/Right		NB Thru		
Corresponding Signal Head(s)		1,2,3		7, 8, 9		4,5,6		
Right-of-Way Display		G		G		G		
Clearance Display Prior to Next Phase		Y		Y		Y		
Corresponding Pedestrian Head(s)		P2,P3		P1,P4,P5,P6		P2,P3		
Concurrent Phase		6				2		
Next Phase (Unless Skipped)		4		6		4		

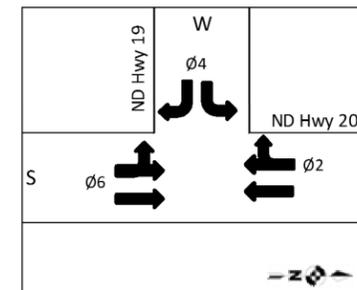
Overlap - Corresponding Signal Head(s)								
Overlap - Right-of-Way Display								
Overlap - Clearance Display Prior to Next Phase								

**BASIC INTERVALS (OR FUNCTIONS)**

Minimum Initial		10.0		7.0		10.0		
Minimum Initial with Pedestrian Actuation*		27.3		26.1		27.3		
Passage Time		5.0		5.0		5.0		
Total Split (Green + Yellow+ All Red)		33.0		32.0		33.0		
Yellow Change		3.2		3.0		3.2		
Red Clearance		2.7		4.1		2.7		
Walk		7.0		7.0		7.0		
Pedestrian Clearance		20.3		19.1		20.3		

NB = Northbound (ND 20)  
 SB = Southbound (ND 20)  
 EB = Eastbound (ND 19)

Y = Yellow Ball Indication  
 G = Green Ball Indication



**VOLUME DENSITY TIMING FUNCTIONS - ONLY APPLICABLE DURING "FREE" (UNCOORDINATED) TIMING PLAN**

<i>Added Initial</i>								
Minimum Initial								
Added Initial per Actuation								
Actuations Before Added Initial								
<i>Computed Initial</i>								
Minimum Initial								
Maximum Initial								
Actuations to Reach Maximum Initial								
<i>Extensible Initial</i>								
Minimum Initial								
Maximum Initial								
Added Initial per Actuation								
<i>Passage Time</i>								
Minimum Gap								
Time to Reduce to Minimum Gap								
Reduce Gap Every								
Reduce Gap Every Second By								
Reduce Gap By								

Site	Time Period	Timing Plan	Coordinated Phase	Offset <sup>1</sup>
1	7:00 AM - 7:00 PM	Coordinated	ø2 (North Thru)/ø6 (South Thru)	0 Seconds
2			ø2 (North Thru)/ø6 (South Thru)	43 Seconds
1	7:00 PM - 7:00 AM	Free	-	-
2			-	-

<sup>1</sup>Offset is referenced to the last of coordinated phases to turn green at master controller (site 1)

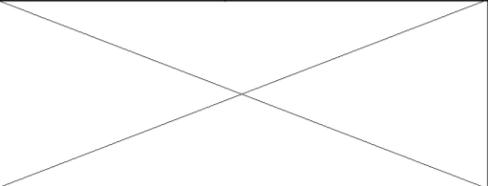
**OTHER CONTROLLER FUNCTIONS**

Recall		Minimum		No		Minimum	
Flashing-Normal & Conflict Monitor		Y		R		Y	
Start Up Phasing		G		R		G	
Emergency Vehicle Pre-emption		x		x		x	
Type of Detector	Presence	Refer to Detector Zone Table					
	Calling						
	Passage						
Locking Memory							
Non-Locking Memory							

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ND Highway 20  
 Controller Settings  
 Intersection of ND 20 and ND 19  
 Site 1



Conductor		Cable SWS (Southwest Signal) (12 No. 14 AWG)		Cable NWS (L11 Light Standard) (7 No. 14 AWG)		Cable NES (Northeast Signal) (12 No. 14 AWG)		Cable SES (Southeast Signal) (12 No. 14 AWG)		
	Base	Tracer	Head	Indication	Head	Indication	Head	Indication	Head	Indication
1	Black		P1	Ø4 Walk	P3	Ø2 Walk		Spare	P6	Ø4 Walk
2	White			Neutral		Neutral		Neutral		Neutral
3	Red		1, 2, 3	Ø2 Red	P3	Ø2 Don't Walk	4, 5, 6	Ø6 Red	7, 8, 9	Ø4 Red
4	Green			Ground		Ground		Ground		Ground
5	Orange		1, 2, 3	Ø2 Yellow	P4	Ø4 Don't Walk	4, 5, 6	Ø6 Yellow	7, 8, 9	Ø4 Yellow
6	Blue		1, 2, 3	Ø2 Green	P4	Ø4 Walk	4, 5, 6	Ø6 Green	7, 8, 9	Ø4 Green
7	White	Black		Spare		Spare		Spare		Spare
8	Red	Black	P1	Ø4 Don't Walk				Spare	P6	Ø4 Don't Walk
9	Green	Black		Spare				Spare		Spare
10	Orange	Black	P2	Ø2 Don't Walk			P5	Ø4 Don't Walk		Spare
11	Blue	Black		Spare				Spare		Spare
12	Black	White	P2	Ø2 Walk			P5	Ø4 Walk		Spare

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ND Highway 20  
Signal Heads and Conductors  
Intersection of ND 20 and ND 19  
Site 1

