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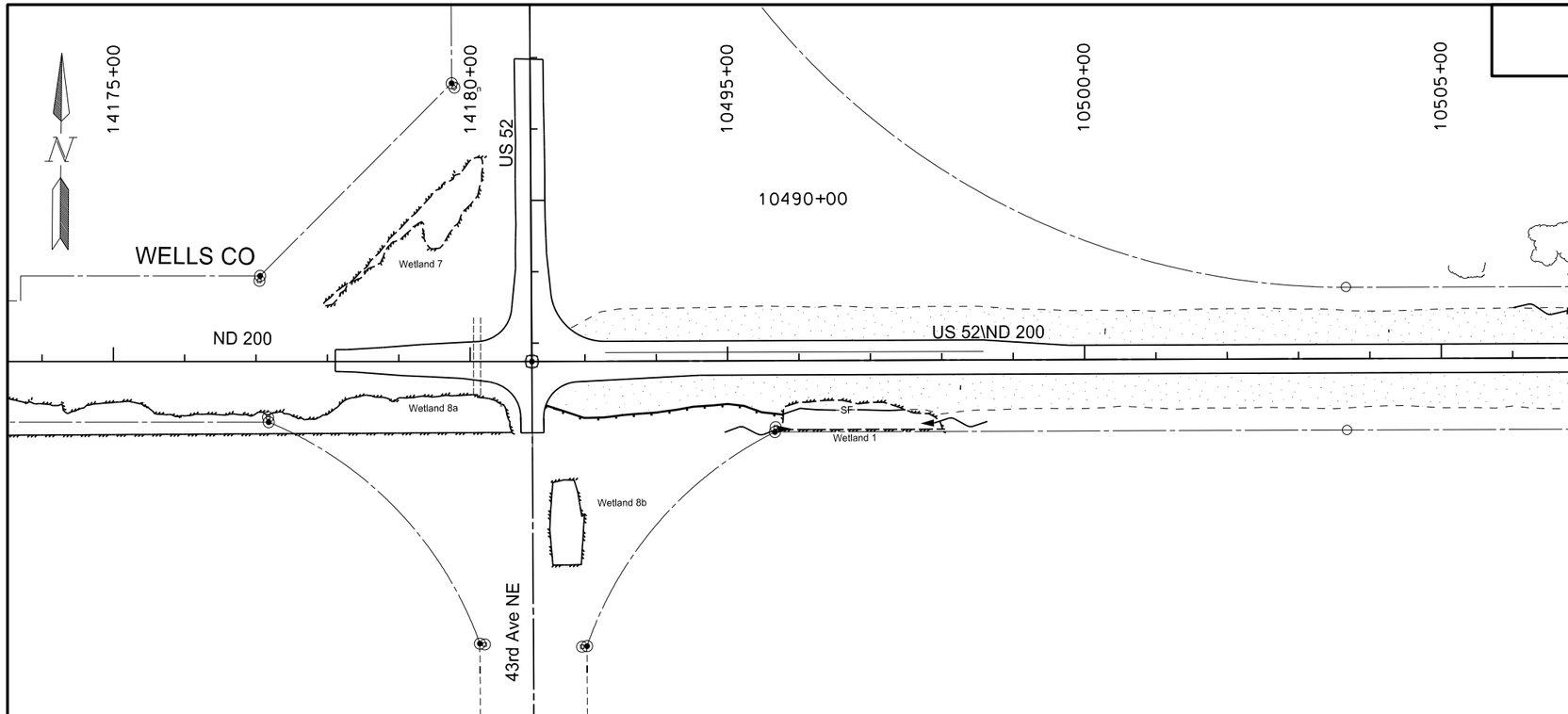
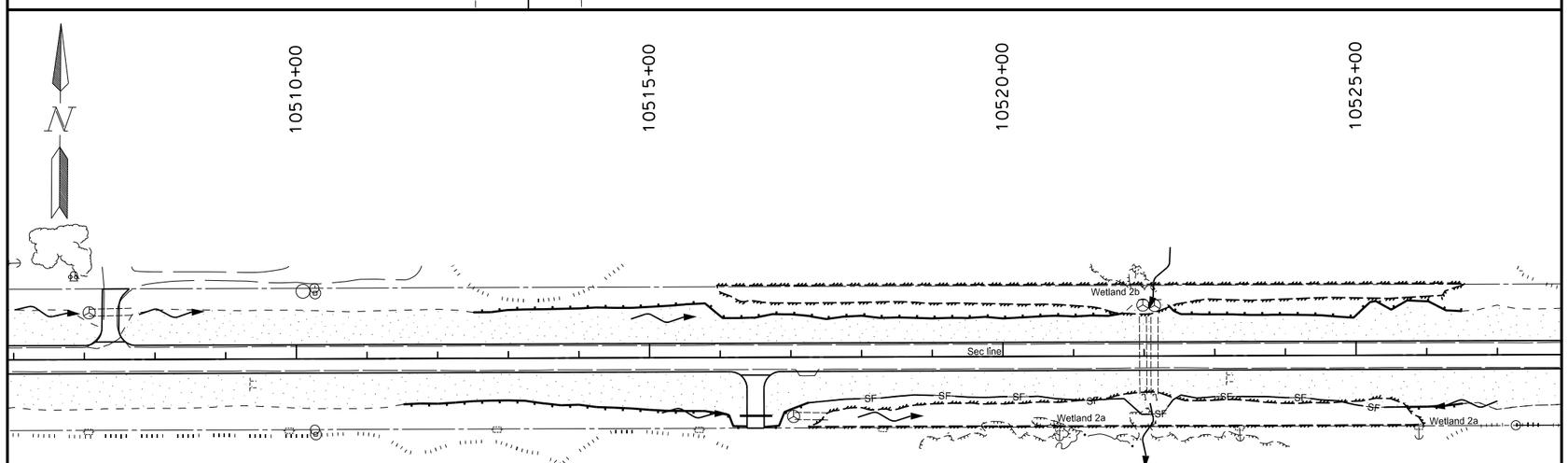
ND	CPU-SNH-3-052(042)198	76	1





See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

— SF — TEMPORARY SILT FENCE UNSUPPORTED

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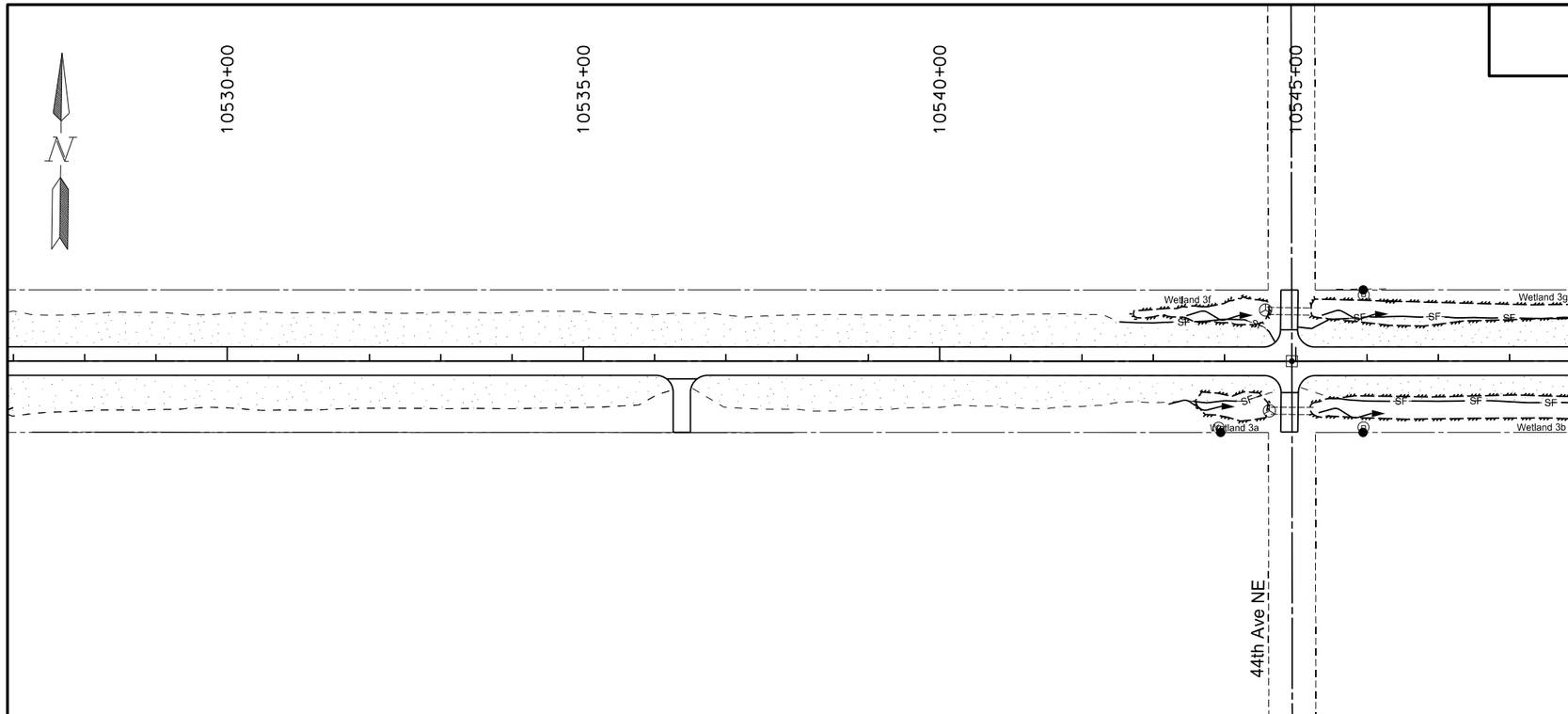
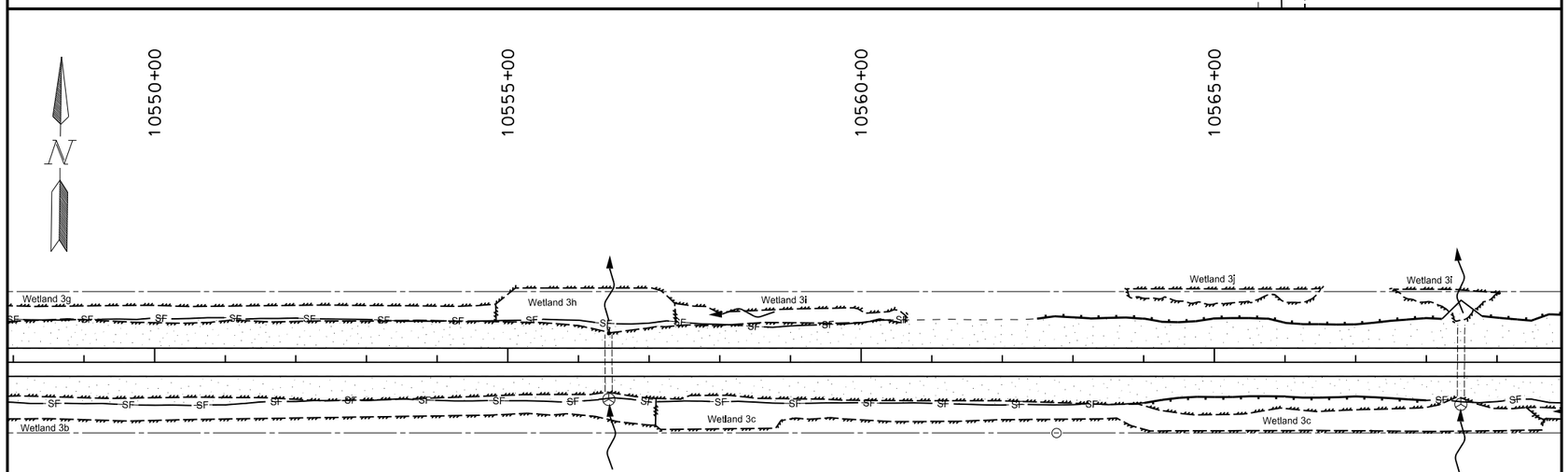
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	2





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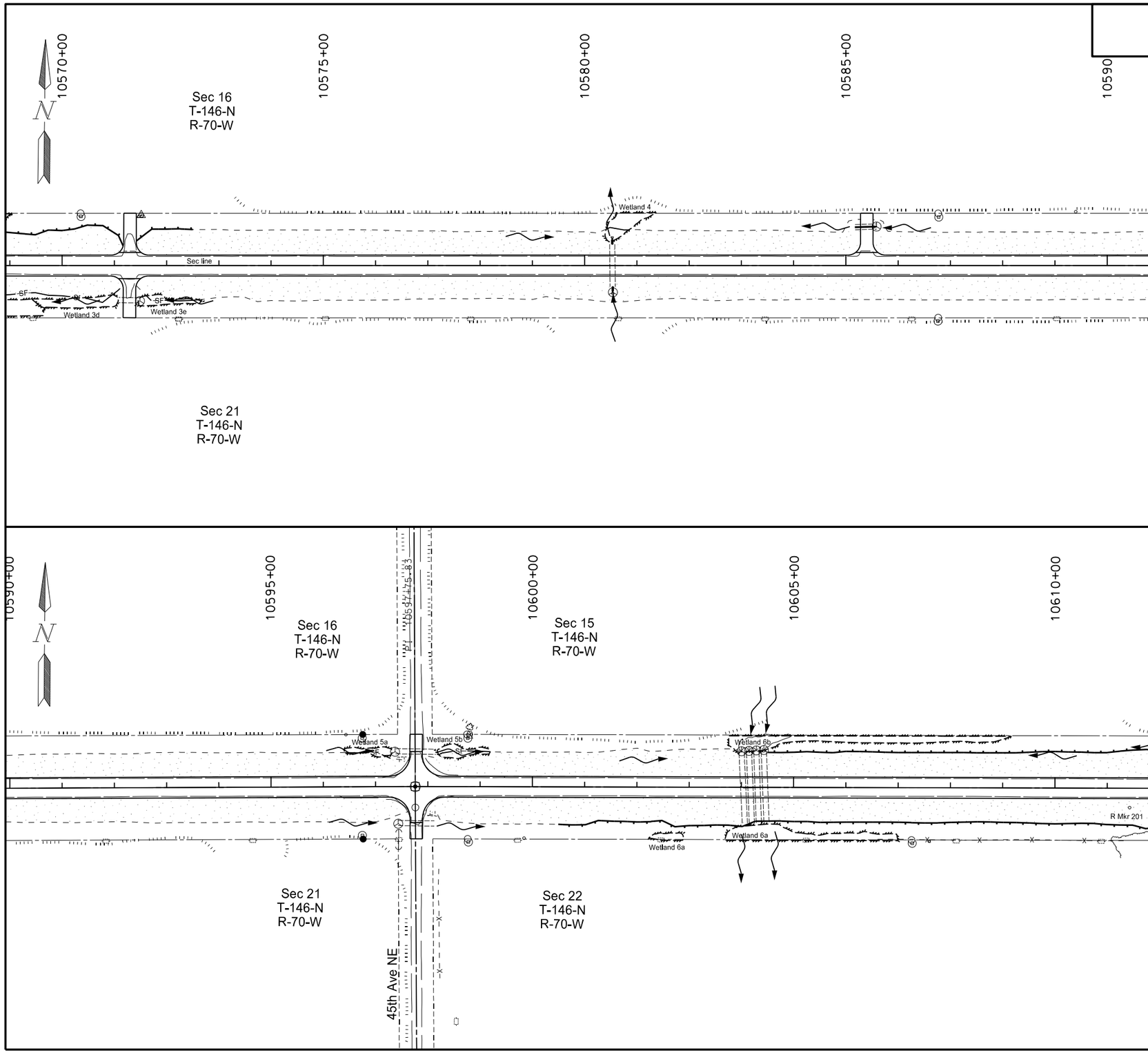

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TEMPORARY INLET PROTECTION - FIBER ROLLS

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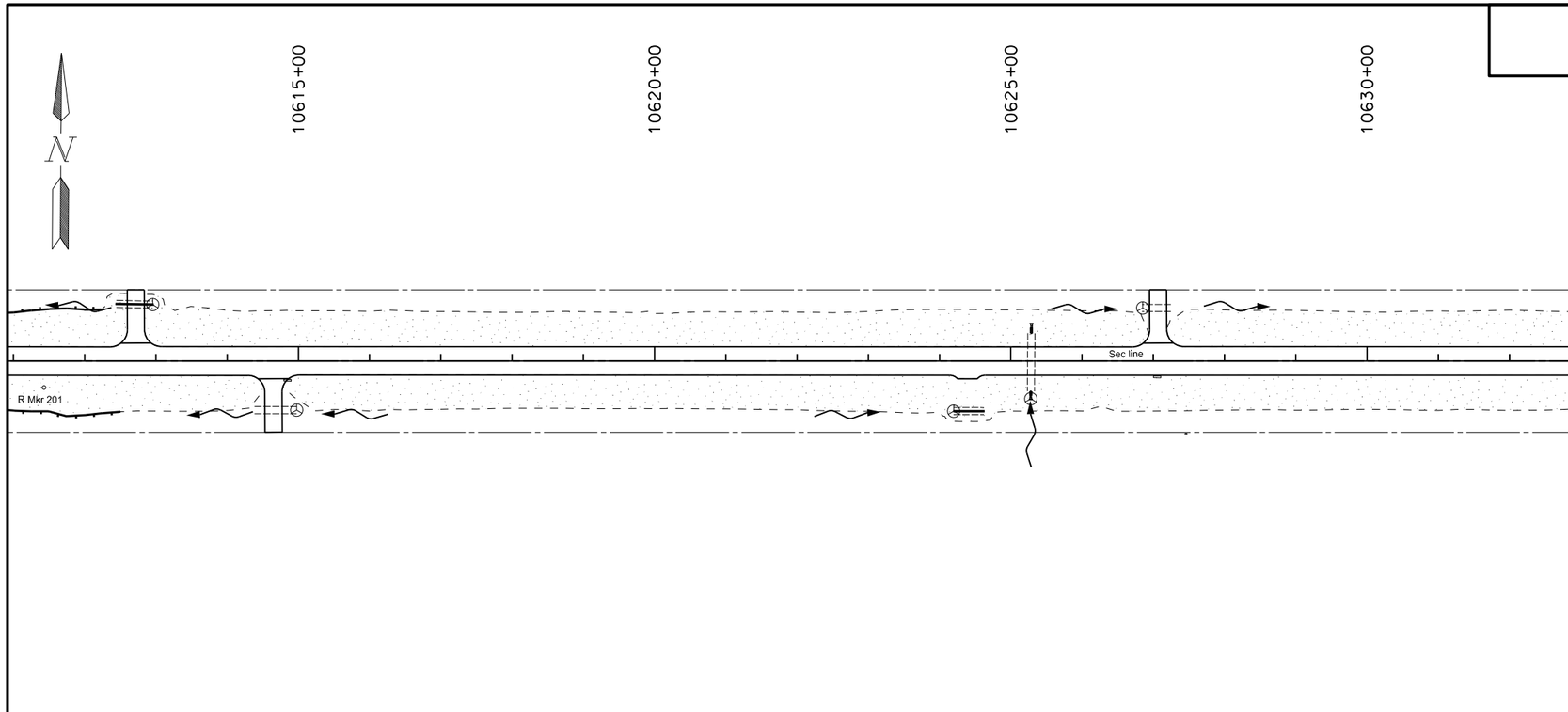

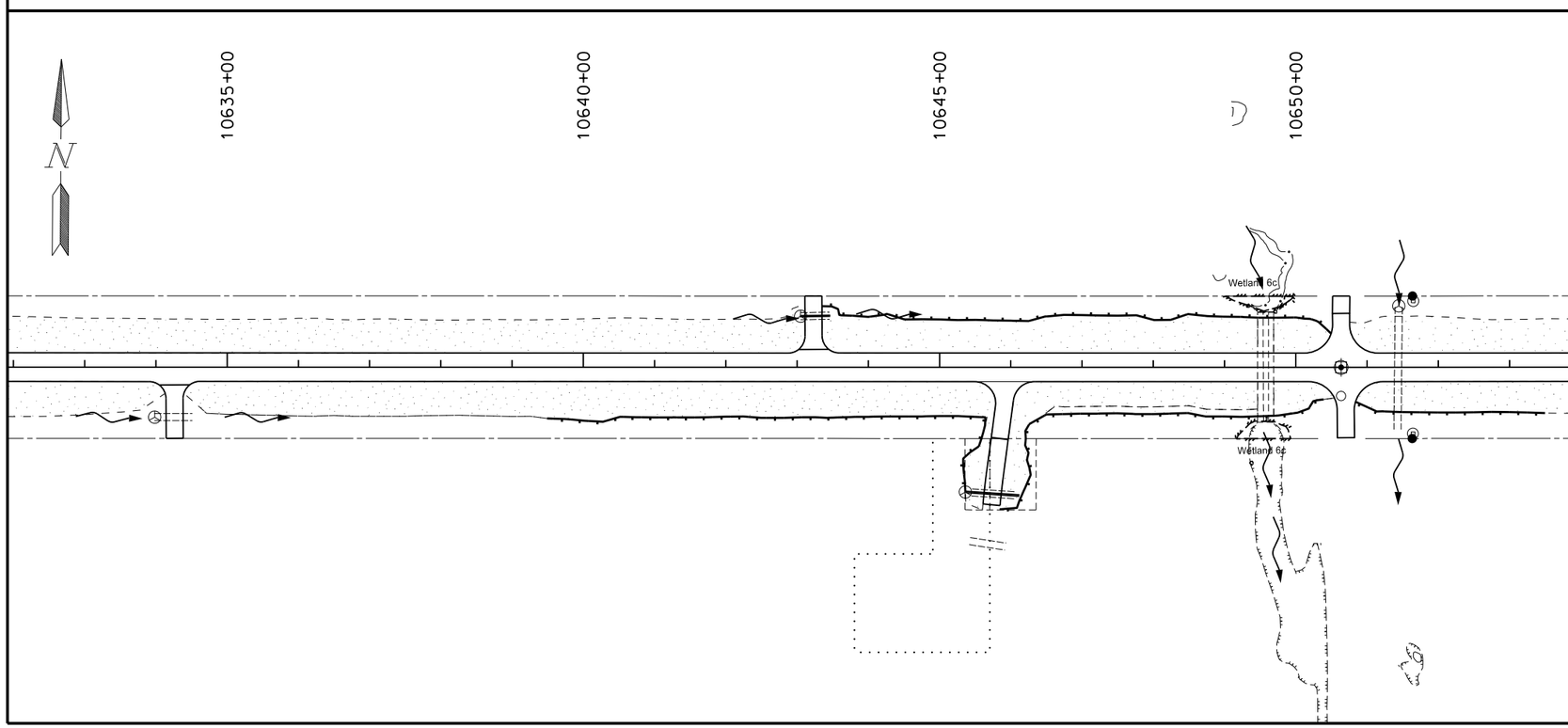

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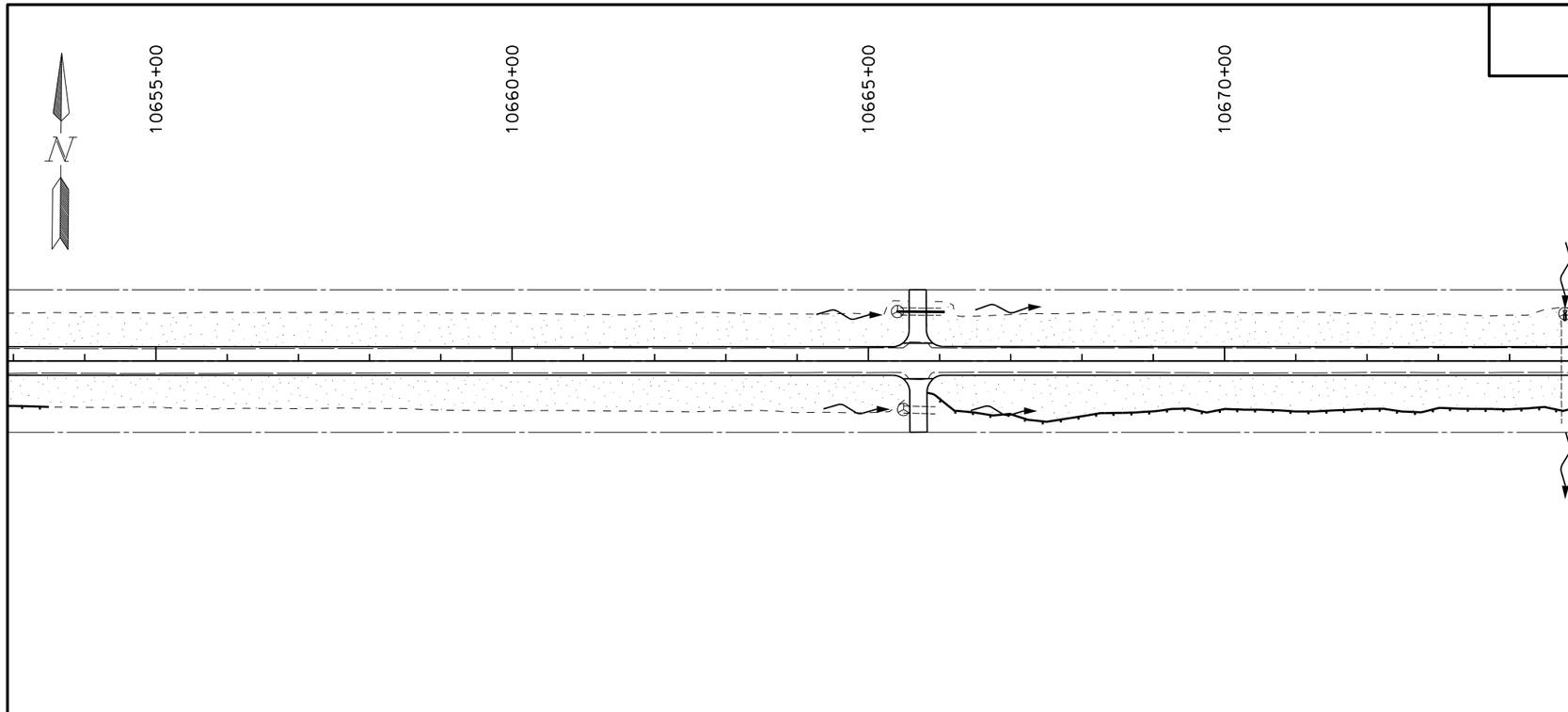

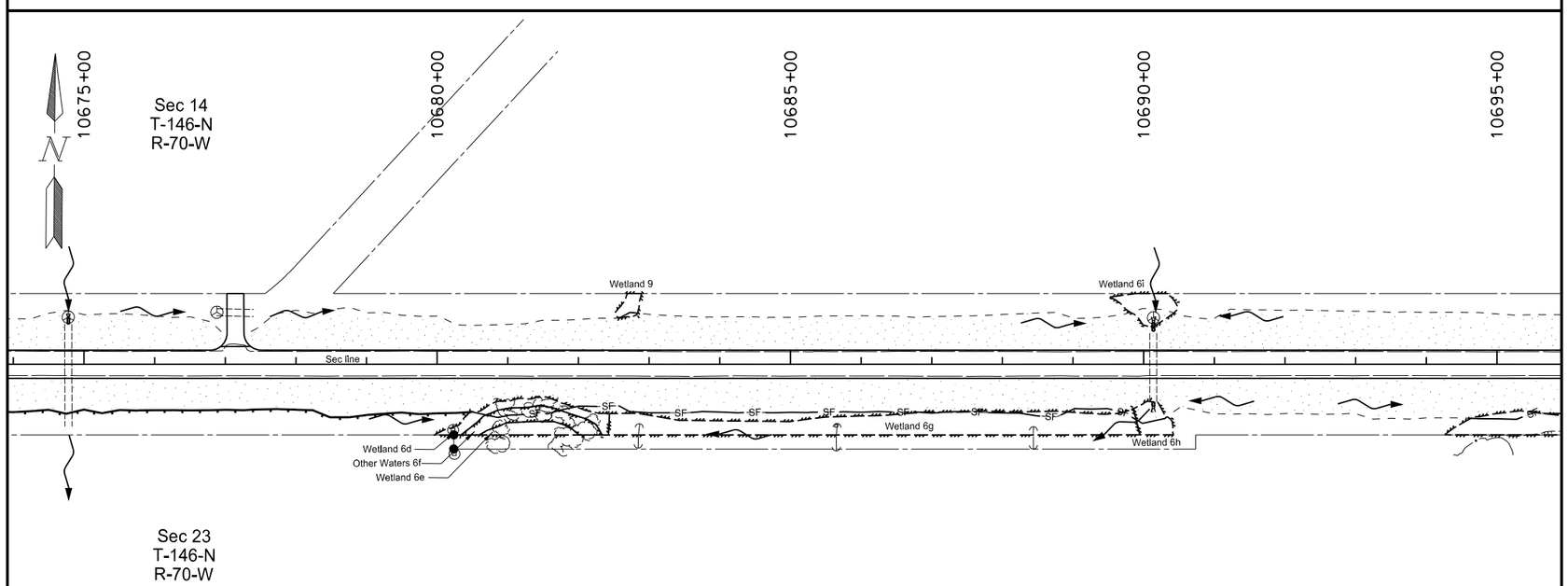

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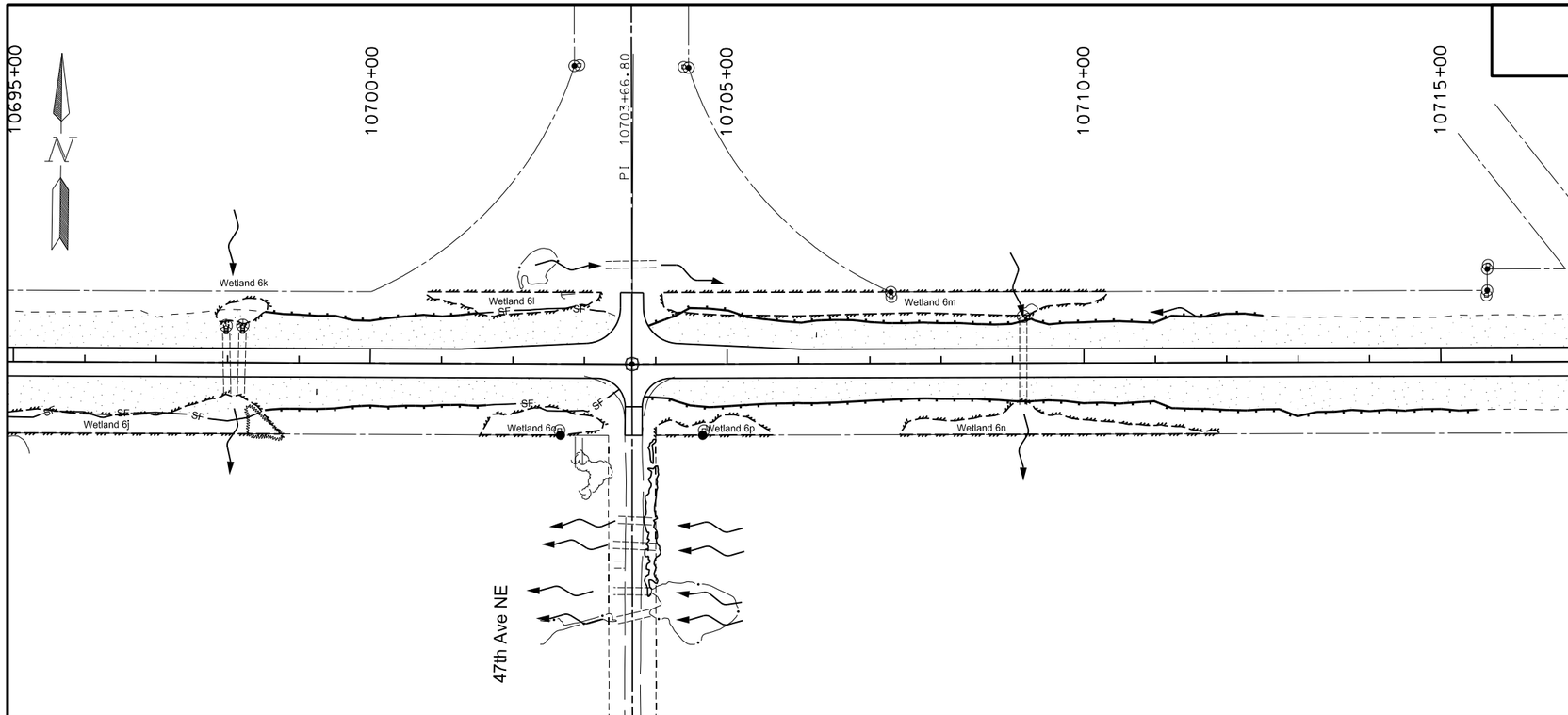

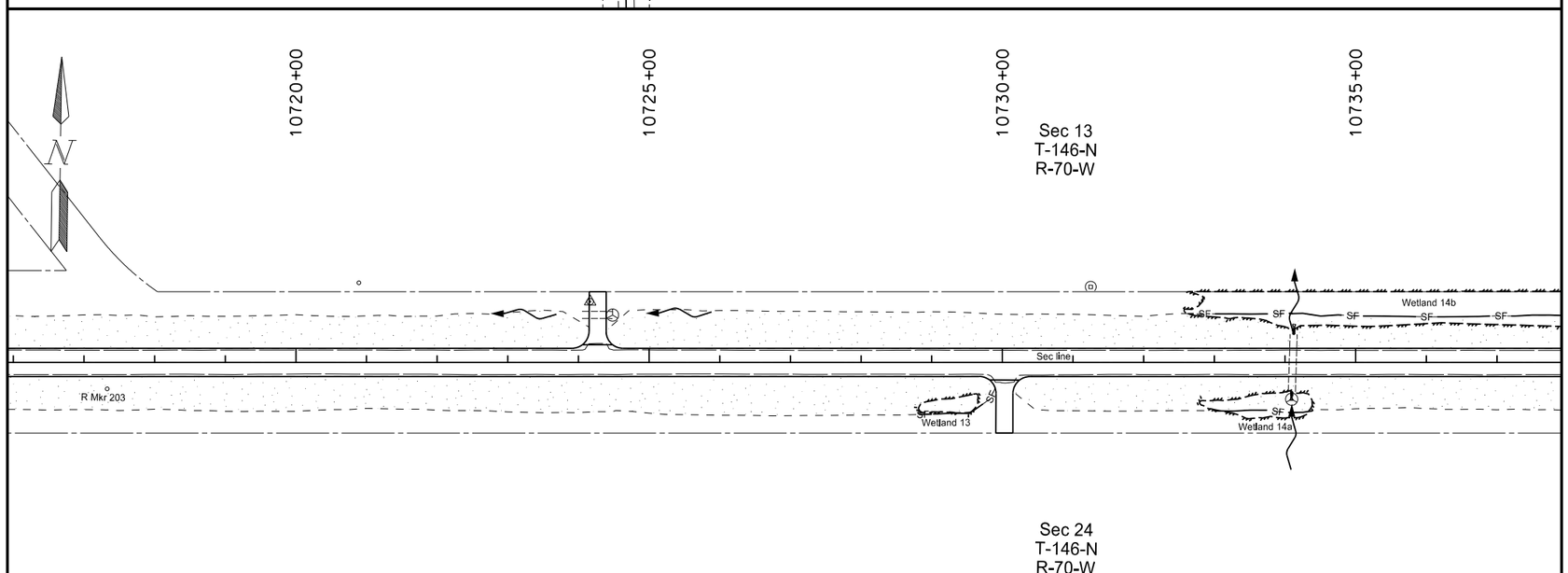

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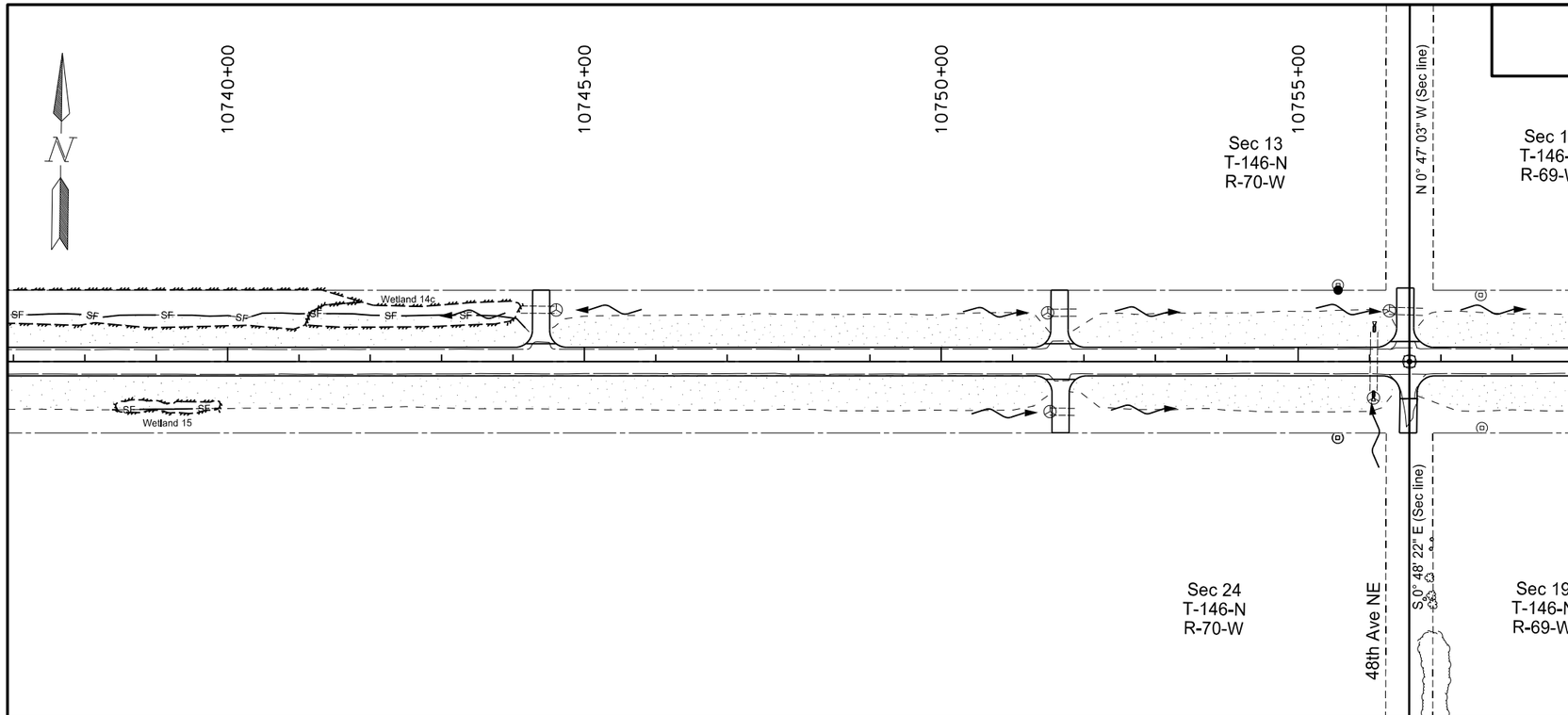

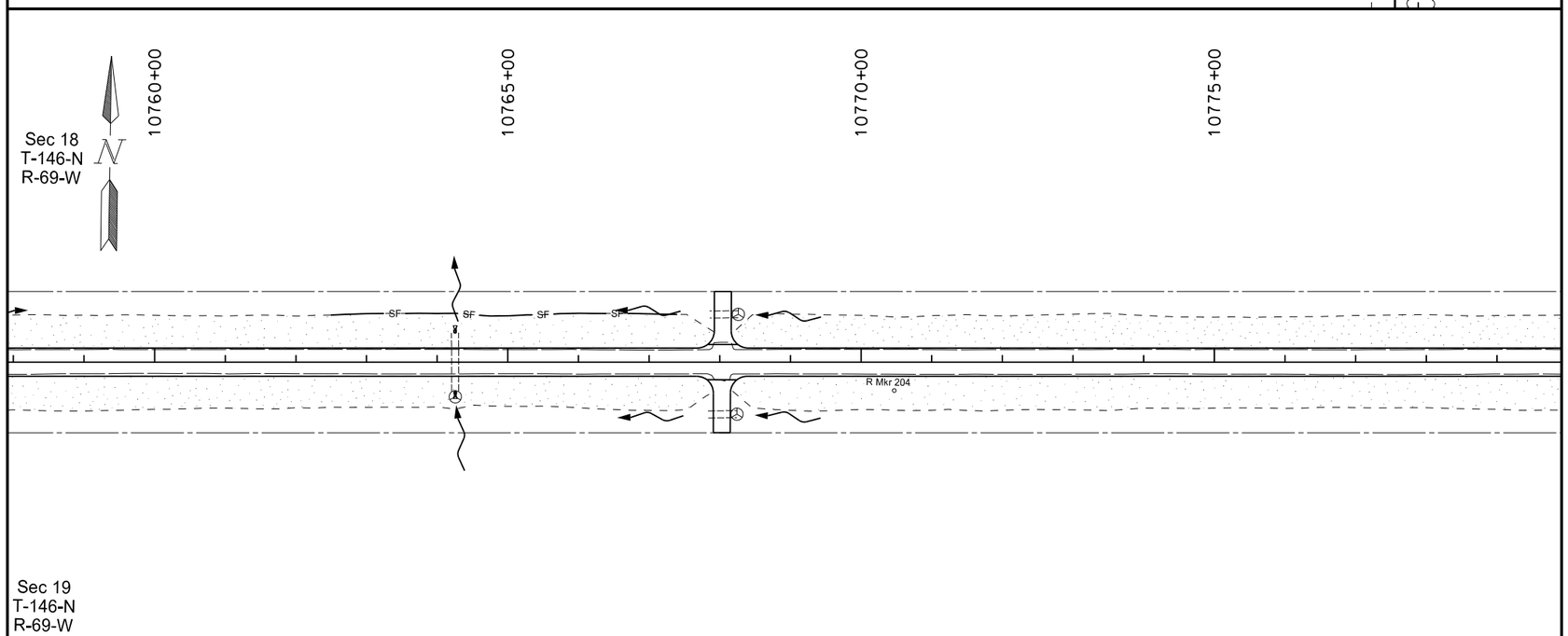

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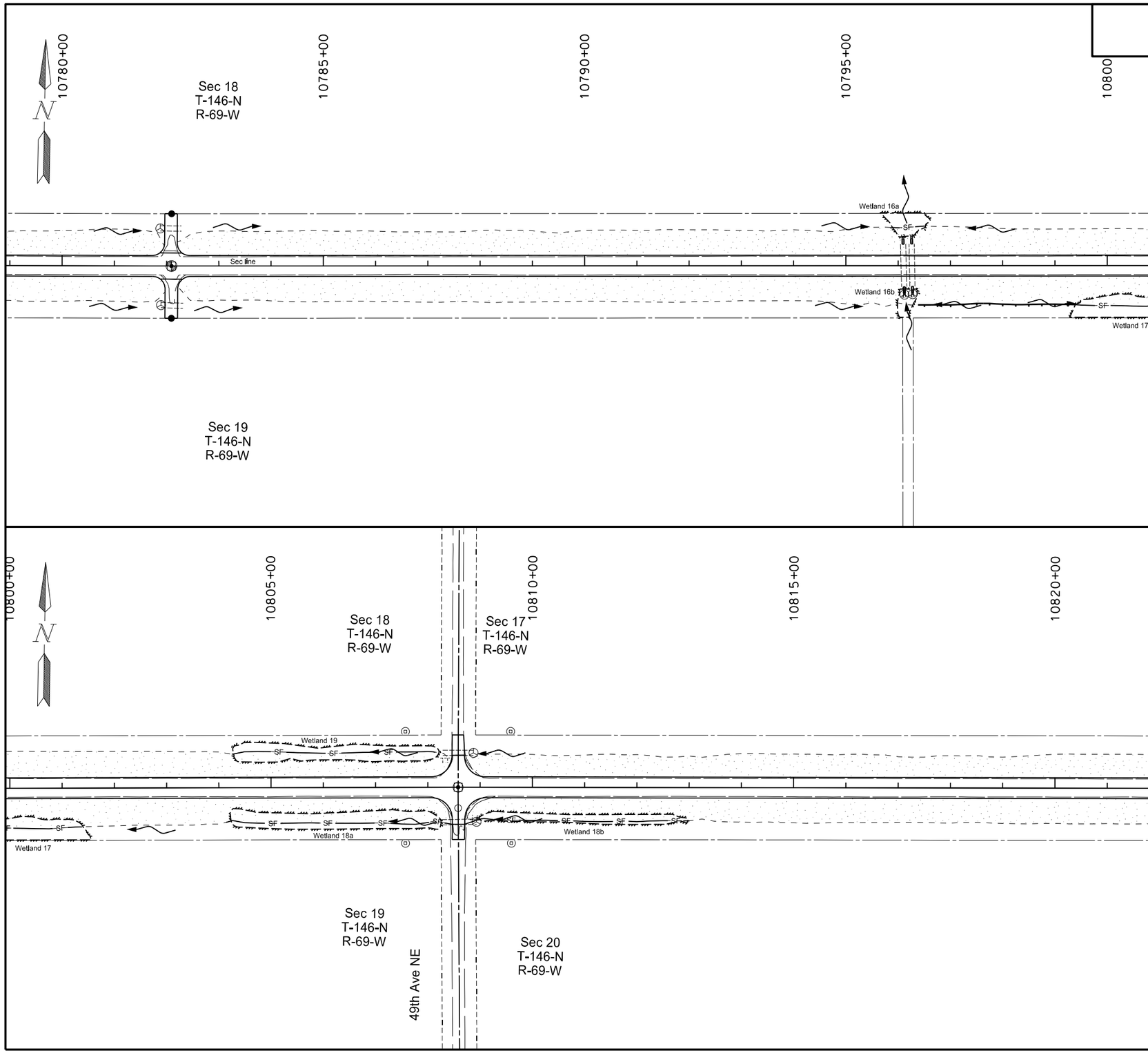

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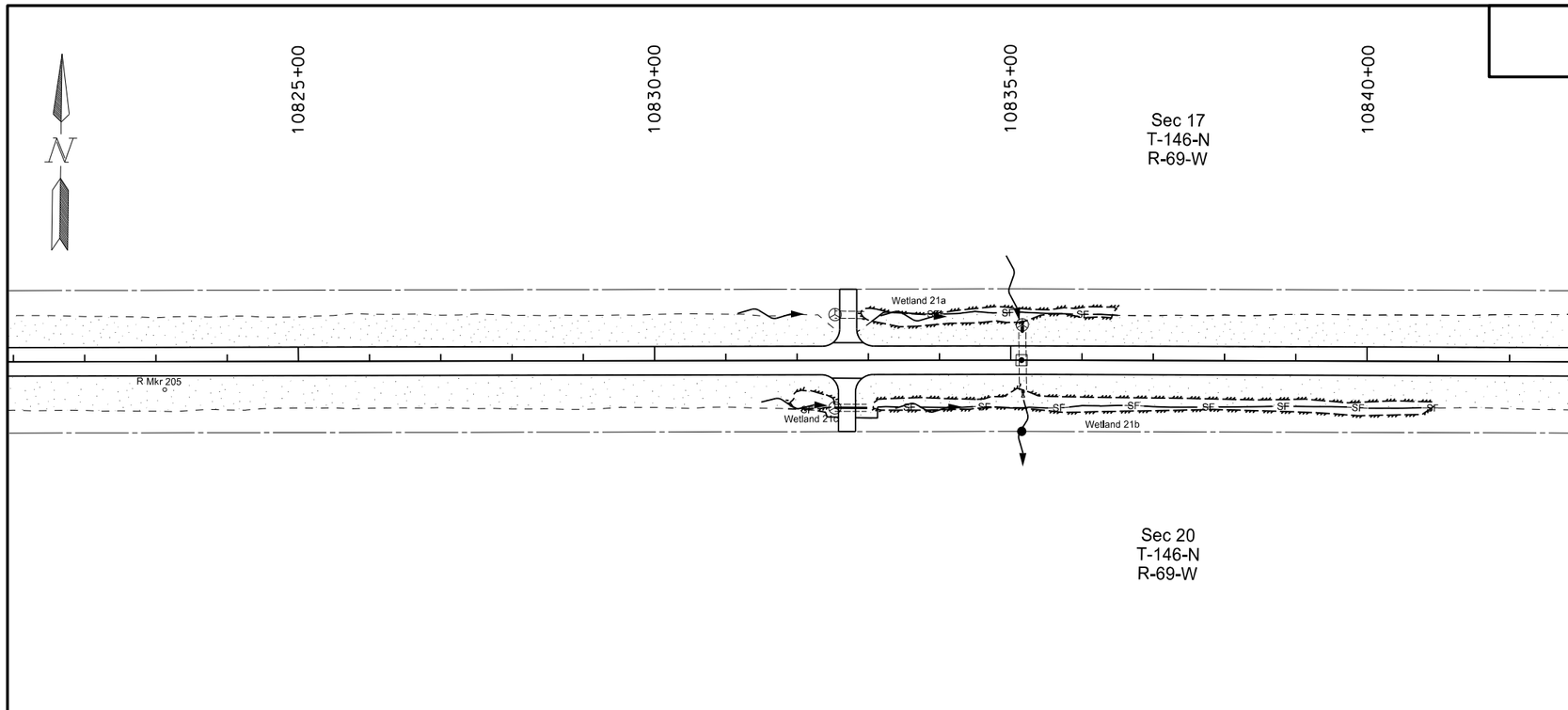

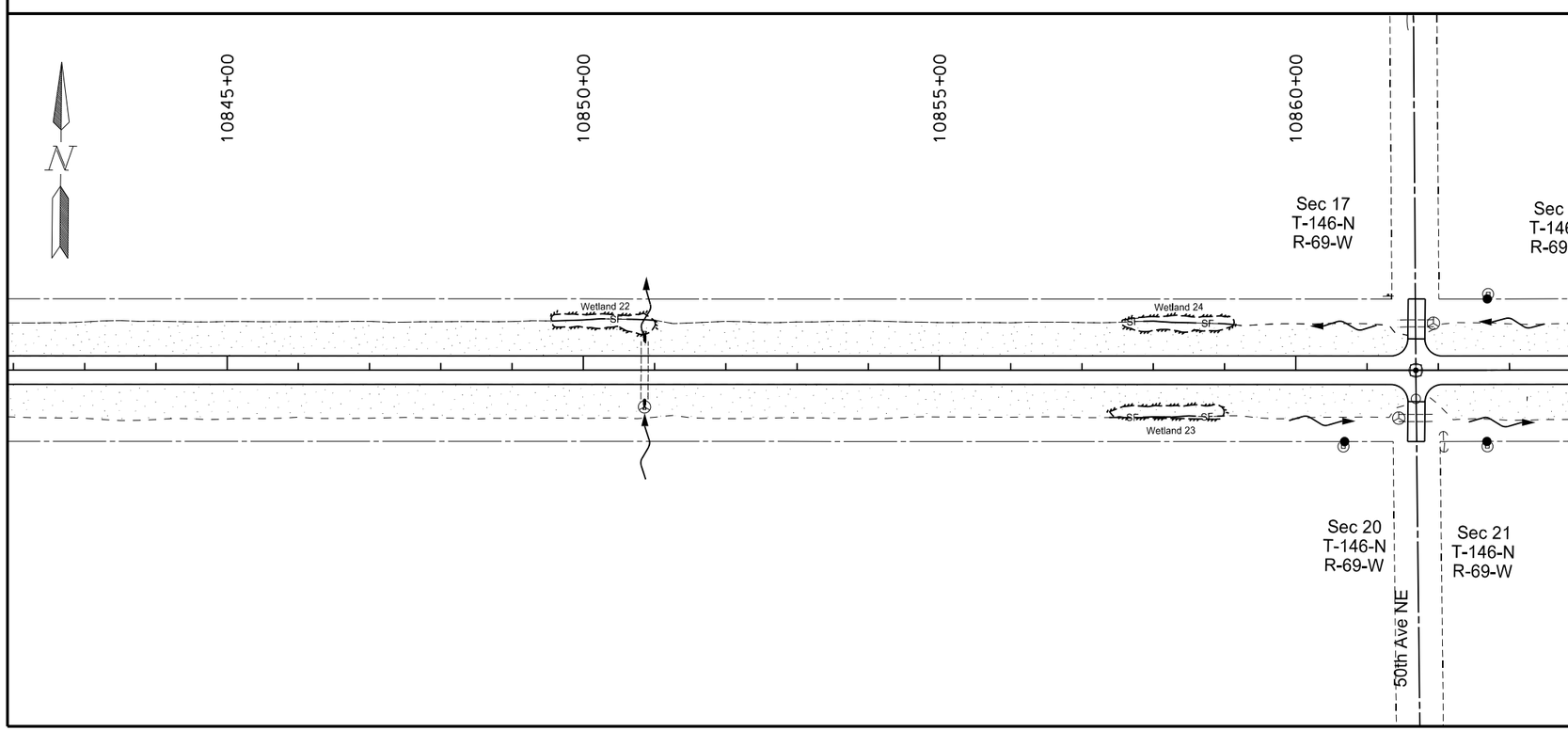

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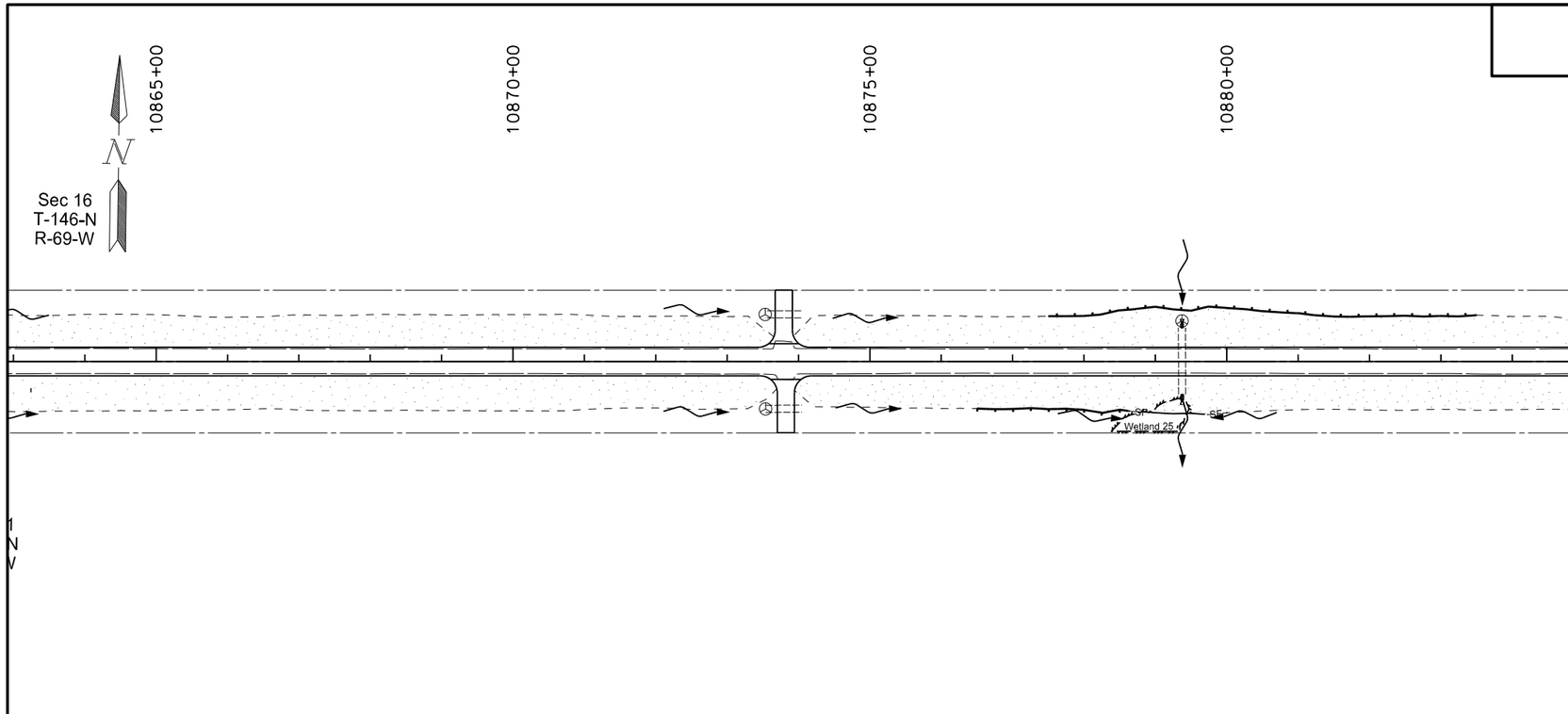

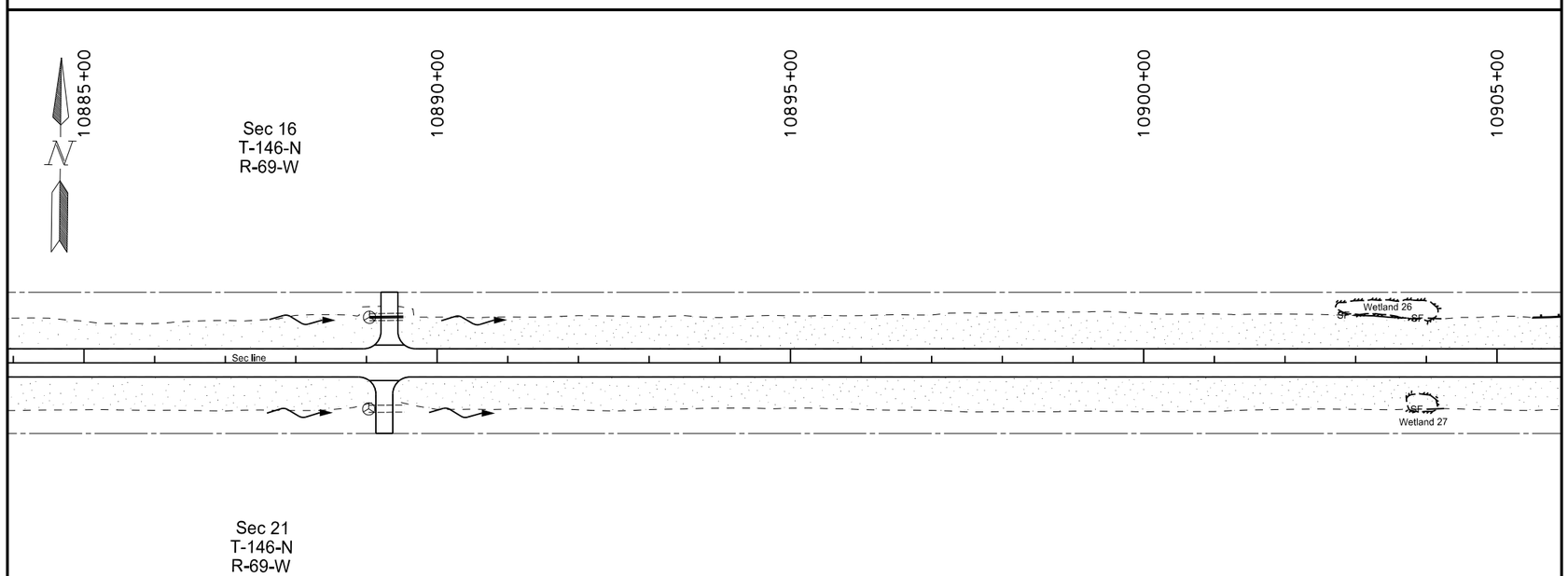

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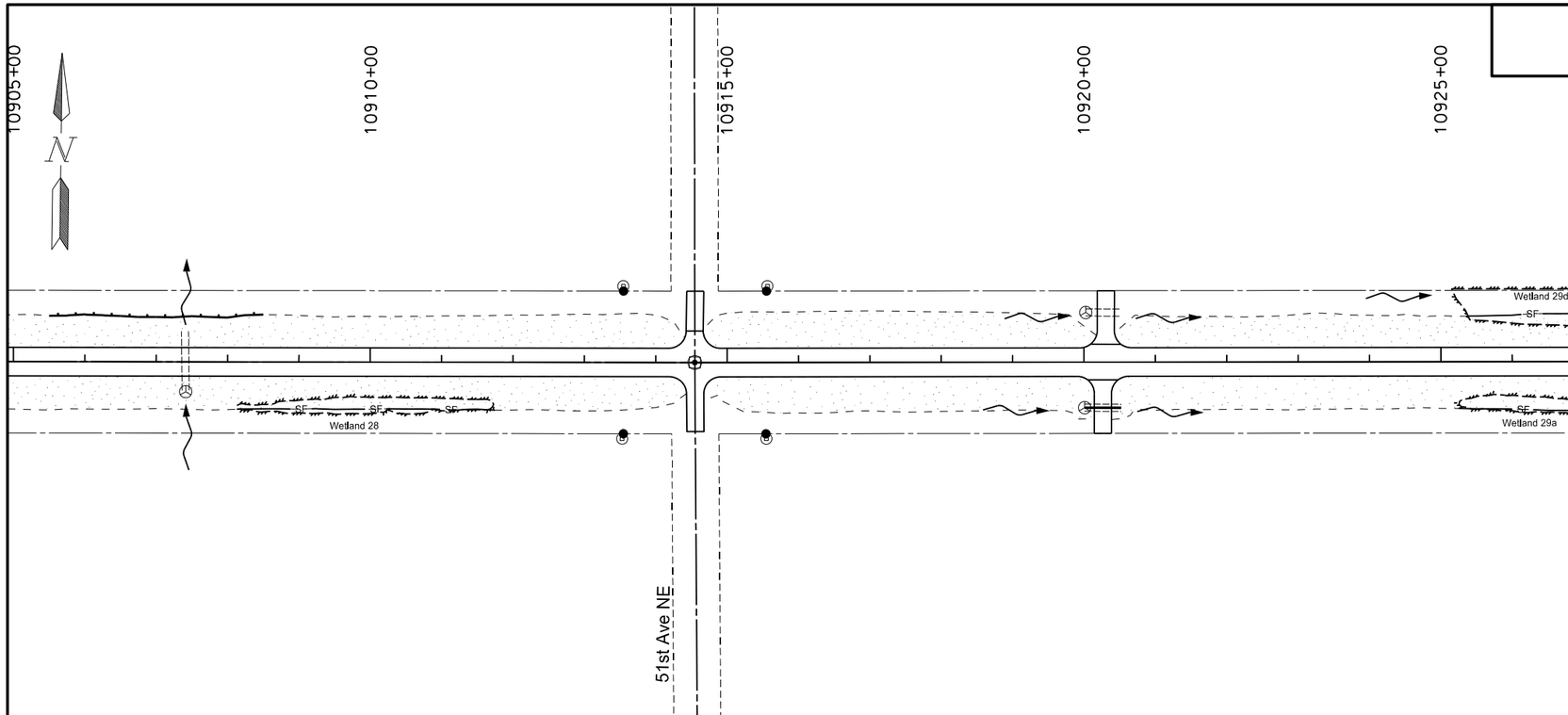

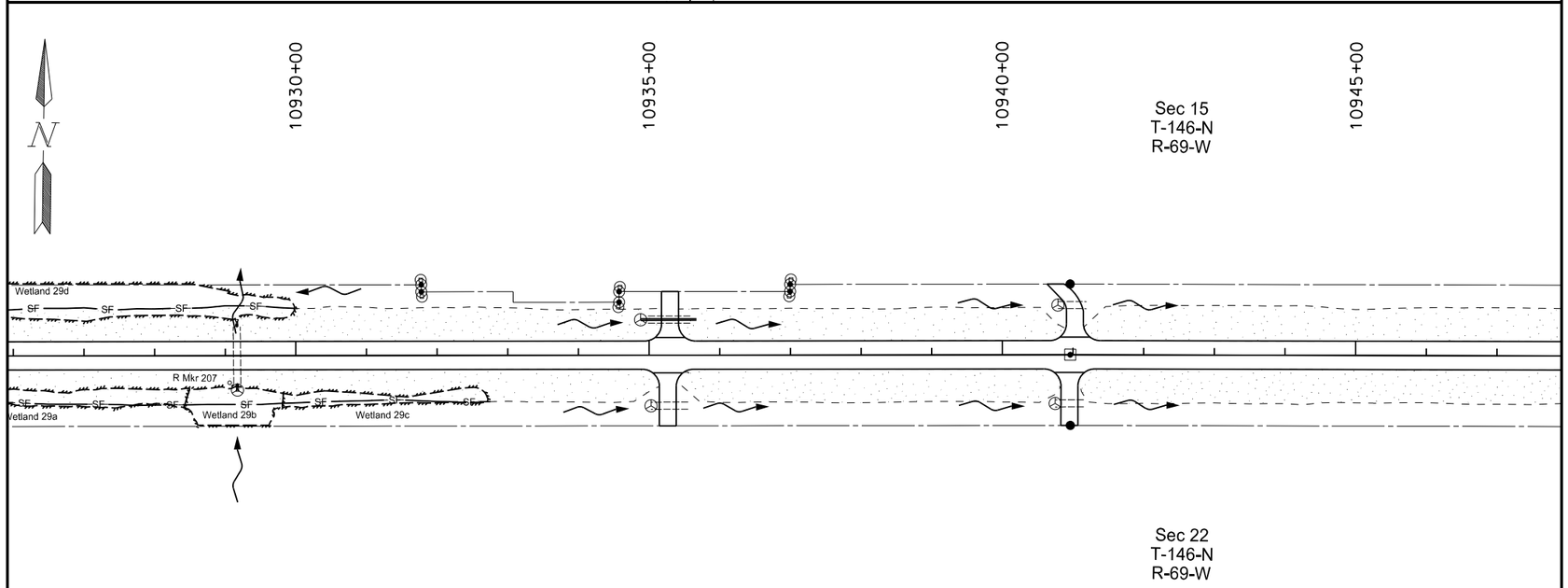

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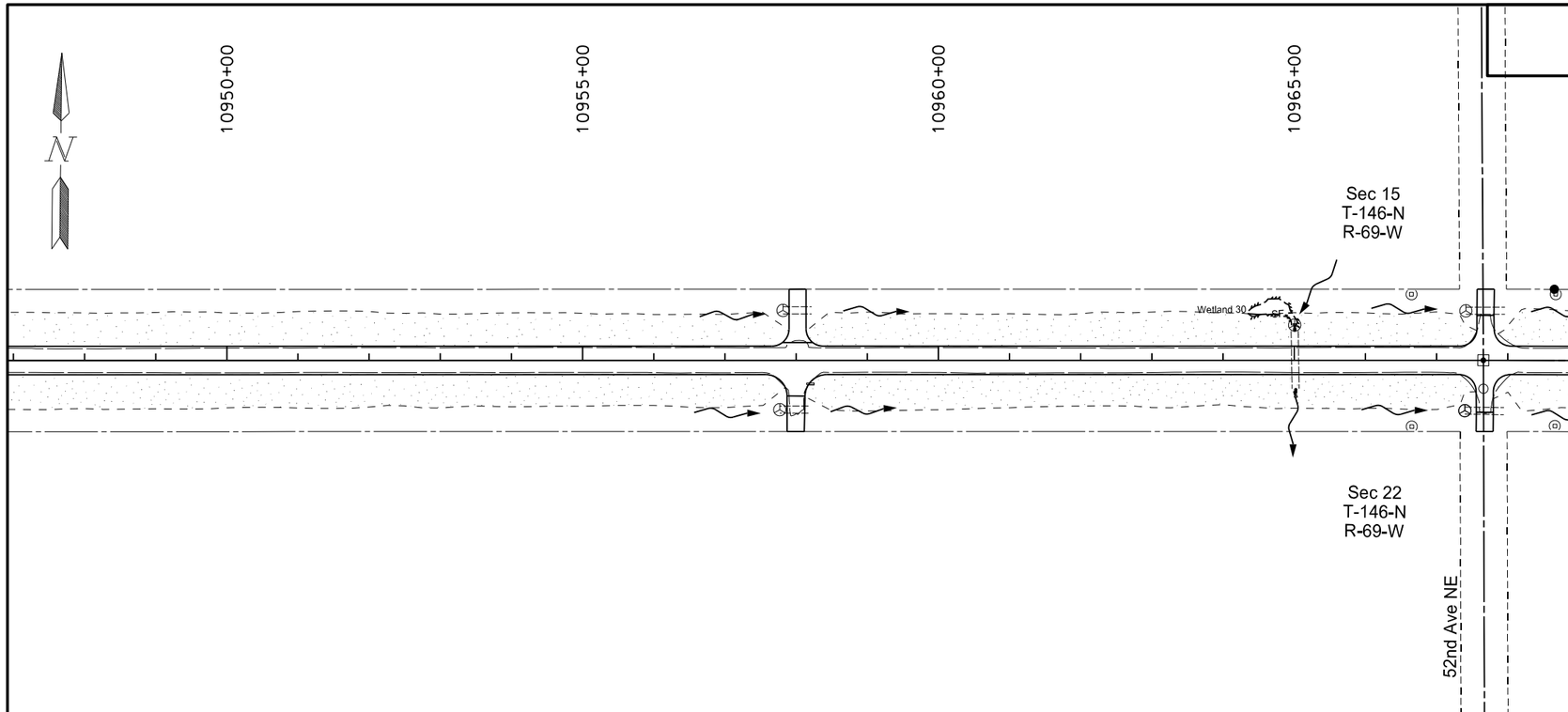

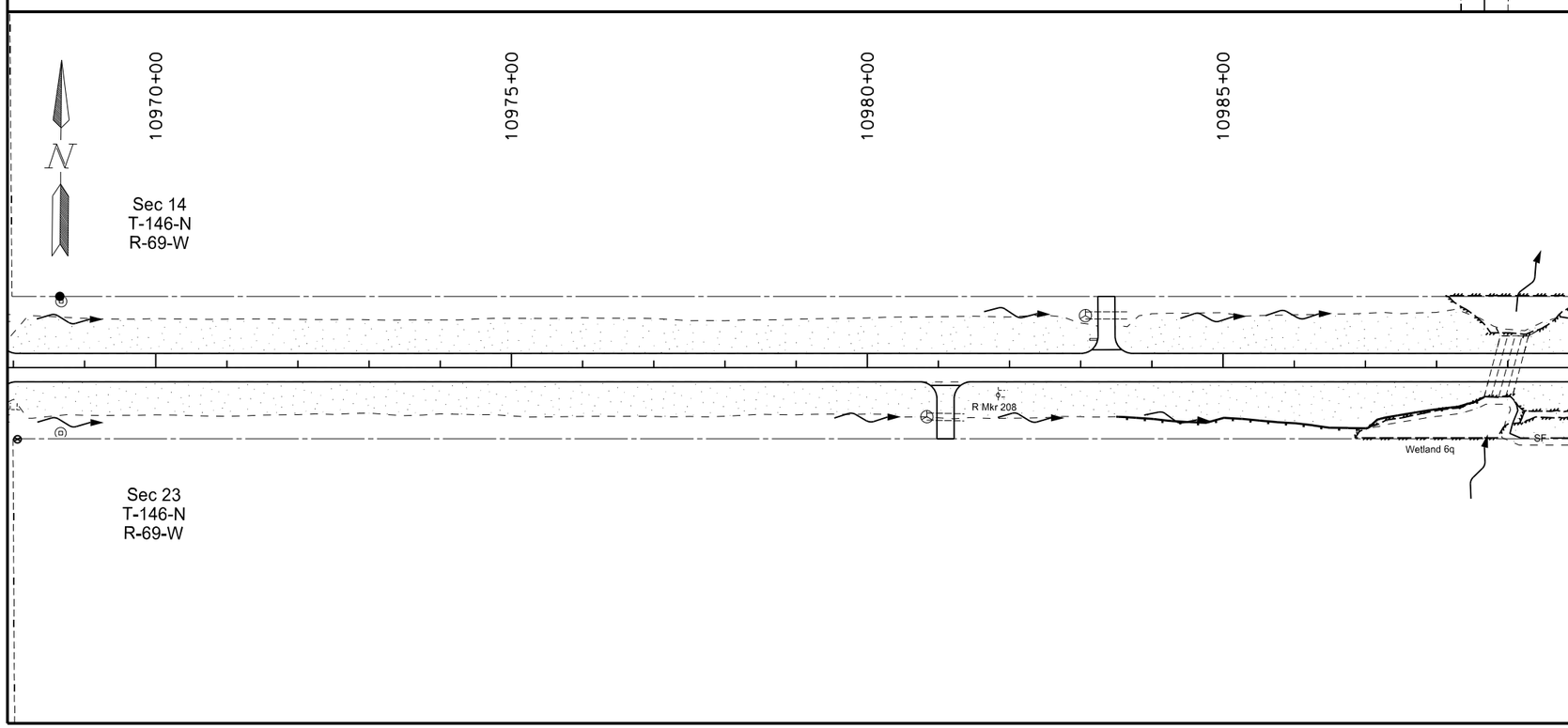

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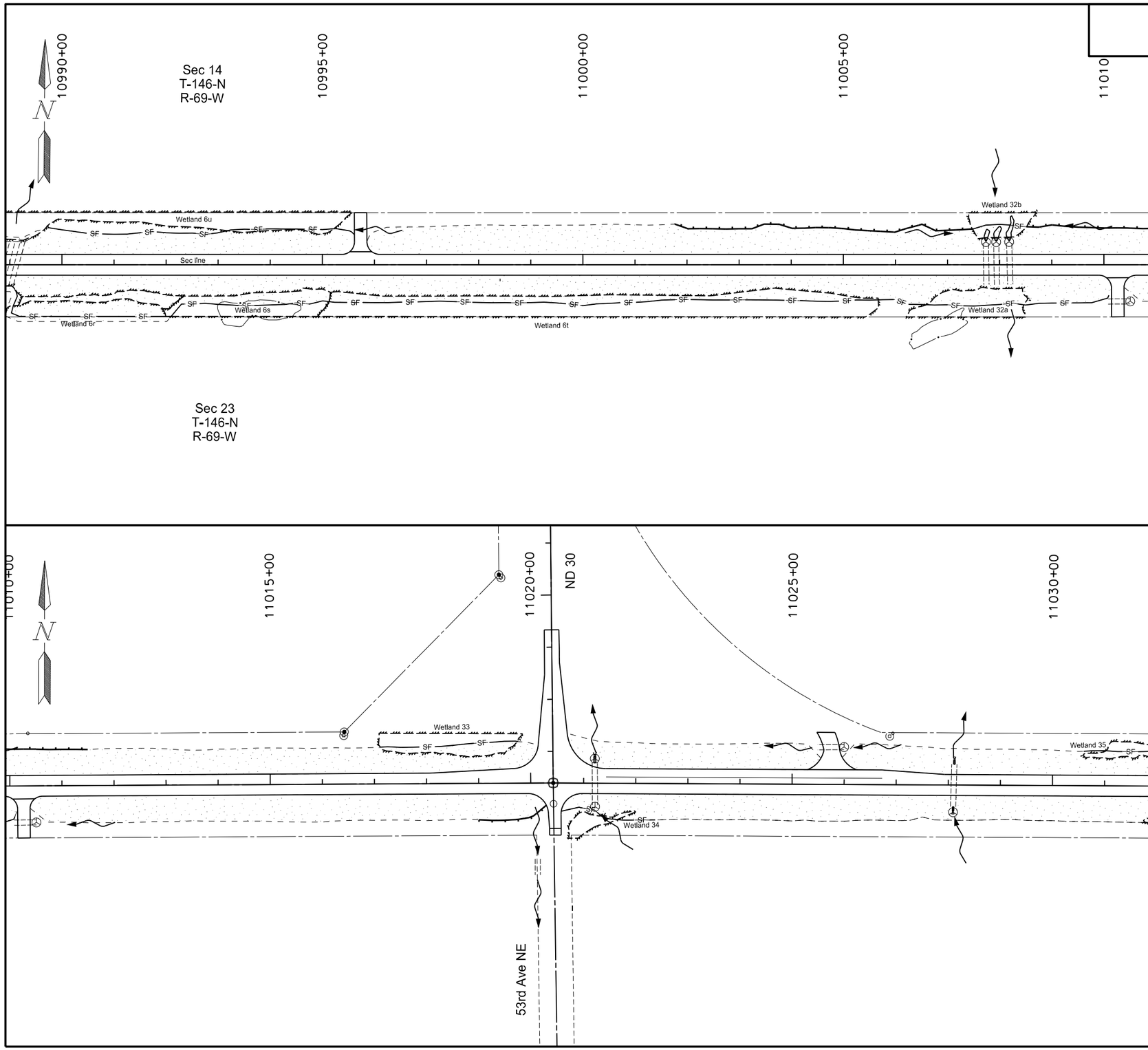

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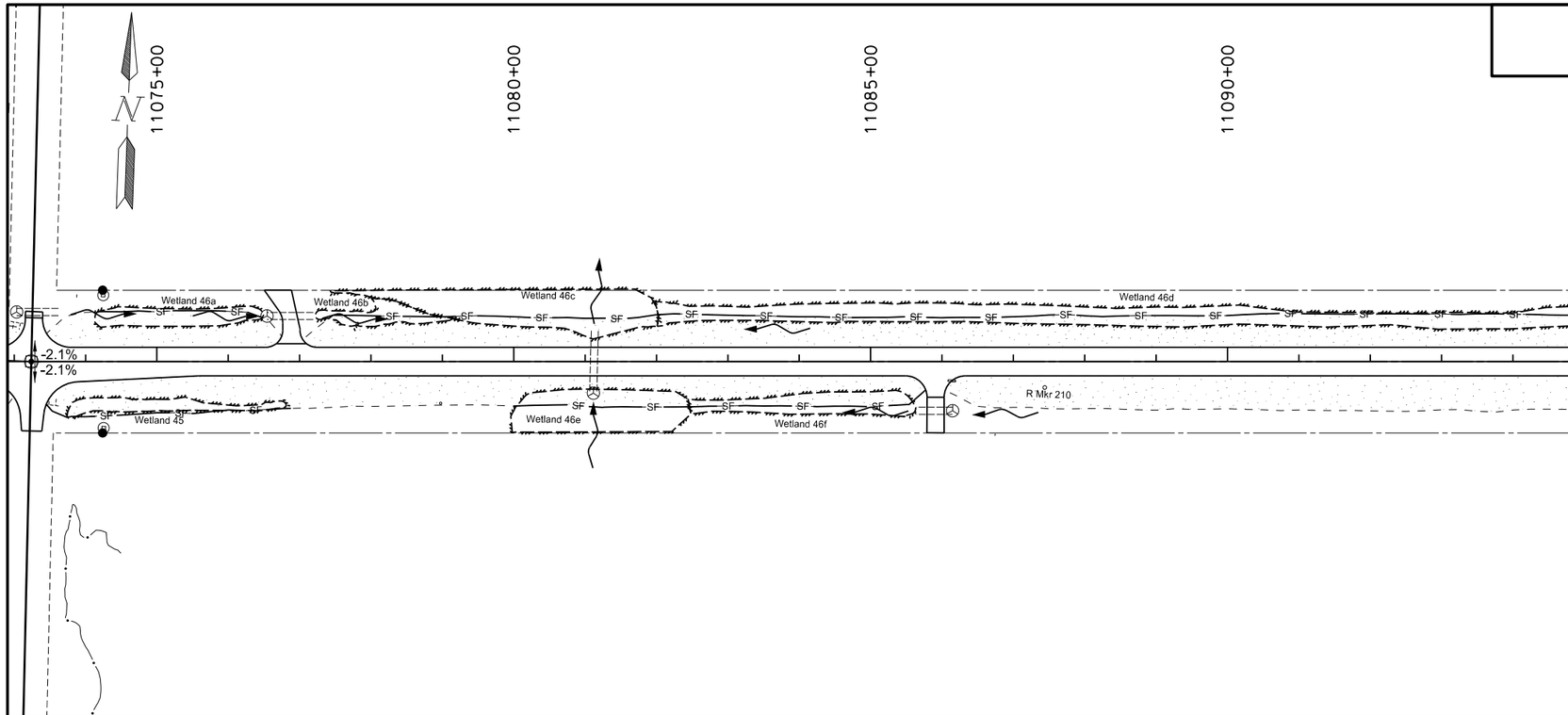

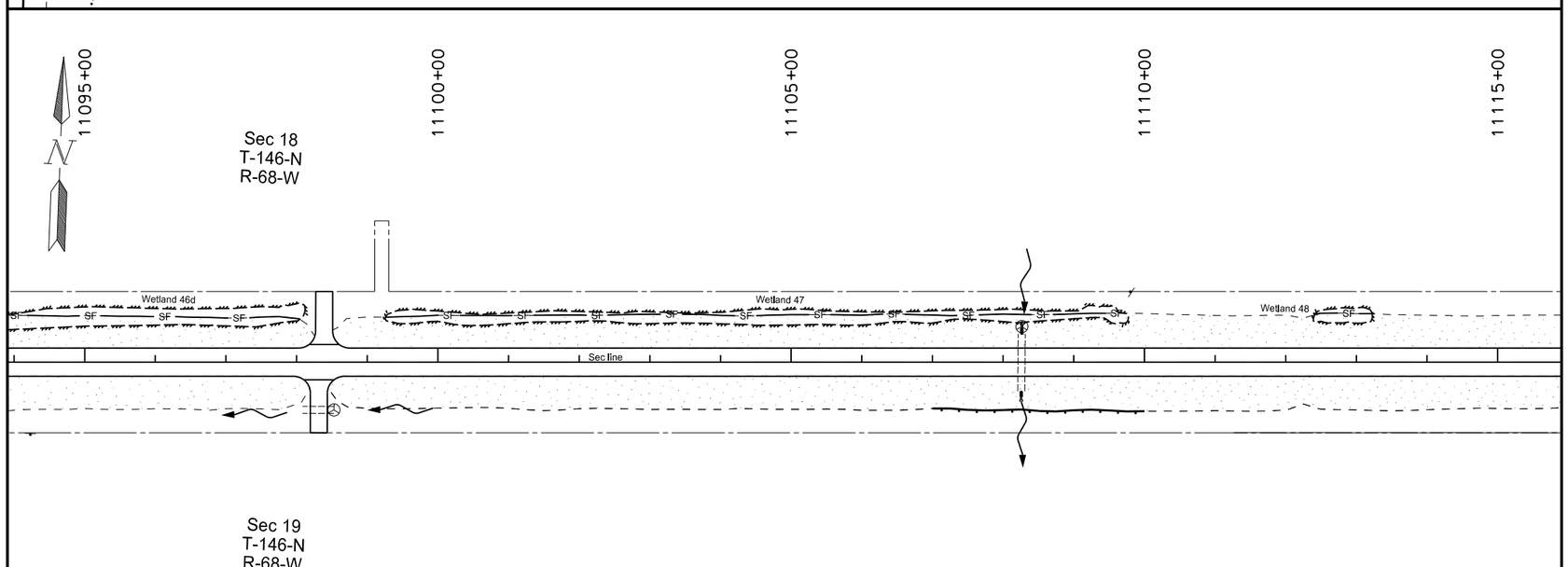

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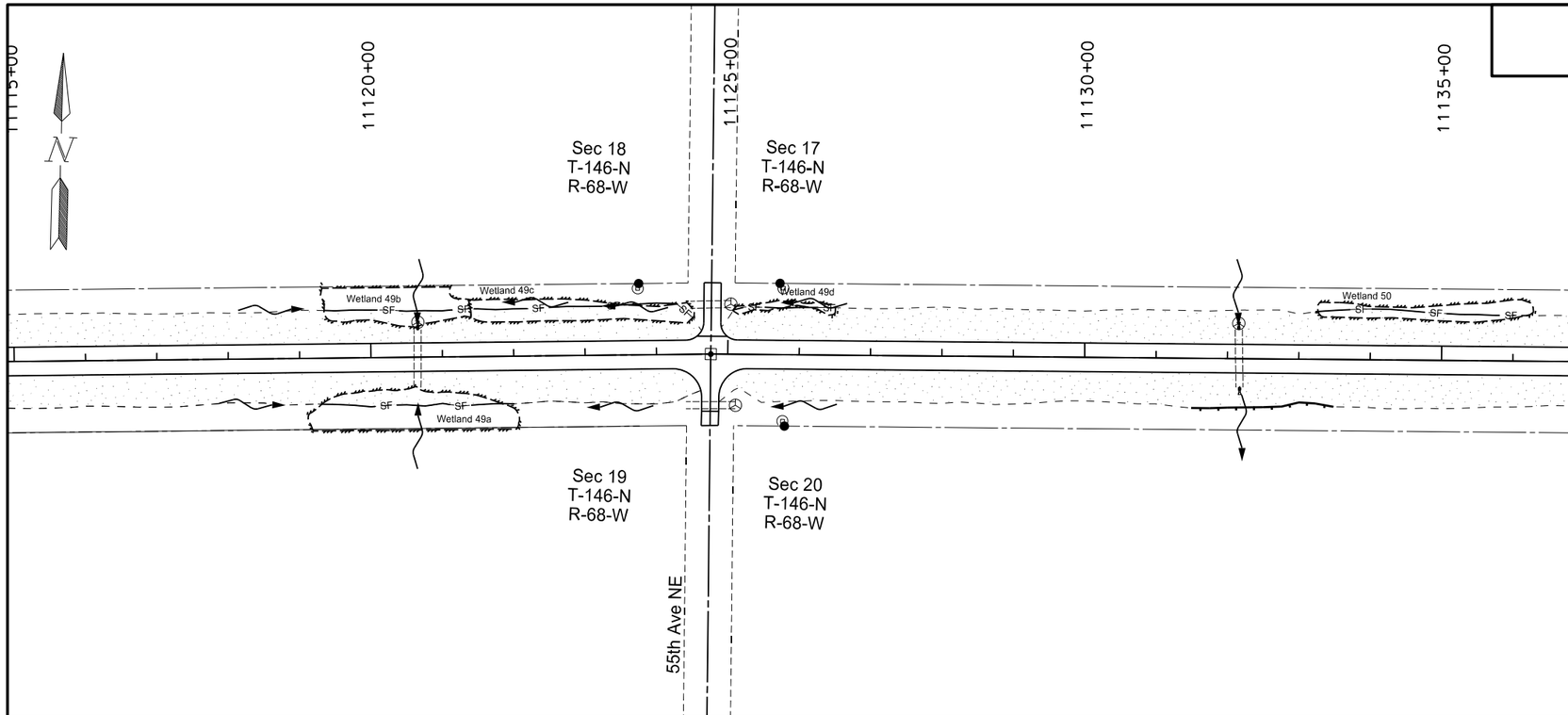

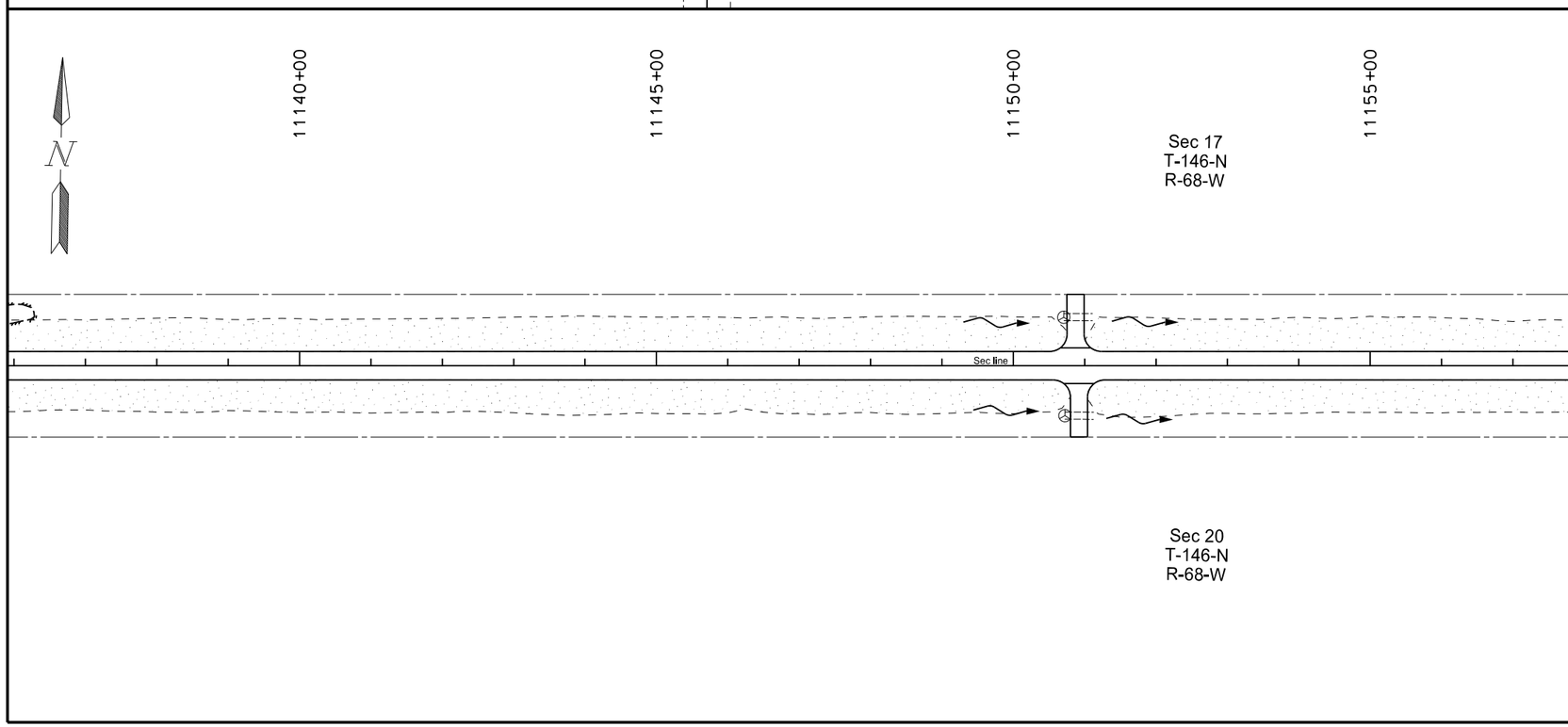

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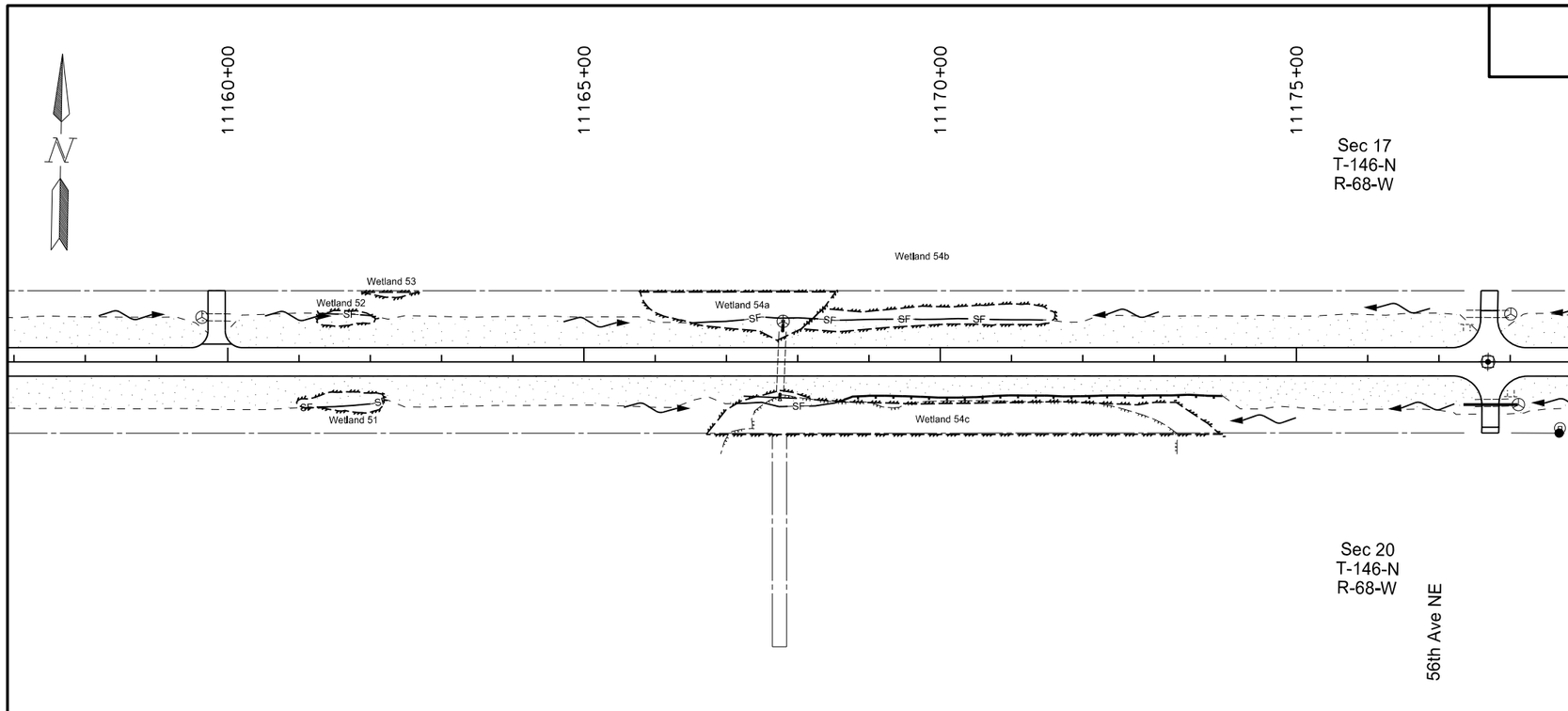

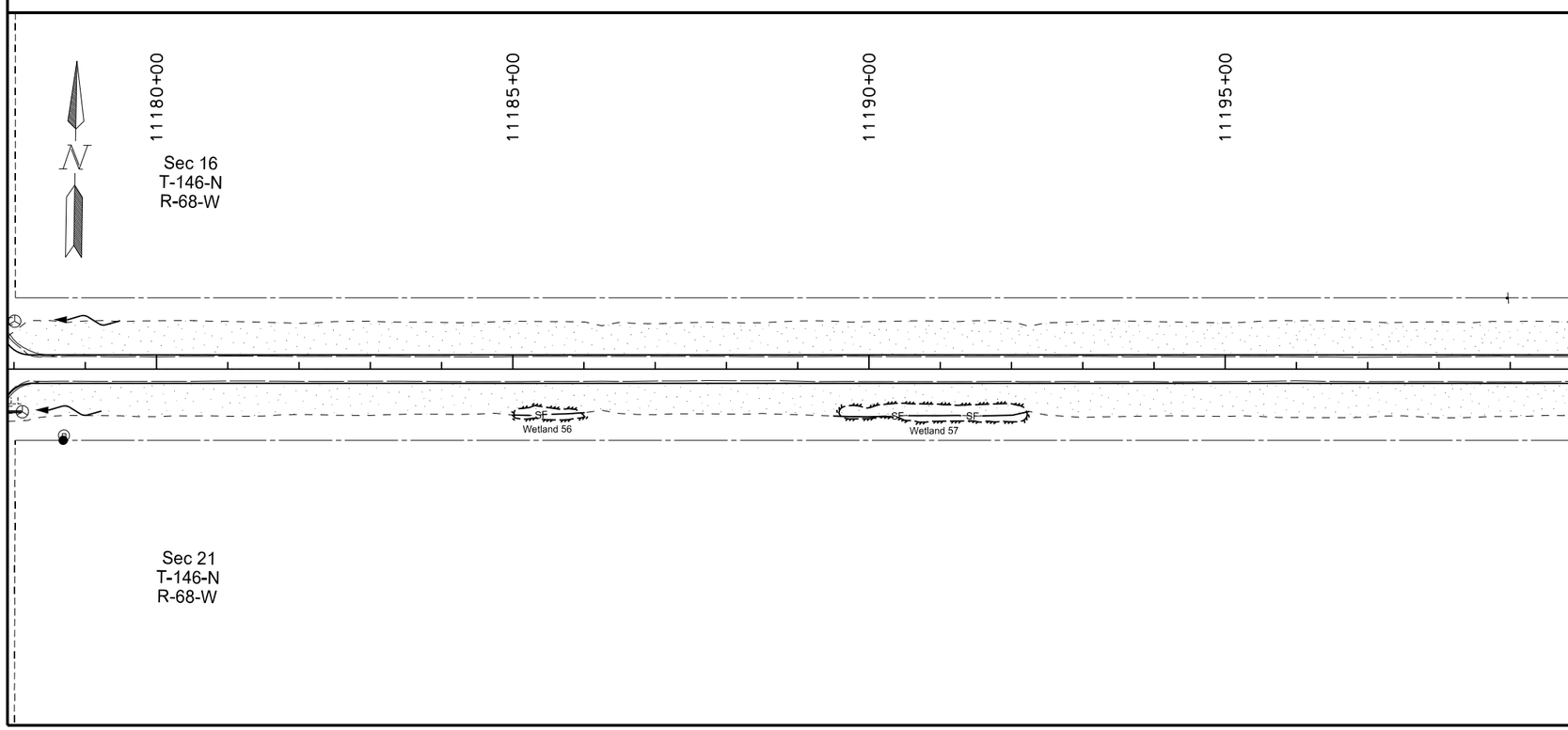

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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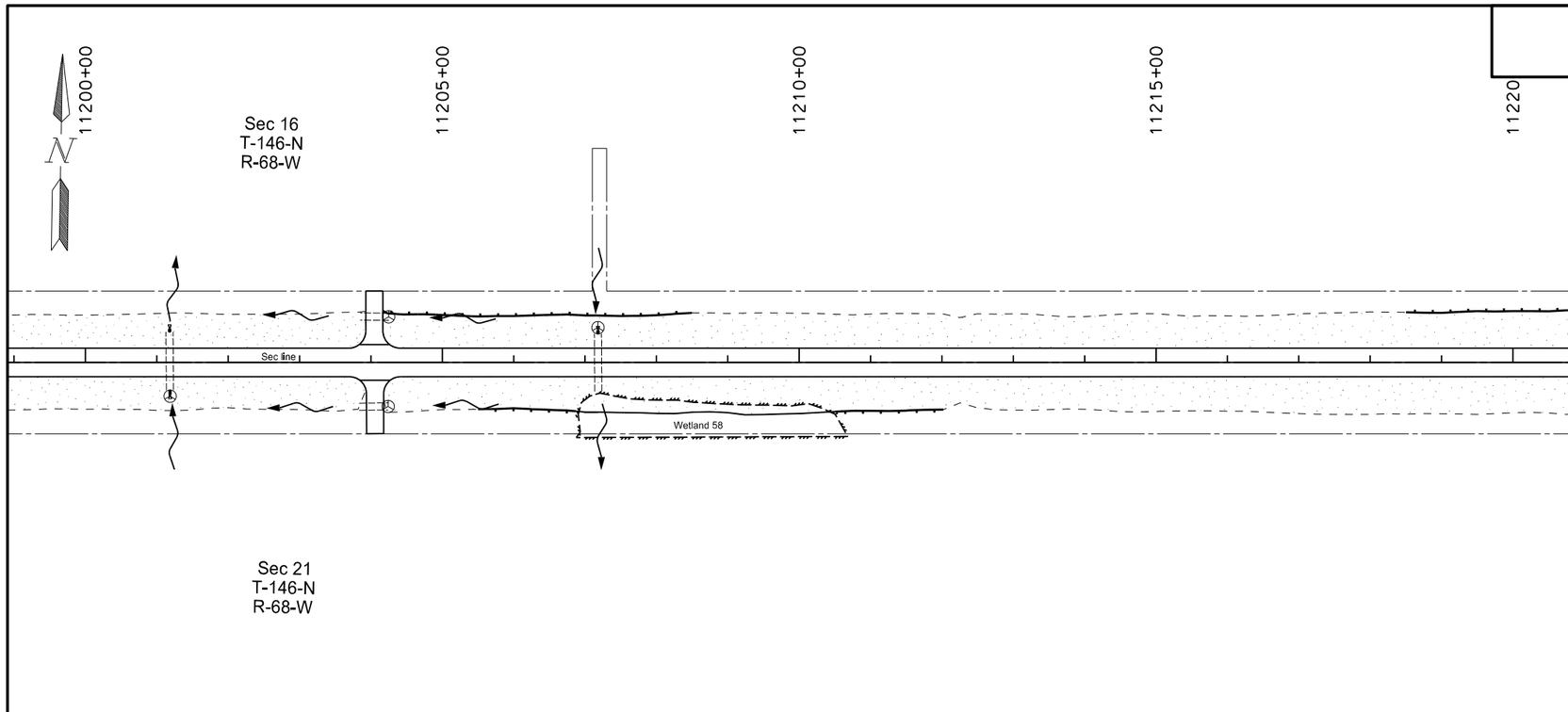