**SIGNAL CABLE & CONDUIT SCHEDULE**

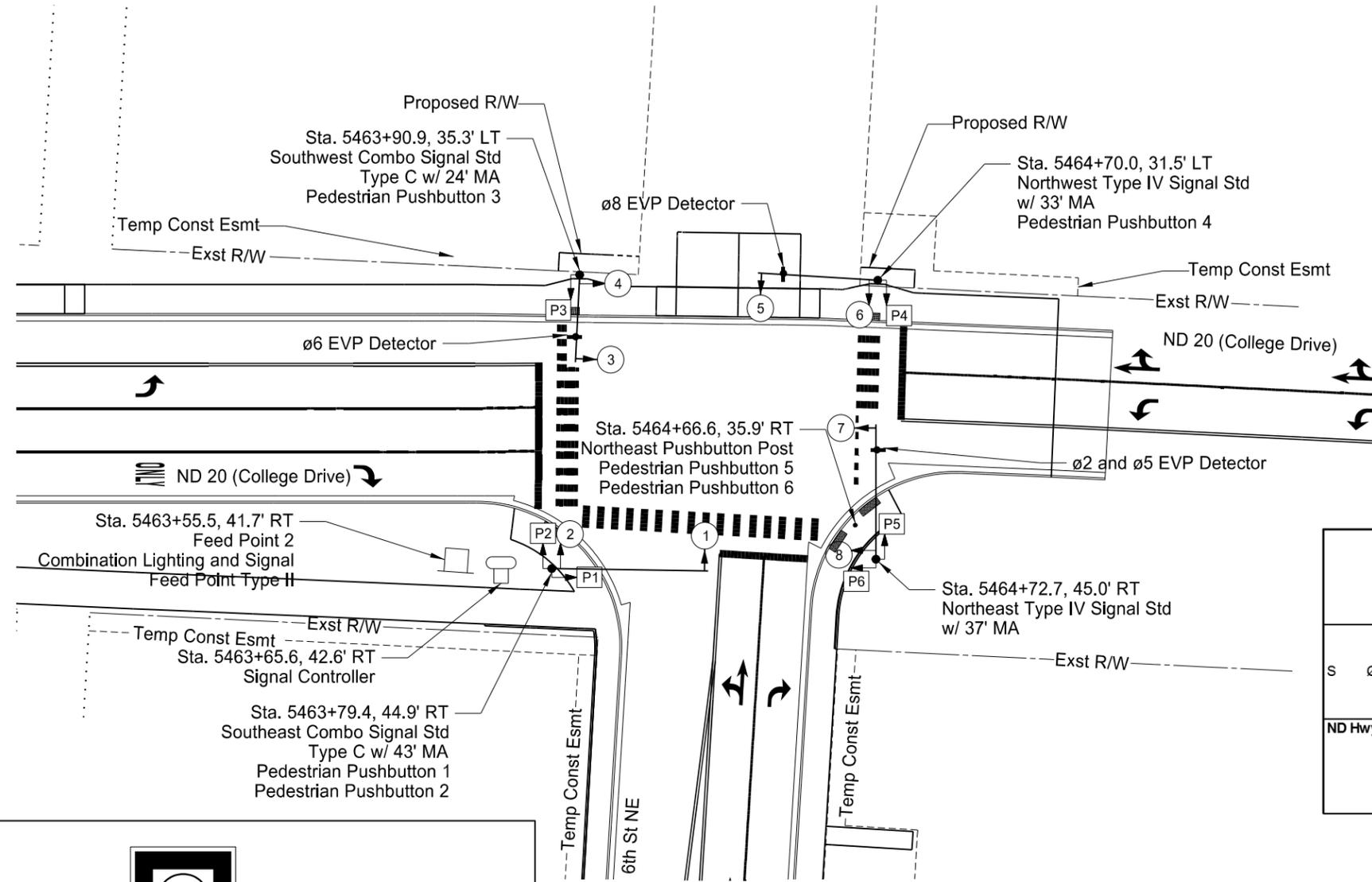
#	RUN		CONDUIT		NOTES	CABLE					
	ITEM	STATION, OFFSET	SIZE (IN)	LF		Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE
1	Origin Destination	Feed Point #1 Traffic Signal Controller	5456+38.7, 72.8' LT 5455+90.2, 43.6' LT	2	52	Feed Point #1 Feed Point #1	Traffic Signal Controller Traffic Signal Controller	2 1	Underground Conductor NO6-Type RHW Underground Conductor NO6-Type THW	142 71	
2	Origin Destination	Traffic Signal Controller Pull Box 1	5455+90.2, 43.6' LT 5456+29.8, 44.2' LT	3	34	Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	1 1 4 1 1 1	14 AWG 12 CONDUCTOR CABLE 14 AWG 7 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE	49 49 196 49 49 49	SWS NWP PB1, PB2, PB3, PB4 ED6 SWD EL2
3	Origin Destination	Traffic Signal Controller Pull Box 1	5455+90.2, 43.6' LT 5456+29.8, 44.2' LT	3	34	Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	2 2 2 2 2	14 AWG 12 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	98 98 98 98 98	SES, NES PB5, PB6 ED4, ED2 EL4, EL6 SED, NED
4	Origin Destination	Pull Box 1 Southwest Type IV Signal Std	5456+29.8, 44.2' LT 5456+33.0, 48.9' LT	2	4	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	Southwest Type IV Signal Std Transformer Base Pushbutton 1 Pushbutton 2 Southwest Emergency Preemption Detector Southwest Emergency Preemption Light Southwest Video Detection Unit	1 1 1 1 1 1	14 AWG 12 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	15 18 18 78 78 64	SWS PB1 PB2 ED6 EL2 SWD
5	Origin Destination	Pull Box 1 Pull Box 2	5456+29.8, 44.2' LT 5457+20.7, 62.2' LT	2	89	Pull Box 1 Pull Box 1	Pull Box 1 Pull Box 2	1 2	14 AWG 7 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	101 202	NWP PB3, PB4
6	Origin Destination	Pull Box 2 L11 Light Standard	5457+20.7, 62.2' LT 5457+22.4, 58.6' LT	2	4	Pull Box 2	L11 Light Standard	1	14 AWG 7 CONDUCTOR CABLE	15	NWS
7	Origin Destination	Pull Box 2 Northwest Pushbutton Post	5457+20.7, 62.2' LT 5457+13.6, 50.2' LT	2	12	Pull Box 2	Northwest Pushbutton Post	2	16 AWG 2 CONDUCTOR CABLE	52	PB3, PB4
8	Origin Destination	Pull Box 1 Pull Box 3	5456+29.8, 44.2' LT 5456+54.5, 36.1' RT	3	80	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3	2 2 2 2 2	14 AWG 12 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	184 184 184 184 184	SES, NES PB5, PB6 ED4, ED2 EL4, EL6 SED, NED
9	Origin Destination	Pull Box 3 Southeast Pushbutton Post	5456+54.5, 36.1' RT 5456+34.9, 28.5' RT	2	19	Pull Box 3	Southeast Pushbutton Post	1	16 AWG 2 CONDUCTOR CABLE	33	PB6
10	Origin Destination	Pull Box 3 Southeast Combo Signal Std	5456+54.5, 36.1' RT 5456+44.5, 37.1' RT	2	8	Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3	Southeast Combo Signal Std Transformer Base Southeast Emergency Preemption Detector Southeast Emergency Preemption Light Southeast Video Detection Unit	1 1 1 1	14 AWG 12 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	19 66 66 68	SES ED4 EL4 SED
11	Origin Destination	Pull Box 3 Pull Box 4	5456+54.5, 36.1' RT 5457+09.0, 37.8' RT	2	52	Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3	Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4	1 1 1 1 1	14 AWG 12 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	64 64 64 64 64	NES PB5 ED2 EL6 NED
12	Origin Destination	Pull Box 4 Northeast Type IV Signal Std	5457+09.0, 37.8' RT 5457+13.9, 39.2' RT	2	3	Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4	Northeast Type IV Signal Std Transformer Base Northeast Emergency Preemption Detector Northeast Emergency Preemption Light Northeast Video Detection Unit	1 1 1 1	14 AWG 12 CONDUCTOR CABLE EMERGENCY VEHICLE DETECTOR CABLE 14 AWG 2 CONDUCTOR CABLE VIDEO DETECTION CABLE	14 67 67 63	NES ED2 EL6 NED
13	Origin Destination	Pull Box 4 Northeast Pushbutton Post	5457+09.0, 37.8' RT 5457+17.4, 28.0' RT	2	11	Pull Box 4	Northeast Pushbutton Post	1	16 AWG 2 CONDUCTOR CABLE	25	PB5

INTERNAL MAST ARM/STANDARD SIGNAL & PEDESTRIAN HEAD CABLE				
Origin	Destination	# of Cables	SIZE/TYPE	Total LF
Southwest Type IV Signal Std Transformer Base	Vehicle Head 1	1	14 AWG 5 CONDUCTOR CABLE	71
	Vehicle Head 2	1	14 AWG 5 CONDUCTOR CABLE	59
	Vehicle Head 3	1	14 AWG 5 CONDUCTOR CABLE	20
	Pedestrian Head 1	1	14 AWG 3 CONDUCTOR CABLE	17
	Pedestrian Head 2	1	14 AWG 3 CONDUCTOR CABLE	17
	Pedestrian Head 3	1	14 AWG 3 CONDUCTOR CABLE	17
L11 Light Standard	Pedestrian Head 4	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 4	1	14 AWG 5 CONDUCTOR CABLE	61
Northeast Type IV Signal Std Transformer Base	Vehicle Head 5	1	14 AWG 5 CONDUCTOR CABLE	49
	Vehicle Head 6	1	14 AWG 5 CONDUCTOR CABLE	20
	Pedestrian Head 5	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 7	1	14 AWG 5 CONDUCTOR CABLE	55
Southeast Combo Signal Std Transformer Base	Vehicle Head 8	1	14 AWG 5 CONDUCTOR CABLE	43
	Vehicle Head 9	1	14 AWG 5 CONDUCTOR CABLE	20
	Pedestrian Head 6	1	14 AWG 3 CONDUCTOR CABLE	17

**Cable Titles**  
SWS = Southwest Signal Standard  
NWS = L11 Light Standard  
SES = Southeast Signal Standard  
NES = Northeast Signal Standard  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
ED2 = Ø2 EVP Detector  
ED4 = Ø4 EVP Detector  
ED6 = Ø6 EVP Detector  
EL2 = Ø2 EVP Light  
EL4 = Ø4 EVP Light  
EL6 = Ø6 EVP Light  
SWD = Southwest Video Detection Unit  
SED = Southeast Video Detection Unit  
NED = Northeast Video Detection Unit

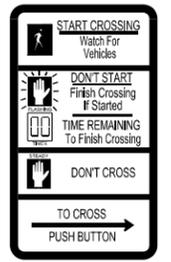
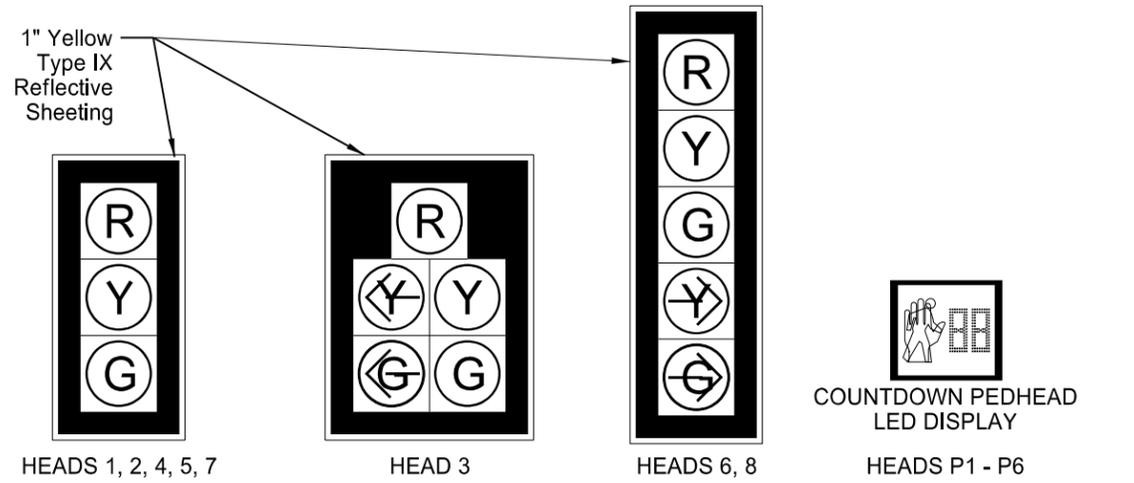
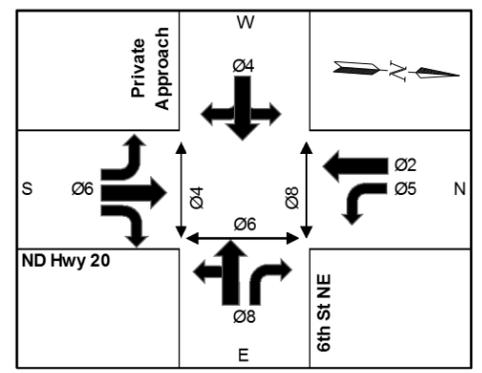
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ND Highway 20  
Cable and Conduit Schedule  
Intersection of ND 20 and ND 19  
Site 1



**LEGEND**

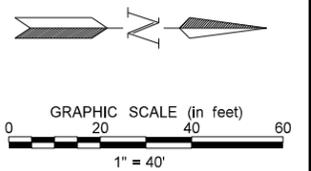
- Signal Controller
- Signal Head
- Pedestrian Head
- EVP Detector
- Feed Point
- Signal Foundation
- Pedestrian Pushbutton



R10-3e Sign  
Direction of Arrow Varies  
(see Pedestrian Pushbutton Schedule)

Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Pole	Direction of Arrow on Sign
Pushbutton 1	North	Right
Pushbutton 2	West	Left
Pushbutton 3	South	Right
Pushbutton 4	North	Left
Pushbutton 5	North	Right
Pushbutton 6	East	Left

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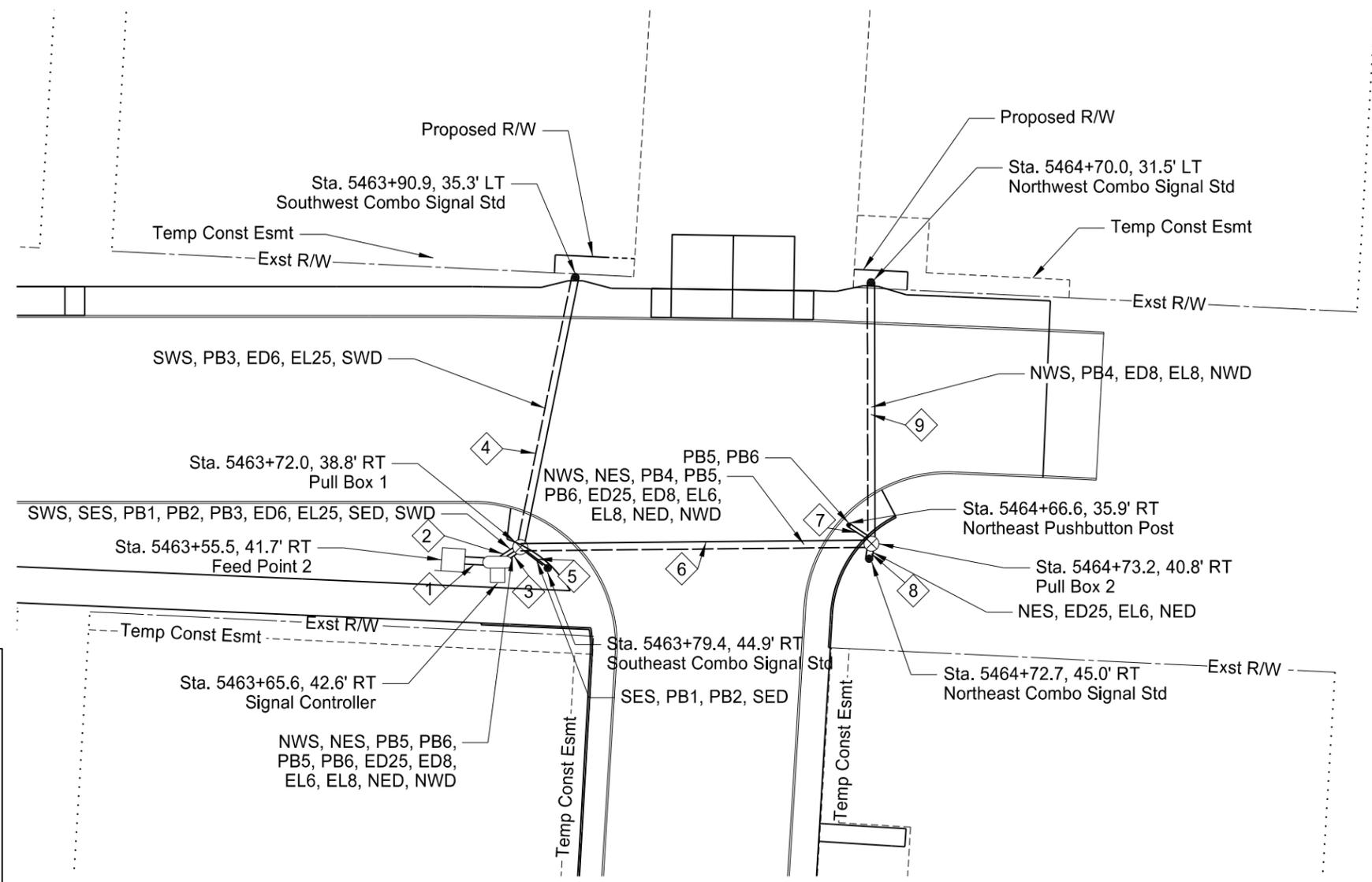


ND Highway 20

Signal Layout  
ND 20 and 6th St NE  
Site 2

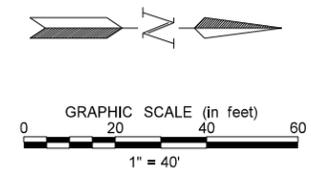
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	11

LEGEND	
	Signal controller
	Cable & Conduit Run
	Pull Box
	Feed Point
	Signal Pole
	Pedestrian Pushbutton