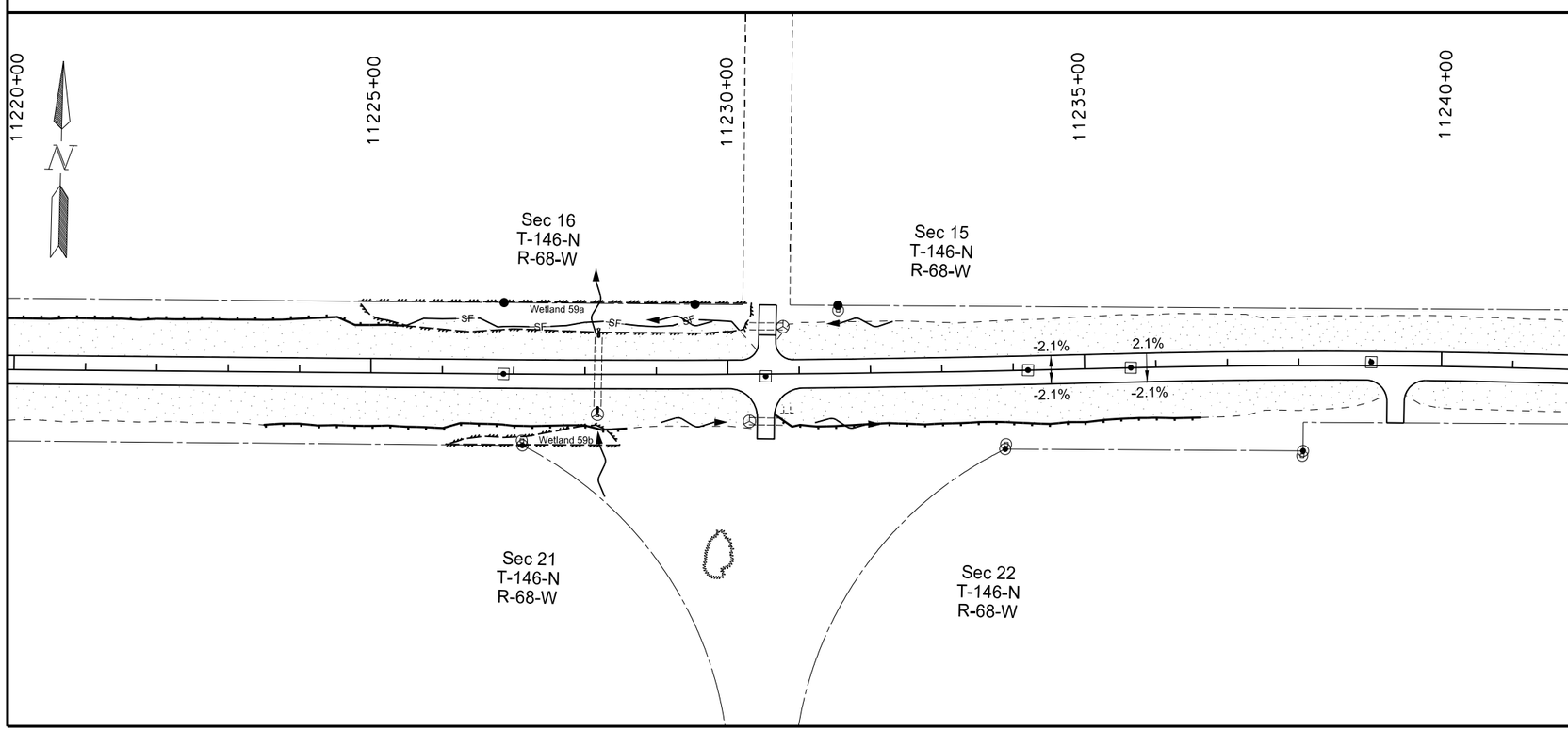

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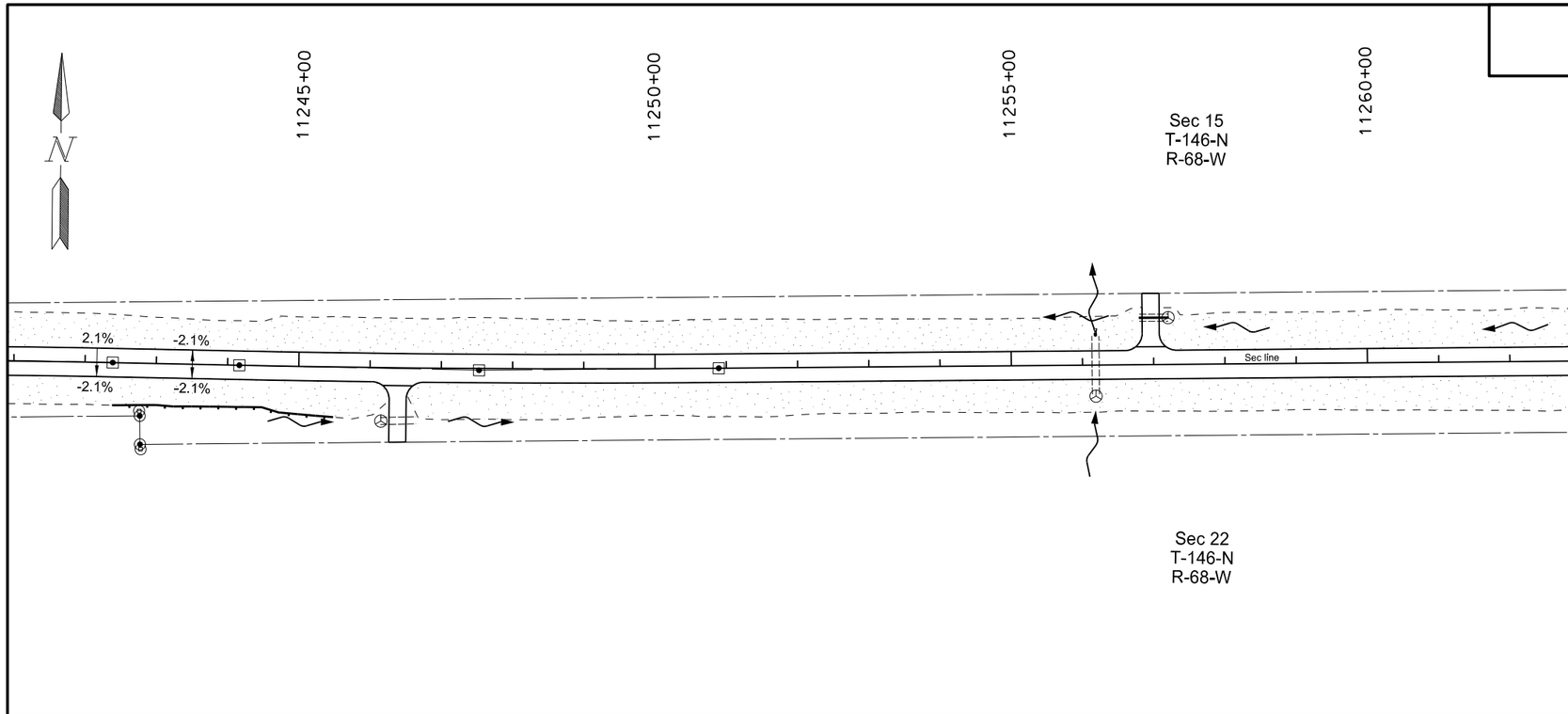

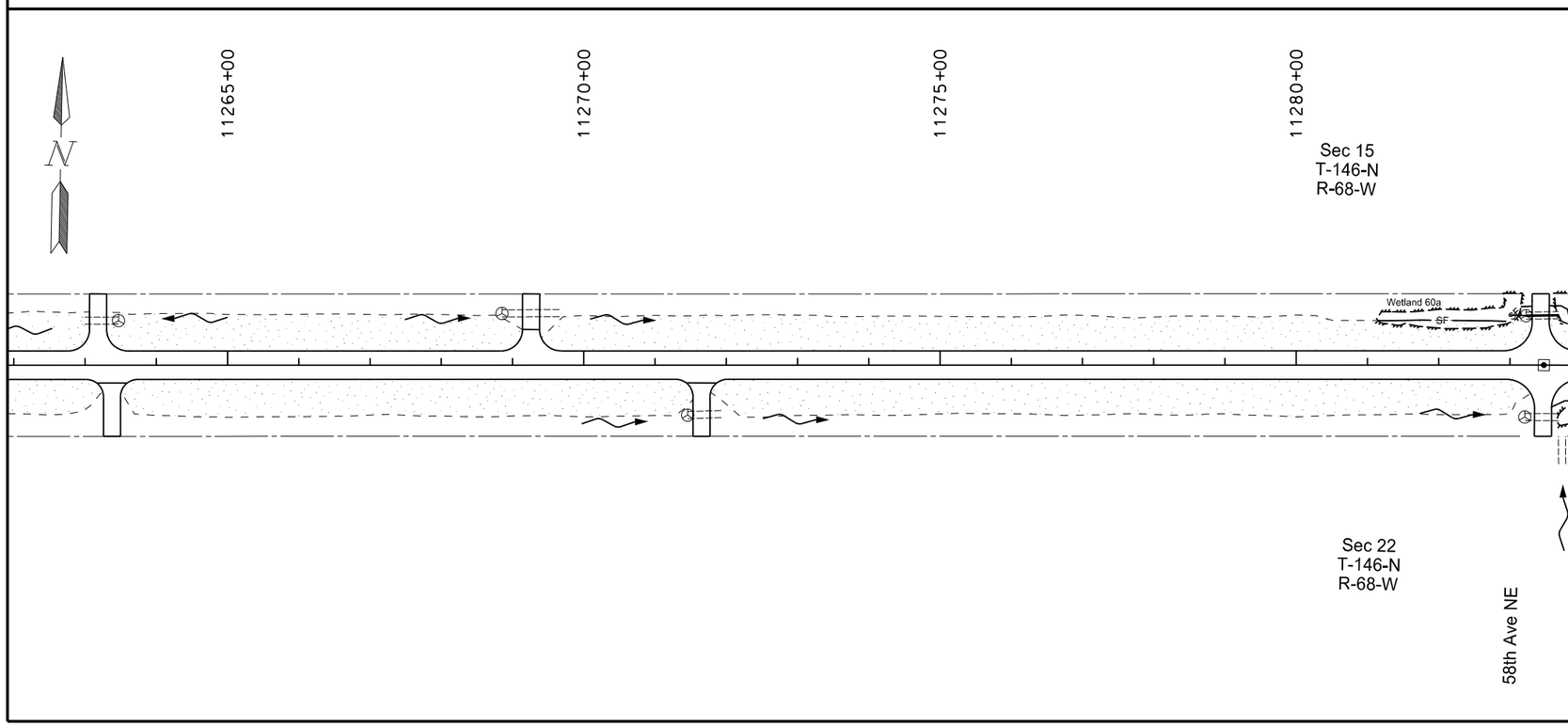

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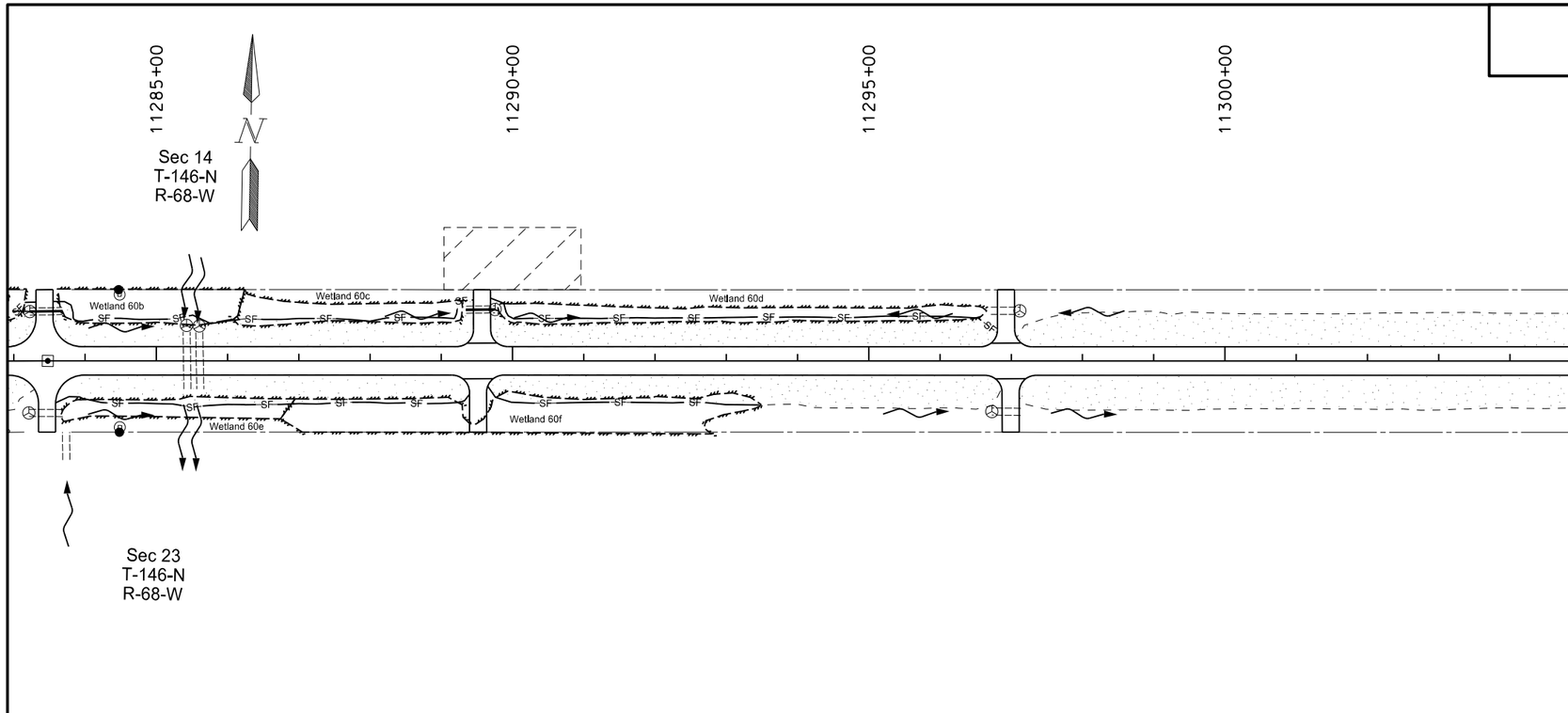

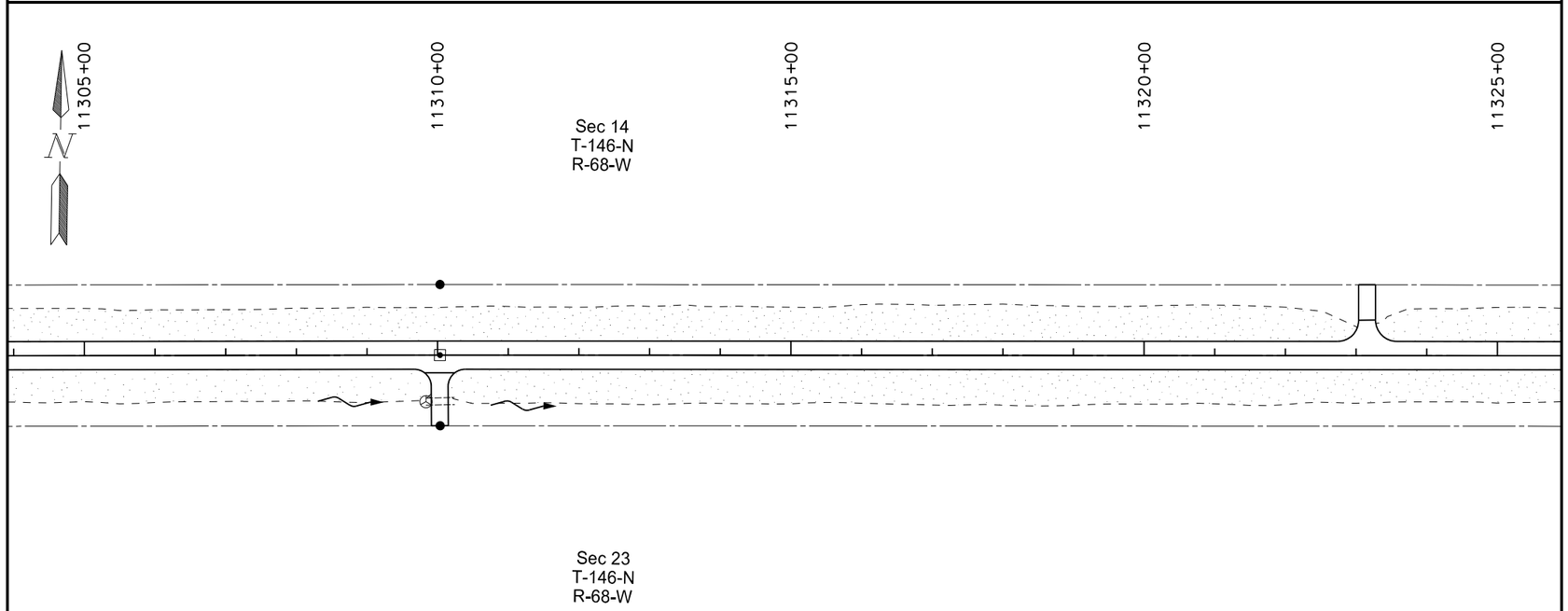

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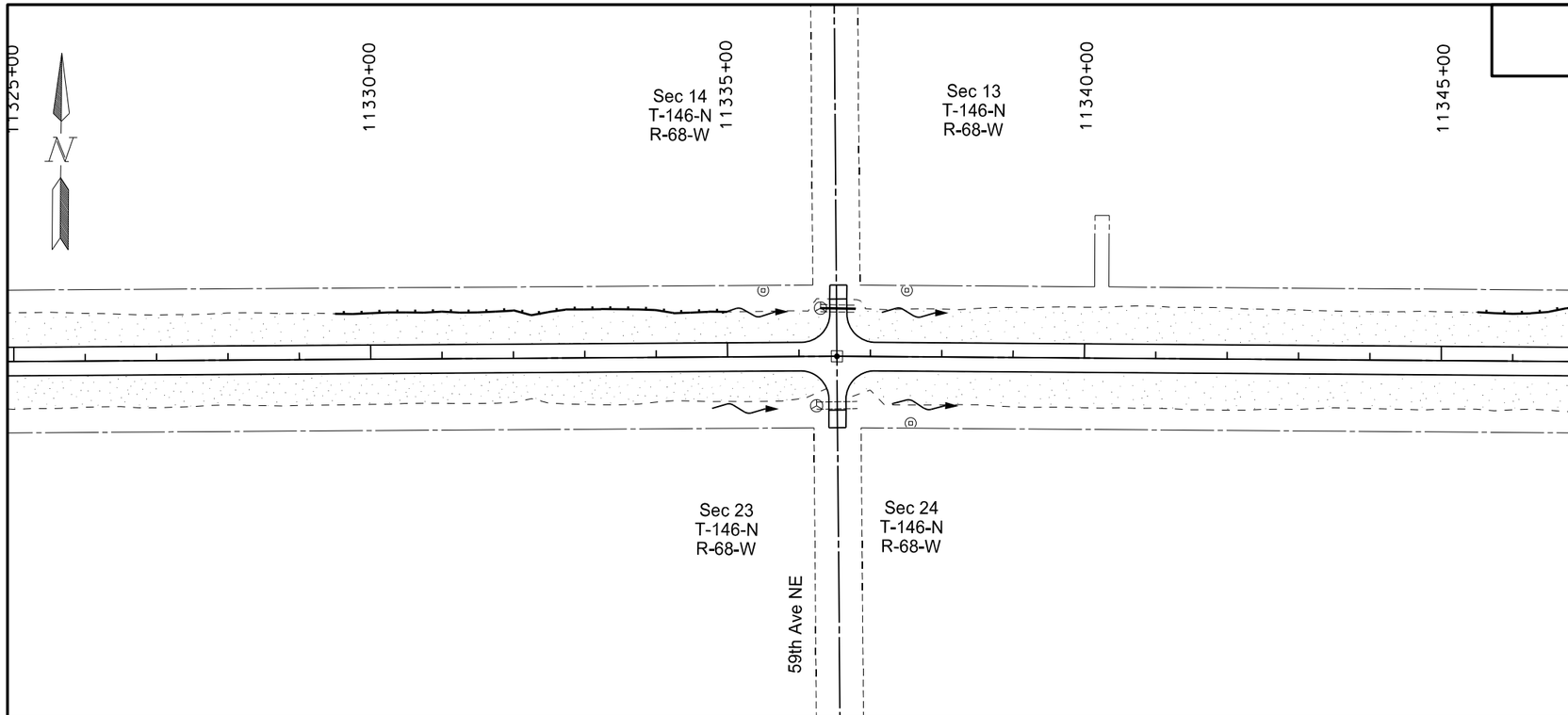

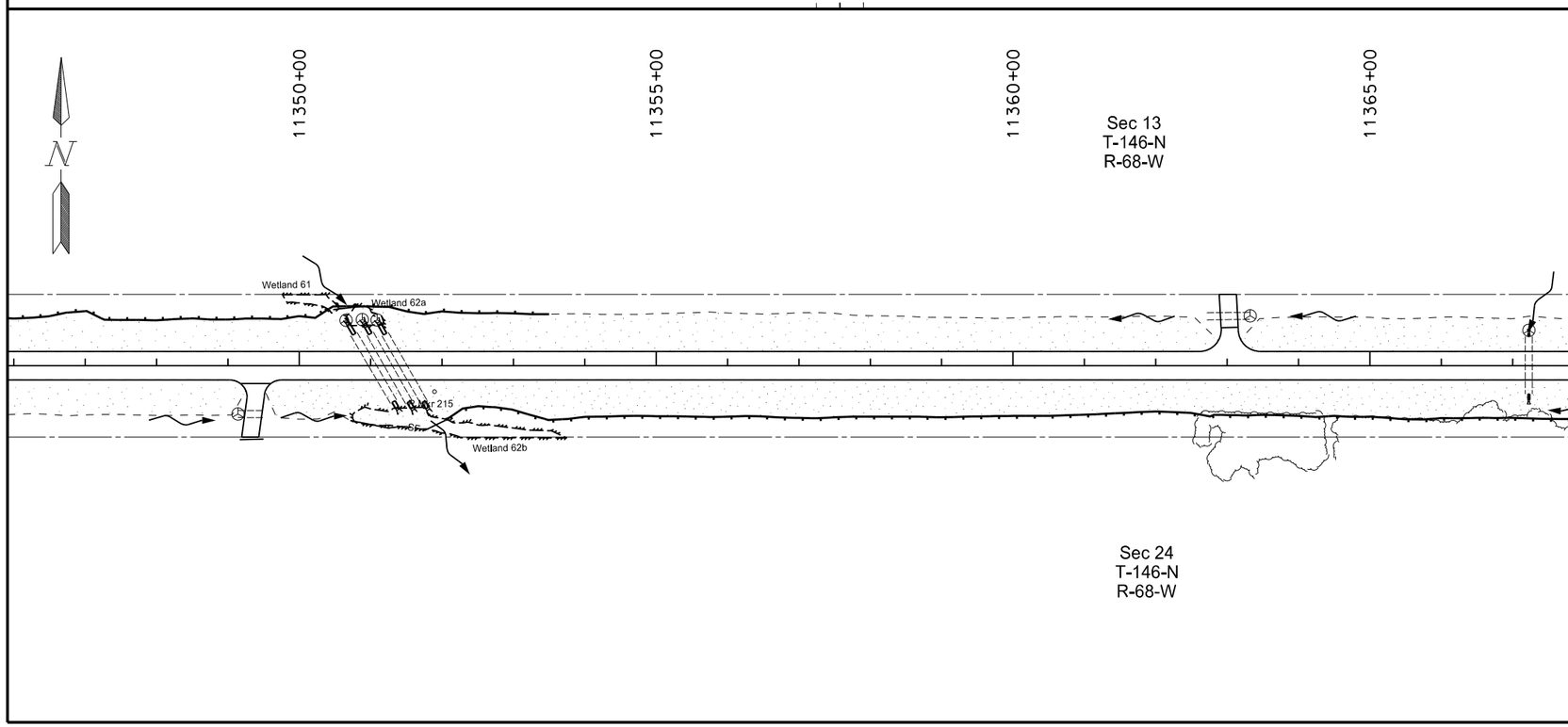

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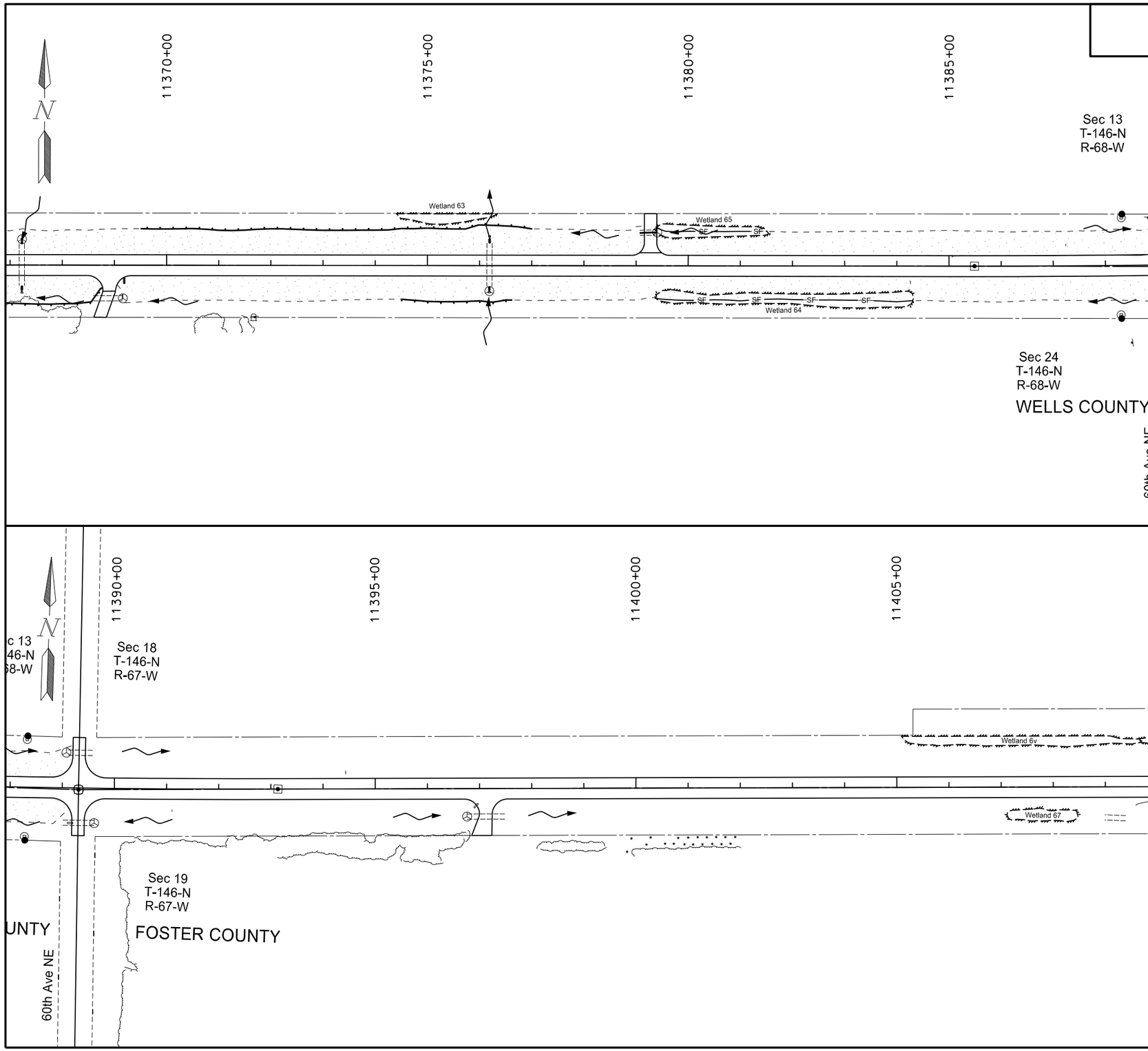
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	22



See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

— SF — TEMPORARY SILT FENCE UNSUPPORTED

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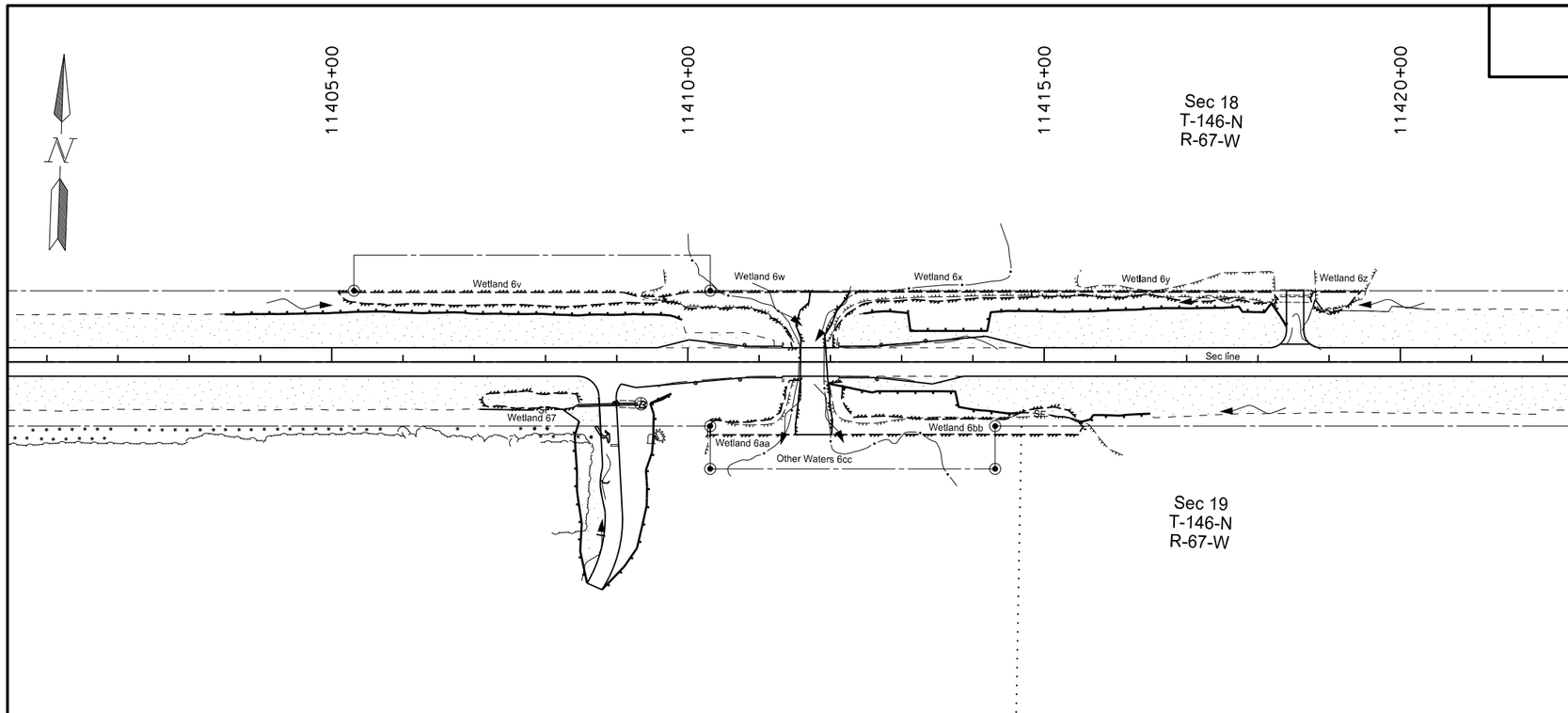
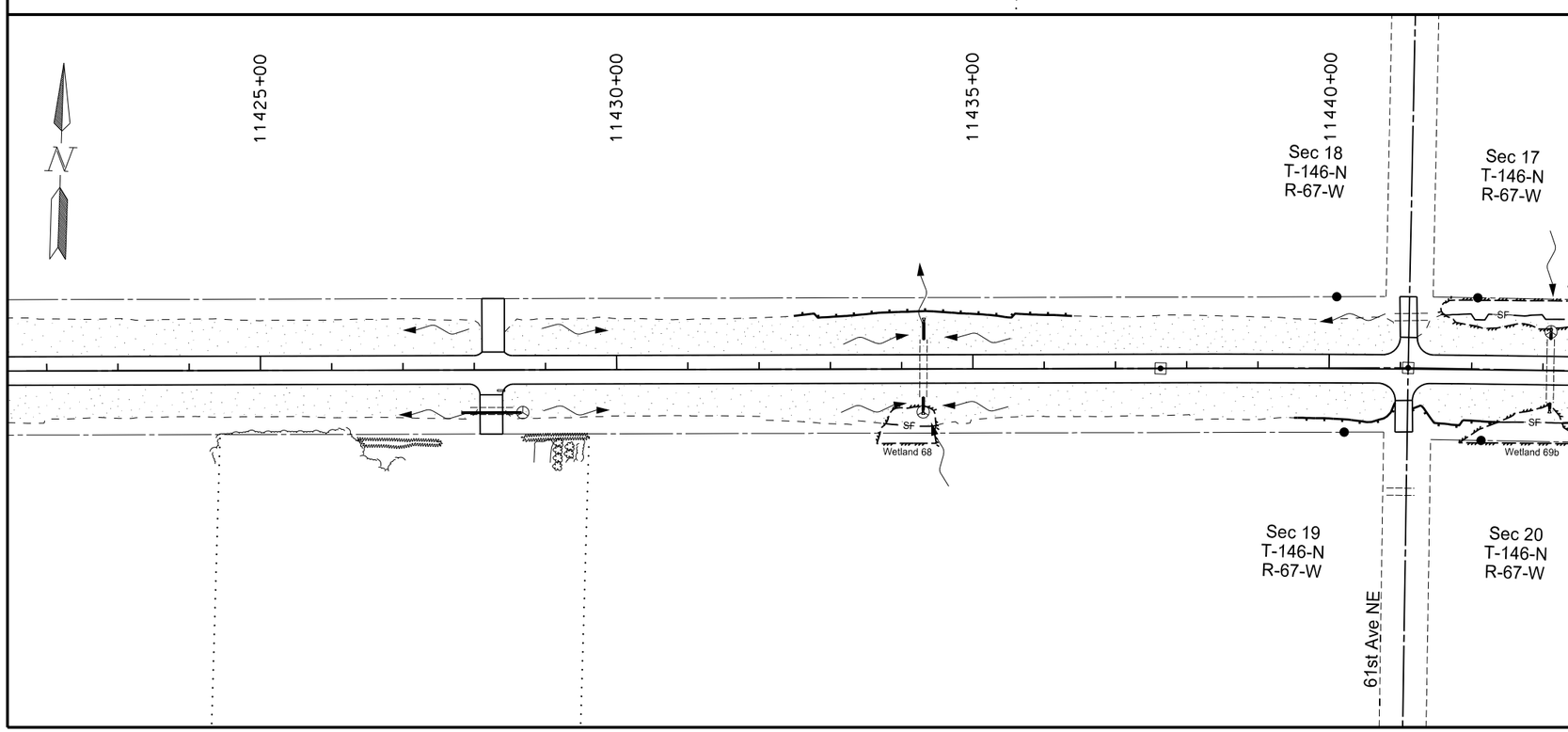
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	23





See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

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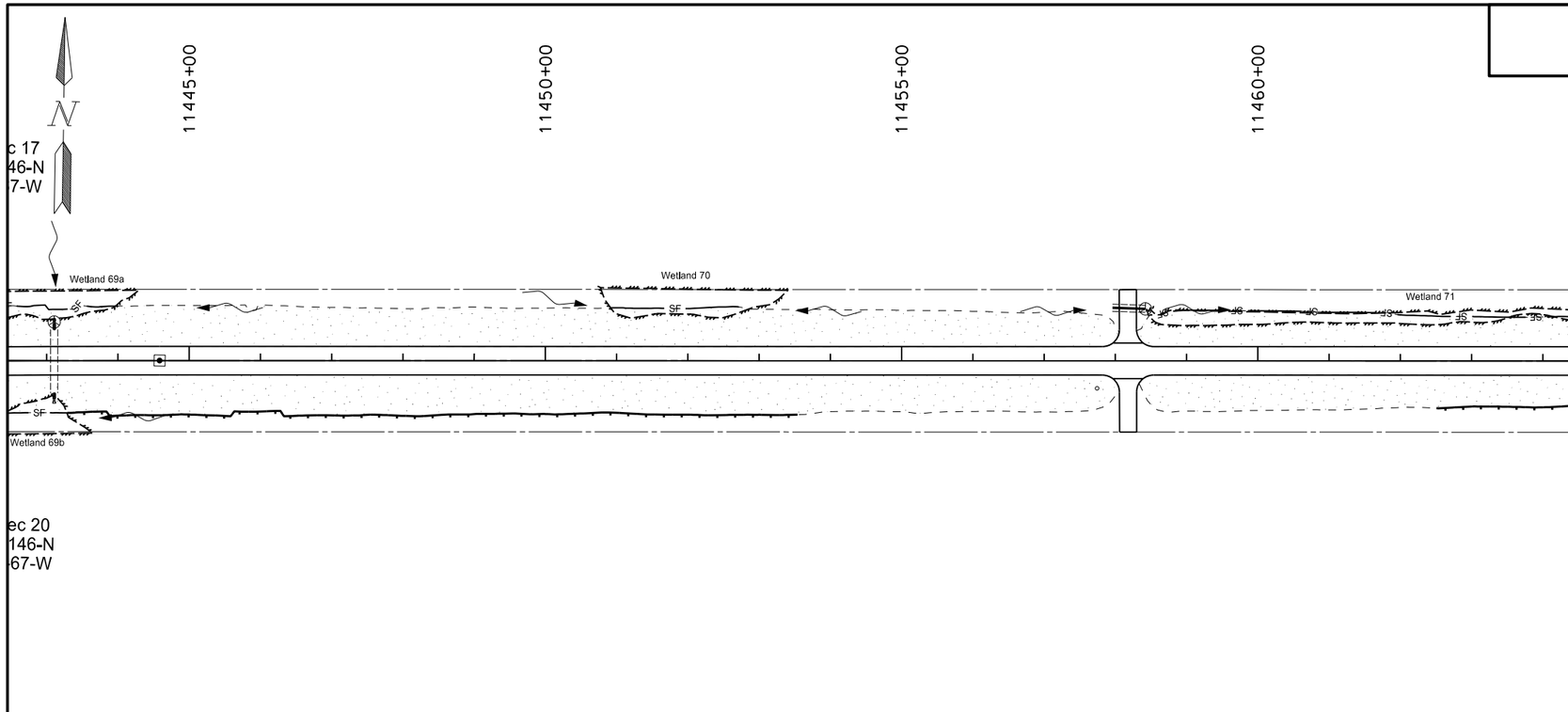
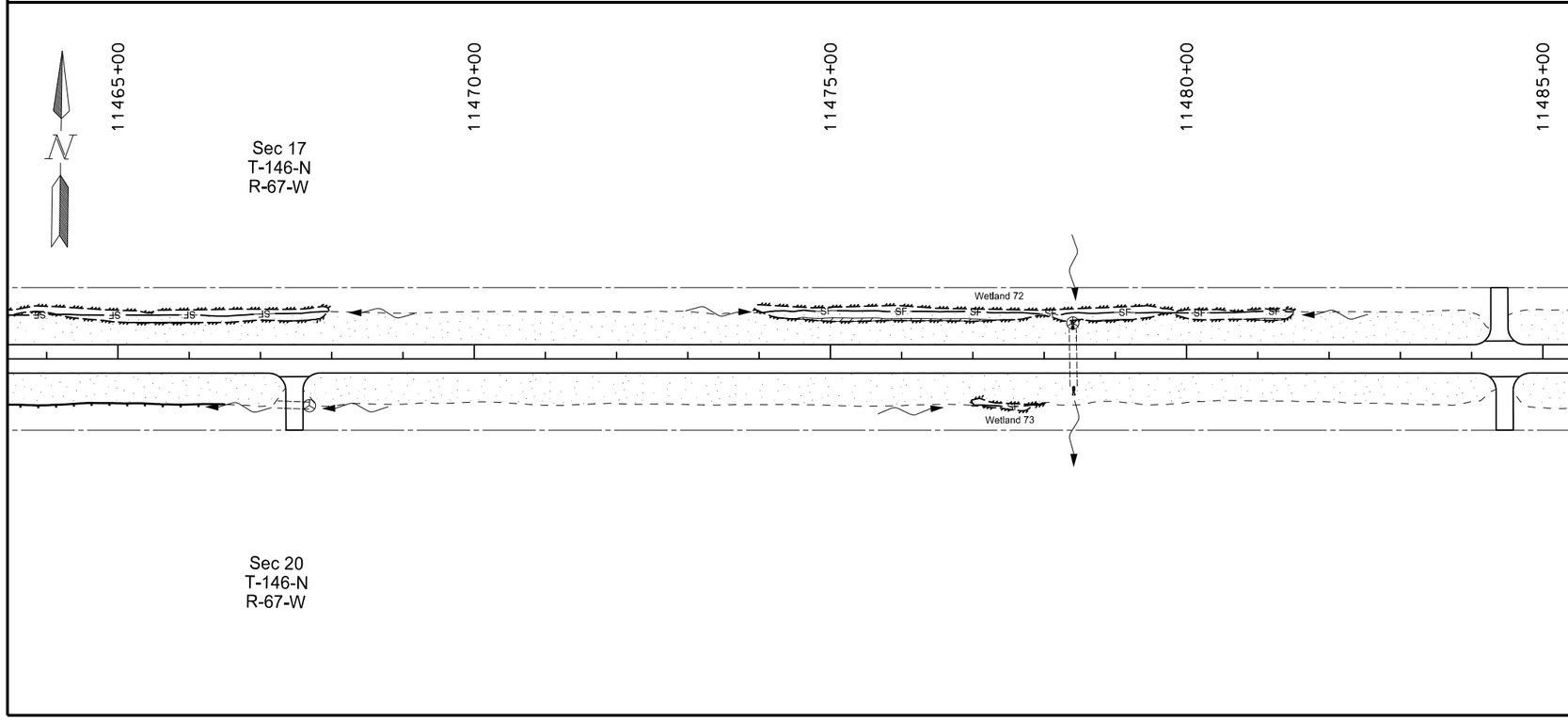
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	24





See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

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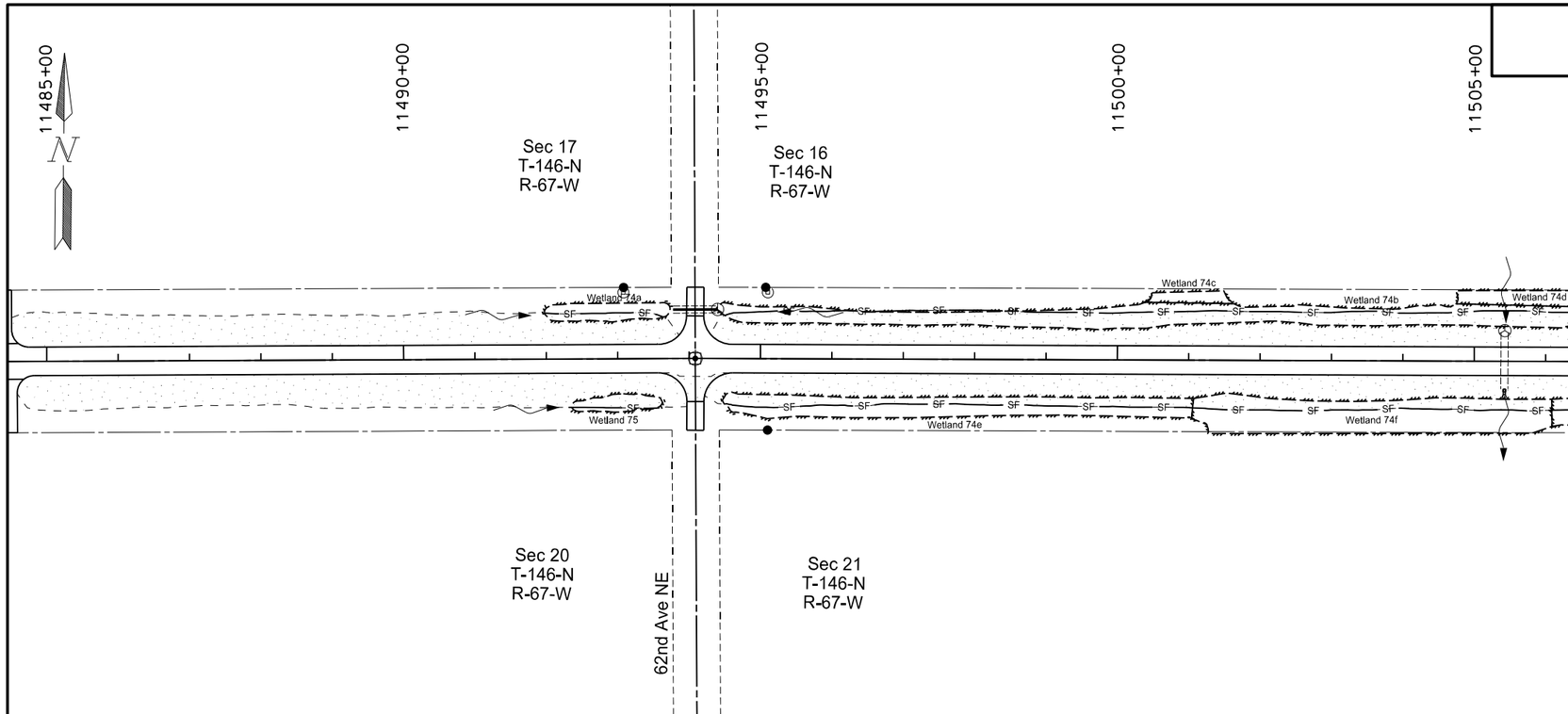
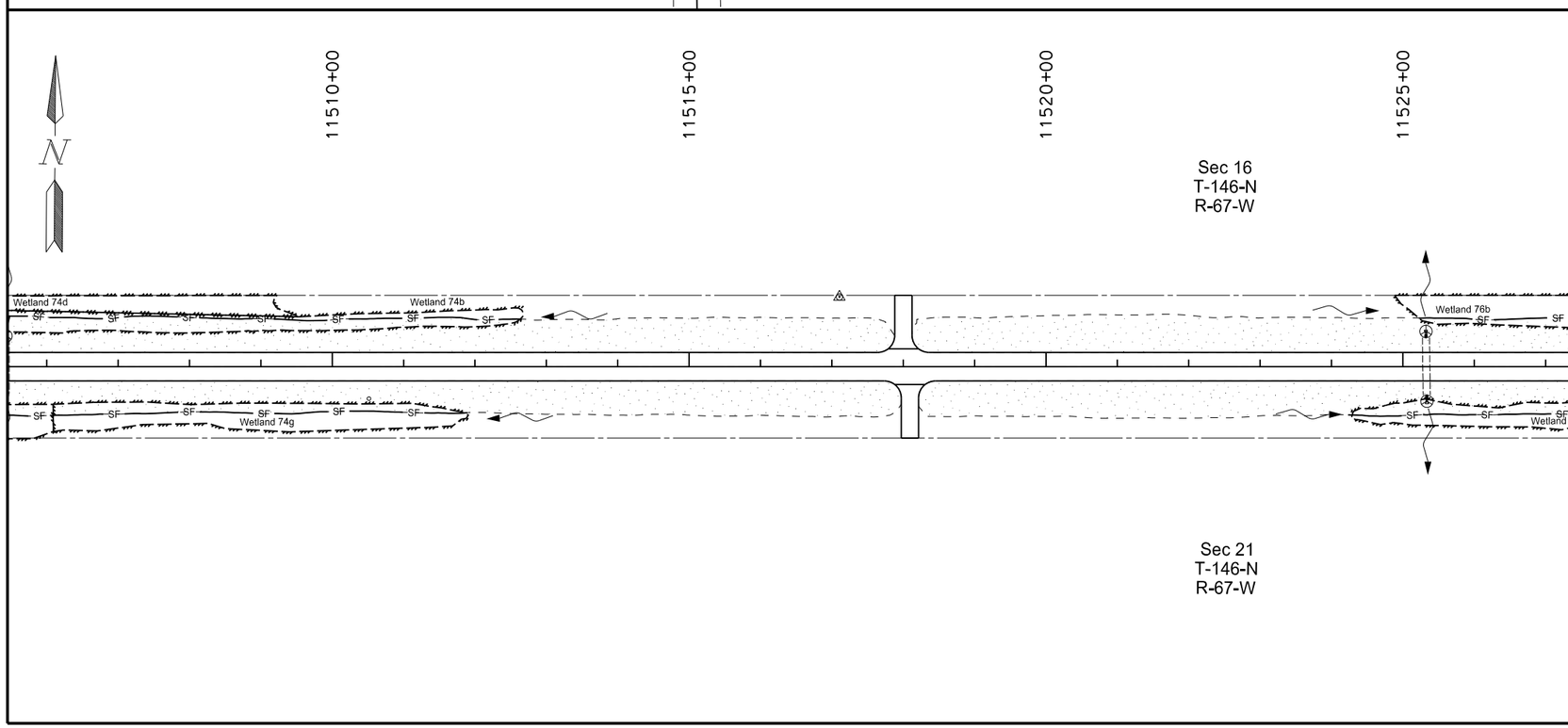
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	25





See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

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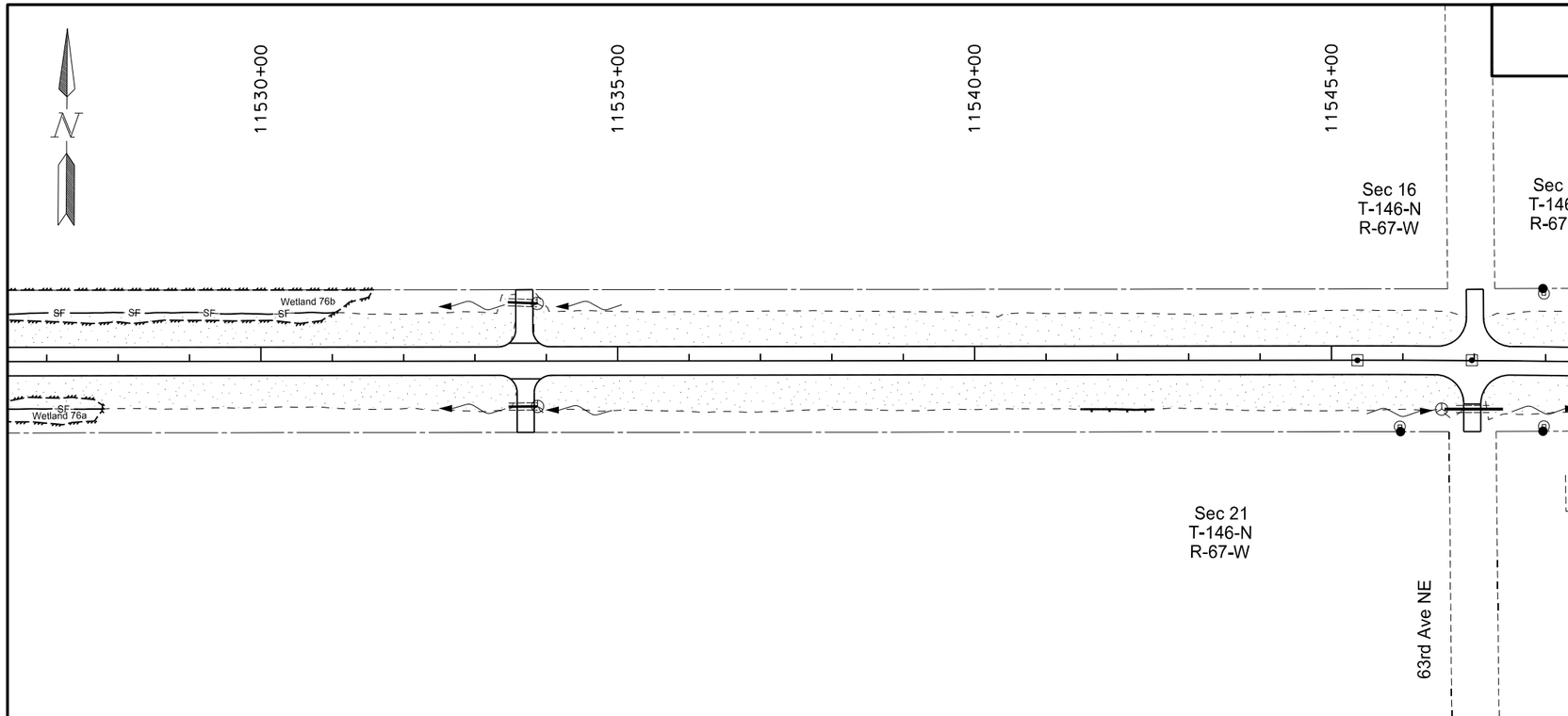
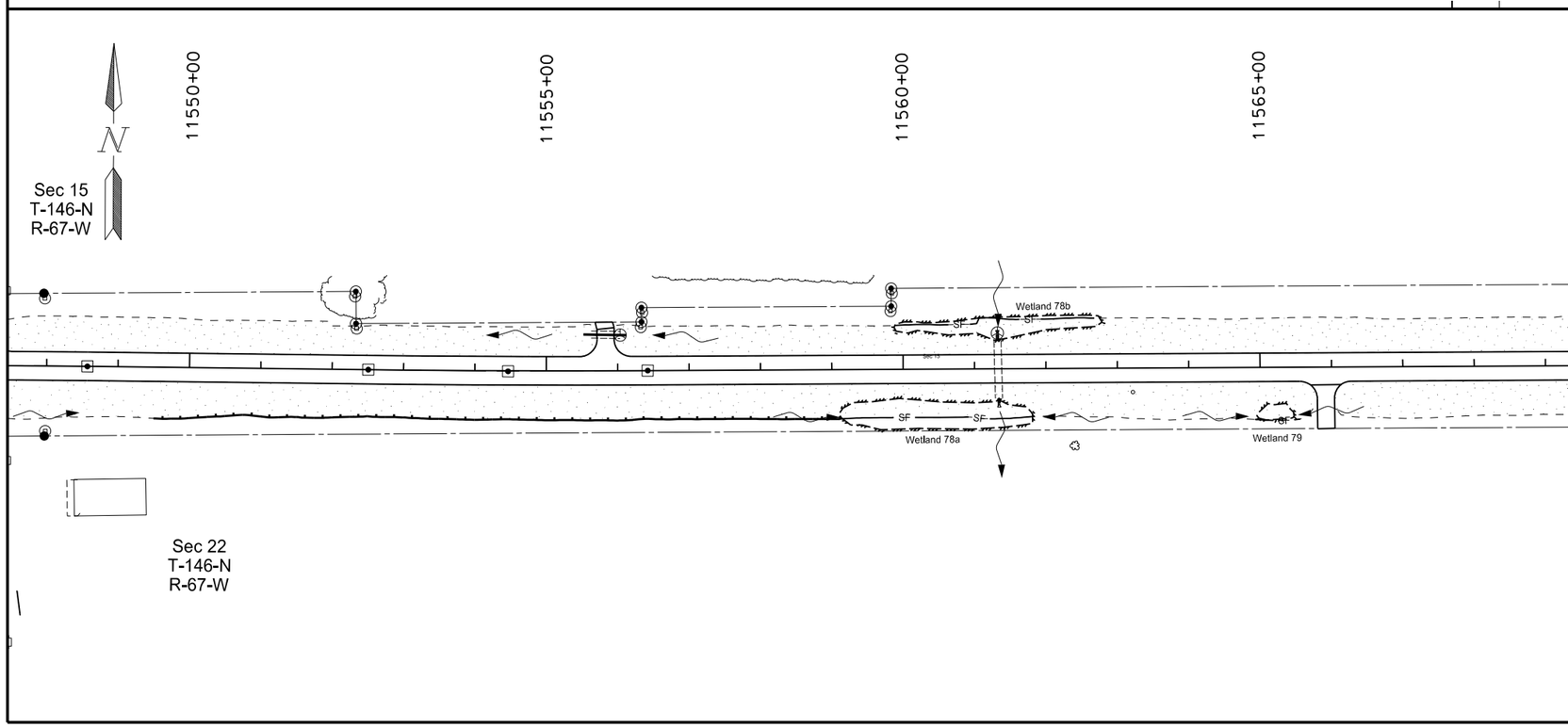
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	26





See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

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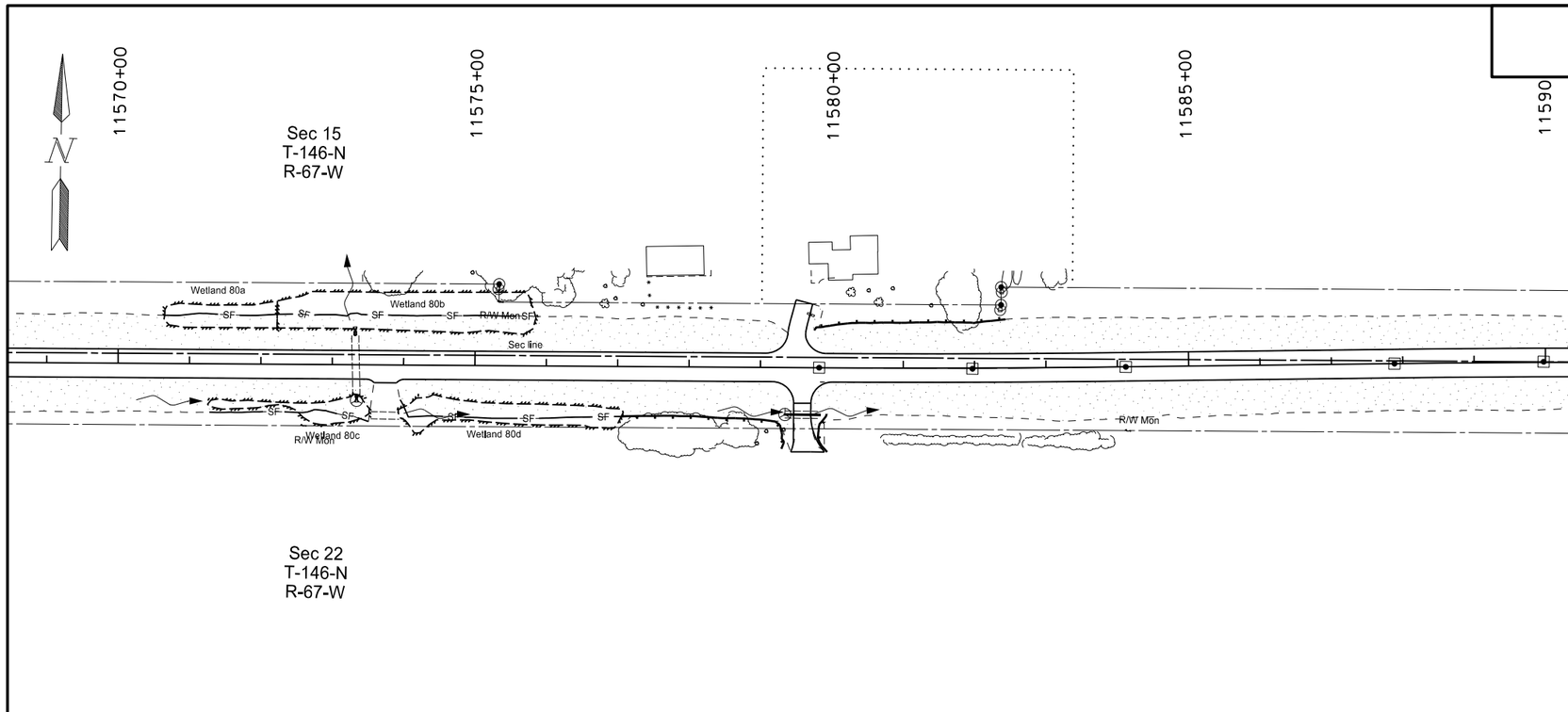
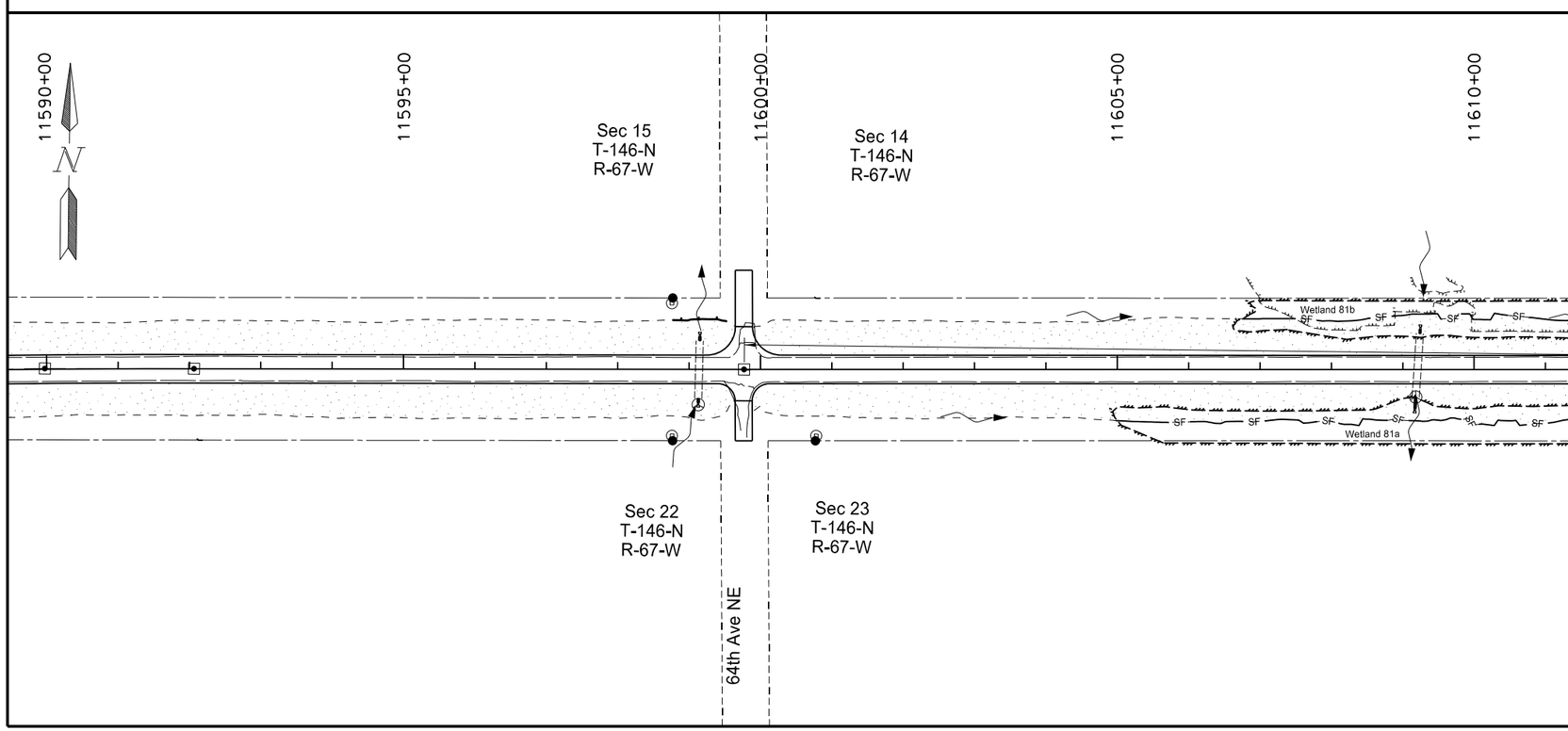
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	27





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TEMPORARY FIBER ROLLS

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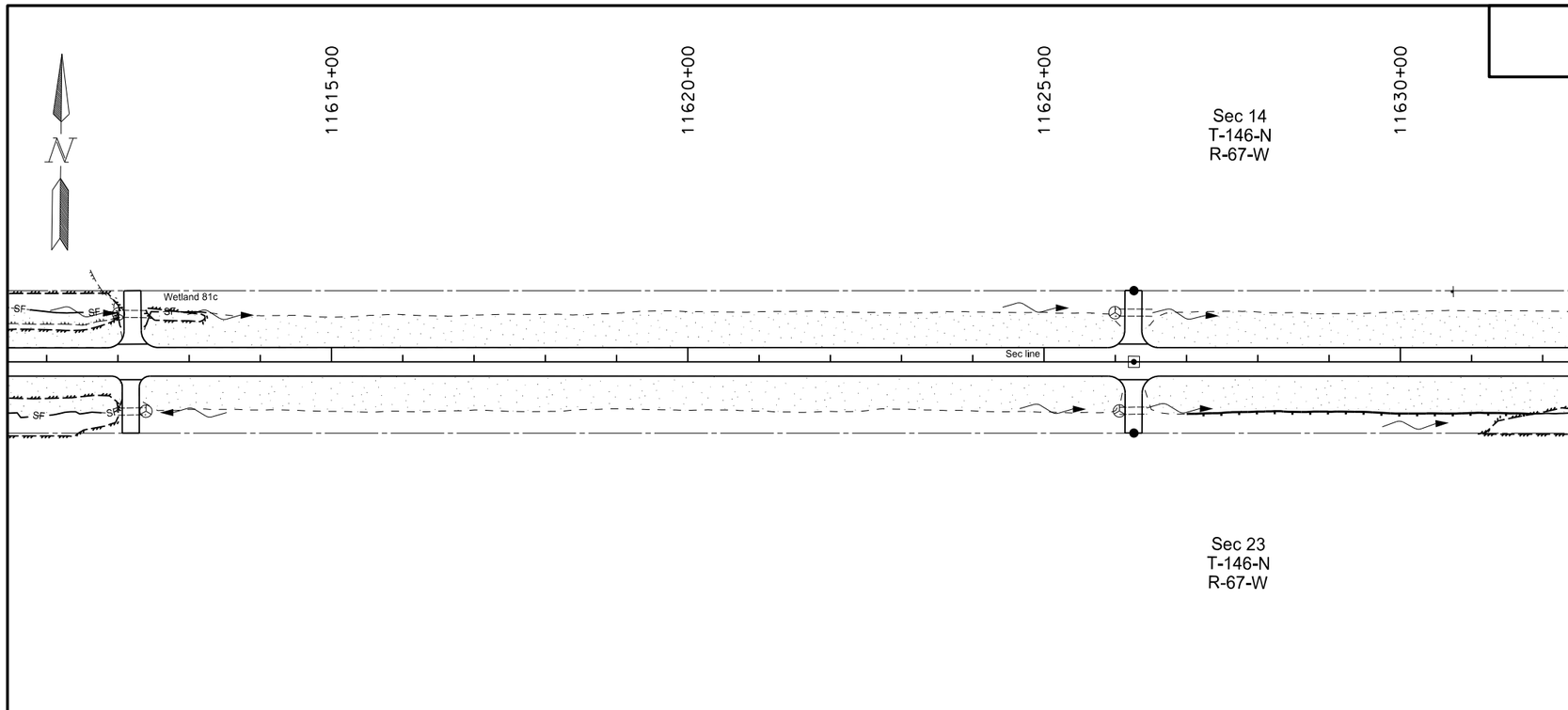
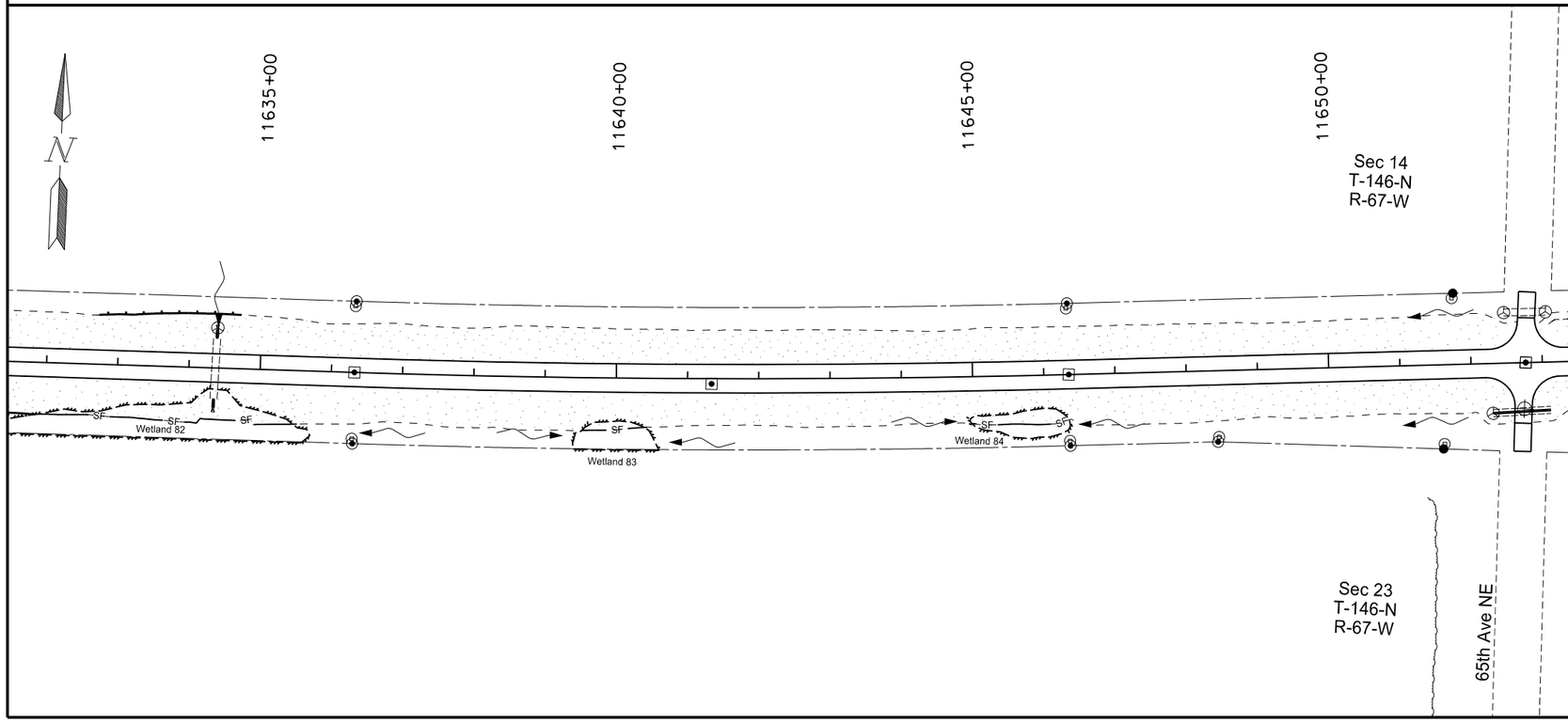
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	28





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MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

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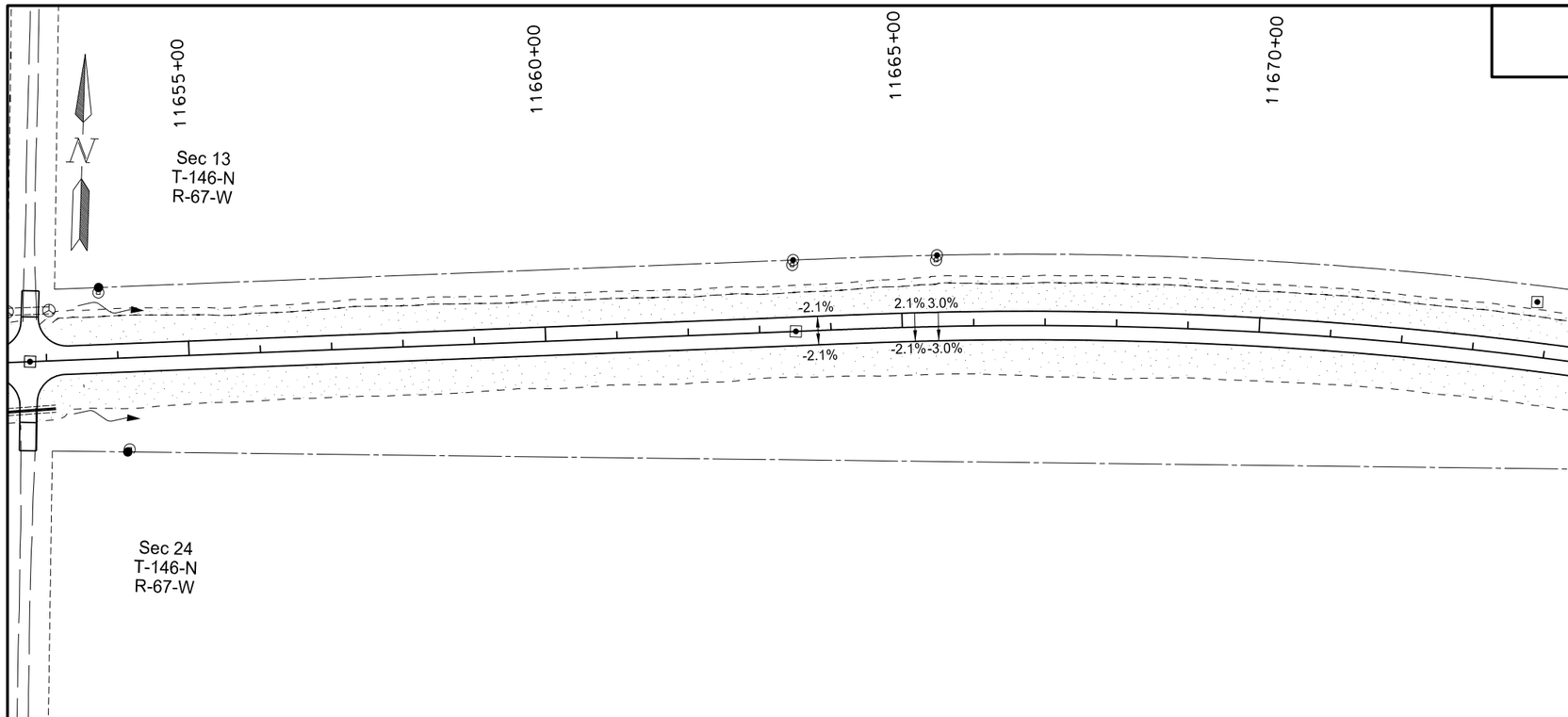
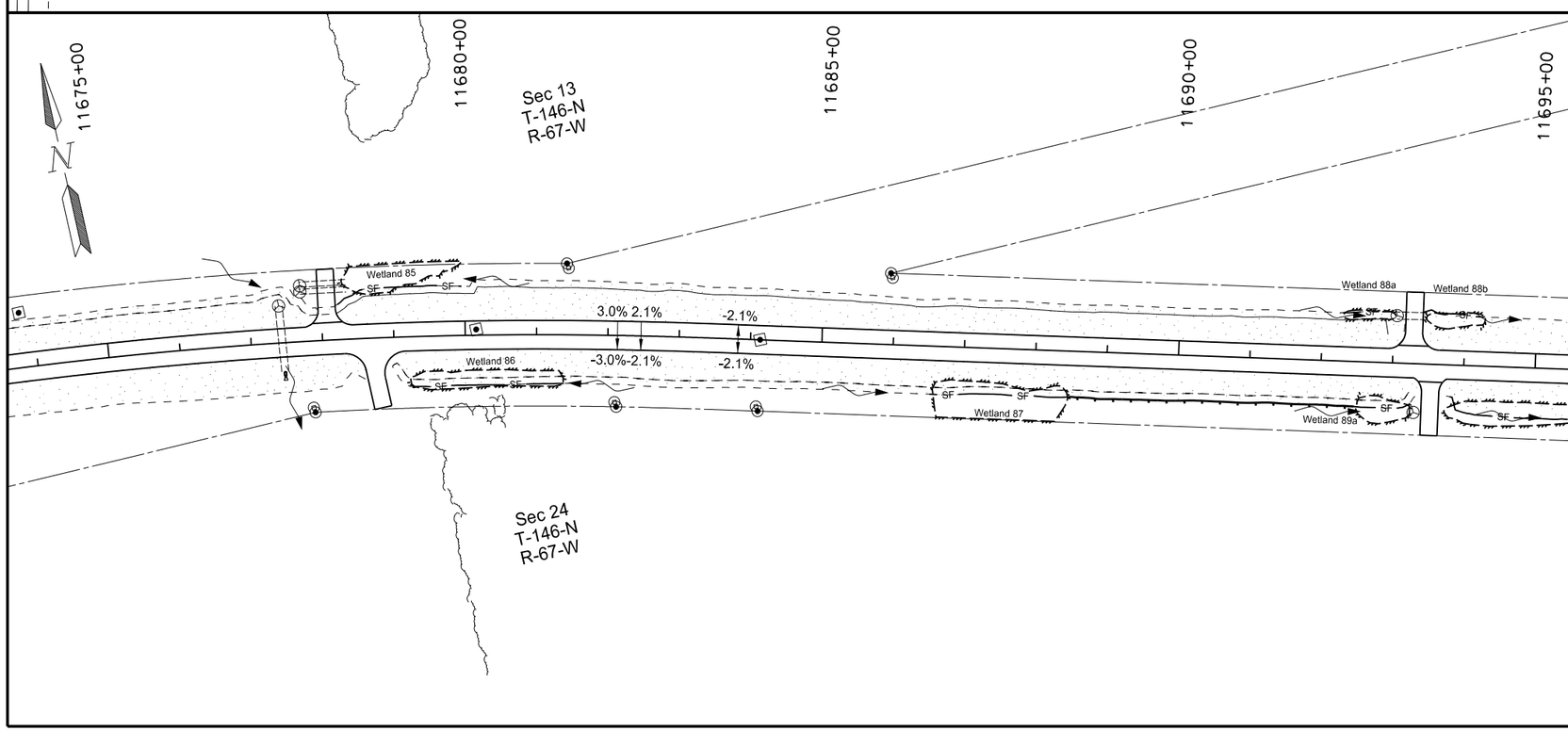
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	29





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TEMPORARY FIBER ROLLS

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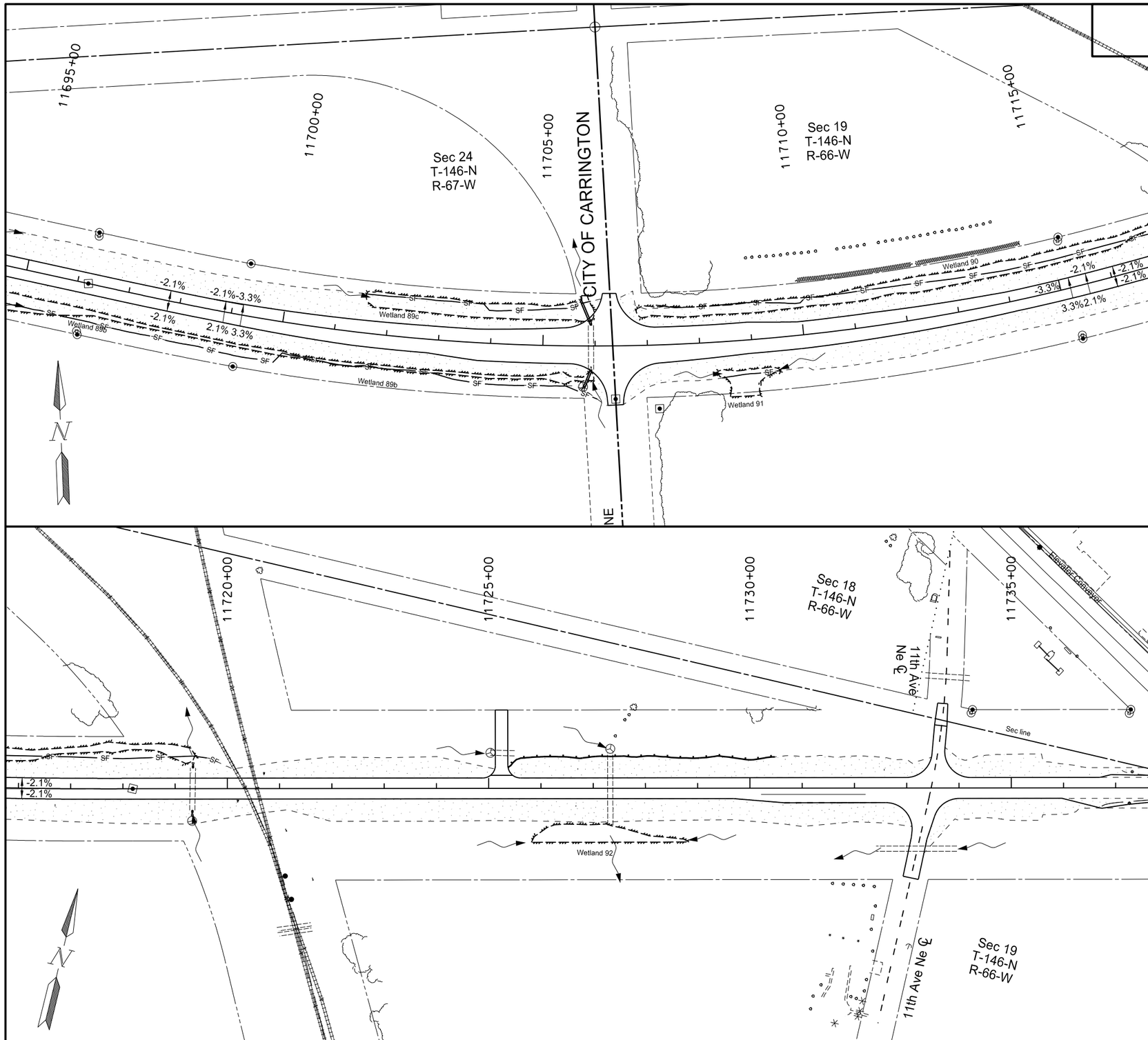
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	30



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TEMPORARY FIBER ROLLS

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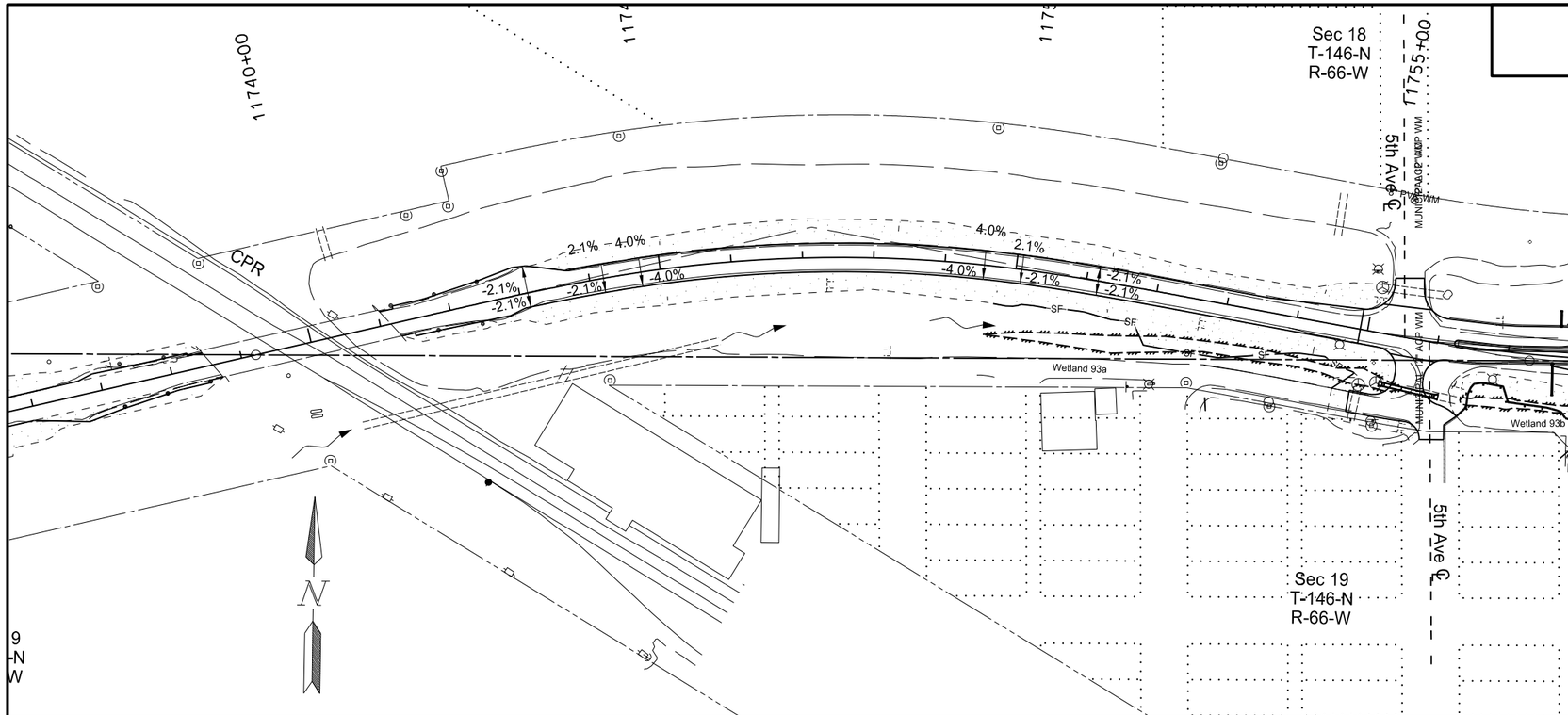
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	31



See sheets 33-35 for Quantities

MULCHING/TEMPORARY COVER CROP

TEMPORARY FIBER ROLLS

TEMPORARY INLET PROTECTION - FIBER ROLLS

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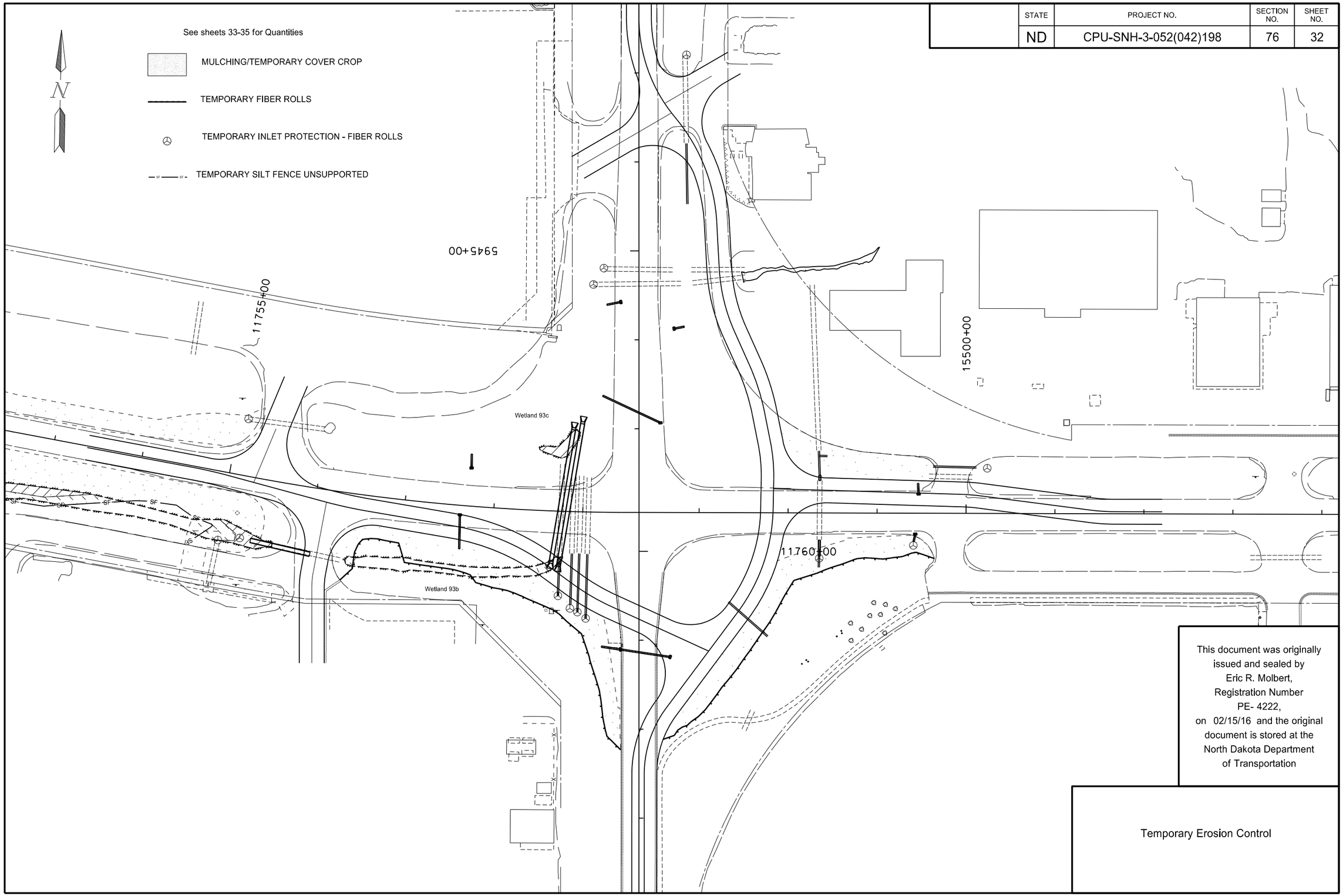
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	32



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Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	76	33

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
10492+45 to 10495+77		339		
10495+77 to 10497+49				173
10507+07	30			
10511+51 to 10516+38		500		
10512+50 to 10521+71	930			
10516+61 to 10517+23		79		
10516+61		30		
10517+23 to 10525+75				876
10521+98	30			
10522+15	30			
10522+34 to 10526+50	439			
10525+75 to 10526+50		76		
10542+52 to 10544+71	232			
10543+60 to 10544+53		94		
10544+57	30			
10544+63		30		
10545+17 to 10560+62			1565	
10545+57 to 10564+01				1845
10556+43		30		
10562+49 to 10567+92	576			
10564+01 to 10568		400		
10568 to 10571+10				322
10568+22 to 10568+79			75	
10568+48		30		
10568+79 to 10571+17	260			
10571+49		30		
10571+42 to 10572+50	116			
10571+61 to 10572+60		103		
10580+41 to 10580+86			45	
10580+54		30		
10585+59	30			
10596+42 to 10597+29			89	
10597+37	30			
10597+42		30		
10598+24 to 10599+19			99	
10600+50 to 10612+50		1208		
10604+00	30			
10604+14	30			
10604+28	30			
10604+42	30			
10604+50 to 10612+24	774			
10612+95	30			
10614+96		30		
10624+21		30		
10625+27		30		
10626+87	30			
10633+99		30		
10639+49 to 10645+36		733		

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
10643+05	30			
10643+34 to 10650+48	734			
10645+37		30		
10645+84 to 10650+39		574		
10650+84 to 10653+49		269		
10651+45	30			
10655+40	30			
10655+49	30			
10665+82 to 10680+49		1486		
10674+78	30			
10676+88	30			
10680+49 to 10690+32				998
10682+59 to 10682+84			27	
10690+14	30			
10694+62 to 10698+53				398
10698+00	30			
10698+21	30			
10698+52 to 10701+62		311		
10698+52 to 10701+51	300			
10701+62 to 10703+49				199
10701+51 to 10703+30			179	
10703+83 to 10715+50		1174		
10703+89 to 10712+51	874			
10709+15	30			
10724+48	30			
10728+81 to 10729+83				131
10732+62 to 10744+26			1177	
10733+00 to 10734+39				140
10734+09		30		
10738+38 to 10739+88				149
10744+61	30			
10751+49	30			
10751+52		30		
10756+06		30		
10756+28	30			
10762+49 to 10767+40			490	
10764+28		30		
10768+24	30			
10768+26		30		
10781+87	30			
10781+89		30		
10795+88 to 10796+50			62	
10796+12		30		
10796+28		30		
10796+38 to 10799+38		300		
10799+38 to 10801+38				201
10804+14 to 10808+47				435
10804+25 to 10808+21			397	

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
10808+87	30			
10808+93		30		
10808+72 to 10813+00				432
10831+87 to 10832+58				76
10832+55	30			
10832+55		30		
10832+82 to 10841+00				833
10833+05 to 10836+50			350	
10835+16		30		
10849+55 to 10850+98			143	
10850+84		30		
10857+38 to 10859+00				162
10857+75 to 10859+15			158	
10861+50		30		
10861+97	30			
10873+55		30		
10873+56	30			
10876+50 to 10878+62		213		
10877+50 to 10883+50	602			
10878+62 to 10879+75				139
10879+37	30			
10889+05	30			
10889+05		30		
10902+75 to 10904+22			150	
10903+75 to 10904+25				50
10905+50 to 10908+50	300			
10907+42		30		
10908+13 to 10911+75				362
10920+02		30		
10920+08	30			
10925+26 to 10932+75				751
10925+38 to 10930+00			461	
10929+17		30		
10934+88	30			
10935+05		30		
10940+75		30		
10940+78	30			
10957+77		30		
10957+81	30			
10964+34 to 10965+00			63	
10965+00	30			
10967+40		30		
10967+41	30			
10980+83		30		
10983+07	30			
10983+50 to 10988+67		527		
10989+11 to 11010+11				2189
10989+74 to 10995+59			593	

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Temporary Erosion Control

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ND	CPU-SNH-3-052(042)198	76	34

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
11001+76 to 11007+47	581			
11007+47 to 11008+51			105	
11007+73	30			
11007+93	30			
11008+18	30			
11008+51 to 11011+50	299			
11010+51		30		
11017+12 to 11019+76			265	
11019+00 to 11020+30		138		
11020+57 to 11022+38				188
11021+22	30			
11021+22		30		
11025+95	30			
11028+09		30		
11030+59 to 11032+06			142	
11031+75 to 11033+77				165
11033+96 to 11034+65				72
11034+08		30		
11034+08 to 11041+98			793	
11036+91 to 11040+12				321
11045+04 to 11048+60	428			
11046+00 to 11047+50				150
11049+40 to 11052+81	341			
11050+68		30		
11052+62 to 11054+74				213
11052+81 to 11053+46			66	
11053+17	30			
11053+45 to 11055+78	235			
11057+09		30		
11060+00 to 11060+75			15	
11064+69 to 11065+56				101
11071+50 to 11072+68				119
11073+45 to 11076+87				350
11074+20 to 11076+48			232	
11076+54	30			
11077+40 to 11098+03			2067	
11080+00 to 11085+77				585
11081+12		30		
11086+16		30		
11098+51		30		
11099+25 to 11109+75			1050	
11107+00 to 11110+00		300		
11108+25	30			
11112+41 to 11113+22			82	
11119+30 to 11122+00				270
11119+35 to 11124+50			524	
11125+03	30			
11125+10		30		

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
11125+07 to 11126+50			145	
11131+50 to 11133+49		200		
11132+15	30			
11133+23 to 11136+24			300	
11150+71	30			
11150+71		30		
11159+62	30			
11161+00 to 11162+25				124
11161+31 to 11162+01			70	
11166+50 to 11171+57			508	
11167+18 to 11168+59				155
11168+59 to 11173+97		533		
11167+80	30			
11178+00	30			
11178+12		30		
11185+00 to 11186+01				102
11189+50 to 11192+25				276
11201+19		30		
11204+24	30			
11204+26		30		
11204+17 to 11208+50	434			
11205+50 to 11206+87		137		
11206+87 to 11210+50				364
11207+18	30			
11210+50 to 11212+02		152		
11218+50 to 11225+46	699			
11223+50 to 11228+59		491		
11225+46 to 11230+16			483	
11228+19		30		
11230+30		30		
11230+65 to 11236+63		605		
11230+79	30			
11242+39 to 11245+49		312		
11246+18		30		
11256+16		30		
11257+22	30			
11263+49	30			
11268+86	30			
11271+46		30		
11281+15 to 11283+32			226	
11283+19	30			
11283+23		30		
11283+55 to 11289+45			633	
11283+58 to 11289+40				590
11285+42	30			
11285+60	30			
11289+75	30			
11289+70 to 11296+80			733	

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
11289+65 to 11293+48				394
11296+73		30		
11297+12	30			
11309+83		30		
11329+50 to 11335+00	552			
11336+24		30		
11336+31	30			
11345+50 to 11353+50	810			
11350+65	30			
11350+88	30			
11351+09	30			
11350+71 to 11352+05				138
11352+05 to 11368+77		1696		
11363+32	30			
11367+23	30			
11369+16		30		
11369+50 to 11377+00	753			
11374+50 to 11376+63		214		
11376+18		30		
11379+41	30			
11379+40 to 11381+51			212	
11379+41 to 11384+32				488
11389+07	30			
11389+58	30			
11389+62		30		
11396+82		30		
11403+50 to 11409+92	643			
11407+08 to 11408+47				145
11407+47 to 11408+58		230		
11408+79 to 11409+77		316		
11409+34		30		
11411+97 to 11414+64		287		
11412+47 to 11418+40	666			
11414+64 to 11415+50				84
11415+50 to 11416+49		102		
11418+62 to 11418+78		39		
11418+78 to 11419+13			49	
11419+13 to 11420+49	141			
11428+68		30		
11432+49 to 11436+39	397			
11433+77 to 11434+48				71
11434+30		30		
11439+51 to 11440+93		155		
11441+17 to 11442+38		138		
11442+38 to 11443+28				90
11441+62 to 11443+97			250	
11443+29 to 11453+54		1036		
11450+92 to 11452+72			194	

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Temporary Erosion Control

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ND	CPU-SNH-3-052(042)198	76	35

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
11458+42	30			
11458+48 to 11467+95			949	
11462+51 to 11466+50		400		
11467+69		30		
11474+05 to 11481+51			748	
11477+03 to 11478+02				99
11478+40	30			
11491+97 to 11493+65			169	
11492+31 to 11493+58				127
11494+40	30			
11494+50 to 11512+64			1816	
11494+51 to 11511+89				1740
11505+43	30			
11524+23 to 11527+81				358
11525+23 to 11531+04			582	
11525+32	30			
11525+33		30		
11533+87	30			
11533+88		30		
11541+48 to 11542+50		103		
11546+55		30		
11549+50 to 11559+11		963		
11556+04	30			
11559+11 to 11561+81				270
11559+89 to 11562+69			293	
11561+32	30			
11564+93 to 11565+56				63
11570+65 to 11575+58			522	
11571+28 to 11573+51				226
11573+34		30		
11573+95 to 11577+06				326
11577+06 to 11579+30		259		
11579+35		30		
11579+75 to 11582+43	271			
11579+94 to 11579+93		61		
11598+77 to 11599+53	77			
11599+13		30		
11604+97 to 11612+06				745
11606+75 to 11612+04			564	
11609+18		30		
11612+01	30			
11612+36 to 11613+24			102	
11612+39		30		
11626+00	30			
11626+06		30		
11627+00 to 11631+86		486		
11631+86 to 11635+54				375

Temporary Erosion Control	12" Fiber Rolls (LF)		Silt Fence (LF)	
Stationing	LT	RT	LT	RT
11632+72 to 11634+71	200			
11634+39	30			
11639+51 to 11640+44				93
11644+97 to 11646+09				141
11652+29		30		
11652+47	30			
11653+06	30			
11677+42	30			
11677+72	30			
11677+72	30			
11678+23 to 11679+96			180	
11679+24 to 11681+39				212
11686+53 to 11688+49				196
11688+49 to 11692+48		399		
11692+48 to 11693+26				79
11692+28 to 11692+97			69	
11693+04	30			
11693+31		30		
11693+41 to 11694+27			89	
11693+82 to 11706+04				1270
11701+53 to 11705+92			438	
11705+77		30		
11707+19 to 11719+82			1252	
11708+39 to 11709+51				114
11719+32		30		
11725+03	30			
11725+37 to 11730+48	520			
11727+34	30			
11749+74 to 11754+66				568
11755+01		30		
11755+25		30		
11755+10	30			
11756+40 to 11762+23		480		
11760+50		24		
11760+64		24		
11760+68		24		
11760+76		24		
15498+34		24		
15496+60 to 15499+64		387		
15500+24		30		
5944+62	30			
5944+80	30			
5947+20		30		
Subtotal	**17,094**	**21,615**	**23,040**	**23,418**
Engineers Discretion (5%)	**1,935**		**2,323**	
Total	**40,644**		**48,781**	

	Qty
TEMPORARY COVER CROP	270 ACRE
STRAW MULCH	270 ACRE
SILT FENCE UNSUPPORTED	48,781 SY
REMOVE SILT FENCE UNSUPPORTED	48,781 LF
FIBER ROLLS 12 IN	40,644 LF
REMOVE FIBER ROLLS 12 IN	40,644 LF

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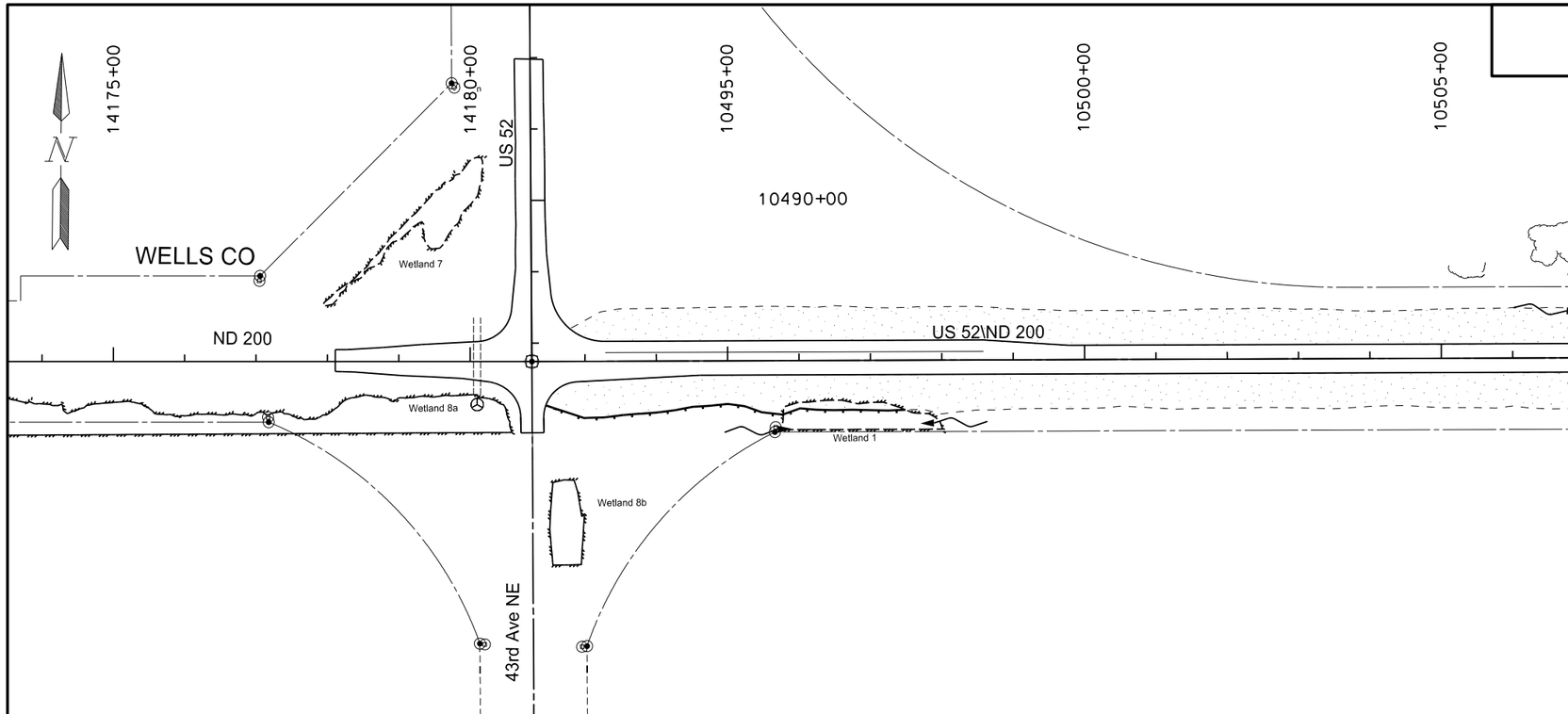
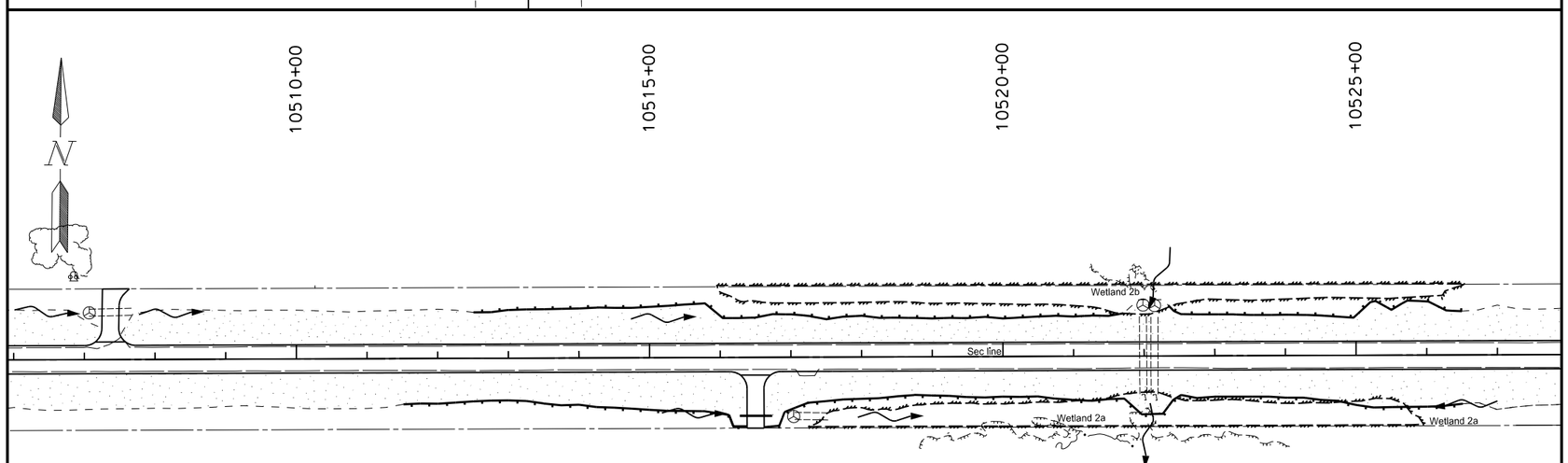
Temporary Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	1





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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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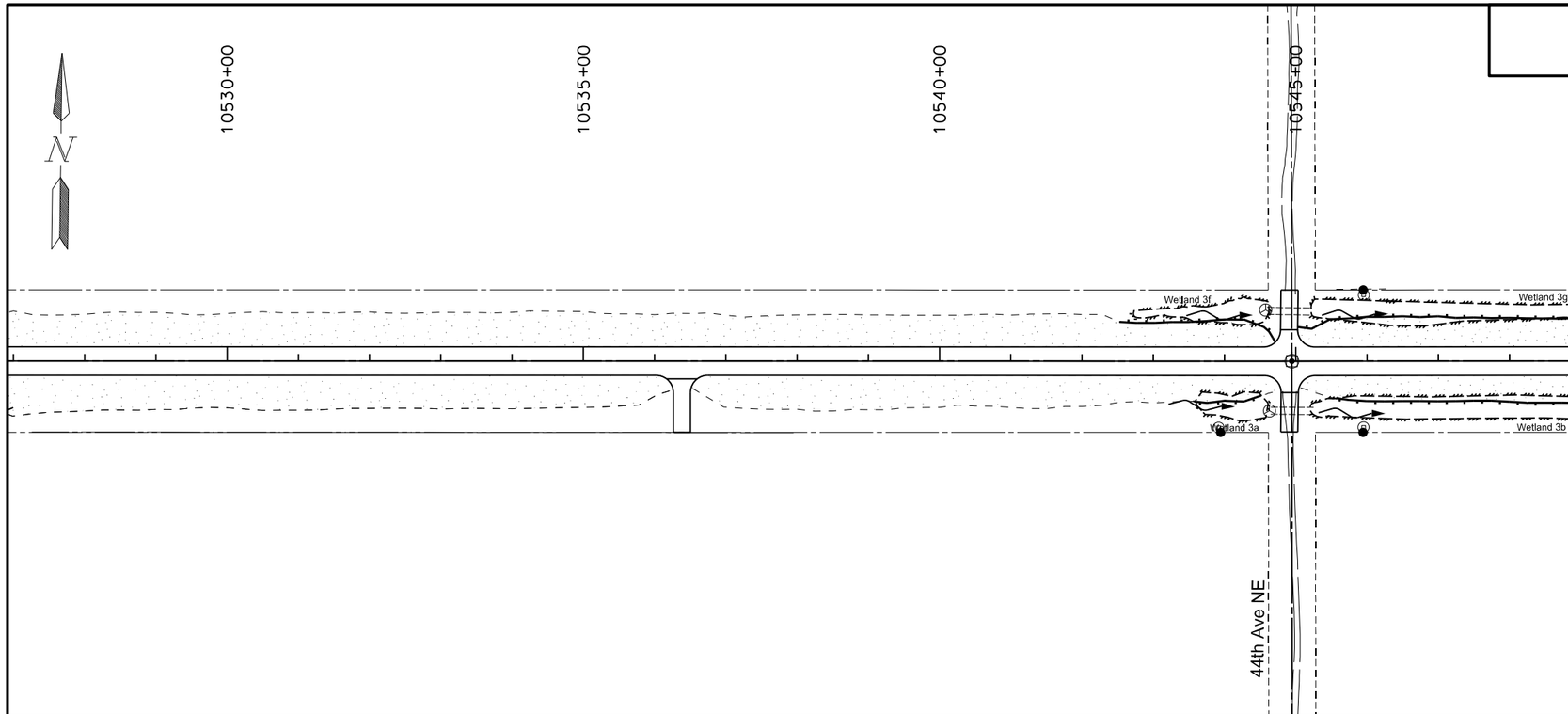

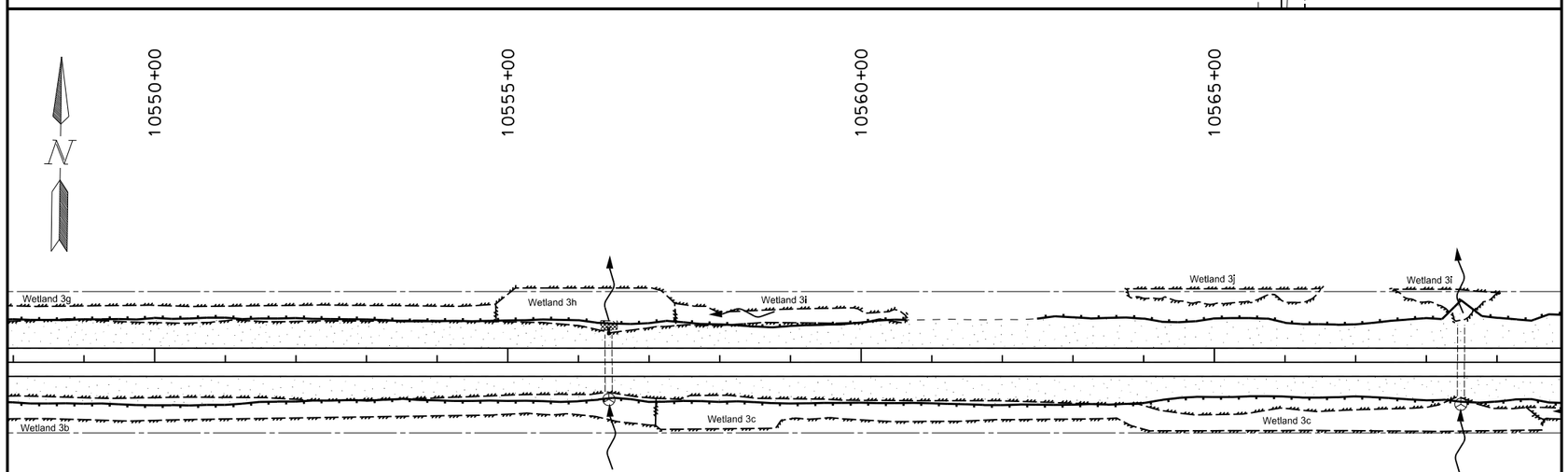

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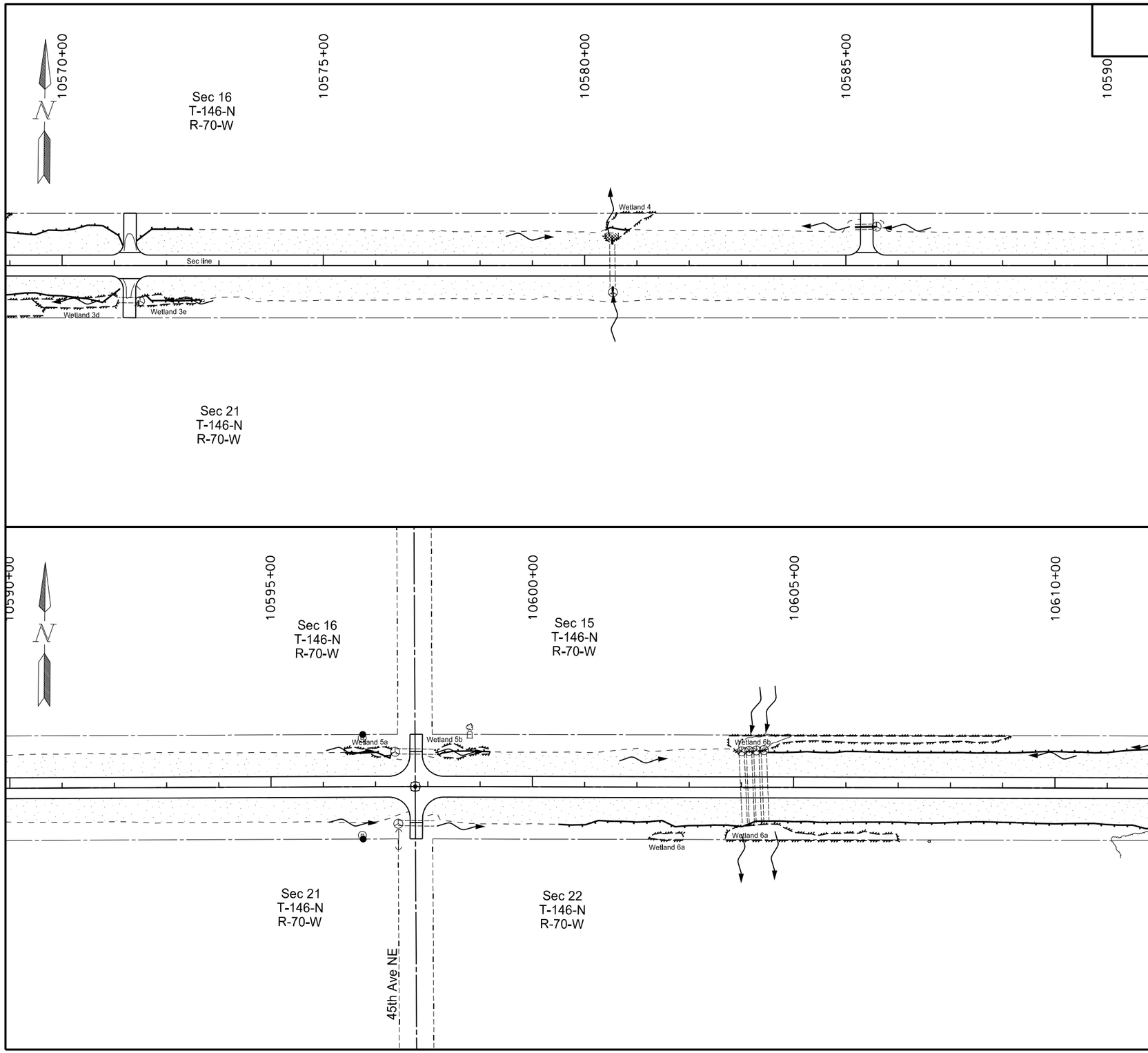

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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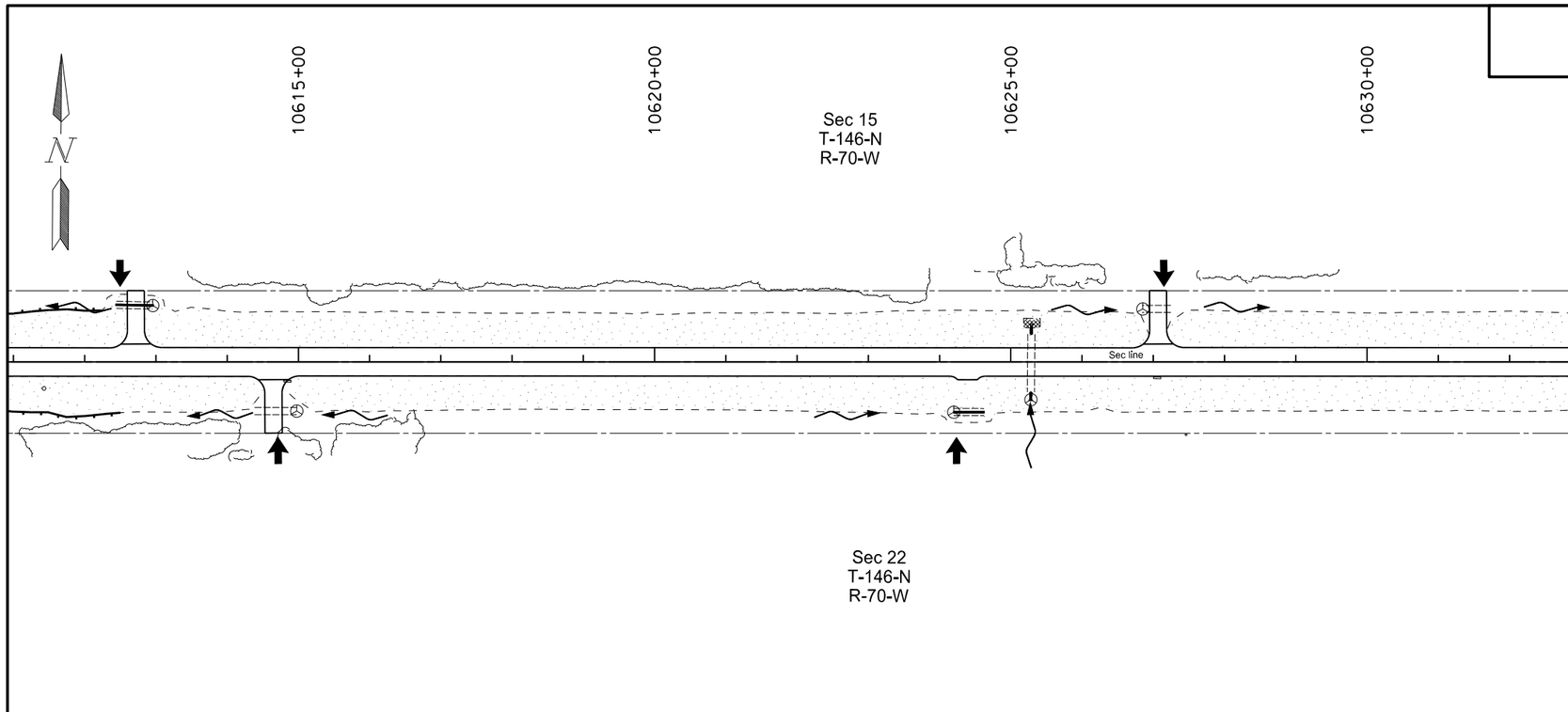

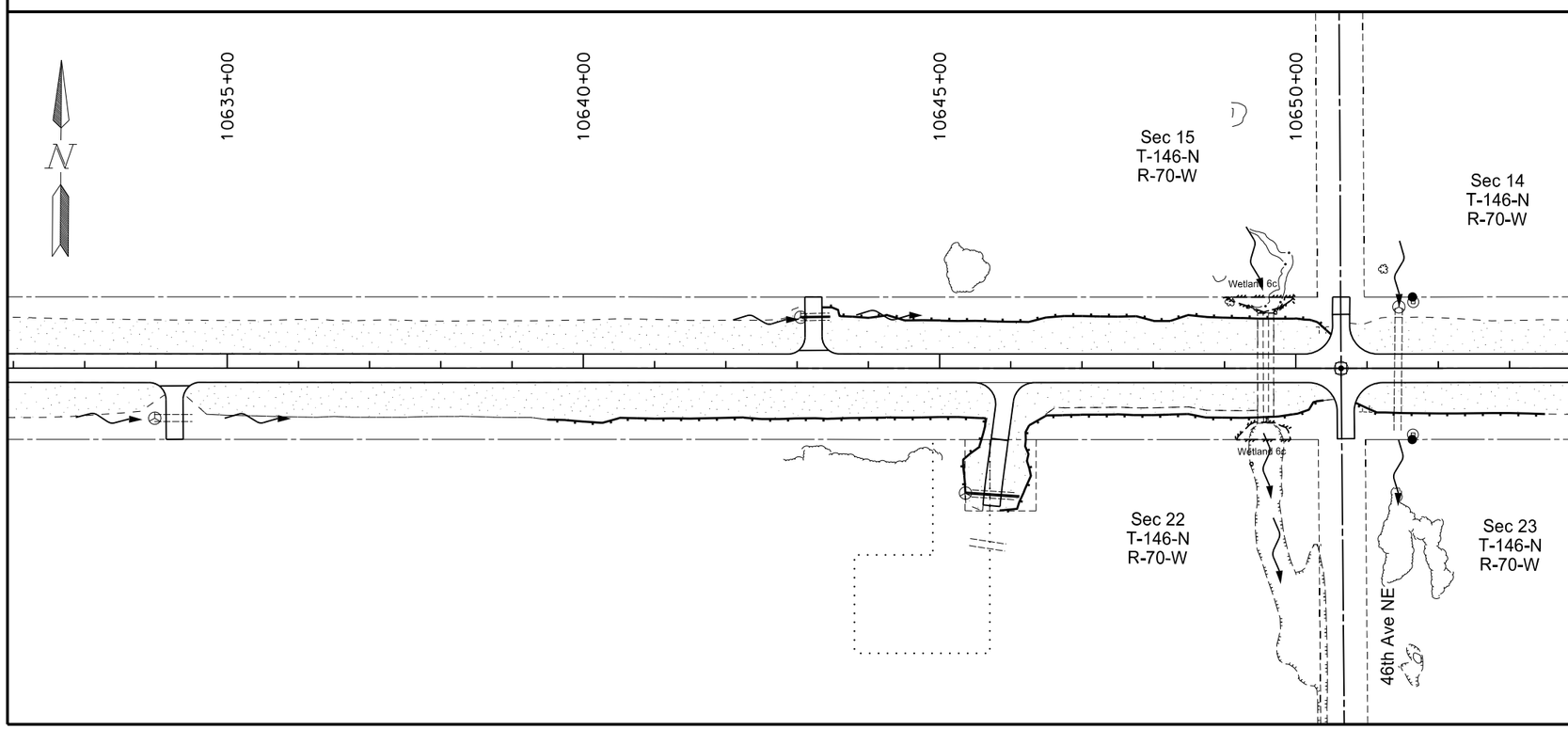

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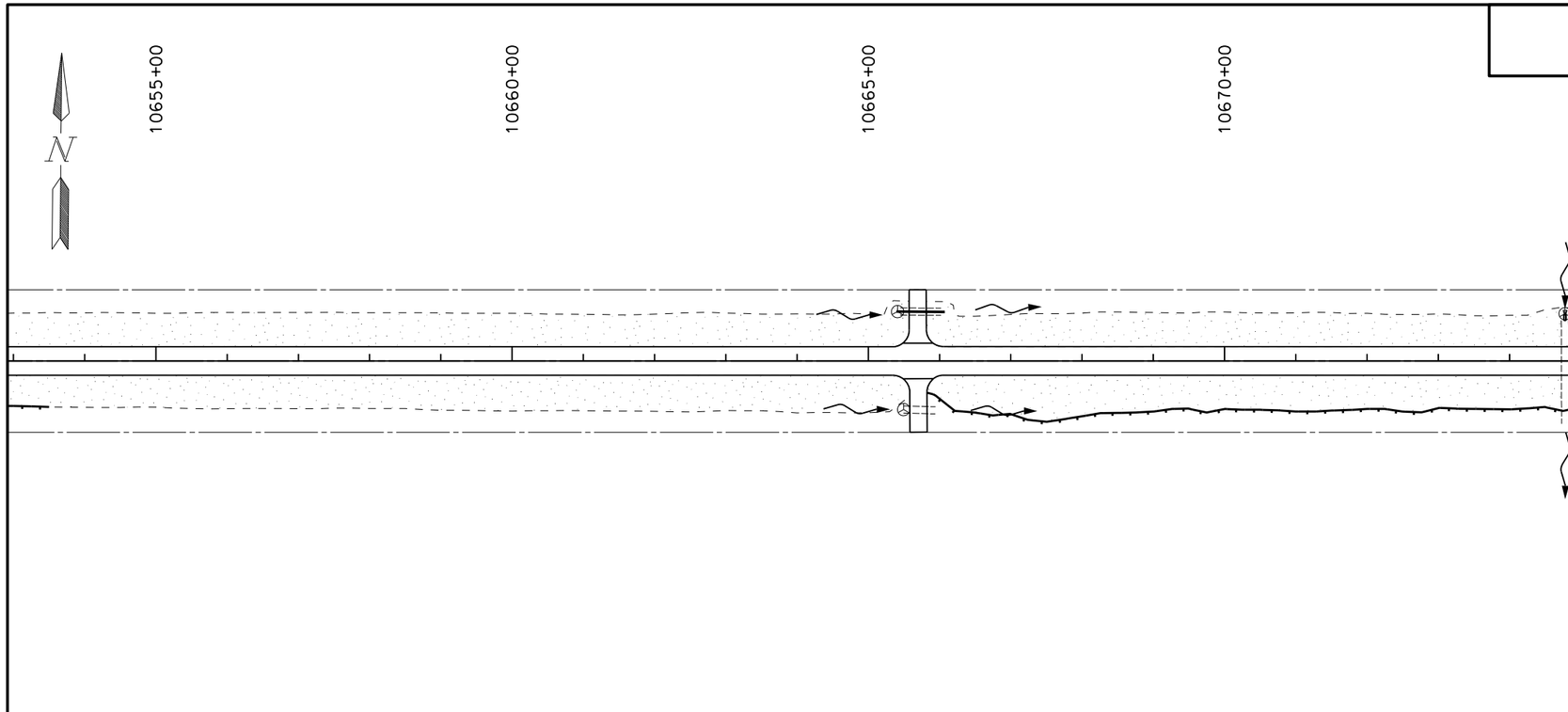

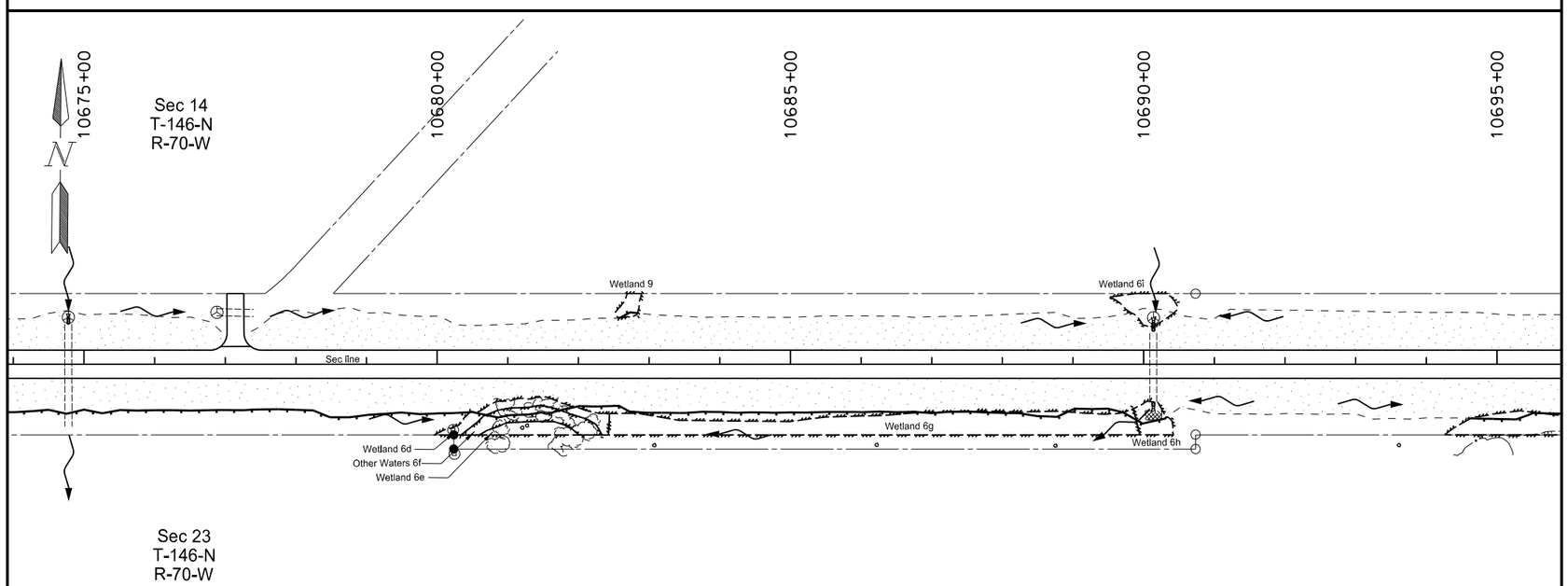

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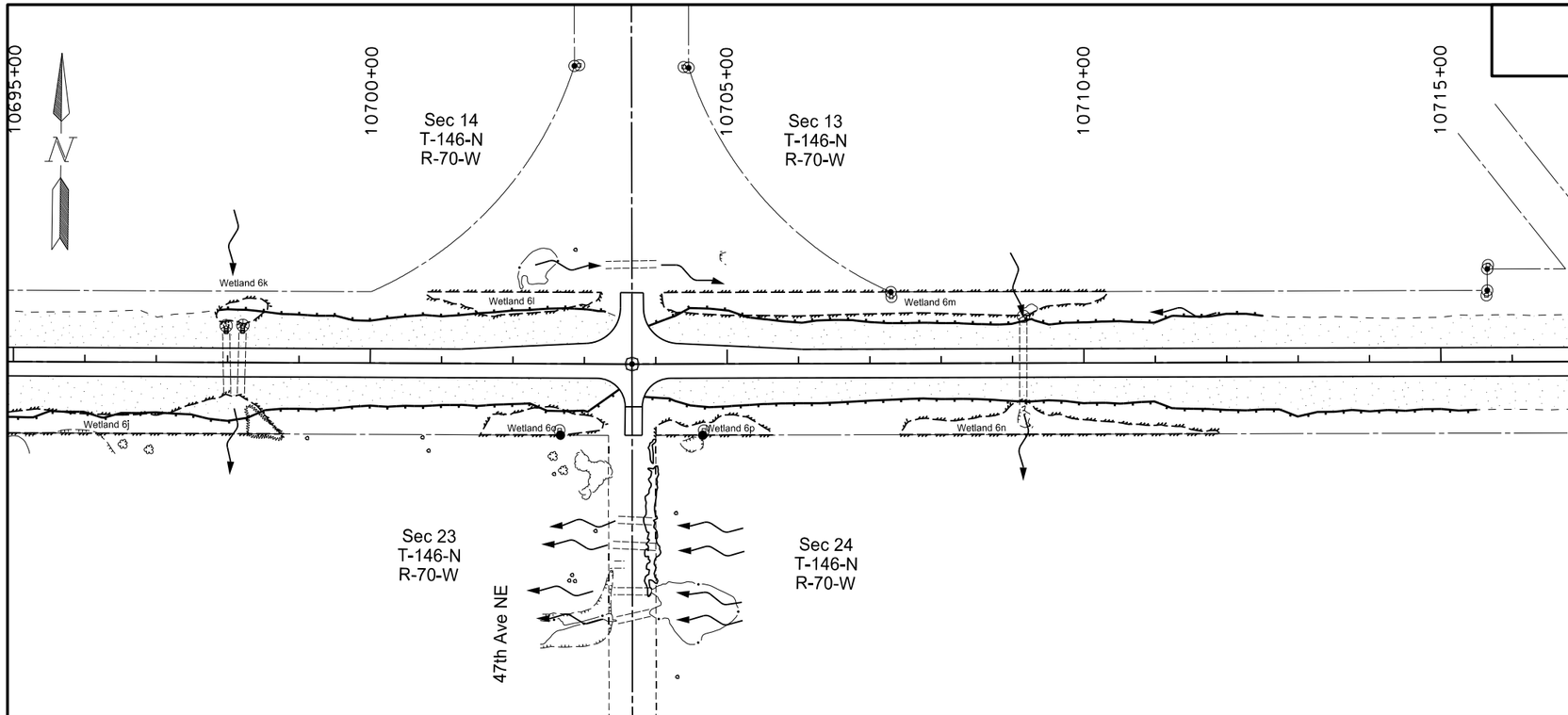

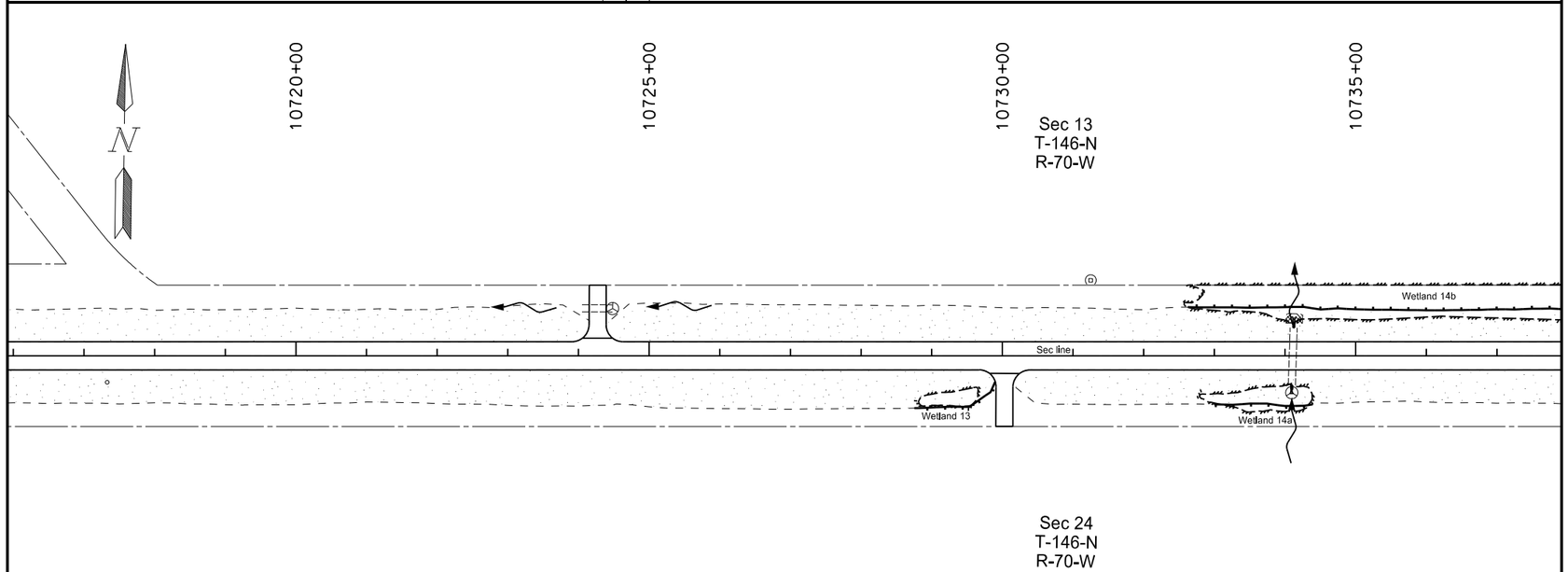

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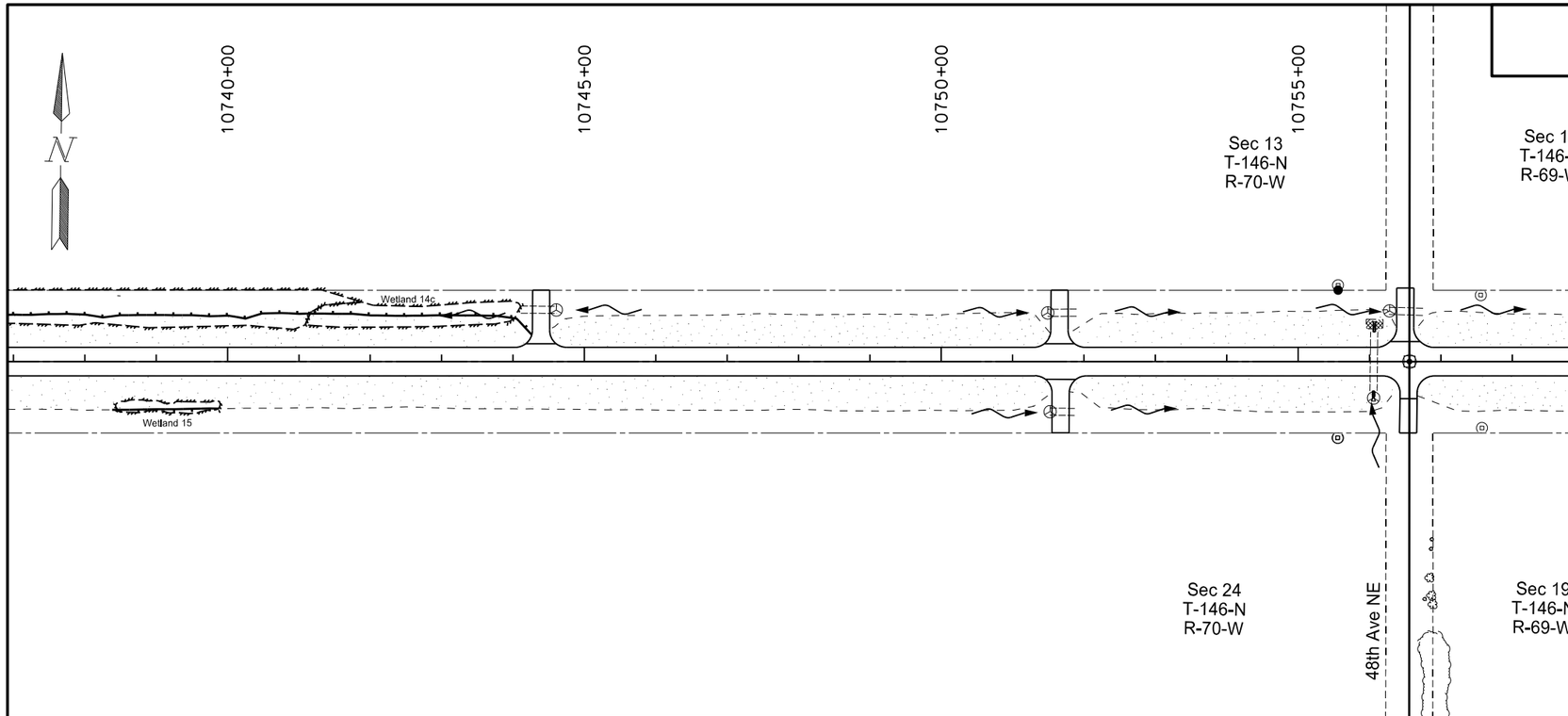

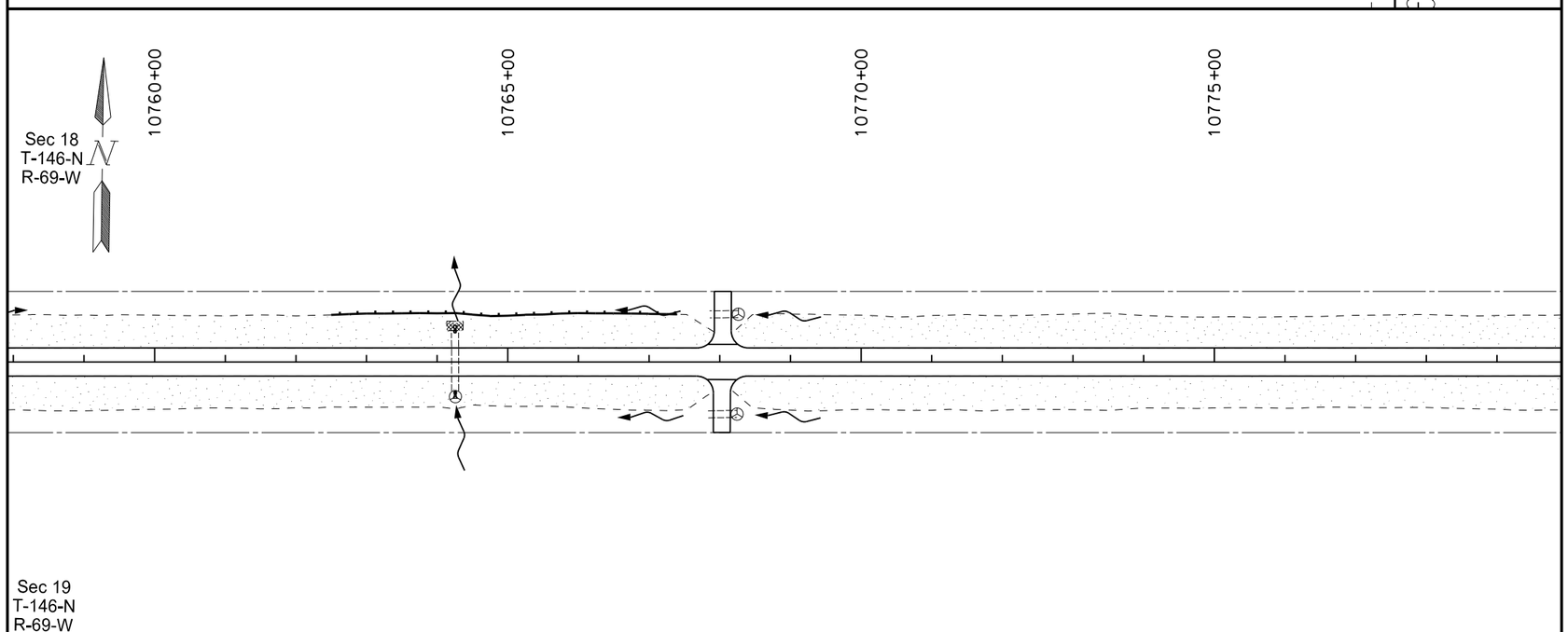

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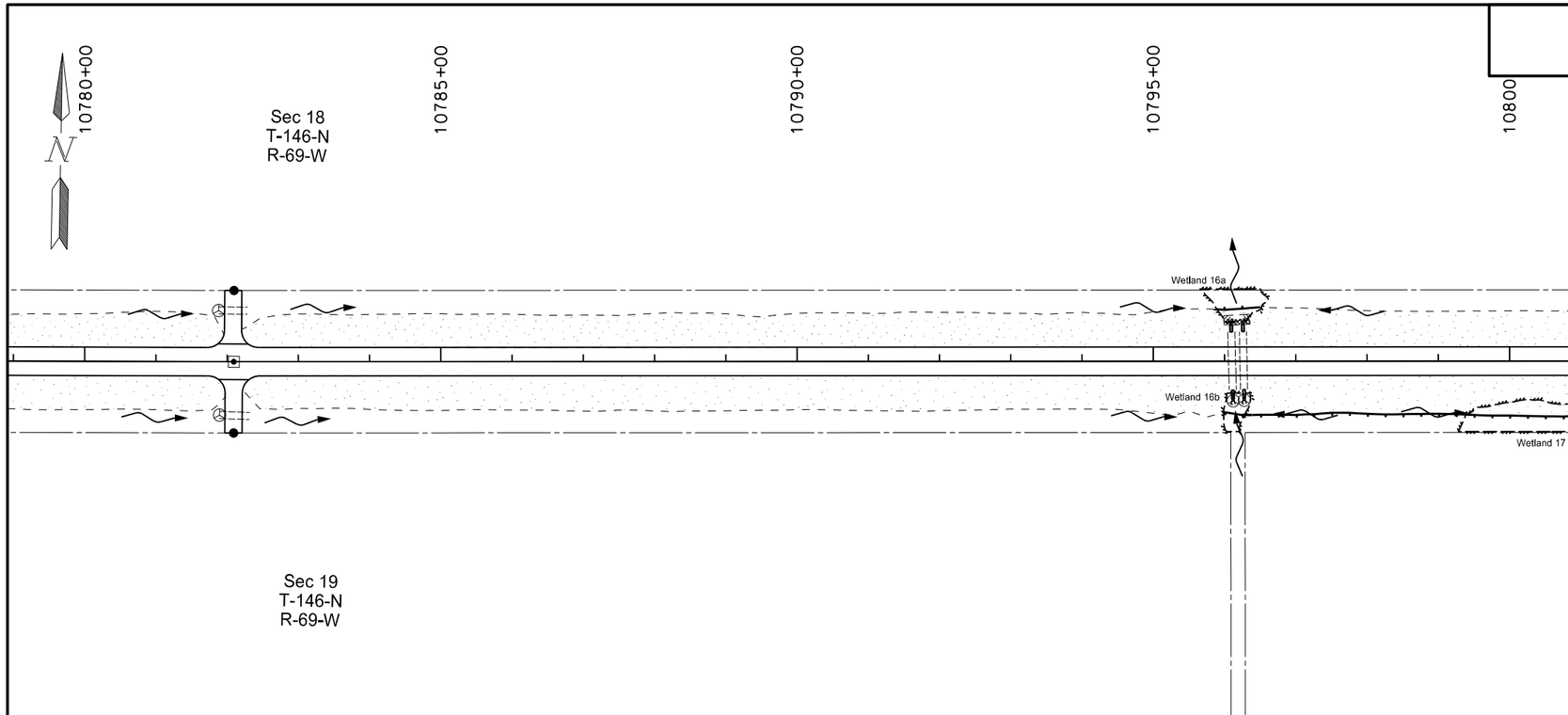

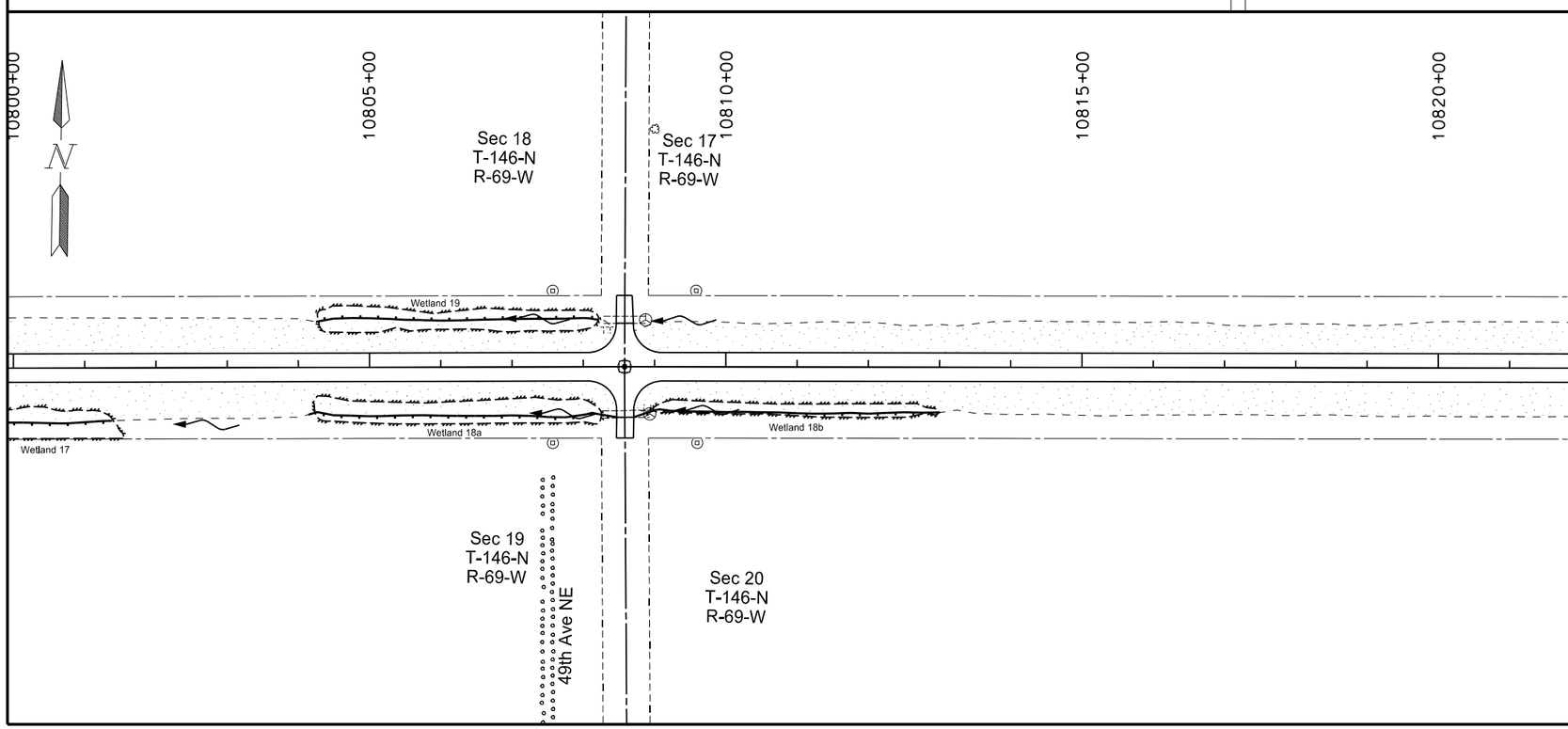

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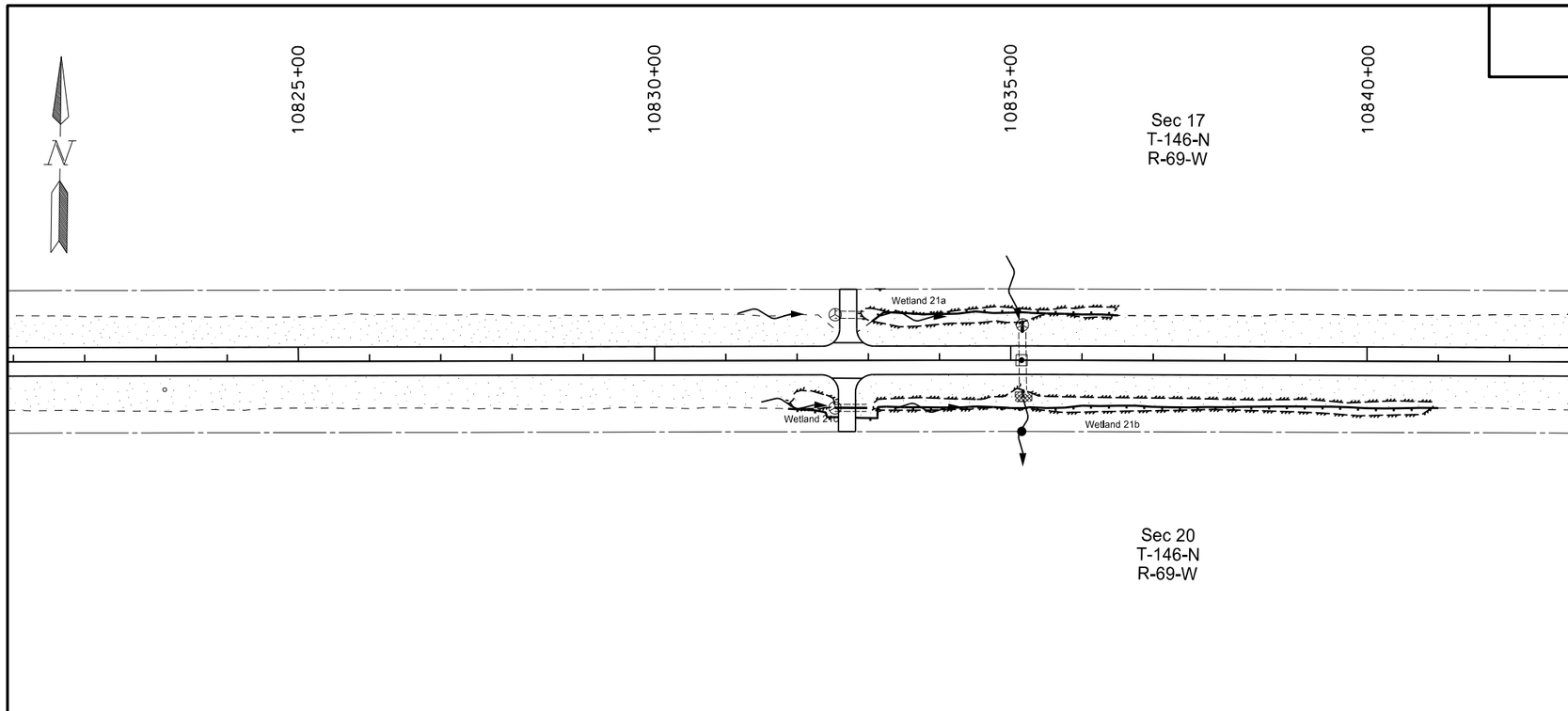

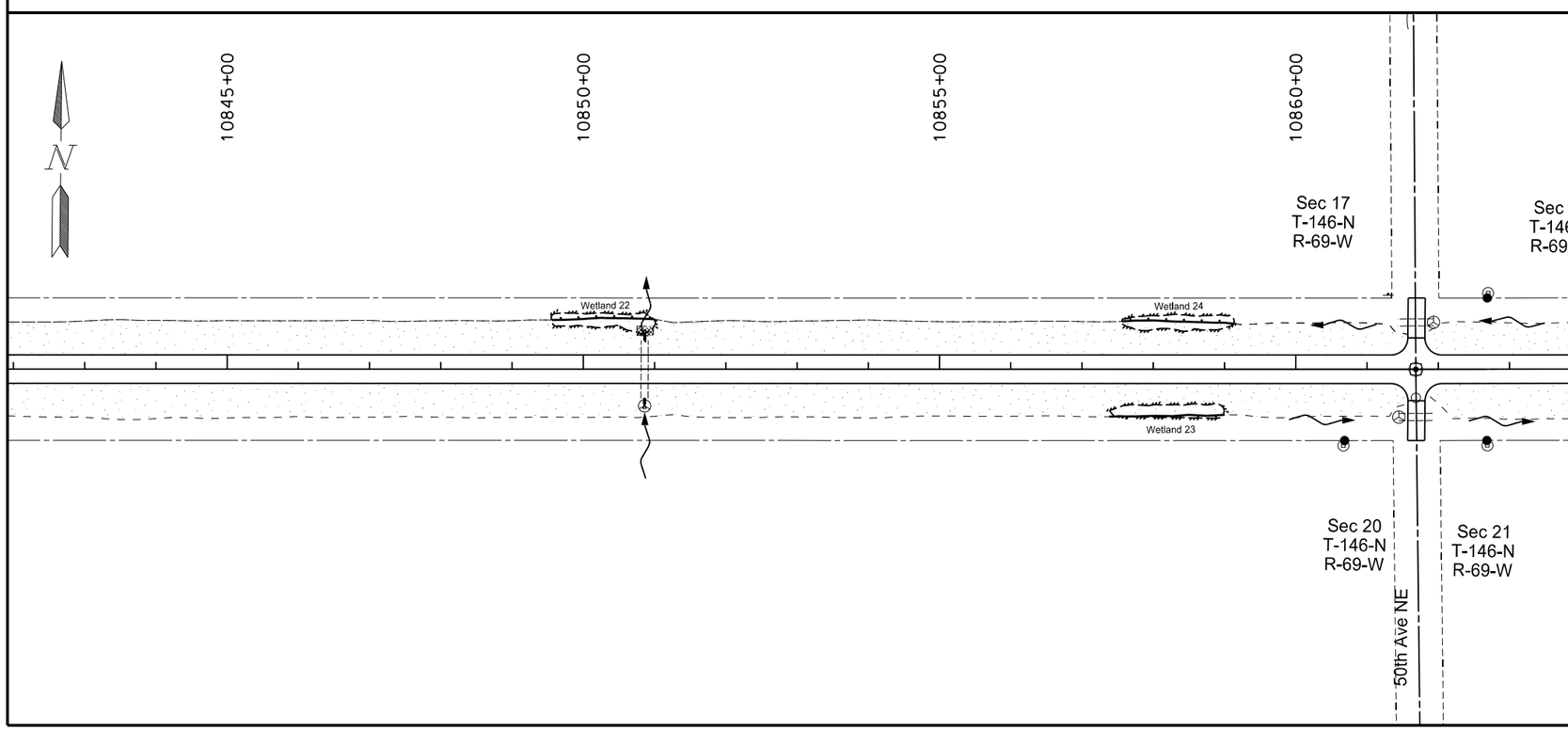

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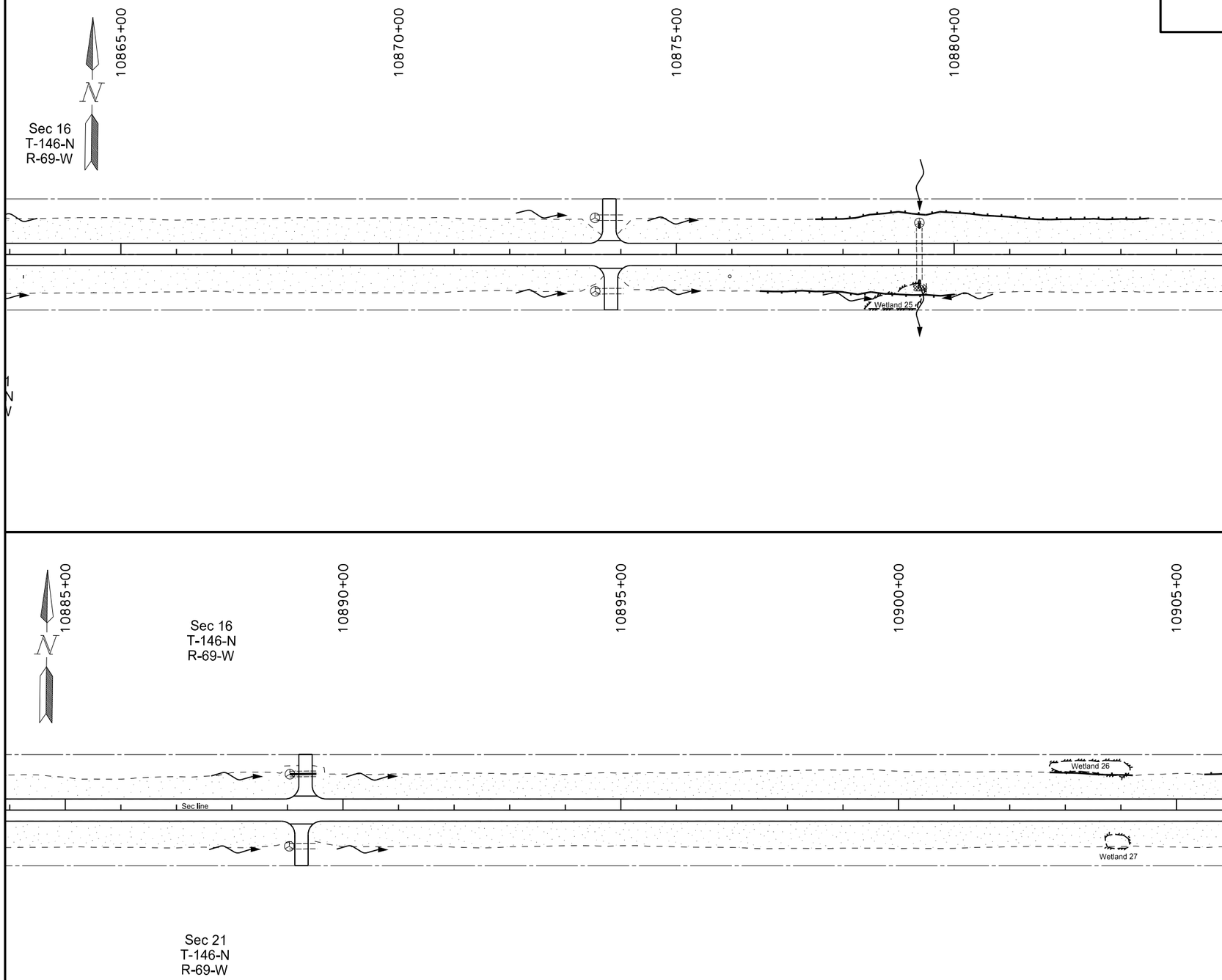

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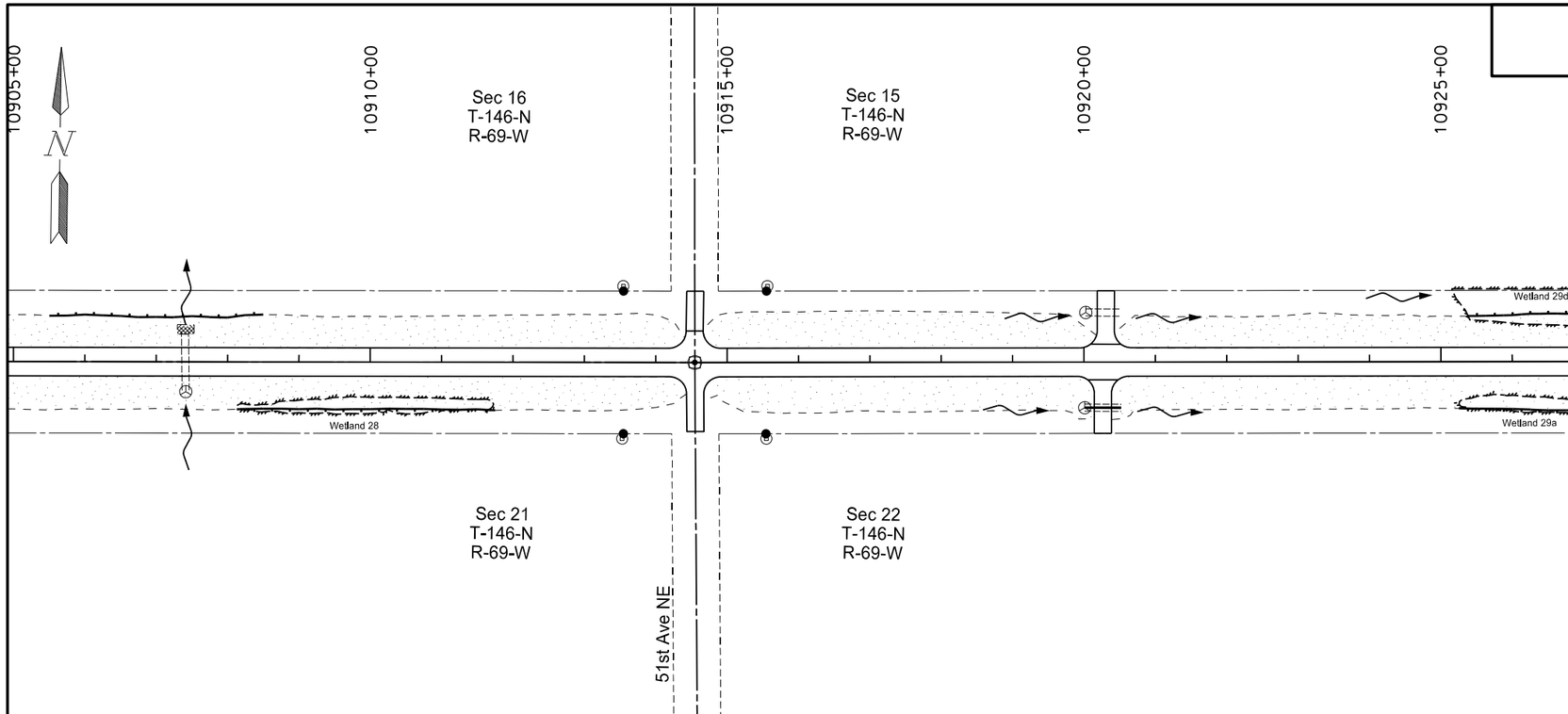

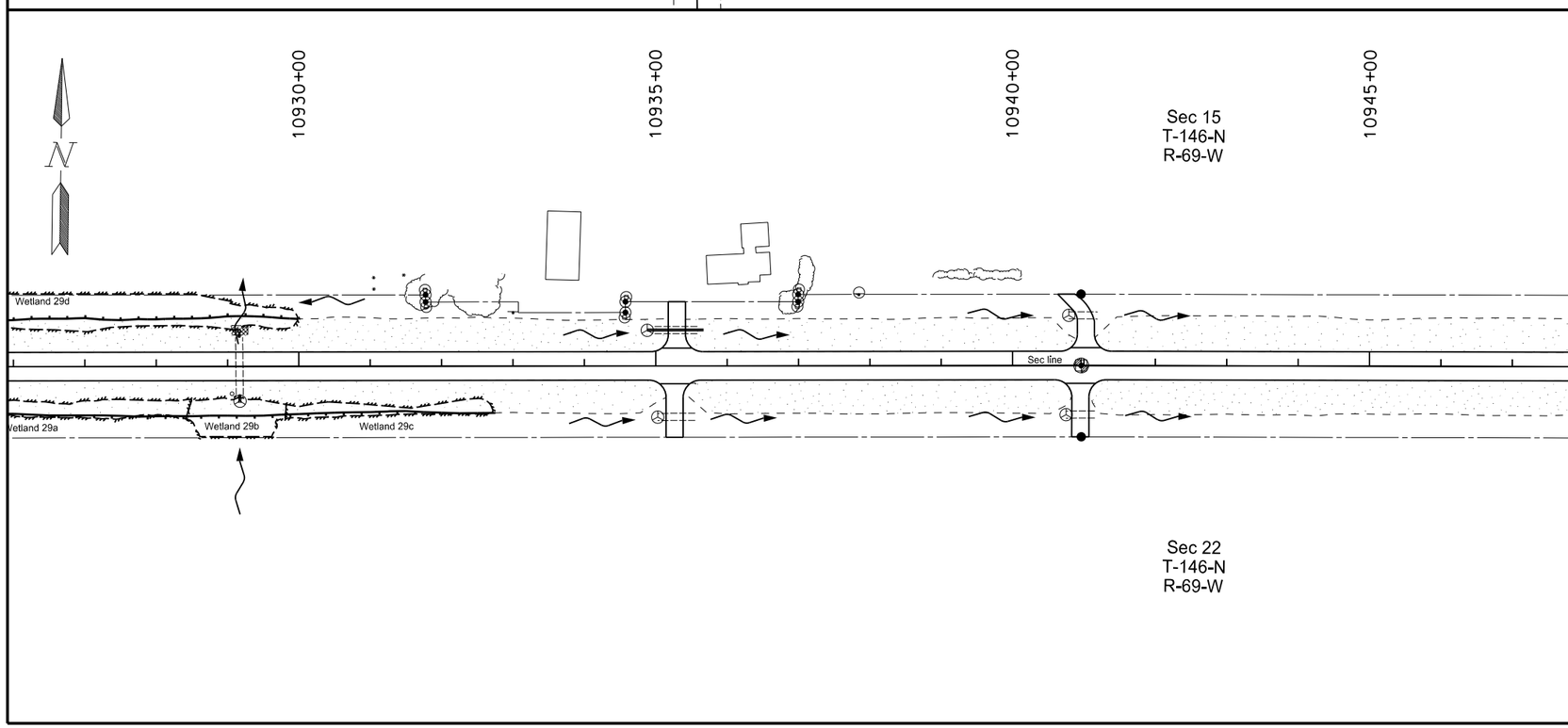

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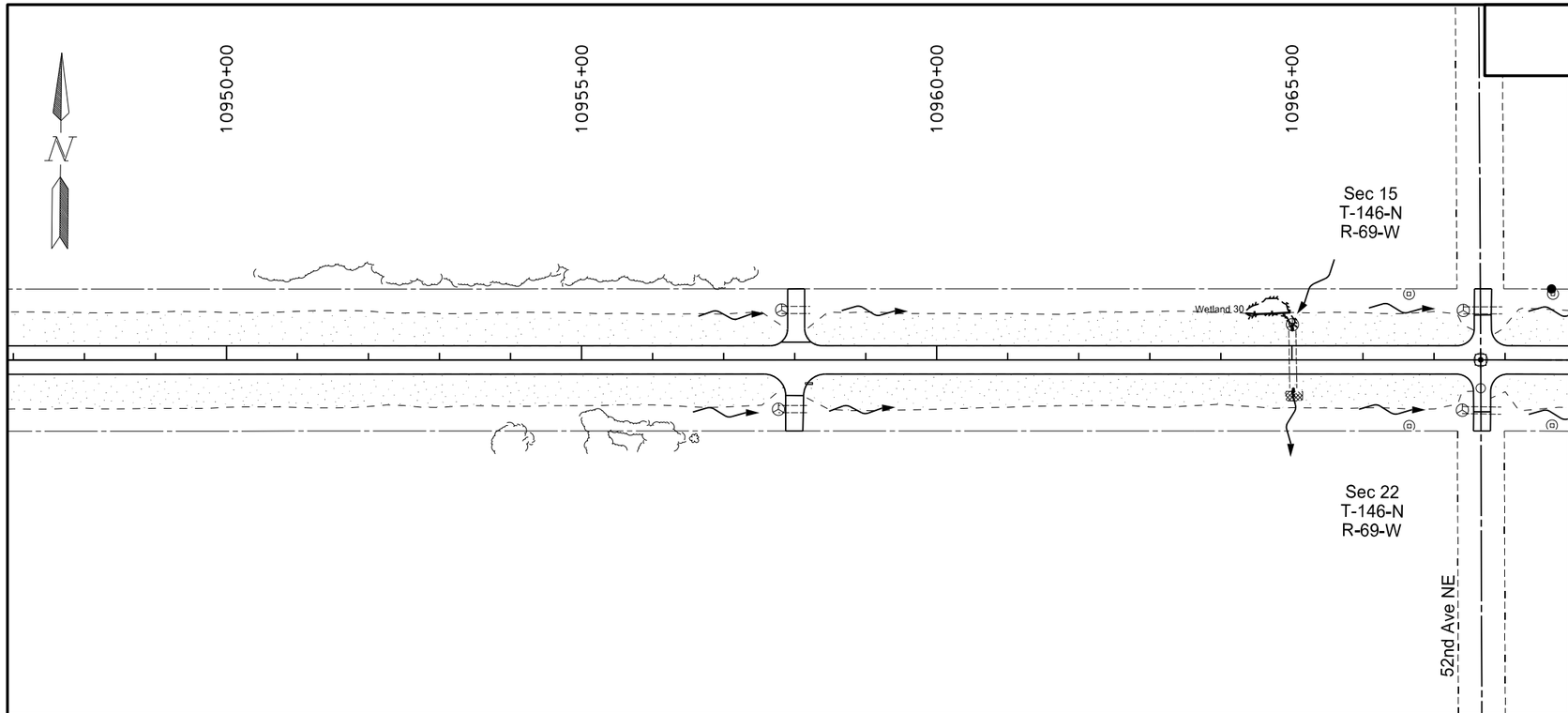

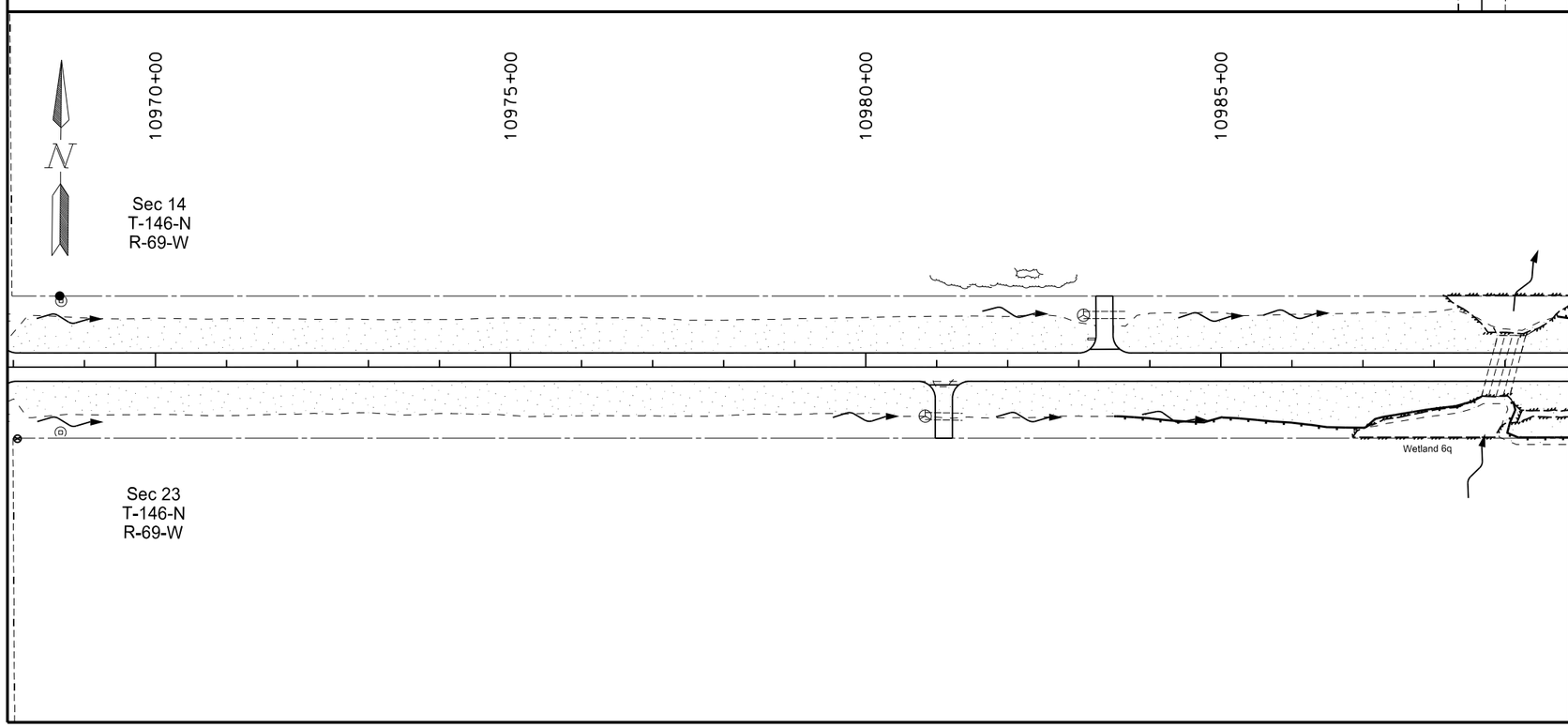

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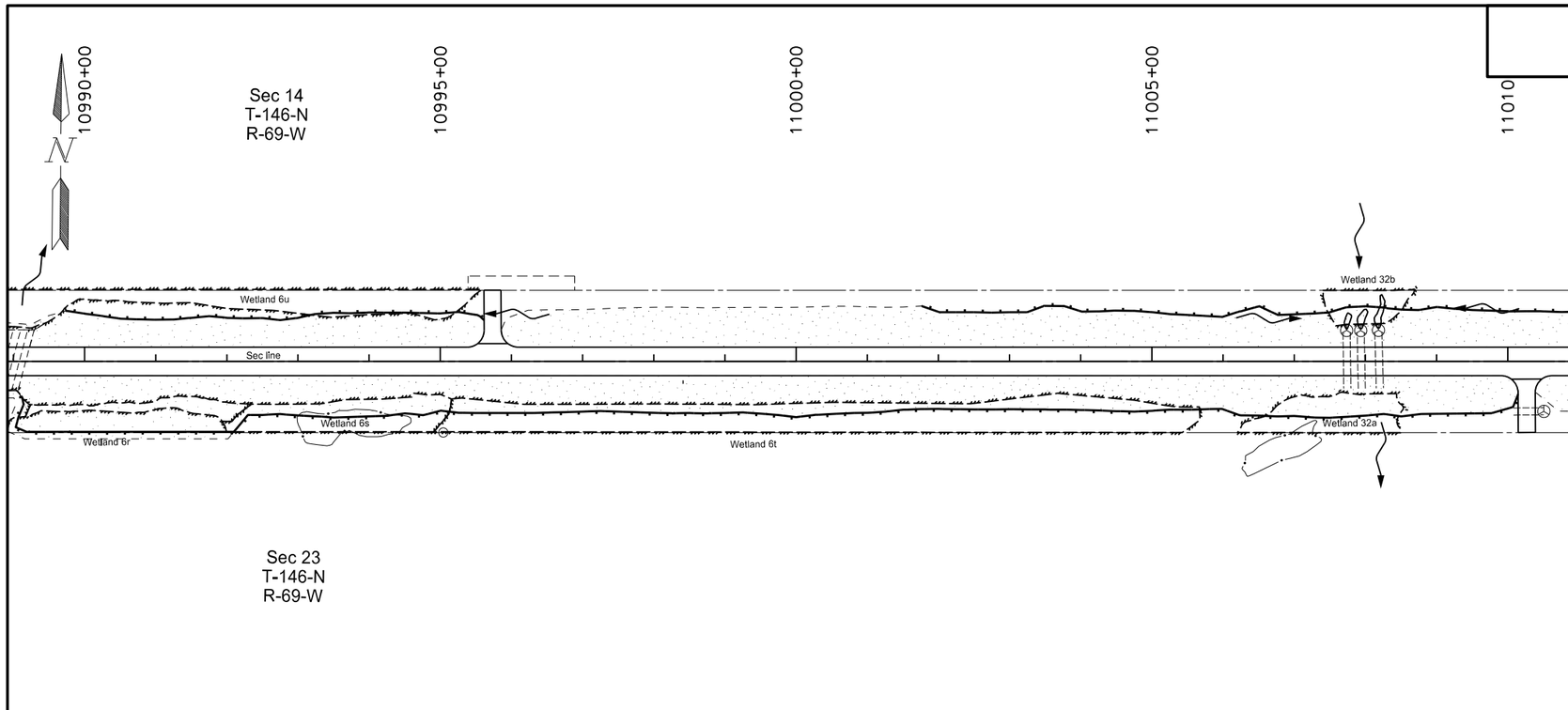

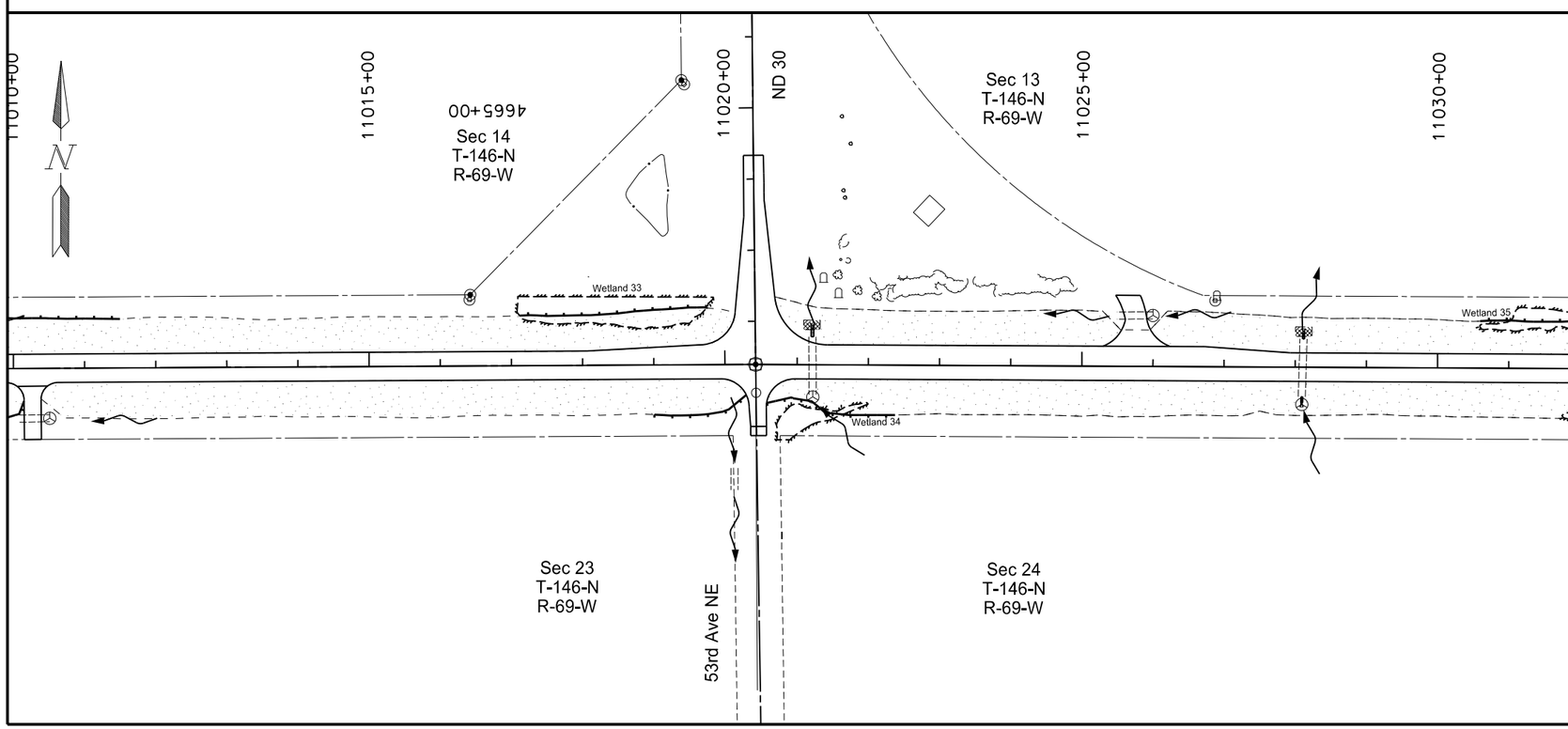

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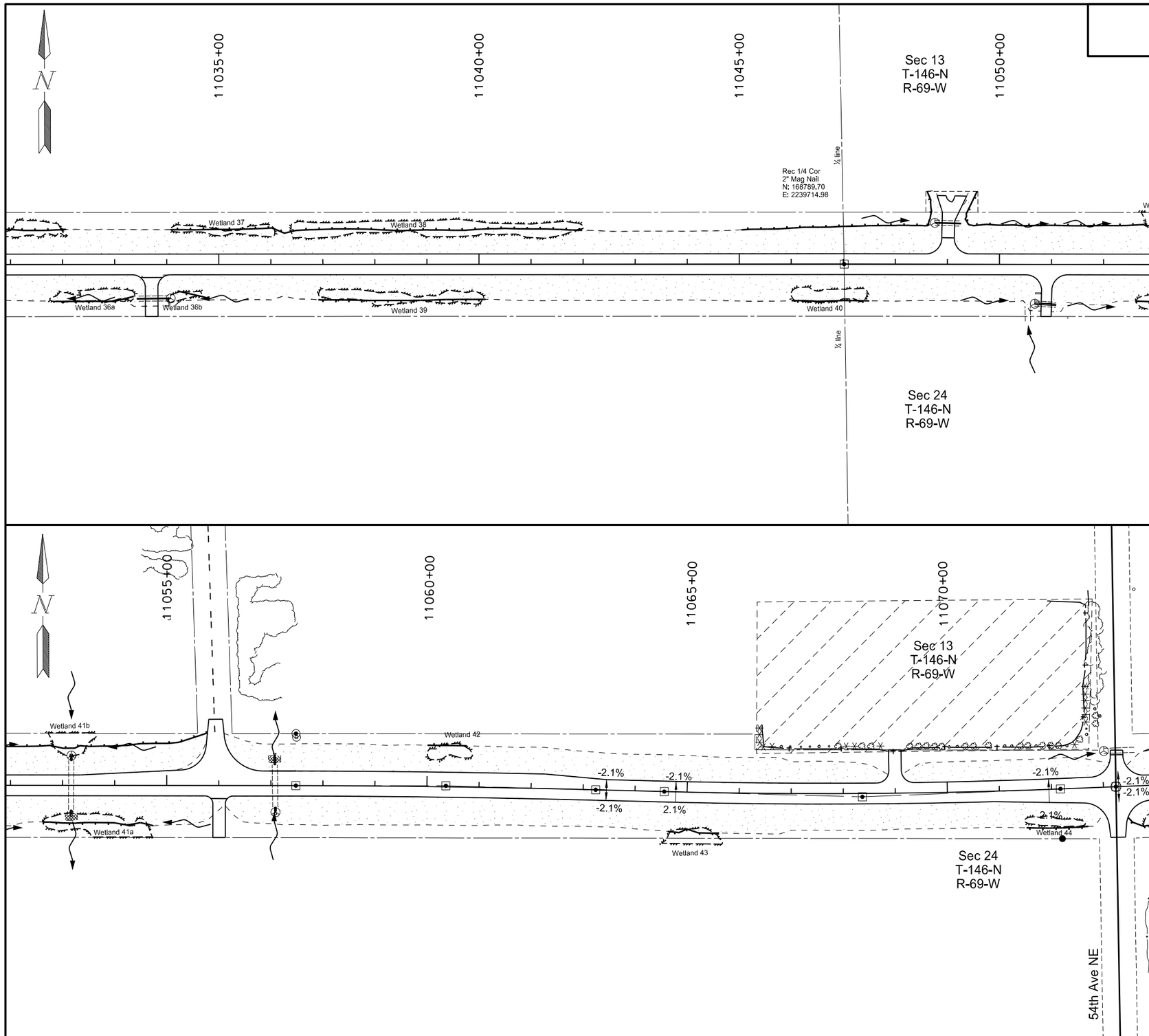

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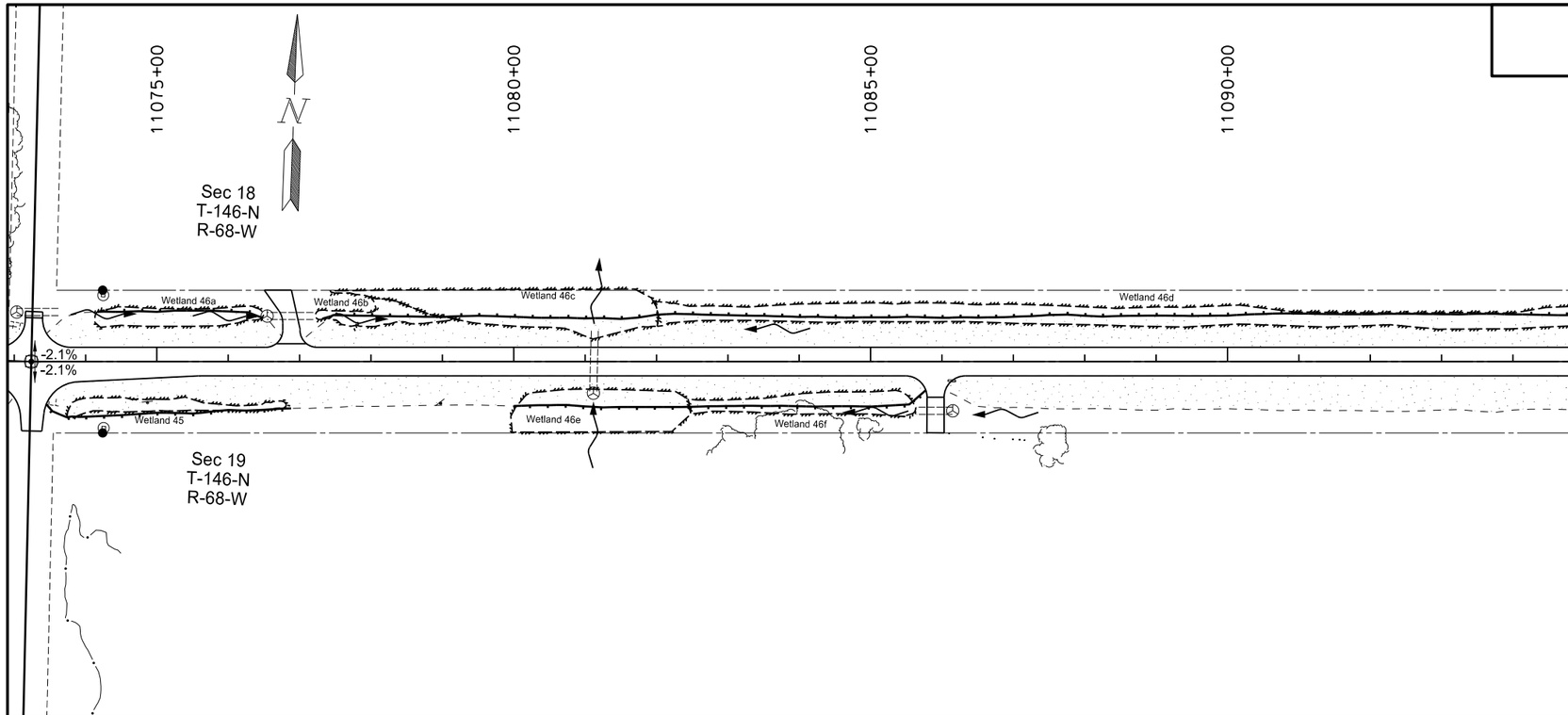

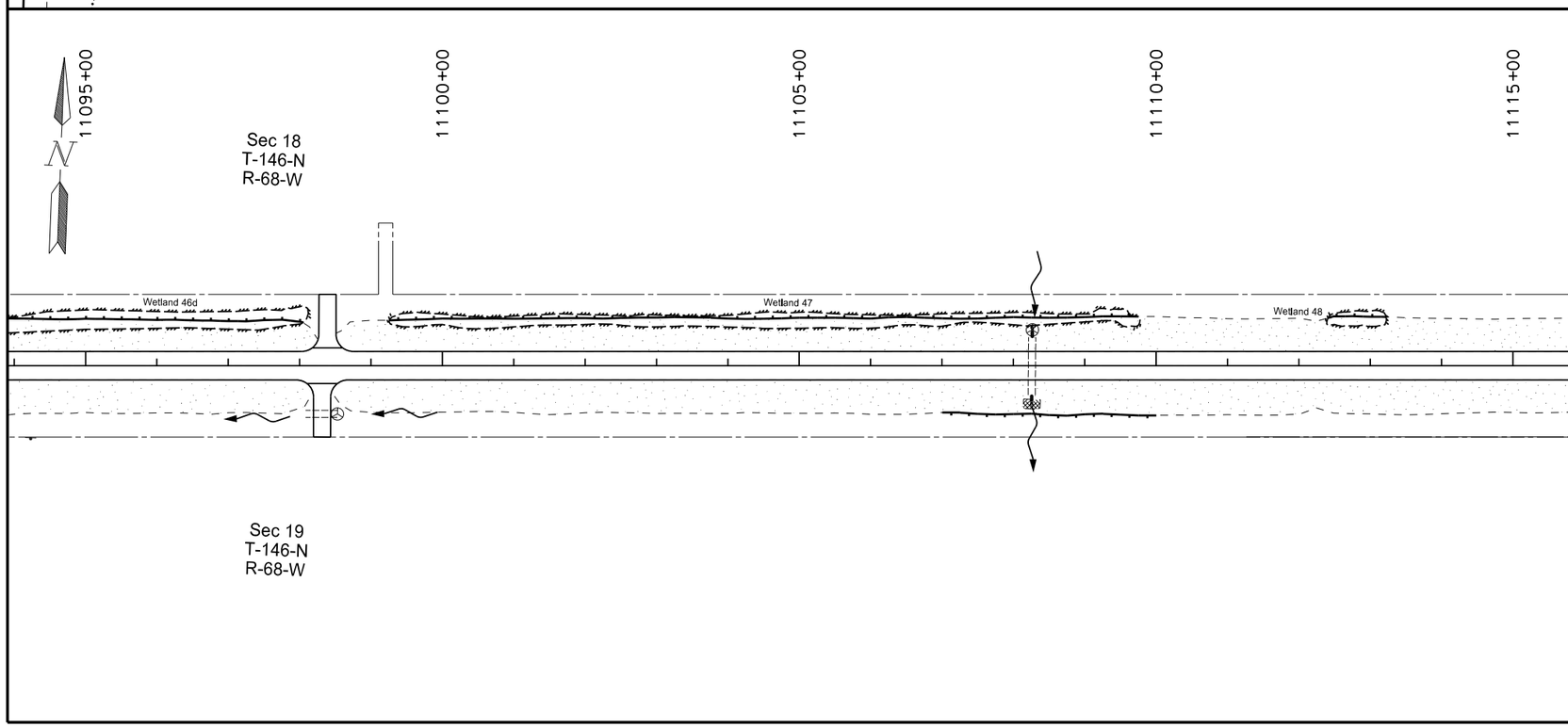

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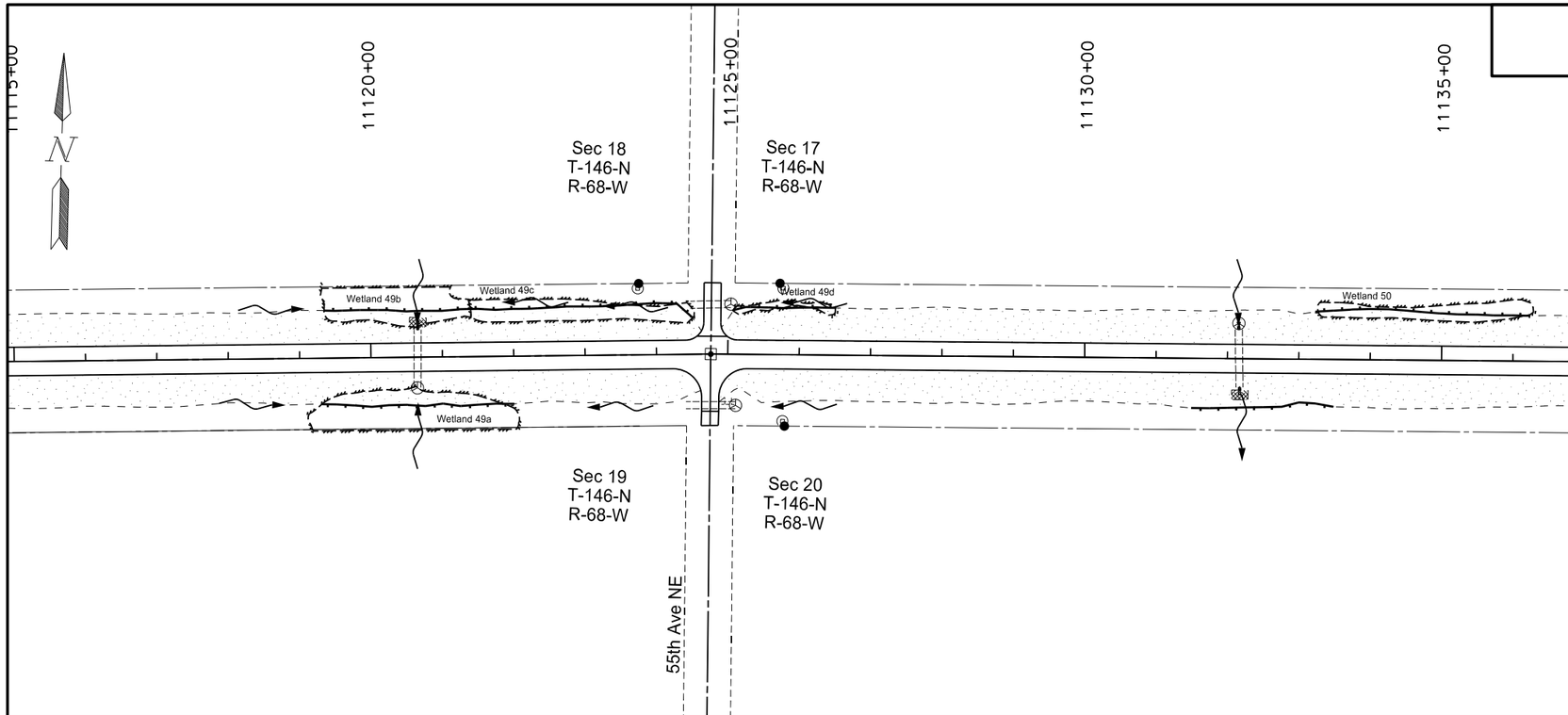

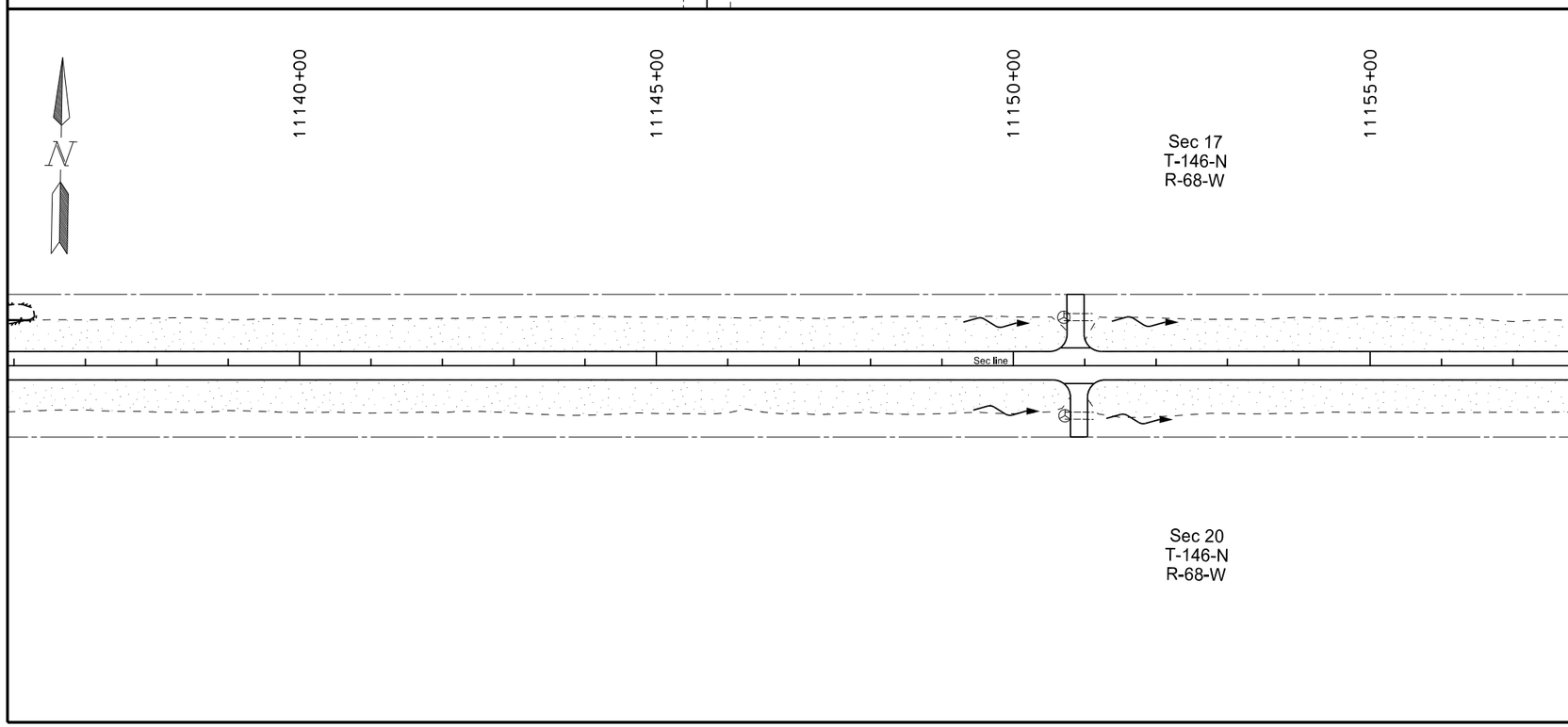

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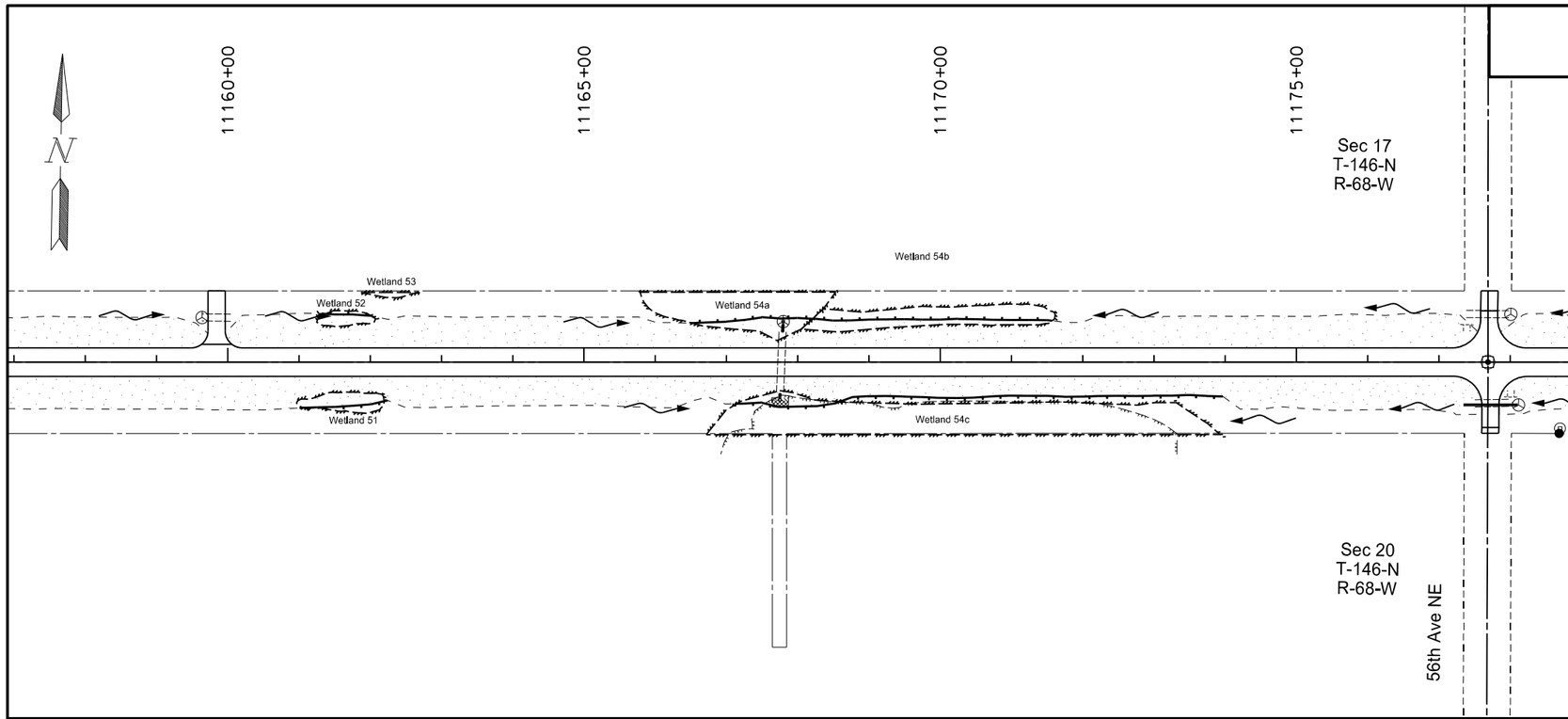