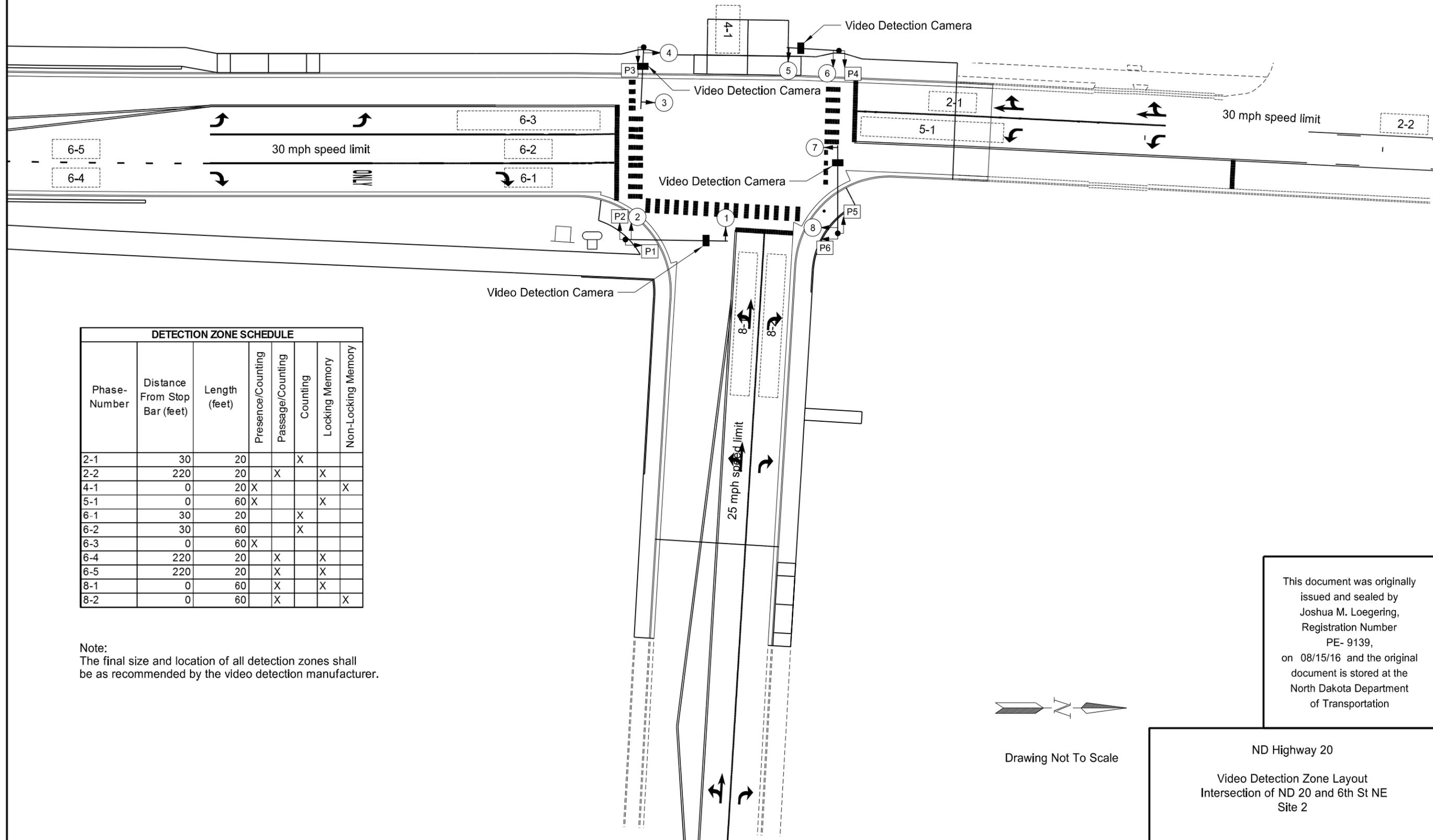


Cable Titles
SWS = Southwest Signal Standard
NWS = Northwest Signal Standard
SES = Southeast Signal Standard
NES = Northeast Signal Standard
PB1 = Pedestrian Pushbutton 1
PB2 = Pedestrian Pushbutton 2
PB3 = Pedestrian Pushbutton 3
PB4 = Pedestrian Pushbutton 4
PB5 = Pedestrian Pushbutton 5
PB6 = Pedestrian Pushbutton 6
ED25 = $\phi$ 2 & $\phi$ 5 EVP Detector
ED6 = $\phi$ 6 EVP Detector
ED8 = $\phi$ 8 EVP Detector
EL25 = $\phi$ 2 & $\phi$ 5 EVP Light
EL6 = $\phi$ 6 EVP Light
EL8 = $\phi$ 8 EVP Light
SWD = Southwest Video Detection Unit
SED = Southeast Video Detection Unit
NED = Northeast Video Detection Unit
NWD = Northwest Video Detection Unit

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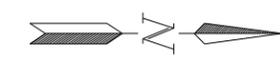
ND Highway 20  
 Conduit and Conductor Layout  
 ND 20 and 6th St NE  
 Site 2



DETECTION ZONE SCHEDULE							
Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting	Passage/Counting	Counting	Locking Memory	Non-Locking Memory
2-1	30	20			X		
2-2	220	20	X	X		X	
4-1	0	20	X				X
5-1	0	60	X			X	
6-1	30	20			X		
6-2	30	60			X		
6-3	0	60	X				
6-4	220	20	X	X		X	
6-5	220	20	X	X		X	
8-1	0	60	X	X		X	
8-2	0	60	X				X

Note:  
The final size and location of all detection zones shall be as recommended by the video detection manufacturer.

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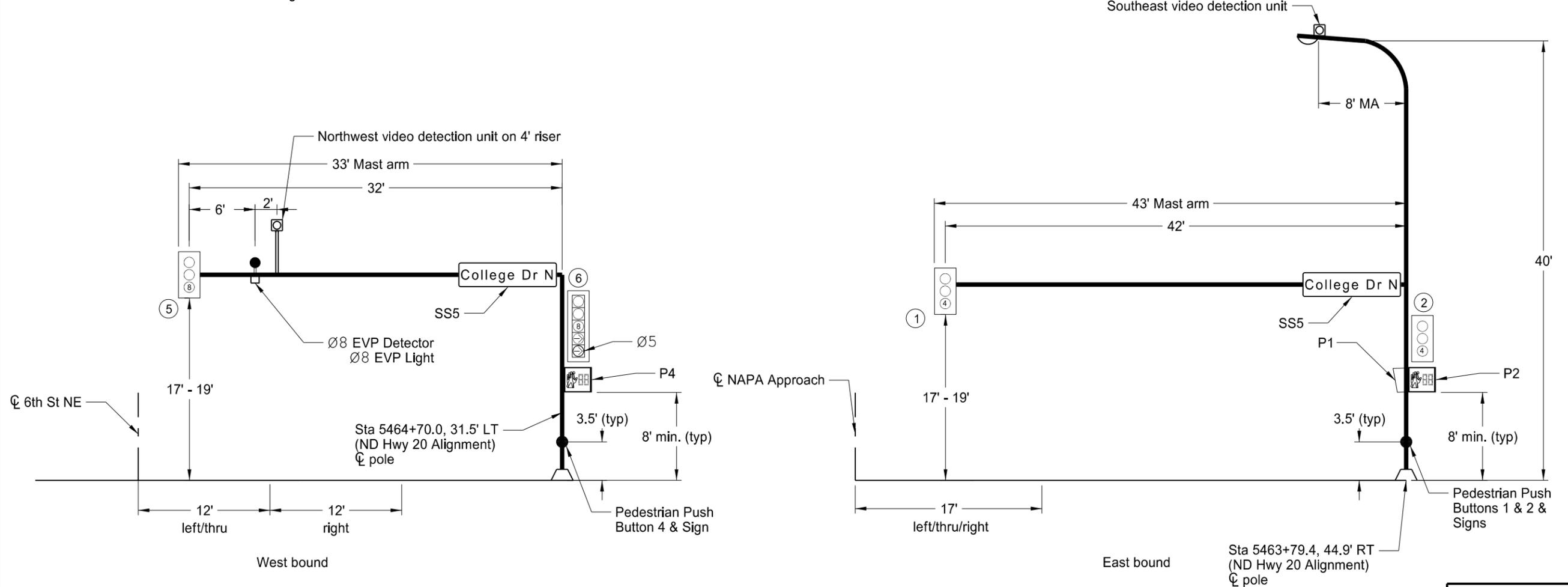
Drawing Not To Scale

ND Highway 20  
Video Detection Zone Layout  
Intersection of ND 20 and 6th St NE  
Site 2

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	13

Northwest signal standard

Southeast combination signal standard



Note:  
Face EVP detector in the opposite direction of the signal heads on the corresponding mast arm.