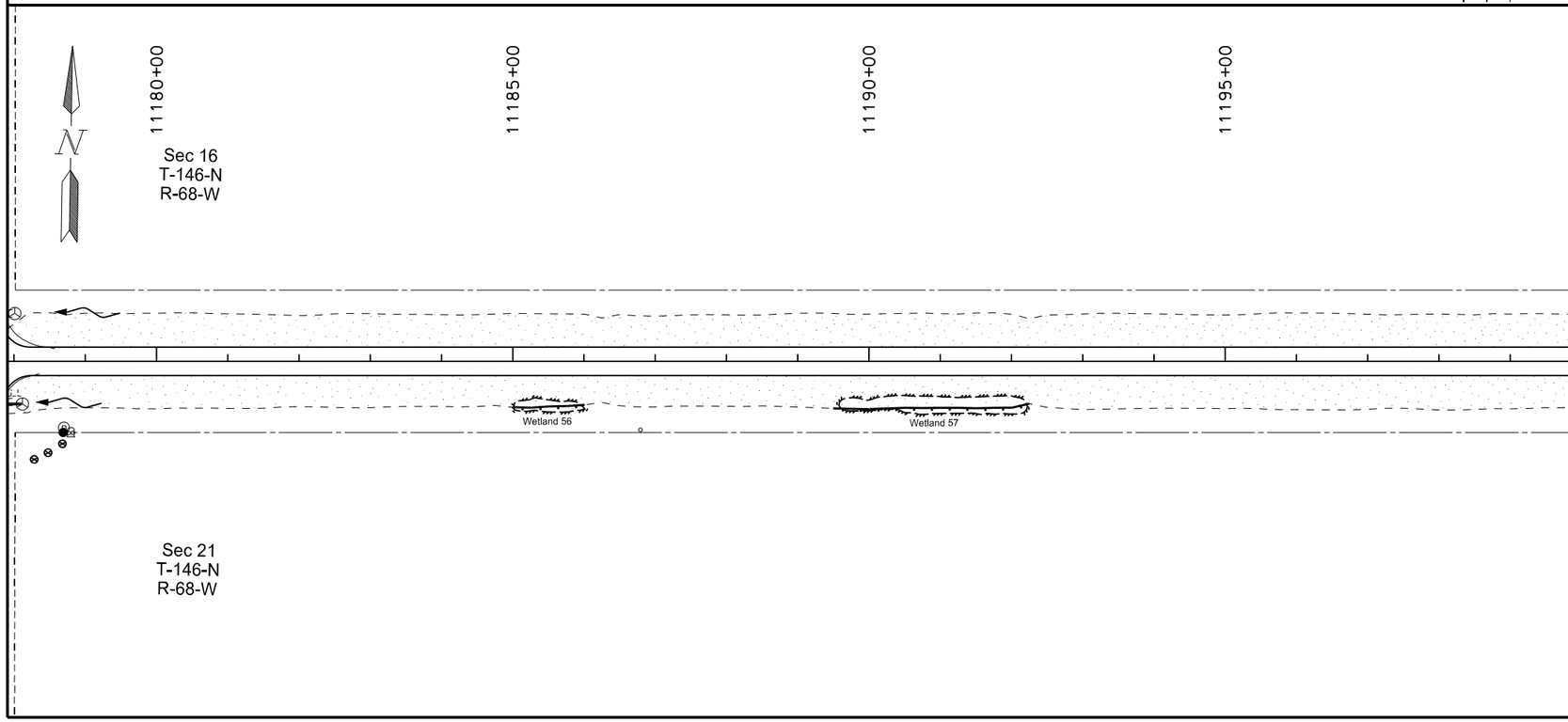

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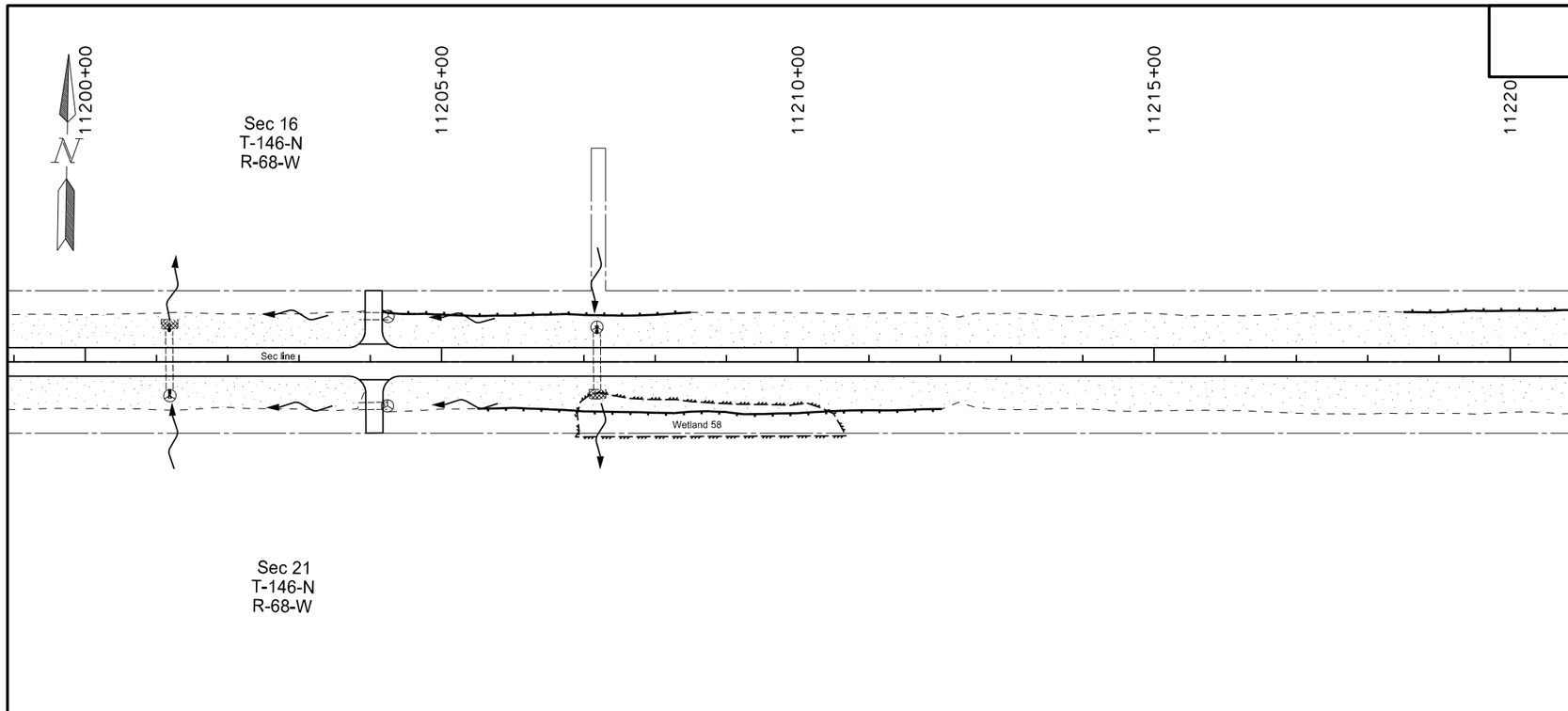

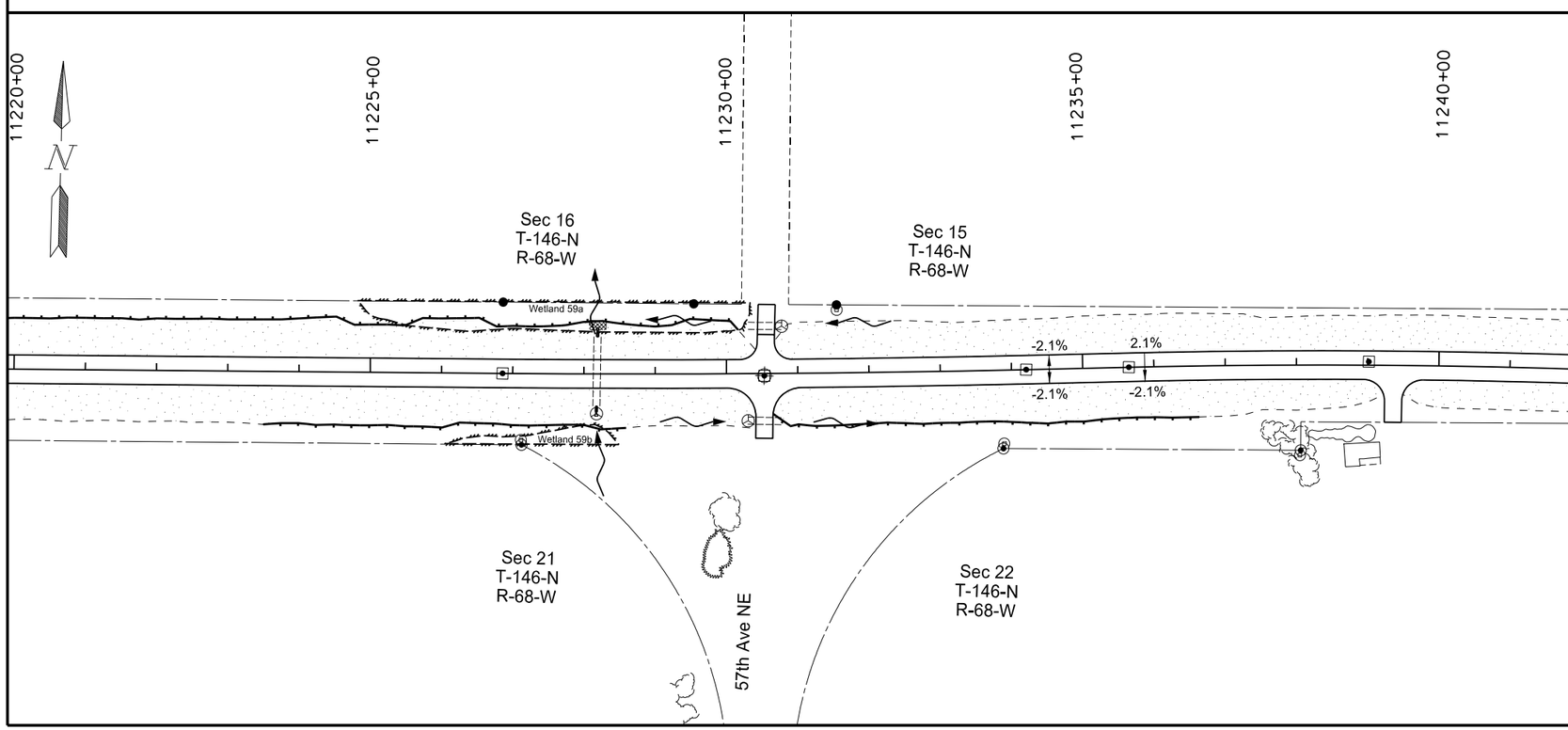

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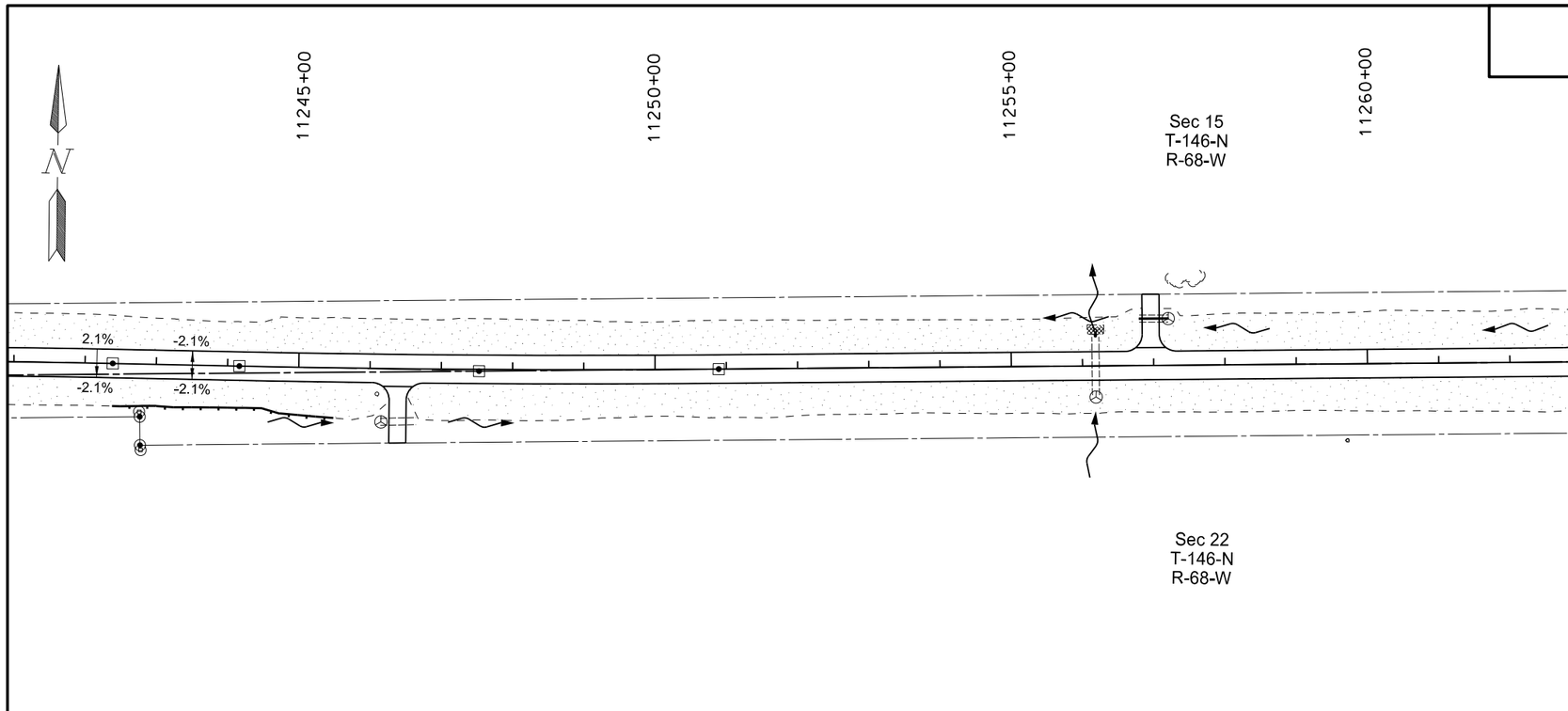

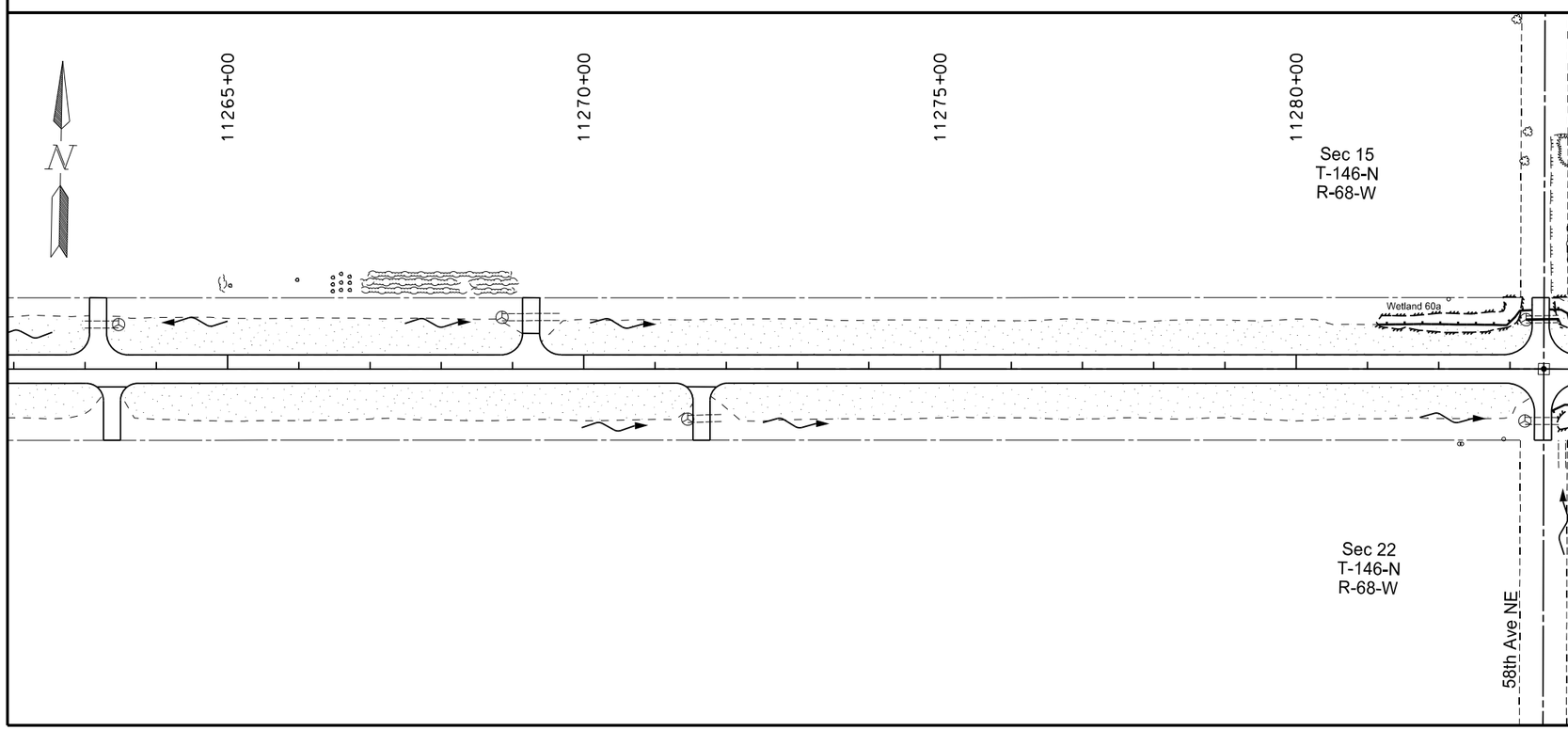

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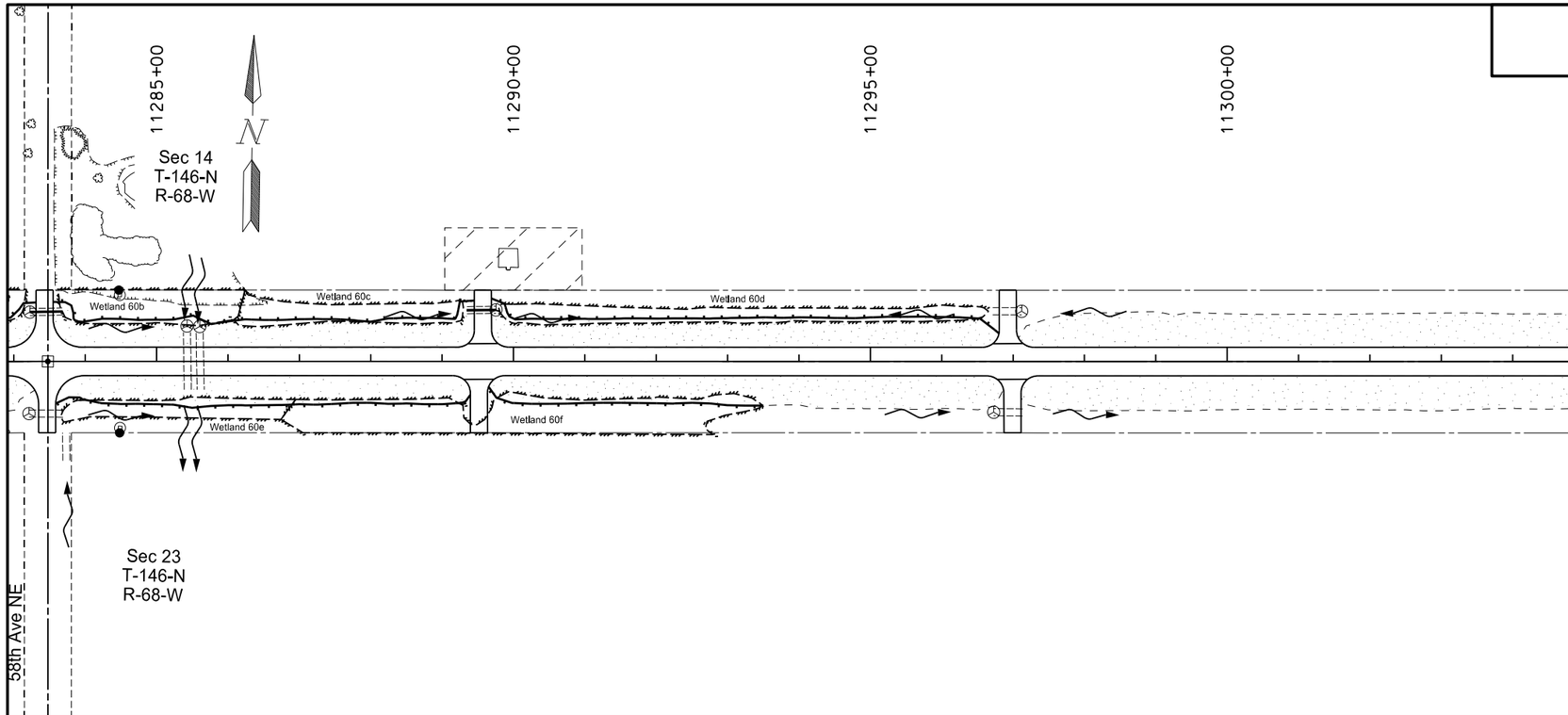
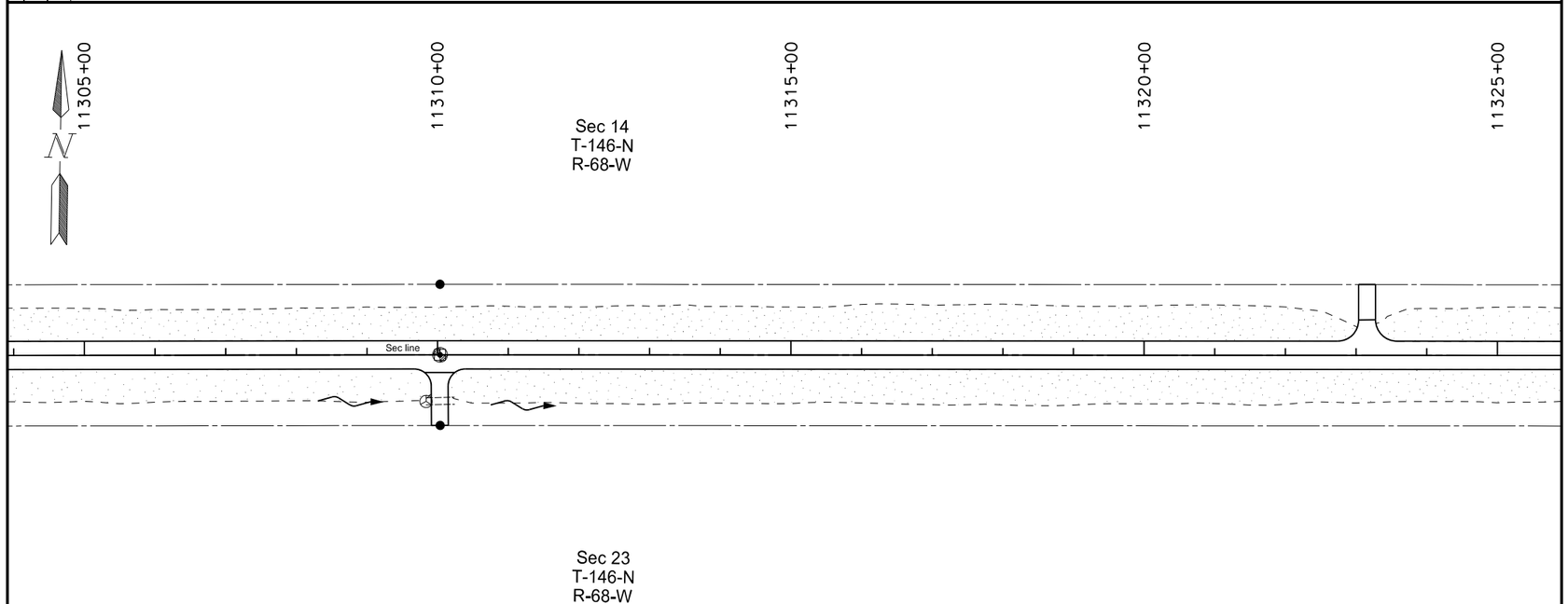
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	20





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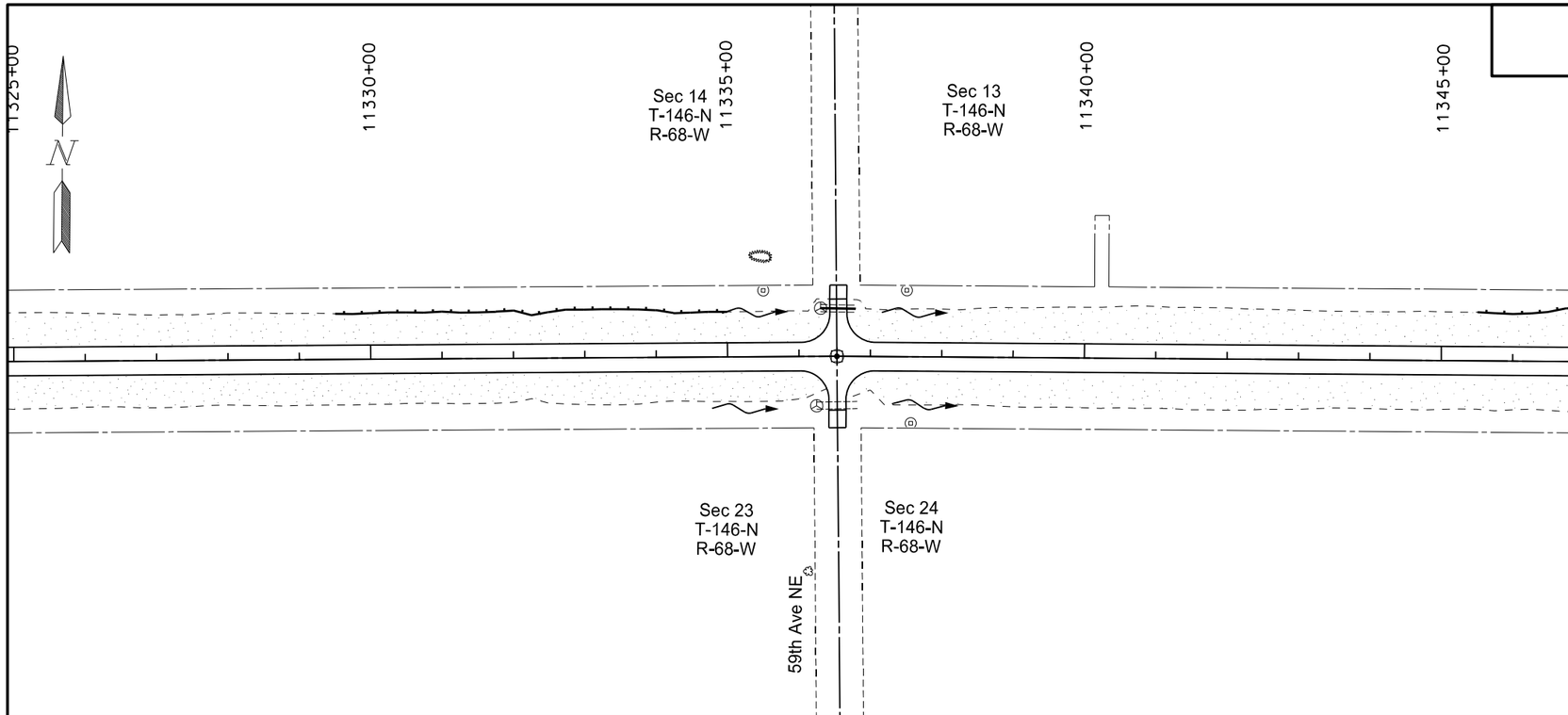
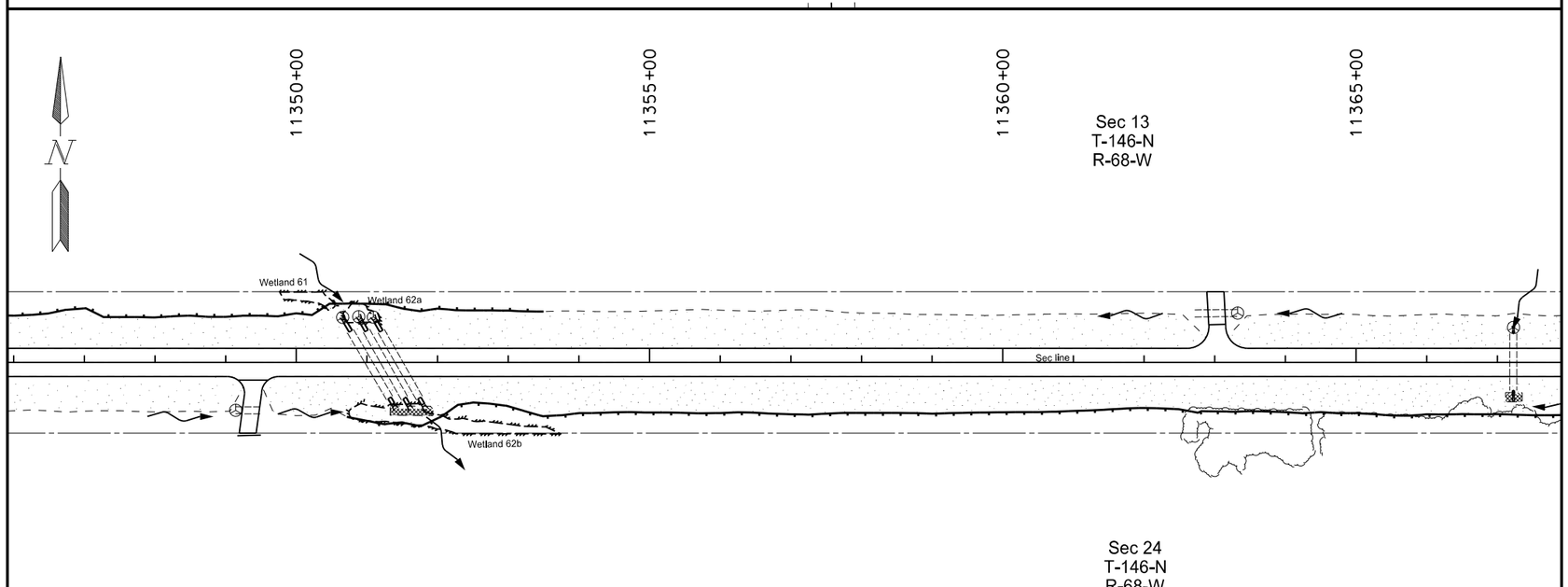
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	21





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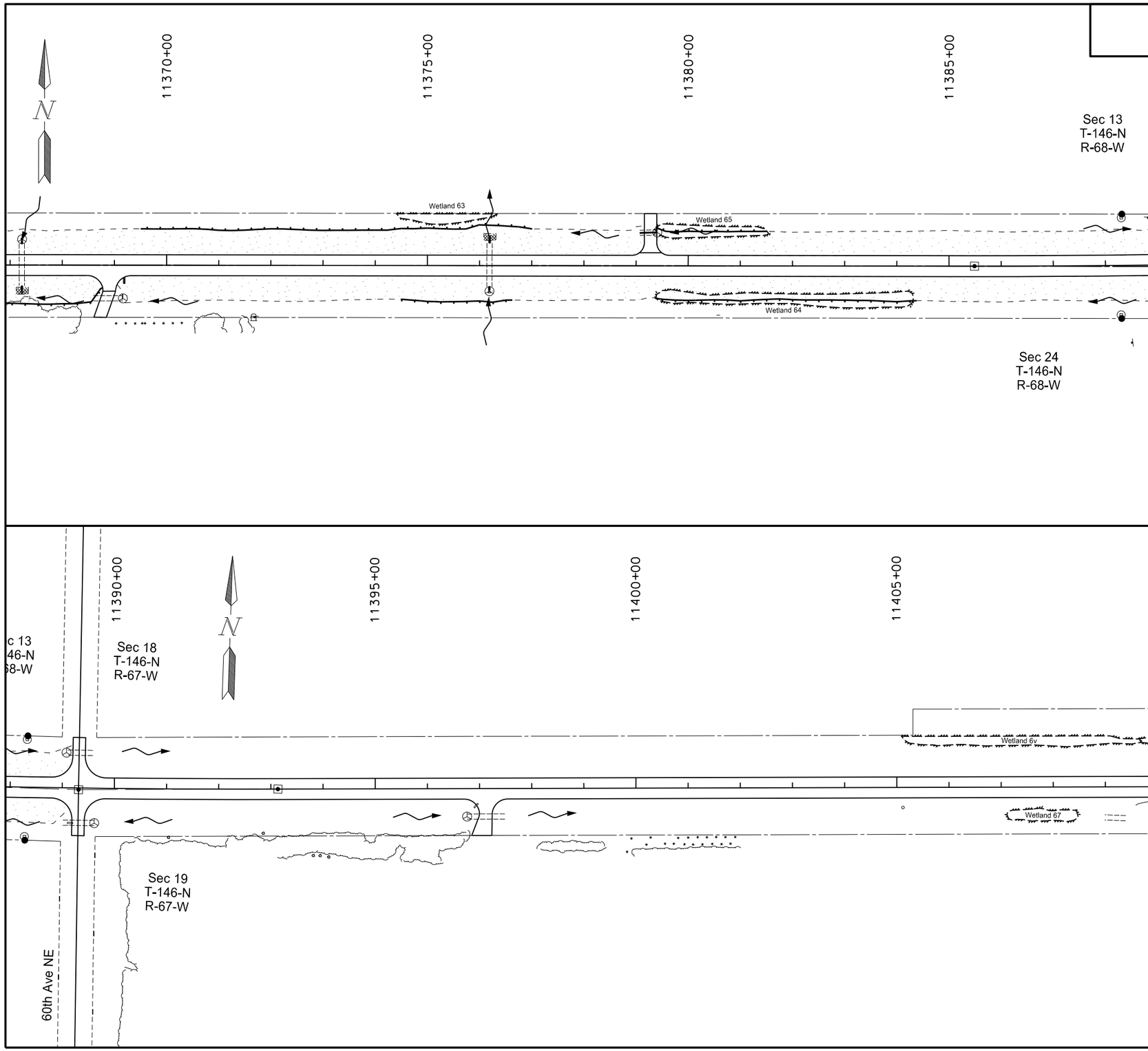
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	22



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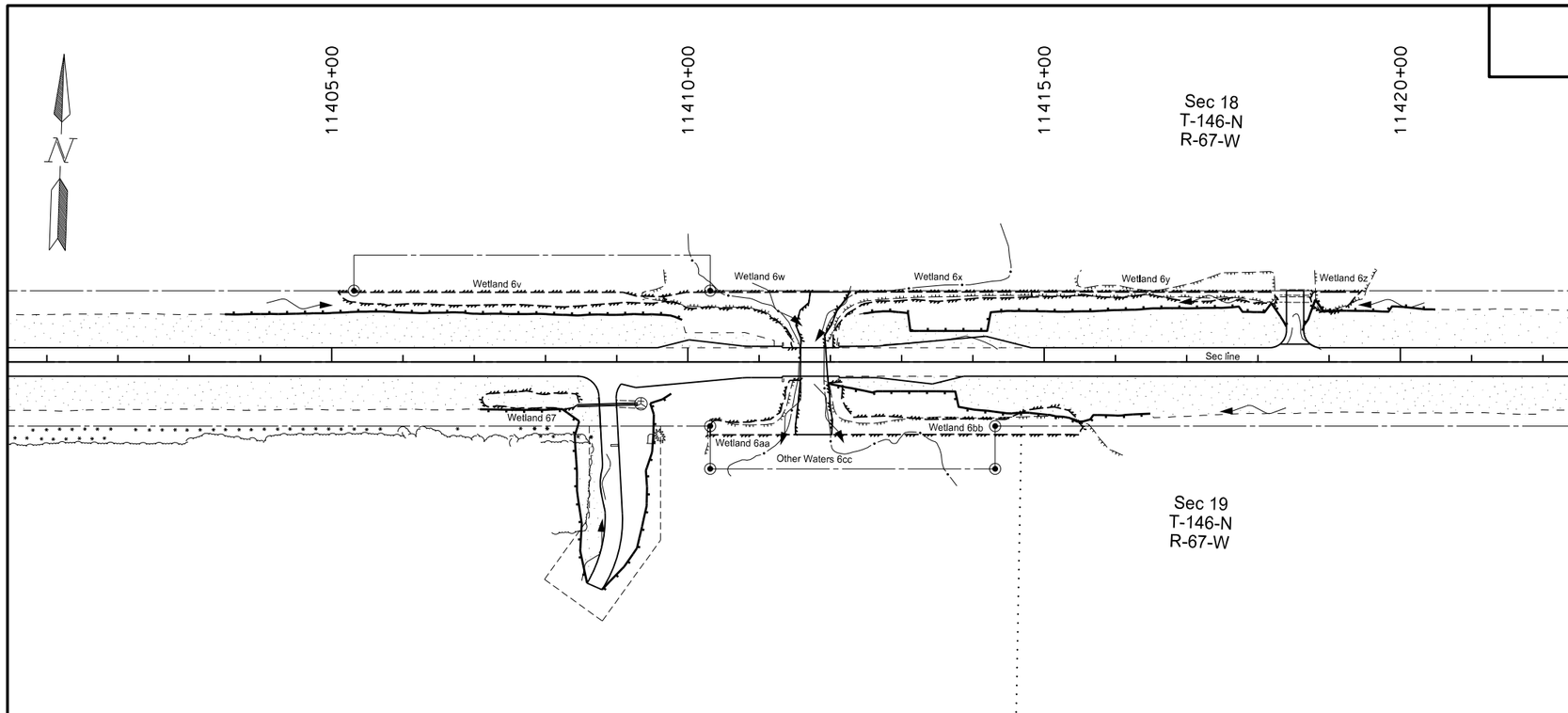
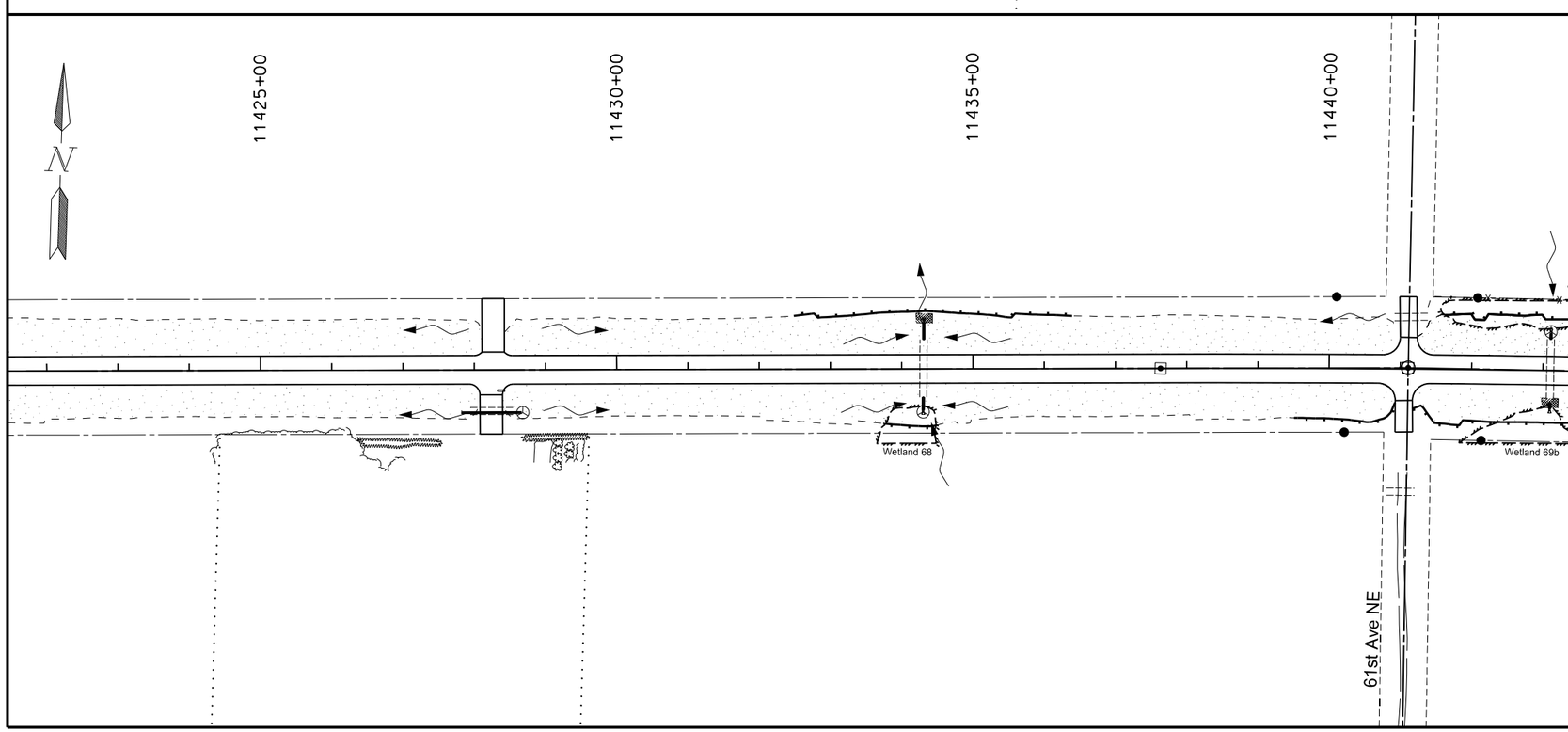
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	23





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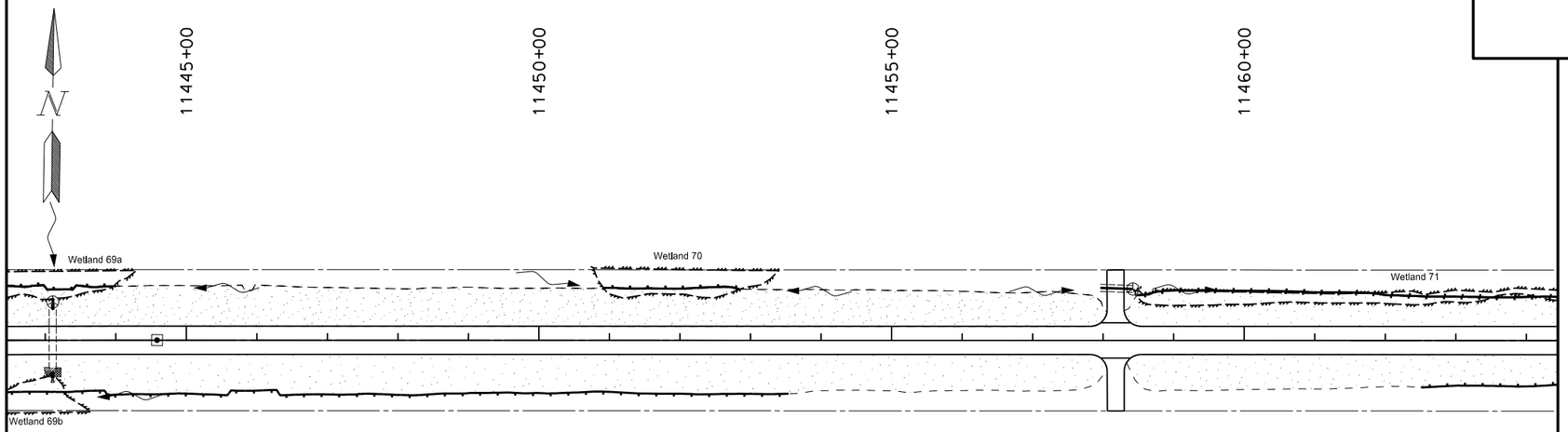
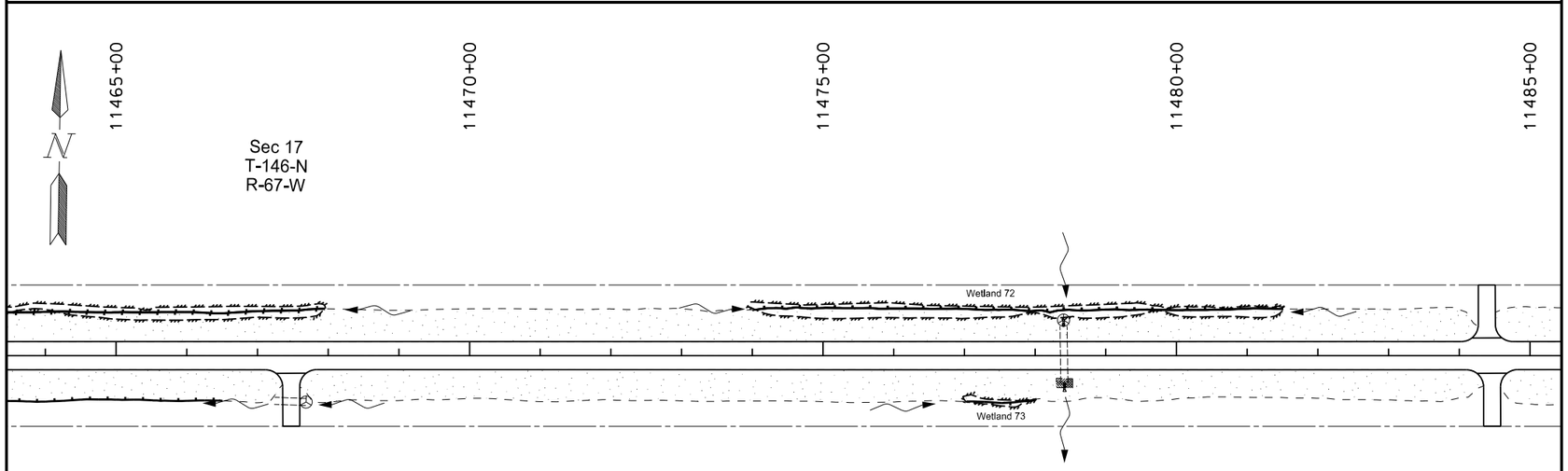
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	24





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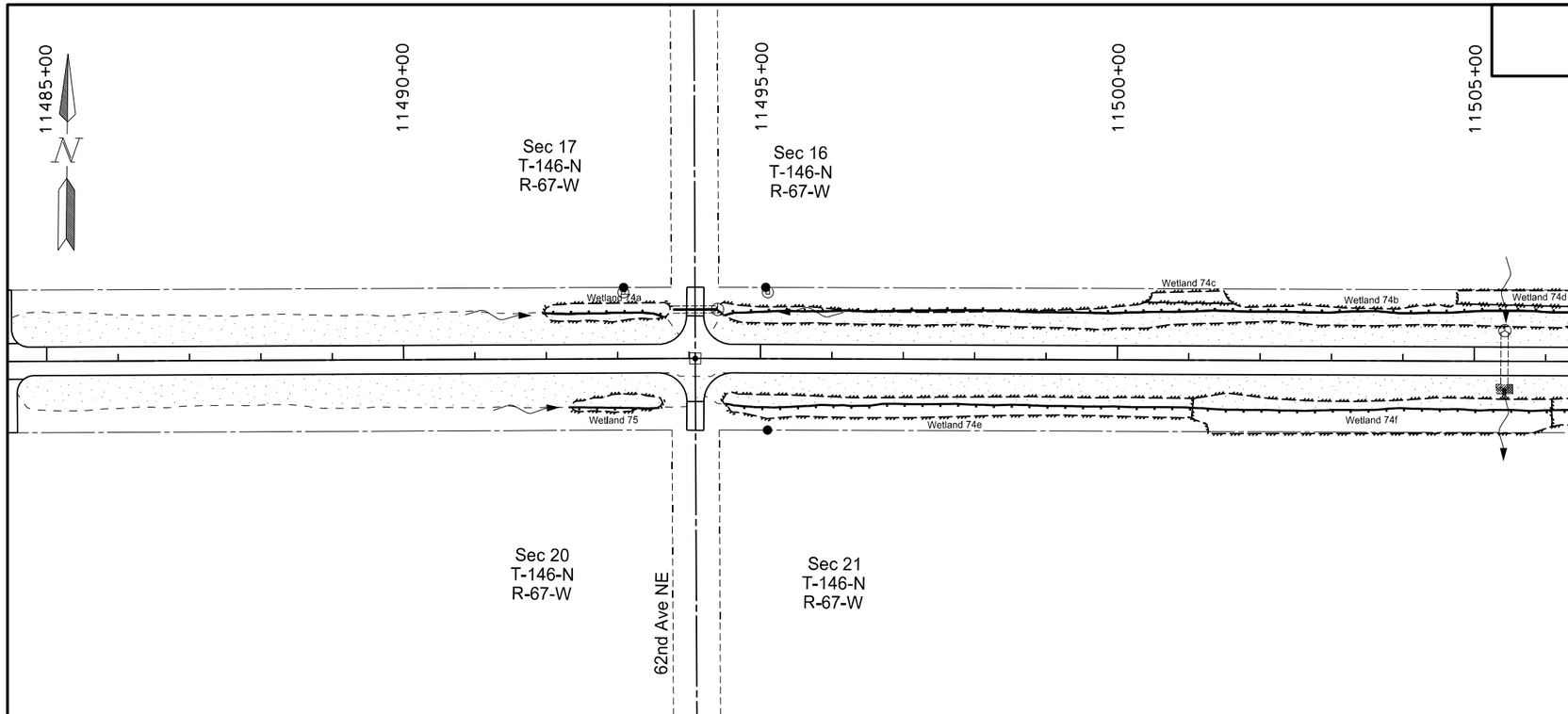
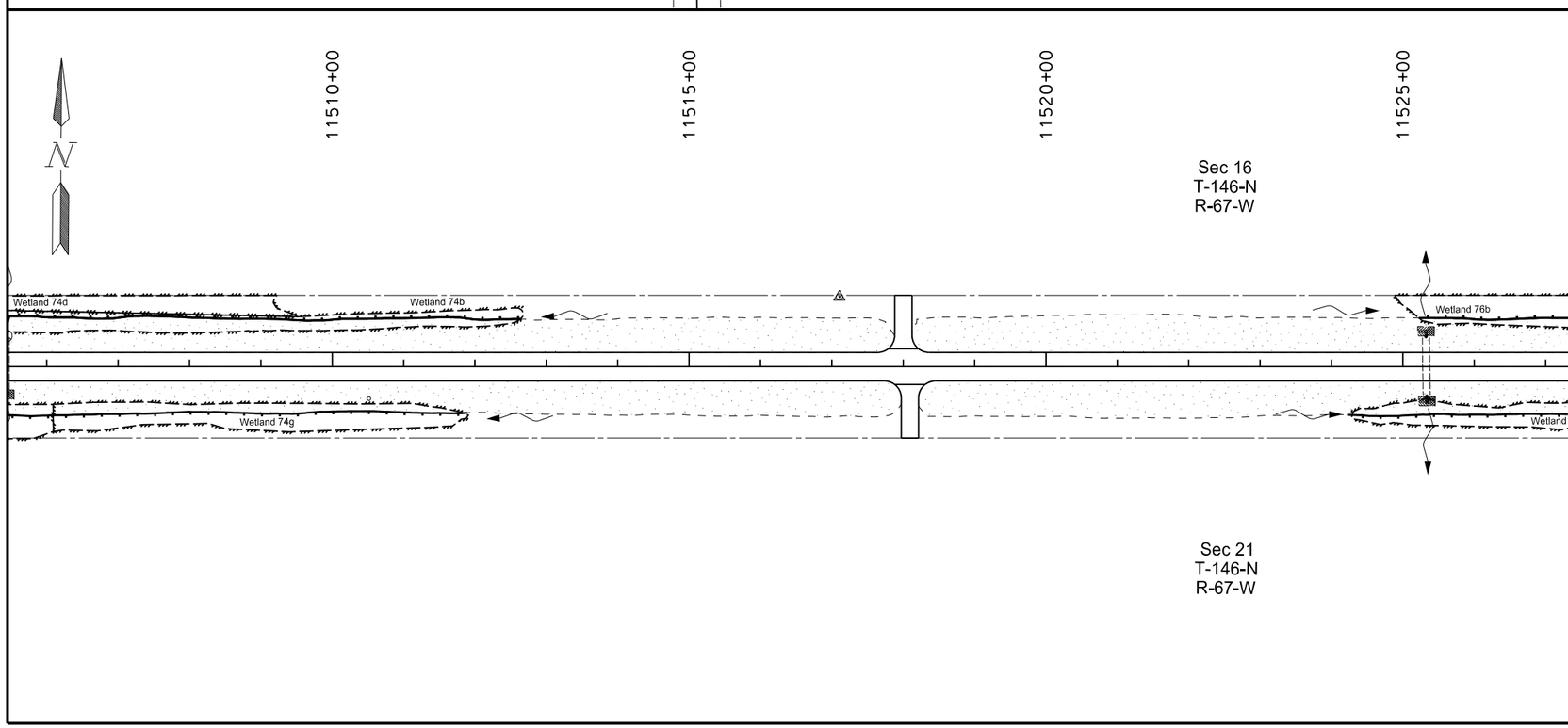
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	25





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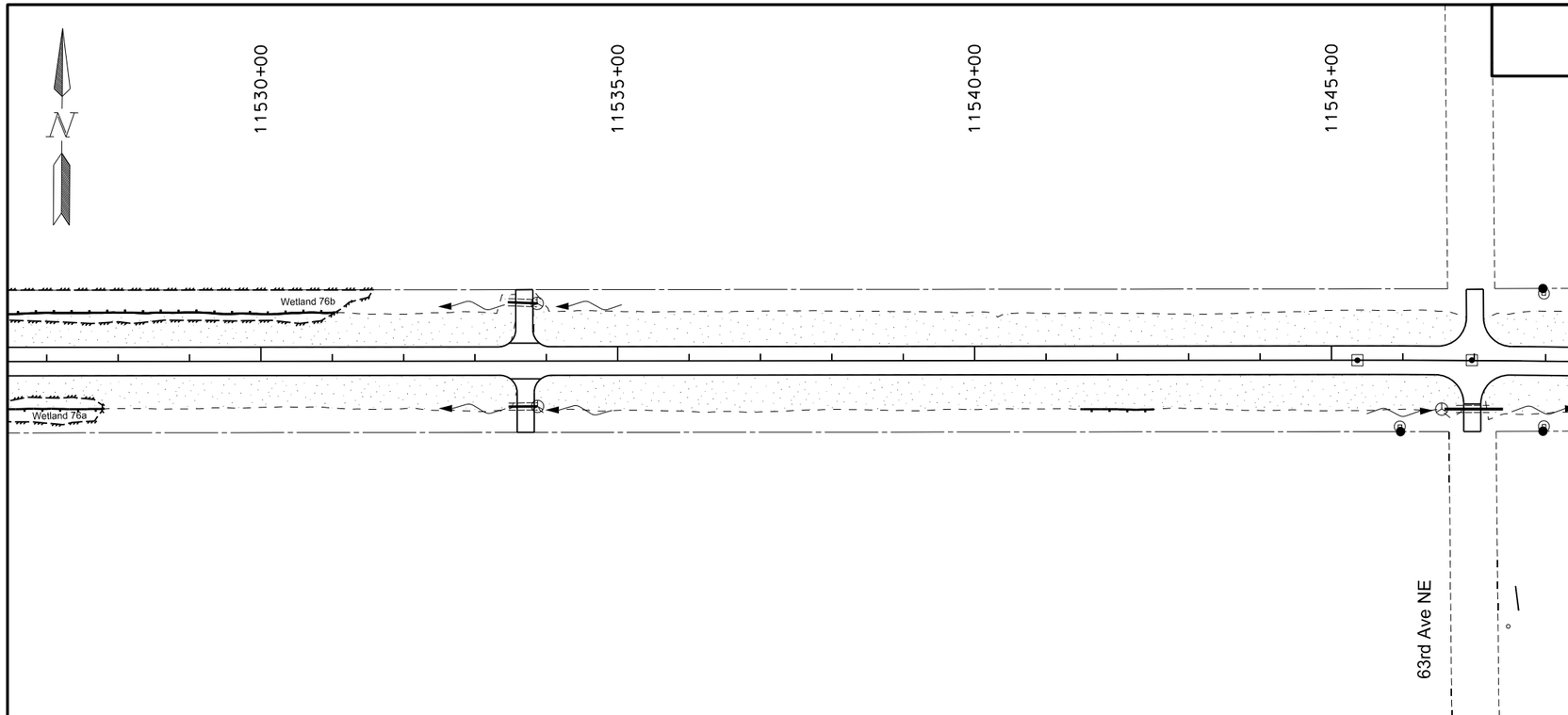
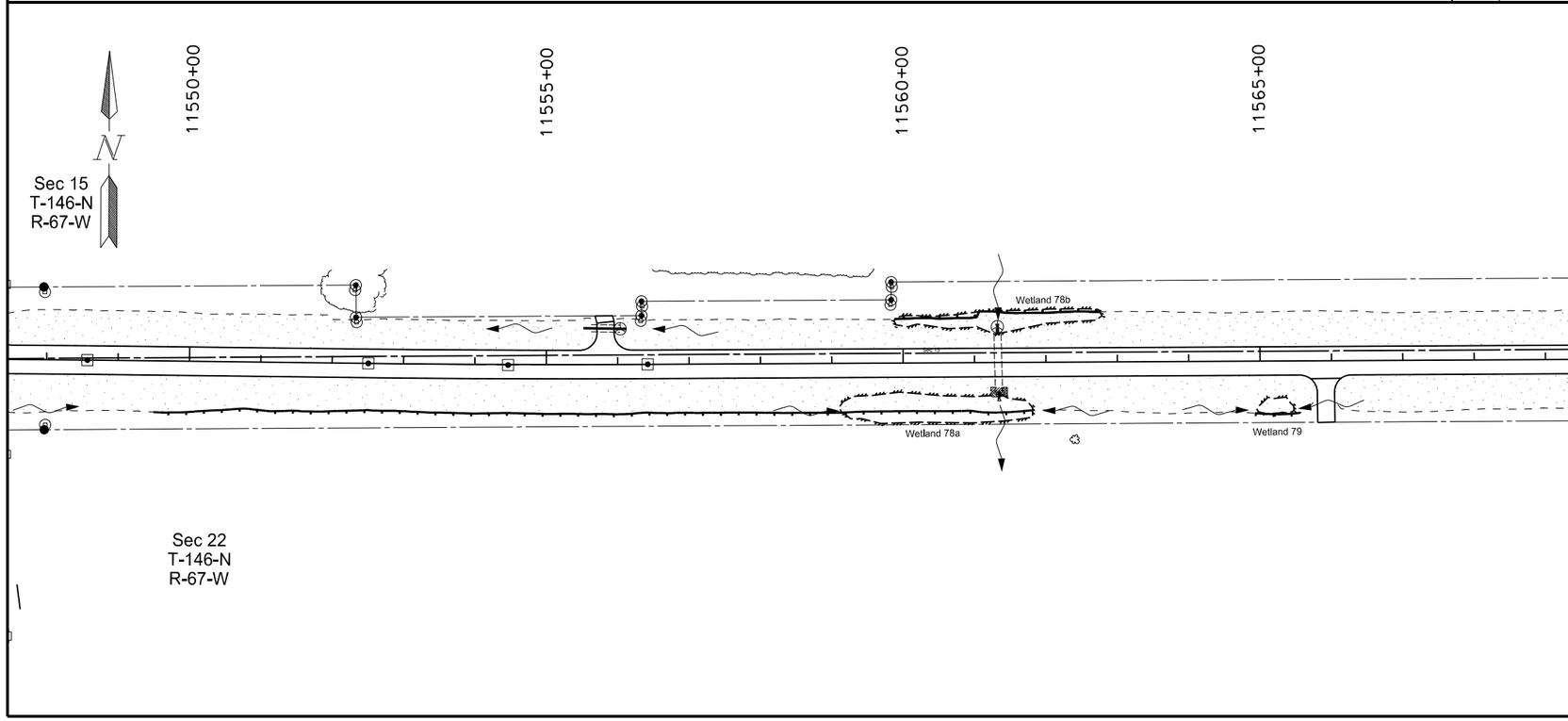
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	26





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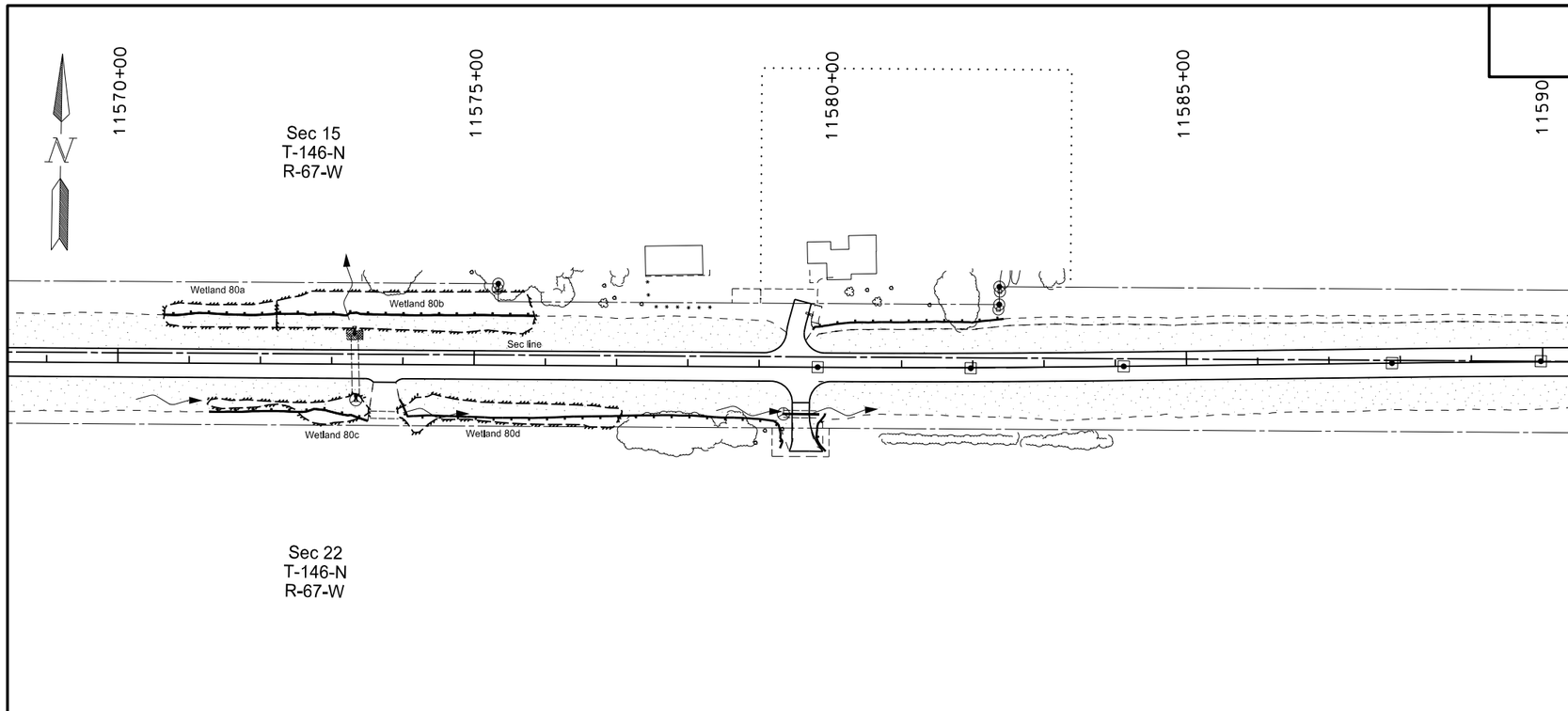
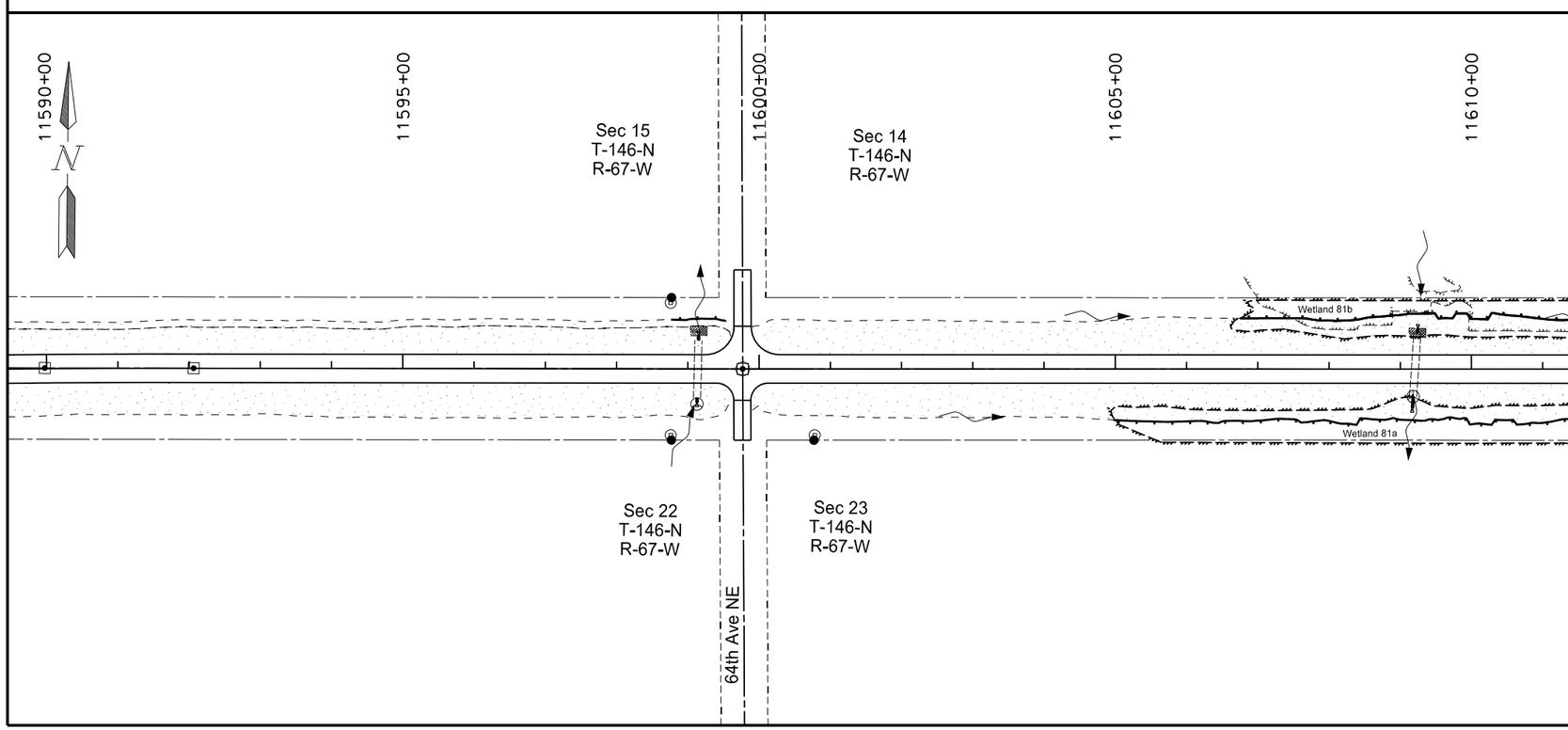
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	27





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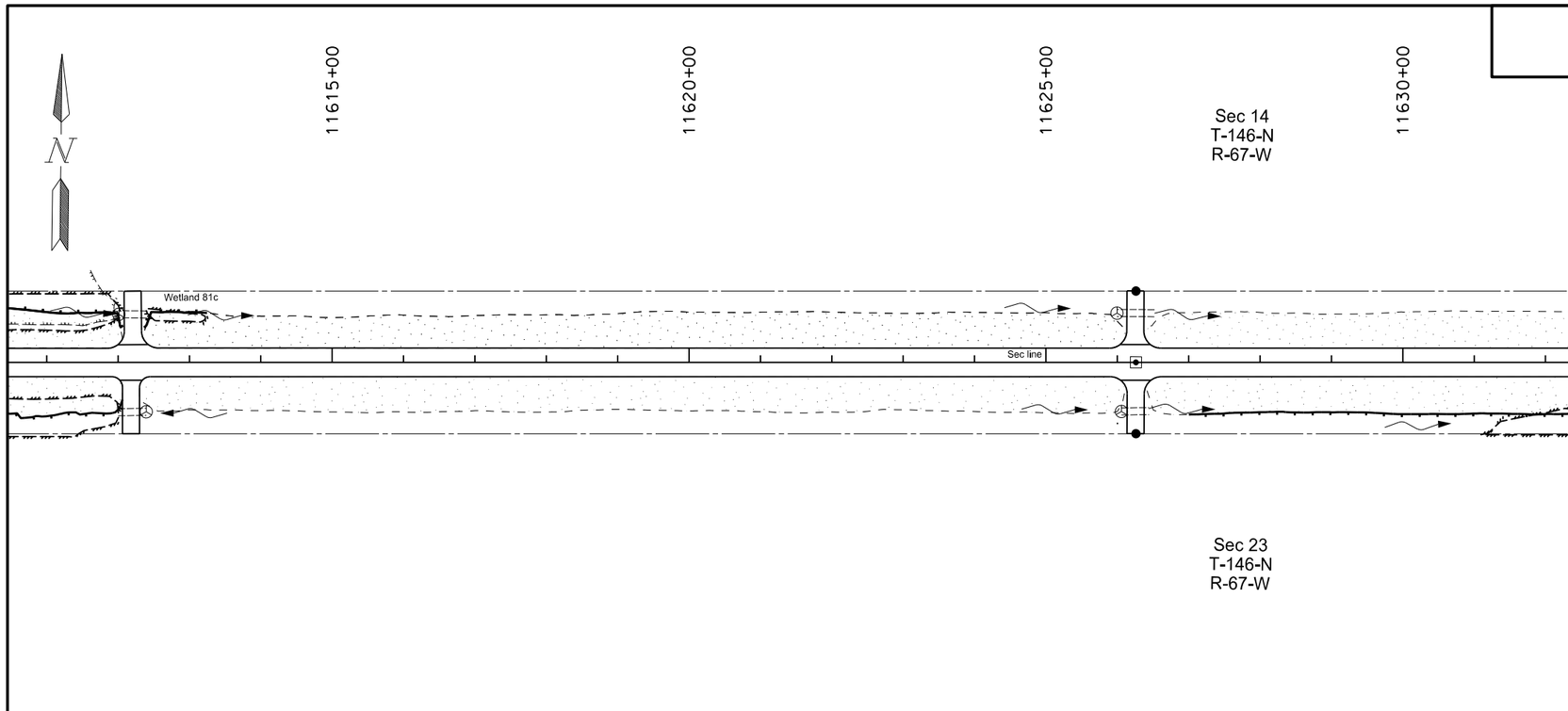
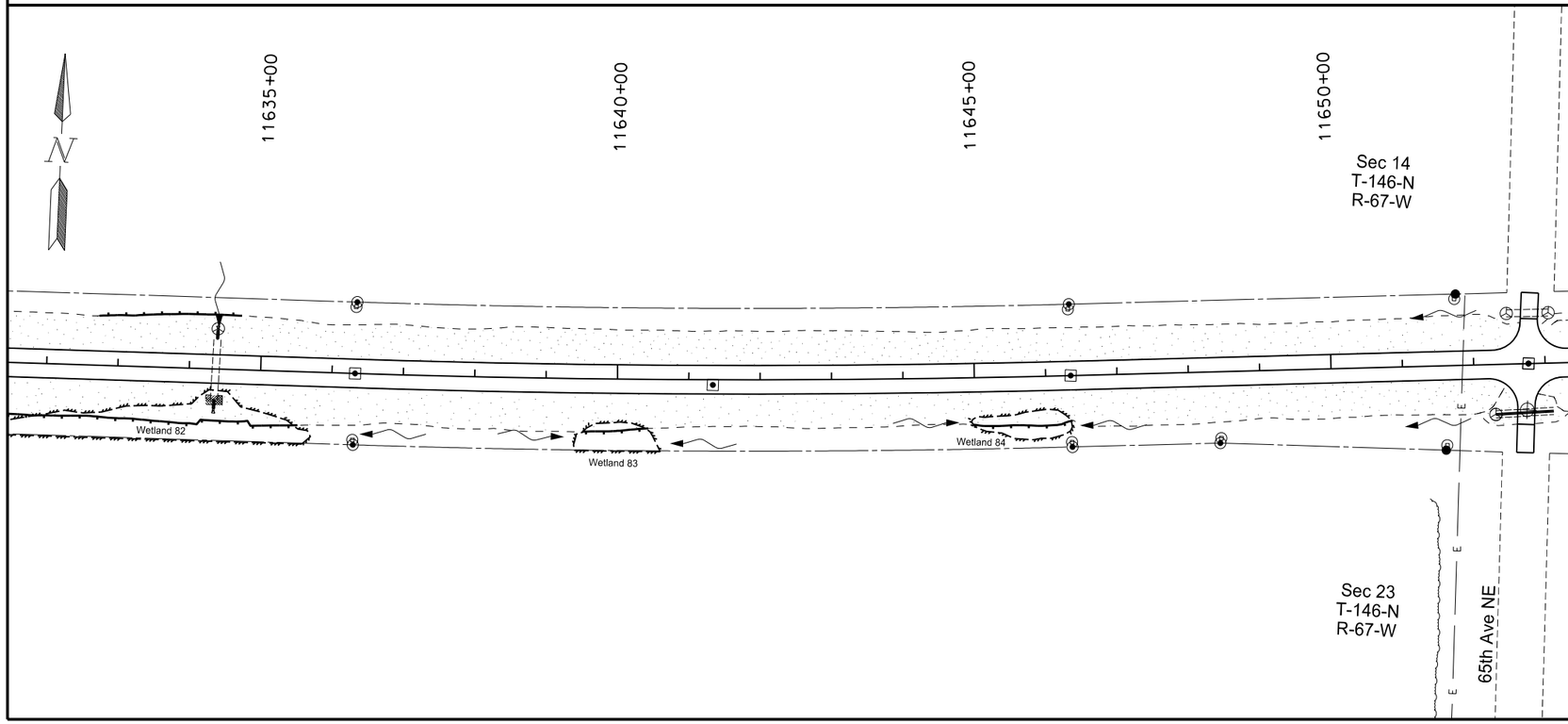
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	28





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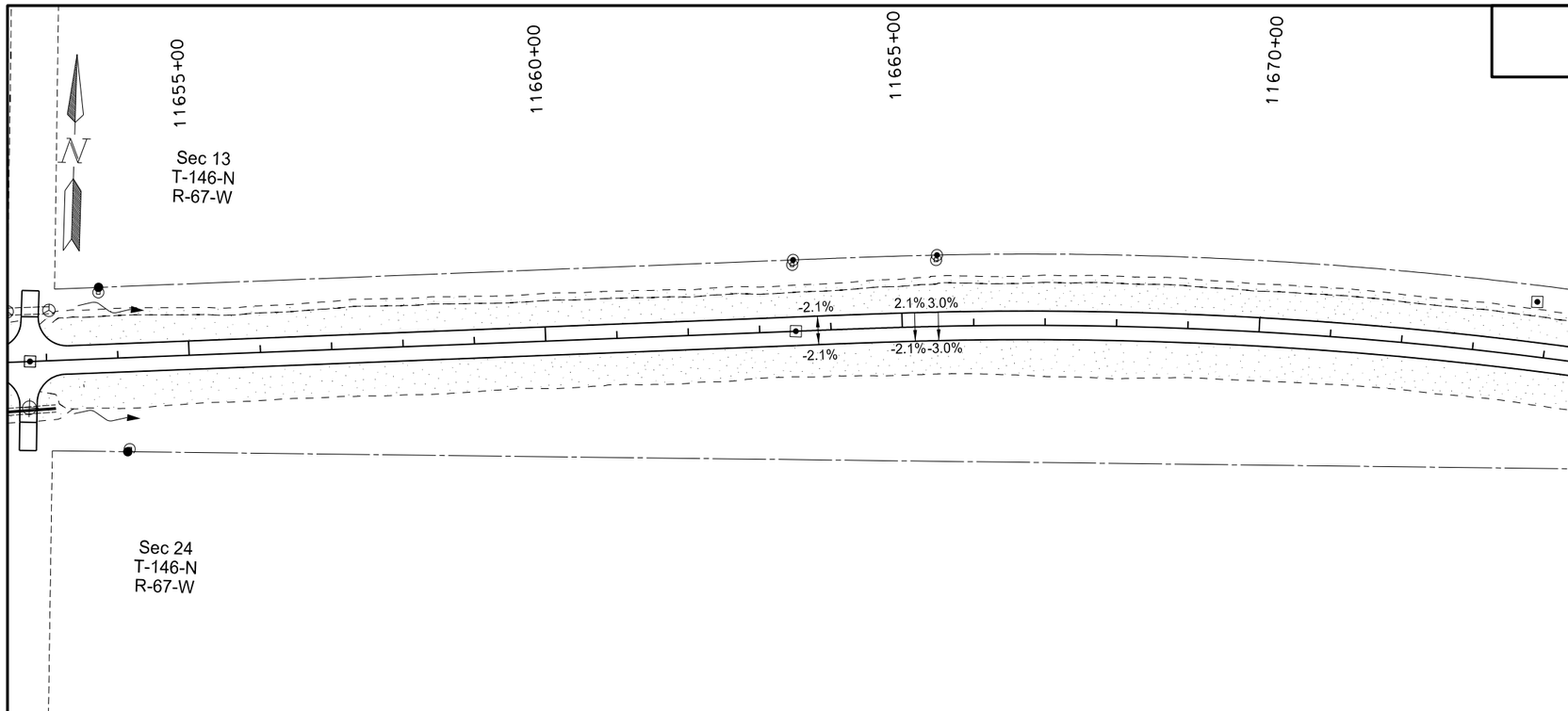
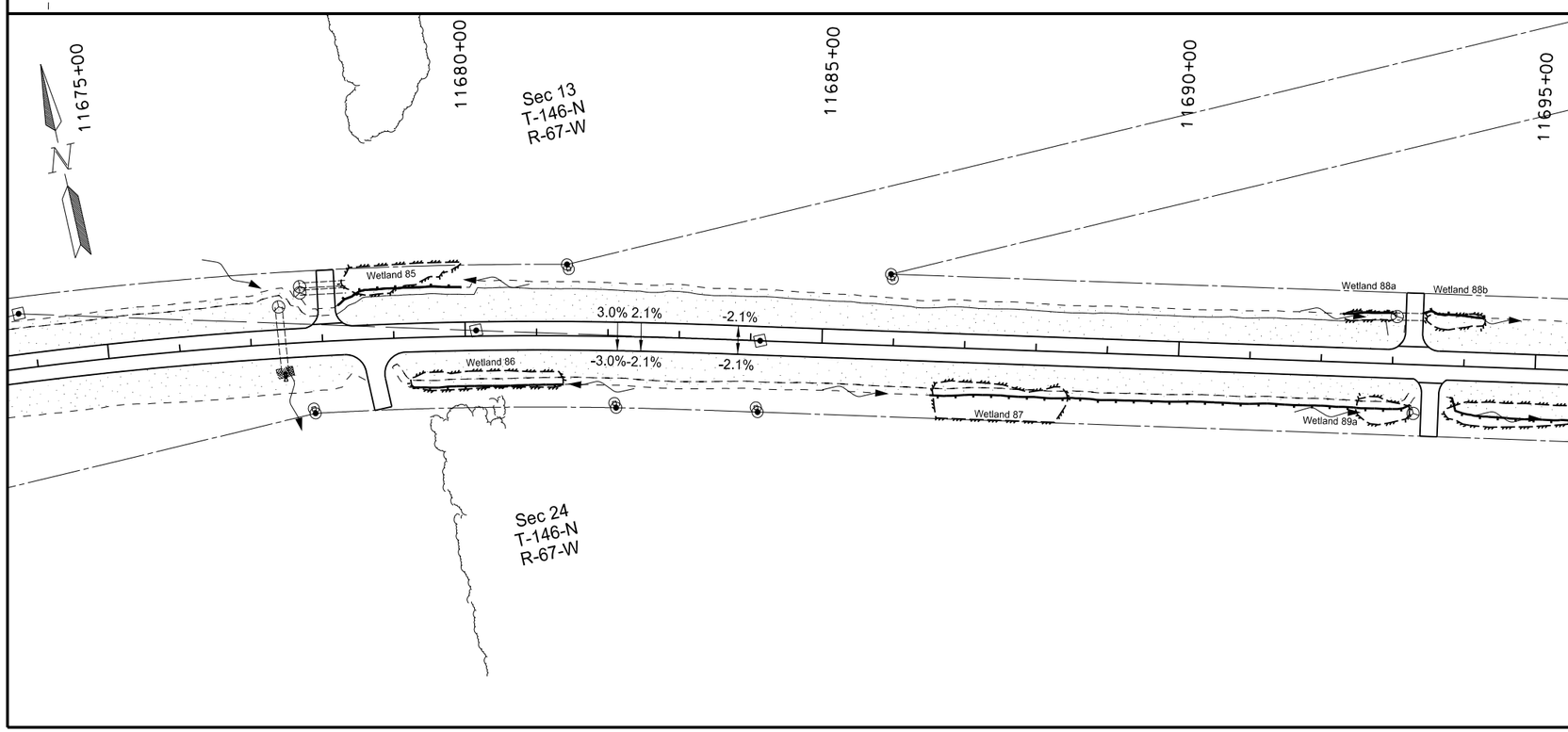
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	29





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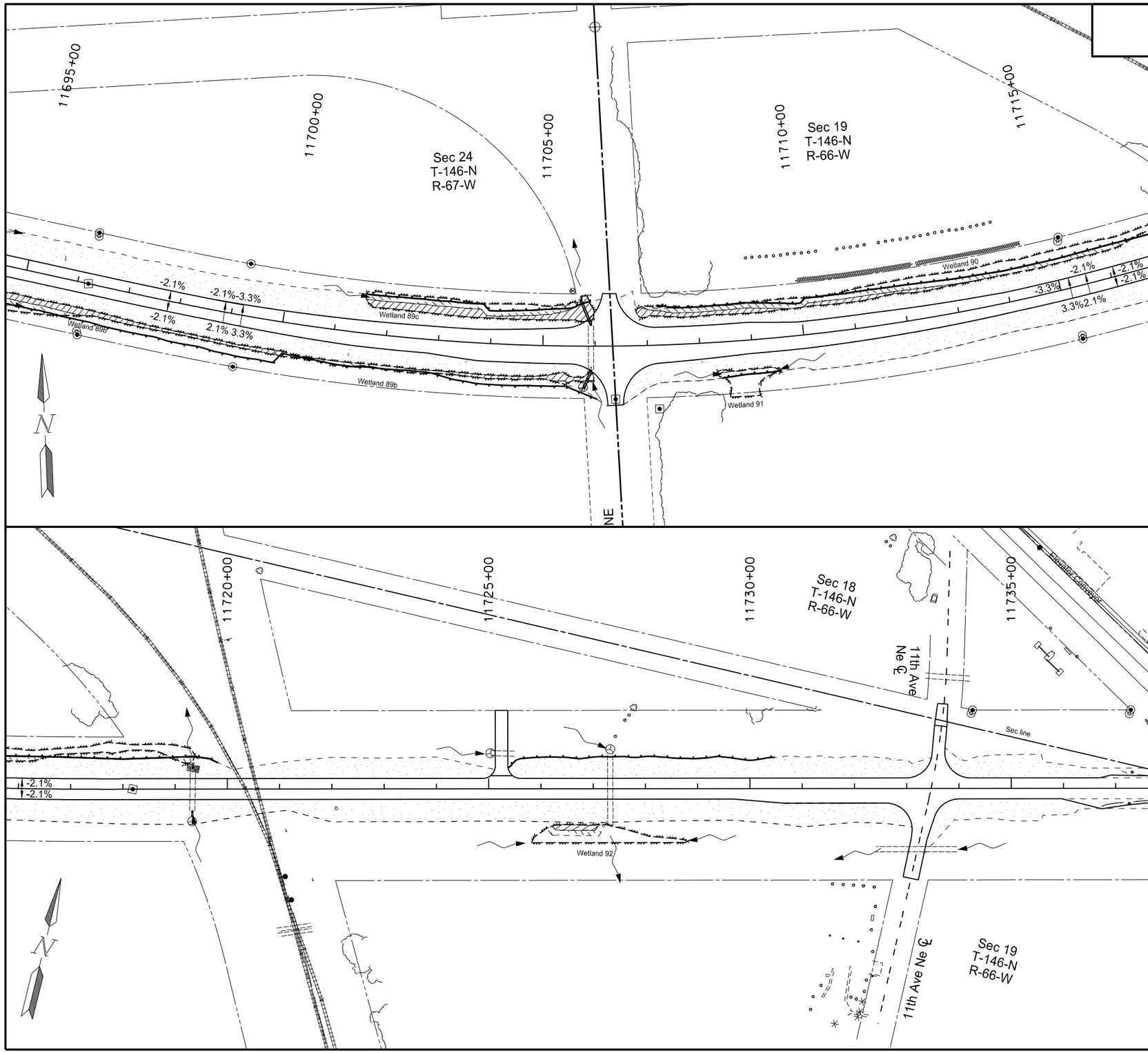
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	30



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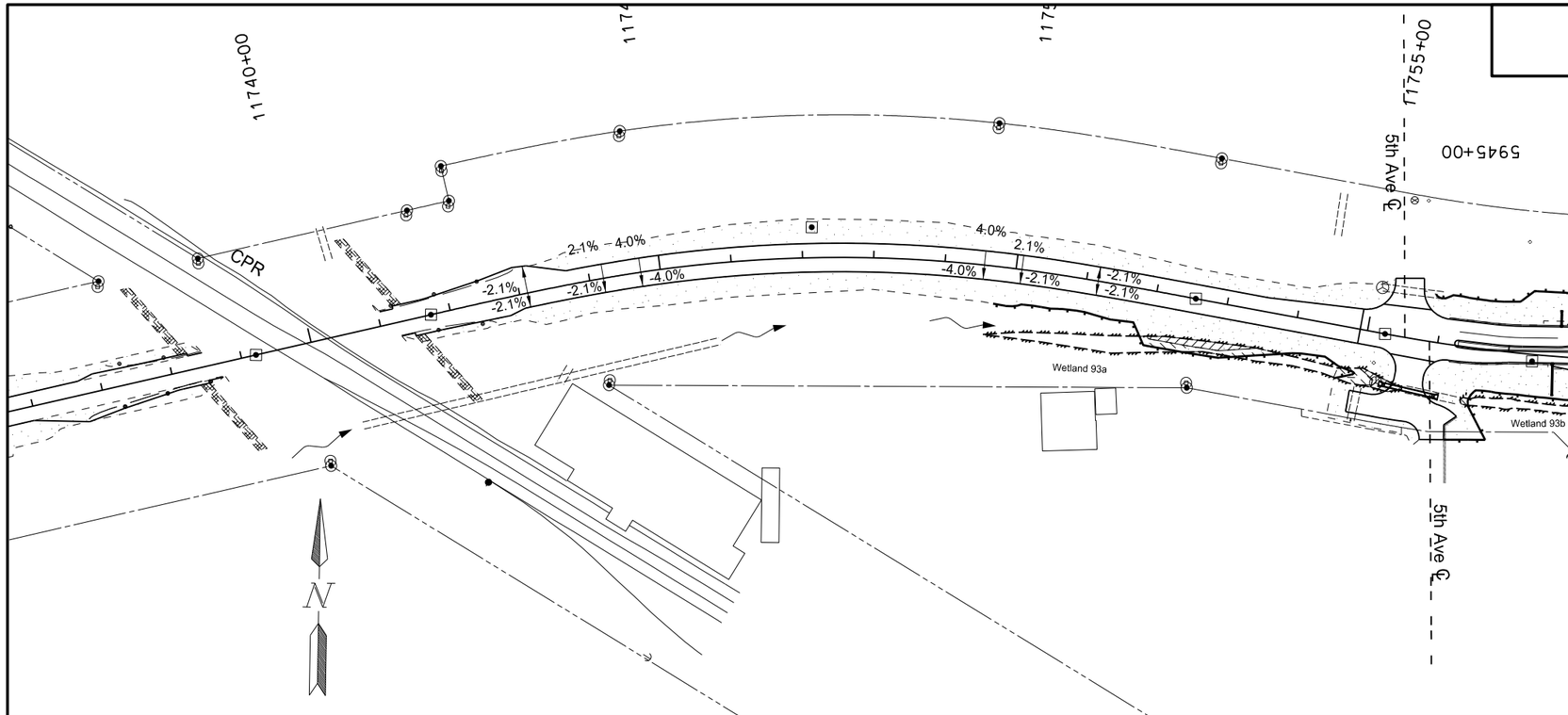
ND	CPU-SNH-3-052(042)198	77	31



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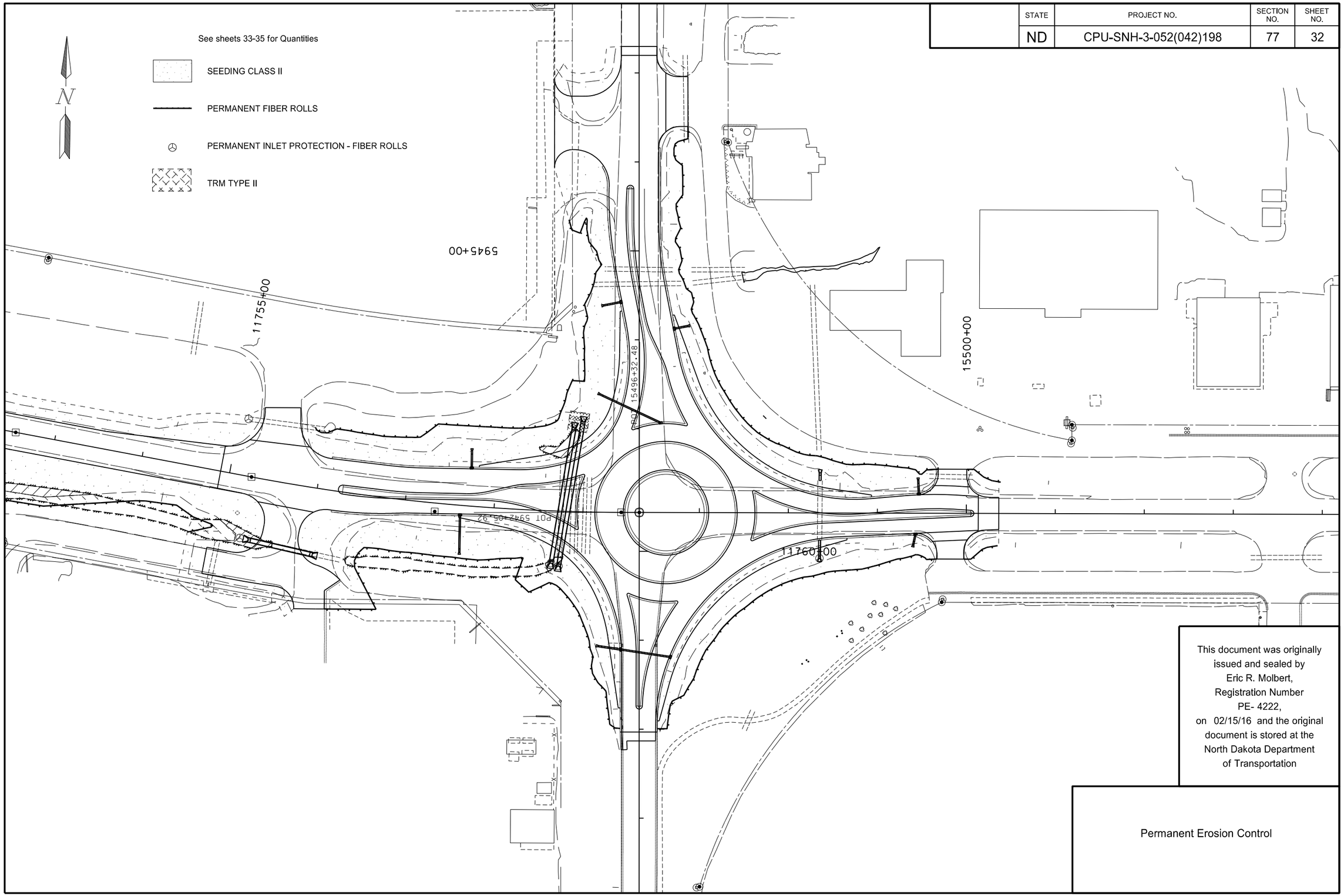
Permanent Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	32



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Permanent Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	33

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
10492+45 to 10497+49		512
10507+07	30	
10511+51 to 10516+38		500
10512+50 to 10521+71	930	
10517+23 to 10526+50		1030
10521+98	30	
10522+15	30	
10522+34 to 10526+50	439	
10525+75 to 10526+50		76
10542+52 to 10544+71	232	
10543+60 to 10544+53		94
10544+57	30	
10544+63		30
10545+17 to 10560+62	1565	
10545+57 to 10564+01		1845
10556+43		30
10556+43		
10562+49 to 10567+92	576	
10564+01 to 10571+10		722
10568+22 to 10568+79	75	
10568+48		30
10568+79 to 10571+17	260	
10571+49		30
10571+42 to 10572+50	116	
10571+61 to 10572+60		103
10580+41 to 10580+86	45	
10580+53		
10580+54		30
10585+59	30	
10596+42 to 10597+29	89	
10597+37	30	
10597+42		30
10598+24 to 10599+19	99	
10600+50 to 10612+50		1208
10604+00	30	
10604+14	30	
10604+28	30	
10604+42	30	
10604+50 to 10612+24	774	
10612+95	30	
10614+96		30
10624+21		30
10625+27		30
10625+30		
10626+87	30	
10633+99		30
10639+49 to 10645+36		733

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
10643+05	30	
10643+34 to 10650+48	734	
10645+37		30
10645+84 to 10650+39		574
10650+84 to 10653+49		269
10651+45	30	
10665+40	30	
10665+49	30	
10665+84 to 10690+32		2484
10682+59 to 10682+84	27	
10690+14	30	
10690+15		
10694+62 to 10701+62		709
10697+90 to 10703+30		
10698+00	30	
10698+21	30	
10698+52 to 10701+51	300	
10701+62 to 10703+49		199
10701+51 to 10703+30	179	
10703+83 to 10715+50		1174
10703+89 to 10712+51	874	
10709+15	30	
10724+48	30	
10728+81 to 10729+83		131
10732+62 to 10744+26	1177	
10733+00 to 10734+39		140
10734+09		30
10738+38 to 10739+88		149
10744+61	30	
10751+49	30	
10751+52		30
10756+06		30
10756+07		
10756+28	30	
10762+49 to 10767+40	490	
10764+25		
10764+28		30
10768+24	30	
10768+26		30
10781+87	30	
10781+89		30
10795+88 to 10796+50	62	
10796+00 to 10801+38		526
10796+12		30
10796+18		
10796+28		30
10796+38 to 10801+38		501
10796+28		30

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
10804+14 to 10808+47		435
10804+25 to 10808+21	397	
10808+87	30	
10808+93		30
10808+72 to 10813+00		432
10831+87 to 10832+58		76
10832+55	30	
10832+55		30
10832+82 to 10841+00		833
10833+05 to 10836+50	350	
10835+16		30
10835+18		
10849+55 to 10850+98	143	
10850+84		30
10850+87		
10857+38 to 10859+00		162
10857+75 to 10859+15	158	
10861+50		30
10861+97	30	
10873+55		30
10873+56	30	
10876+50 to 10878+62		213
10877+50 to 10883+50	602	
10878+62 to 10879+75		139
10879+37	30	
10879+38		
10889+05	30	
10889+05		30
10902+75 to 10904+22	150	
10903+75 to 10904+25		50
10905+50 to 10908+50	300	
10907+40		
10907+42		30
10908+13 to 10911+75		362
10920+02		30
10920+08	30	
10925+26 to 10932+75		751
10925+38 to 10930+00	461	
10929+16		
10929+17		30
10934+88	30	
10935+05		30
10940+75		30
10940+78	30	
10957+77		30
10957+81	30	
10964+34 to 10965+00	63	
10965+00	30	

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Permanent Erosion Control

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ND	CPU-SNH-3-052(042)198	77	34

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
10965+02		
10967+40		30
10967+41	30	
10980+83		30
10983+07	30	
10983+50 to 10988+67		527
10989+11 to 11010+11		2189
10989+74 to 10995+59	593	
10983+50 to 11009+84		2642
11001+76 to 11008+51	686	
11007+73	30	
11007+93	30	
11008+18	30	
11008+51 to 11011+50	299	
11010+51		30
11017+12 to 11019+76	265	
11019+00 to 11020+30		138
11020+57 to 11022+38		188
11021+21		
11021+22	30	
11021+22		30
11025+95	30	
11028+09		30
11028+11		
11030+59 to 11032+06	142	
11031+75 to 11033+77		165
11033+96 to 11034+65		72
11034+08		30
11034+08 to 11041+98	793	
11036+91 to 11040+12		321
11045+04 to 11048+60	428	
11046+00 to 11047+50		150
11049+40 to 11052+81	341	
11050+68		30
11052+62 to 11054+74		213
11052+81 to 11053+46	66	
11053+17		
11053+17	30	
11053+45 to 11055+78	235	
11057+08		
11057+09		30
11060+00 to 11060+75	15	
11064+69 to 11065+56		101
11071+50 to 11072+68		119
11073+45 to 11076+87		350
11074+20 to 11076+48	232	
11076+54	30	
11077+40 to 11098+03	2067	

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
11080+00 to 11085+77		585
11081+12		30
11081+14		
11086+16		30
11098+51		30
11099+25 to 11109+75	1050	
11107+00 to 11110+00		300
11108+25	30	
11108+26		
11112+41 to 11113+22	82	
11119+30 to 11122+00		270
11119+35 to 11124+50	524	
11120+65	30	
11125+03	30	
11125+10		30
11125+07 to 11126+50	145	
11131+50 to 11133+49		200
11132+15	30	
11132+17		
11133+23 to 11136+24	300	
11150+71	30	
11159+62	30	
11161+00 to 11162+25		124
11161+31 to 11162+01	70	
11166+50 to 11171+57	508	
11167+18 to 11173+97		688
11167+75		
11167+80	30	
11178+00	30	
11178+12		30
11185+00 to 11186+01		102
11189+50 to 11192+25		276
11201+18		
11201+19		30
11204+24	30	
11204+26		30
11204+17 to 11208+50	434	
11205+50 to 11210+50		501
11207+18	30	
11207+19		
11210+50 to 11212+02		152
11218+50 to 11225+46	699	
11223+50 to 11228+59		491
11225+46 to 11230+16	483	
11228+19		30
11228+19		
11230+30		30
11230+65 to 11236+63		605

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
11230+79	30	
11242+39 to 11245+49		312
11246+18		
11256+16		30
11257+22	30	
11263+49	30	
11268+86	30	
11271+46		30
11281+15 to 11283+32	226	
11283+19	30	
11283+23		30
11283+55 to 11289+45	633	
11283+58 to 11289+40		590
11285+42	30	
11285+53		
11285+60	30	
11289+75	30	
11289+70 to 11296+80	733	
11289+65 to 11293+48		394
11296+73		30
11297+12	30	
11309+83		30
11329+50 to 11335+00	552	
11336+24		30
11336+31	30	
11349+15		30
11345+50 to 11353+50	810	
11350+65	30	
11351+63		
11350+88	30	
11351+09	30	
11350+71 to 11368+77		1834
11363+32	30	
11367+23	30	
11369+16		30
11369+50 to 11377+00	753	
11374+50 to 11376+63		214
11376+18		30
11376+19		
11379+41	30	
11379+40 to 11381+51	212	
11379+41 to 11384+32		488
11389+58	30	
11389+62		30
11396+80		30
11403+50 to 11409+92	643	
11407+08 to 11408+58		374
11408+79 to 11409+77		316

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Permanent Erosion Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	77	35

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
11409+34		30
11411+97 to 11414+64		371
11412+47 to 11418+40	666	
11414+64 to 11415+50		
11415+50 to 11416+49		102
11418+62 to 11419+13		88
11419+13 to 11420+49	141	
11428+68		30
11432+49 to 11436+39	397	
11433+77 to 11434+48		71
11434+30		30
11439+51 to 11440+93		155
11441+17 to 11443+28		228
11441+62 to 11443+97	250	
11443+11		
11443+29 to 11453+54		1036
11450+92 to 11452+72	194	
11458+42	30	
11458+48 to 11467+95	949	
11462+51 to 11466+50		400
11467+69		30
11474+05 to 11481+51	748	
11477+03 to 11478+02		99
11478+40	30	
11491+97 to 11493+65	169	
11492+31 to 11493+58		127
11494+40	30	
11494+50 to 11512+64	1816	
11494+51 to 11511+89		1740
11505+43	30	
11524+23 to 11527+81		358
11525+23 to 11531+04	582	
11525+32		
11525+33		
11533+87	30	
11533+88		30
11541+48 to 11542+50		103
11546+55		30
11549+50 to 11559+11		963
11556+04	30	
11559+11 to 11561+81		270
11559+89 to 11562+69	293	
11561+32	30	
11564+93 to 11565+56		63
11570+65 to 11575+58	522	
11571+28 to 11573+51		226
11573+34		30
11573+95 to 11577+06		326
11577+06 to 11579+30		259

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
11579+35		30
11579+75 to 11582+43	271	
11579+94 to 11579+93		61
11598+77 to 11599+53	77	
11599+13		30
11604+97 to 11612+06		745
11606+75 to 11612+04	564	
11609+18		30
11609+24		
11612+01	30	
11612+36 to 11613+24	102	
11612+39		30
11626+00	30	
11626+06		30
11627+00 to 11635+54		861
11632+72 to 11634+71	200	
11634+36		
11634+39	30	
11639+51 to 11640+44		93
11644+97 to 11646+09		141
11652+29		30
11652+47	30	
11653+06	30	
11677+42	30	
11677+72	30	
11677+72	30	
11678+23 to 11679+96	180	
11679+24 to 11681+39		212
11686+53 to 11692+48		595
11692+48 to 11693+26		79
11692+28 to 11692+97	69	
11693+04	30	
11693+31		30
11693+41 to 11694+27	89	
11693+82 to 11706+04		1270
11701+53 to 11705+92	438	
11705+77		30
11707+19 to 11719+82	1252	
11708+39 to 11709+51		114
11719+32		30
11725+03	30	
11725+37 to 11730+48	520	
11727+34	30	
11738+26		
11738+47		
11741+28		
11741+53		
11749+74 to 11754+66		568
11755+01		30

Permanent Erosion Control	12" Fiber Rolls (LF)	
Stationing	LT	RT
11755+25		30
11755+10	30	
11756+44 to 11760+84		341
11755+09	30	
11755+21		30
11755+87 to 11758+73	578	
5942+06		30
11756+27 to 11761+99	587	
15496+53 to 15499+66		409
15500+00 to 15500+36		43
15500+39 to 15500+02	34	
15499+68 to 15496+86	606	
15496+32		30
Subtotal	**41,770**	**48,100**
Engineers Discretion (5%)		**4,494**
Total		**94,364**

	Qty
SEEDING CLASS II	270 ACRE
STRAW MULCH	270 ACRE
TRM TYPE II	1644 SY
FIBER ROLLS 12 IN	94,364 LF

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Permanent Erosion Control

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - US 52 - WELLS COUNTY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
EX52			
Sec Cor	10439+39.38	173477.11	2184161.95
Sec Cor	10492+25.76	168191.33	2184241.45
Sec Cor	10544+94.50	168255.63	2189509.80
Sec Cor	10597+75.83	168323.82	2194790.68
Sec Cor	10650+63.61	168358.47	2200078.35
Sec Cor	10703+66.80	168400.95	2205381.37
Sec Cor	10756+56.04	168478.90	2210670.03
Qtr Cor	10782+09.32	168515.89	2213223.05
Sec Cor	10808+57.88	168563.41	2215871.18
Qtr Cor	10835+15.12	168601.45	2218528.15
Sec Cor	10861+68.54	168626.49	2221181.45
Sec Cor	10914+54.72	168688.23	2226467.27
Qtr Cor	10940+96.10	168725.66	2229108.38
Sec Cor	10967+65.85	168754.50	2231777.98
Station Equation	11020+43.09 (BK) = 11020+41.60 (AHD)		
Sec Cor	11020+41.60	168796.66	2237055.05
Qtr Cor	11047+01.53	168789.70	2239714.98
PC	11057+48.23	168784.95	2240761.66
PI C125	11060+36.26	168783.64	2241049.69
PT	11063+24.26	168775.10	2241337.60
PC	11064+56.14	168771.19	2241469.42
PI C128	11068+36.90	168759.89	2241850.01
PT	11072+17.38	168773.89	2242230.51
Sec Cor	11124+76.13	168967.16	2247485.71
Sec Cor	11177+68.86	169060.13	2252777.62
PC	11226+85.69	169142.74	2257693.75
PI C136	11230+53.23	169148.91	2258061.25
PT	11234+20.71	169166.87	2258428.35
PC	11235+64.83	169173.91	2258572.30
PI C402	11239+01.88	169190.38	2258908.94
PT	11242+38.73	169187.03	2259245.97

CURVE DATA

ARC DEFINITION

C125	C403
PI STA = 11060+36.26	PI STA = 11247+52.92
Delta = 1° 26' 24" RT	Delta = 1° 40' 56" LT
D_0 = 0° 15' 00"	D_0 = 0° 15' 00"
R = 22918.30'	R = 22918.30'
T = 288.03'	T = 336.47'
L = 576.04'	L = 672.89'

C128
PI STA = 11068+36.90
Delta = 3° 48' 22" LT
D_0 = 0° 30' 00"
R = 11,459.20'
T = 380.76'
L = 761.24'

C136
PI STA = 11230+53.23
Delta = 1° 50' 15" LT
D_0 = 0° 15' 00"
R = 22918.30'
T = 367.54'
L = 735.02'

C402
PI STA = 11239+01.88
Delta = 3° 22' 10" RT
D_0 = 0° 30' 00"
R = 11459.20'
T = 337.05'
L = 673.90'

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
NW Cor Sec	19 T-146-N R-70-W	168146.02	2179025.12
NE Cor Sec	18 T-146-N R-70-W	173477.11	2184161.95
NE Cor Sec	19 T-146-N R-70-W	168191.33	2184241.45
NE Cor Sec	30 T-146-N R-70-W	162910.51	2184316.71
SE Cor Sec	17 T-146-N R-70-W	168255.63	2189509.80
SE Cor Sec	20 T-146-N R-70-W	162968.10	2189581.69
NE Cor Sec	17 T-146-N R-70-W	173560.55	2189433.26
SE Cor Sec	16 T-146-N R-70-W	168323.82	2194790.68
SE Cor Sec	21 T-146-N R-70-W	163032.45	2194865.09
NE Cor Sec	16 T-146-N R-70-W	173610.02	2194718.57
SE Cor Sec	15 T-146-N R-70-W	168358.47	2200078.35
NE Cor Sec	27 T-146-N R-70-W	163075.69	2200160.89
NE Cor Sec	15 T-146-N R-70-W	173641.22	2200013.23
SE Cor Sec	14 T-146-N R-70-W	168400.95	2205381.37
NE Cor Sec	26 T-146-N R-70-W	163124.78	2205451.05
NE Cor Sec	14 T-146-N R-70-W	173659.50	2205307.94
SE Cor Sec	13 T-146-N R-70-W	168478.90	2210670.03
NE Cor Sec	25 T-146-N R-70-W	163193.07	2210744.42
NE Cor Sec	13 T-146-N R-70-W	173773.01	2210597.57
S 1/4 Cor Sec	18 T-146-N R-69-W	168515.89	2213223.05
SE Cor Sec	18 T-146-N R-69-W	168563.41	2215871.18
NE Cor Sec	30 T-146-N R-69-W	163277.93	2215984.69
NE Cor Sec	18 T-146-N R-69-W	173855.11	2215810.80
S 1/4 Cor Sec	17 T-146-N R-69-W	168601.45	2218528.15
SE Cor Sec	17 T-146-N R-69-W	168626.49	2221181.45
SE Cor Sec	20 T-146-N R-69-W	163335.01	2221292.80
NE Cor Sec	17 T-146-N R-69-W	173908.50	2221094.57
SE Cor Sec	16 T-146-N R-69-W	168688.23	2226467.27
SE Cor Sec	21 T-146-N R-69-W	163397.61	2226572.03
NE Cor Sec	16 T-146-N R-69-W	173985.74	2226391.29
S 1/4 Cor Sec	15 T-146-N R-69-W	168725.66	2229108.38
SE Cor Sec	15 T-146-N R-69-W	168754.50	2231777.98

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	CONTROL POINT DESCRIPTION
GPS 1	168386.28	2192165.22	1745.95	10571+51.39	96.36' LT	5/8" Rebar w/Alum cap stamped - 52*200.2
GPS 2	168517.02	2207429.64	1713.43	10724+16.56	85.86' LT	5/8" Rebar w/Alum cap stamped - 52*203.1
GPS 3	168758.59	2223906.11	1675.24	10888+94.56	100.27' LT	5/8" Rebar w/Alum cap stamped - 52*206.3
GPS 4	168884.09	2239716.70	1632.15	11047+02.26	87.41' LT	5/8" Rebar w/Alum cap stamped - 52*209.2
GPS 5	169008.71	2255506.46	1614.91	11204+96.50	97.25' RT	5/8" Rebar w/Alum cap stamped - 52*212.2
GPS 6	169428.98	2271277.70	1595.46	11362+71.94	90.37' LT	5/8" Rebar w/Alum cap stamped - 52*215.2

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

- [x] NAVD-88
- [ ] NGVD-29
- [ ] GEOID 09
- [ ] _____
- [x] GEOID 12A

NOTES:

Date Survey Completed 4/01/15

- [ ] Assumed Coordinates
- [x] All coordinates on this sheet are Wells County ground coordinates. They are derived from the "North Dakota Coordinate System of 1983", NAD83(2011).North Zone Combination Factor (cf) = 0.9998895

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA - US 52 - WELLS COUNTY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	81	2

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
PC	11244+16.45	169185.26	2259423.68
PI C403	11247+52.92	169181.92	2259760.14
PT	11250+89.35	169188.46	2260096.55
Sec Cor	11283+47.62	169251.74	2263354.21
Qtr Cor	11310+03.41	169295.74	2266009.64
Sec Cor	11336+53.23	169334.95	2268659.17
PC	11385+48.95	169341.80	2273554.88
PI C152	11389+31.27	169342.34	2273937.19
PT	11393+13.51	169355.62	2274319.27
Sec Cor	11441+11.10	169522.35	2279113.96
EX200			
P.I.	14128+70.03	168146.02	2179025.12
Sec Cor	14180+86.56	168191.33	2184241.45
EX30			
Sec Cor	4661+39.52	168796.66	2237055.05
Sec Cor	4714+30.36	174087.02	2236984.74

CURVE DATA

ARC DEFINITION

C152

PI STA = 11389+31.27

Delta = 1° 54' 41" LT

D_0 = 0° 15' 00"

R = 22918.33'

T = 382.31'

L = 764.55'

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
SE Cor Sec	22 T-146-N R-69-W	163470.57	2231849.79
NE Cor Sec	15 T-146-N R-69-W	174050.20	2231693.48
SE Cor Sec	14 T-146-N R-69-W	168796.66	2237055.05
NE Cor Sec	26 T-146-N R-69-W	163514.30	2237143.74
NE Cor Sec	14 T-146-N R-69-W	174087.02	2236984.74
S 1/4 Cor Sec	13 T-146-N R-69-W	168789.70	2239714.98
SE Cor Sec	13 T-146-N R-69-W	168777.80	2242337.08
NE Cor Sec	25 T-146-N R-69-W	163523.73	2242411.73
NE Cor Sec	13 T-146-N R-69-W	174038.32	2242268.57
SE Cor Sec	18 T-146-N R-68-W	168967.16	2247485.71
SE Cor Sec	19 T-146-N R-68-W	163687.77	2247568.10
NE Cor Sec	18 T-146-N R-68-W	174259.23	2247408.35
SE Cor Sec	17 T-146-N R-68-W	169060.13	2252777.62
SE Cor Sec	20 T-146-N R-68-W	163779.98	2252851.48
NE Cor Sec	17 T-146-N R-68-W	174349.12	2252688.53
SE Cor Sec	16 T-146-N R-68-W	169148.91	2258061.25
NE Cor Sec	28 T-146-N R-68-W	163870.14	2258138.85
NE Cor Sec	16 T-146-N R-68-W	174440.35	2257972.55
SE Cor Sec	15 T-146-N R-68-W	169251.74	2263354.21
NE Cor Sec	27 T-146-N R-68-W	163966.84	2263442.78
NE Cor Sec	15 T-146-N R-68-W	174540.35	2263270.94
S 1/4 Cor Sec	14 T-146-N R-68-W	169295.74	2266009.64
SE Cor Sec	14 T-146-N R-68-W	169334.95	2268659.17
SE Cor Sec	23 T-146-N R-68-W	164042.37	2268748.25
NE Cor Sec	14 T-146-N R-68-W	174623.28	2268573.59
SE Cor Sec	13 T-146-N R-68-W	169342.34	2273937.19
NE Cor Sec	25 T-146-N R-68-W	164097.97	2274027.48
NE Cor Sec	13 T-146-N R-68-W	174589.69	2273867.61

REFERENCE MARKERS

R Mkr #	NORTHING	EASTING	STATION	OFFSET
199	168165.93	2185533.72	10505+18	41' RT
200	168233.94	2190827.61	10558+12	39' RT
201	168295.57	2196158.10	10611+43	37' RT
202	168329.41	2201478.83	10664+64	40' RT
203	168383.56	2206747.93	10717+33	38' RT
204	168458.84	2212061.38	10770+47	40' RT
205	168544.81	2217326.09	10823+12	39' RT
206	168603.60	2222609.46	10875+96	40' RT
207	168670.37	2227919.22	10929+06	38' RT
208	168727.26	2233196.18	10981+84	38' RT
209	168755.72	2238471.70	11034+58	37' RT
210	168793.62	2243757.43	11087+44	36' RT
211	168956.49	2249047.47	11140+37	38' RT
212	169050.91	2254353.14	11193+44	36' RT
213	169148.31	2259617.33	11246+10	36' RT
214	169232.46	2264886.64	11298+80	45' RT
215	169300.68	2270195.42	11351+89	36' RT

All coordinates and measurements on this document derived from the International Foot definition.

NOTES:

Date Survey Completed 04/01/15

☐ Assumed Coordinates

☒ All coordinates on this sheet are Wells County ground coordinates. They are derived from the "North Dakota Coordinate System of 1983", NAD83(2011).North Zone Combination Factor (cf) = 0.9998895

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID 09 ☐ _____
☒ GEOID 12A

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA - US 52 - FOSTER COUNTY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	81	3

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
EX52			
Sec Cor	11336+53.40	169329.70	2268588.83
PC	11385+48.96	169336.55	2273484.39
PI C152	11389+31.27	169337.09	2273866.70
PT	11393+13.51	169350.37	2274248.77
PC	11437+63.38	169505.02	2278695.96
PI C158	11441+10.94	169517.10	2279043.31
PT	11444+58.46	169522.15	2279390.82
Sec Cor	11494+08.64	169594.13	2284340.48
PC	11545+36.37	169628.21	2289468.09
PI C49	11546+96.67	169629.28	2289628.39
PT	11548+56.97	169628.10	2289788.69
PC	11552+50.55	169625.21	2290182.26
PI C404	11554+46.33	169623.77	2290378.03
PT	11556+42.09	169625.68	2290573.79
PC	11579+82.26	169648.48	2292913.85
PI C405	11581+97.08	169650.57	2293128.66
PT	11584+11.89	169656.69	2293343.39
PC	11587+88.42	169667.41	2293719.77
PI C177	11589+97.40	169673.37	2293928.67
PT	11592+06.36	169675.51	2294137.63
Sec Cor	11599+77.08	169683.41	2294908.31
PC	11636+32.34	169725.17	2298563.33
PI C406	11641+33.89	169730.90	2299064.84
PT	11646+35.14	169765.86	2299565.17
TS	11663+50.72	169885.45	2301276.57
SC	11665+50.72	169898.24	2301476.16
PI SCS407	11673+90.41	169957.93	2302313.73
CS	11682+13.42	169744.72	2303125.91
ST	11684+13.42	169695.34	2303319.71

CURVE DATA

ARC DEFINITION

C152	C405
PI STA = 11389+31.27	PI STA = 11581+97.08
Delta = 1° 54' 41" LT	Delta = 1° 04' 27" LT
D_0 = 0° 15' 00"	D_0 = 0° 15' 00"
R = 22918.33'	R = 22918.30'
T = 382.31'	T = 214.82'
L = 764.55'	L = 429.63'

C158	C177
PI STA = 11441+10.94	PI STA = 11589+97.40
Delta = 1° 09' 30" RT	Delta = 1° 02' 41" RT
D_0 = 0° 10' 00"	D_0 = 0° 15' 00"
R = 34377.48'	R = 22918.30'
T = 347.55'	T = 208.98'
L = 695.08'	L = 417.94'

C49	C406
PI STA = 11546+96.67	PI STA = 11641+33.89
Delta = 0° 48' 05" RT	Delta = 3° 20' 34" LT
D_0 = 0° 15' 00"	D_0 = 0° 20' 00"
R = 22918.30'	R = 17188.80'
T = 160.30'	T = 501.54'
L = 320.60'	L = 1002.80'

C404	SCS407
PI STA = 11554+46.33	PI STA = 11673+90.41
Delta = 0° 58' 44" LT	Delta = 18° 37' 37" RT
D_0 = 0° 15' 00"	D_0 = 1° 00' 00"
R = 22918.30'	R = 5729.65'
T = 195.78'	L_s = 200.00'
L = 391.54'	S_c = 1° 00' 00"
	T_s = 1039.69'
	L = 1662.70'

NOTES:

Date Survey Completed 4/01/15

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
SE Cor Sec	13 T-146-N R-68-W	169337.09	2273866.70
NE Cor Sec	25 T-146-N R-68-W	164092.89	2273956.98
NE Cor Sec	13 T-146-N R-68-W	174584.28	2273797.11
SE Cor Sec	18 T-146-N R-67-W	169517.10	2279043.31
SE Cor Sec	19 T-146-N R-67-W	164228.12	2279134.29
NE Cor Sec	18 T-146-N R-67-W	174805.81	2278978.44
SE Cor Sec	17 T-146-N R-67-W	169594.13	2284340.48
SE Cor Sec	20 T-146-N R-67-W	164301.08	2284419.30
NE Cor Sec	17 T-146-N R-67-W	174882.47	2284265.99
SE Cor Sec	16 T-146-N R-67-W	169629.28	2289628.39
SE Cor Sec	21 T-146-N R-67-W	164344.39	2289711.49
NE Cor Sec	16 T-146-N R-67-W	174915.17	2289549.54
SE Cor Sec	15 T-146-N R-67-W	169683.41	2294908.31
NE Cor Sec	27 T-146-N R-67-W	164401.56	2294995.71
NE Cor Sec	15 T-146-N R-67-W	174965.95	2294832.13
S1/4 Cor Sec	14 T-146-N R-67-W	169713.68	2297557.19
SE Cor Sec	14 T-146-N R-67-W	169745.73	2300206.39
NE Cor Sec	26 T-146-N R-67-W	164461.71	2300288.25
NE Cor Sec	14 T-146-N R-67-W	175028.34	2300118.57
SE Cor Sec	13 T-146-N R-67-W	169842.66	2305476.00
NE Cor Sec	25 T-146-N R-67-W	164536.04	2305560.80
NE Cor Sec	13 T-146-N R-67-W	175087.07	2305390.05
SE Cor Sec	18 T-146-N R-66-W	169900.88	2310716.44
NE Cor Sec	30 T-146-N R-66-W	164613.36	2310811.38
NE Cor Sec	18 T-146-N R-66-W	175191.91	2310616.49
SE Cor Sec	17 T-146-N R-66-W	169983.72	2315987.11

☐ Assumed Coordinates

☒ All coordinates on this sheet are Foster County ground coordinates. They are derived from the "North Dakota Coordinate System of 1983", NAD83(2011).North Zone Combination Factor (cf) = .9999205

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
CONTROL POINT DESCRIPTION					
GPS 6	169423.73	2271207.28	1595.46	11362+71.97	90.37' LT
#5 Rebar w/Alum cap stamped - 52*215.2					
GPS 7	169706.98	2286641.89	1607.65	11517+10.74	97.56' LT
#5 Rebar w/Alum cap stamped - 52*218.1					
GPS 8	169371.07	2304223.27	1589.30	11693+69.49	85.55' RT
#5 Rebar w/Alum cap stamped - 52*221.4					

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID 09 ☐ _____
☒ GEOID 12A

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA - US 52 - FOSTER COUNTY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	81	4

HORIZONTAL ALIGNMENT

PNT		STATION	NORTHING	EASTING
TS		11696+20.63	169390.44	2304487.78
SC		11699+20.63	169318.48	2304779.00
PI	SCS408	11707+40.01	169107.72	2305570.87
CS		11715+18.85	169307.58	2306365.55
ST		11718+18.85	169375.54	2306657.73
TS		11741+72.40	169938.65	2308942.92
SC		11744+72.40	170002.76	2309235.91
PI	SCS199	11747+19.83	170069.63	2309474.45
CS		11749+55.35	170020.41	2309717.25
ST		11752+55.35	169977.93	2310014.14
PC		11755+25.02	169932.76	2310280.01
PI	C202	11757+34.56	169897.66	2310486.59
PT		11759+42.94	169900.60	2310696.11
Sec Cor		11759+63.28	169900.88	2310716.44
60 Station Equation		11759+63.28 BK = 11759+56.32 AH		
Sec Cor		11812+44.70	164613.36	2310811.38
EX281				
Sec Cor		5942+05.92	169900.88	2310716.44
Sec Cor		5994+97.89	175191.91	2310616.49
EX200				
Sec Cor		15496+32.48	169900.88	2310716.44
Sec Cor		15549+03.80	169983.72	2315987.11

CURVE DATA

ARC DEFINITION

SCS408

PI STA = 11707+40.01

Delta = 28° 28' 21" LT

D_0 = 1° 30' 00"

R = 3819.83'

L_s = 300.00'

S_c = 2° 15' 00'

T_s = 1119.38'

L = 1598.21'

SCS199

PI STA = 11747+19.83

Delta = 23° 29' 08" RT

D_0 = 2° 59' 59"

R =1910.08'

L_s = 300.00'

S_c = 4° 29' 58'

T_s = 547.43'

L = 482.95'

C202

PI STA = 11757+34.56

Delta = 10° 26' 50" LT

D_0 = 2° 29' 59"

R = 2292.01'

T = 209.54'

L = 417.92'

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING

REFERENCE MARKERS

R Mkr #	NORTHING	EASTING	STATION	OFFSET
215	169295.43	2270125.04	11351+90	36' RT
216	169353.53	2275447.65	11405+12	39' RT
217	169502.69	2280707.15	11457+74	39' RT
218	169560.20	2285983.54	11510+51	45' RT
219	169598.55	2291253.77	11563+22	34' RT
220	169665.92	2296568.16	11616+37	36' RT
221	169867.92	2301860.09	11669+35	37' RT
222	169432.71	2307044.71	11722+08	37' RT

NOTES:

Date Survey Completed 4/01/15

☐ Assumed Coordinates

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All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID 09 ☐ _____
☒ GEOID 12A

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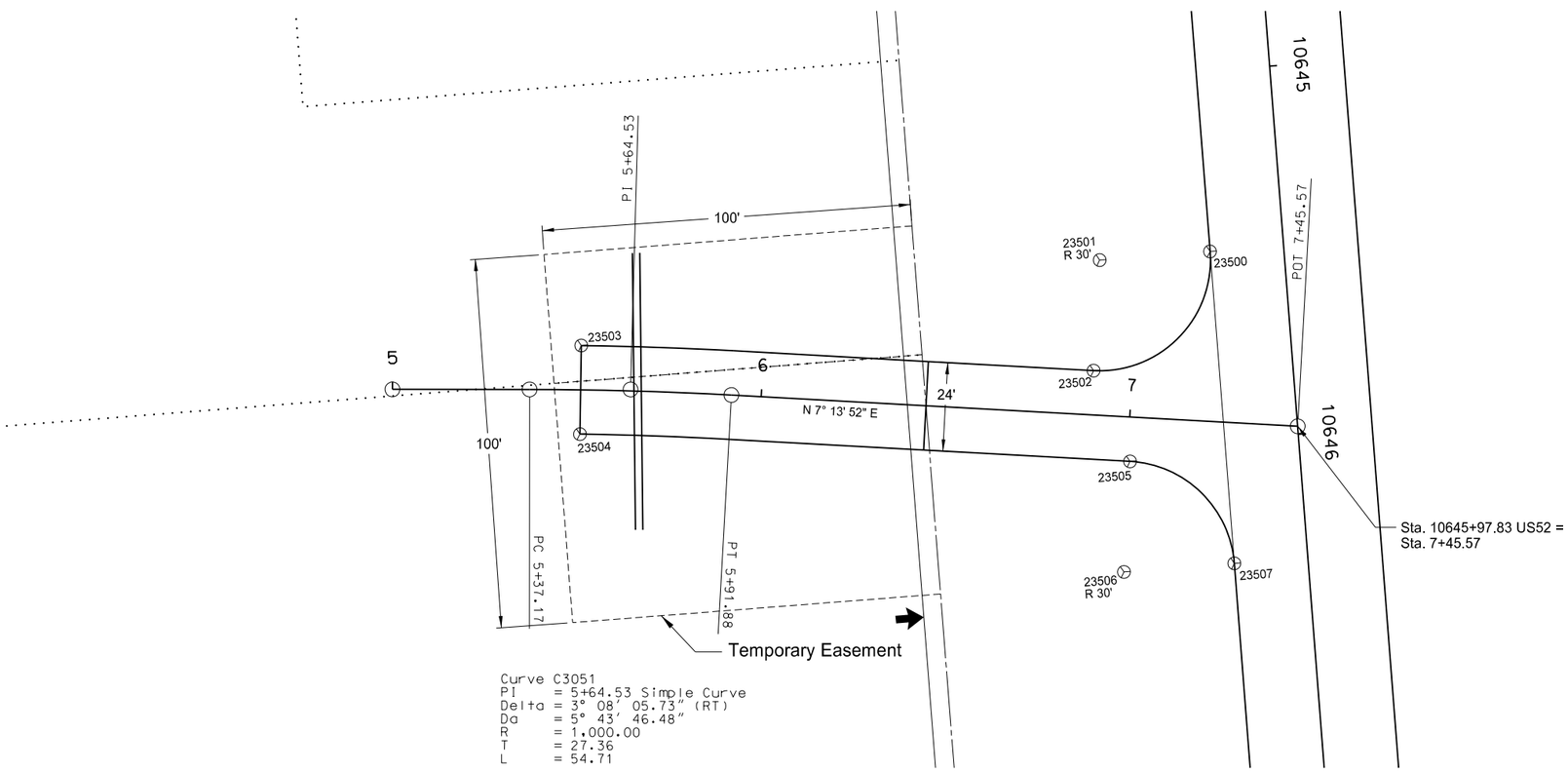
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	1



Describe Chain PRPD1 (Wells)

Chain PRPD1 contains:
3050 CUR C3051 3052

Beginning chain PRPD1 description
Description: Private Drive Sta 10645+87.83 Rt
==========

Point 3050 N 168,111.4378 E 2,199,585.1841 Sta 5+00.00

Course from 3050 to PC C3051 N 4° 05' 46.20" E Dist 37.1678

Curve Data
———

Curve C3051
P.I. Station 5+64.53 N 168,175.8049 E 2,199,589.7937
Delta = 3° 08' 05.73" (RT)
Degree = 5° 43' 46.48"
Tangent = 27.3642
Length = 54.7148
Radius = 1,000.0000
External = 0.3743
Long Chord = 54.7080
Mid. Ord. = 0.3742
P.C. Station 5+37.17 N 168,148.5106 E 2,199,587.8390
P.T. Station 5+91.88 N 168,202.9515 E 2,199,593.2380
C.C. N 168,077.0799 E 2,200,585.2846
Back = N 4° 05' 46.20" E
Ahead = N 7° 13' 51.94" E
Chord Bear = N 5° 39' 49.07" E

Course from PT C3051 to 3052 N 7° 13' 51.94" E Dist 153.6864

Point 3052 N 168,355.4156 E 2,199,612.5828 Sta 7+45.57

==========
Ending chain PRPD1 description

Point	North	East	Station	Offset
23500	168335.09	2199563.66	7+19.25	-45.97
23501	168305.10	2199563.86	6+89.52	-42.00
23502	168301.32	2199593.62	6+89.52	-12.00
23503	168163.32	2199576.97	5+51.00	-12.00
23504	168161.28	2199600.88	5+51.00	12.00
23505	168309.43	2199618.84	7+00.73	12.00
23506	168305.66	2199648.61	7+00.73	42.00
23507	168335.65	2199648.41	7+30.47	38.03

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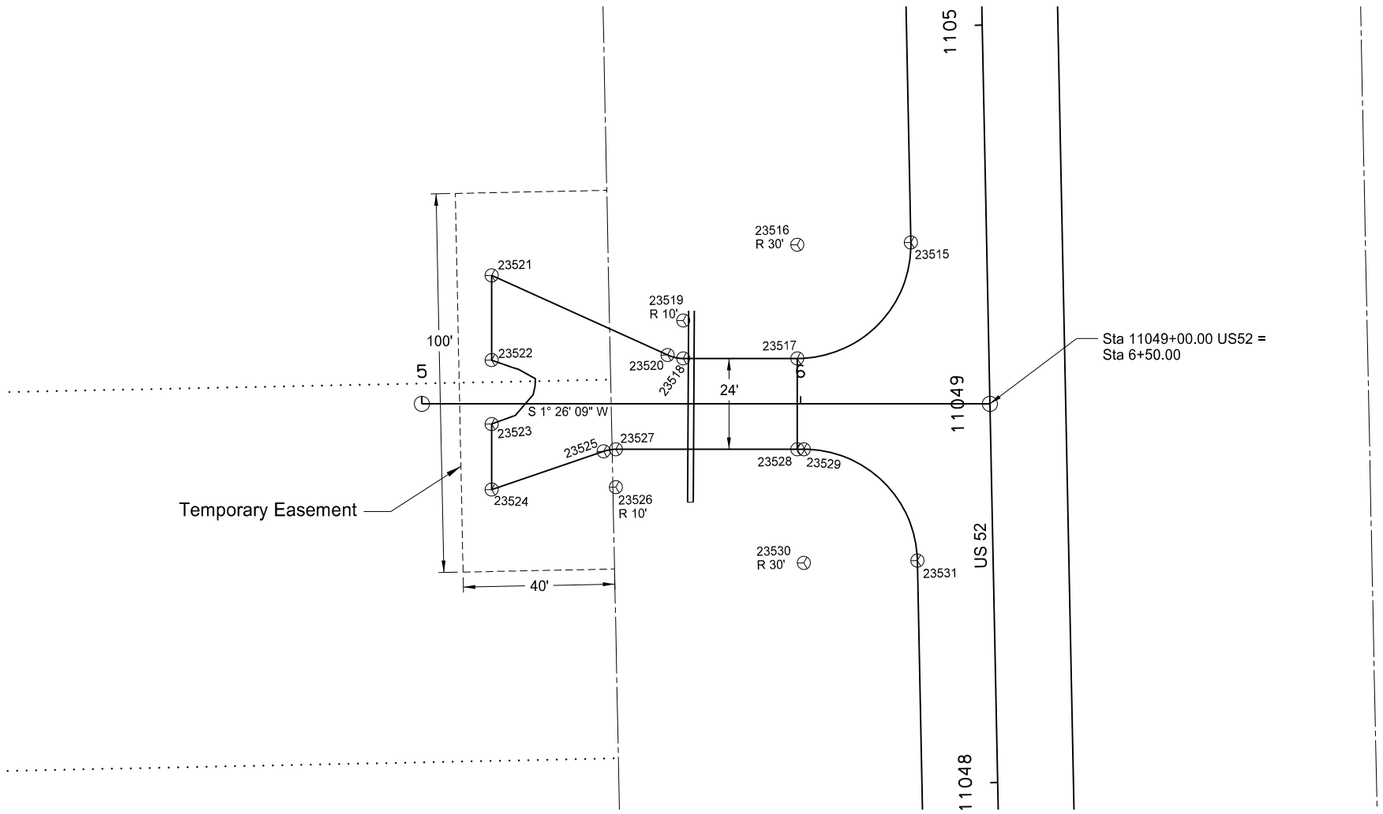
Survey Data Layout
Special Approach
Sta. 10645+98 Rt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	2



Describe Chain PRPD2 (Wells)

Chain PRPD2 contains:
3055 3056

Beginning chain PRPD2 description
Description: Private Drive Sta 11049+00.00 Lt
==========

Point 3055 N 168,938.7489 E 2,239,917.1994 Sta 5+00.00

Course from 3055 to 3056 S 1° 26' 08.80" W Dist 150.0000

Point 3056 N 168,788.7960 E 2,239,913.4410 Sta 6+50.00

==========
Ending chain PRPD2 description

Point	North	East	Station	Offset
23515	168808.60	2239956.57	6+29.12	-42.62
23516	168838.60	2239956.70	5+99.13	-42.00
23517	168839.35	2239926.71	5+99.13	-12.00
23518	168869.45	2239927.47	5+69.01	-12.00
23519	168869.21	2239937.46	5+69.01	-22.00
23520	168873.56	2239928.46	5+64.89	-12.89
23521	168919.47	2239950.65	5+18.43	-33.92
23522	168920.04	2239928.29	5+18.43	-11.55
23523	168920.46	2239911.41	5+18.43	5.33
23524	168920.89	2239894.12	5+18.43	22.62
23525	168891.08	2239903.47	5+47.99	12.54
23526	168888.09	2239893.92	5+51.22	22.00
23527	168887.84	2239903.92	5+51.22	12.00
23528	168839.95	2239902.72	5+99.13	12.00
23529	168838.23	2239902.68	6+00.85	12.00
23530	168838.98	2239872.69	6+00.85	42.00
23531	168808.98	2239872.55	6+30.85	41.38

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Survey Data Layout
Special Approach
Sta. 11049+00 Lt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	3

Point	North	East	Station	Offset
23000	169374.88	2275841.53	8+20.87	19.94
23001	169356.55	2275865.29	8+00.55	42.00
23002	169353.94	2275835.40	8+00.55	12.00
23003	169193.28	2275849.46	6+39.28	12.00
23004	169177.59	2275670.14	5+25.00	-167.99
23005	169085.40	2275824.74	5+34.29	12.01
23006	169093.69	2275803.54	5+30.29	-10.41
23007	169180.41	2275645.80	5+13.73	-189.75
23008	169193.35	2275825.34	6+41.46	-12.02
23009	169191.20	2275795.41	6+41.91	-42.01
23010	169198.61	2275824.48	6+46.76	-12.41
23011	169218.33	2275819.46	6+66.85	-15.70
23012	169236.86	2275892.13	6+78.97	58.31
23013	169249.68	2275818.24	6+98.19	-14.18
23014	169253.40	2275818.88	7+01.84	-13.22
23015	169259.33	2275789.47	7+10.30	-42.00
23016	169261.94	2275819.36	7+10.30	-12.00
23017	169354.67	2275811.24	8+03.39	-12.00
23018	169353.63	2275781.22	8+04.97	-42.00
23019	169383.61	2275780.18	8+34.93	-40.42

Describe Chain PRPD1 (Foster)

Chain PRPD1 contains:
3010 CUR C3011 3012

Beginning chain PRPD1 description
Description: Private Drive Sta 11408+85
==========

Point 3010 N 169,062.98 E 2,275,795.48 Sta 5+00.00

Course from 3010 to PC C3011 N 33° 58' 34.23" E Dist 25.00

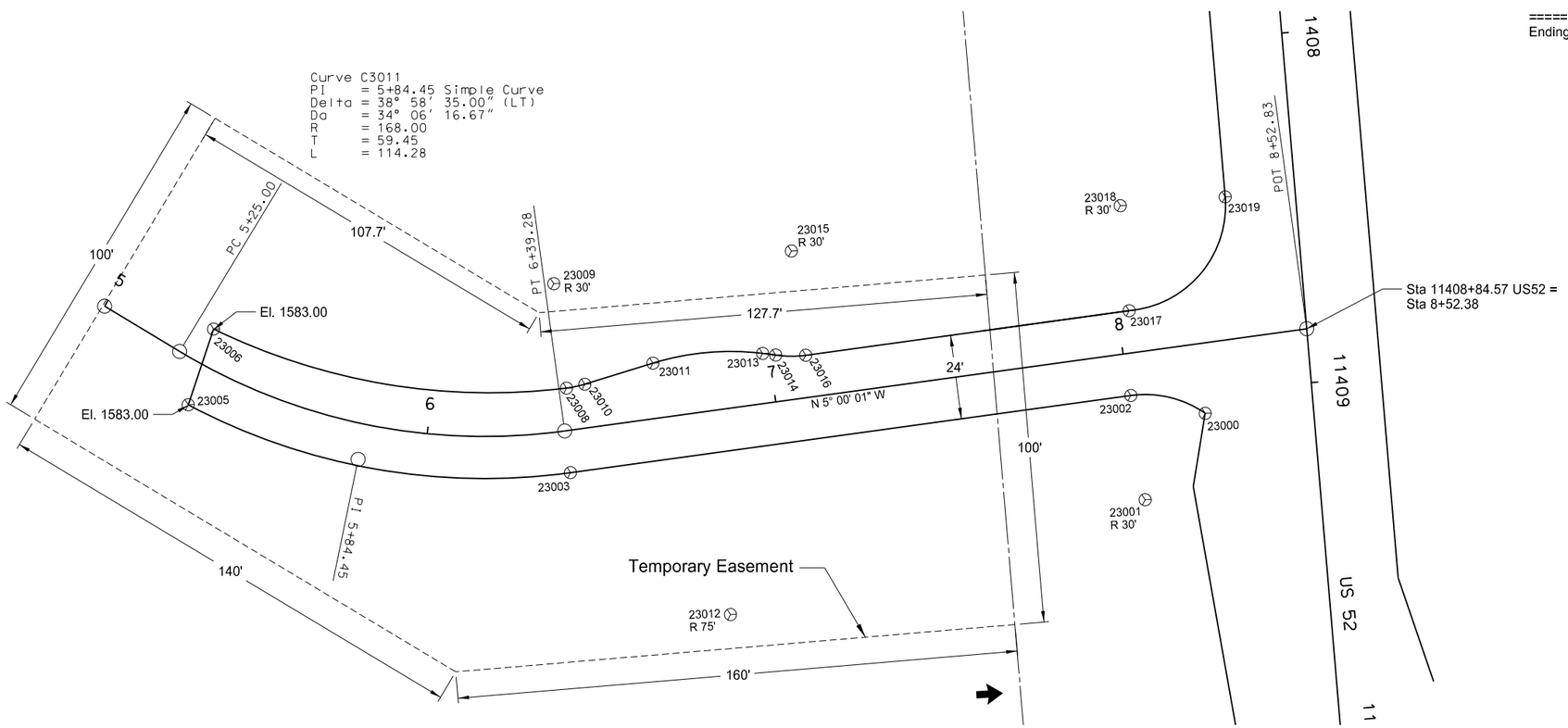
Curve Data
———

Curve C3011
P.I. Station 5+84.45 N 169,133.01 E 2,275,842.68
Delta = 38° 58' 35.00" (LT)
Degree = 34° 06' 16.67"
Tangent = 59.45
Length = 114.28
Radius = 168.00
External = 10.21
Long Chord = 112.09
Mid. Ord. = 9.62
P.C. Station 5+25.00 N 169,083.71 E 2,275,809.45
P.T. Station 6+39.28 N 169,192.24 E 2,275,837.50
C.C. N 169,177.59 E 2,275,670.14
Back = N 33° 58' 34.23" E
Ahead = N 5° 00' 00.78" W
Chord Bear = N 14° 29' 16.73" E

Course from PT C3011 to 3012 N 5° 00' 00.78" W Dist 213.55

Point 3012 N 169,404.97 E 2,275,818.89 Sta 8+52.83

==========
Ending chain PRPD1 description



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Survay Data Layout
Special Approach
Sta. 11408+85 Rt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	4

Describe Chain PRPD2 (Foster)

Chain PRPD2 contains:
3005 CUR C3006 3007

Beginning chain PRPD2 description
Description: Private Drive Sta 11579+50 Lt
==========

Point 3005 N 169,773.26 E 2,292,899.98 Sta 5+00.00

Course from 3005 to PC C3006 S 14° 04' 45.29" W Dist 58.30

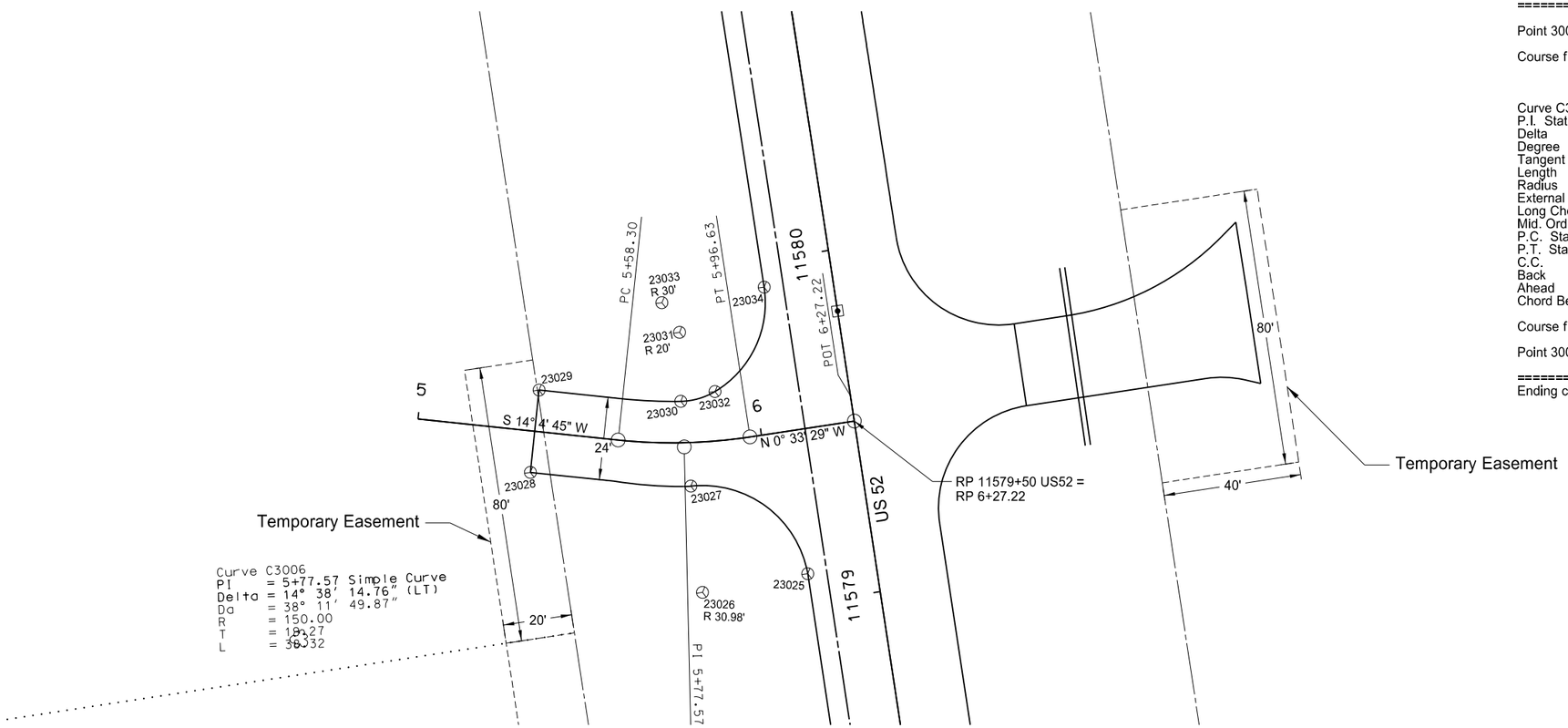
Curve Data
———

Curve C3006
P.I. Station 5+77.57 N 169,698.02 E 2,292,881.11
Delta = 14° 38' 14.76" (LT)
Degree = 38° 11' 49.87"
Tangent = 19.27
Length = 38.32
Radius = 150.00
External = 1.23
Long Chord = 38.22
Mid. Ord. = 1.22
P.C. Station 5+58.30 N 169,716.71 E 2,292,885.79
P.T. Station 5+96.63 N 169,678.75 E 2,292,881.29
C.C. N 169,680.22 E 2,293,031.29
Back = S 14° 04' 45.29" W
Ahead = S 0° 33' 29.47" E
Chord Bear = S 6° 45' 37.91" W

Course from PT C3006 to 3007 S 0° 33' 29.47" E Dist 30.59

Point 3007 N 169,648.16 E 2,292,881.59 Sta 6+27.22

==========
Ending chain PRPD2 description



Stations and Offsets from Centerline Chain: PRPD2				
Point	North	East	Station	Offset
23025	169667.75	2292839.69	6+07.22	41.71
23026	169698.72	2292838.63	5+80.80	43.54
23027	169697.71	2292869.59	5+79.00	12.64
23028	169743.20	2292880.07	5+34.00	12.00
23029	169737.36	2292903.35	5+34.00	-12.00
23030	169697.15	2292894.33	5+76.71	-12.00
23031	169694.70	2292914.18	5+76.71	-32.00
23032	169686.94	2292895.74	5+87.73	-14.29
23033	169698.57	2292923.40	5+69.89	-40.56
23034	169668.57	2292923.69	6+07.22	-42.29

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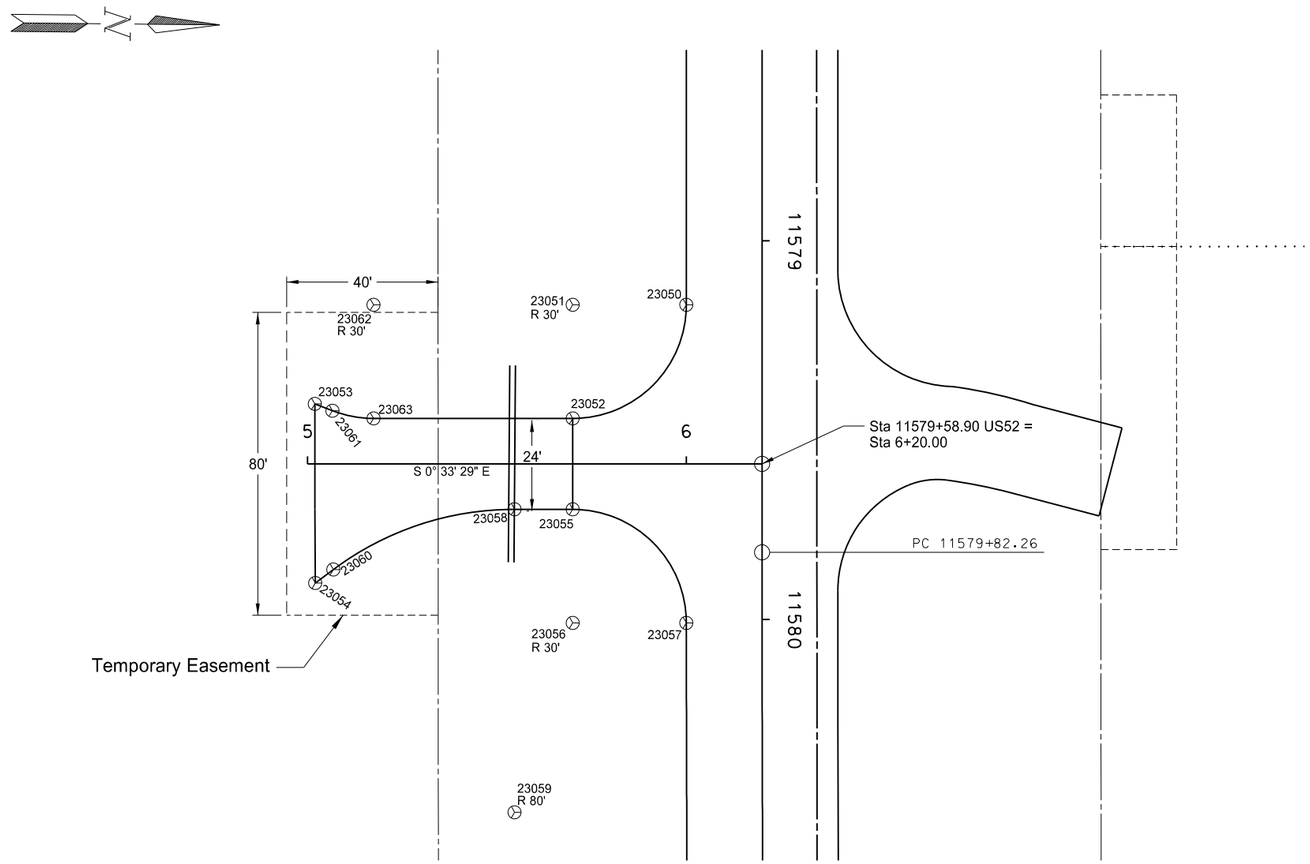
Survey Data Layout
Special Approach
Sta. 11579+50 Lt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	5



Describe Chain PRPD3

Chain PRPD3 contains:
3008 3009

Beginning chain PRPD3 description
Description: Private Drive Sta 11579+58.9 Rt
==========

Point 3008 N 169,528.25 E 2,292,891.66 Sta 5+00.00

Course from 3008 to 3009 N 0° 33' 29.47" W Dist 120.00

Point 3009 N 169,648.25 E 2,292,890.49 Sta 6+20.00

==========
Ending chain PRPD3 description

Stations and Offsets from Centerline Chain: PRPD3				
Point	North	East	Station	Offset
23050	169627.84	2292848.69	6+00.00	-42.00
23051	169597.84	2292848.98	5+70.00	-42.00
23052	169598.13	2292878.98	5+70.00	-12.00
23053	169530.00	2292875.81	5+01.90	-15.83
23054	169530.58	2292923.09	5+02.02	31.46
23055	169598.37	2292902.97	5+70.00	12.00
23056	169598.66	2292932.97	5+70.00	42.00
23057	169628.66	2292932.68	6+00.00	42.00
23058	169583.02	2292903.12	5+54.65	12.00
23059	169583.80	2292983.12	5+54.65	92.00
23060	169535.32	2292919.48	5+06.79	27.89
23061	169534.68	2292877.57	5+06.56	-14.03
23062	169545.25	2292849.49	5+17.40	-42.00
23063	169545.54	2292879.49	5+17.40	-12.00

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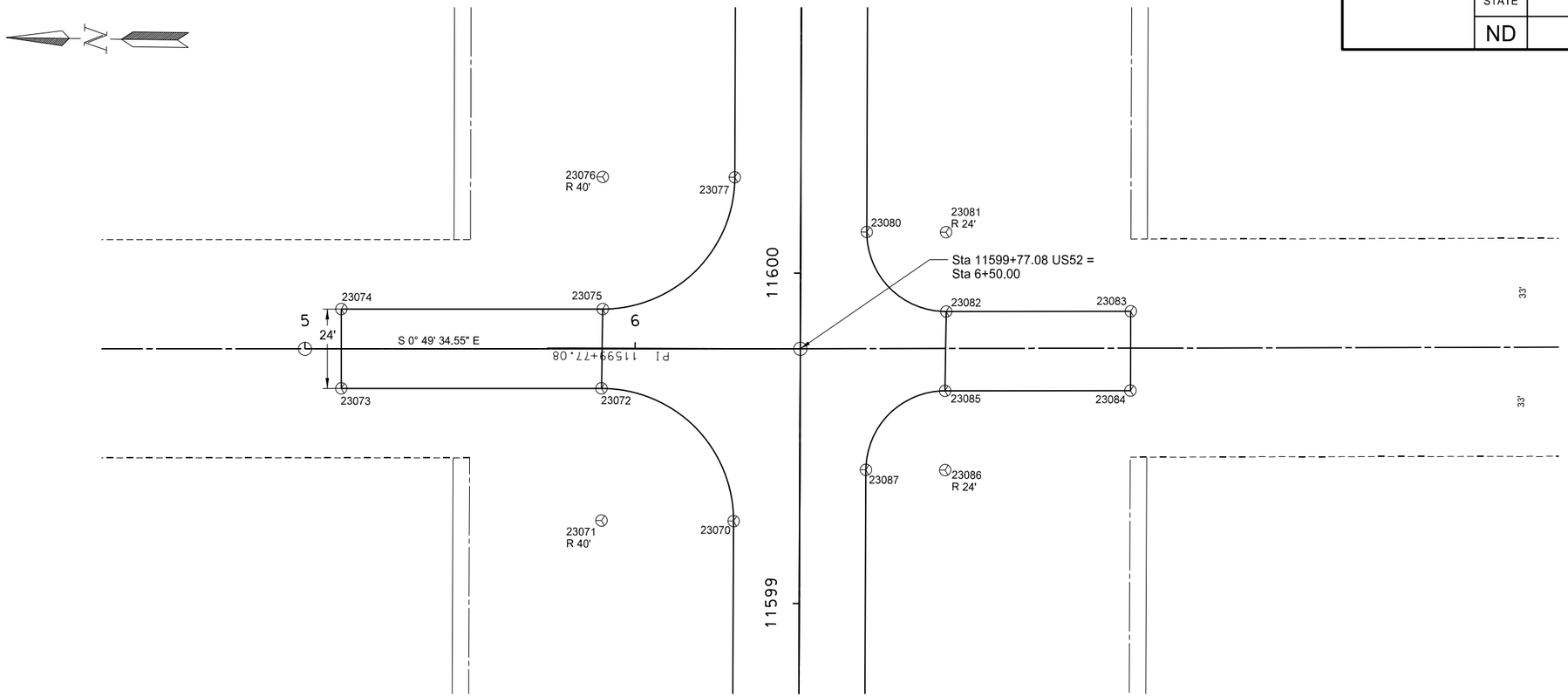
Survey Data Layout
Special Approach
Sta. 11579+59 Rt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	6



Stations and Offsets from Centerline Chain: PRSL1				
Point	North	East	Station	Offset
23070	169702.87	2294855.89	6+29.78	52.14
23071	169742.87	2294855.48	5+89.78	51.97
23072	169743.45	2294895.47	5+89.78	11.97
23073	169822.22	2294894.34	5+11.00	11.97
23074	169822.57	2294918.33	5+11.00	-12.03
23075	169743.42	2294919.48	5+90.16	-12.03
23076	169744.00	2294959.47	5+90.16	-52.03
23077	169704.00	2294959.93	6+30.16	-51.91

Stations and Offsets from US HWY 52 Centerline Chain: EX52				
Point	North	East	Station	Offset
23080	169663.82	2294943.96	11600+12.50	20.00
23081	169639.82	2294944.23	11600+12.50	44.00
23082	169639.42	2294920.23	11599+88.50	44.12
23083	169583.55	2294921.11	11599+88.74	100.00
23084	169583.29	2294897.11	11599+64.86	100.00
23085	169639.43	2294896.23	11599+64.55	43.85
23086	169639.04	2294872.23	11599+40.55	44.00
23087	169663.04	2294871.99	11599+40.55	20.00

Describe Chain PRSL1

Chain PRSL1 contains:
3014 3015

Beginning chain PRSL1 description
Description: Section Line Approach Sta 11599+77.08 Lt
==========

Point 3014 N 169,833.39 E 2,294,906.15 Sta 5+00.00

Course from 3014 to 3015 S 0° 49' 34.55" E Dist 150.00

Point 3015 N 169,683.41 E 2,294,908.31 Sta 6+50.00

==========
Ending chain PRSL1 description

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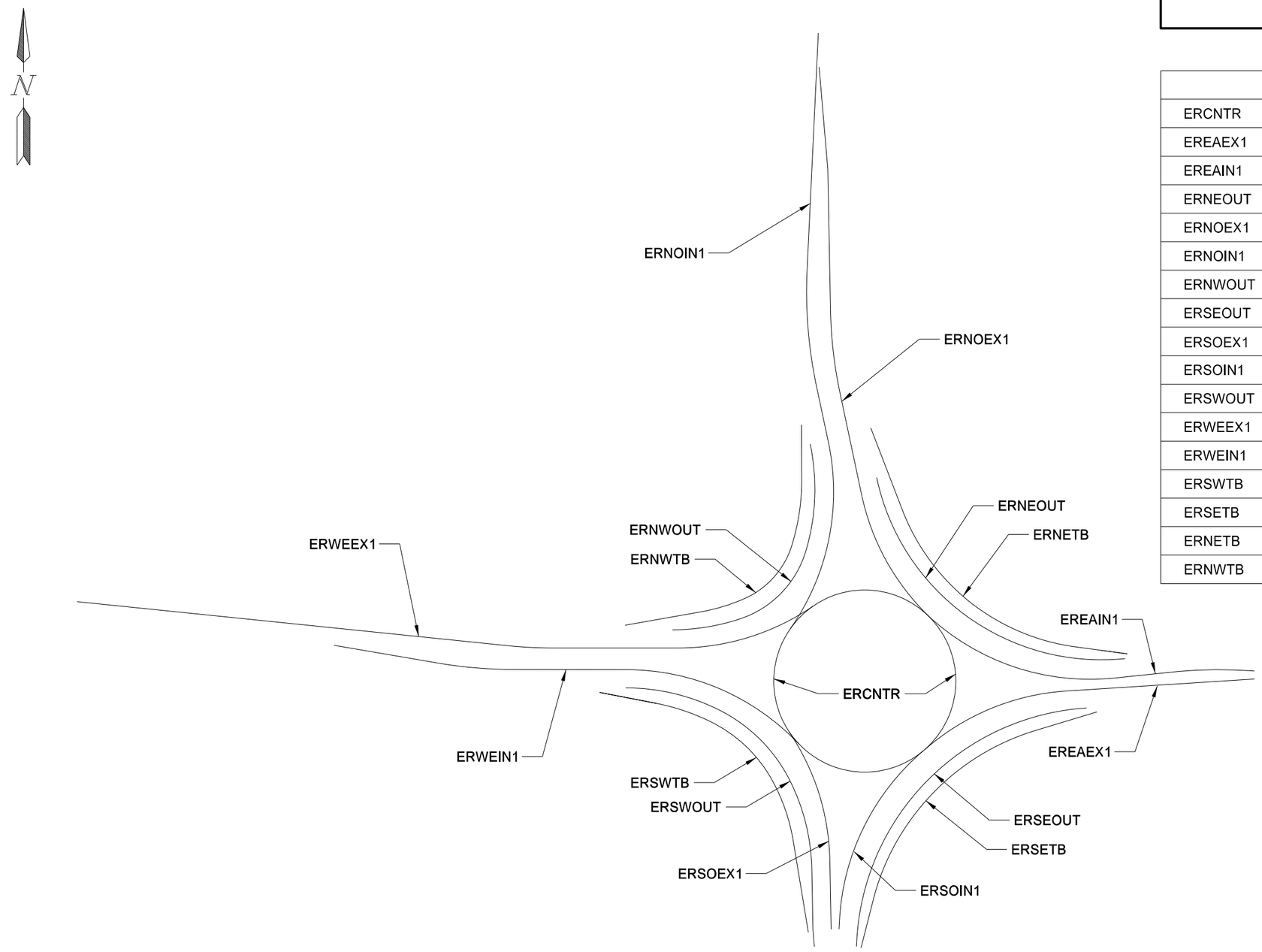
Survey Data Layout
Special Approach
Sta. 11599+77 Lt

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	7



ALIGNMENT KEY	
ERCNTR	Roundabout Center Island
EREAEX1	Roundabout East Exit
EREAIN1	Roundabout East Entrance
ERNEOUT	Roundabout NE Quadrant Outside Edge
ERNOEX1	Roundabout North Exit
ERNOIN1	Roundabout North Entrance
ERNWOUT	Roundabout NW Quadrant Outside Edge
ERSEOUT	Roundabout SE Quadrant Outside Edge
ERSOEX1	Roundabout South Exit
ERSOIN1	Roundabout South Entrance
ERSWOUT	Roundabout SW Quadrant Outside Edge
ERWEEX1	Roundabout West Exit
ERWEIN1	Roundabout West Entrance
ERSWTB	Roundabout SW Truck Blister
ERSETB	Roundabout SE Truck Blister
ERNETB	Roundabout NE Truck Blister
ERNWTB	Roundabout NW Truck Blister

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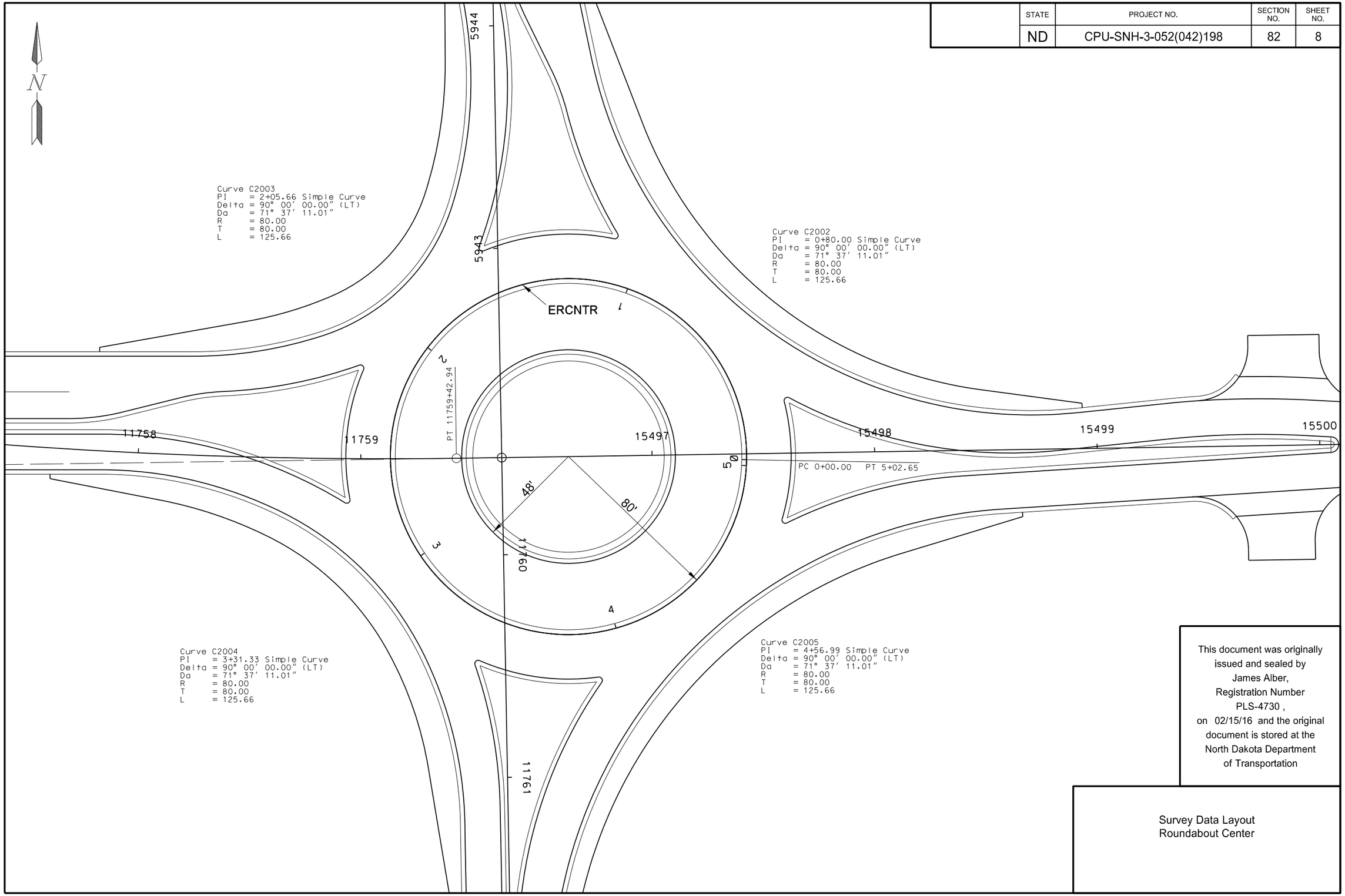
Survey Data Layout
US 52/US 281/ND 200
Roundabout Alignment Key

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	8



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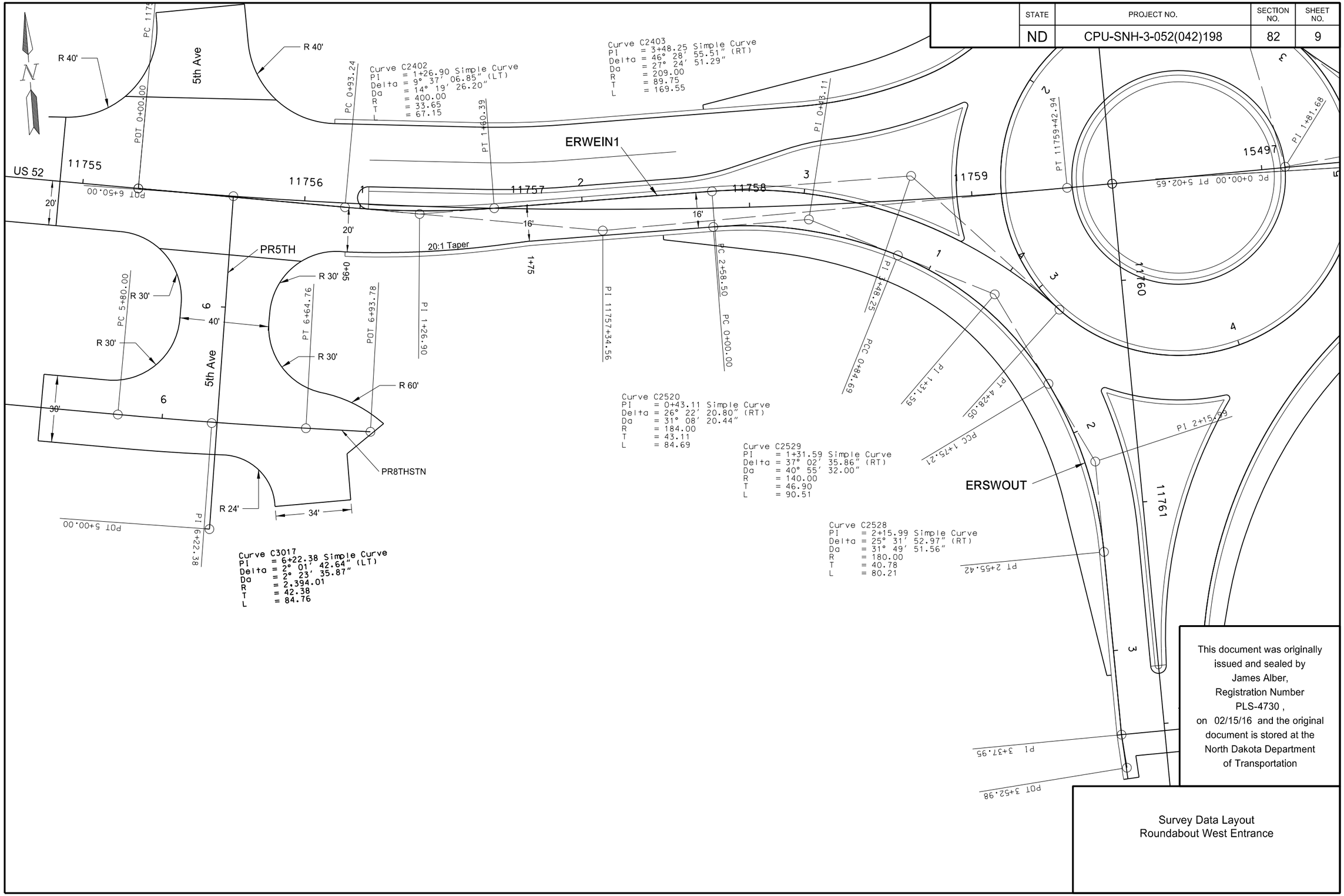
Survey Data Layout
Roundabout Center

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	9



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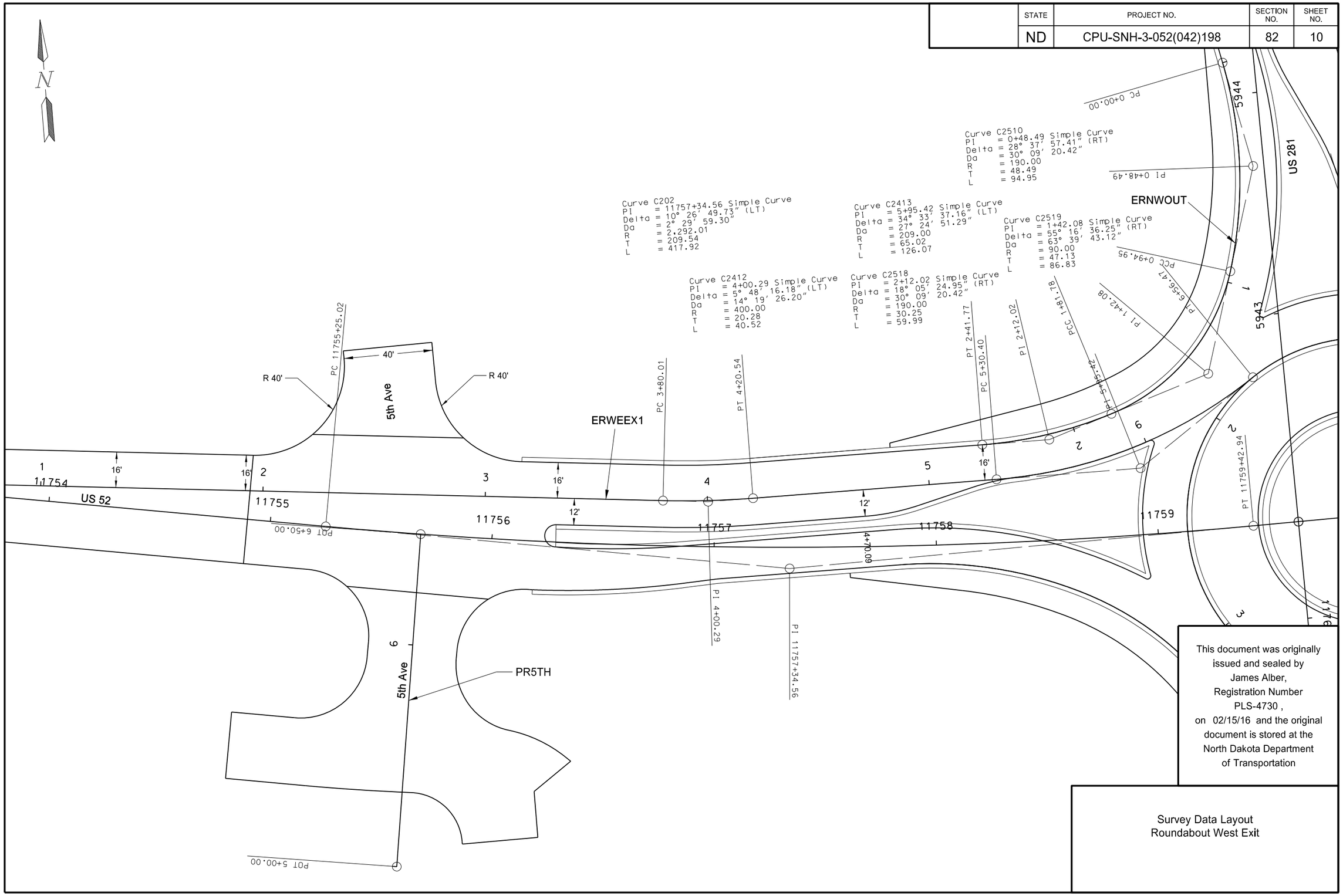
Survey Data Layout
Roundabout West Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	10



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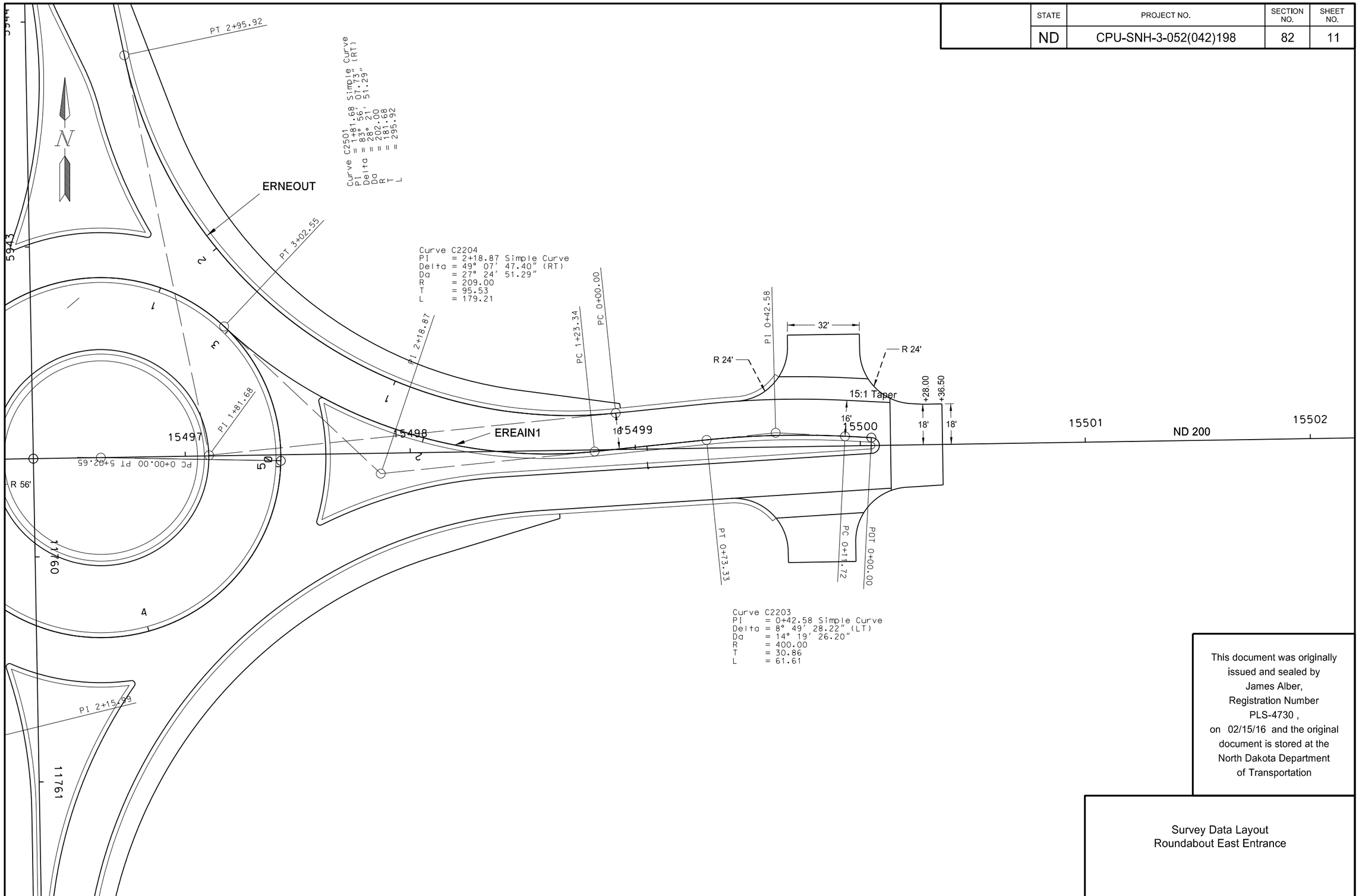
Survey Data Layout
Roundabout West Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	11



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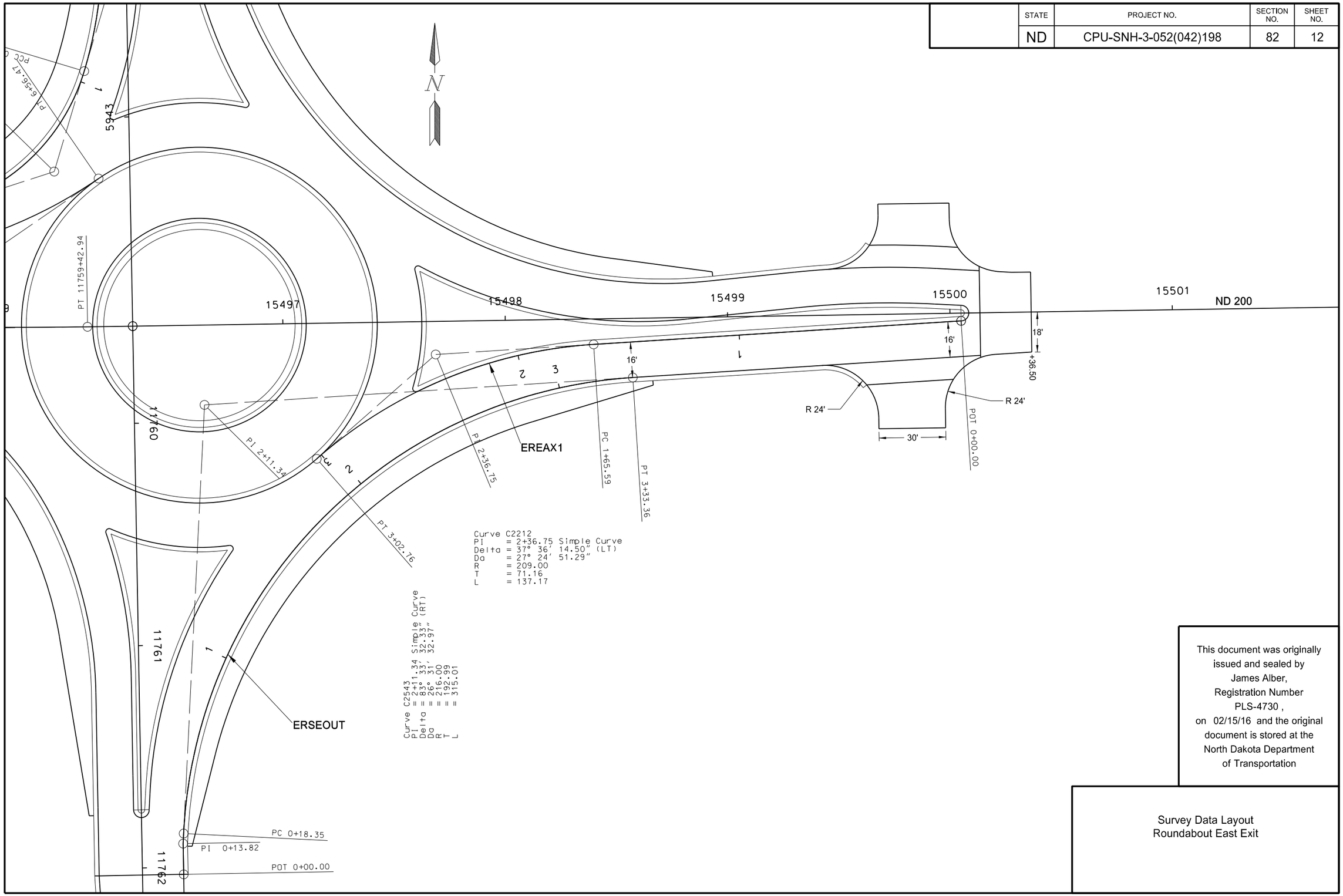
Survey Data Layout
Roundabout East Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	12



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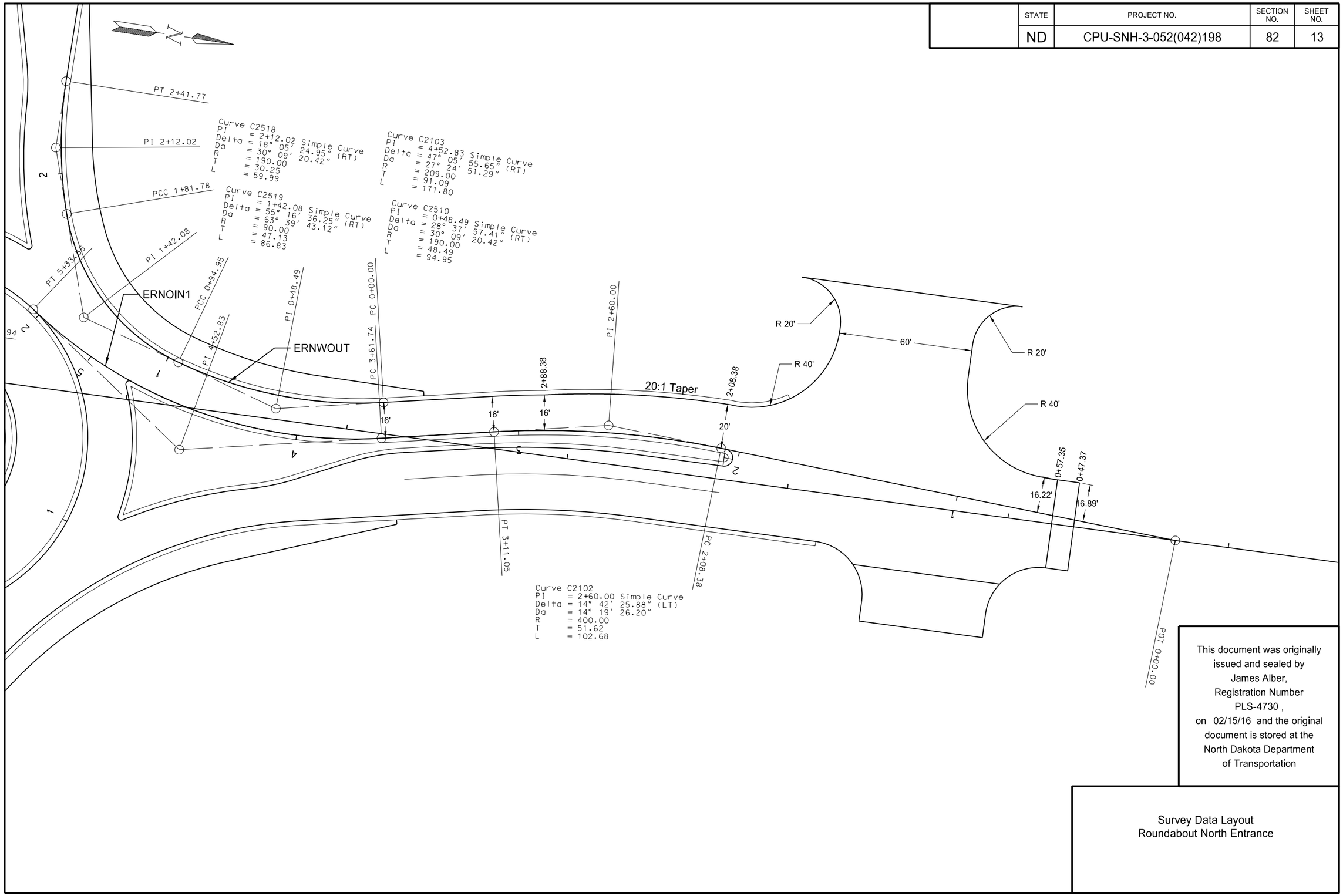
Survey Data Layout
Roundabout East Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	13



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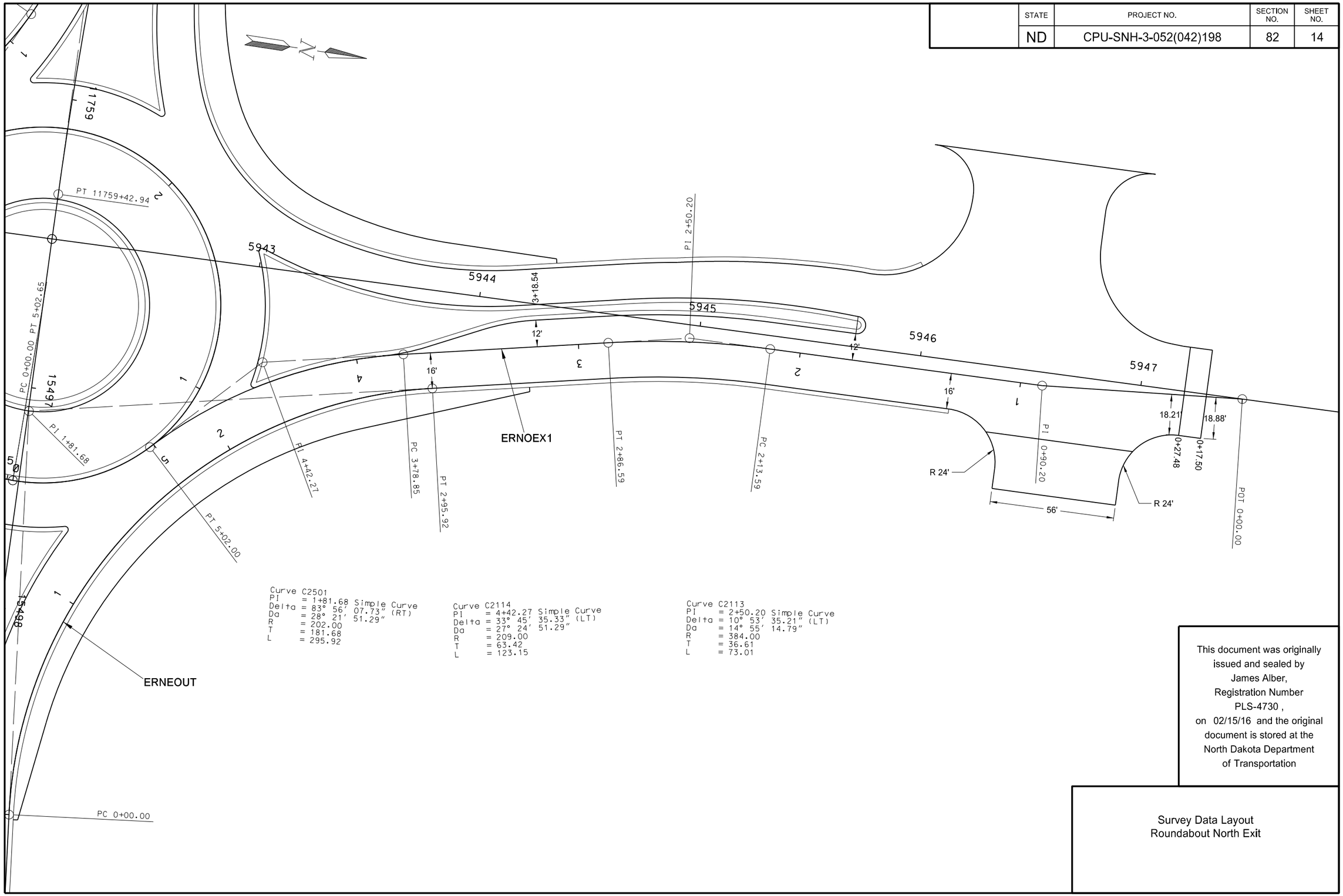
Survey Data Layout
Roundabout North Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	14



Curve C2501
PI = 1+81.68 Simple Curve
Delta = 83° 56' 07.73" (RT)
Da = 28° 21' 51.29"
R = 202.00
T = 181.68
L = 295.92

Curve C2114
PI = 4+42.27 Simple Curve
Delta = 33° 45' 35.33" (LT)
Da = 27° 24' 51.29"
R = 209.00
T = 63.42
L = 123.15

Curve C2113
PI = 2+50.20 Simple Curve
Delta = 10° 53' 35.21" (LT)
Da = 14° 55' 14.79"
R = 384.00
T = 36.61
L = 73.01

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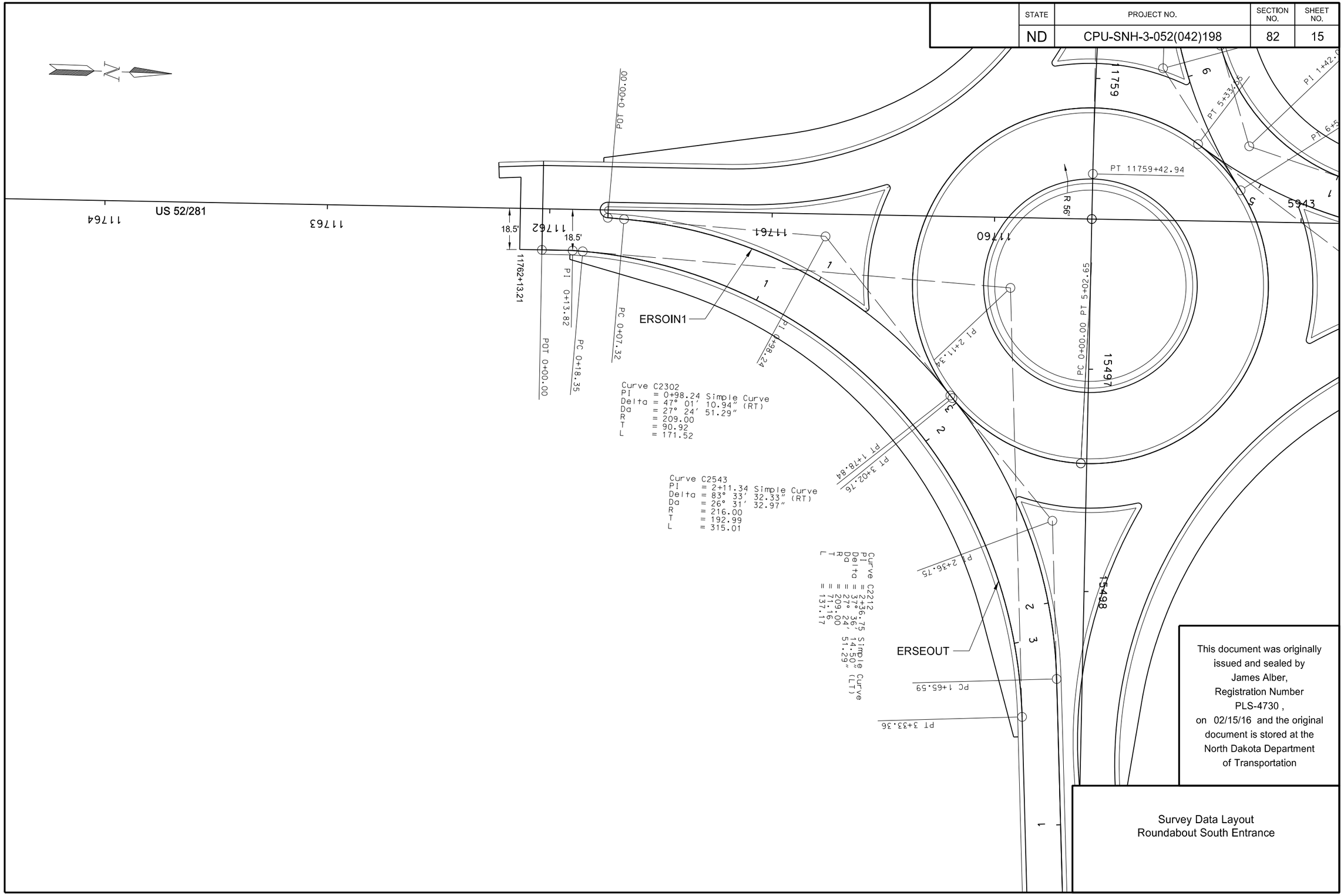
Survey Data Layout
Roundabout North Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	15



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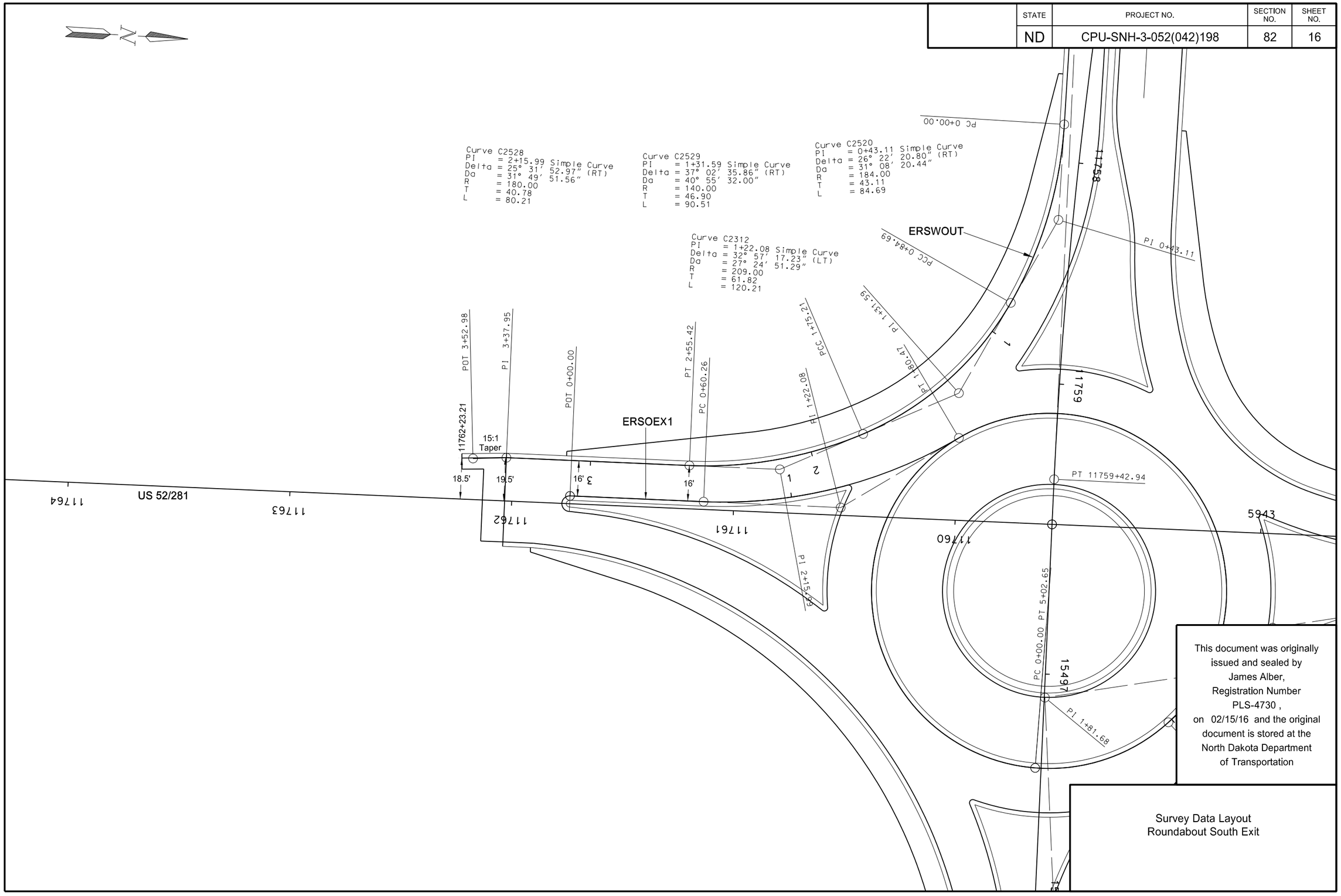
Survey Data Layout
Roundabout South Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	16