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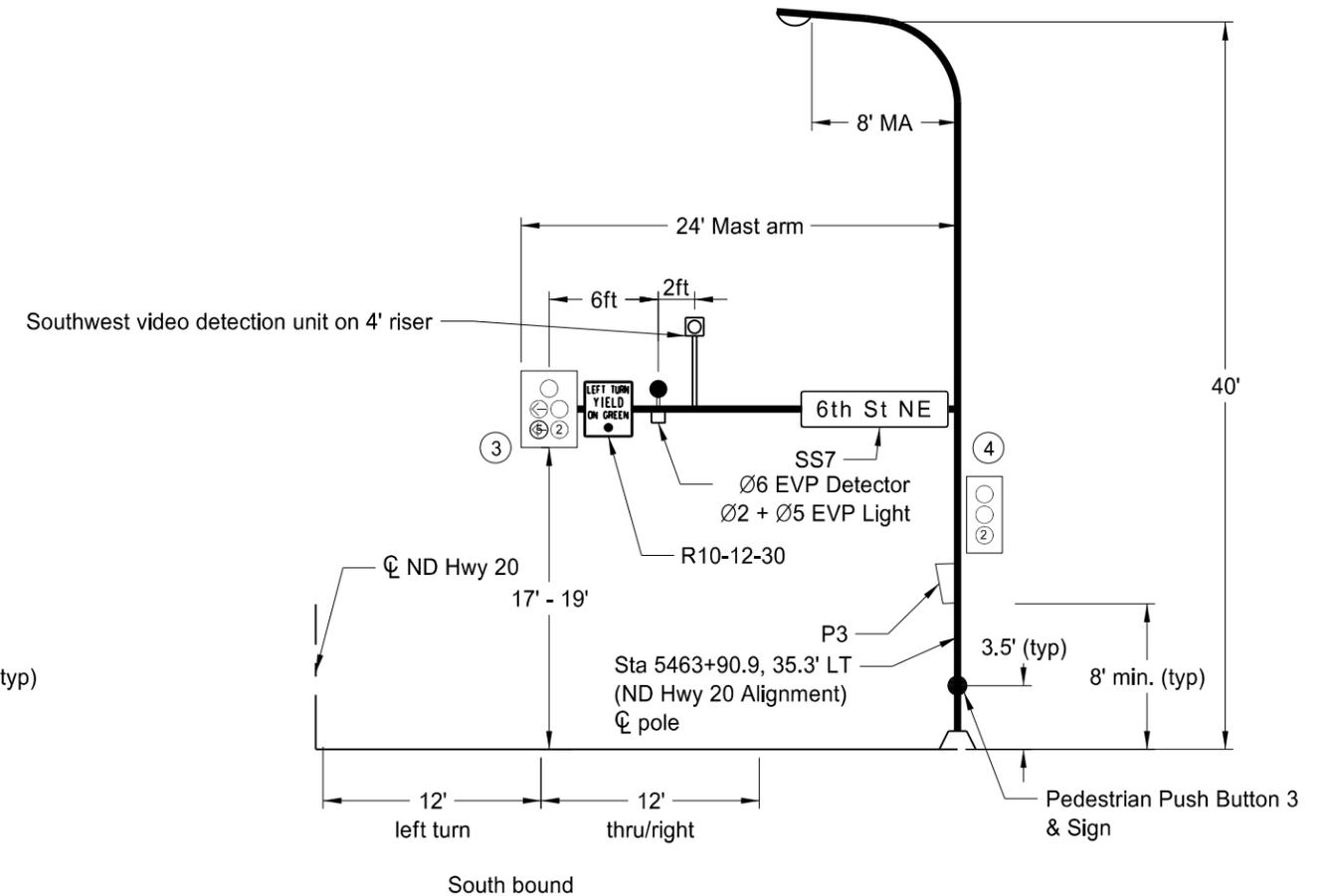
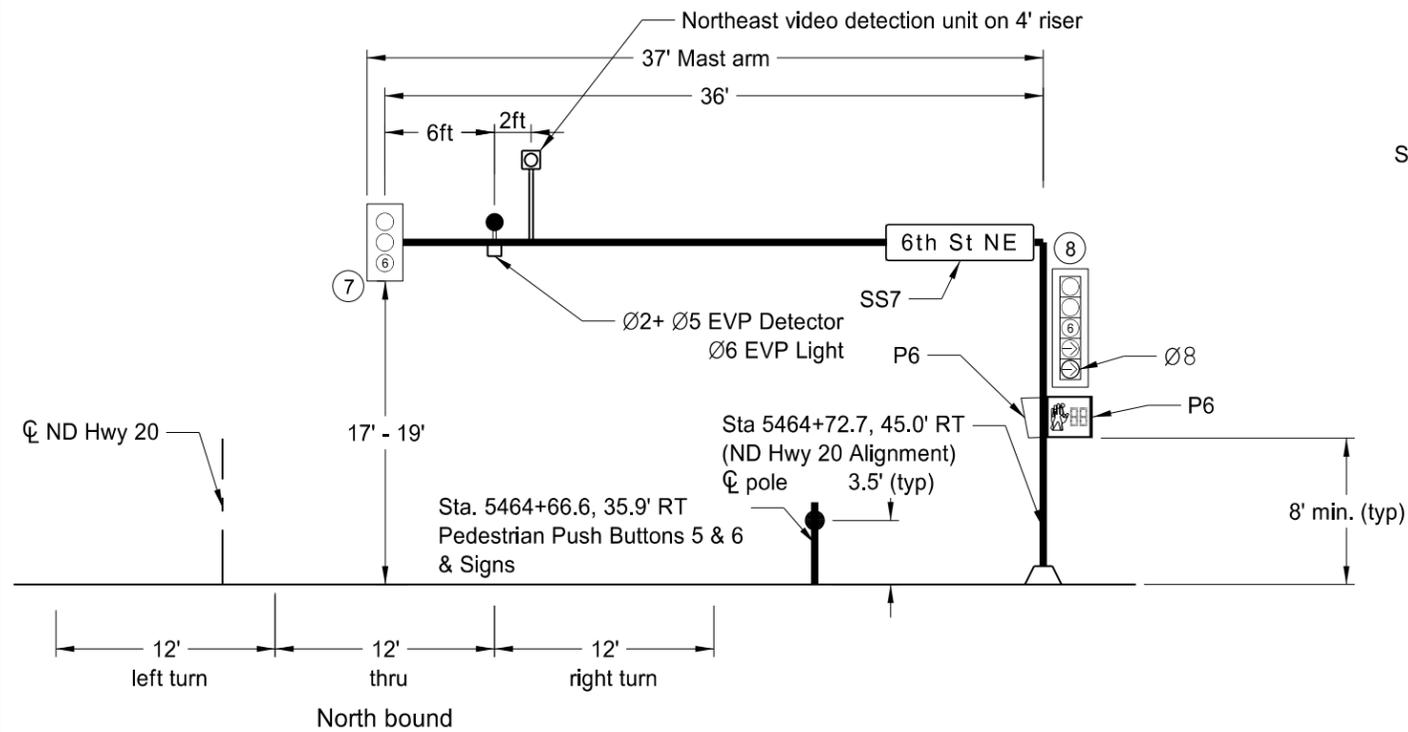
ND Highway 20  
Signal Standards and Head Locations  
Intersection of ND 20 and 6th St NE  
Site 2

LEGEND	
	Video Detection Camera
	Traffic Signal Head w/ associated phase
	Signal Head Number
	EVP Light
	EVP Detector

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	14

Northeast signal standard

Southwest combination signal standard



Note:  
Face EVP detector in the opposite direction of the signal heads on the corresponding mast arm.

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ND Highway 20  
Signal Standards and Head Locations  
Intersection of ND 20 and 6th St NE  
Site 2

LEGEND

- Video Detection Camera
- Traffic Signal Head w/ associated phase
- Signal Head Number
- EVP Light
- EVP Detector

**SIGNAL INDICATIONS & PHASING**

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
		SB Thru		EB Thru	SB Left	NB Thru		WB Thru
Corresponding Signal Head(s)		3,4		1,2	3	7,8		5,6
Right-of-Way Display		G		G	GL	G		G
Clearance Display Prior to Next Phase		Y		Y	YL	Y		Y
Corresponding Pedestrian Head(s)				P2,P3		P1,P6		P4,P5
Concurrent Phase		6		8	2			4
Next Phase (Unless Skipped)		4		5	6	8		2
Overlap - Corresponding Signal Head(s)					6			8
Overlap - Right-of-Way Display					GR			GR
Overlap - Clearance Display Prior to Next Phase					YR			YR

**BASIC INTERVALS (OR FUNCTIONS)**

Minimum Initial		10.0		10.0	5.0	10.0		10.0
Minimum Initial with Pedestrian Actuation*				24.1		26.4		20.7
Passage Time		5.0		2.0	2.0	5.0		2.0
Total Split (Green + Yellow+ All Red)		30.0		27.0	11.0	30.0		27.0
Yellow Change		3.2		3.2	3.0	3.2		3.2
Red Clearance		2.6		2.5	2.8	2.6		2.5
Walk				7.0		7.0		7.0
Pedestrian Clearance				17.1		19.4		13.7

**VOLUME DENSITY TIMING FUNCTIONS - ONLY APPLICABLE DURING "FREE" (UNCOORDINATED) TIMING PLAN**

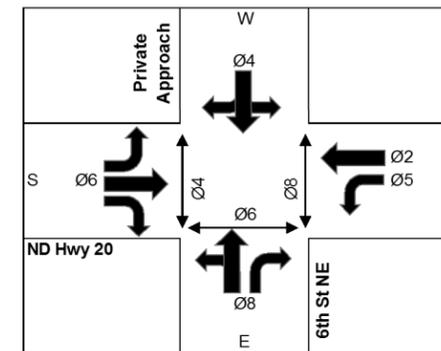
<i>Added Initial</i>								
Minimum Initial								
Added Initial per Actuation								
Actuations Before Added Initial								
<i>Computed Initial</i>								
Minimum Initial								
Maximum Initial								
Actuations to Reach Maximum Initial								
<i>Extensible Initial</i>								
Minimum Initial								
Maximum Initial								
Added Initial per Actuation								
Passage Time								
Minimum Gap								
Time to Reduce to Minimum Gap								
Reduce Gap Every								
Reduce Gap Every Second By								
Reduce Gap By								

**OTHER CONTROLLER FUNCTIONS**

Recall		Minimum		No	No	Minimum		No
Flashing-Normal & Conflict Monitor		Y		R	YL	Y		R
Start Up Phasing		G		R	R	G		R
Emergency Vehicle Pre-emption		x				x		x
Type of Detector	Presence	Refer to Detector Zone Table						
	Calling							
	Passage							
Locking Memory								
Non-Locking Memory								

NB = Northbound (ND 20)  
 SB = Southbound (ND 20)  
 EB = Eastbound (Private App.)  
 WB = Westbound (6th St NE)

Y = Yellow Ball Indication  
 G = Green Ball Indication  
 YL = Yellow Left Arrow Indication  
 GL = Green Left Arrow Indication  
 YR = Yellow Right Arrow Indication  
 GR = Green Right Arrow Indication



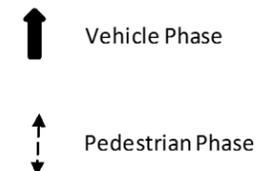
Site	Time Period	Timing Plan	Coordinated Phase	Offset <sup>1</sup>
1	7:00 AM - 7:00 PM	Coordinated	Ø2 (North Thru)/Ø6 (South Thru)	0 Seconds
2			Ø2 (North Thru)/Ø6 (South Thru)	43 Seconds
1	7:00 PM - 7:00 AM	Free	-	-
2			-	-

<sup>1</sup>Offset is referenced to the last of coordinated phases to turn green at master controller (site 1)

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ND Highway 20  
 Controller Settings  
 Intersection of ND 20 and 6th St NE  
 Site 2

Head Number	Phase 1								Phase 2								Phase 3								Phase 4								Phase 5								Phase 6								Phase 7								Phase 8														
	Future								Southbound								Future								Eastbound								Southbound Left								Northbound								Future								Westbound														
	RW	2	3	4	5	6	7	8	RW	3	4	5	6	7	8	1	RW	4	5	6	7	8	1	2	RW	5	6	7	8	1	2	3	RW	6	7	8	1	2	3	4	RW	7	8	1	2	3	4	5	RW	8	1	2	3	4	5	6	RW	1	2	3	4	5	6	7							
1																																																																							
2																																																																							
3								G																																																															
4								G																																																															
5																																																																							
6																																																																							
7																																																																							
8																																																																							



Blank spaces denote a "Red" indication  
 G= Green Ball Indication  
 Y= Yellow Ball Indication  
 GL= Green Left Indication  
 YL= Yellow Left Indication  
 GR= Green Right Indication  
 YR= Yellow Right Indication  
 N= Continue to display right of way indication.  
 When any phase is on alone, any non-conflicting phase may start timing without a clearance interval. See Chart A.

WB Right overlap shall display green right arrow during SB phases unless NB phase is also called. If NB phase is called, WB Right overlap shall remain red during NB phase.

NB Right overlap shall display green right arrow during WB phase unless EB phase is also called. If EB phase is called, NB Right overlap shall remain red during EB phase.

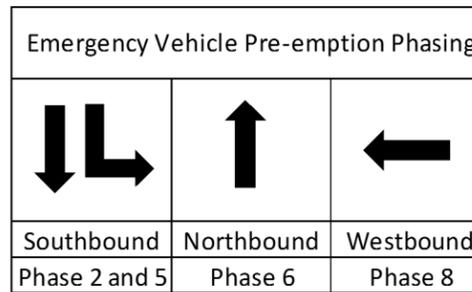


Chart A	
Phase	Non-conflicting Phase allowed to time concurrently
1	N/A
2	5, 6
3	N/A
4	8
5	2
6	2
7	N/A
8	4

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ND Highway 20  
 Controller Phasing  
 Intersection of ND 20 and 6th St NE  
 Site 2

Conductor		Cable SES (Southeast Signal) (12 No. 14 AWG)		Cable SWS (Southwest Signal) (12 No. 14 AWG)		Cable NWS (Northwest Signal) (12 No. 14 AWG)		Cable NES (Northeast Signal) (12 No. 14 AWG)		
Base	Tracer	Head	Indication	Head	Indication	Head	Indication	Head	Indication	
1	Black		Ø6 Walk			P4	Ø8 Walk	P6	Ø8 Walk	
2	White		Neutral		Neutral		Neutral		Neutral	
3	Red		Ø4 Red	3, 4	Ø2 Red	5, 6	Ø8 Red	7, 8	Ø6 Red	
4	Green		Ground		Ground		Ground		Ground	
5	Orange		Ø4 Yellow	3, 4	Ø2 Yellow	5, 6	Ø8 Yellow	7, 8	Ø6 Yellow	
6	Blue		Ø4 Green	3, 4	Ø2 Green	5, 6	Ø8 Green	7, 8	Ø6 Green	
7	White	Black	Spare	P3	Ø4 Don't Walk		Spare	P6	Ø6 Don't Walk	
8	Red	Black	P1	Ø6 Don't Walk		P4	Ø8 Don't Walk	P5	Ø8 Don't Walk	
9	Green	Black		Spare			Spare		Spare	
10	Orange	Black	P2	Ø4 Don't Walk	3	Ø5 Yellow ←	Spare	8	Ø8 Yellow →	
11	Blue	Black		Spare	3	Ø5 Green ←	6	Ø5 Yellow →	8	Ø8 Green →
12	Black	White	P2	Ø4 Walk	P3	Ø4 Walk	6	Ø5 Green →	P6	Ø6 Walk

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ND Highway 20  
Signal Heads and Conductors  
Intersection of ND 20 and 6th St NE  
Site 2