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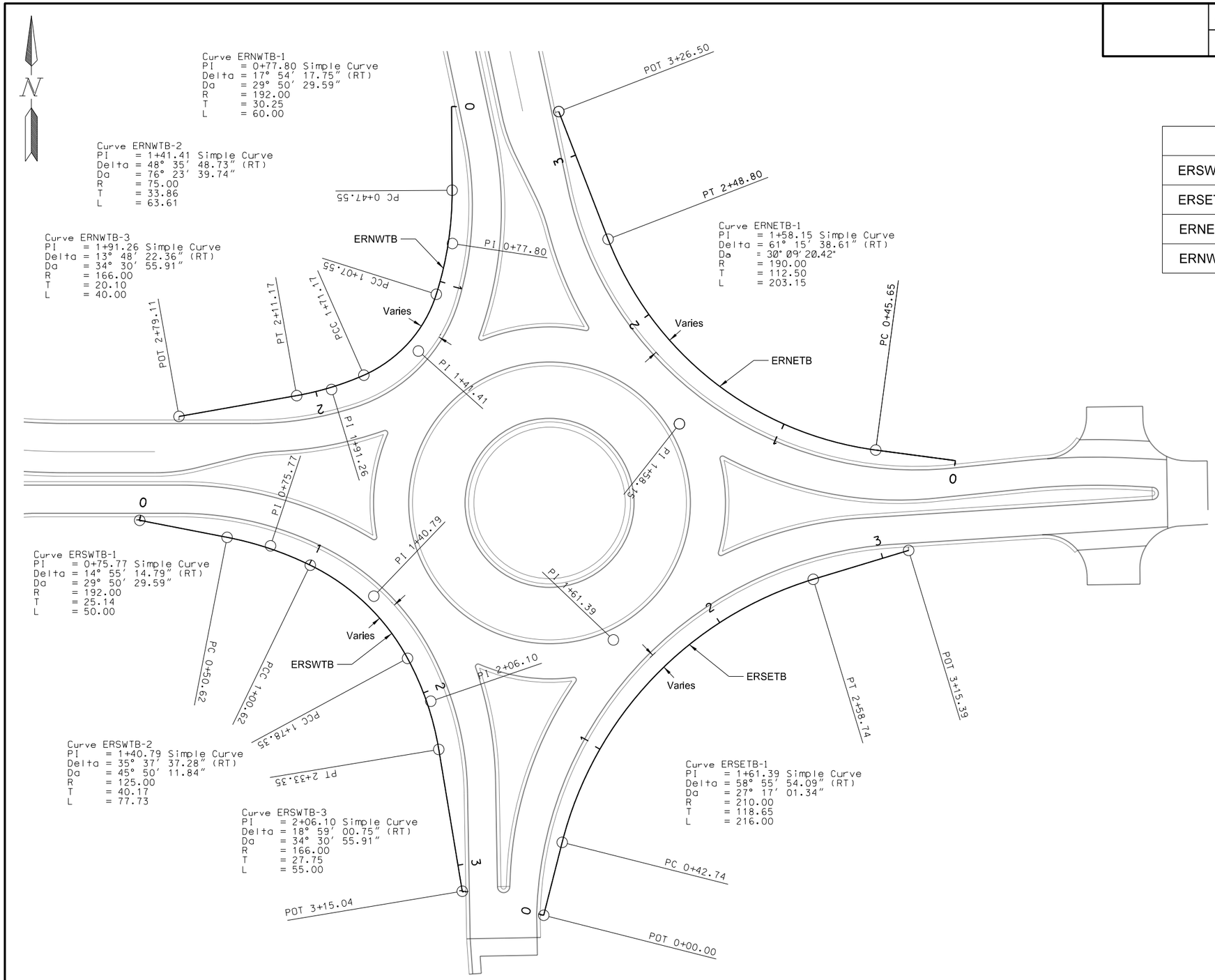
Survey Data Layout
Roundabout South Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	17



ALIGNMENT KEY	
ERSWTB	Roundabout SW Truck Blister
ERSETB	Roundabout SE Truck Blister
ERNETB	Roundabout NE Truck Blister
ERNWTB	Roundabout NW Truck Blister

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Survey Data Layout
Roundabout
Truck Blister Layout

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	18

ERCNTR

Chain ERCNTR contains:
CUR C2002 CUR C2003 CUR C2004 CUR C2005

Beginning chain ERCNTR description
Description: Roundabout Center Circle
==========

Curve Data
——

Curve C2002
P.I. Station 0+80.00 N 169,979.95 E 2,310,827.82
Delta = 90° 00' 00.00" (LT)
Degree = 71° 37' 11.01"
Tangent = 80.00
Length = 125.66
Radius = 80.00
External = 33.14
Long Chord = 113.14
Mid. Ord. = 23.43
P.C. Station 0+00.00 N 169,899.96 E 2,310,826.43
P.T. Station 1+25.66 N 169,981.34 E 2,310,747.83
C.C. N 169,901.36 E 2,310,746.44
Back = N 1° 00' 00.00" E
Ahead = N 89° 00' 00.00" W
Chord Bear = N 44° 00' 00.00" W

Curve Data
——

Curve C2003
P.I. Station 2+05.66 N 169,982.74 E 2,310,667.85
Delta = 90° 00' 00.00" (LT)
Degree = 71° 37' 11.01"
Tangent = 80.00
Length = 125.66
Radius = 80.00
External = 33.14
Long Chord = 113.14
Mid. Ord. = 23.43
P.C. Station 1+25.66 N 169,981.34 E 2,310,747.83
P.T. Station 2+51.33 N 169,902.75 E 2,310,666.45
C.C. N 169,901.36 E 2,310,746.44
Back = N 89° 00' 00.00" W
Ahead = S 1° 00' 00.00" W
Chord Bear = S 46° 00' 00.00" W

Curve Data
——

Curve C2004
P.I. Station 3+31.33 N 169,822.76 E 2,310,665.05
Delta = 90° 00' 00.00" (LT)
Degree = 71° 37' 11.01"
Tangent = 80.00
Length = 125.66
Radius = 80.00
External = 33.14
Long Chord = 113.14
Mid. Ord. = 23.43
P.C. Station 2+51.33 N 169,902.75 E 2,310,666.45
P.T. Station 3+76.99 N 169,821.37 E 2,310,745.04
C.C. N 169,901.36 E 2,310,746.44
Back = S 1° 00' 00.00" W
Ahead = S 89° 00' 00.00" E
Chord Bear = S 44° 00' 00.00" E

Curve Data
——

Curve C2005
P.I. Station 4+56.99 N 169,819.97 E 2,310,825.03
Delta = 90° 00' 00.00" (LT)
Degree = 71° 37' 11.01"
Tangent = 80.00
Length = 125.66
Radius = 80.00
External = 33.14
Long Chord = 113.14
Mid. Ord. = 23.43
P.C. Station 3+76.99 N 169,821.37 E 2,310,745.04
P.T. Station 5+02.65 N 169,899.96 E 2,310,826.43
C.C. N 169,901.36 E 2,310,746.44
Back = S 89° 00' 00.00" E
Ahead = N 1° 00' 00.00" E
Chord Bear = N 46° 00' 00.00" E

==========
Ending chain ERCNTR description

EREAEX1

Chain EREAEX1 contains:
2211 CUR C2212

Beginning chain EREAEX1 description
Description: Roundabout East Exit
==========

Point 2211 N 169,903.24 E 2,311,088.95 Sta 0+00.00

Course from 2211 to PC C2212 S 86° 20' 39.89" W Dist 165.59

Curve Data
——

Curve C2212
P.I. Station 2+36.75 N 169,888.14 E 2,310,852.69
Delta = 37° 36' 14.50" (LT)
Degree = 27° 24' 51.29"
Tangent = 71.16
Length = 137.17
Radius = 209.00
External = 11.78
Long Chord = 134.72
Mid. Ord. = 11.15
P.C. Station 1+65.59 N 169,892.68 E 2,310,923.70
P.T. Station 3+02.76 N 169,841.22 E 2,310,799.20
C.C. N 169,684.11 E 2,310,937.03
Back = S 86° 20' 39.89" W
Ahead = S 48° 44' 25.38" W
Chord Bear = S 67° 32' 32.64" W

==========
Ending chain EREAEX1 description

EREAIN1

Chain EREAIN1 contains:
2202 CUR C2203 CUR C2204

Beginning chain EREAIN1 description
Description: Roundabout East Entrance
==========

Point 2202 N 169,910.24 E 2,311,088.84 Sta 0+00.00

Course from 2202 to PC C2203 N 87° 05' 10.85" W Dist 11.72

Curve Data
——

Curve C2203
P.I. Station 0+42.58 N 169,912.40 E 2,311,046.31
Delta = 8° 49' 28.22" (LT)
Degree = 14° 19' 26.20"
Tangent = 30.86
Length = 61.61
Radius = 400.00
External = 1.19
Long Chord = 61.55
Mid. Ord. = 1.19
P.C. Station 0+11.72 N 169,910.83 E 2,311,077.14
P.T. Station 0+73.33 N 169,909.22 E 2,311,015.61
C.C. N 169,511.35 E 2,311,056.80
Back = N 87° 05' 10.85" W
Ahead = S 84° 05' 20.93" W
Chord Bear = S 88° 30' 05.04" W

Course from PT C2203 to PC C2204 S 84° 05' 20.93" W Dist 50.01

Curve Data
——

Curve C2204
P.I. Station 2+18.87 N 169,894.23 E 2,310,870.84
Delta = 49° 07' 47.40" (RT)
Degree = 27° 24' 51.29"
Tangent = 95.53
Length = 179.21
Radius = 209.00
External = 20.80
Long Chord = 173.77
Mid. Ord. = 18.92
P.C. Station 1+23.34 N 169,904.07 E 2,310,965.87
P.T. Station 3+02.55 N 169,959.65 E 2,310,801.22
C.C. N 170,111.96 E 2,310,944.34
Back = S 84° 05' 20.93" W
Ahead = N 46° 46' 51.67" W
Chord Bear = N 71° 20' 45.37" W

==========
Ending chain EREAIN1 description

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Survey Data Layout
Roundabout Alignments

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	19

ERNEOUT

Chain ERNEOUT contains:
CUR C2501

Beginning chain ERNEOUT description
Description: Roundabout NE Quadrant Outside Edge
==========

Curve Data
———

Curve C2501
P.I. Station 1+81.68 N 169,902.42 E 2,310,794.53
Delta = 83° 56' 07.73" (RT)
Degree = 28° 21' 51.29"
Tangent = 181.68
Length = 295.92
Radius = 202.00
External = 69.68
Long Chord = 270.16
Mid. Ord. = 51.81
P.C. Station 0+00.00 N 169,921.13 E 2,310,975.24
P.T. Station 2+95.92 N 170,080.14 E 2,310,756.84
C.C. N 170,122.06 E 2,310,954.44
Back = S 84° 05' 20.93" W
Ahead = N 11° 58' 31.34" W
Chord Bear = N 53° 56' 35.20" W

==========
Ending chain ERNEOUT description

ERNOEX1

Chain ERNOEX1 contains:
2111 2112 CUR C2113 CUR C2114

Beginning chain ERNOEX1 description
Description: Roundabout North Exit
==========

Point 2111 N 170,440.86 E 2,310,706.24 Sta 0+00.00

Course from 2111 to 2112 S 4° 53' 46.80" E Dist 90.20

Point 2112 N 170,350.99 E 2,310,713.94 Sta 0+90.20

Course from 2112 to PC C2113 S 1° 04' 56.13" E Dist 123.39

Curve Data
———

Curve C2113
P.I. Station 2+50.20 N 170,191.02 E 2,310,716.96
Delta = 10° 53' 35.21" (LT)
Degree = 14° 55' 14.79"
Tangent = 36.61
Length = 73.01
Radius = 384.00
External = 1.74
Long Chord = 72.90
Mid. Ord. = 1.73
P.C. Station 2+13.59 N 170,227.62 E 2,310,716.27
P.T. Station 2+86.59 N 170,155.20 E 2,310,724.56
C.C. N 170,234.88 E 2,311,100.20
Back = S 1° 04' 56.13" E
Ahead = S 11° 58' 31.34" E
Chord Bear = S 6° 31' 43.74" E

Course from PT C2113 to PC C2114 S 11° 58' 31.34" E Dist 92.26

Curve Data
———

Curve C2114
P.I. Station 4+42.27 N 170,002.91 E 2,310,756.86
Delta = 33° 45' 35.33" (LT)
Degree = 27° 24' 51.29"
Tangent = 63.42
Length = 123.15
Radius = 209.00
External = 9.41
Long Chord = 121.37
Mid. Ord. = 9.00
P.C. Station 3+78.85 N 170,064.95 E 2,310,743.70
P.T. Station 5+02.00 N 169,958.65 E 2,310,802.28
C.C. N 170,108.31 E 2,310,948.15
Back = S 11° 58' 31.34" E
Ahead = S 45° 44' 06.68" E
Chord Bear = S 28° 51' 19.01" E

==========
Ending chain ERNOEX1 description

ERNOIN1

Chain ERNOIN1 contains:
2101 CUR C2102 CUR C2103

Beginning chain ERNOIN1 description
Description: Roundabout North Entrance
==========

Point 2101 N 170,470.78 E 2,310,705.68 Sta 0+00.00

Course from 2101 to PC C2102 S 2° 43' 54.54" W Dist 208.38

Curve Data
———

Curve C2102
P.I. Station 2+60.00 N 170,211.08 E 2,310,693.28
Delta = 14° 42' 25.88" (LT)
Degree = 14° 19' 26.20"
Tangent = 51.62
Length = 102.68
Radius = 400.00
External = 3.32
Long Chord = 102.39
Mid. Ord. = 3.29
P.C. Station 2+08.38 N 170,262.64 E 2,310,695.74
P.T. Station 3+11.05 N 170,160.58 E 2,310,704.00
C.C. N 170,243.58 E 2,311,095.29
Back = S 2° 43' 54.54" W
Ahead = S 11° 58' 31.34" E
Chord Bear = S 4° 37' 18.40" E

Course from PT C2102 to PC C2103 S 11° 58' 31.34" E Dist 50.69

Curve Data
———

Curve C2103
P.I. Station 4+52.83 N 170,021.89 E 2,310,733.41
Delta = 47° 05' 55.65" (RT)
Degree = 27° 24' 51.29"
Tangent = 91.09
Length = 171.80
Radius = 209.00
External = 18.99
Long Chord = 167.01
Mid. Ord. = 17.41
P.C. Station 3+61.74 N 170,110.99 E 2,310,714.51
P.T. Station 5+33.55 N 169,947.38 E 2,310,681.01
C.C. N 170,067.63 E 2,310,510.06
Back = S 11° 58' 31.34" E
Ahead = S 35° 07' 24.31" W
Chord Bear = S 11° 34' 26.49" W

==========
Ending chain ERNOIN1 description

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Survey Data Layout
Roundabout Alignments

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	20

ERNWOUT

Chain ERNWOUT contains:
CUR C2510 CUR C2519 CUR C2518

Beginning chain ERNWOUT description
Description: Roundabout NW Quadrant Outside Edge
==========

Curve Data
———

Curve C2510
P.I. Station 0+48.49 N 170,062.01 E 2,310,708.55
Delta = 28° 37' 57.41" (RT)
Degree = 30° 09' 20.42"
Tangent = 48.49
Length = 94.95
Radius = 190.00
External = 6.09
Long Chord = 93.96
Mid. Ord. = 5.90
P.C. Station 0+00.00 N 170,109.44 E 2,310,698.49
P.T. Station 0+94.95 N 170,015.56 E 2,310,694.65
C.C. N 170,070.02 E 2,310,512.62
Back = S 11° 58' 31.34" E
Ahead = S 16° 39' 26.07" W
Chord Bear = S 2° 20' 27.37" W

Curve Data
———

Curve C2519
P.I. Station 1+42.08 N 169,970.41 E 2,310,681.14
Delta = 55° 16' 36.25" (RT)
Degree = 63° 39' 43.12"
Tangent = 47.13
Length = 86.83
Radius = 90.00
External = 11.59
Long Chord = 83.50
Mid. Ord. = 10.27
P.C. Station 0+94.95 N 170,015.56 E 2,310,694.65
P.T. Station 1+81.78 N 169,955.79 E 2,310,636.33
C.C. N 170,041.36 E 2,310,608.42
Back = S 16° 39' 26.07" W
Ahead = S 71° 56' 02.33" W
Chord Bear = S 44° 17' 44.20" W

Curve Data
———

Curve C2518
P.I. Station 2+12.02 N 169,946.41 E 2,310,607.58
Delta = 18° 05' 24.95" (RT)
Degree = 30° 09' 20.42"
Tangent = 30.25
Length = 59.99
Radius = 190.00
External = 2.39
Long Chord = 59.74
Mid. Ord. = 2.36
P.C. Station 1+81.78 N 169,955.79 E 2,310,636.33
P.T. Station 2+41.77 N 169,946.43 E 2,310,577.33
C.C. N 170,136.43 E 2,310,577.41
Back = S 71° 56' 02.33" W
Ahead = N 89° 58' 32.73" W
Chord Bear = S 80° 58' 44.80" W

==========
Ending chain ERNWOUT description

ERSEOUT

Chain ERSEOUT contains:
2541 CUR C2542

Beginning chain ERSEOUT description
Description: Roundabout SE Quadrant Outside Edge
==========

Point 2541 N 169,668.18 E 2,310,739.12 Sta 0+00.00

Course from 2541 to PC C2542 N 2° 47' 07.56" E Dist 4.53

Curve Data
———

Curve C2542
P.I. Station 1+97.52 N 169,865.47 E 2,310,748.72
Delta = 83° 33' 32.33" (RT)
Degree = 26° 31' 32.97"
Tangent = 192.99
Length = 315.01
Radius = 216.00
External = 73.66
Long Chord = 287.83
Mid. Ord. = 54.93
P.C. Station 0+04.53 N 169,672.71 E 2,310,739.34
P.T. Station 3+19.54 N 169,877.77 E 2,310,941.32
C.C. N 169,662.21 E 2,310,955.09
Back = N 2° 47' 07.56" E
Ahead = N 86° 20' 39.89" E
Chord Bear = N 44° 33' 53.73" E

==========
Ending chain ERSEOUT description

ERSOEX1

Chain ERSOEX1 contains:
2311 CUR C2312

Beginning chain ERSOEX1 description
Description: Roundabout South Exit
==========

Point 2311 N 169,683.32 E 2,310,716.85 Sta 0+00.00

Course from 2311 to PC C2312 N 1° 01' 43.11" W Dist 60.26

Curve Data
———

Curve C2312
P.I. Station 1+22.08 N 169,805.38 E 2,310,714.66
Delta = 32° 57' 17.23" (LT)
Degree = 27° 24' 51.29"
Tangent = 61.82
Length = 120.21
Radius = 209.00
External = 8.95
Long Chord = 118.56
Mid. Ord. = 8.58
P.C. Station 0+60.26 N 169,743.57 E 2,310,715.77
P.T. Station 1+80.47 N 169,856.64 E 2,310,680.10
C.C. N 169,739.82 E 2,310,506.80
Back = N 1° 01' 43.11" W
Ahead = N 33° 59' 00.34" W
Chord Bear = N 17° 30' 21.72" W

==========
Ending chain ERSOEX1 description

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Survey Data Layout
Roundabout Alignments

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ND	CPU-SNH-3-052(042)198	82	21

ERSOIN1

Chain ERSOIN1 contains:
2301 CUR C2302

Beginning chain ERSOIN1 description
Description: Roundabout South Entrance
==========

Point 2301 N 169,683.44 E 2,310,723.85 Sta 0+00.00

Course from 2301 to PC C2302 N 2° 47' 07.56" E Dist 7.32

Curve Data
———

Curve C2302
P.I. Station 0+98.24 N 169,781.57 E 2,310,728.62
Delta = 47° 01' 10.94" (RT)
Degree = 27° 24' 51.29"
Tangent = 90.92
Length = 171.52
Radius = 209.00
External = 18.92
Long Chord = 166.74
Mid. Ord. = 17.35
P.C. Station 0+07.32 N 169,690.76 E 2,310,724.20
P.T. Station 1+78.84 N 169,840.25 E 2,310,798.07
C.C. N 169,680.60 E 2,310,932.96
Back = N 2° 47' 07.56" E
Ahead = N 49° 48' 18.50" E
Chord Bear = N 26° 17' 43.03" E

==========
Ending chain ERSOIN1 description

ERWEEX1

Chain ERWEEX1 contains:
2411 CUR C2412 CUR C2413

Beginning chain ERWEEX1 description
Description: Roundabout West Exit
==========

Point 2411 N 169,971.13 E 2,310,054.14 Sta 0+00.00

Course from 2411 to PC C2412 S 84° 10' 16.55" E Dist 380.01

Curve Data
———

Curve C2412
P.I. Station 4+00.29 N 169,930.48 E 2,310,452.37
Delta = 5° 48' 16.18" (LT)
Degree = 14° 19' 26.20"
Tangent = 20.28
Length = 40.52
Radius = 400.00
External = 0.51
Long Chord = 40.51
Mid. Ord. = 0.51
P.C. Station 3+80.01 N 169,932.54 E 2,310,432.19
P.T. Station 4+20.54 N 169,930.47 E 2,310,472.65
C.C. N 170,330.47 E 2,310,472.81
Back = S 84° 10' 16.55" E
Ahead = S 89° 58' 32.73" E
Chord Bear = S 87° 04' 24.64" E

Course from PT C2412 to PC C2413 S 89° 58' 32.73" E Dist 109.86

Curve Data
———

Curve C2413
P.I. Station 5+95.42 N 169,930.40 E 2,310,647.53
Delta = 34° 33' 37.16" (LT)
Degree = 27° 24' 51.29"
Tangent = 65.02
Length = 126.07
Radius = 209.00
External = 9.88
Long Chord = 124.16
Mid. Ord. = 9.43
P.C. Station 5+30.40 N 169,930.42 E 2,310,582.51
P.T. Station 6+56.47 N 169,967.26 E 2,310,701.08
C.C. N 170,139.42 E 2,310,582.60
Back = S 89° 58' 32.73" E
Ahead = N 55° 27' 50.11" E
Chord Bear = N 72° 44' 38.69" E

==========
Ending chain ERWEEX1 description

ERSWOUT

Chain ERSWOUT contains:
CUR C2520 CUR C2529 CUR C2528 2530 2531

Beginning chain ERSWOUT description
Description: Roundabout SW Quadrant Outside Edge
==========

Curve Data
———

Curve C2520
P.I. Station 0+43.11 N 169,895.43 E 2,310,579.33
Delta = 26° 22' 20.80" (RT)
Degree = 31° 08' 20.44"
Tangent = 43.11
Length = 84.69
Radius = 184.00
External = 4.98
Long Chord = 83.95
Mid. Ord. = 4.85
P.C. Station 0+00.00 N 169,895.44 E 2,310,536.22
P.T. Station 0+84.69 N 169,876.26 E 2,310,617.95
C.C. N 169,711.44 E 2,310,536.14
Back = S 89° 58' 32.73" E
Ahead = S 63° 36' 11.93" E
Chord Bear = S 76° 47' 22.33" E

Curve Data
———

Curve C2529
P.I. Station 1+31.59 N 169,855.41 E 2,310,659.96
Delta = 37° 02' 35.86" (RT)
Degree = 40° 55' 32.00"
Tangent = 46.90
Length = 90.51
Radius = 140.00
External = 7.65
Long Chord = 88.95
Mid. Ord. = 7.25
P.C. Station 0+84.69 N 169,876.26 E 2,310,617.95
P.T. Station 1+75.21 N 169,813.46 E 2,310,680.93
C.C. N 169,750.86 E 2,310,555.70
Back = S 63° 36' 11.93" E
Ahead = S 26° 33' 36.08" E
Chord Bear = S 45° 04' 54.00" E

Curve Data
———

Curve C2528
P.I. Station 2+15.99 N 169,776.98 E 2,310,699.16
Delta = 25° 31' 52.97" (RT)
Degree = 31° 49' 51.56"
Tangent = 40.78
Length = 80.21
Radius = 180.00
External = 4.56
Long Chord = 79.55
Mid. Ord. = 4,45
P.C. Station 1+75.21 N 169,813.46 E 2,310,680.93
P.T. Station 2+55.42 N 169,736.20 E 2,310,699.90
C.C. N 169,732.97 E 2,310,519.92
Back = S 26° 33' 36.08" E
Ahead = S 1° 01' 43.11" E
Chord Bear = S 13° 47' 39.59" E

Course from PT C2528 to 2530 S 1° 01' 43.11" E Dist 53.18

Point 2530 N 169,683.03 E 2,310,700.85 Sta 3+08.60

Course from 2530 to 2531 S 4° 50' 33.78" E Dist 15.03

Point 2531 N 169,668.05 E 2,310,702.12 Sta 3+23.63

==========
Ending chain ERSWOUT description

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Survey Data Layout
Roundabout Alignments

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	22

ERWEIN1

Chain ERWEIN1 contains:
2401 CUR C2402 CUR C2403

Beginning chain ERWEIN1 description
Description: Roundabout West Entrance
==========

Point 2401 N 169,932.76 E 2,310,280.01 Sta 0+00.00

Course from 2401 to PC C2402 S 80° 21' 25.88" E Dist 93.24

Curve Data
———

Curve C2402
P.I. Station 1+26.90 N 169,911.50 E 2,310,405.11
Delta = 9° 37' 06.85" (LT)
Degree = 14° 19' 26.20"
Tangent = 33.65
Length = 67.15
Radius = 400.00
External = 1.41
Long Chord = 67.07
Mid. Ord. = 1.41
P.C. Station 0+93.24 N 169,917.14 E 2,310,371.93
P.T. Station 1+60.39 N 169,911.49 E 2,310,438.77
C.C. N 170,311.49 E 2,310,438.94
Back = S 80° 21' 25.88" E
Ahead = S 89° 58' 32.73" E
Chord Bear = S 85° 09' 59.30" E

Course from PT C2402 to PC C2403 S 89° 58' 32.73" E Dist 98.10

Curve Data
———

Curve C2403
P.I. Station 3+48.25 N 169,911.41 E 2,310,626.63
Delta = 46° 28' 55.51" (RT)
Degree = 27° 24' 51.29"
Tangent = 89.75
Length = 169.55
Radius = 209.00
External = 18.46
Long Chord = 164.94
Mid. Ord. = 16.96
P.C. Station 2+58.50 N 169,911.44 E 2,310,536.87
P.T. Station 4+28.05 N 169,846.29 E 2,310,688.40
C.C. N 169,702.44 E 2,310,536.78
Back = S 89° 58' 32.73" E
Ahead = S 43° 29' 37.21" E
Chord Bear = S 66° 44' 04.97" E

==========
Ending chain ERWEIN1 description

PR5TH

Chain PR5TH contains:
3001 3002

Beginning chain PR5TH description
==========

Point 3001 N 169,777.65 E 2,310,299.96 Sta 5+00.00

Course from 3001 to 3002 N 8° 34' 17.57" E Dist 150.00

Point 3002 N 169,925.97 E 2,310,322.32 Sta 6+50.00

==========
Ending chain PR5TH description

PR8THSTN

Chain PR8THSTN contains:
3016 CUR C3017 3018

Beginning chain PR8THSTN description
==========

Point 3016 N 169,845.60 E 2,310,184.05 Sta 5+00.00

Course from 3016 to PC C3017 S 80° 21' 25.88" E Dist 80.00

Curve Data
———

Curve C3017
P.I. Station 6+22.38 N 169,825.10 E 2,310,304.71
Delta = 2° 01' 42.64" (LT)
Degree = 2° 23' 35.87"
Tangent = 42.38
Length = 84.76
Radius = 2,394.01
External = 0.38
Long Chord = 84.75
Mid. Ord. = 0.38
P.C. Station 5+80.00 N 169,832.20 E 2,310,262.92
P.T. Station 6+64.76 N 169,819.48 E 2,310,346.72
C.C. N 172,192.38 E 2,310,663.93
Back = S 80° 21' 25.88" E
Ahead = S 82° 23' 08.51" E
Chord Bear = S 81° 22' 17.20" E

Course from PT C3017 to 3018 S 82° 23' 08.51" E Dist 29.03

Point 3018 N 169,815.64 E 2,310,375.49 Sta 6+93.78

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Ending chain PR8THSTN description

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Survey Data Layout
Roundabout Alignments

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	23

Chain ERSWTB contains:
3100 CUR ERSWTB-1 CUR ERSWTB-2 CUR ERSWTB-3 3101

Beginning chain ERSWTB description
==========

Point 3100 N 169,891.45 E 2,310,513.54 Sta 0+00.00

Course from 3100 to PC ERSWTB-1 S 78° 58' 01.01" E Dist 50.62

Curve Data
———

Curve ERSWTB-1
P.I. Station 0+75.77 N 169,876.95 E 2,310,587.90
Delta = 14° 55' 14.79" (RT)
Degree = 29° 50' 29.59"
Tangent = 25.14
Length = 50.00
Radius = 192.00
External = 1.64
Long Chord = 49.86
Mid. Ord. = 1.63
P.C. Station 0+50.62 N 169,881.77 E 2,310,563.23
P.T. Station 1+00.62 N 169,865.95 E 2,310,610.51
C.C. N 169,693.31 E 2,310,526.48
Back = S 78° 58' 01.01" E
Ahead = S 64° 02' 46.22" E
Chord Bear = S 71° 30' 23.62" E

Curve Data
———

Curve ERSWTB-2
P.I. Station 1+40.79 N 169,848.37 E 2,310,646.63
Delta = 35° 37' 37.28" (RT)
Degree = 45° 50' 11.84"
Tangent = 40.17
Length = 77.73
Radius = 125.00
External = 6.29
Long Chord = 76.48
Mid. Ord. = 5.99
P.C. Station 1+00.62 N 169,865.95 E 2,310,610.51
P.T. Station 1+78.35 N 169,813.05 E 2,310,665.74
C.C. N 169,753.56 E 2,310,555.81
Back = S 64° 02' 46.22" E
Ahead = S 28° 25' 08.94" E
Chord Bear = S 46° 13' 57.58" E

Curve Data
———

Curve ERSWTB-3
P.I. Station 2+06.10 N 169,788.64 E 2,310,678.95
Delta = 18° 59' 00.75" (RT)
Degree = 34° 30' 55.91"
Tangent = 27.75
Length = 55.00
Radius = 166.00
External = 2.30
Long Chord = 54.75
Mid. Ord. = 2.27
P.C. Station 1+78.35 N 169,813.05 E 2,310,665.74
P.T. Station 2+33.35 N 169,761.26 E 2,310,683.50
C.C. N 169,734.04 E 2,310,519.75
Back = S 28° 25' 08.94" E
Ahead = S 9° 26' 08.19" E
Chord Bear = S 18° 55' 38.57" E

Course from PT ERSWTB-3 to 3101 S 9° 26' 08.19" E Dist 81.69

Point 3101 N 169,680.68 E 2,310,696.89 Sta 3+15.04

==========
Ending chain ERSWTB description

Chain ERSETB contains:
3105 CUR ERSETB-1 3106

Beginning chain ERSETB description
==========

Point 3105 N 169,667.02 E 2,310,743.14 Sta 0+00.00

Course from 3105 to PC ERSETB-1 N 14° 11' 59.31" E Dist 42.74

Curve Data
———

Curve ERSETB-1
P.I. Station 1+61.39 N 169,823.48 E 2,310,782.73
Delta = 58° 55' 54.09" (RT)
Degree = 27° 17' 01.34"
Tangent = 118.65
Length = 216.00
Radius = 210.00
External = 31.20
Long Chord = 206.60
Mid. Ord. = 27.16
P.C. Station 0+42.74 N 169,708.46 E 2,310,753.63
P.T. Station 2+58.74 N 169,857.91 E 2,310,896.28
C.C. N 169,656.95 E 2,310,957.21
Back = N 14° 11' 59.31" E
Ahead = N 73° 07' 53.40" E
Chord Bear = N 43° 39' 56.35" E

Course from PT ERSETB-1 to 3106 N 73° 07' 53.40" E Dist 56.65

Point 3106 N 169,874.35 E 2,310,950.49 Sta 3+15.39

==========
Ending chain ERSETB description

Chain ERNETB contains:
3110 CUR ERNETB-1 3111

Beginning chain ERNETB description
==========

Point 3110 N 169,925.34 E 2,310,977.02 Sta 0+00.00

Course from 3110 to PC ERNETB-1 N 82° 23' 37.60" W Dist 45.65

Curve Data
———

Curve ERNETB-1
P.I. Station 1+58.15 N 169,946.27 E 2,310,820.26
Delta = 61° 15' 38.61" (RT)
Degree = 30° 09' 20.42"
Tangent = 112.50
Length = 203.15
Radius = 190.00
External = 30.81
Long Chord = 193.61
Mid. Ord. = 26.51
P.C. Station 0+45.65 N 169,931.38 E 2,310,931.78
P.T. Station 2+48.80 N 170,051.20 E 2,310,779.70
C.C. N 170,119.71 E 2,310,956.93
Back = N 82° 23' 37.60" W
Ahead = N 21° 07' 59.00" W
Chord Bear = N 51° 45' 48.30" W

Course from PT ERNETB-1 to 3111 N 21° 07' 59.00" W Dist 77.70

Point 3111 N 170,123.68 E 2,310,751.69 Sta 3+26.50

==========
Ending chain ERNETB description

Chain ERNWTB contains:
3115 CUR ERNWTB-1 CUR ERNWTB-2 CUR ERNWTB-3 3116

Beginning chain ERNWTB description
==========

Point 3115 N 170,126.53 E 2,310,690.77 Sta 0+00.00

Course from 3115 to PC ERNWTB-1 S 0° 21' 00.09" E Dist 47.55

Curve Data
———

Curve ERNWTB-1
P.I. Station 0+77.80 N 170,048.73 E 2,310,691.25
Delta = 17° 54' 17.75" (RT)
Degree = 29° 50' 29.59"
Tangent = 30.25
Length = 60.00
Radius = 192.00
External = 2.37
Long Chord = 59.76
Mid. Ord. = 2.34
P.C. Station 0+47.55 N 170,078.98 E 2,310,691.06
P.T. Station 1+07.55 N 170,019.90 E 2,310,682.12
C.C. N 170,077.81 E 2,310,499.07
Back = S 0° 21' 00.09" E
Ahead = S 17° 33' 17.66" W
Chord Bear = S 8° 36' 08.78" W

Curve Data
———

Curve ERNWTB-2
P.I. Station 1+41.41 N 169,987.61 E 2,310,671.91
Delta = 48° 35' 48.73" (RT)
Degree = 76° 23' 39.74"
Tangent = 33.86
Length = 63.61
Radius = 75.00
External = 7.29
Long Chord = 61.72
Mid. Ord. = 6.64
P.C. Station 1+07.55 N 170,019.90 E 2,310,682.12
P.T. Station 1+71.17 N 169,973.92 E 2,310,640.94
C.C. N 170,042.52 E 2,310,610.62
Back = S 17° 33' 17.66" W
Ahead = S 66° 09' 06.39" W
Chord Bear = S 41° 51' 12.02" W

Curve Data
———

Curve ERNWTB-3
P.I. Station 1+91.26 N 169,965.80 E 2,310,622.56
Delta = 13° 48' 22.36" (RT)
Degree = 34° 30' 55.91"
Tangent = 20.10
Length = 40.00
Radius = 166.00
External = 1.21
Long Chord = 39.90
Mid. Ord. = 1.20
P.C. Station 1+71.17 N 169,973.92 E 2,310,640.94
P.T. Station 2+11.17 N 169,962.29 E 2,310,602.77
C.C. N 170,125.75 E 2,310,573.82
Back = S 66° 09' 06.39" W
Ahead = S 79° 57' 28.75" W
Chord Bear = S 73° 03' 17.57" W

Course from PT ERNWTB-3 to 3116 S 79° 57' 28.75" W Dist 67.94

Point 3116 N 169,950.44 E 2,310,535.87 Sta 2+79.11

==========
Ending chain ERNWTB description

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Survey Data Layout
Roundabout
Truck Blister Alignments

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	24

Stations and Offsets from US HWY 52 Centerline Chain: EX52

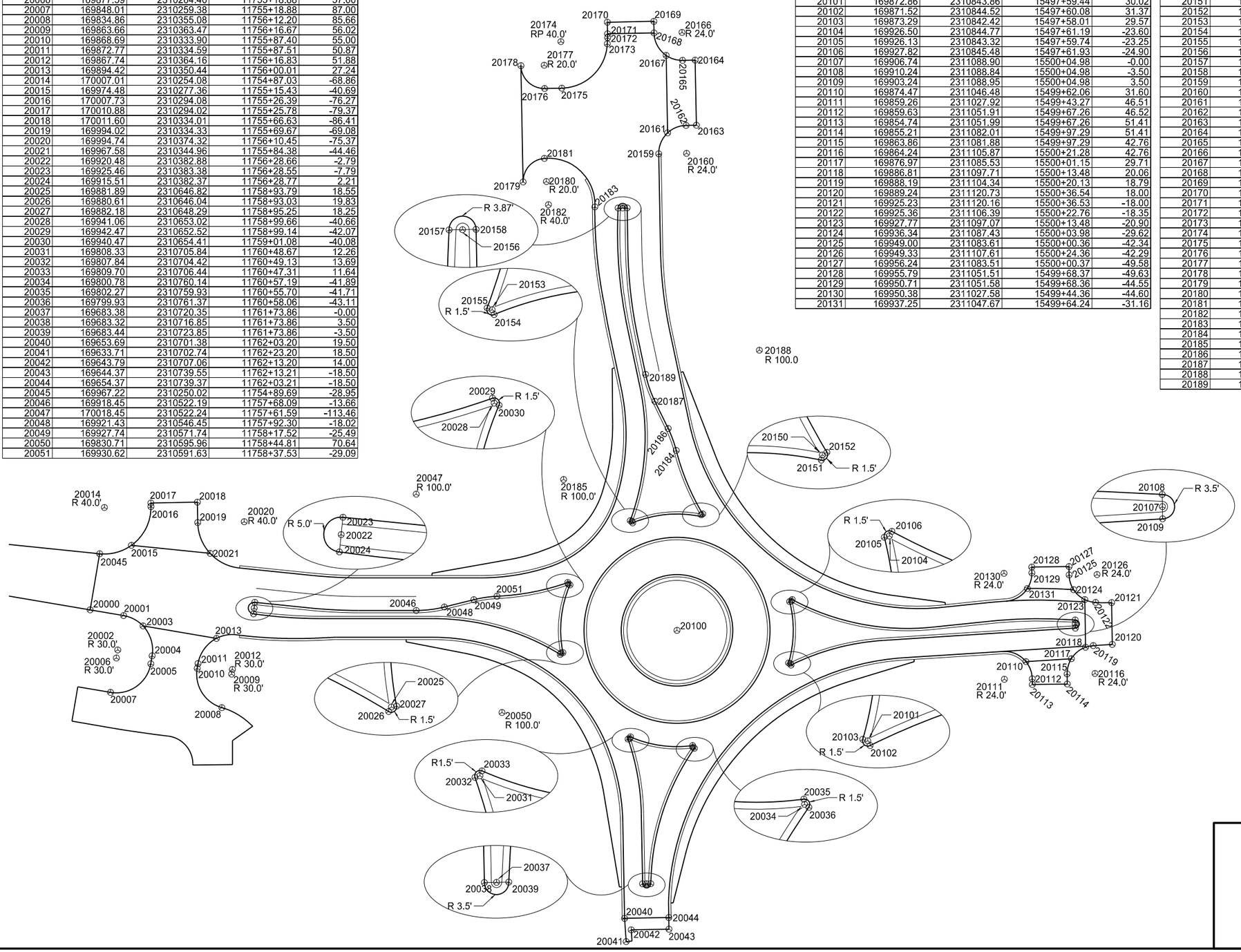
Point	North	East	Station	Offset
20000	169918.96	2310241.82	11754+89.69	20.00
20001	169914.07	2310270.60	11755+18.88	20.00
20002	169884.49	2310265.58	11755+18.89	50.00
20003	169905.14	2310287.34	11755+36.75	26.03
20004	169879.47	2310295.15	11755+48.37	50.12
20005	169872.56	2310293.98	11755+48.30	57.13
20006	169877.59	2310264.40	11755+18.88	57.00
20007	169848.01	2310259.38	11755+18.88	87.00
20008	169834.86	2310355.08	11756+12.20	85.66
20009	169863.66	2310363.47	11756+16.67	56.02
20010	169868.69	2310333.90	11755+87.40	55.00
20011	169872.77	2310334.59	11755+87.51	50.87
20012	169867.74	2310364.16	11756+16.83	51.88
20013	169894.42	2310350.44	11756+00.01	27.24
20014	170007.01	2310254.08	11754+87.03	-68.86
20015	169974.48	2310277.36	11755+15.43	-40.69
20016	170007.73	2310294.08	11755+26.39	-76.27
20017	170010.88	2310294.02	11755+25.78	-79.37
20018	170011.60	2310334.01	11755+66.63	-86.41
20019	169994.02	2310334.33	11755+69.67	-69.08
20020	169994.74	2310374.32	11756+10.45	-75.37
20021	169967.58	2310344.96	11755+84.38	-44.46
20022	169920.48	2310382.88	11756+28.66	-2.79
20023	169925.46	2310383.38	11756+28.55	-7.79
20024	169915.51	2310382.37	11756+28.77	2.21
20025	169881.89	2310646.82	11758+93.79	18.55
20026	169880.61	2310646.04	11758+93.03	19.83
20027	169882.18	2310648.29	11758+95.25	18.25
20028	169941.06	2310653.02	11758+99.66	-40.66
20029	169942.47	2310652.52	11758+99.14	-42.07
20030	169940.47	2310654.41	11759+01.08	-40.08
20031	169808.33	2310705.84	11760+48.67	12.26
20032	169807.84	2310704.42	11760+49.13	13.69
20033	169809.70	2310706.44	11760+47.31	11.64
20034	169800.78	2310760.14	11760+57.19	-41.89
20035	169802.27	2310759.93	11760+55.70	-41.71
20036	169799.93	2310761.37	11760+58.06	-43.11
20037	169683.38	2310720.35	11761+73.86	-0.00
20038	169683.32	2310716.85	11761+73.86	3.50
20039	169683.44	2310723.85	11761+73.86	-3.50
20040	169653.69	2310701.38	11762+03.20	19.50
20041	169633.71	2310702.74	11762+23.20	18.50
20042	169643.79	2310707.06	11762+13.20	14.00
20043	169644.37	2310739.55	11762+13.21	-18.50
20044	169654.37	2310739.37	11762+03.21	-18.50
20045	169967.22	2310250.02	11754+89.69	-28.95
20046	169918.45	2310522.19	11757+68.09	-13.66
20047	170018.45	2310522.24	11757+61.59	-113.46
20048	169921.43	2310546.45	11757+92.30	-18.02
20049	169927.74	2310571.74	11758+17.52	-25.49
20050	169830.71	2310595.96	11758+44.81	70.64
20051	169930.62	2310591.63	11758+37.53	-29.09

Stations and Offsets from ND HWY 200 Centerline Chain: EX200

Point	North	East	Station	Offset
20100	169901.36	2310746.44	15496+62.48	-0.00
20101	169872.86	2310843.86	15497+59.44	30.02
20102	169871.52	2310844.52	15497+60.08	31.37
20103	169873.29	2310842.42	15497+58.01	29.57
20104	169926.50	2310844.77	15497+61.19	-23.60
20105	169926.13	2310843.32	15497+59.74	-23.25
20106	169927.82	2310845.48	15497+61.93	-24.90
20107	169906.74	2311088.90	15500+04.98	-0.00
20108	169910.24	2311088.84	15500+04.98	-3.50
20109	169903.24	2311088.95	15500+04.98	3.50
20110	169874.47	2311046.48	15499+62.06	31.60
20111	169859.26	2311027.92	15499+43.27	46.51
20112	169859.63	2311051.91	15499+67.26	46.52
20113	169854.74	2311051.99	15499+67.26	51.41
20114	169855.21	2311082.01	15499+97.29	51.41
20115	169863.86	2311081.88	15499+97.29	42.76
20116	169864.24	2311105.87	15500+21.28	42.76
20117	169876.97	2311085.53	15500+01.15	29.71
20118	169886.81	2311097.71	15500+13.48	20.06
20119	169888.19	2311104.34	15500+20.13	18.79
20120	169889.24	2311120.73	15500+36.54	18.00
20121	169925.23	2311120.16	15500+36.53	-18.00
20122	169925.36	2311106.39	15500+22.76	-18.35
20123	169927.77	2311097.07	15500+13.48	-20.90
20124	169936.34	2311087.43	15500+03.98	-29.62
20125	169949.00	2311083.61	15500+00.36	-42.34
20126	169949.33	2311107.61	15500+24.36	-42.29
20127	169956.24	2311083.51	15500+00.37	-49.58
20128	169955.79	2311051.51	15499+68.37	-49.63
20129	169950.71	2311051.58	15499+68.36	-44.55
20130	169950.38	2311027.58	15499+44.36	-44.60
20131	169937.25	2311047.67	15499+64.24	-31.16

Stations and Offsets from US HWY 281 Centerline Chain: EX281

Point	North	East	Station	Offset
20150	170000.70	2310767.24	5943+04.76	52.67
20151	169999.23	2310766.93	5943+03.29	52.34
20152	170001.47	2310768.53	5943+05.50	53.98
20153	169995.17	2310707.70	5943+00.35	-6.96
20154	169993.78	2310708.27	5942+98.95	-6.42
20155	169995.69	2310706.29	5943+00.90	-8.36
20156	170264.58	2310699.70	5945+69.87	-9.87
20157	170264.50	2310695.83	5945+69.86	-13.74
20158	170264.65	2310703.57	5945+69.86	-6.00
20159	170311.08	2310730.70	5946+15.77	22.00
20160	170311.53	2310754.69	5946+15.77	46.00
20161	170329.12	2310738.36	5946+33.67	30.00
20162	170335.53	2310754.24	5946+39.77	46.00
20163	170335.70	2310763.10	5946+39.78	54.86
20164	170391.69	2310762.04	5946+95.78	54.86
20165	170391.49	2310751.18	5946+95.78	44.00
20166	170415.48	2310750.73	5947+19.78	44.00
20167	170395.73	2310737.10	5947+00.29	30.00
20168	170415.03	2310726.73	5947+19.78	20.00
20169	170425.03	2310726.54	5947+29.78	20.00
20170	170424.27	2310686.55	5947+29.78	-20.00
20171	170414.28	2310686.74	5947+19.79	-20.00
20172	170410.95	2310686.80	5947+16.45	-20.00
20173	170405.68	2310686.55	5947+11.19	-20.35
20174	170407.59	2310646.60	5947+13.85	-60.26
20175	170367.60	2310647.35	5946+73.86	-60.26
20176	170367.32	2310632.62	5946+73.86	-75.00
20177	170387.32	2310632.24	5946+93.86	-75.00
20178	170386.94	2310612.24	5946+93.86	-95.00
20179	170286.91	2310614.13	5945+93.81	-95.00
20180	170287.29	2310634.13	5945+93.81	-75.00
20181	170307.21	2310632.36	5946+13.76	-76.39
20182	170267.36	2310635.90	5945+73.85	-73.61
20183	170265.46	2310675.86	5945+71.20	-33.69
20184	170056.07	2310745.79	5943+60.52	32.27
20185	170031.07	2310648.96	5943+37.35	-65.01
20186	170074.92	2310738.84	5943+79.50	25.68
20187	170098.35	2310727.40	5944+03.14	14.69
20188	170142.21	2310817.27	5944+45.29	105.37
20189	170121.46	2310719.45	5944+26.40	7.17



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Survey Data Layout
Roundabout and
Splitter Islands

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	25

720 0110 Right of Way Markers / 720 0130 Iron Pin R/W Monuments / 720 0135 Iron Pin Reference Monuments

STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	POINT NUMBER	R/W MARKER (Witness Post)	IRON PIN R/W MONUMENT	IRON PIN REFERENCE MONUMENT
14177+05.80	-120.00	168308.02	2183859.66	R/W MON R/W BREAK	22000	X	X	
10488+35.07	110.00	168580.33	2184125.58	R/W MON R/W BREAK	22001	X	X	
14177+17.78	85.00	168103.13	2183873.42	R/W MON R/W BREAK	22002	X	X	
14180+13.76	395.36	167795.36	2184172.08	R/W MON R/W BREAK	22003	X	X	
10493+01.58	399.15	167793.13	2184322.13	R/W MON R/W BREAK	22004	X	X	
10495+65.83	100.00	168095.49	2184582.71	R/W MON R/W BREAK	22005	X	X	
10543+94.50	100.00	168154.42	2189411.02	R/W REF MON	22007	X		X
10545+94.36	100.00	168156.93	2189610.94	R/W REF MON	22008	X		X
10545+94.64	-100.00	168356.91	2189608.64	R/W REF MON	22009	X		X
10596+75.83	-100.00	168422.52	2194689.39	R/W REF MON	22011	X		X
10596+75.83	100.00	168222.53	2194691.98	R/W REF MON	22012	X		X
10651+63.32	100.00	168259.27	2200178.86	R/W REF MON	22015	X		X
10651+63.90	-100.00	168459.27	2200177.84	R/W REF MON	22016	X		X
10680+23.46	100.00	168282.18	2203038.91	R/W MON R/W BREAK	22017	X	X	
10680+23.46	120.00	168262.18	2203039.07	R/W MON R/W BREAK	22018	X	X	
10702+84.31	-417.54	168817.82	2205295.54	R/W MON R/W BREAK	22019	X	X	
10704+47.12	-414.98	168817.08	2205455.56	R/W MON R/W BREAK	22020	X	X	
10707+29.61	-100.00	168506.29	2205742.67	R/W MON R/W BREAK	22021	X	X	
10702+66.80	100.00	168300.16	2205282.17	R/W REF MON	22023	X		X
10704+65.46	100.00	168302.42	2205481.49	R/W REF MON	22024	X		X
10715+65.30	-100.00	168518.61	2206578.26	R/W MON R/W BREAK	22025	X	X	
10715+65.30	-130.00	168548.60	2206577.82	R/W MON R/W BREAK	22026	X	X	
10755+56.04	-100.00	168577.42	2210568.57	R/W REF MON	22028	X		X
10755+56.04	100.00	168377.44	2210571.52	R/W MARKER	22029	X		
10757+55.99	-100.00	168580.34	2210768.52	R/W MARKER	22030	X		
10757+56.09	100.00	168380.36	2210771.52	R/W MARKER	22031	X		
10782+09.32	-100.00	168615.88	2213221.60	R/W REF MON	22104	X		X
10782+09.32	100.00	168415.90	2213224.50	R/W REF MON	22105	X		X
10835+15.12	100.00	168501.46	2218529.58	R/W REF MON	22106	X		X
10860+68.54	100.00	168525.55	2221082.40	R/W REF MON	22037	X		X
10862+68.09	100.00	168527.66	2221282.16	R/W REF MON	22038	X		X
10862+68.99	-100.00	168727.65	2221280.72	R/W REF MON	22039	X		X
10913+54.72	-100.00	168787.05	2226366.10	R/W REF MON	22040	X		X
10913+54.72	100.00	168587.07	2226368.44	R/W REF MON	22041	X		X
10915+54.22	100.00	168589.65	2226568.18	R/W REF MON	22042	X		X
10915+55.22	-100.00	168789.64	2226566.34	R/W REF MON	22043	X		X
10940+96.10	-100.00	168825.65	2229106.96	R/W REF MON	22107	X		X
10940+96.10	100.00	168625.67	2229109.80	R/W REF MON	22108	X		X
10931+77.61	-100.00	168812.63	2228188.57	R/W MON R/W BREAK	22045	X	X	
10931+77.61	-90.00	168802.63	2228188.71	R/W MON R/W BREAK	22046	X	X	
10934+57.61	-75.00	168791.60	2228468.90	R/W MON R/W BREAK	22047	X	X	
10934+57.61	-90.00	168806.60	2228468.69	R/W MON R/W BREAK	22048	X	X	
10968+65.29	-100.00	168855.29	2231876.61	R/W REF MON	22051	X		X
10936+99.61	-90.00	168810.03	2228710.66	R/W MON R/W BREAK	22052	X	X	
10936+99.61	-100.00	168820.03	2228710.52	R/W MON R/W BREAK	22053	X	X	
11016+42.56	-100.00	168893.45	2236653.74	R/W MON R/W BREAK	22054	X	X	
11019+40.97	-399.99	169195.82	2236949.74	R/W MON R/W BREAK	22055	X	X	
11021+31.59	-629.82	169426.23	2237146.69	R/W MON R/W BREAK	22056	X	X	
11057+48.23	-100.00	168884.95	2240762.11	R/W MON PC LT	22059	X	X	
11072+17.38	95.68	168678.27	2242234.03	R/W REF MON	22066	X		X
11074+24.02	100.00	168681.55	2242440.69	R/W REF MON	22067	X		X
11074+24.02	-100.00	168881.41	2242433.34	R/W REF MON	22068	X		X
11123+76.13	-100.00	169063.42	2247382.10	R/W REF MON	22071	X		X
11125+72.36	-100.00	169068.83	2247580.17	R/W REF MON	22072	X		X
11125+80.04	100.00	168869.00	2247591.36	R/W REF MON	22073	X		X
11178+69.01	100.00	168961.83	2252879.44	R/W REF MON	22074	X		X
11226+85.69	-100.00	169242.72	2257692.07	R/W MON PC LT	22077	X	X	
11227+13.01	100.02	169043.21	2257722.88	R/W MON R/W BREAK	22078	X	X	
11229+99.14	577.00	168573.42	2258024.70	R/W MON R/W BREAK	22079	X	X	
11229+54.39	-98.43	169247.22	2257959.58	R/W REF MON	22027	X		X
11231+55.49	-95.47	169250.85	2258159.81	R/W REF MON	22081	X		X
11233+86.43	109.88	169055.46	2258399.31	R/W MON R/W BREAK	22082	X	X	
11230+86.99	574.68	168578.65	2258114.63	R/W MON R/W BREAK	22083	X	X	
11238+05.92	119.63	169063.57	2258816.54	R/W MON R/W BREAK	22091	X	X	
11242+78.17	73.97	169112.67	2259284.67	R/W MON R/W BREAK	22092	X	X	
11242+79.34	113.95	169072.68	2259285.45	R/W MON R/W BREAK	22093	X	X	
11284+47.05	-100.00	169353.38	2263451.97	R/W REF MON	22095	X		X
11284+48.19	100.00	169153.42	2263456.42	R/W REF MON	22096	X		X
11310+03.41	-100.00	169395.72	2266007.98	R/W REF MON	22109	X		X
11310+03.41	100.00	169195.75	2266011.29	R/W REF MON	22110	X		X
11388+32.48	-98.25	169442.20	2273837.05	R/W REF MON	22102	X		X
11388+30.02	101.73	169242.20	2273837.33	R/W REF MON	22103	X		X

720 0125 Alignment Monuments

STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	POINT NUMBER	IRON PIN MONUMENT
10492+25.76	0.00	168191.33	2184241.45	SEC COR	22006	X
10544+94.50	0.00	168255.63	2189509.80	SEC COR	22010	X
10597+75.83	0.00	168323.82	2194790.68	SEC COR	22013	X
10650+63.61	0.00	168358.47	2200078.35	SEC COR	22014	X
10703+66.80	0.00	168400.95	2205381.37	SEC COR	22022	X
10756+56.03	0.00	168478.90	2210670.03	SEC COR	22032	X
10782+09.32	0.00	168515.89	2213223.05	1/4 COR	22033	X
10808+57.88	0.00	168563.41	2215871.18	SEC COR	22034	X
10835+15.12	0.00	168601.45	2218528.15	1/4 COR	22035	X
10861+68.54	0.00	168626.49	2221181.45	SEC COR	22036	X
10914+54.72	0.00	168688.23	2226467.27	SEC COR	22044	X
10940+96.10	0.00	168725.66	2229108.38	1/4 COR	22049	X
10967+65.85	0.00	168754.50	2231777.98	SEC COR	22050	X
11020+43.09	0.00	168796.66	2237055.05	SEC COR	22057	X
11047+01.53	0.00	168789.70	2239714.98	1/4 COR	22058	X
11057+48.23	0.00	168784.95	2240761.66	PC	22069	X
11060+36.26	N/A	168783.64	2241049.69	PI	22060	X
11063+24.26	0.00	168775.10	2241337.60	PT	22061	X
11064+56.14	0.00	168771.19	2241469.42	PC	22062	X
11068+36.90	N/A	168759.89	2241850.01	PI	22063	X
11072+17.38	0.00	168773.89	2242230.51	PT	22064	X
11073+24.02	0.00	168777.80	2242337.08	SEC COR	22065	X
11124+76.13	0.00	168967.16	2247485.71	SEC COR	22070	X
11177+68.86	0.00	169060.13	2252777.62	SEC COR	22075	X
11226+85.69	0.00	169142.74	2257693.75	PC	22076	X
11230+53.23	N/A	169148.91	2258061.25	PI/SEC COR	22080	X
11234+20.71	0.00	169166.87	2258428.35	PT	22084	X
11235+64.83	0.00	169173.91	2258572.30	PC	22085	X
11239+01.88	N/A	169190.38	2258908.94	PI	22086	X
11242+38.73	0.00	169187.03	2259245.97	PT	22087	X
11244+16.45	0.00	169185.26	2259423.68	PC	22088	X
11247+52.92	N/A	169181.92	2259760.14	PI	22089	X
11250+89.35	0.00	169188.46	2260096.55	PT	22090	X
11283+47.62	0.00	169251.74	2263354.21	SEC COR	22094	X
11310+03.41	0.00	169295.74	2266009.64	1/4 COR	22097	X
11336+53.23	0.00	169334.95	2268659.17	SEC COR	22098	X
11385+48.95	0.00	169341.80	2273554.88	PC	22099	X
11389+31.27	N/A	169342.34	2273937.19	PI/SEC COR	22100	X
11393+13.51	0.00	169355.62	2274319.27	PT	22101	X

720 0110 RIGHT OF WAY MARKERS
Summary of Quantities 72 EA

720 0125 ALIGNMENT MONUMENT
Summary of Quantities 39 EA

720 0130 IRON PIN R/W MONUMENTS
Summary of Quantities 31 EA

720 0135 IRON PIN REFERENCE MONUMENTS
Summary of Quantities 38 EA

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Survey Marker Locations
Wells County

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	82	26

720 0110 Right of Way Markers / 720 0130 Iron Pin R/W Monuments / 720 0135 Iron Pin Reference Monuments

STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	POINT NUMBER	R/W MARKER (Witness Post)	IRON PIN R/W MONUMENT	IRON PIN REFERENCE MONUMENT
11405+31.20	-100.00	169492.63	2275462.25	R/W MON R/W BREAK	22125	X	X	
11410+31.20	-100.00	169510.01	2275961.95	R/W MON R/W BREAK	22126	X	X	
11410+31.20	90.00	169320.12	2275968.56	R/W MON R/W BREAK	22127	X	X	
11410+31.20	150.00	169260.16	2275970.64	R/W MON R/W BREAK	22128	X	X	
11414+31.20	150.00	169274.06	2276370.40	R/W MON R/W BREAK	22129	X	X	
11414+31.20	90.00	169334.02	2276368.31	R/W MON R/W BREAK	22130	X	X	
11440+21.61	89.03	169424.02	2278956.49	R/W REF MON	22134	X		X
11440+10.15	-100.89	169613.56	2278939.89	R/W REF MON	22135	X		X
11442+14.33	99.14	169418.62	2279148.88	R/W REF MON	22136	X		X
11442+07.68	-100.92	169618.48	2279137.88	R/W REF MON	22137	X		X
11493+08.64	-100.00	169692.66	2284239.03	R/W REF MON	22138	X		X
11495+07.07	-100.00	169694.78	2284438.24	R/W REF MON	22139	X		X
11495+10.23	100.00	169494.81	2284442.73	R/W REF MON	22140			X
11545+96.94	99.92	169528.61	2289529.06	R/W REF MON	22145	X		X
11547+97.44	98.16	169530.30	2289728.69	R/W REF MON	22146	X		X
11547+95.17	-101.83	169730.30	2289727.36	R/W REF MON	22147	X		X
11552+31.83	-109.43	169734.78	2290164.34	R/W MON R/W BREAK	22148	X	X	
11552+32.62	-64.44	169689.78	2290164.80	R/W MON R/W BREAK	22149	X	X	
11556+33.72	-68.28	169693.88	2290564.78	R/W MON R/W BREAK	22150	X	X	
11556+33.70	-88.28	169713.88	2290564.57	R/W MON R/W BREAK	22151	X	X	
11559+83.73	-88.46	169717.47	2290914.55	R/W MON R/W BREAK	22152	X	X	
11559+83.72	-113.46	169742.46	2290914.30	R/W MON R/W BREAK	22153	X	X	
11575+33.21	-114.25	169758.35	2292463.71	R/W MON R/W BREAK	22157	X	X	
11582+37.51	-88.20	169740.56	2293167.23	R/W MON R/W BREAK	22158	X	X	
11582+37.78	-113.20	169765.56	2293166.98	R/W MON R/W BREAK	22159	X	X	
11598+77.08	-100.00	169782.38	2294807.29	R/W REF MON	22166	X		X
11598+77.08	100.00	169582.39	2294809.34	R/W REF MON	22167	X		X
11600+77.08	100.00	169584.56	2295009.45	R/W REF MON	22168	X		X
11626+26.14	-100.00	169813.67	2297556.05	R/W REF MON	22232	X		X
11626+26.14	100.00	169613.68	2297558.34	R/W REF MON	22233	X		X
11636+32.34	100.00	169625.18	2298564.47	R/W MON PC RT	22172	X	X	
11636+32.34	-100.00	169825.16	2298562.19	R/W MON PC LT	22173	X	X	
11646+35.14	-100.00	169865.62	2299558.20	R/W MON PT LT	22176	X	X	
11646+35.14	100.00	169666.11	2299572.14	R/W MON PT RT	22177	X	X	
11648+42.34	100.00	169680.55	2299778.83	R/W MON R/W BREAK	22178	X	X	
11651+76.84	-100.00	169903.38	2300098.58	R/W REF MON	22179	X		X
11651+58.58	118.26	169684.38	2300095.58	R/W REF MON	22180	X		X
11654+08.66	131.82	169688.29	2300345.99	R/W REF MON	22181	X		X
11653+76.84	-100.00	169917.32	2300298.09	R/W REF MON	22182	X		X
11663+50.72	-100.00	169985.21	2301269.60	R/W MON TS LT	22185	X	X	
11665+50.72	-100.00	169998.10	2301470.93	R/W MON SC LT	22186	X	X	
11677+84.72	100.00	169731.40	2302689.66	R/W MON R/W BREAK	22189	X	X	
11681+42.07	-100.00	169858.58	2303078.81	R/W MON R/W BREAK	22190	X	X	
11682+13.42	100.00	169647.54	2303102.35	R/W MON CS RT	22191	X	X	
11684+13.42	100.00	169598.58	2303294.46	R/W MON ST RT	22193	X	X	
11685+93.33	-100.00	169746.66	2303519.05	R/W MON R/W BREAK	22194	X	X	
11696+20.63	100.00	169293.68	2304462.52	R/W MON TS RT	22195	X	X	
11696+20.63	-100.00	169487.19	2304513.04	R/W MON TS LT	22196	X	X	
11699+20.63	-100.00	169416.15	2304800.44	R/W MON SC LT	22199	X	X	
11699+20.63	100.00	169220.80	2304757.56	R/W MON SC RT	22200	X	X	
11715+18.85	100.00	169209.62	2306385.64	R/W MON CS RT	22203	X	X	
11715+18.85	-100.00	169405.54	2306345.45	R/W MON CS LT	22204	X	X	
11734+26.11	-150.00	169905.73	2308182.42	R/W MON R/W BREAK	22206	X	X	
11737+28.96	-150.00	169978.19	2308476.47	R/W MON	22207	X	X	
11738+71.72	-150.00	170012.35	2308615.08	R/W MON	22208	X	X	
11739+88.70	175.00	169724.78	2308806.42	R/W MON	22209	X	X	
11741+72.40	-150.00	170084.29	2308907.04	R/W MON TS LT	22210	X	X	
11742+32.18	-150.00	170098.64	2308965.54	R/W MON R/W BREAK	22211	X	X	
11742+32.02	-200.00	170147.19	2308953.58	R/W MON R/W BREAK	22212	X	X	
11744+72.40	-200.00	170200.11	2309203.44	R/W MON SC LT	22213	X	X	
11749+55.35	-200.00	170219.61	2309735.18	R/W MON CS LT	22217	X	X	
11752+55.35	-200.00	170175.10	2310047.64	R/W MON ST LT	22218	X	X	
11752+65.70	125.00	169852.96	2310003.41	R/W MON R/W BREAK	22219	X	X	
11744+00.30	148.71	169843.97	2309193.98	R/W MON R/W BREAK	22226	X	X	
5946+21.88	100.00	170318.66	2310808.57	R/W MON R/W BREAK	22227	X	X	
15501+18.48	-82.45	169990.96	2311201.09	R/W MON R/W BREAK	22228	X	X	
15501+18.48	-100.00	170008.51	2311200.81	R/W MON R/W BREAK	22229	X	X	
15499+72.64	100.00	169806.24	2311058.14	R/W MON R/W BREAK	22230	X	X	
11763+77.04	-68.00	169481.45	2310791.98	R/W MON R/W BREAK	22231	X	X	

720 0125 Alignment Monuments

STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	POINT NUMBER	IRON PIN MONUMENT
11437+63.38	0.00	169505.02	2278695.96	PC	22131	X
11441+10.94	N/A	169517.10	2279043.31	PI SEC COR	22132	X
11444+58.46	0.00	169522.15	2279390.82	PT	22133	X
11494+08.64	0.00	169594.13	2284340.48	SEC COR	22141	X
11545+36.37	0.00	169628.21	2289468.09	PC	22142	X
11546+96.67	N/A	169629.28	2289628.39	PI SEC COR	22143	X
11548+56.97	0.00	169628.10	2289788.69	PT	22144	X
11552+50.55	0.00	169625.21	2290182.26	PC	22154	X
11554+46.33	N/A	169623.77	2290378.03	PI	22155	X
11556+42.09	0.00	169625.68	2290573.79	PT	22156	X
11579+82.26	0.00	169648.48	2292913.85	PC	22160	X
11581+97.08	N/A	169650.57	2293128.66	PI	22161	X
11584+11.89	0.00	169656.69	2293343.39	PT	22162	X
11587+88.42	0.00	169667.41	2293719.77	PC	22163	X
11589+97.40	N/A	169673.37	2293928.67	PI	22164	X
11592+06.36	0.00	169675.51	2294137.63	PT	22165	X
11599+77.08	0.00	169683.41	2294908.31	PI SEC COR	22169	X
11626+26.14	0.00	169713.68	2297557.19	1/4 COR	22170	X
11636+32.34	0.00	169725.17	2298563.33	PC	22171	X
11641+33.89	N/A	169730.90	2299064.84	PI	22174	X
11646+35.14	0.00	169765.86	2299565.17	PT	22175	X
11652+76.85	0.00	169810.60	2300205.31	SEC LINE CROSS	22183	X
11663+50.72	0.00	169885.45	2301276.57	TS	22184	X
11673+90.41	N/A	169957.93	2302313.73	PI	22187	X
11680+15.51	-8.05	169795.91	2302934.42	TAN LINE/SEC LINE CROSS	22188	X
11684+13.42	0.00	169695.34	2303319.71	ST	22192	X
11696+20.63	0.00	169390.44	2304487.78	TS	22197	X
11706+38.29	101.71	169129.50	2305487.40	TAN LINE/SEC LINE CROSS	22201	X
11707+40.01	N/A	169107.72	2305570.87	PI	22202	X
11718+18.85	0.00	169375.54	2306657.73	ST	22205	X
11739+20.87	0.00	169878.47	2308698.70	SEC LINE CROSS	22214	X
11741+72.40	0.00	169938.65	2308942.92	TS	22215	X
11747+13.89	N/A	170069.63	2309474.45	PI	22216	X
11752+55.35	0.00	169977.93	2310014.14	ST	22232	X
11755+25.02	0.00	169932.76	2310280.01	PC	22220	X
11757+34.56	N/A	169897.66	2310486.59	PI	22223	X
11759+42.94	0.00	169900.60	2310696.11	PT	22224	X
11759+63.28	0.00	169900.88	2310716.44	SEC COR	22225	X

720 0110 RIGHT OF WAY MARKERS
Summary of Quantities 68 EA

720 0125 ALIGNMENT MONUMENT
Summary of Quantities 38 EA

720 0130 IRON PIN R/W MONUMENTS
Summary of Quantities 50 EA

720 0135 IRON PIN REFERENCE MONUMENTS
Summary of Quantities 19 EA

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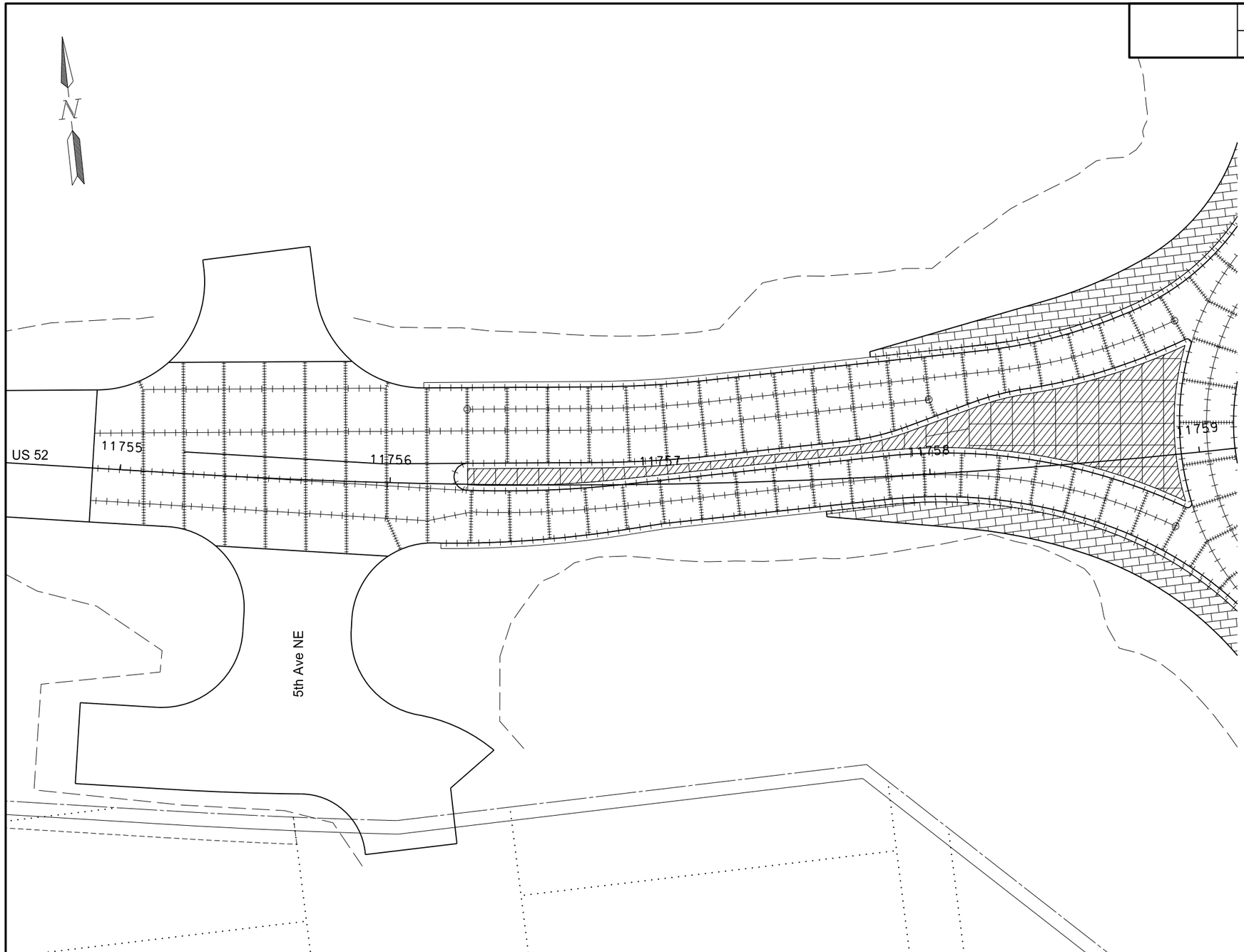
Survey Marker Locations
Foster County

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	90	1



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
WEST LEG	2,184.0 SY

CONCRETE MEDIAN PAVEMENT	Qty
WEST LEG MEDIAN	367.0 SY

9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	Qty
TRUCK BLISTER WEST ENTRANCE	123.5 SY
TRUCK BLISTER WEST EXIT	118.9 SY

CURB & GUTTER MOUNTABLE-TYPE I	Qty
WEST ENTRANCE	129.7 LF
WEST EXIT	113.3 LF

CURB & GUTTER-TYPE I	Qty
WEST SPLITTER ISLAND	609.0 LF
WEST ENTRANCE	143.6 LF
WEST EXIT	165.8 LF

Dowel Basket
Tie Bar
Keyed Joint
Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

○ * Core hole to be placed to prevent sympathy cracking. Core hole to be filled with low modulus silicone. Coring and all associated work to be included in the "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED" bid item.

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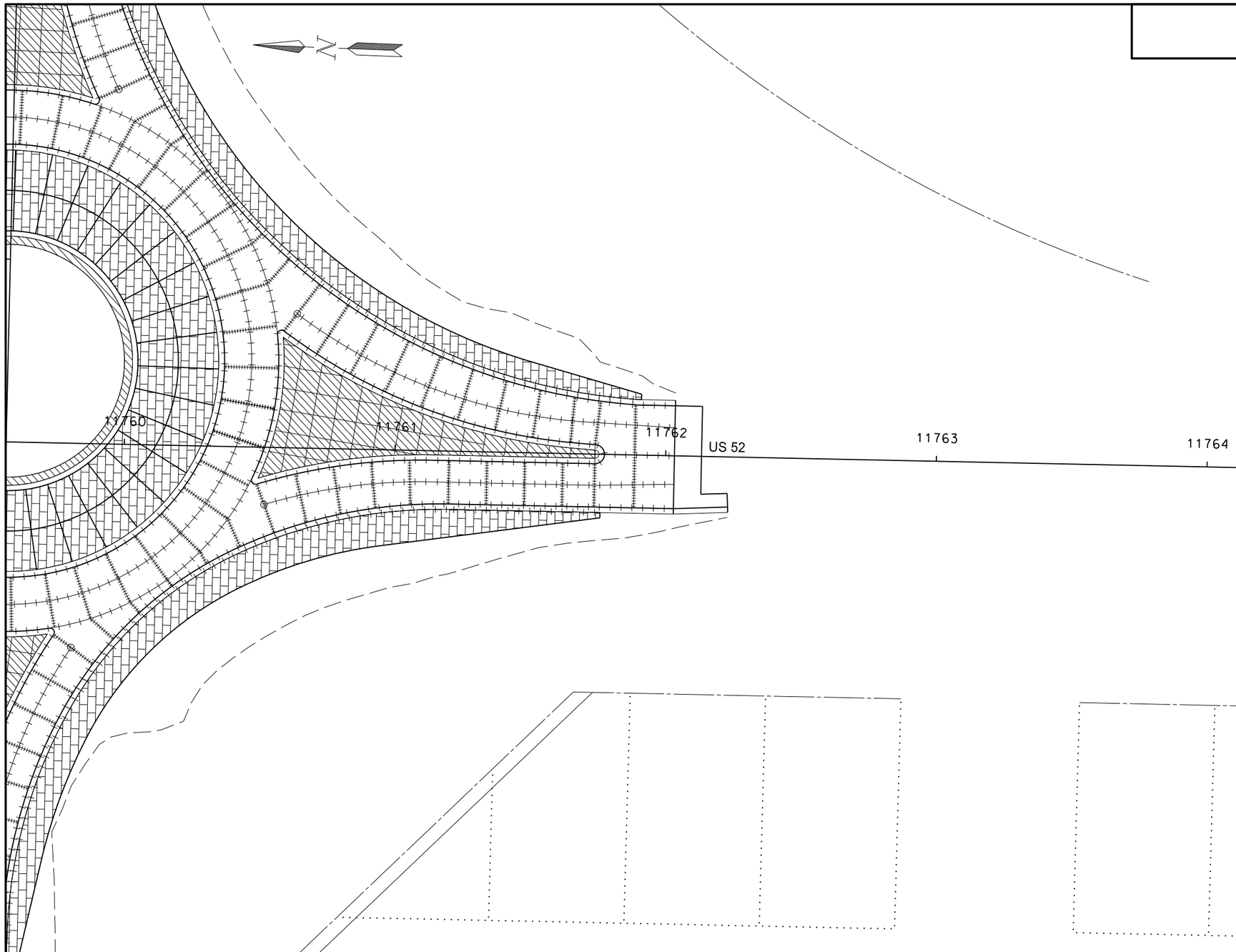
Paving Layout
West Roundabout Leg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	90	2



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
SOUTH LEG	623.3 SY

CONCRETE MEDIAN PAVEMENT	Qty
SOUTH LEG MEDIAN	234.6 SY

9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	Qty
TRUCK BLISTER SOUTH ENTRANCE	102.6 SY
TRUCK BLISTER SOUTH EXIT	123.9 SY

CURB & GUTTER MOUNTABLE-TYPE I	Qty
SOUTH ENTRANCE	129.3 LF
SOUTH EXIT	124.1 LF

CURB & GUTTER-TYPE I	Qty
SOUTH SPLITTER ISLAND	308.0 LF
SOUTH ENTRANCE	12.6 LF
SOUTH EXIT	47.2 LF

Dowel Basket
Tie Bar
Keyed Joint
Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

○ * Core hole to be placed to prevent sympathy cracking. Core hole to be filled with low modulus silicone. Coring and all associated work to be included in the "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED" bid item.

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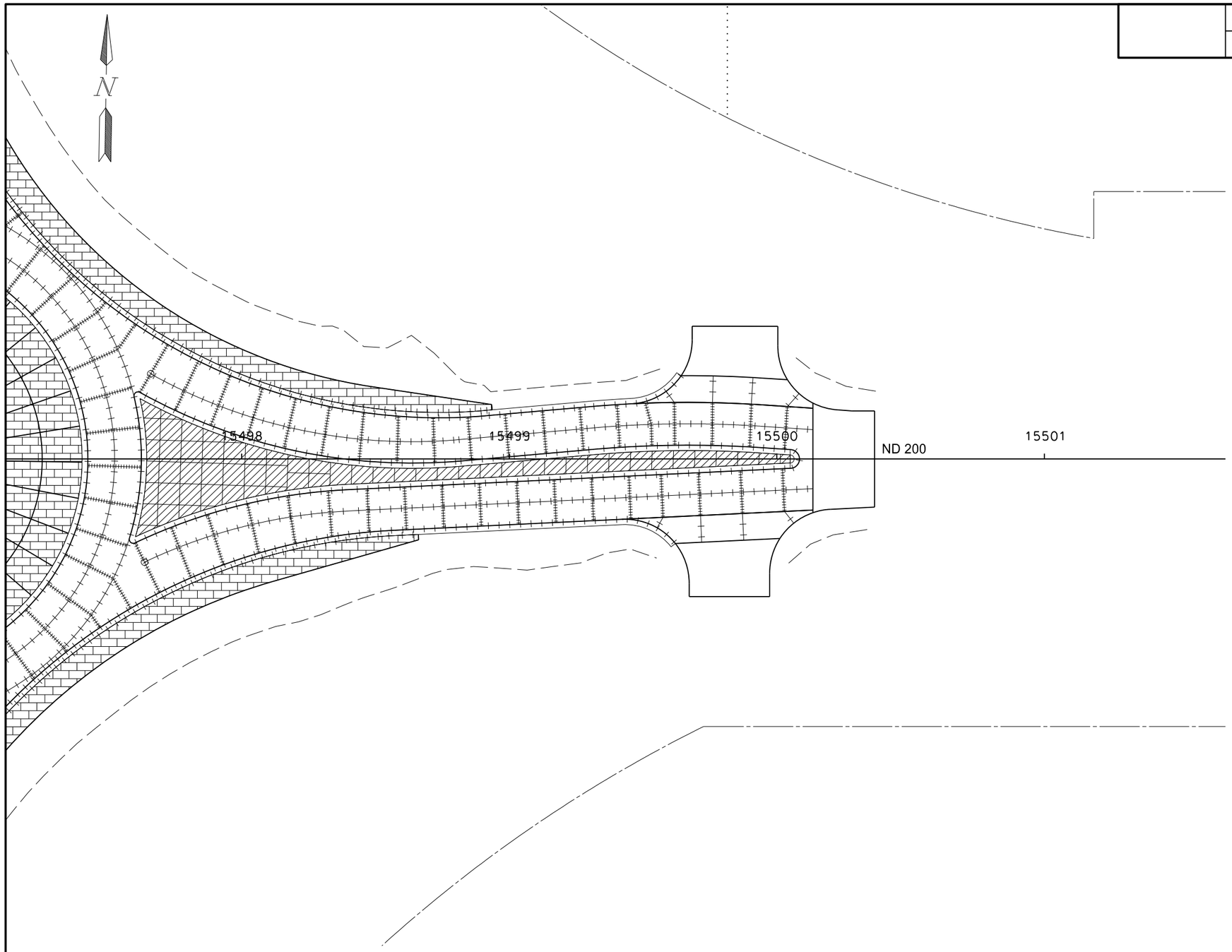
Paving Layout
South Roundabout Leg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	90	3



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
EAST LEG	1,090.2 SY

CONCRETE MEDIAN PAVEMENT	Qty
EAST LEG MEDIAN	300.5 SY

9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	Qty
TRUCK BLISTER EAST ENTRANCE	105.9 SY
TRUCK BLISTER EAST EXIT	91.6 SY

CURB & GUTTER MOUNTABLE-TYPE I	Qty
EAST ENTRANCE	127.9 LF
EAST EXIT	102.6 LF

CURB & GUTTER-TYPE I	Qty
EAST SPLITTER ISLAND	555.24 LF
EAST ENTRANCE	72.4 LF
EAST EXIT	97.2 LF

Dowel Basket
Tie Bar
Keyed Joint
Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

○ * Core hole to be placed to prevent sympathy cracking. Core hole to be filled with low modulus silicone. Coring and all associated work to be included in the "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED" bid item.

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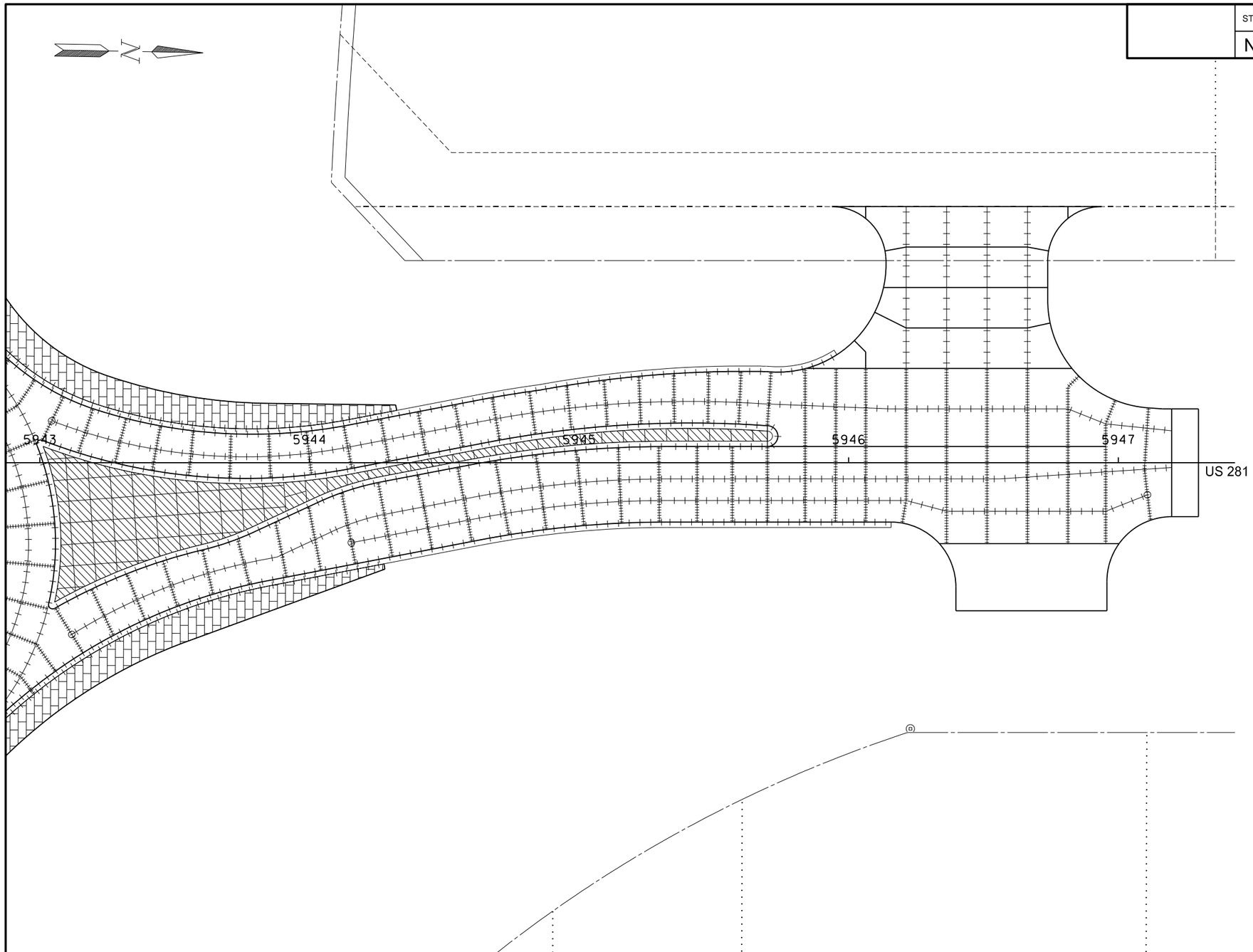
Paving Layout
East Roundabout Leg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	90	4



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
NORTH LEG	2,672.4 SY

CONCRETE MEDIAN PAVEMENT	Qty
NORTH LEG MEDIAN	361.6 SY

9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	Qty
TRUCK BLISTER NORTH ENTRANCE	123.8 SY
TRUCK BLISTER NORTH EXIT	117.7 SY

CURB & GUTTER MOUNTABLE-TYPE I	Qty
NORTH ENTRANCE	127.6 LF
NORTH EXIT	120.4 LF

CURB & GUTTER-TYPE I	Qty
NORTH SPLITTER ISLAND	611.0 LF
NORTH ENTRANCE	164.7 LF
NORTH EXIT	189.2 LF

Dowel Basket
Tie Bar
Keyed Joint
Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

○ * Core hole to be placed to prevent sympathy cracking. Core hole to be filled with low modulus silicone. Coring and all associated work to be included in the "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED" bid item.

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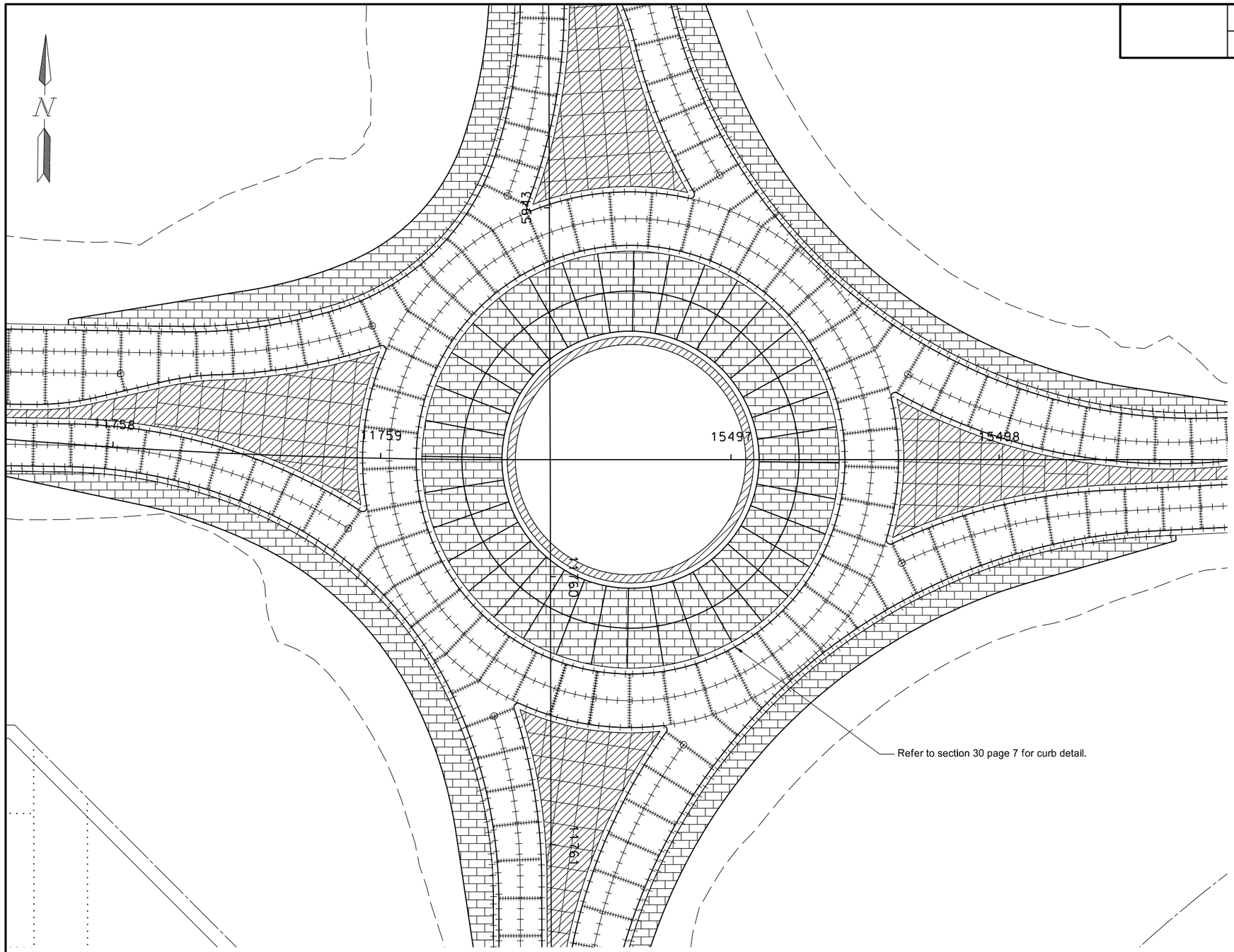
Paving Layout
North Roundabout Leg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	90	5



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
CENTER ROADWAY	1,553.3 SY

9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	Qty
TRUCK APRON	1,310.2 SY
TRUCK BLISTER NE	98.1 SY
TRUCK BLISTER NW	72.6 SY
TRUCK BLISTER SW	92.3 SY
TRUCK BLISTER SE	95.1 SY

CONCRETE MEDIAN PAVEMENT	Qty
INSIDE TRUCK APRON	93.2 SY

CURB & GUTTER-TYPE I	Qty
INSIDE TRUCK APRON	289.0 LF

CURB & GUTTER MOUNTABLE-TYPE I	Qty
OUTSIDE TRUCK APRON	489.0 LF
OUTSIDE NE	90.5 LF
OUTSIDE NW	57.1 LF
OUTSIDE SW	76.6 LF
OUTSIDE SE	93.7 LF

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Dowel Basket

Tie Bar

Keyed Joint

Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

○ * Core hole to be placed to prevent sympathy cracking. Core hole to be filled with low modulus silicone. Coring and all associated work to be included in the "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED" bid item.