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	18

**SIGNAL CABLE & CONDUIT SCHEDULE**

#	RUN		CONDUIT		NOTES	CABLE					
	ITEM	STATION, OFFSET	SIZE (IN)	LF		Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE
1	<i>Origin</i> Feed Point #2	5463+55.5, 41.7' RT	2	6		Feed Point #2	Traffic Signal Controller	2	Underground Conductor NO6-Type RHW	50	
	<i>Destination</i> Traffic Signal Controller	5463+65.6, 42.6' RT				Feed Point #2	Traffic Signal Controller	1	Underground Conductor NO6-Type THW	25	
2	<i>Origin</i> Traffic Signal Controller	5463+65.6, 42.6' RT	3	5		Traffic Signal Controller	Pull Box 1	2	14 AWG 12 CONDUCTOR CABLE	40	SWS, SES
	<i>Destination</i> Pull Box 1	5463+72.0, 38.8' RT				Traffic Signal Controller	Pull Box 1	3	16 AWG 2 CONDUCTOR CABLE	60	PB1, PB2, PB3
						Traffic Signal Controller	Pull Box 1	1	EMERGENCY VEHICLE DETECTOR CABLE	20	ED6
						Traffic Signal Controller	Pull Box 1	2	VIDEO DETECTION CABLE	40	SWD, SED
						Traffic Signal Controller	Pull Box 1	1	14 AWG 2 CONDUCTOR CABLE	20	EL25
3	<i>Origin</i> Traffic Signal Controller	5463+65.6, 42.6' RT	3	5		Traffic Signal Controller	Pull Box 1	2	14 AWG 12 CONDUCTOR CABLE	40	NWS, NES
	<i>Destination</i> Pull Box 1	5463+72.0, 38.8' RT				Traffic Signal Controller	Pull Box 1	3	16 AWG 2 CONDUCTOR CABLE	60	PB4, PB5, PB6
						Traffic Signal Controller	Pull Box 1	2	EMERGENCY VEHICLE DETECTOR CABLE	40	ED25, ED8
						Traffic Signal Controller	Pull Box 1	2	14 AWG 2 CONDUCTOR CABLE	40	EL6, EL8
						Traffic Signal Controller	Pull Box 1	2	VIDEO DETECTION CABLE	40	NED, NWD
4	<i>Origin</i> Pull Box 1	5463+72.0, 38.8' RT	2	75		Pull Box 1	Southwest Combo Signal Std Transformer Base	1	14 AWG 12 CONDUCTOR CABLE	86	SWS
	<i>Destination</i> Southwest Combo Signal Std	5463+90.9, 35.3' LT				Pull Box 1	Pushbutton 3	1	16 AWG 2 CONDUCTOR CABLE	89	PB3
						Pull Box 1	Southwest Emergency Preemption Detector	1	EMERGENCY VEHICLE DETECTOR CABLE	129	ED6
						Pull Box 1	Southwest Emergency Preemption Light	1	14 AWG 2 CONDUCTOR CABLE	129	EL25
						Pull Box 1	Southwest Video Detection Unit	1	VIDEO DETECTION CABLE	135	SWD
5	<i>Origin</i> Pull Box 1	5463+72.0, 38.8' RT	2	8		Pull Box 1	Southeast Combo Signal Std Transformer Base	1	14 AWG 12 CONDUCTOR CABLE	19	SES
	<i>Destination</i> Southeast Combo Signal Std	5463+79.4, 44.9' RT				Pull Box 1	Pushbutton 1	1	16 AWG 2 CONDUCTOR CABLE	22	PB1
						Pull Box 1	Pushbutton 2	1	16 AWG 2 CONDUCTOR CABLE	22	PB2
						Pull Box 1	Southeast Video Detection Unit	1	VIDEO DETECTION CABLE	68	SED
6	<i>Origin</i> Pull Box 1	5463+72.0, 38.8' RT	3	96		Pull Box 1	Pull Box 2	2	14 AWG 12 CONDUCTOR CABLE	216	NWS, NES
	<i>Destination</i> Pull Box 2	5464+73.2, 40.8' RT				Pull Box 1	Pull Box 2	3	16 AWG 2 CONDUCTOR CABLE	324	PB4, PB5, PB6
						Pull Box 1	Pull Box 2	2	EMERGENCY VEHICLE DETECTOR CABLE	216	ED5, ED8
						Pull Box 1	Pull Box 2	2	14 AWG 2 CONDUCTOR CABLE	216	EL6, EL8
						Pull Box 1	Pull Box 2	2	VIDEO DETECTION CABLE	216	NED, NWD
7	<i>Origin</i> Pull Box 2	5464+73.2, 40.8' RT	2	6		Pull Box 2	Pushbutton 5	1	16 AWG 2 CONDUCTOR CABLE	20	PB5
	<i>Destination</i> Northeast Pushbutton Post	5464+66.6, 35.9' RT				Pull Box 2	Pushbutton 6	1	16 AWG 2 CONDUCTOR CABLE	20	PB6
8	<i>Origin</i> Pull Box 2	5464+73.2, 40.8' RT	2	3		Pull Box 2	Northeast Type IV Signal Std Transformer Base	1	14 AWG 12 CONDUCTOR CABLE	14	NES
	<i>Destination</i> Northeast Type IV Signal Std	5464+72.7, 45.0' RT				Pull Box 2	Northeast Emergency Preemption Detector	1	EMERGENCY VEHICLE DETECTOR CABLE	70	ED25
						Pull Box 2	Northeast Emergency Preemption Light	1	14 AWG 2 CONDUCTOR CABLE	70	EL6
						Pull Box 2	Northeast Video Detection Unit	1	VIDEO DETECTION CABLE	63	NED
9	<i>Origin</i> Pull Box 2	5464+73.2, 40.8' RT	2	70		Pull Box 2	Northwest Type IV Signal Std Transformer Base	1	14 AWG 12 CONDUCTOR CABLE	81	NWS
	<i>Destination</i> Northwest Type IV Signal Std	5464+70.0, 31.5' LT				Pull Box 2	Pushbutton 4	1	16 AWG 2 CONDUCTOR CABLE	84	PB5
						Pull Box 2	Northwest Emergency Preemption Detector	1	EMERGENCY VEHICLE DETECTOR CABLE	133	ED8
						Pull Box 2	Northwest Emergency Preemption Light	1	14 AWG 2 CONDUCTOR CABLE	133	EL8
						Pull Box 2	Northwest Video Detection Unit	1	VIDEO DETECTION CABLE	130	SED

INTERNAL MAST ARM/STANDARD SIGNAL & PEDESTRIAN HEAD CABLE				
Origin	Destination	# of Cables	SIZE/TYPE	Total LF
Southeast Combo Signal Std Transformer Base	Vehicle Head 1	1	14 AWG 5 CONDUCTOR CABLE	70
	Vehicle Head 2	1	14 AWG 5 CONDUCTOR CABLE	20
	Pedestrian Heac 1	1	14 AWG 3 CONDUCTOR CABLE	17
Southwest Combo Signal Std Transformer Base	Pedestrian Heac 2	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 3	1	14 AWG 7 CONDUCTOR CABLE	51
	Vehicle Head 4	1	14 AWG 5 CONDUCTOR CABLE	20
Northwest Type IV Signal Std Transformer Base	Pedestrian Heac 3	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 5	1	14 AWG 5 CONDUCTOR CABLE	60
	Vehicle Head 6	1	14 AWG 7 CONDUCTOR CABLE	20
Northeast Type IV Signal Std Transformer Base	Pedestrian Heac 4	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 7	1	14 AWG 5 CONDUCTOR CABLE	64
	Vehicle Head 8	1	14 AWG 7 CONDUCTOR CABLE	20
	Pedestrian Heac 5	1	14 AWG 3 CONDUCTOR CABLE	17
	Pedestrian Heac 6	1	14 AWG 3 CONDUCTOR CABLE	17

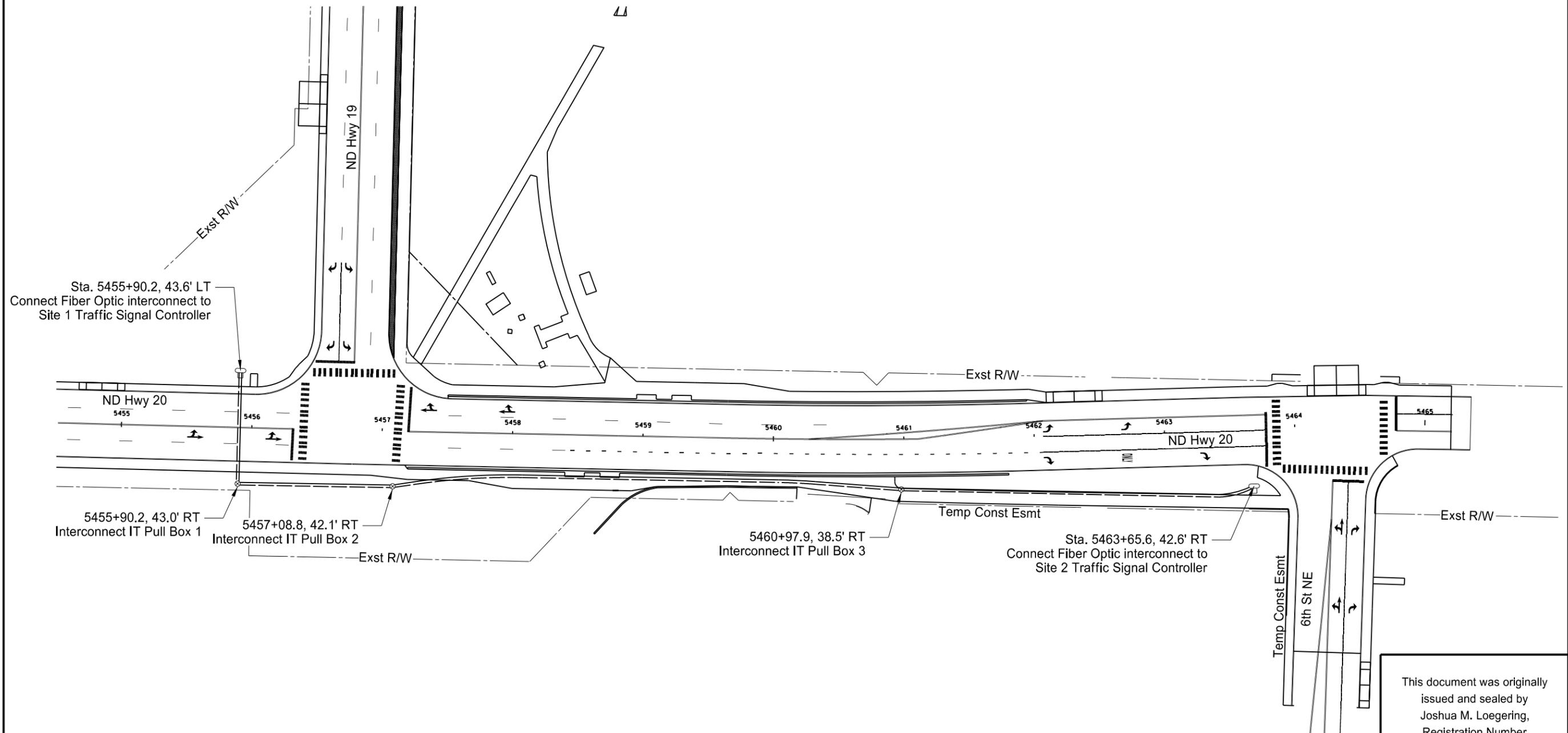
**Cable Titles**

SWS = Southwest Signal Standard  
 NWS = Northwest Signal Standard  
 SES = Southeast Signal Standard  
 NES = Northeast Signal Standard  
 PB1 = Pedestrian Pushbutton 1  
 PB2 = Pedestrian Pushbutton 2  
 PB3 = Pedestrian Pushbutton 3  
 PB4 = Pedestrian Pushbutton 4  
 PB5 = Pedestrian Pushbutton 5  
 PB6 = Pedestrian Pushbutton 6  
 ED25 =  $\Phi$ 2 &  $\Phi$ 5 EVP Detector  
 ED6 =  $\Phi$ 6 EVP Detector  
 ED8 =  $\Phi$ 8 EVP Detector  
 EL25 =  $\Phi$ 2 &  $\Phi$ 5 EVP Light  
 EL6 =  $\Phi$ 6 EVP Light  
 EL8 =  $\Phi$ 8 EVP Light  
 SWD = Southwest Video Detection Unit  
 SED = Southeast Video Detection Unit  
 NED = Northeast Video Detection Unit  
 NWD = Northwest Video Detection Unit

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ND Highway 20  
 Cable and Conduit Schedule  
 Intersection of ND 20 and 6th St NE  
 Site 2

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	19



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ND Highway 20  
IT System Layout

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-3-020(074)103	150	20

SPEC	CODE	ITEM DESCRIPTION	UNIT	Quantity			
				TRAFFIC SIGNAL SYSTEM - SITE 1	TRAFFIC SIGNAL SYSTEM - SITE 2	IT SYSTEM	TOTAL
772	0020	CONCRETE FOUNDATION-TRAFFIC SIGNALS	EA	3	4	-	7
772	0055	CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	1	1	-	2
772	0100	PULLBOX	EA	4	2	-	6
772	0240	2IN DIAMETER RIGID CONDUIT	LF	254	167	875	1,296
772	0270	3IN DIAMETER RIGID CONDUIT	LF	148	106	-	254
772	0300	UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	142	50	-	192
772	0310	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	71	25	-	96
772	0375	EMERGENCY VEHICLE DETECTOR CABLE	LF	606	608	-	1,214
772	0432	NO14 AWG 2 CONDUCTOR CABLE	LF	606	608	-	1,214
772	0433	NO14 AWG 3 CONDUCTOR CABLE	LF	102	102	-	204
772	0435	NO14 AWG 5 CONDUCTOR CABLE	LF	398	234	-	632
772	0437	NO14 AWG 7 CONDUCTOR CABLE	LF	165	71	-	236
772	0442	NO14 AWG 12 CONDUCTOR CABLE	LF	443	496	-	939
772	0420	NO16 AWG 2 CONDUCTOR CABLE	LF	872	701	-	1,573
772	0551	FEED POINT-COMBO LIGHTING & SIGNAL-PAD MOUNT	EA	1	1	-	2
772	0633	TYPE IV SIGNAL STD 33FT MA	EA	-	1	-	1
772	0634	TYPE IV SIGNAL STD 34FT MA	EA	1	-	-	1
772	0637	TYPE IV SIGNAL STD 37FT MA	EA	-	1	-	1
772	0644	TYPE IV SIGNAL STD 44FT MA	EA	1	-	-	1
772	0942	COMBO 24FT MA SIG & LT STD-TYPE C	EA	-	1	-	1
772	0982	COMBO 28FT MA SIG & LT STD-TYPE C	EA	1	-	-	1
772	1132	COMBO 43FT MA SIG & LT STD-TYPE C	EA	-	1	-	1
772	1810	1-WAY 3 SEC HEAD W/12IN LENS-POST MTD	EA	3	4	-	7
772	1812	1-WAY 3 SEC HEAD W/12IN LENS-MA MTD	EA	6	3	-	9
772	1830	1-WAY 5 SEC HEAD W/12IN LENS-POST MTD	EA	-	2	-	2
772	1832	1-WAY 5 SEC HEAD W/12IN LENS-MA MTD	EA	-	1	-	1
772	2060	PEDESTRIAN COUNTDOWN SIGNAL HEAD-POST MTD	EA	6	6	-	12
772	2200	PEDESTRIAN PUSHBUTTON POST	EA	3	2	-	5
772	2215	PEDESTRIAN PUSHBUTTON & SIGN	EA	6	6	-	12
772	2260	VIDEO DETECTION CABLE	LF	590	692	-	1,282
772	2265	VIDEO DETECTION SYSTEM <sup>1</sup>	EA	1	1	-	2
772	2350	CONTROLLER TYPE 1 <sup>2</sup>	EA	1	1	-	2
772	2610	EMERGENCY VEHICLE PRE-EMPTION UNIT <sup>3</sup>	EA	3	3	-	6
772	9205	IT-PULL BOX	EA	-	-	3	3
772	9230	IT FIBER OPTIC CABLE <sup>4</sup>	LF	-	-	875	875

<sup>1</sup>Includes cameras, video monitor, access point and all other equipment required for a fully operational video detection system.  
<sup>2</sup>Includes cabinet, working slab, conflict monitor, load switches, flashers, bus interface units and all other equipment required for a fully operational traffic signal controller.  
<sup>3</sup>Includes detectors, lights and all other equipment required for a fully operation preemption system.  
<sup>4</sup>Tracer wire incidental to this item

772	9200	IT SYSTEM	EA	1
772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1
772	9812	TRAFFIC SIGNAL SYSTEM - SITE 2	EA	1

Items shown above are for informational purposes, provide all labor and equipment necessary for the signal system to be fully operational as shown in the plans.

Include items in the corresponding price bid for "TRAFFIC SIGNAL SYSTEM - SITE \_" and "IT SYSTEM".

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ND Highway 20  
Traffic Signal Estimate of Quantities