Paving Layout
Roundabout Circle

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)		6	
G20-1-60	**60"x24"**	**ROAD WORK NEXT __ MILES**	**2**	**34**	**68**
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**	**5**	**19**	**95**
G20-4-36	**36"x18"**	**PILOT CAR FOLLOW ME (Mounted to back of pilot car)**	**1**	**18**	**18**
G20-10-108	**108"x48"**	**CONTRACTOR SIGN**	**5**	**64**	**320**
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**	**48**	**37**	**1776**
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**	**6**	**59**	**354**
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	
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	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)		7	
R1-1-48	**48"x48"**	**STOP**	**8**	**32**	**256**
R1-1a-18	**18"x18"**	**STOP and SLOW PADDLE Back to Back**	**6**	**5**	**30**
R1-2-60	60"x60"	YIELD		29	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**18**	**39**	**702**
R2-1a-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**	**6**	**10**	**60**
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT 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	
R10-6-24	**24"x36"**	**STOP HERE ON RED**	**4**	**16**	**64**
R11-2-48	48"x30"	ROAD CLOSED		28	
R11-2a-48	48"x30"	STREET CLOSED		28	
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	
W1-4-48	**48"x48"**	**RIGHT or LEFT REVERSE CURVE ARROW**	**2**	**35**	**70**
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**	**4**	**35**	**140**
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**	**6**	**35**	**210**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**8**	**35**	**280**
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL		35	
W8-1-48	**48"x48"**	**BUMP**	**1**	**35**	**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**	**1**	**35**	**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.**	**4**	**35**	**140**
W8-55-48	**48"x48"**	**TRUCKS CROSSING AHEAD or __ FT.**	**4**	**35**	**140**
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	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**50**	**35**	**1750**
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.**	**4**	**35**	**140**
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or __ FT.		35	
W20-7a-48	**48"x48"**	**FLAGGING SYMBOL**	**6**	**35**	**210**
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)**	**6**	**12**	**72**
W21-1a-48	48"x48"	WORKERS SYMBOL		35	
W21-2-48	**48"x48"**	**FRESH OIL**	**1**	**35**	**35**
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-5-48	**48"x48"**	**SHOULDER WORK**	**2**	**35**	**70**
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

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**7070**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	**FLAGGING**	**MHR**	**4400**
704-1018	**LANE CLOSURE-SIGNAL CONTROLLER/FLAGGING CONTROL**	**EACH**	**2**
704-1039	**ATTENUATION DEVICE-TYPE B-45**	**EACH**	**2**
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH	
704-1043	**ATTENUATION DEVICE-TYPE B-65**	**EACH**	**2**
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**	**42**
704-1060	**DELINEATOR DRUMS**	**EACH**	**20**
704-1065	TRAFFIC CONES	EACH	
704-1067	**TUBULAR MARKERS**	**EACH**	**729**
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	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH	
704-1095	TYPE B FLASHERS	EACH	
704-1185	**PILOT CAR**	**HR**	**700**
704-1500	**OBLITERATION OF PVMT MK**	**SF**	**1570**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	**PRECAST CONCRETE MED BARRIER - STATE FURNISHED**	**EACH**	**66**
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	**SHORT TERM 4IN LINE - TYPE R**	**LF**	**76739**
762-0430	**SHORT TERM 4IN LINE - TYPE NR**	**LF**	**7320**
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
Widening and Paving

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	2

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
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						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						59	
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)**	**7**	**3**	**3**		**7**	**10**	**70**
M1-5-24	**24"x24"**	**STATE ROUTE MARKER (Post and installation only)**	**6**	**2**	**2**		**6**	**10**	**60**
M3-1-24	**24"x12"**	**NORTH (Mounted on route marker post)**	**2**	**1**	**1**		**2**	**7**	**14**
M3-2-24	**24"x12"**	**EAST (Mounted on route marker post)**	**3**	**1**	**1**		**3**	**7**	**21**
M3-3-24	**24"x12"**	**SOUTH (Mounted on route marker post)**	**2**	**1**	**1**		**2**	**7**	**14**
M3-4-24	**24"x12"**	**WEST (Mounted on route marker post)**	**6**	**2**	**2**		**6**	**7**	**42**
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)						7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT						15	
M4-10-48	48"x18"	DETOUR 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)**	**11**				**11**	**7**	**77**
M6-2-21	**21"x15"**	**ARROW UP & RT or LT (Mounted on route marker post)**		**5**	**5**		**5**	**7**	**35**
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)						7	
R1-1-48	**48"x48"**	**STOP**	**6**				**6**	**32**	**192**
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back						5	
R1-2-60	60"x60"	YIELD						29	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**4**	**4**	**4**		**4**	**39**	**156**
R2-1a-24	24"x18"	MINIMUM FEE $80 (Mounted on Speed Limit post)						10	
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT						35	
R4-1-48	48"x60"	DO NOT PASS						39	
R4-7-48	48"x60"	KEEP RIGHT 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	
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						28	
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	
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						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**	**4**	**4**	**4**		**4**	**35**	**140**
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL						35	
W5-1-48	48"x48"	ROAD NARROWS						35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE						35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW						35	
W6-3-48	48"x48"	TWO WAY TRAFFIC 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	
W20-1-48	48"x48"	ROAD WORK AHEAD or _FT or _ MILE						35	
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	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or __ FT.						35	
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	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
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

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**821**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. 1	2	3		TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**1800**				**1800**
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**	**6**			**12**
704-1060	DELINEATOR DRUMS	EACH					
704-1065	TRAFFIC CONES	EACH					
704-1067	**TUBULAR MARKERS**	EACH	**189**	**117**	**73**		**189**
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					
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					
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF					
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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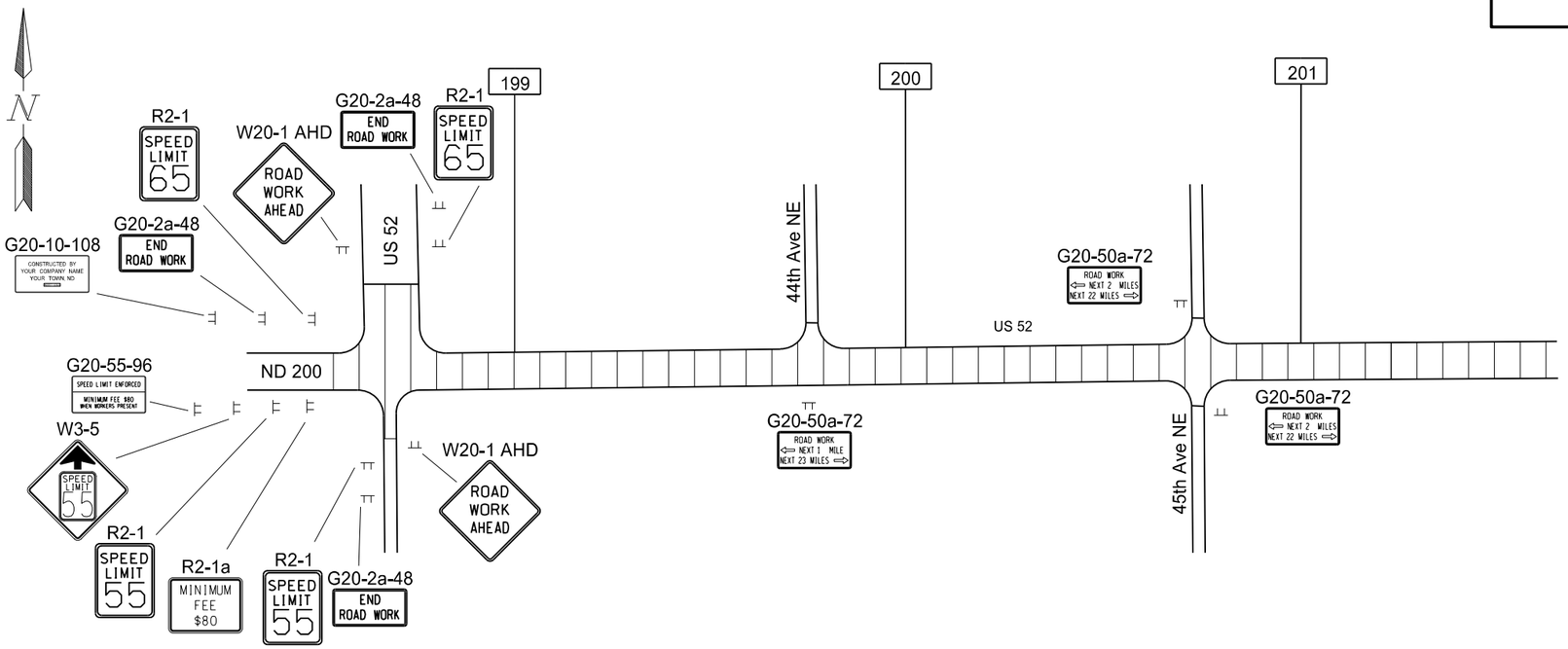
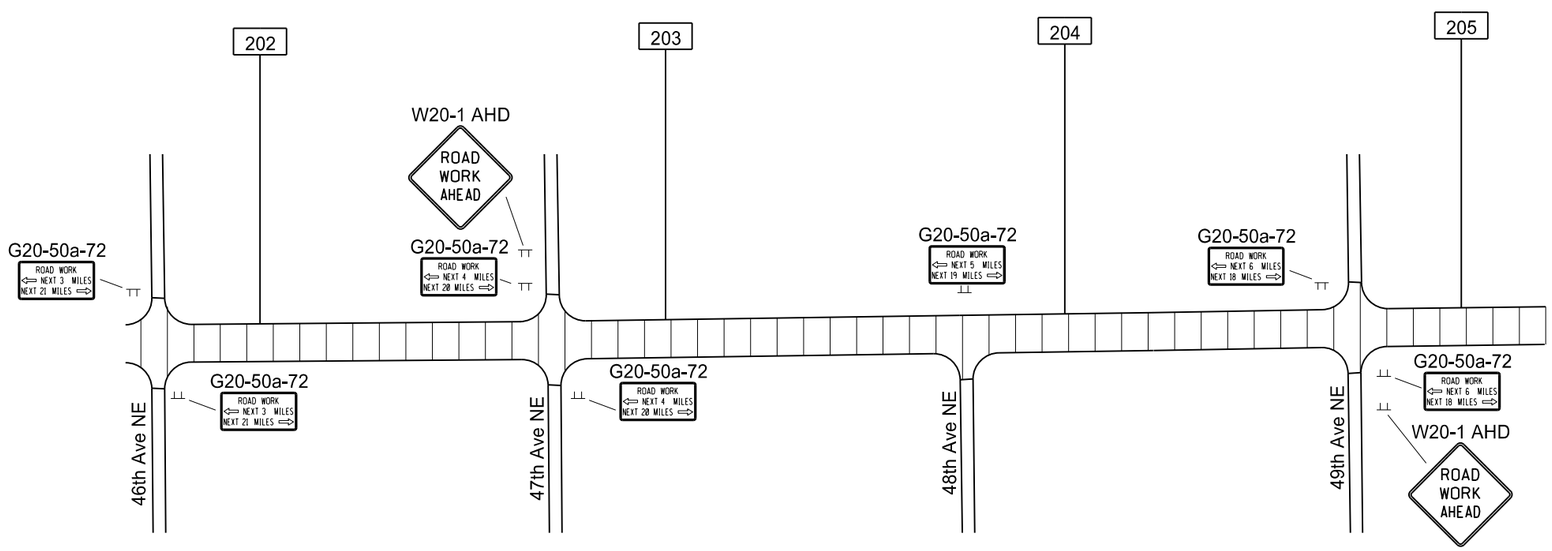
Traffic Control Devices List

Roundabout Detour

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	3





Work Zone

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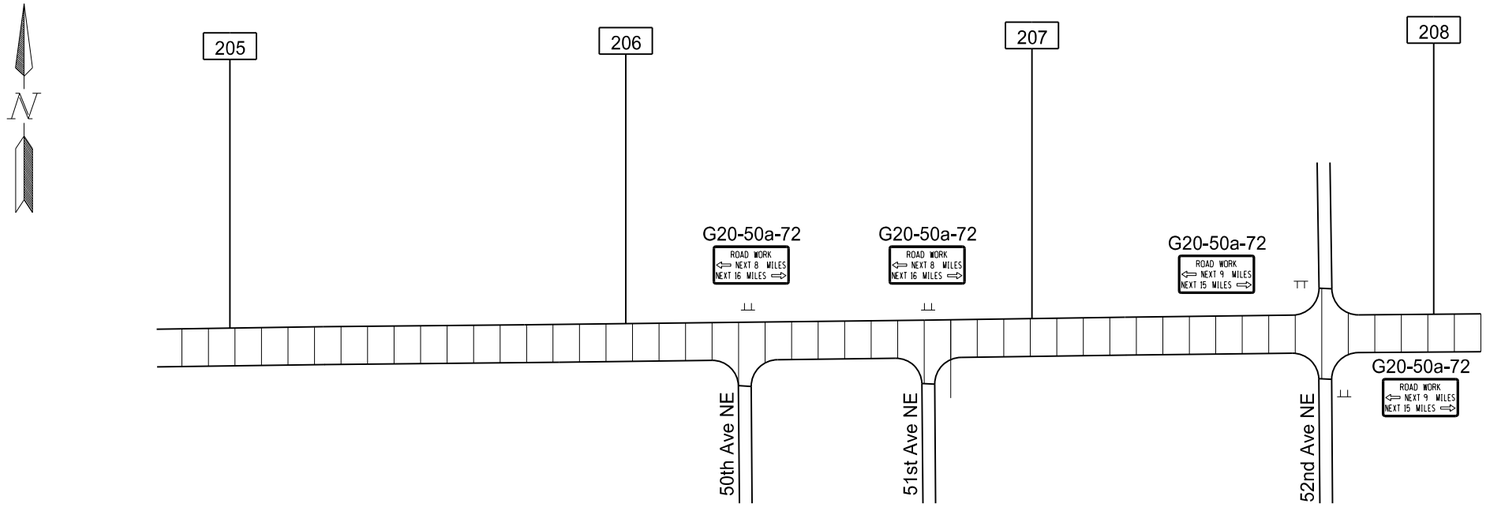
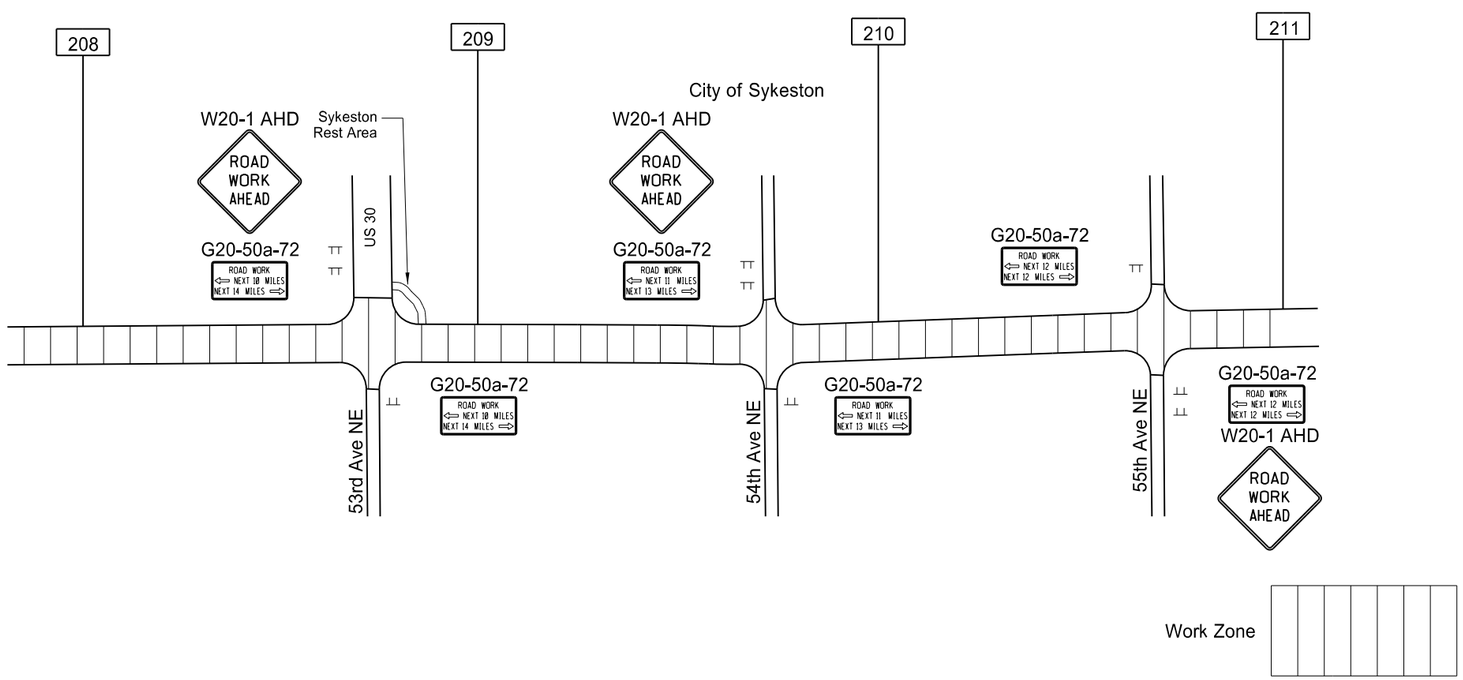
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	4





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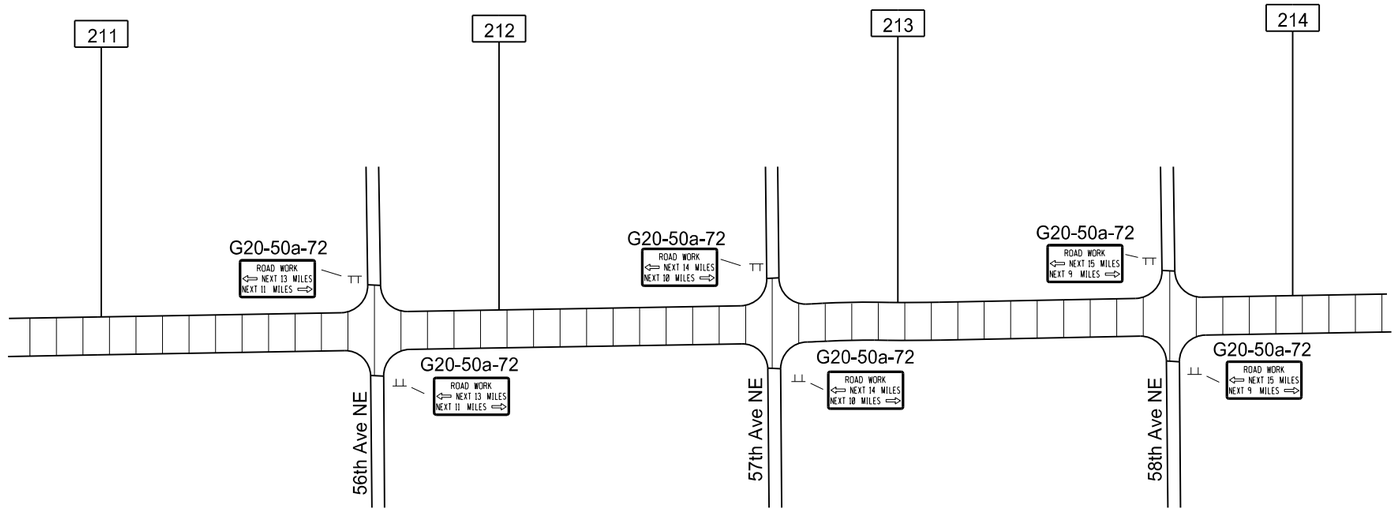
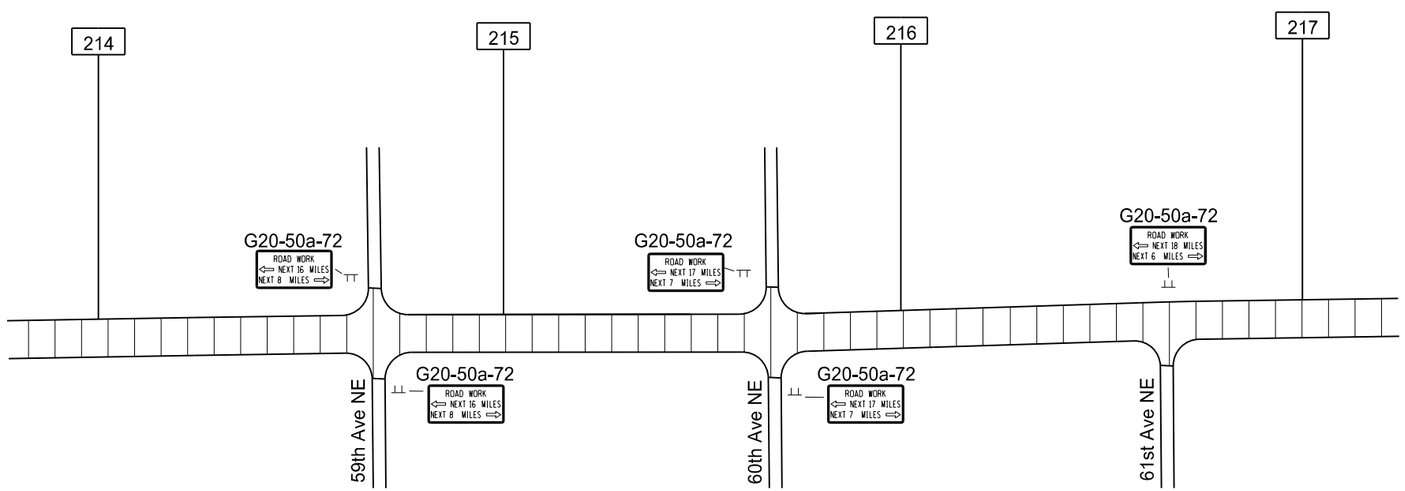
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	5





Work Zone

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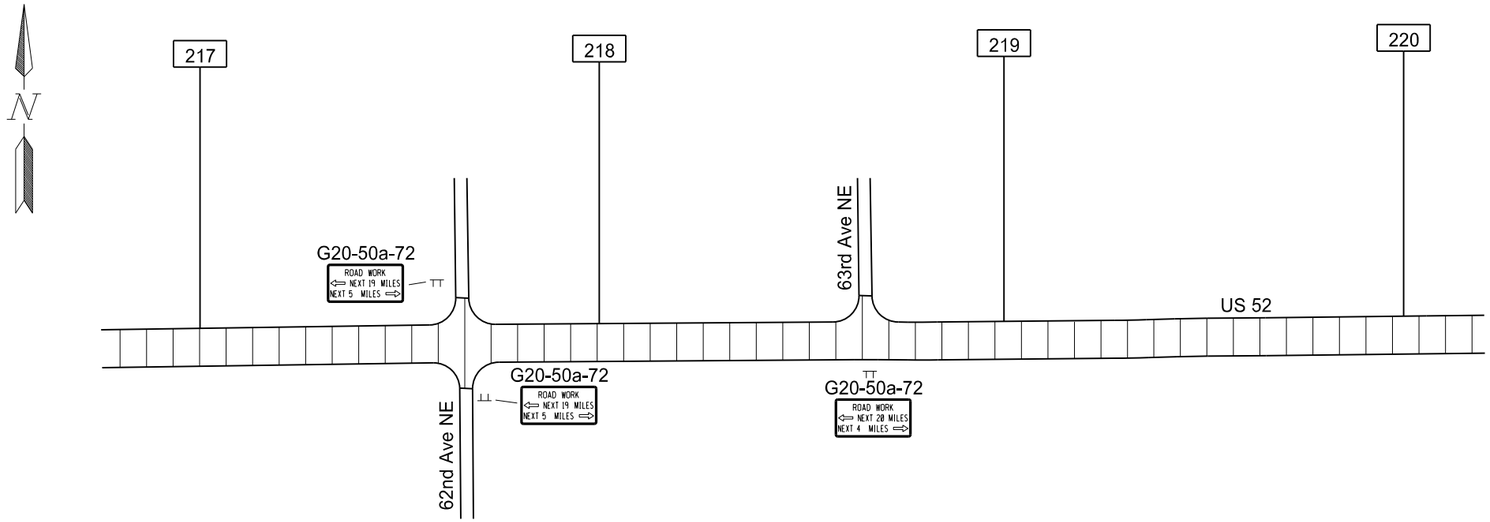
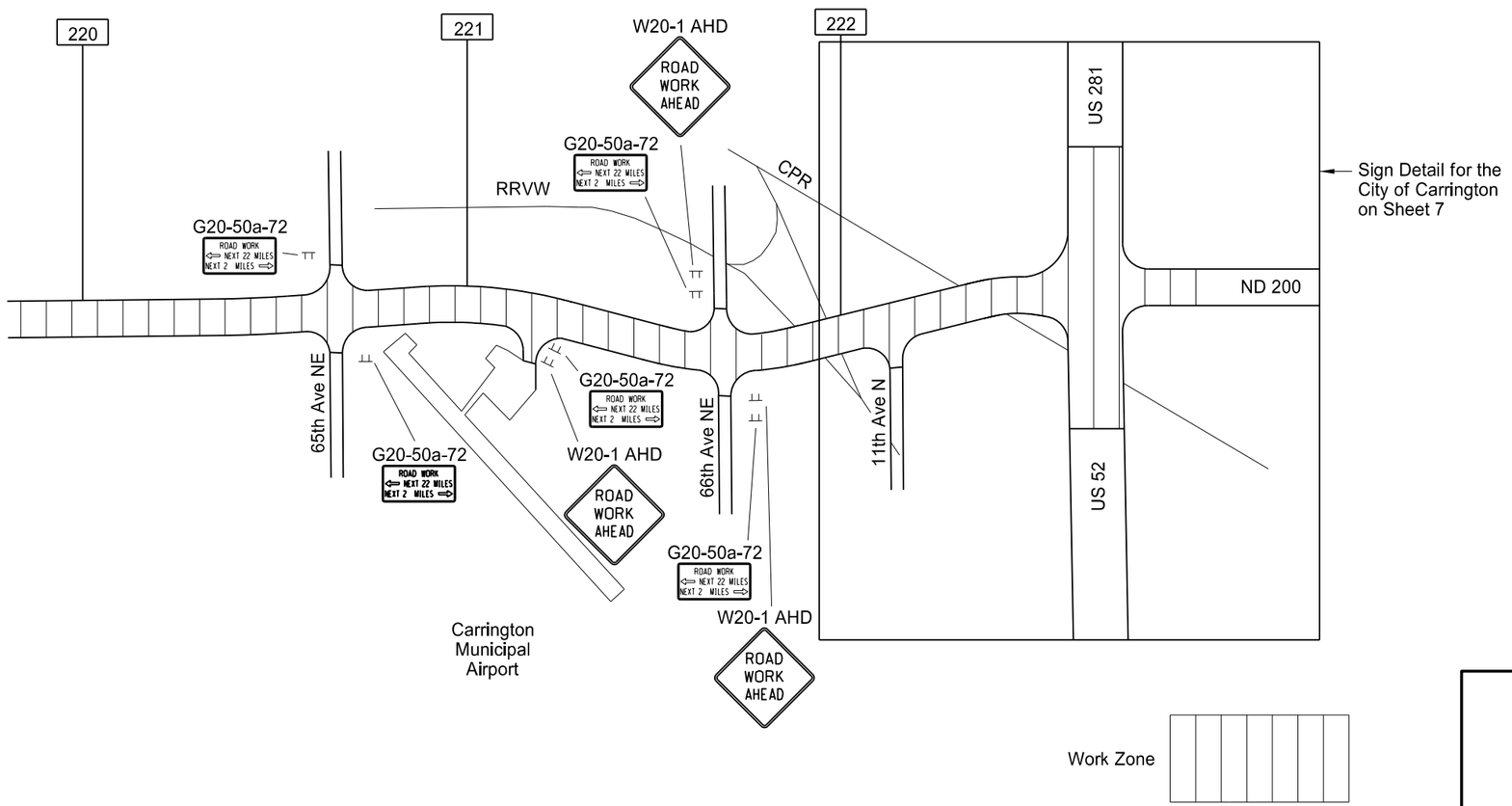
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	6





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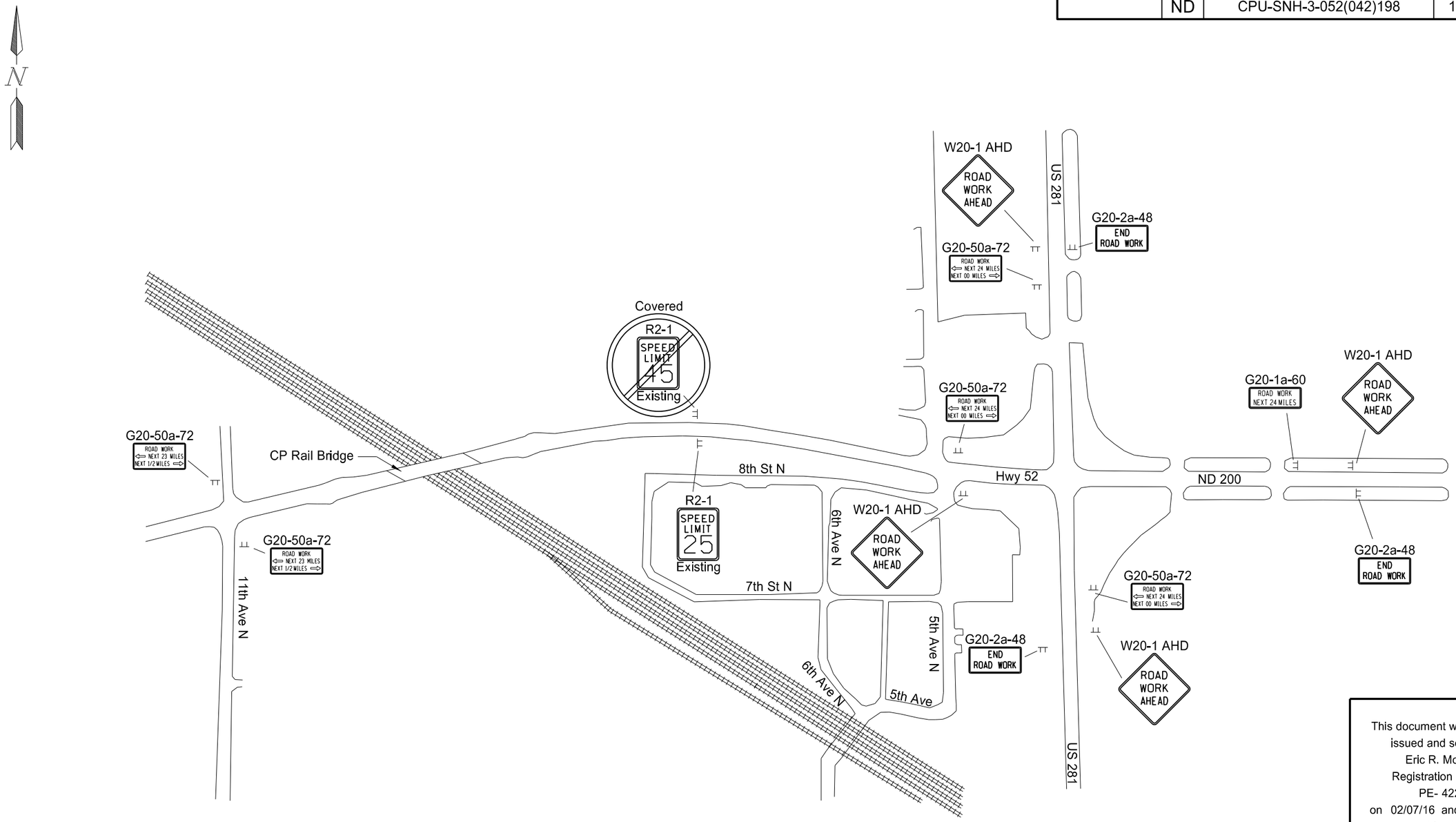
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	7



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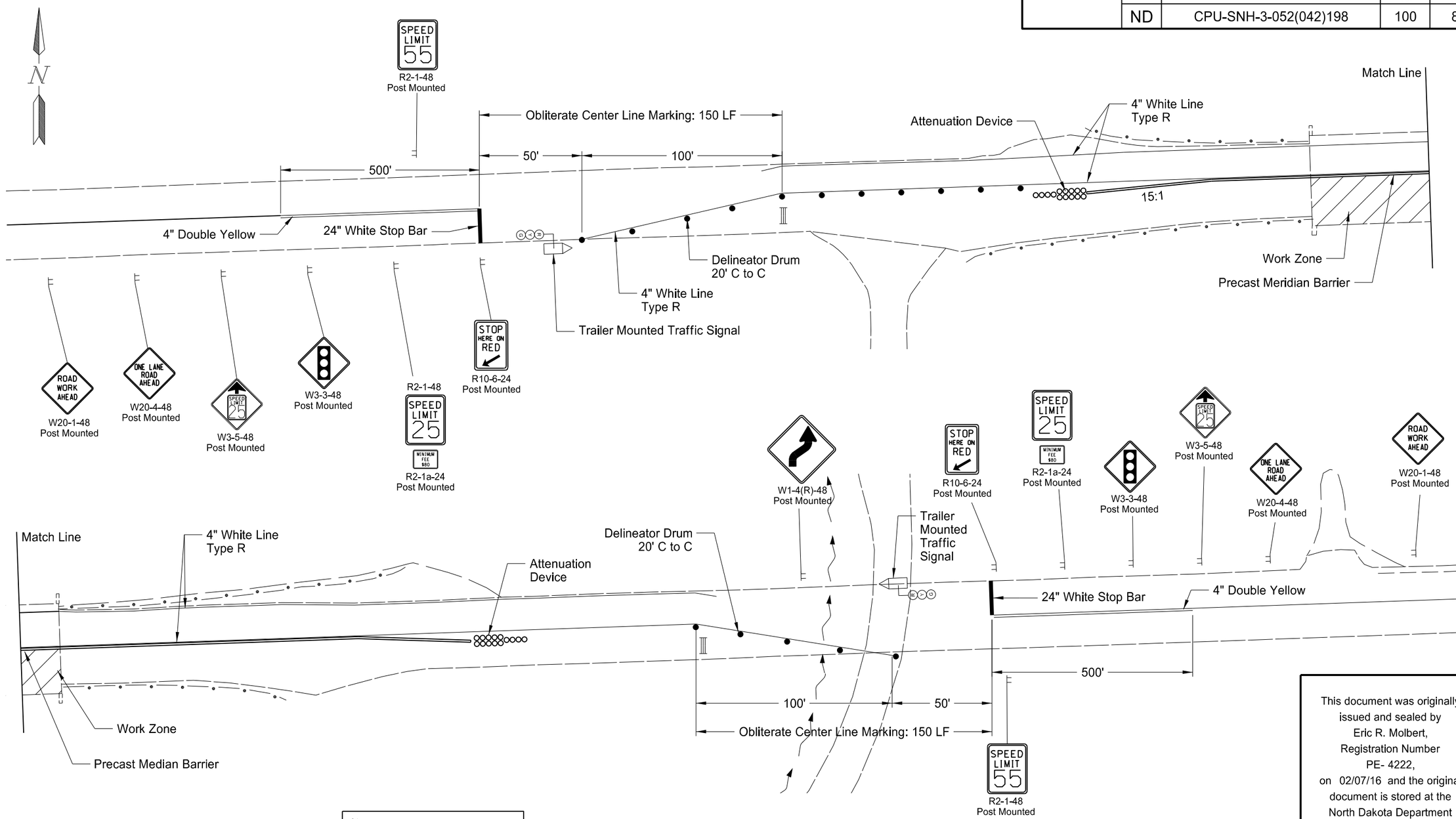
Work Zone Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	8



Key

- ● Delineator Drum
- Sign
- Stackable Vertical Panels
- Flagger
- Type III Barricade

PORTABLE PRECAST CONCRETE MED BARRIER	Qty
	400 LF

Note: See Standard Drawing D-704-16 for Sign Spacing

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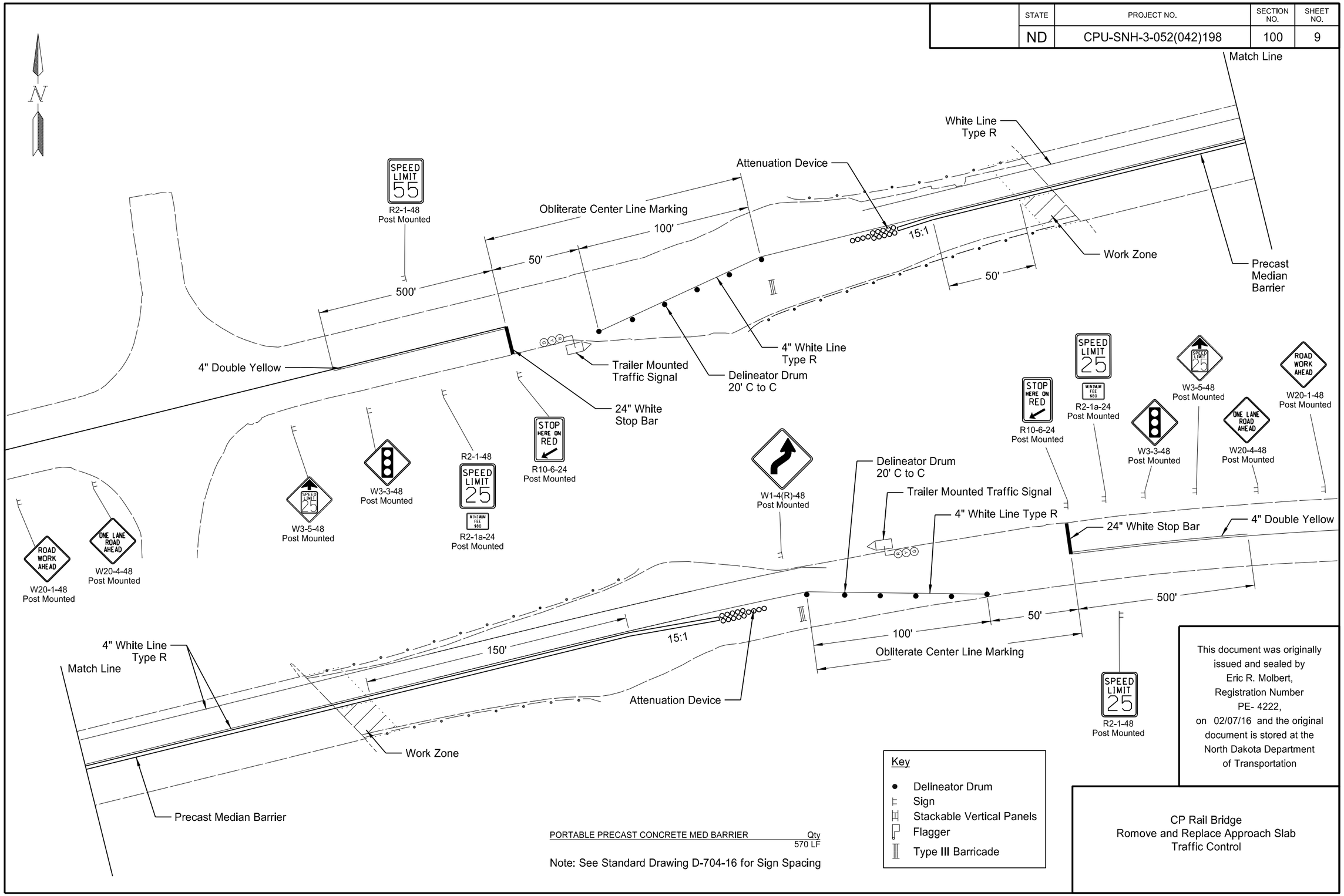
Pipestem Creek Bridge
Deck Overlay Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	9



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PORTABLE PRECAST CONCRETE MED BARRIER — Qty 570 LF

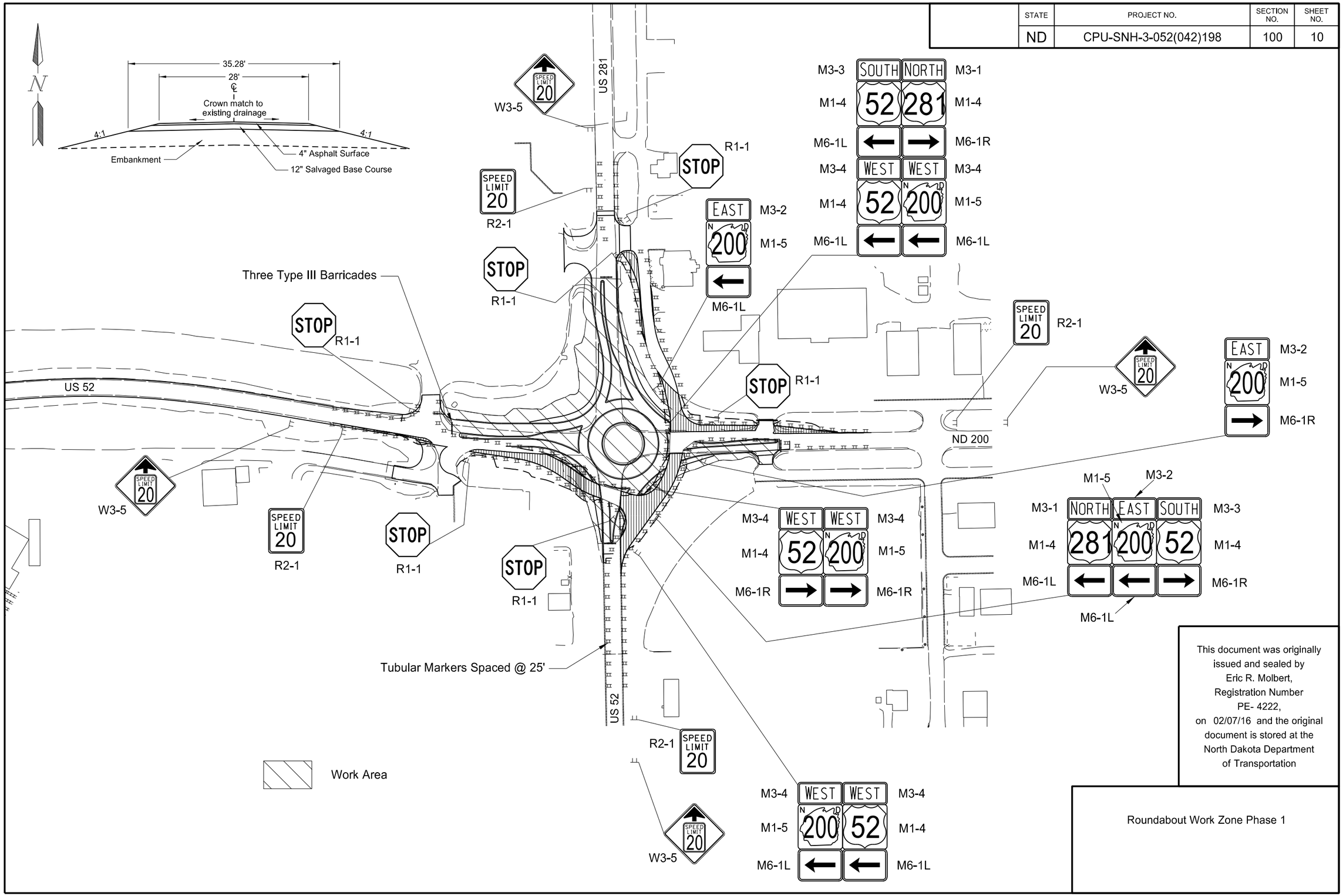
Note: See Standard Drawing D-704-16 for Sign Spacing

Key

- ● Delineator Drum
- Sign
- Stackable Vertical Panels
- Flagger
- Type III Barricade

CP Rail Bridge
Romove and Replace Approach Slab
Traffic Control

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	10



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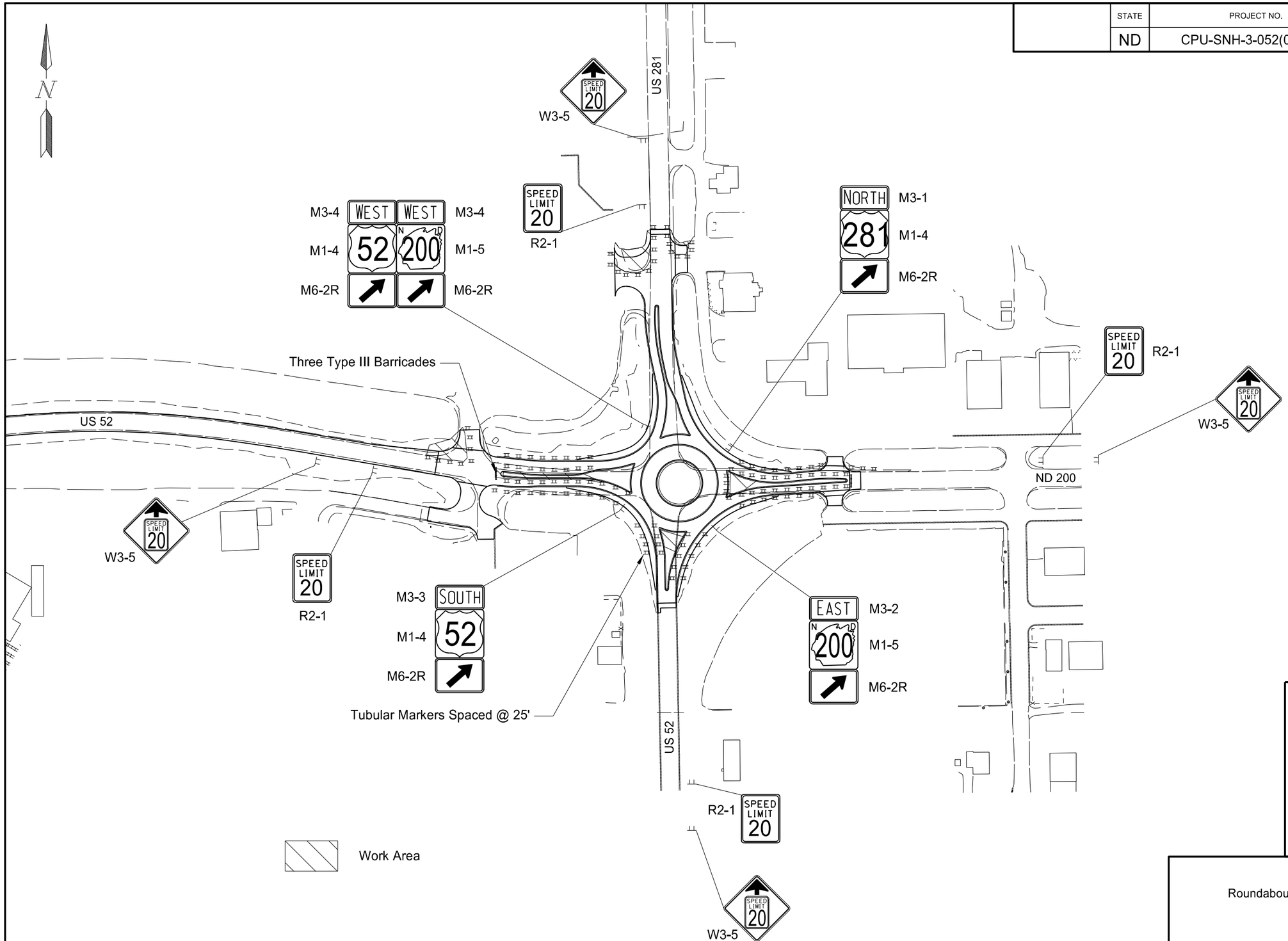
Roundabout Work Zone Phase 1

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	11



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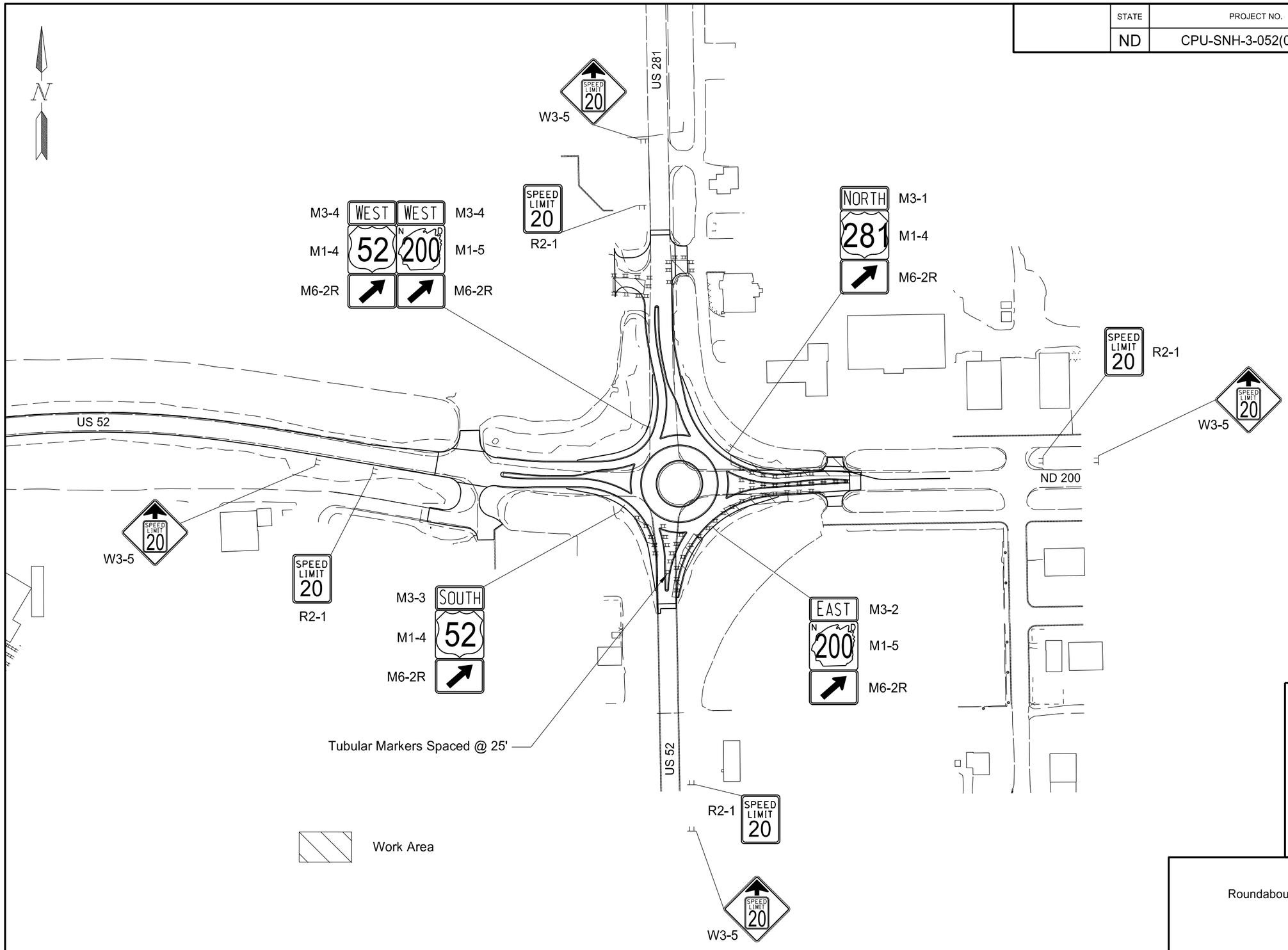
Roundabout Work Zone Phase 2

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	12



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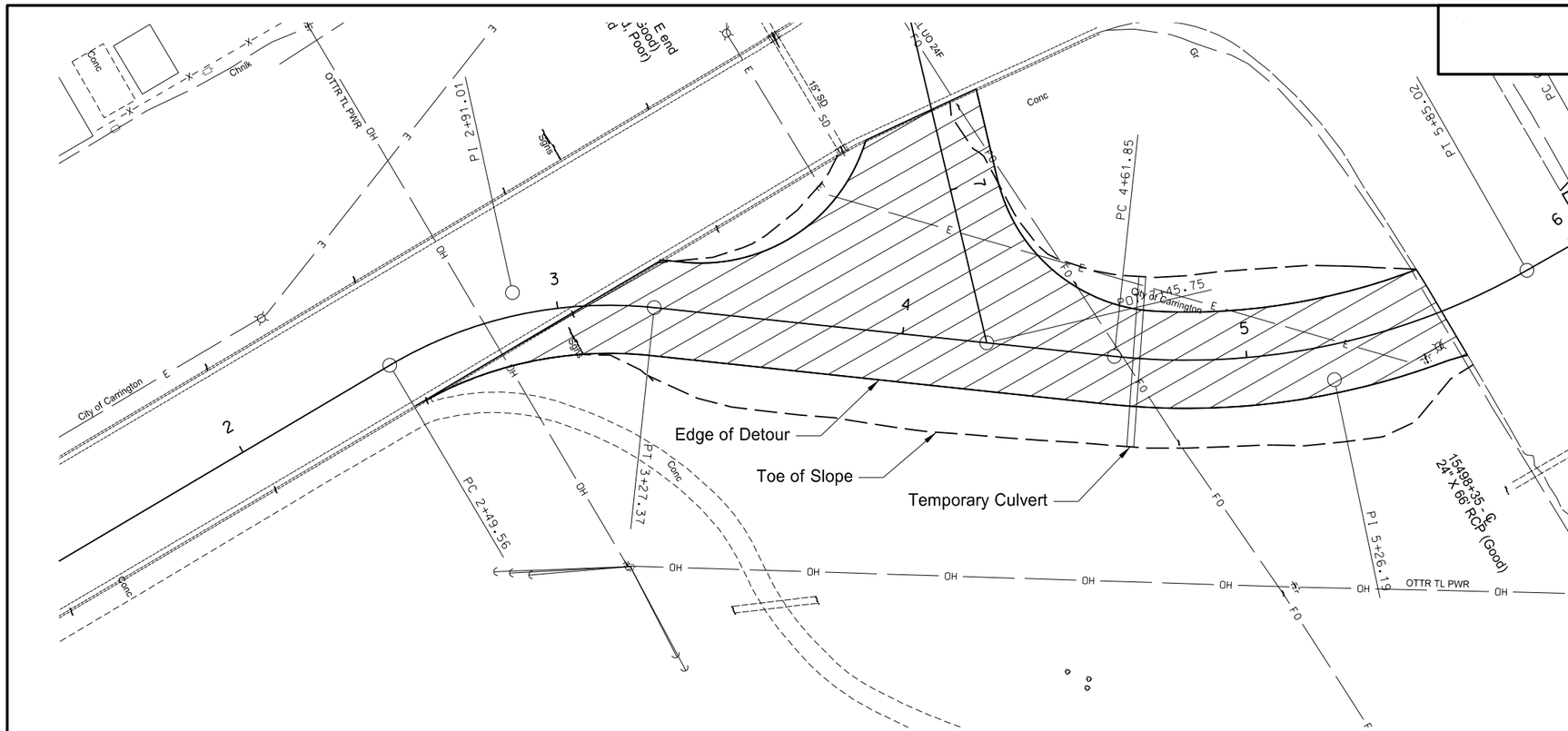
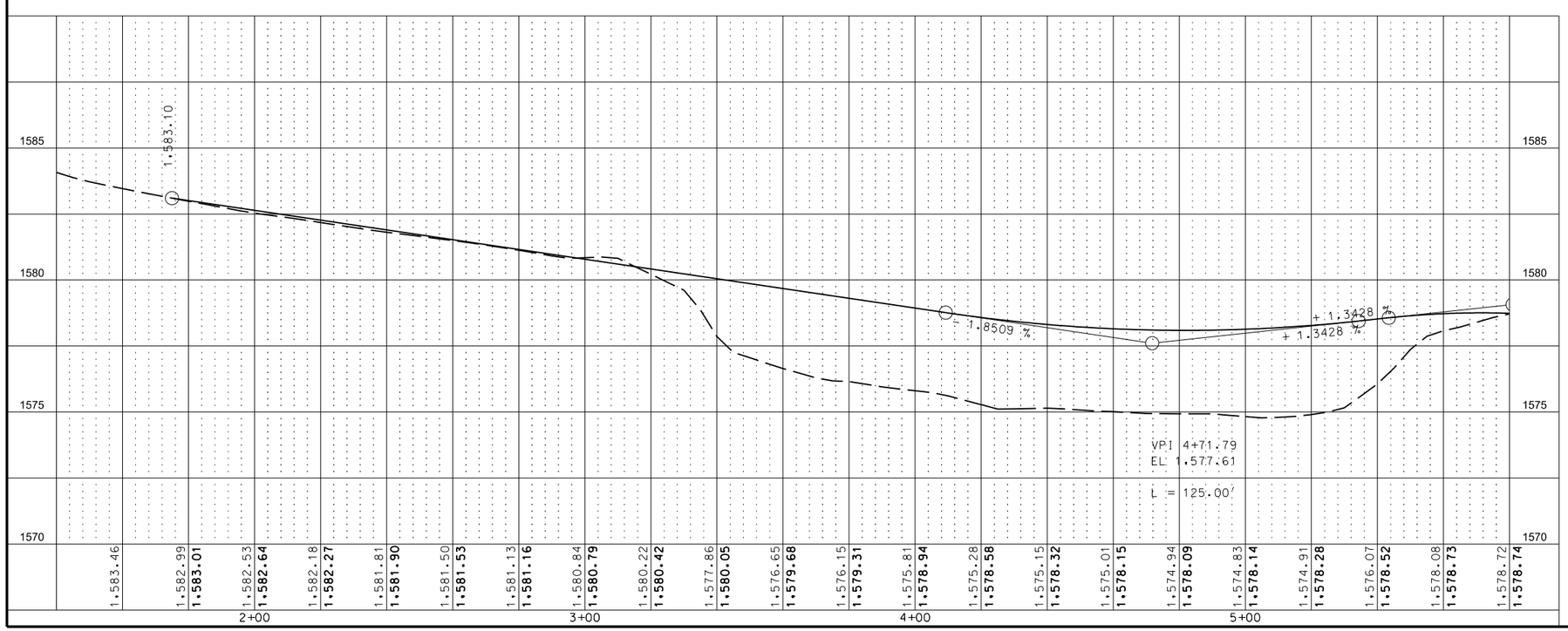
Roundabout Work Zone Phase 3

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	13

PIPE CONDUIT 24IN - APPROACH — Qty
Sta 4+68 — 50 LF





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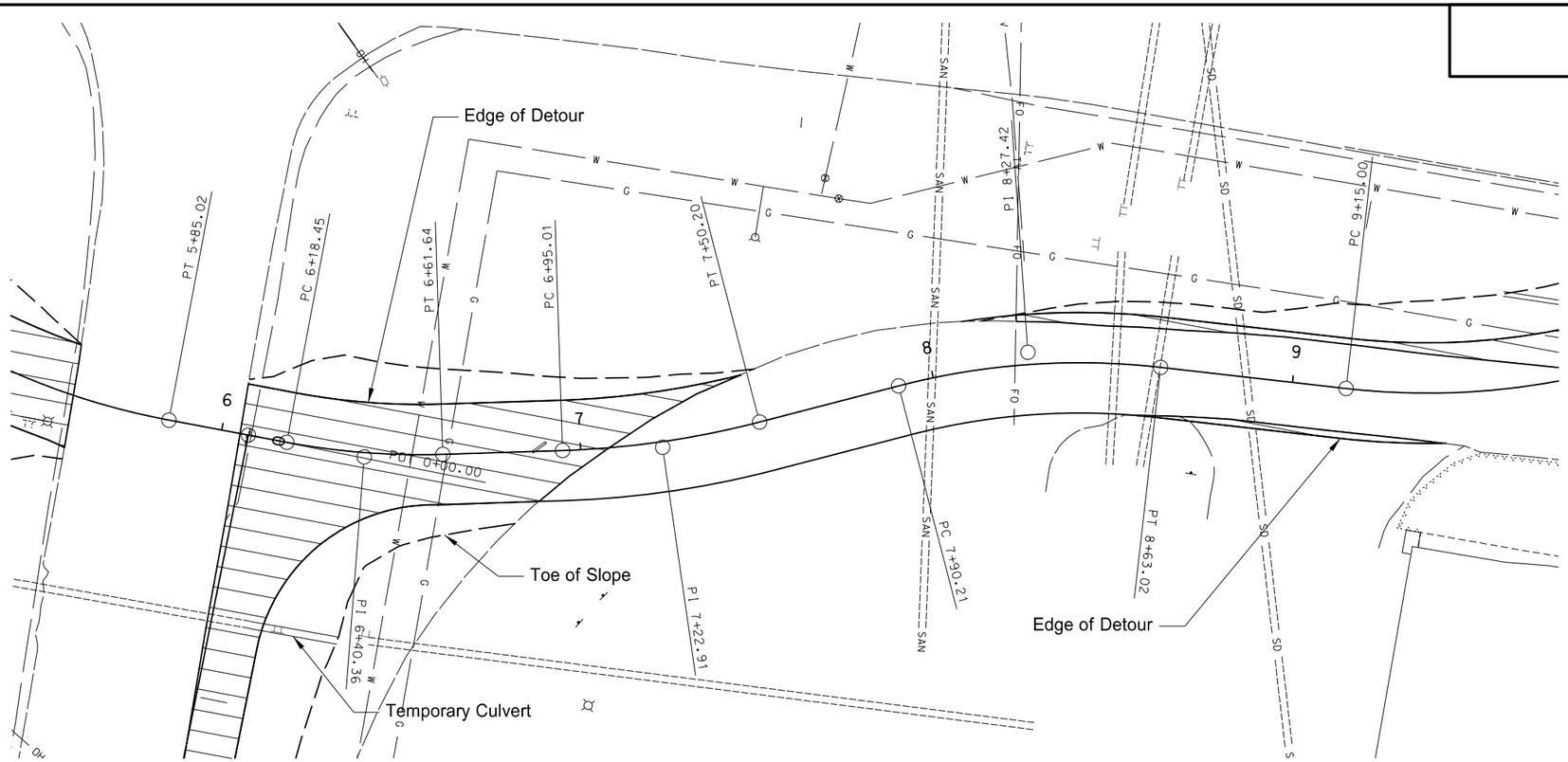
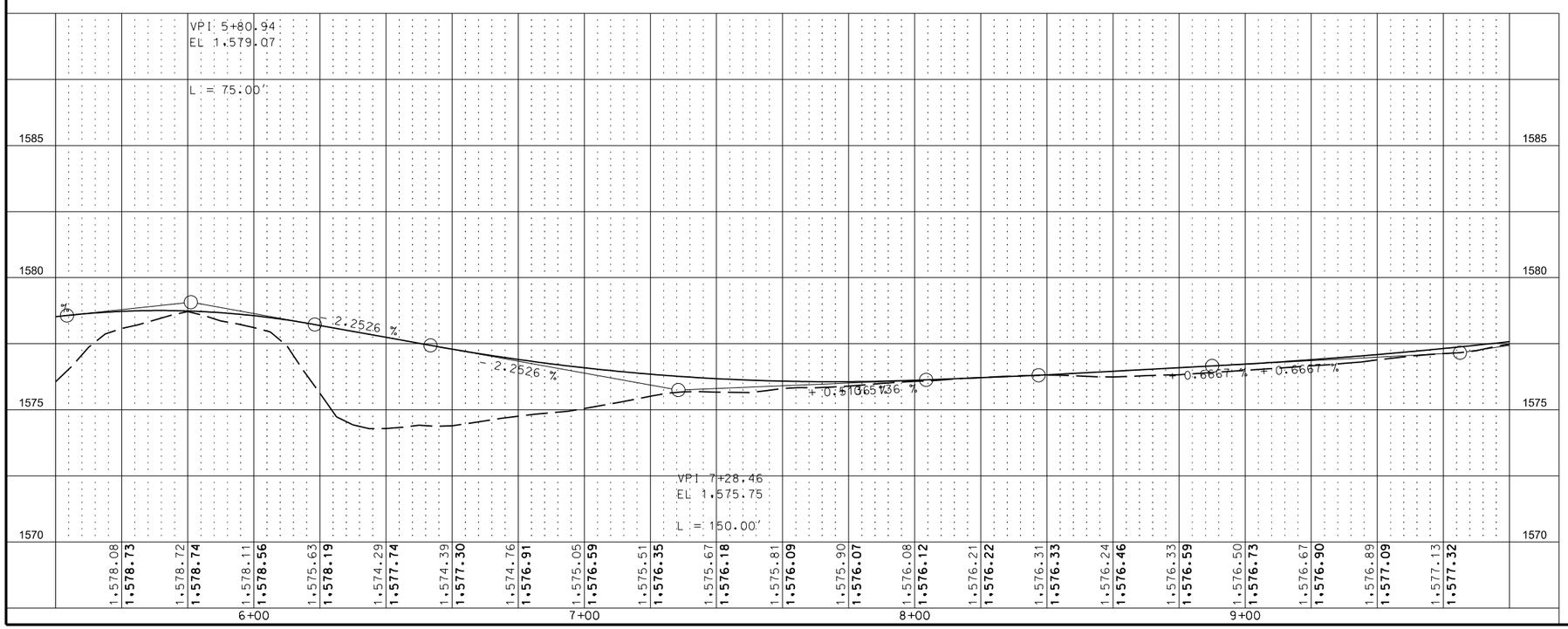
Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	14





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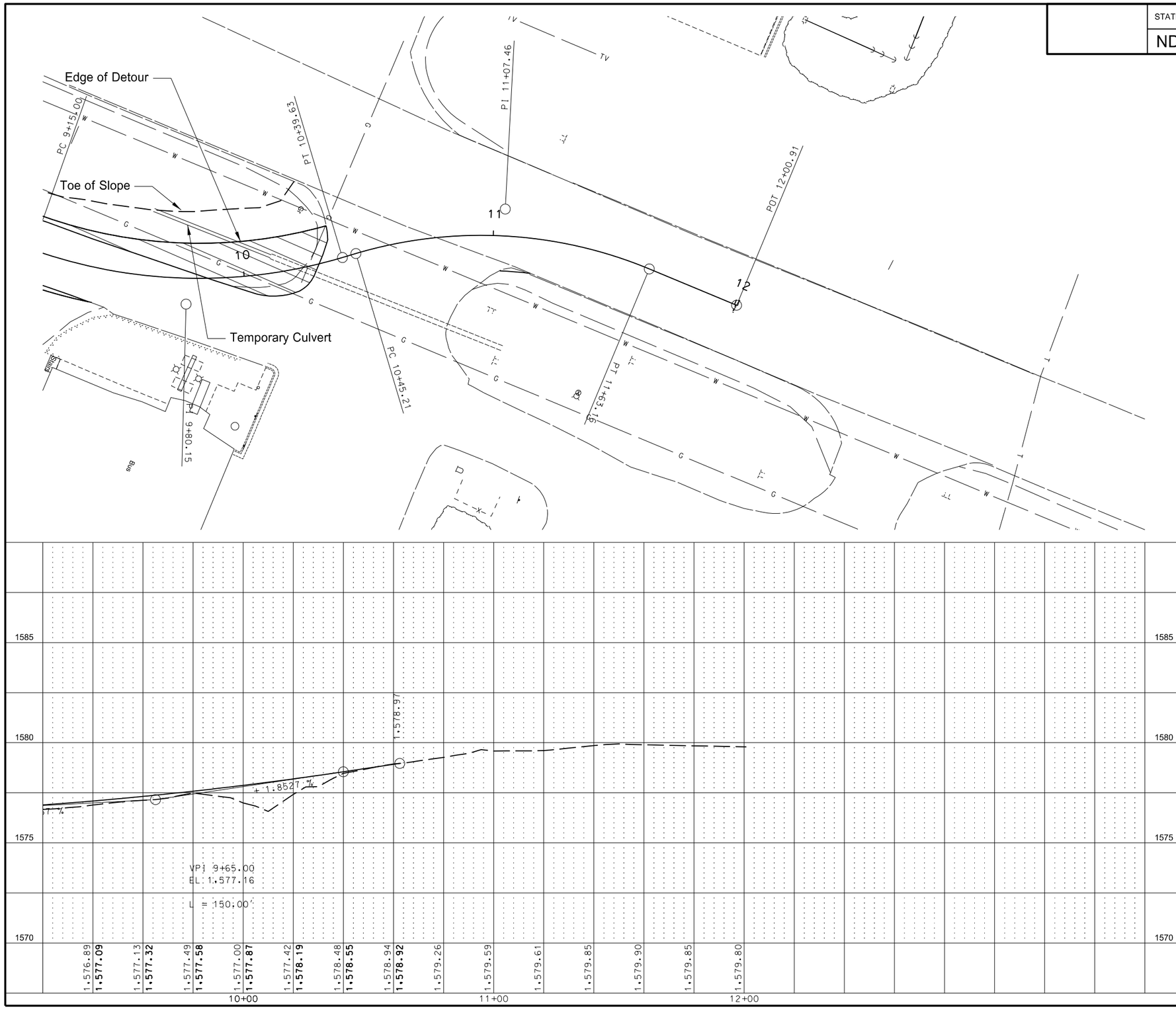
Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	15

PIPE CONDUIT 15IN - APPROACH — Qty
Sta 10+22 — 51 LF



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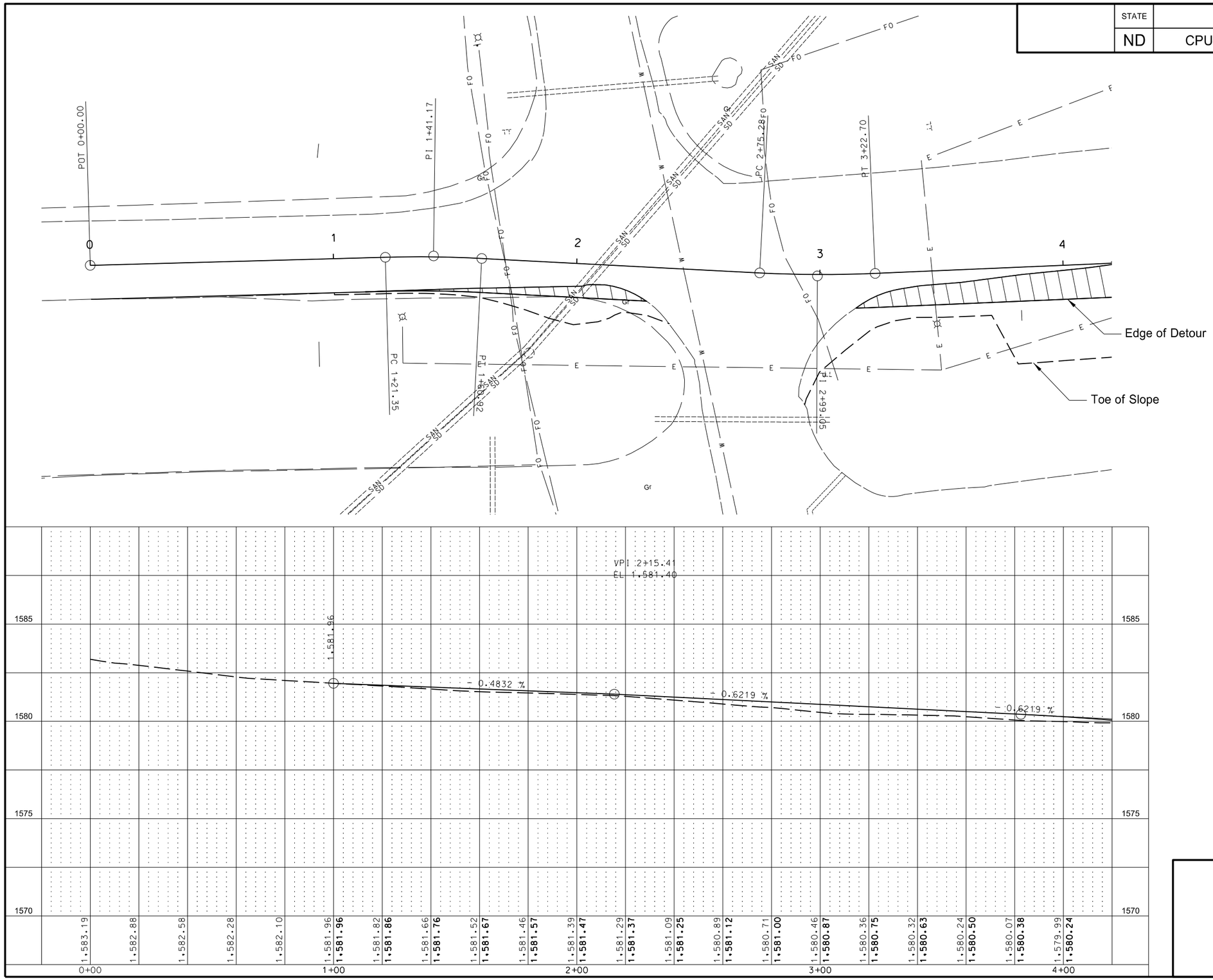
Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	16



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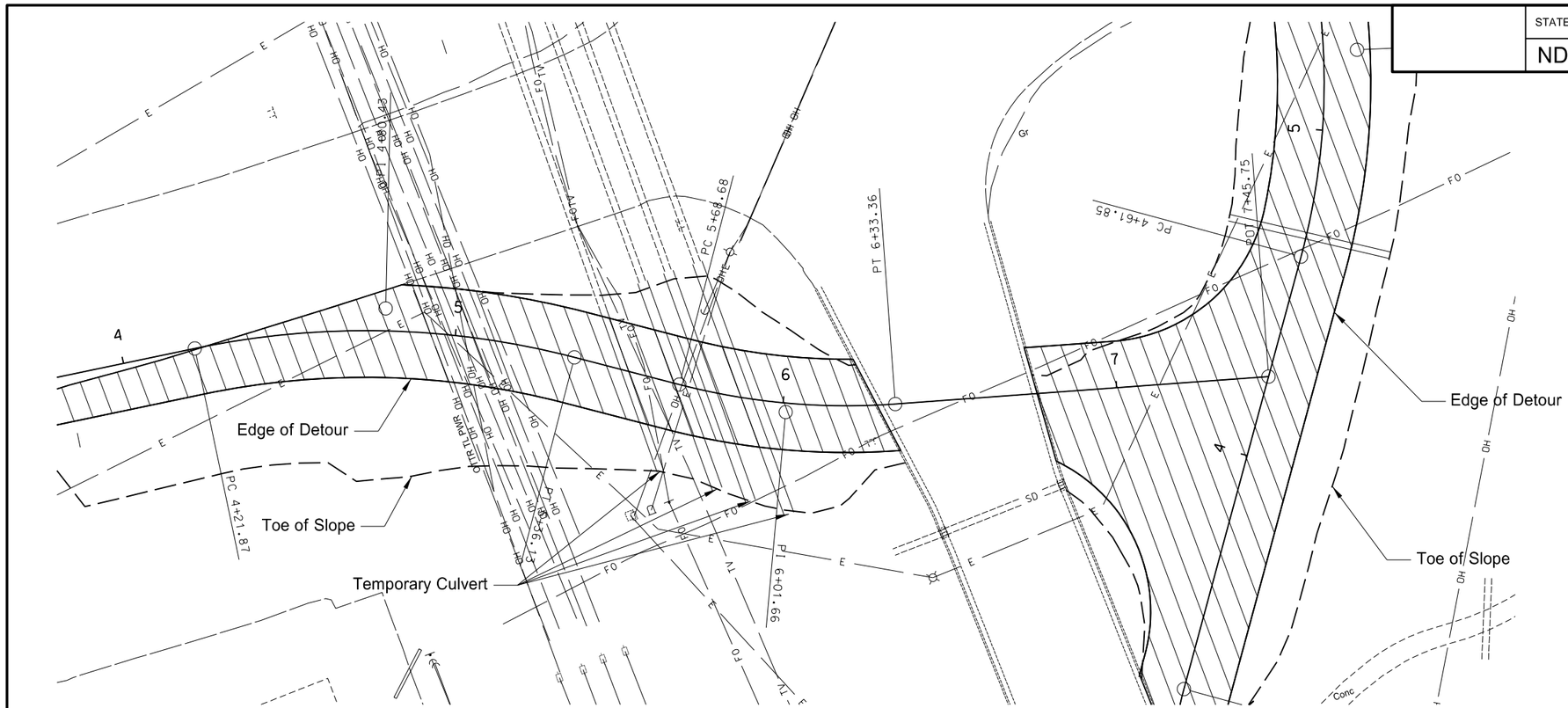
Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	17

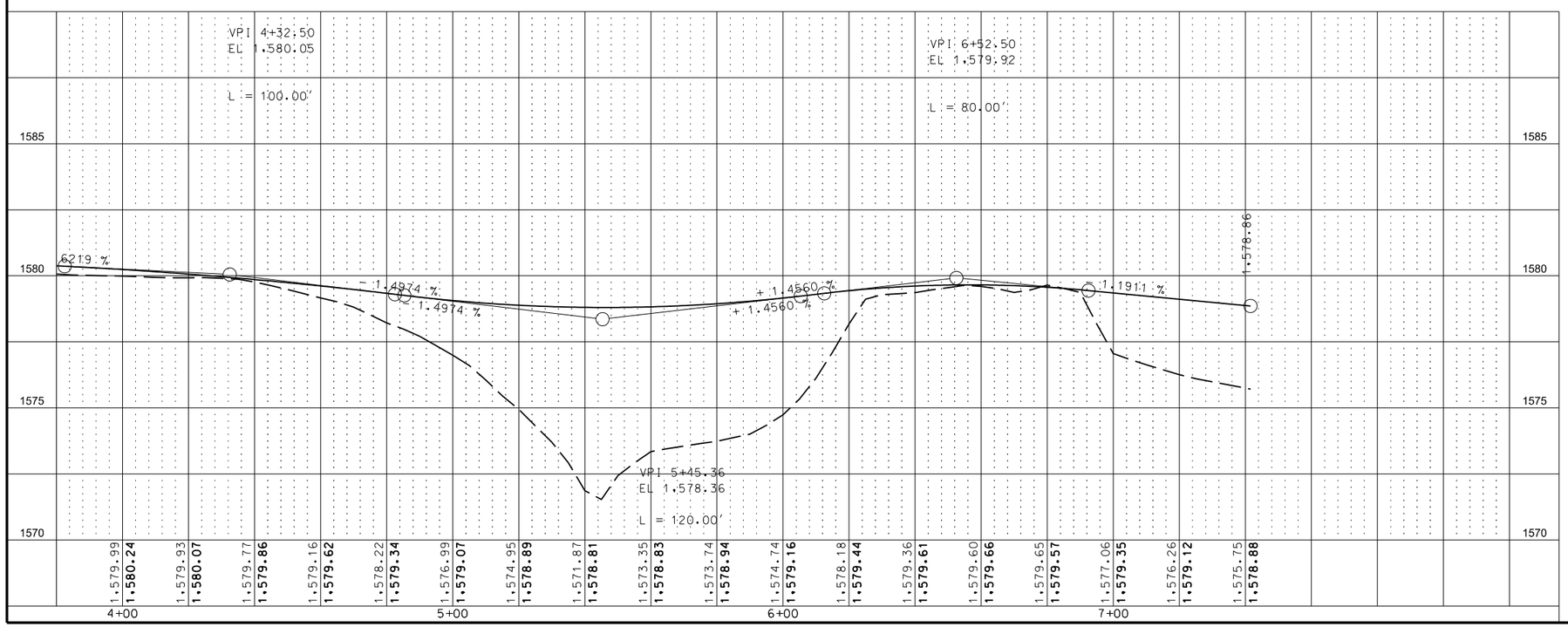


PIPE CONDUIT 24IN - APPROACH

	Qty
Sta 5+52	52 LF

PIPE CONDUIT 36IN - APPROACH

	Qty
Sta 5+67	66 LF
Sta 5+79	74 LF
Sta 5+89	81 LF



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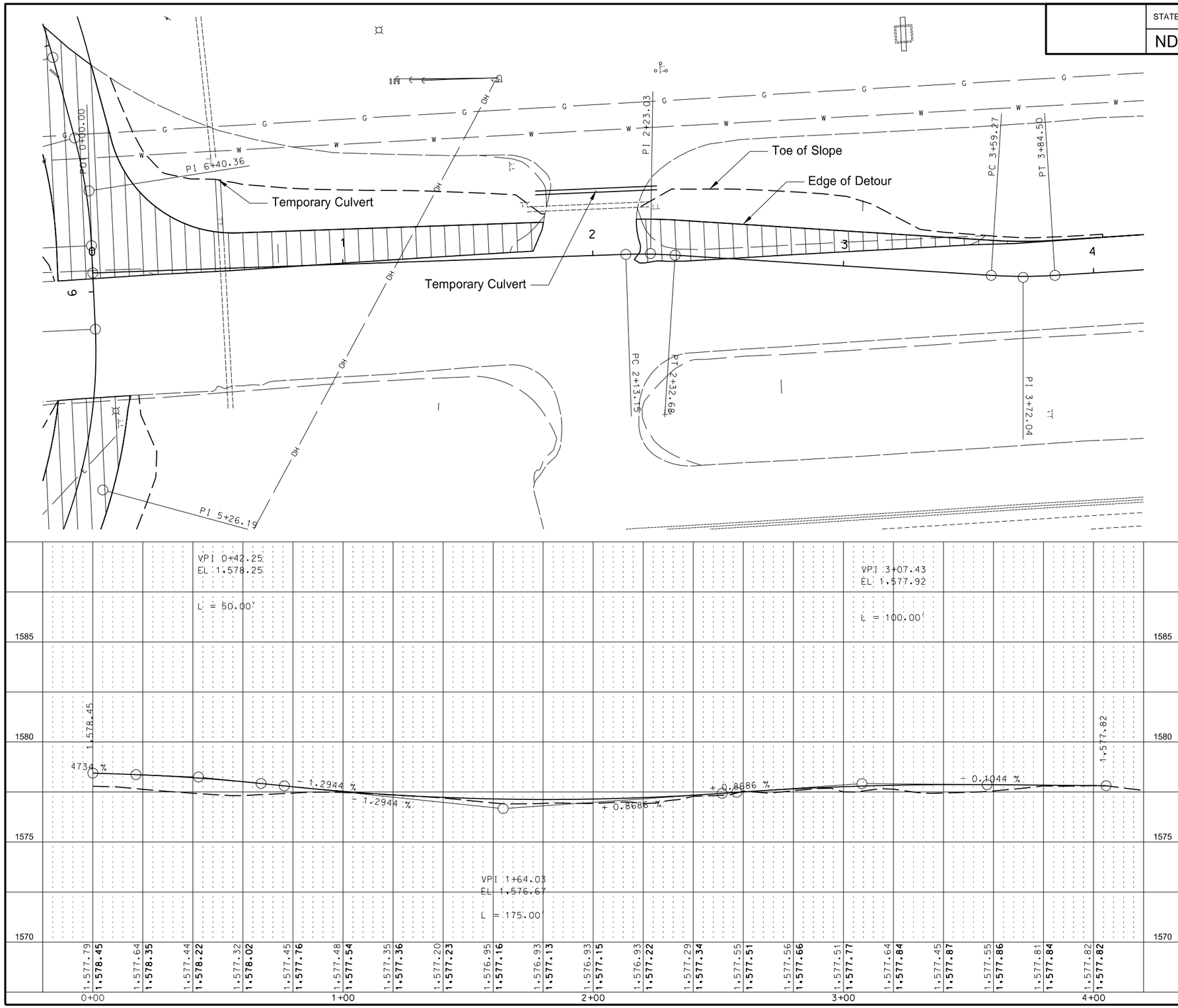
Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	100	18

PIPE CONDUIT 18IN - APPROACH	Qty
Sta 2+00	49 LF

PIPE CONDUIT 24IN - APPROACH	Qty
Sta 0+52 Lt	25 LF



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Roundabout Detour Plan and Profile

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	1

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
ND 200																						
14176+54 Rt	SA A		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
14178+58 Lt		372	7.0		11.2				2.25 x 2.25 12 ga	11.3						1	4	2.5 x 2.5 12 ga				
14180+62 Rt	SA C				10.1				2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga	1			
14180+62. Rt		9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
15497+21 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
15497+47 Lt			7.1																			Mount on Light Standard
15497+80 Lt	R1-2	4		3.9	9.9				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
15498+77 Lt	SN 25		34.0		9.7	10.4	11.1	11.7	2.5 x 2.5 10 ga	13.1						4	4	3 x 3 7 ga			4	Include breakaway per D-754-24A
15499+83 Lt	R3-2			8.0	7.2				2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
15500+03 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
15500+55 Rt		372	7.0		12.5				2.5 x 2.5 12 ga	14.1						1	4	3 x 3 7 ga				
15500+62 Lt	SA L		39.6		16.3	16.9	17.5		2.5 x 2.5 10 ga	18.0	4.4	5.0	5.6		2.19 x 2.19 10 ga	3	4	3 x 3 7 ga			3	
15501+55 Rt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
15501+62 Lt		380	9.2		13.3				2.5 x 2.5 10 ga	13.9						1	4	3 x 3 7 ga			1	
15502+55 Rt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
15502+62 Lt		396	11.2		14.2				2.5 x 2.5 12 ga	16.7	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
15504+62 Lt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
15505+05 Rt	SN 27		25.5		11.2	11.9	12.5	13.2	2.5 x 2.5 12 ga	13.9						4	4	3 x 3 7 ga			4	
15506+76 Lt	W14-1	21			12.2	12.5			2.5 x 2.5 10 ga	14.3						2	4	3 x 3 7 ga	1		2	
15510+96 Lt	SA J				11.3				2 x 2 12 ga	16.9						1	4	2.25 x 2.25 12 ga	1			
15512+96 Lt	SN 21		12.0		11.1				2.5 x 2.5 12 ga	12.9	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
Sub Total			182.0	35.9		**Total**	356.2									**Total**	120		4	0	20	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

This document was originally issued and sealed by Gabriel J Schell, Registration Number 6876, on 2/1/2016 and the original document is stored at the North Dakota Department of Transportation

Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	2

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
US 52																						
10489+97 Lt		371	6.0		11.2				2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
10491+64 Rt	SA O			7.2	11.7	11.8			2.5 x 2.5 10 ga	12.9						2	4	3 x 3 7 ga			2	
10491+66 Lt	SA O			7.2	11.7	11.8			2.5 x 2.5 10 ga	12.9						2	4	3 x 3 7 ga			2	
10491+70 Lt	SA 1E				9.6				2 x 2 12 ga	24.1						1	4	2.25 x 2.25 12 ga	1			
10491+87 Rt	SA B		26.6		12.1	12.6			2.5 x 2.5 12 ga	13.3	3.6	4.2			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
10492+60 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10494+60 Rt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10496+52 Lt		388	17.4		12.0	12.3			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
10498+60 Rt	SN2		13.0		9.4	10.1			2.5 x 2.5 12 ga	13.4						2	4	3 x 3 7 ga			2	
10500+52 Lt	SN1		32.0		11.0	11.7			2.5 x 2.5 10 ga	12.3	3.5	4.2			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
10502+61 Rt	R2-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
10504+52 Lt		388	17.4		12.0	12.3			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
10545+52 Lt	SA D		3.8		12.7				2.5 x 2.5 12 ga	16.1	2.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10597+48 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10598+08 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10650+34 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10651+00 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
10699+57 Rt	SN 4		12.0		10.3				2.5 x 2.5 12 ga	12.9	2.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10703+33 Lt	SA 4E				12.7				2.25 x 2.25 12 ga	13.6	4.0				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10703+99 Rt	SA 4E				12.7				2.25 x 2.25 12 ga	13.6	4.0				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10707+82 Lt	SN 5		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10808+29 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10808+89 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10914+85 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10967+39 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10967+97 Rt	SA 4E				12.1				2.5 x 2.5 10 ga	12.5						1	4	3 x 3 7 ga	1		1	
10973+30 Rt	D5-1		16.5		10.2	10.7			2.5 x 2.5 10 ga	11.2						2	4	3 x 3 7 ga			2	
10981+84 Rt	SA D				12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10999+84 Rt	Sign1		21.0		10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga			2	
11003+84 Rt		391	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11007+84 Rt		389	17.4		12.0	12.4			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
11009+84 Rt	Sign2				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11012+34 Rt	SN 3		34.0		10.8	11.2	11.6	12.1	2.5 x 2.5 10 ga	13.1						4	4	3 x 3 7 ga			4	
11014+15 Lt	R1-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	3

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11016+34 Rt	SA A		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
11018+15 Lt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11019+97 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11020+15 Rt	SA E		32.4		14.0	14.4	14.8		2.5 x 2.5 12 ga	16.9	3.1	3.5	3.9		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11020+73 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11022+25 Rt	SA G		14.0		11.0				2.5 x 2.5 12 ga	12.4	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11023+68 Lt	SA F		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
11025+46 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11028+18 Rt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11028+42 Lt	SA G		14.0		11.0				2.5 x 2.5 12 ga	12.4	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11031+30 Lt	SN 6		30.0		11.0	11.3	11.7		2.25 x 2.25 12 ga	12.5	3.3	3.6	4.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
11032+24 Rt	R2-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
11035+30 Lt		389	17.4		12.0	12.4			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
11037+85 Lt	Sign2				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11041+85 Lt		391	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11048+20 Lt	Sign1				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11049+81 Rt	SN 7		17.0		9.5	10.3			2.5 x 2.5 10 ga	12.6						2	4	3 x 3 7 ga			2	
11051+86 Rt	SN 9		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11055+58 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11060+07 Lt	SN 10		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11064+07 Lt	SN 8		17.0		9.5	10.3			2.5 x 2.5 10 ga	12.6						2	4	3 x 3 7 ga			2	
11072+99 Lt	R1-1	2			11.2				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11073+60 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11079+02 Lt	D5-1		16.5		10.2	10.7			2.5 x 2.5 10 ga	11.2						2	4	3 x 3 7 ga			2	
11125+06 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11140+39 Lt	SA D				12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11177+41 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11178+02 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11230+83 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11336+26 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11336+84 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11383+21 Rt	SA P		28.5		13.3	13.8			2.5 x 2.5 10 ga	14.4	3.8	4.4			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11387+25 Lt	SN 14		13.5		10.3				2.5 x 2.5 12 ga	11.9	3.2				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11389+03 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11389+62 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11391+11 Lt	SN 13		13.5		10.3				2.5 x 2.5 12 ga	11.9	3.2				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	4

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11395+45 Lt	SA P		28.5		13.8	14.5			2.5 x 2.5 10 ga	15.2	3.9	4.6			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11493+79 Lt	R1-1	1		5.2	10.7				2.25 x 2.25 12 ga	13.7						1	4	2.5 x 2.5 12 ga				
11494+39 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11546+71 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11547+27 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11652+49 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11653+02 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11653+51 Rt	SA D		3.8		12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
11674+60 Rt	I-5	399	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11679+04 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11682+86 Lt	I-5	399	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11684+00 Rt	W3-5	20		9.0	11.6				2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
11691+65 Lt	BUCKL	9	5.0		10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11694+00 Lt	R2-1	9		5.0	10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11694+00 Rt	R2-1	9		5.0	10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11695+68 Lt	SA H		17.5		12.3				2.5 x 2.5 10 ga	12.8	4.1				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
11705+97 Lt	R1-1	2			12.0				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11706+60 Lt	SA I		26.4		15.2	15.6	15.9		2.25 x 2.25 12 ga	16.8	4.2	4.6	5.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
11706+71 Rt	SA 2E			5.2	13.5				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11708+03 Rt					11.6				2.5 x 2.5 12 ga	13.3	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
11710+00 Rt	SN 21		12.0		11.1				2.5 x 2.5 12 ga	12.9	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11712+00 Rt	SA J				11.0				2 x 2 12 ga	17.6						1	4	2.25 x 2.25 12 ga	1			
11718+61 Rt	W10-1	63		7.1	11.2				2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga				
11722+31 Lt	W10-1	63		7.1	11.2				2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga				
11729+09 Rt	D9-2	399	6.2		11.9				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11732+57 Lt					10.8				2.5 x 2.5 12 ga	13.3	2.9				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
11733+31 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11733+70 Rt	R1-1	2			12.0				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11737+19 Lt	D9-2	399	6.2		12.7				2.5 x 2.5 12 ga	15.9						1	4	3 x 3 7 ga				
11749+00 Lt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
11749+00 Rt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
11751+00 Lt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11751+00 Rt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
11752+00 Lt	SN 19		22.8		11.9	12.9			2.5 x 2.5 12 ga	14.2	3.4	4.4			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
11752+00 Rt		392	7.2		11.5				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga				
11753+00 Lt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	5

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11753+00 Rt		388	17.4		13.3	13.8			2.25 x 2.25 12 ga	15.1	3.7	4.2			2 x 2 12 ga	2	4	3 x 3 7 ga			2	
11754+00 Lt		377	13.0		12.2				2.5 x 2.5 12 ga	12.8	4.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11754+00 Rt	SA K		33.6		15.1	15.5	15.8		2.5 x 2.5 12 ga	17.7	3.5	3.9	4.2		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11755+09 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11756+05 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11756+30 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11757+43 Rt	SN 20		34.0		9.9	11.1			2.5 x 2.5 10 ga	11.6	2.7	3.9			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11758+76 Rt	R1-2	4		3.9	9.6				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11759+33 Rt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11760+19 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11760+32 Rt			15.6																			Mount on Light Standard
11760+46 Lt			9.6																			Mount on Light Standard
11760+80 Lt	R1-2	4		3.9	9.6				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11761+47 Rt		377	13.0		9.8				2.25 x 2.25 12 ga	10.1	3.3				2 x 2 12 ga	1	4	3 x 3 7 ga			1	Include breakaway per D-754-24A
11761+58 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
11761+58. Lt	SN 22		34.0		9.9	11.1			2.5 x 2.5 10 ga	11.6	2.7	3.9			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	Include breakaway per D-754-24A
11763+47 Rt	SN 24		26.3		9.0	9.6	10.2		2.5 x 2.5 12 ga	10.7						3	4	3 x 3 7 ga			3	
11763+58 Lt	SA M		33.6		13.1	13.7	14.3		2.5 x 2.5 12 ga	16.9	2.0	2.5	3.1		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11765+35 Lt		389	17.4		10.3				2.5 x 2.5 10 ga	12.4	2.3				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
11766+35 Lt		392	7.2		9.5				2.25 x 2.25 12 ga	11.2						1	4	2.5 x 2.5 12 ga				
11767+35 Lt	W2-6			9.0																		Mount on Light Standard
11776+16 Lt	R2-1	9			7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
Sub Total			976.0	139.6		**Total**	1900.8									**Total**	660		51	0	113	
ND 30																						
4664+33 Rt		371	6.0		12.4				2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
Sub Total			6.0	0.0		**Total**	12.4									**Total**	4		0	0	0	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SNH-3-052(042)198	110	6

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
US 281																						
5942+57 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
5942+99 Lt			13.6																			Mount on Light Standard
5943+13 Lt	R1-2	4		3.9	9.9				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				Include breakaway per D-754-24A
5944+03 Rt		372	7.0		10.3				2.25 x 2.25 12 ga	11.3						1	4	2.5 x 2.5 12 ga				Include breakaway per D-754-24A
5944+99 Lt	SN 26		32.0		10.1	10.7	11.2		2.25 x 2.25 12 ga	11.7	2.9	3.4	4.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
5945+03 Rt	R2-1	9		5.0	9.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
5945+70 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
5945+96 Lt	R1-1	1			8.2				2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
5946+03 Rt	SN 23		25.5		9.4	10.6			2.5 x 2.5 12 ga	12.5	1.9	3.1			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
5947+19 Rt	R8-3	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
5948+11 Lt	SA N		39.6		16.3	16.9	17.5		2.5 x 2.5 10 ga	18.0	4.4	5.0	5.6		2.19 x 2.19 10 ga	3	4	3 x 3 7 ga			3	
5948+34 Rt	R8-3	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
5949+75 Lt	R2-1	11			12.3				2.5 x 2.5 12 ga	14.3	3.6				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
5950+65 Rt	R8-3	9			11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga	1			
5951+11 Lt		380	9.2		13.3				2.5 x 2.5 10 ga	13.9						1	4	3 x 3 7 ga			1	
5952+11 Lt		396	11.2		14.2				2.5 x 2.5 12 ga	16.7	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
5952+37 Rt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
5953+11 Lt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
Sub Total			141.9	37.9		**Total**	257.3									**Total**	88		3	0	13	
Grand Total			1305.9	213.4		**Total**	2526.6									**Total**	872		58	0	146	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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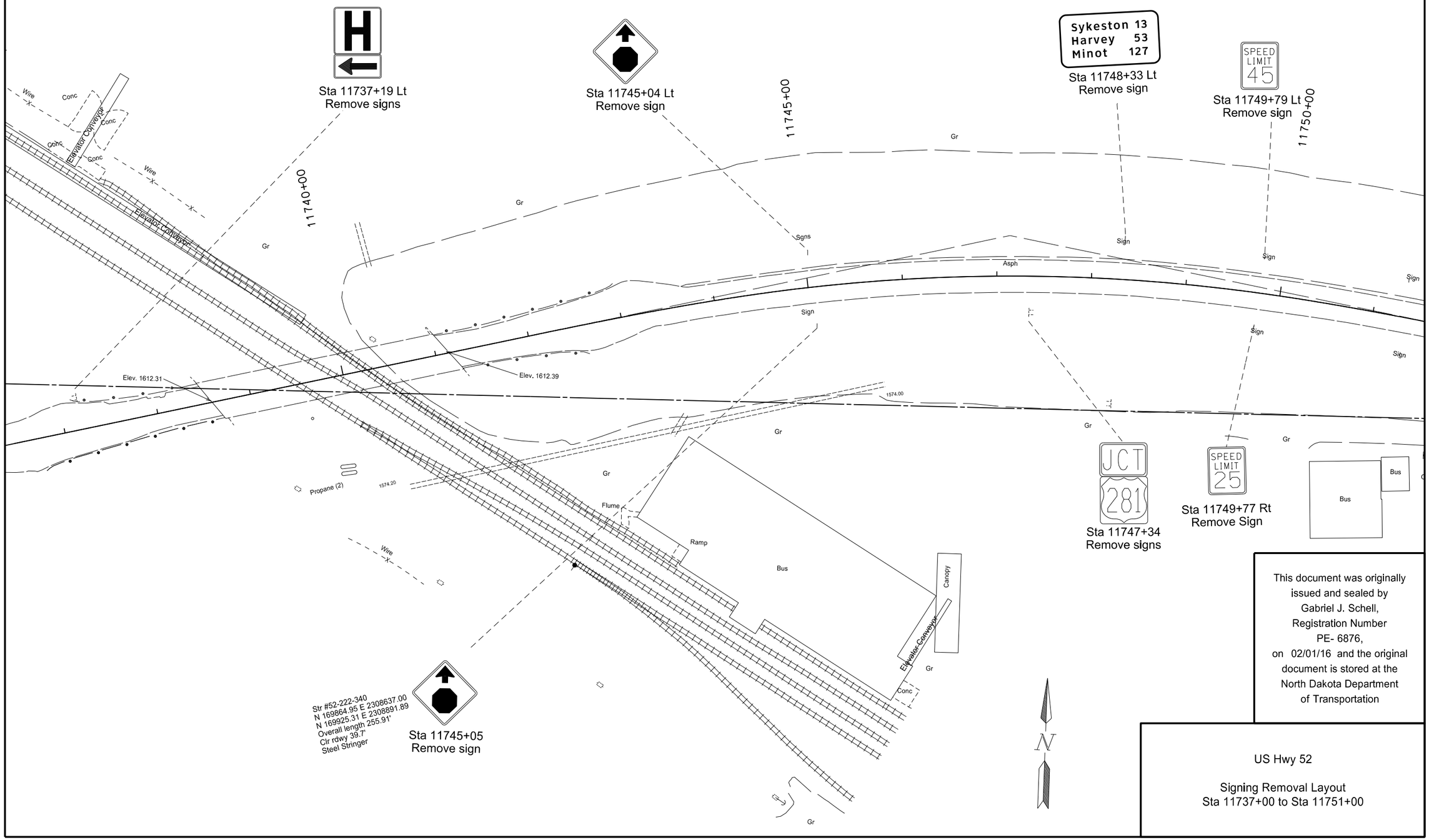
Sign Summary
Perforated Tube

US Hwy 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	7



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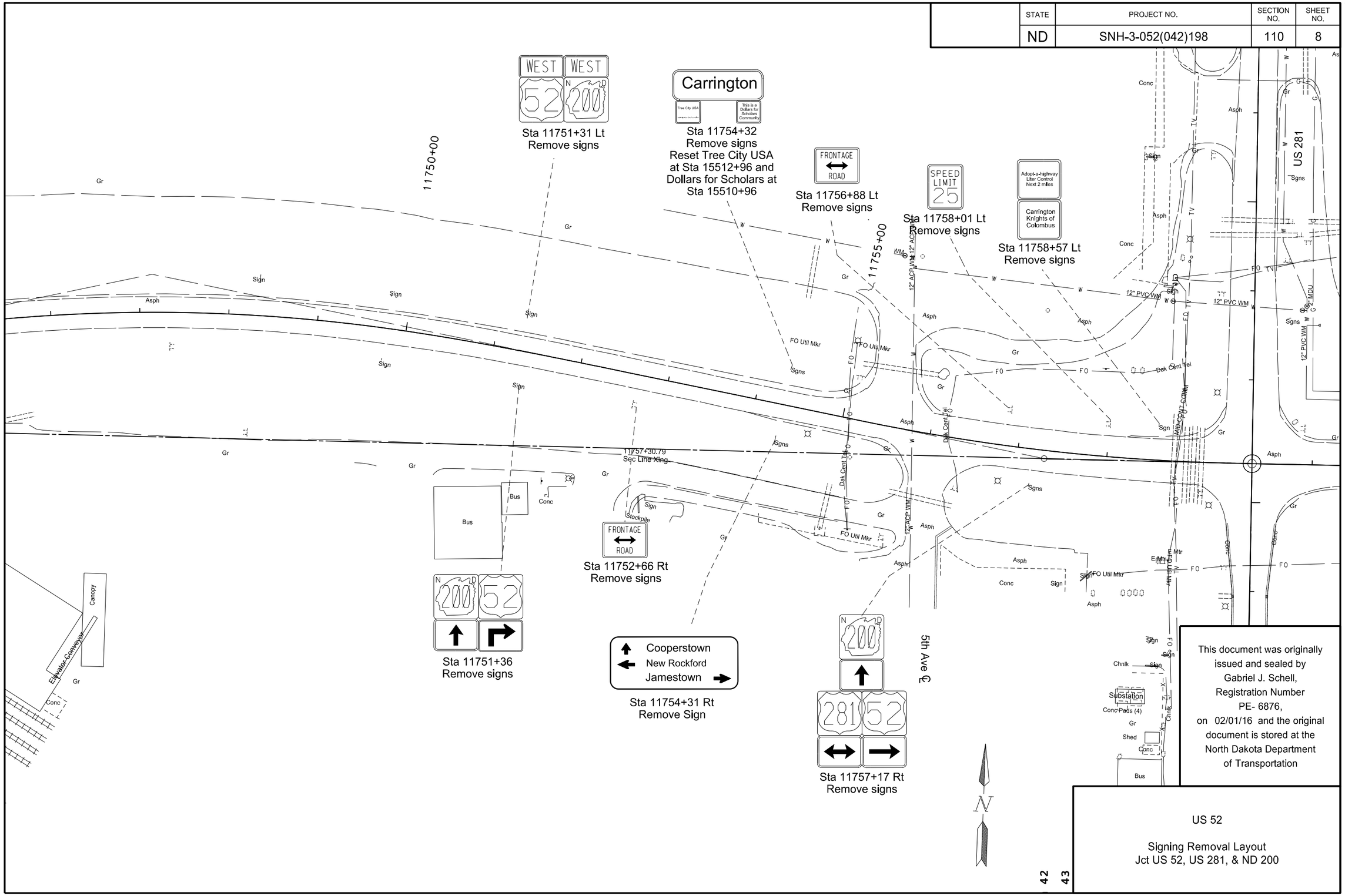
US Hwy 52

Signing Removal Layout
Sta 11737+00 to Sta 11751+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	8



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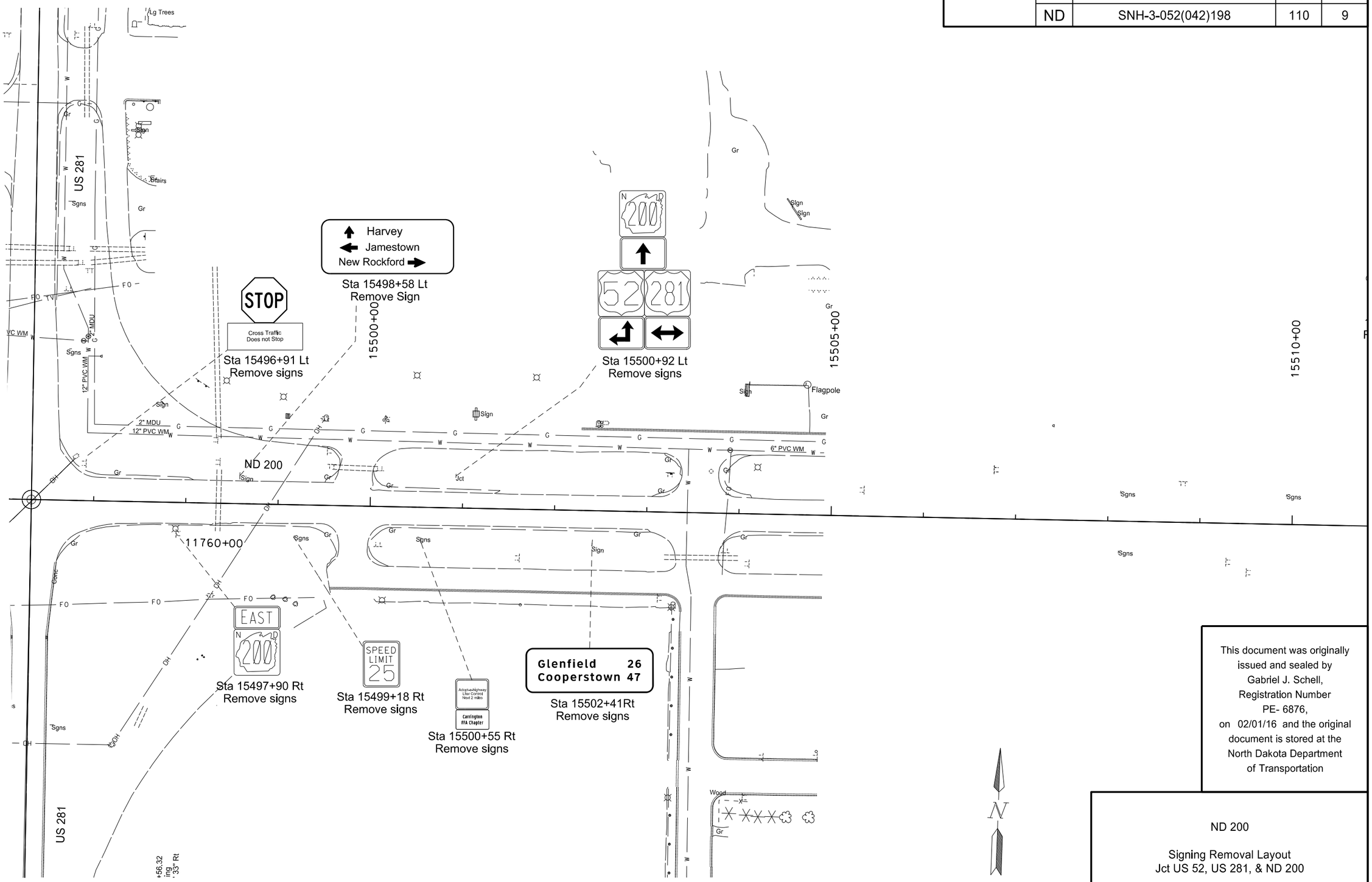
US 52

Signing Removal Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	9



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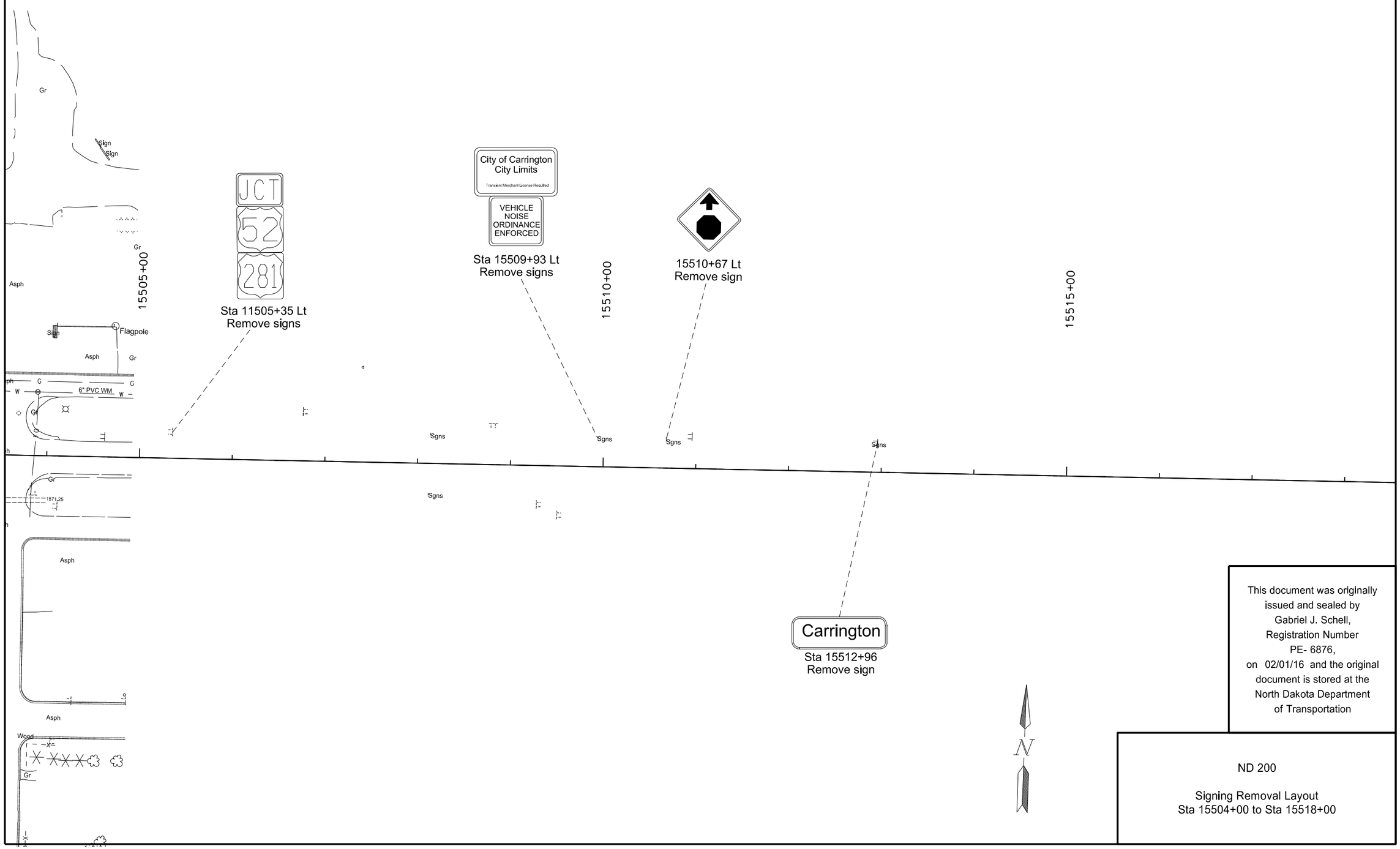
ND 200

Signing Removal Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	10



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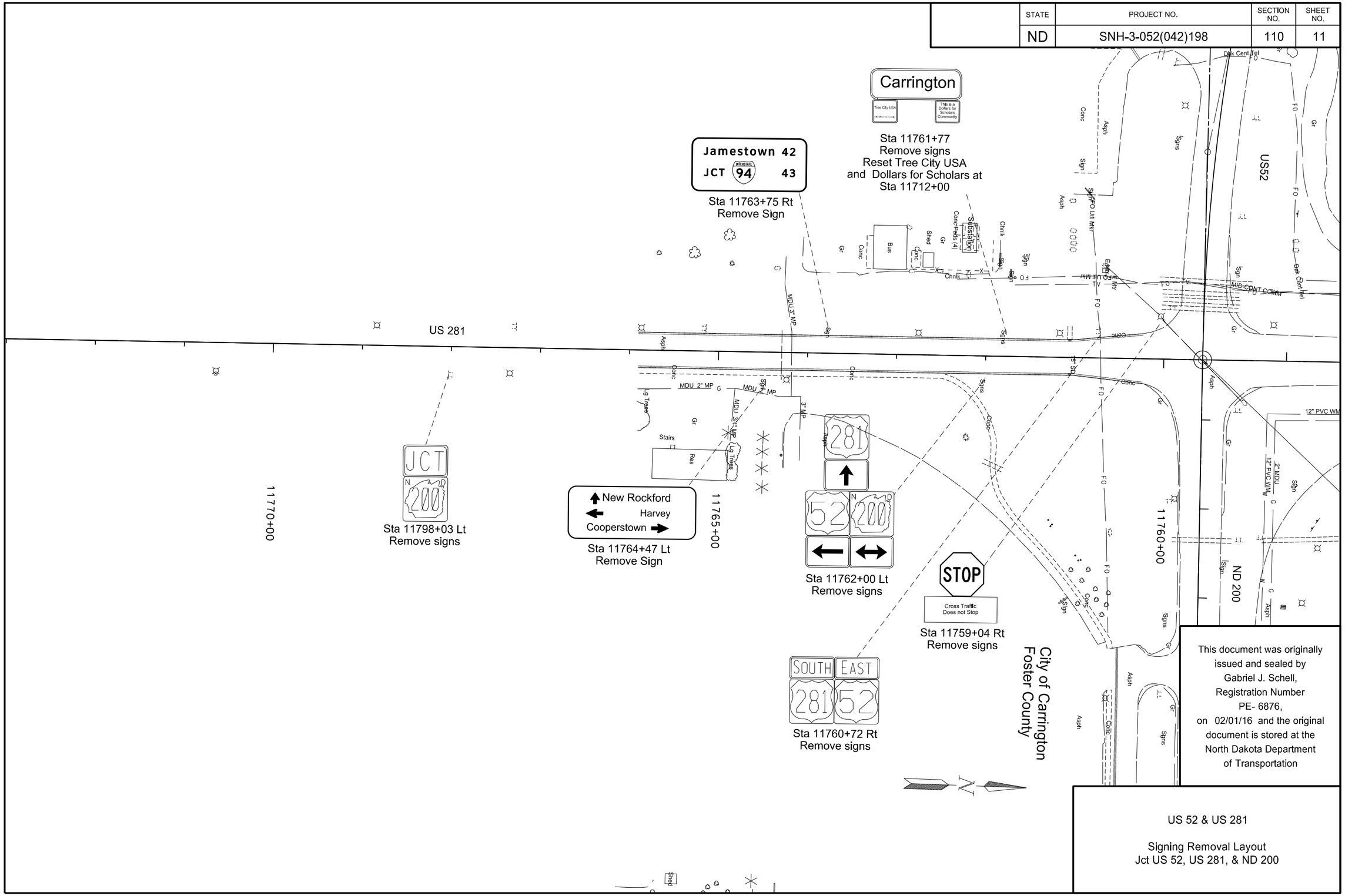
ND 200

Signing Removal Layout
Sta 15504+00 to Sta 15518+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	11



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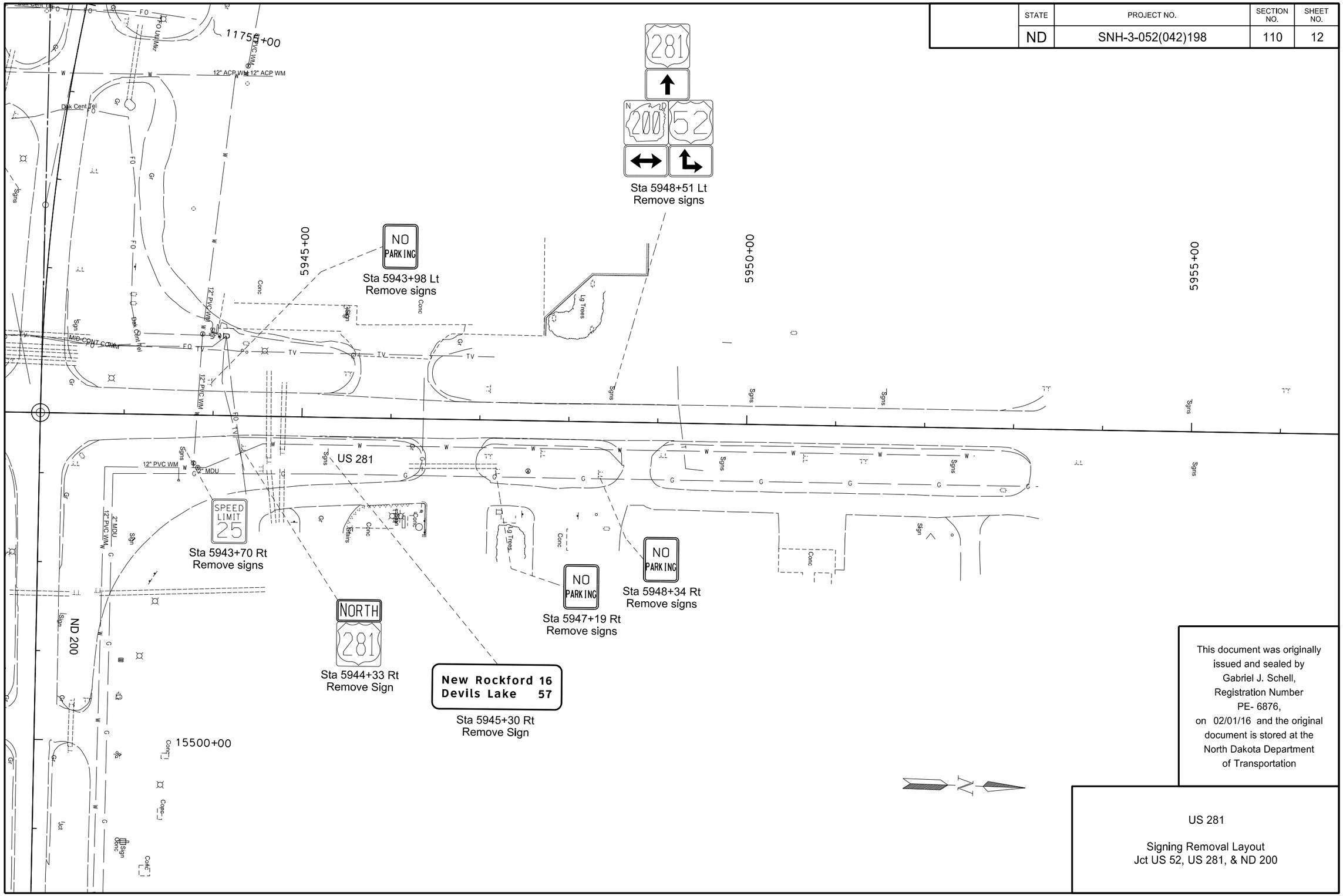
US 52 & US 281

Signing Removal Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	12



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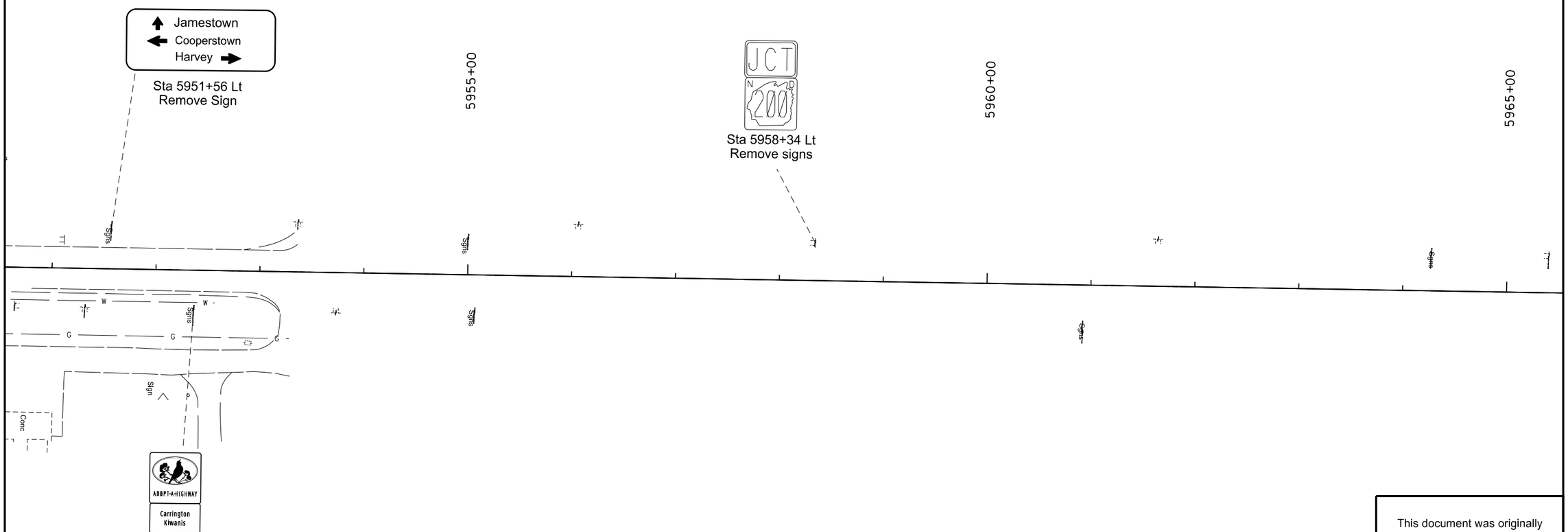
US 281

Signing Removal Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	13



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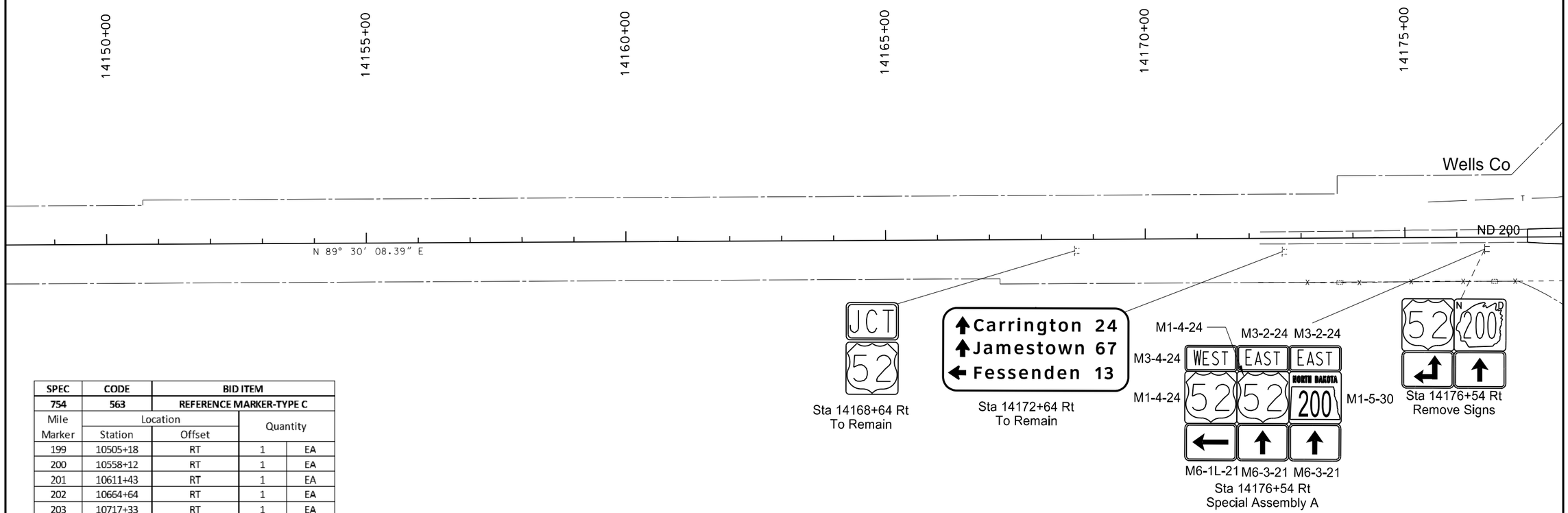
US 281

Signing Removal Layout
Sta 5951+00 to Sta 5965+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	14



SPEC	CODE	BID ITEM		
754	563	REFERENCE MARKER-TYPE C		
Mile Marker	Location		Quantity	
	Station	Offset		
199	10505+18	RT	1	EA
200	10558+12	RT	1	EA
201	10611+43	RT	1	EA
202	10664+64	RT	1	EA
203	10717+33	RT	1	EA
204	10770+47	RT	1	EA
205	10823+12	RT	1	EA
206	10875+96	RT	1	EA
207	10929+04	RT	1	EA
208	10981+84	RT	1	EA
209	11034+58	RT	1	EA
210	11087+44	RT	1	EA
211	11140+38	RT	1	EA
212	11193+44	RT	1	EA
213	11246+10	RT	1	EA
214	11298+80	RT	1	EA
215	11351+89	RT	1	EA
216	11405+12	RT	1	EA
217	11457+74	RT	1	EA
218	11510+51	RT	1	EA
219	11563+22	RT	1	EA
220	11616+37	RT	1	EA
221	11669+35	RT	1	EA
222	11722+08	RT	1	EA
Total			24	EA

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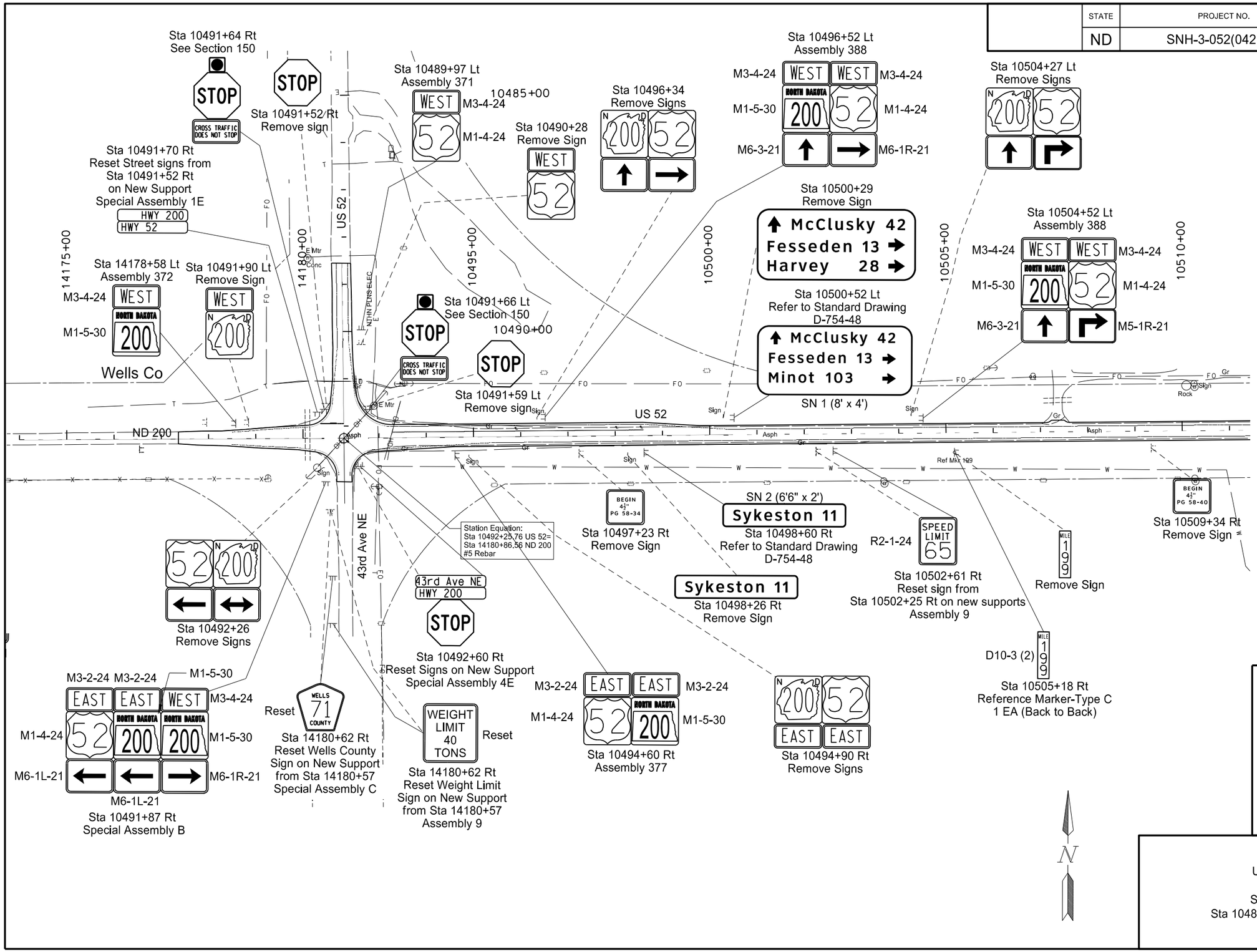
N

US Hwy 52

Sign Layout
Sta 14150+00 to 14175+00 (ND 200)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	15



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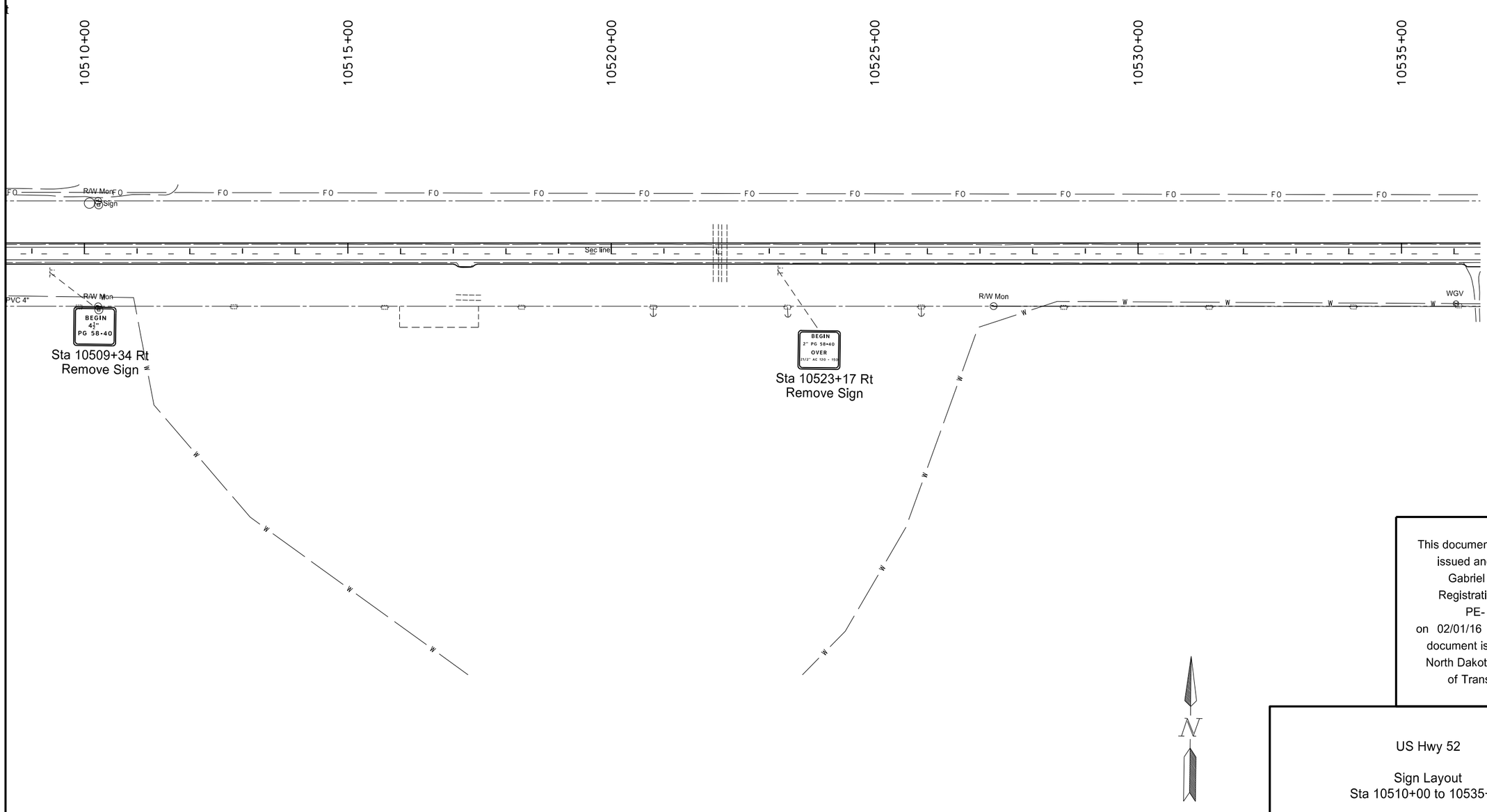
US Hwy 52

Sign Layout
Sta 10485+00 to 10510+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	16



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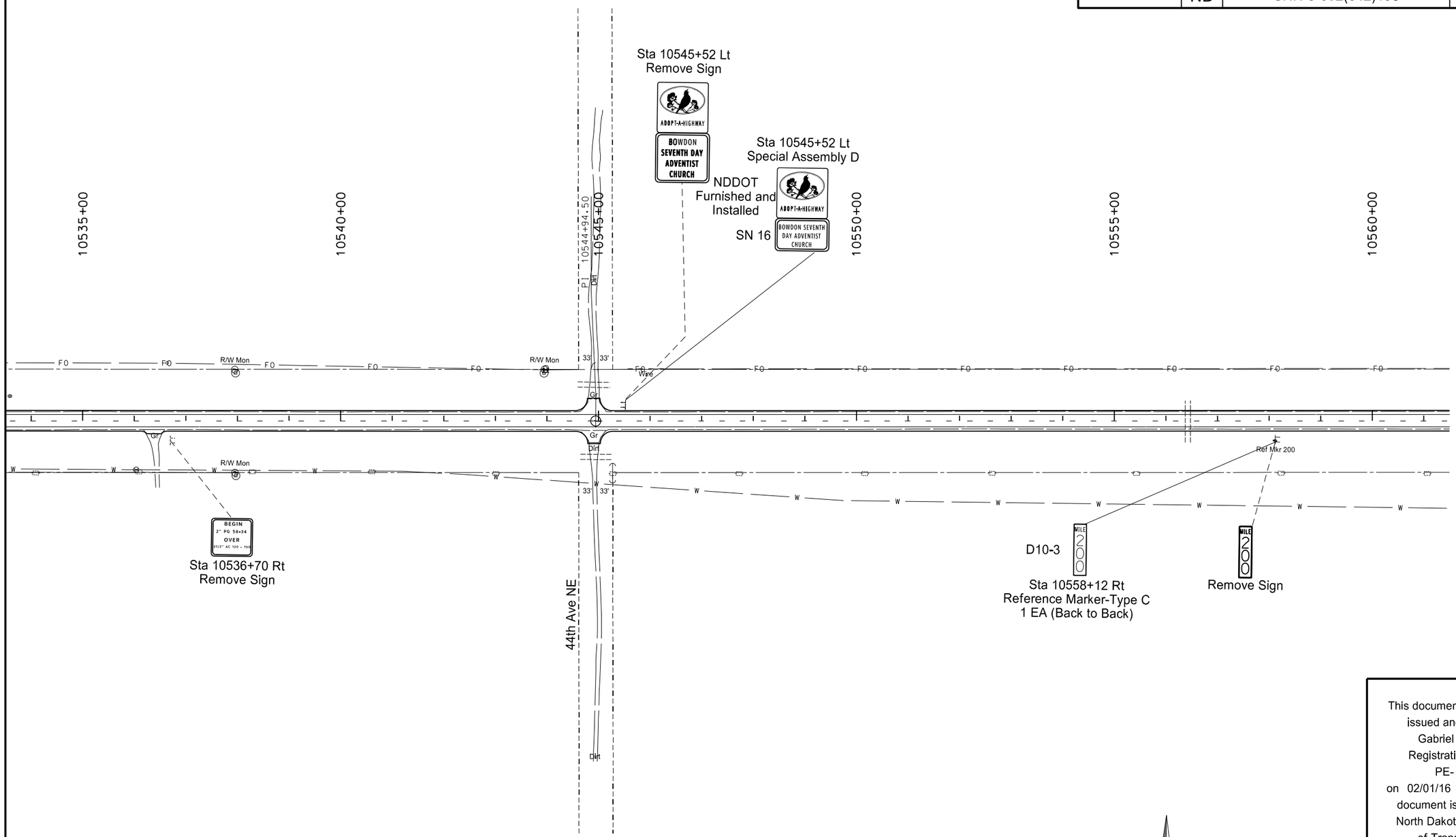
US Hwy 52

Sign Layout
Sta 10510+00 to 10535+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	17



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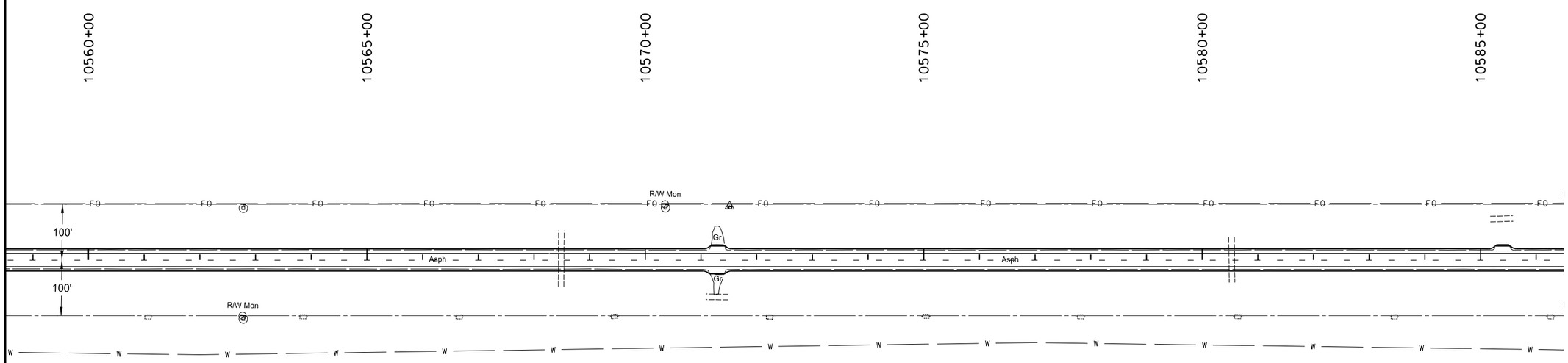
US Hwy 52

Sign Layout
Sta 10535+00 to 10560+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	18



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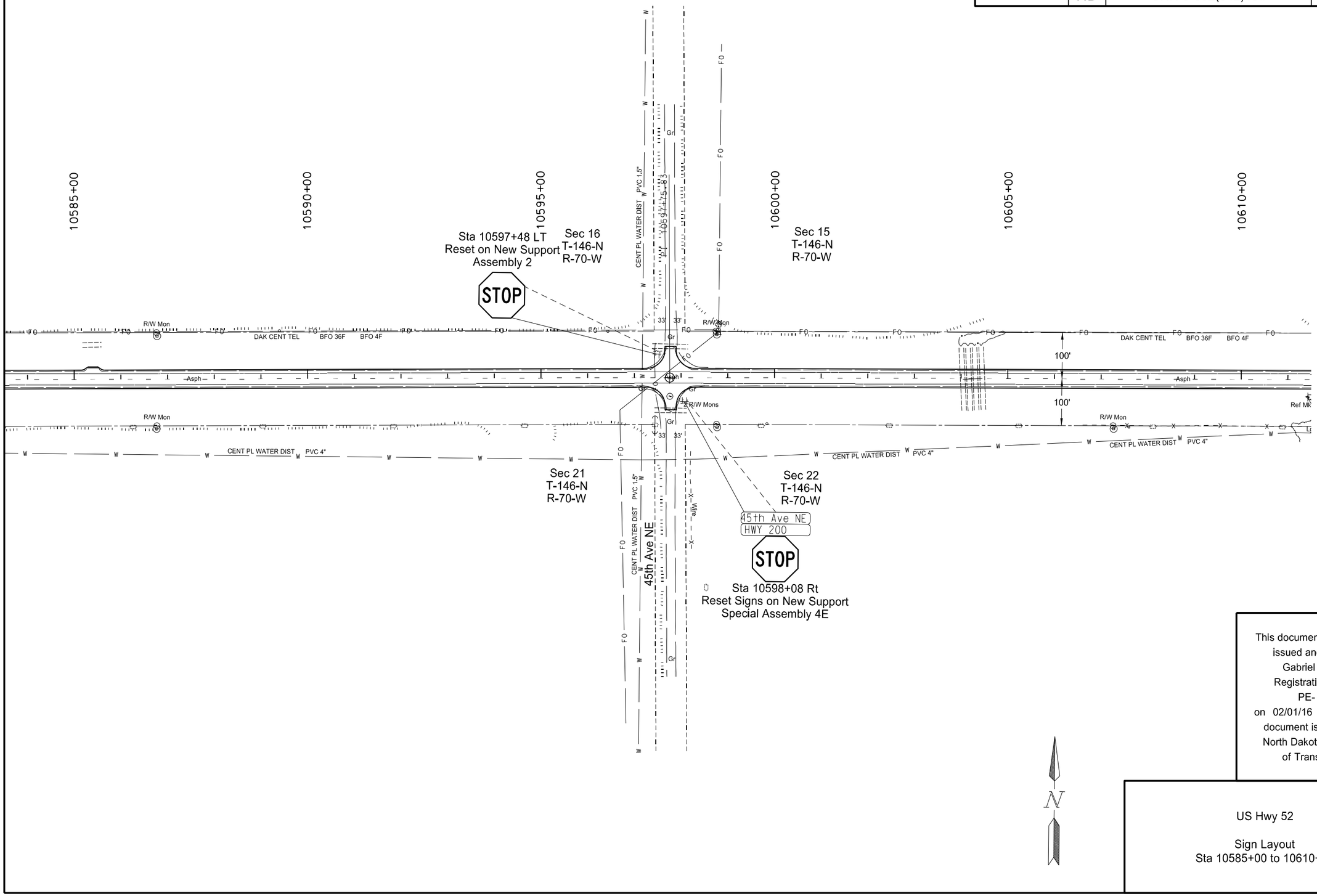
US Hwy 52

Sign Layout
Sta 10560+00 to 10585+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	19



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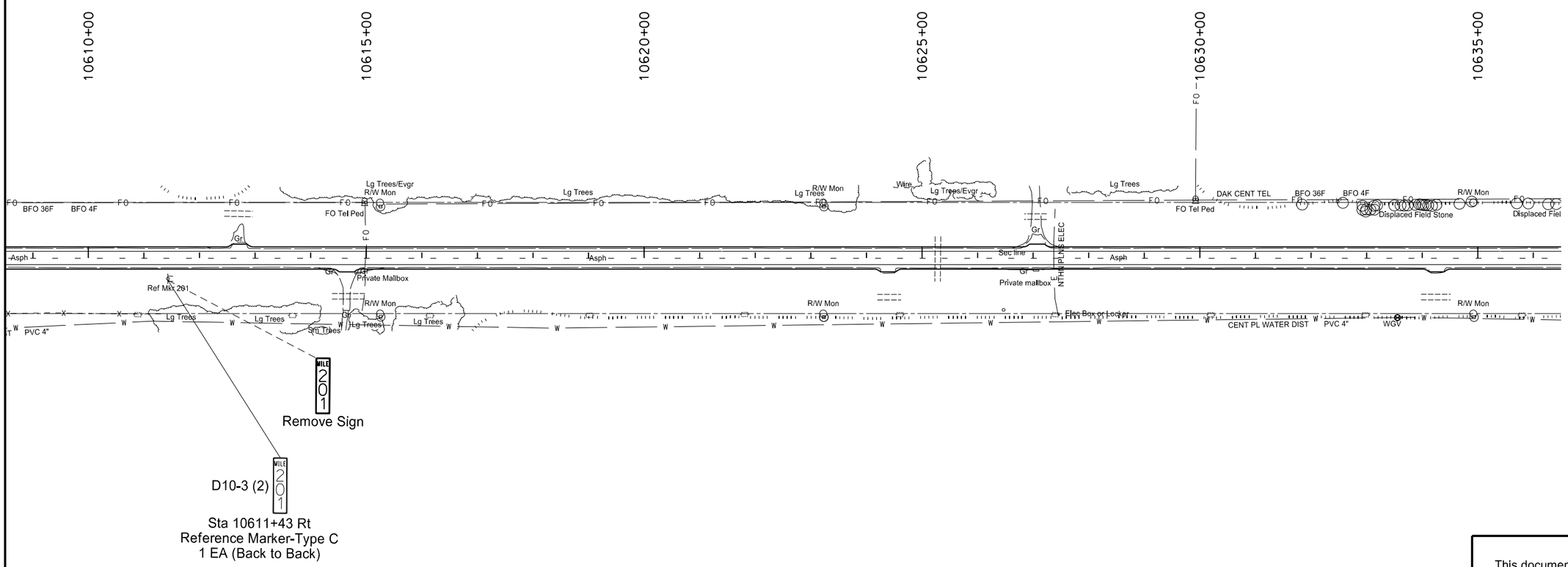
US Hwy 52

Sign Layout
Sta 10585+00 to 10610+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	20



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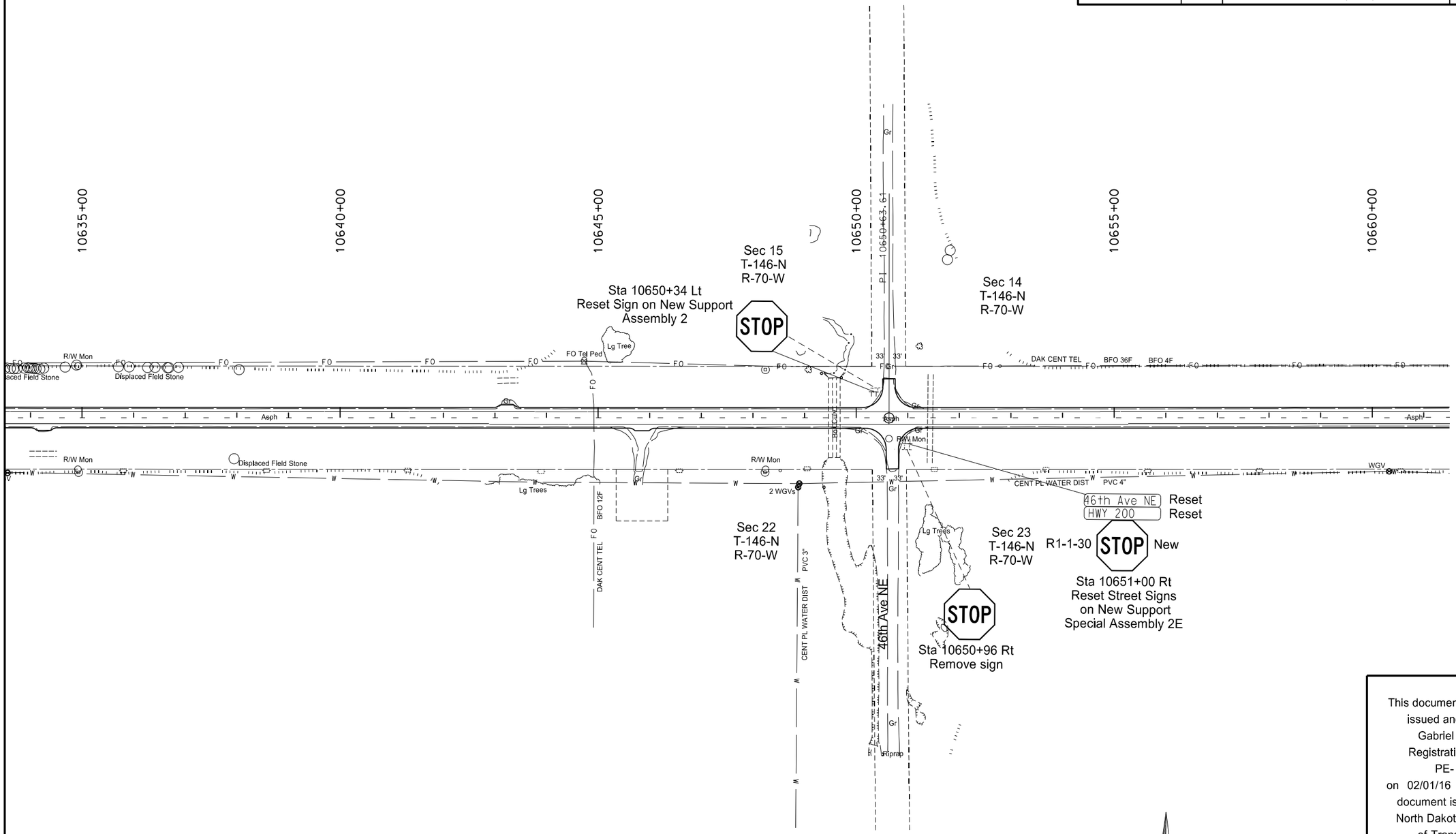
US Hwy 52

Sign Layout
Sta 10610+00 to 10635+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	21



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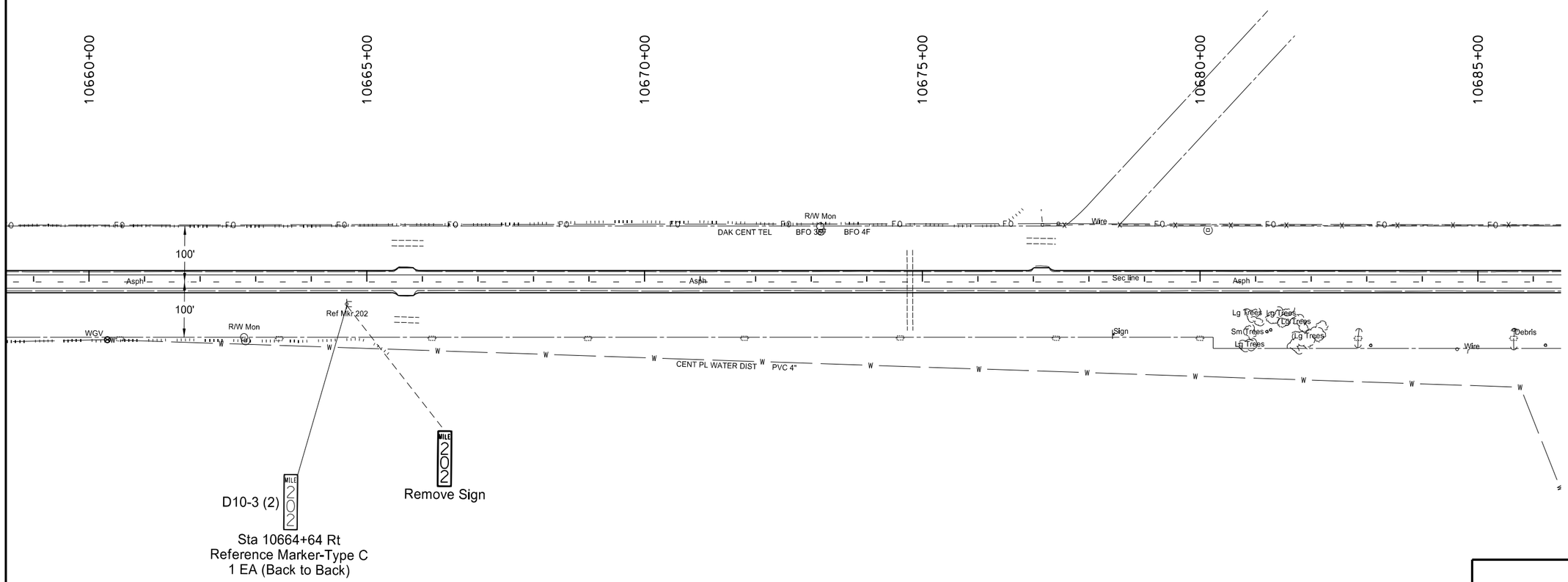
US Hwy 52

Sign Layout
Sta 10635+00 to 10660+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	22



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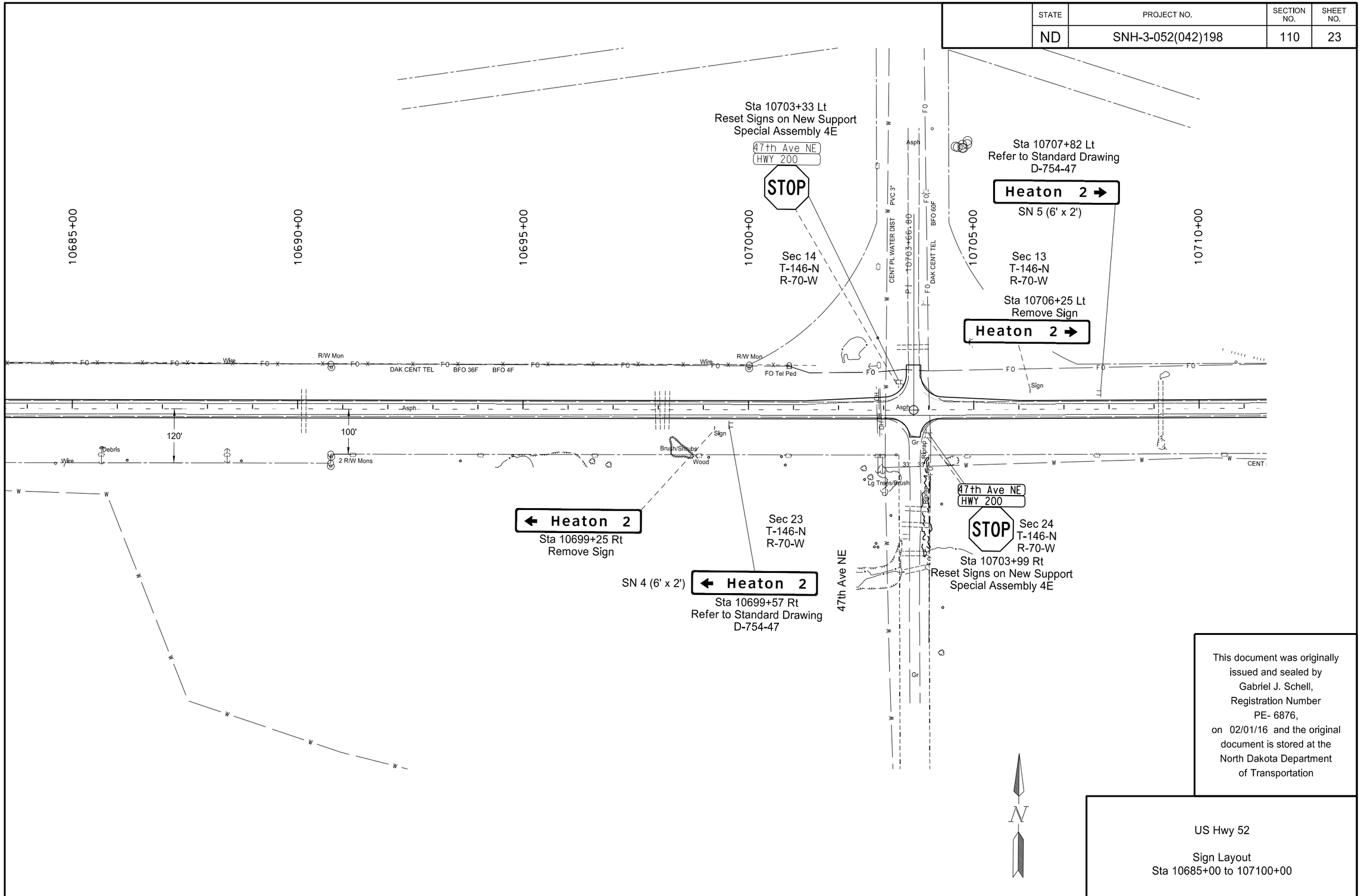
US Hwy 52

Sign Layout
Sta 10660+00 to 10685+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	23



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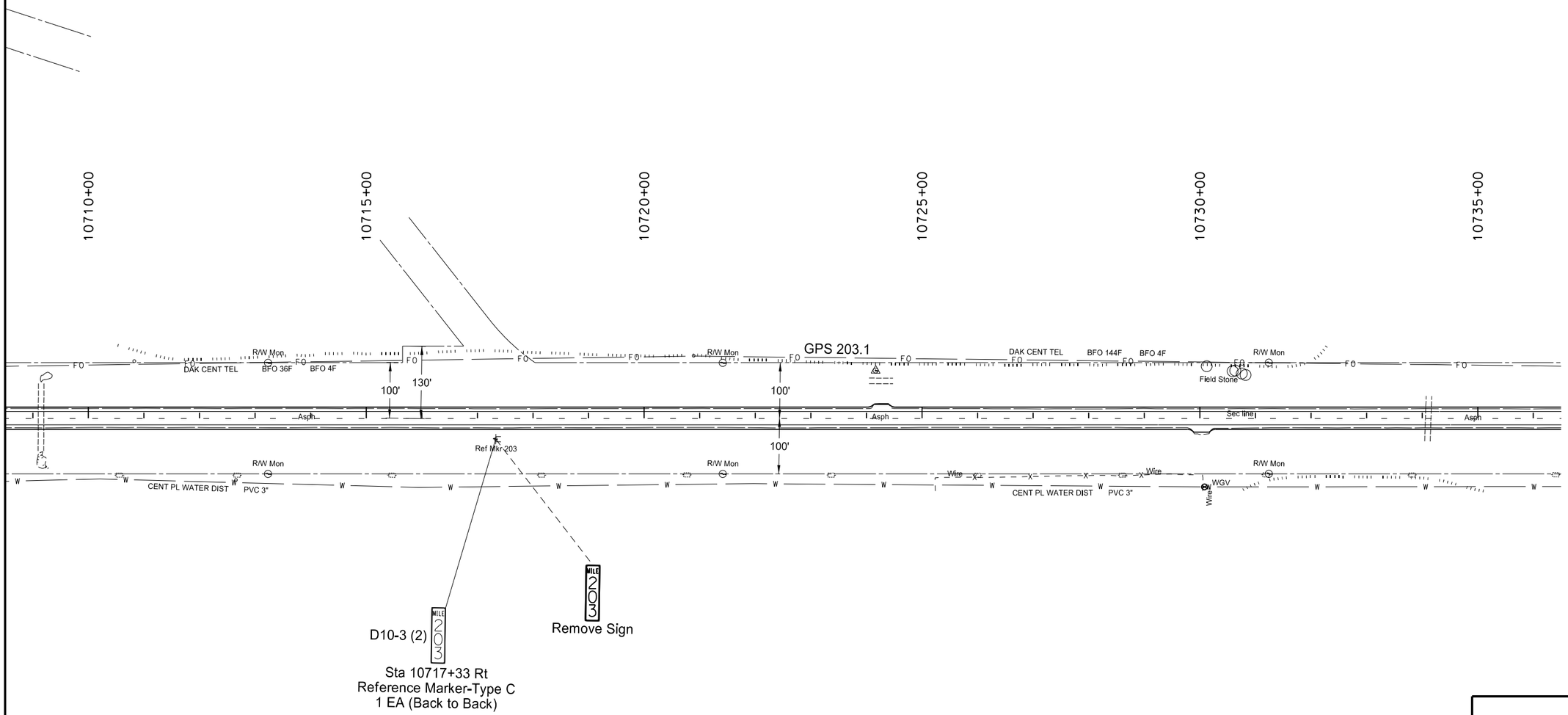
US Hwy 52

Sign Layout
Sta 10685+00 to 107100+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	24



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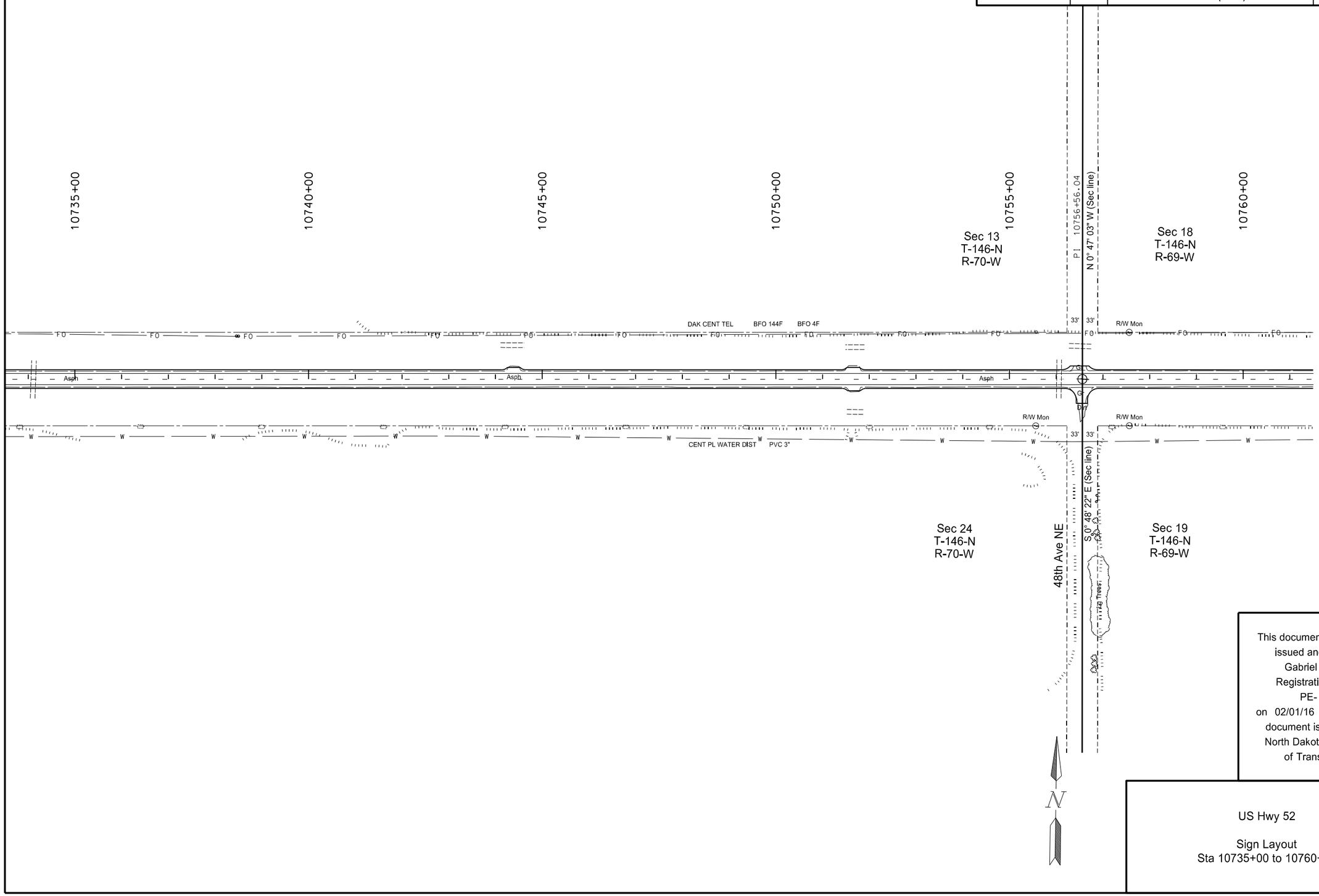
N

US Hwy 52

Sign Layout
Sta 10710+00 to 10735+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	25



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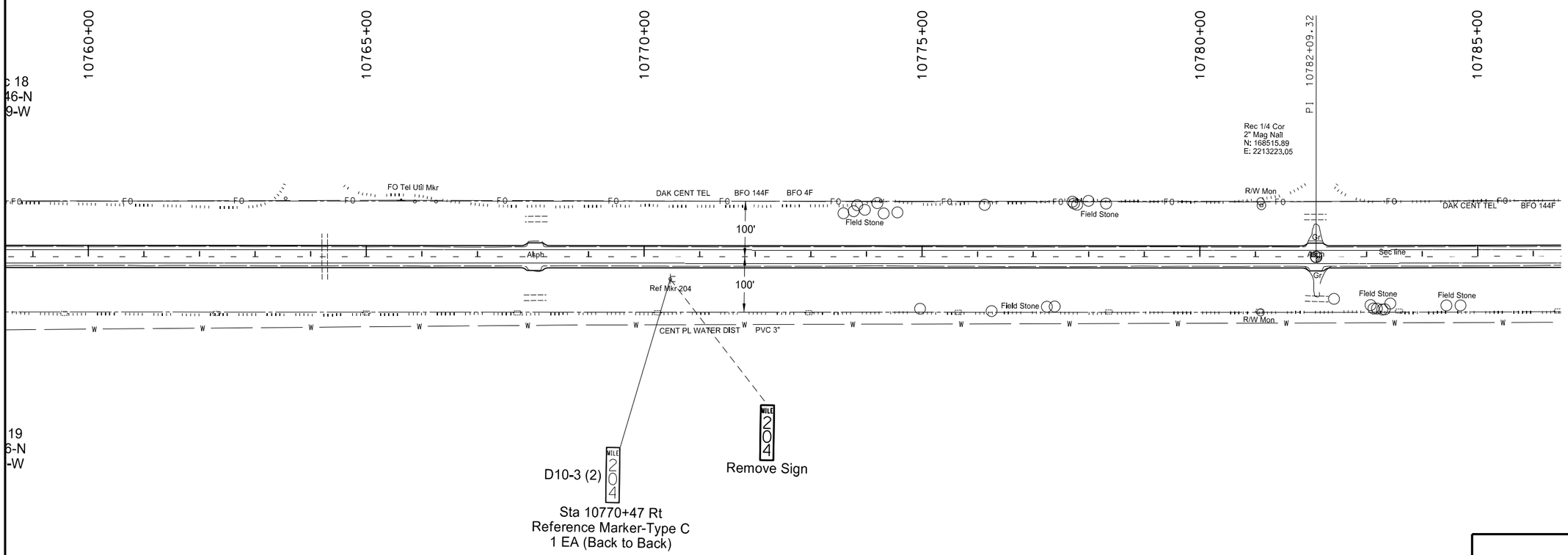
US Hwy 52

Sign Layout
Sta 10735+00 to 10760+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	26



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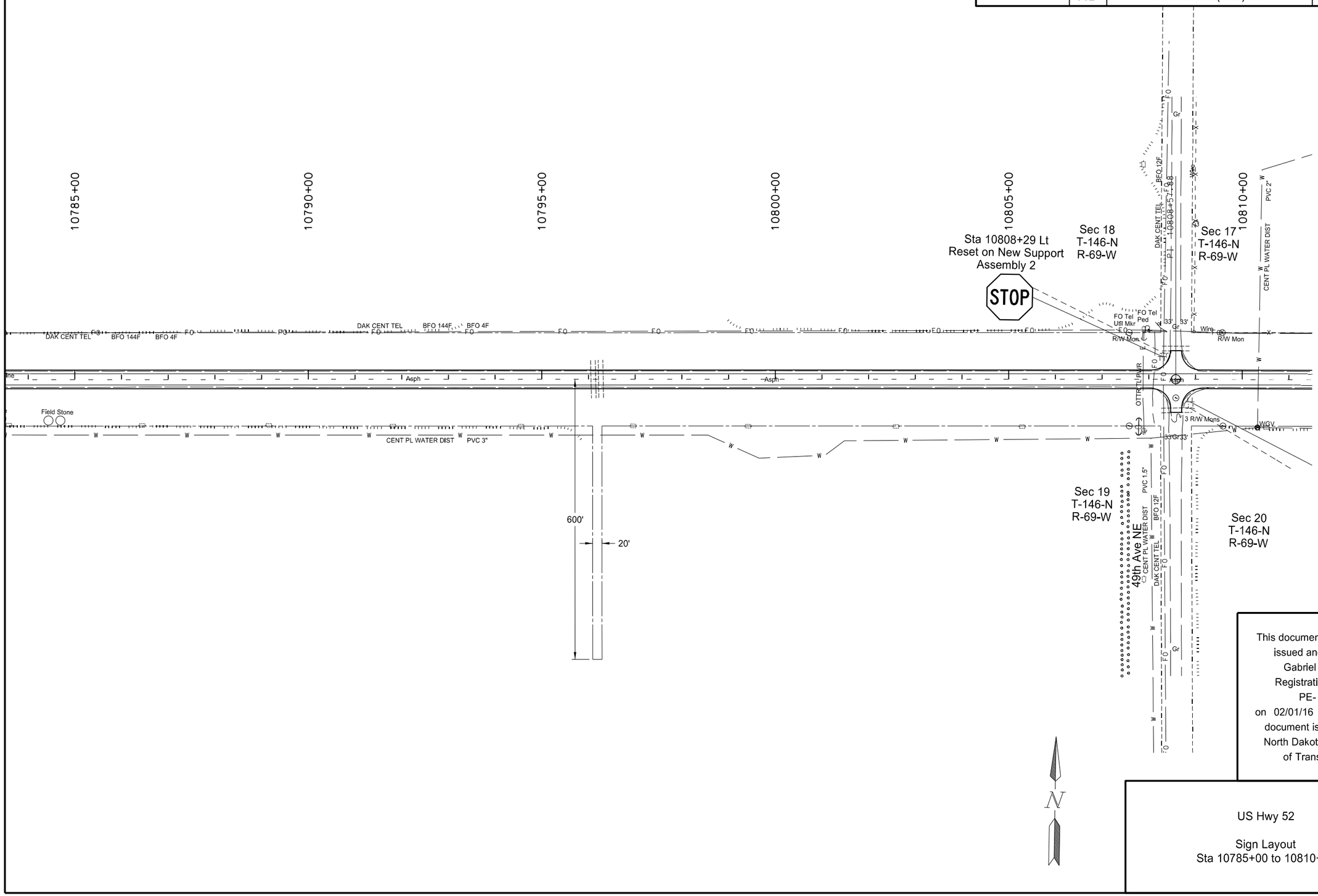
US Hwy 52

Sign Layout
Sta 10760+00 to 10785+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	27



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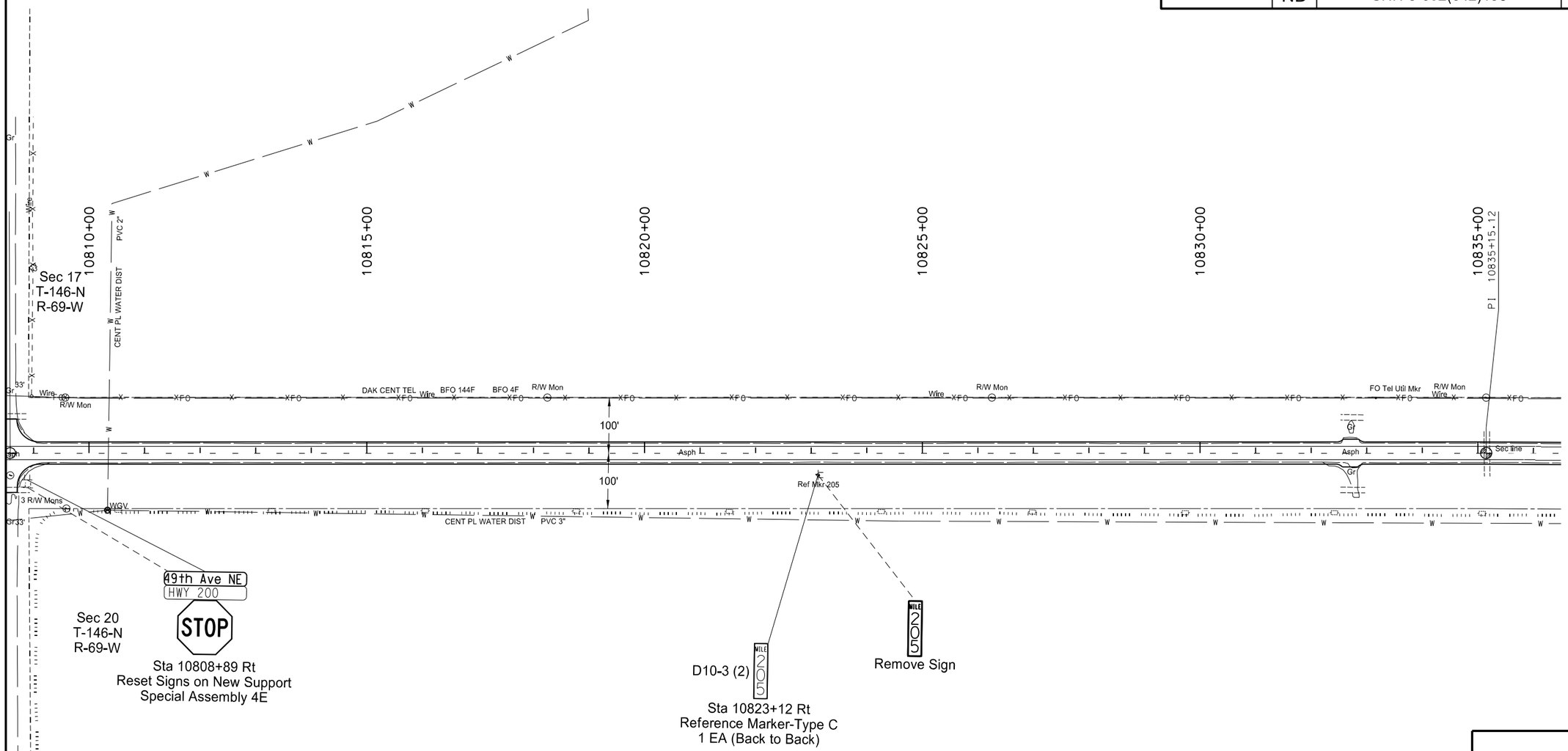
US Hwy 52

Sign Layout
Sta 10785+00 to 10810+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	28



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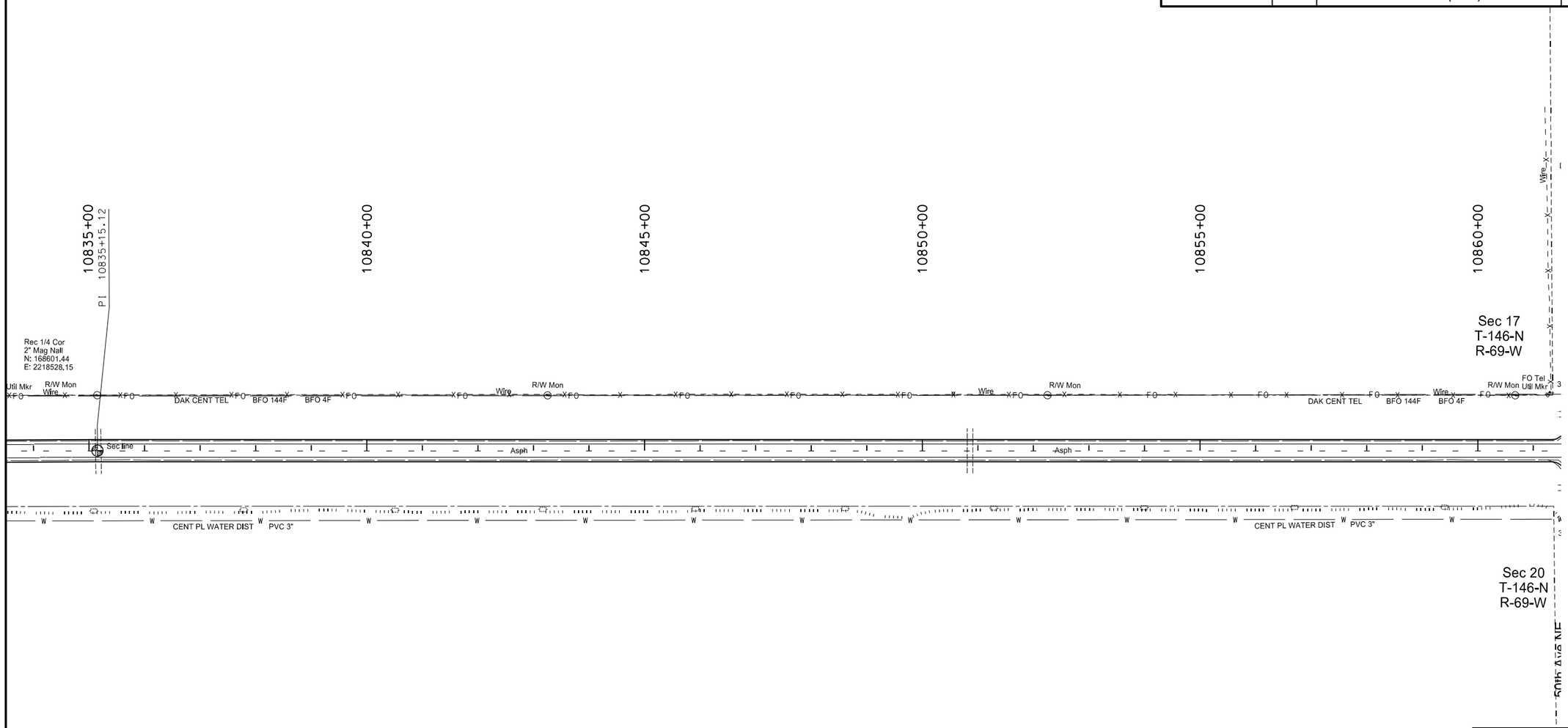
US Hwy 52

Sign Layout
Sta 10810+00 to 10835+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	29



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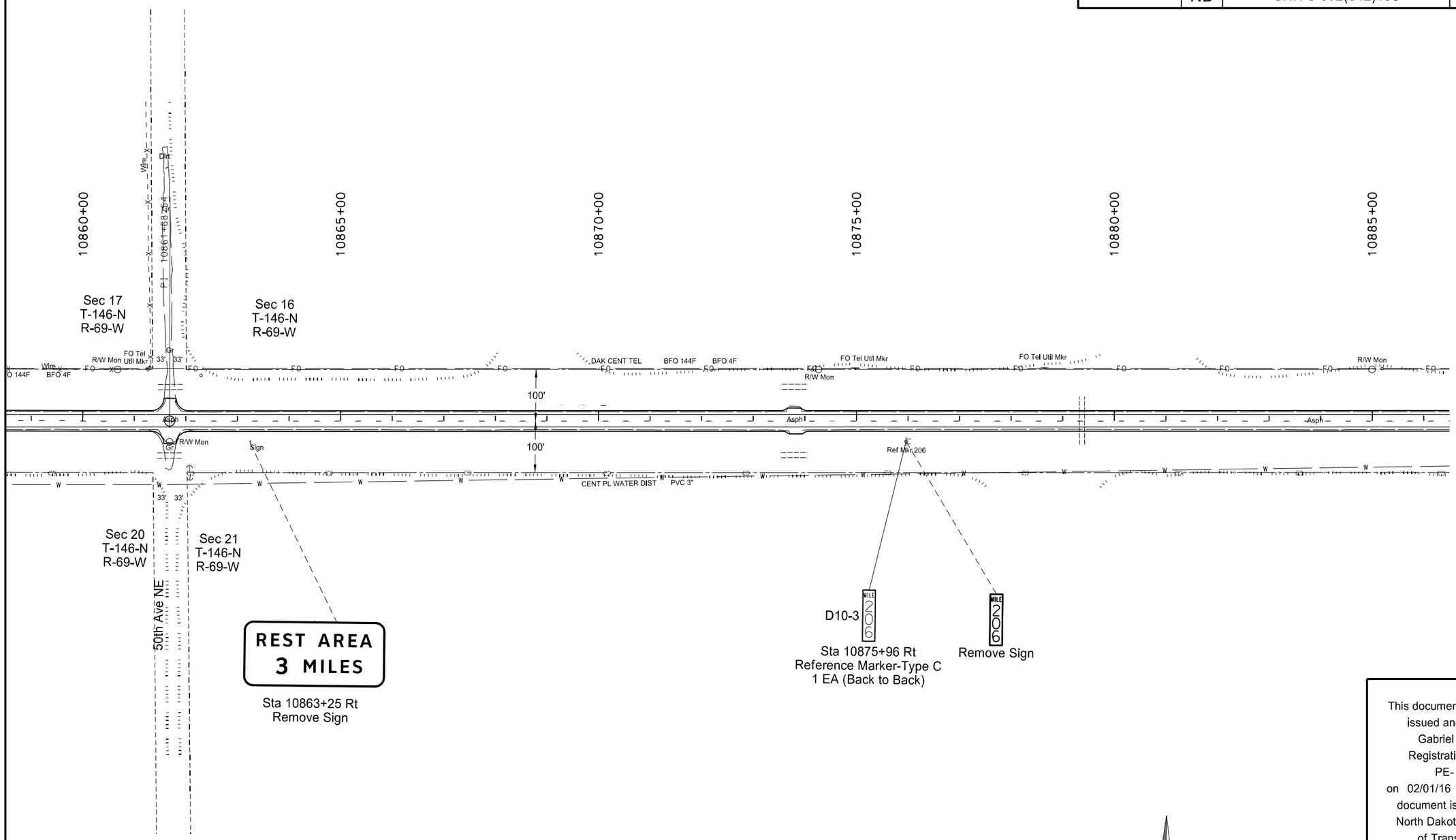
N

US Hwy 52

Sign Layout
Sta 10835+00 to 10860+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	30



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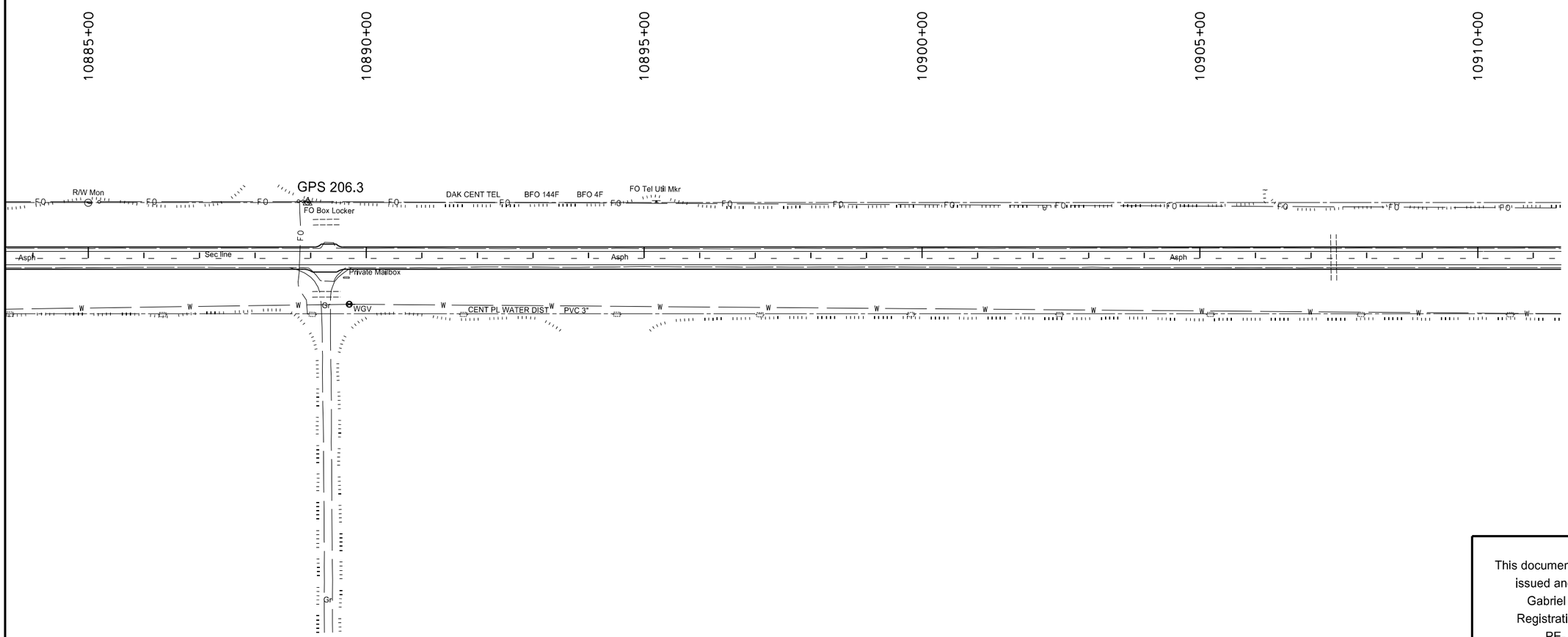
US Hwy 52

Sign Layout
Sta 10860+00 to 10885+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	31



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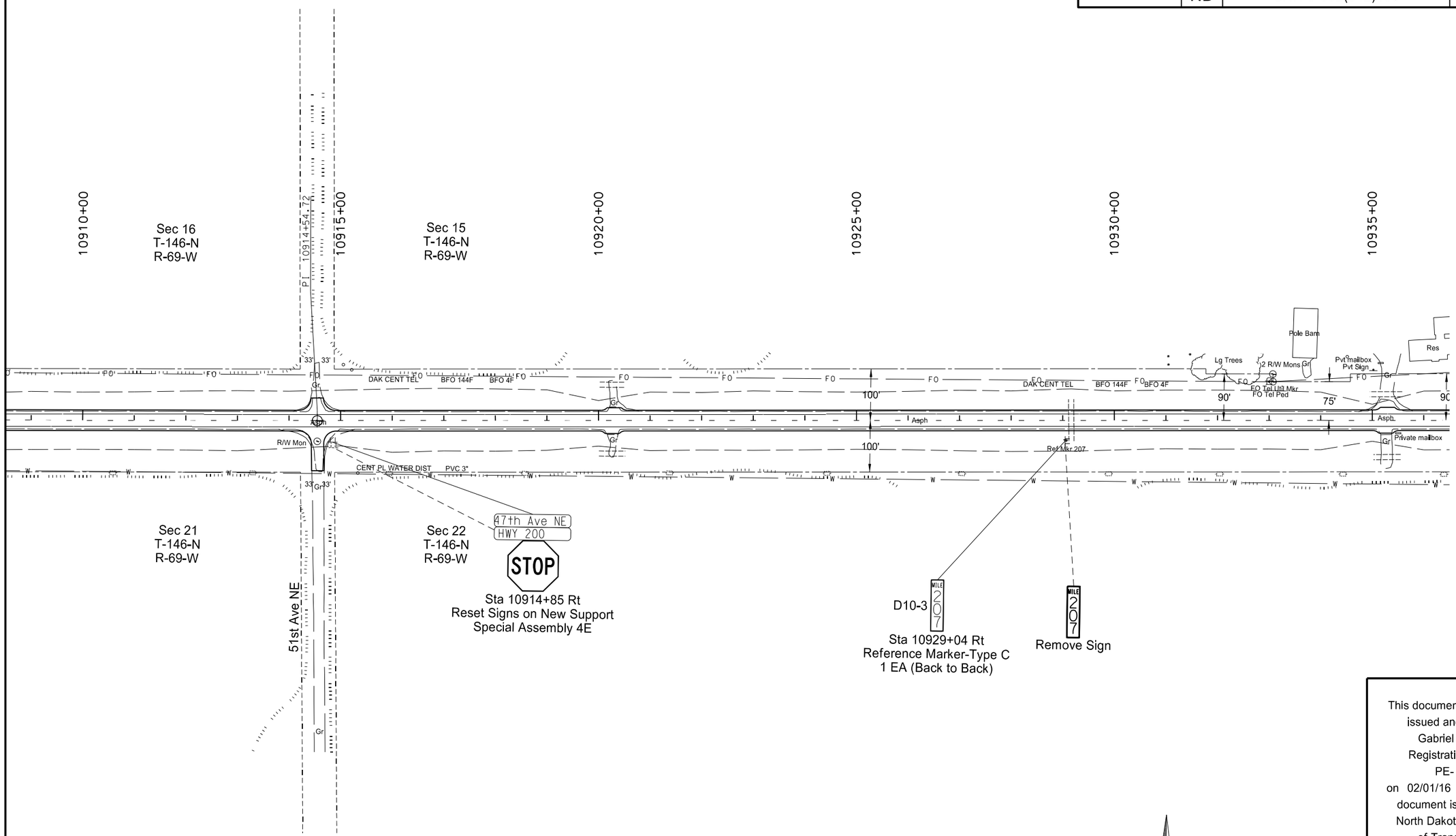
US Hwy 52

Sign Layout
Sta 10885+00 to 10910+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	32



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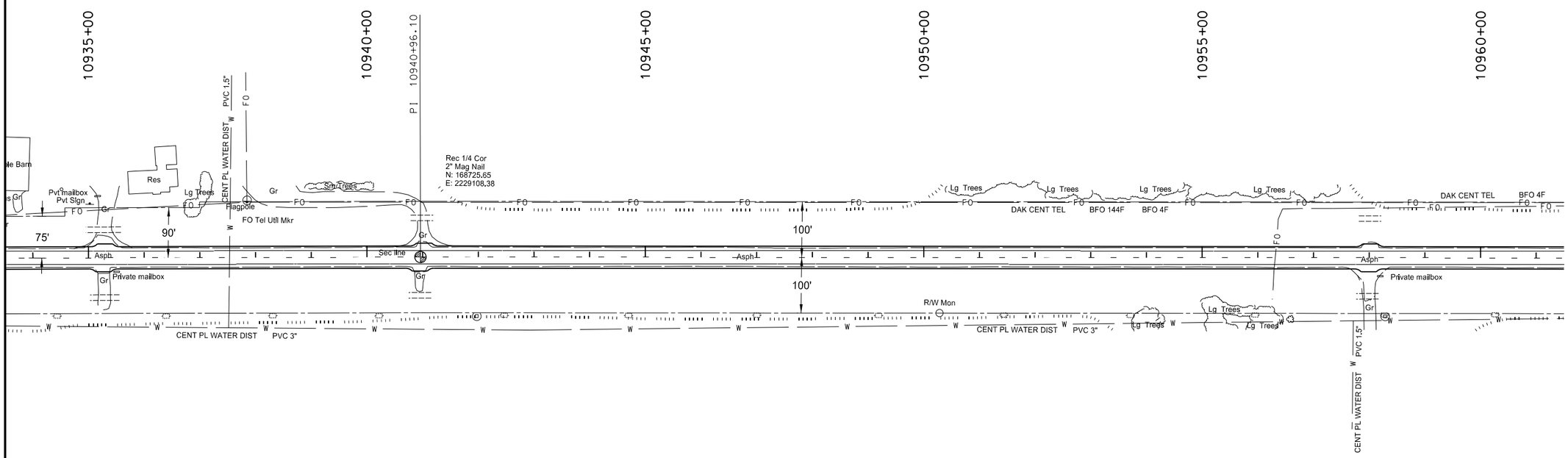
US Hwy 52

Sign Layout
Sta 10910+00 to 10935+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	33



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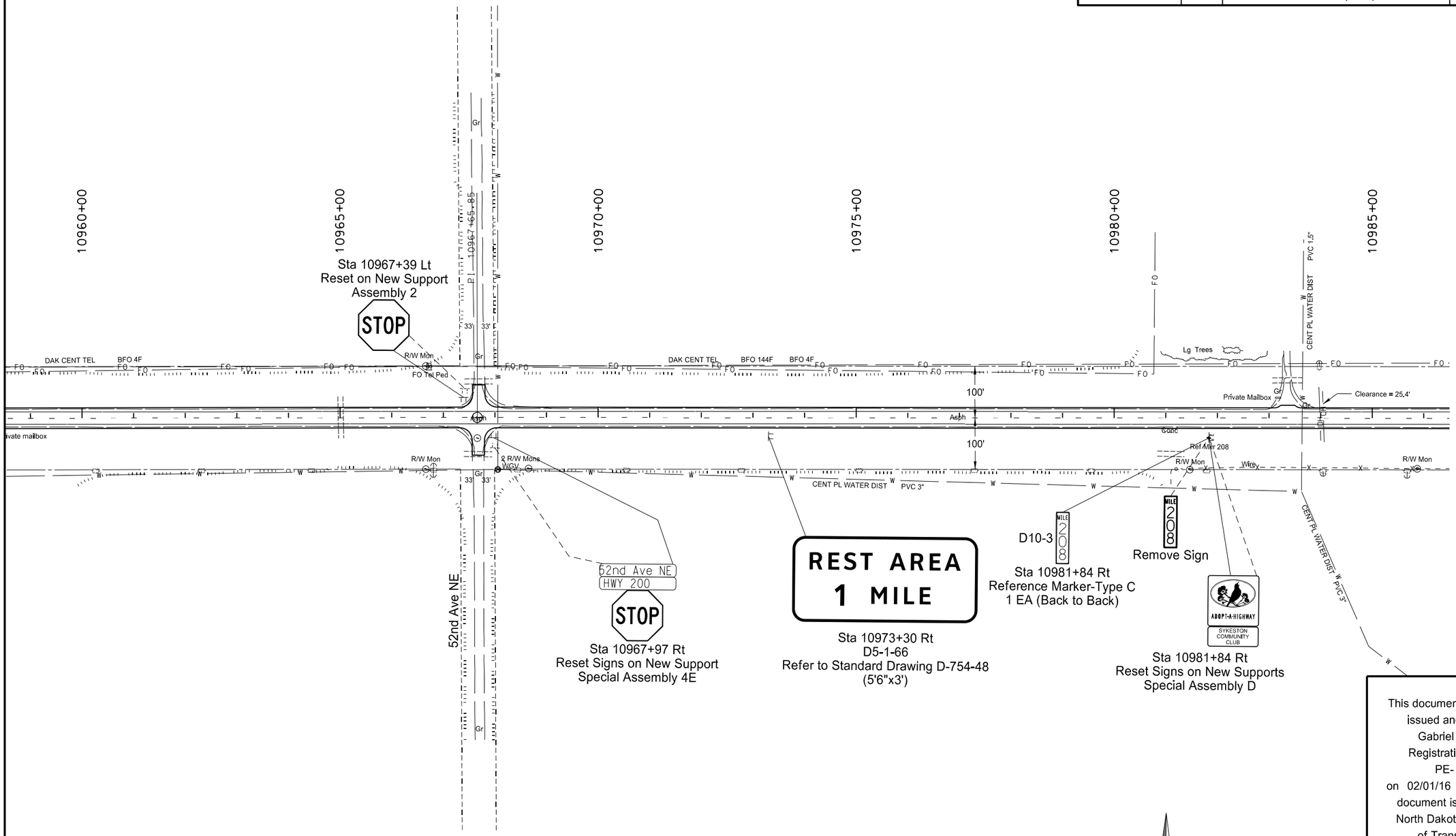
US Hwy 52

Sign Layout
Sta 10935+00 to 10960+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	34



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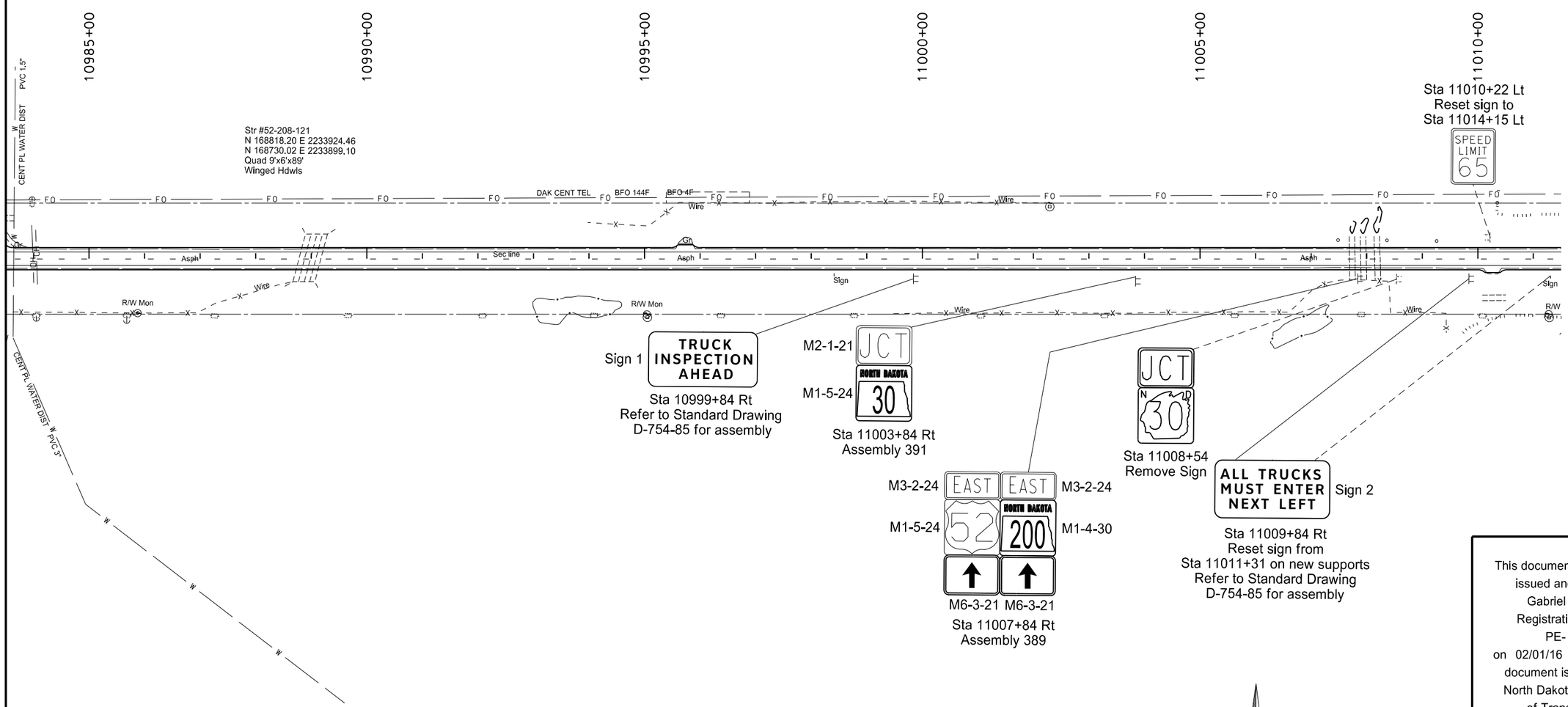
US Hwy 52

Sign Layout
Sta 10960+00 to 10985+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	35



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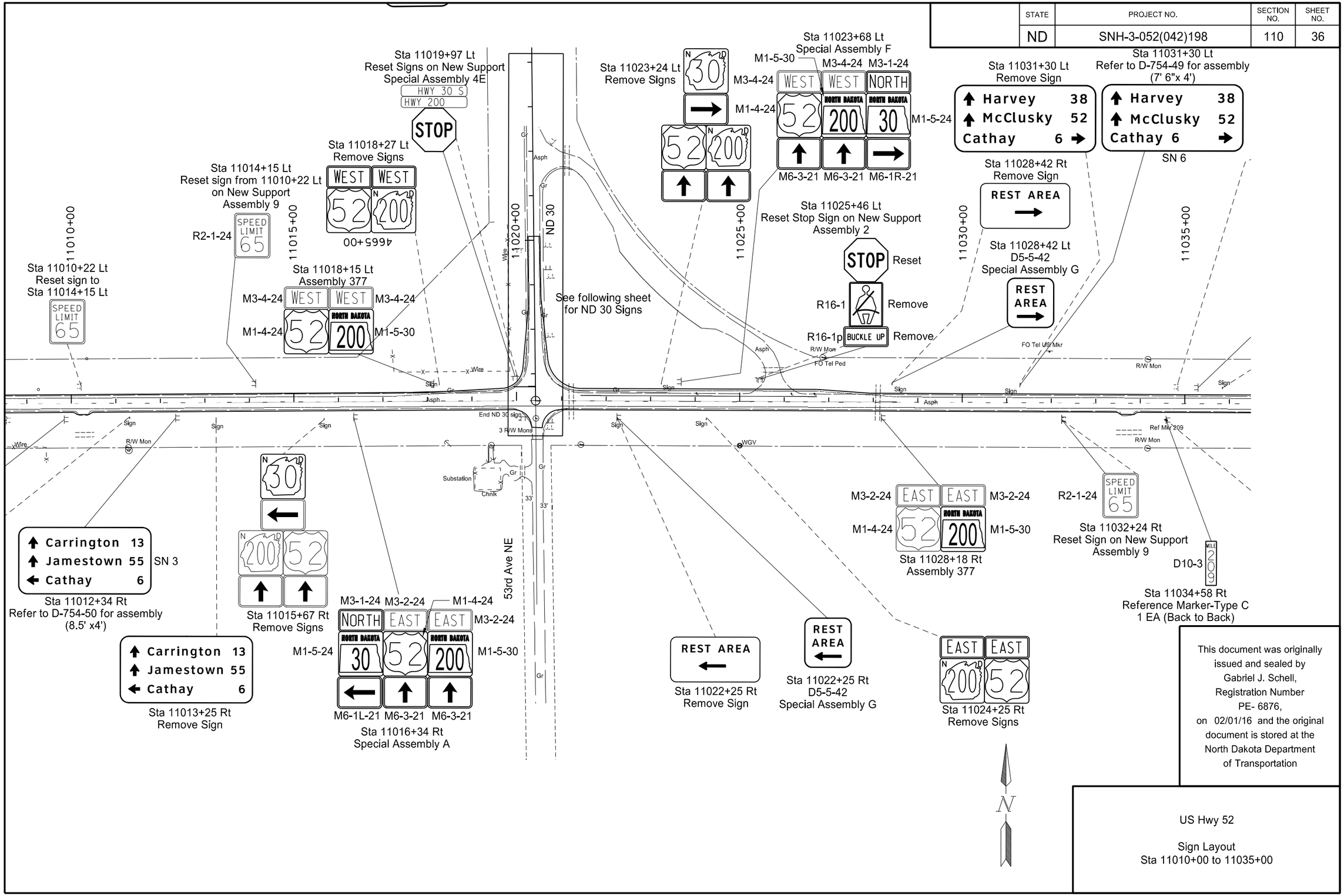
US Hwy 52

Sign Layout
Sta 10985+00 to 11010+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	36



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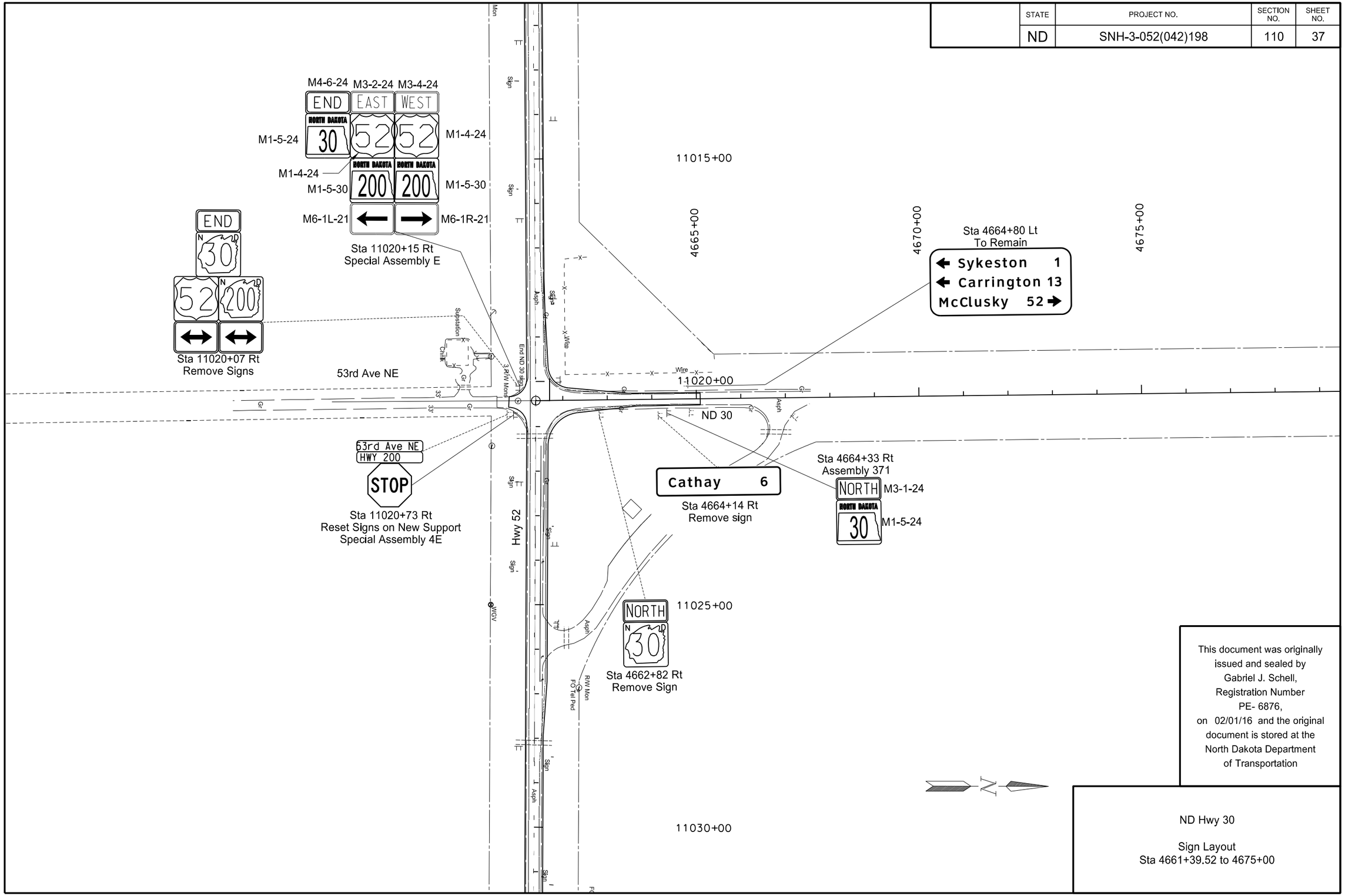
US Hwy 52

Sign Layout
Sta 11010+00 to 11035+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	37



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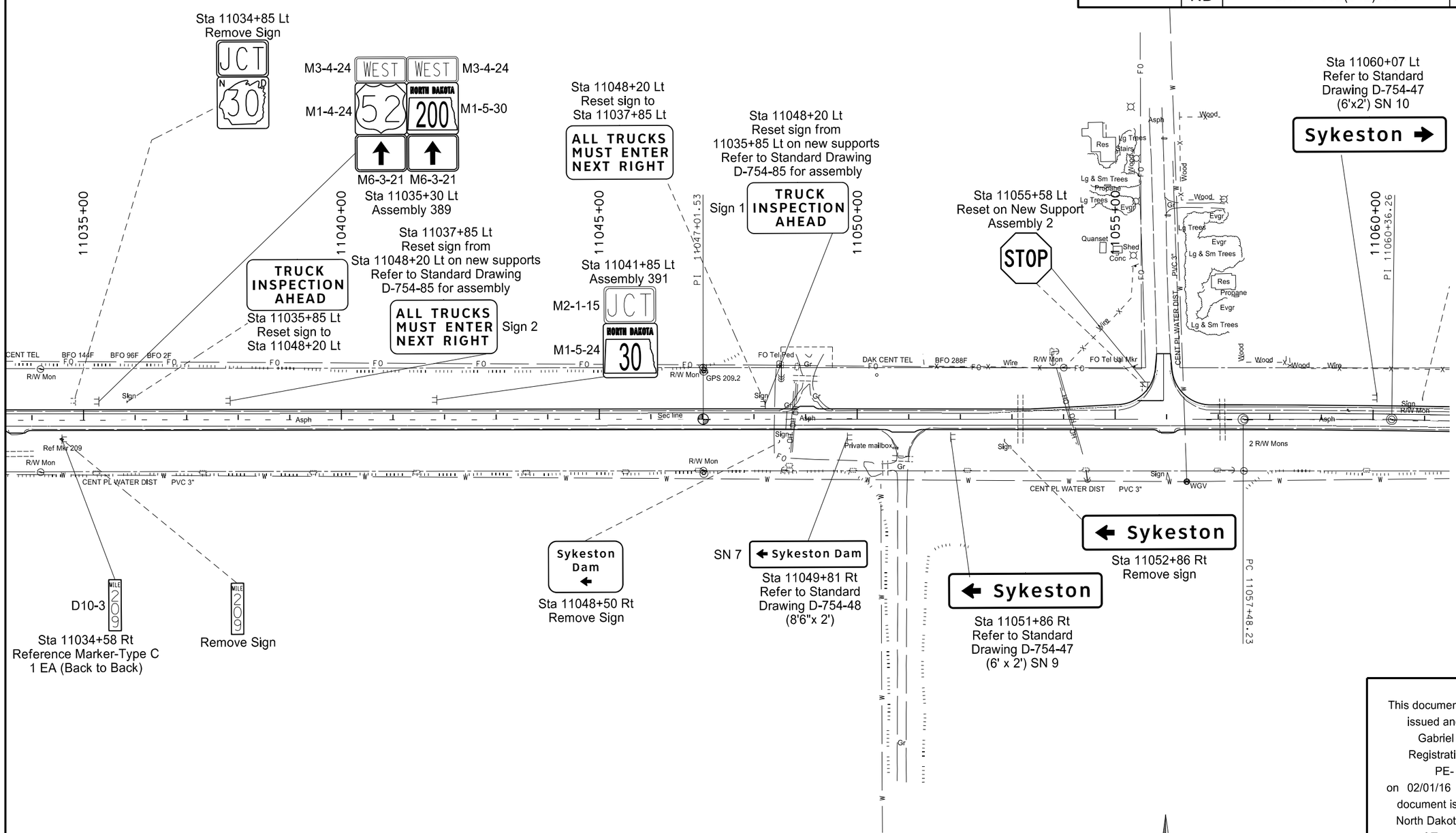
ND Hwy 30

Sign Layout
Sta 4661+39.52 to 4675+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	38



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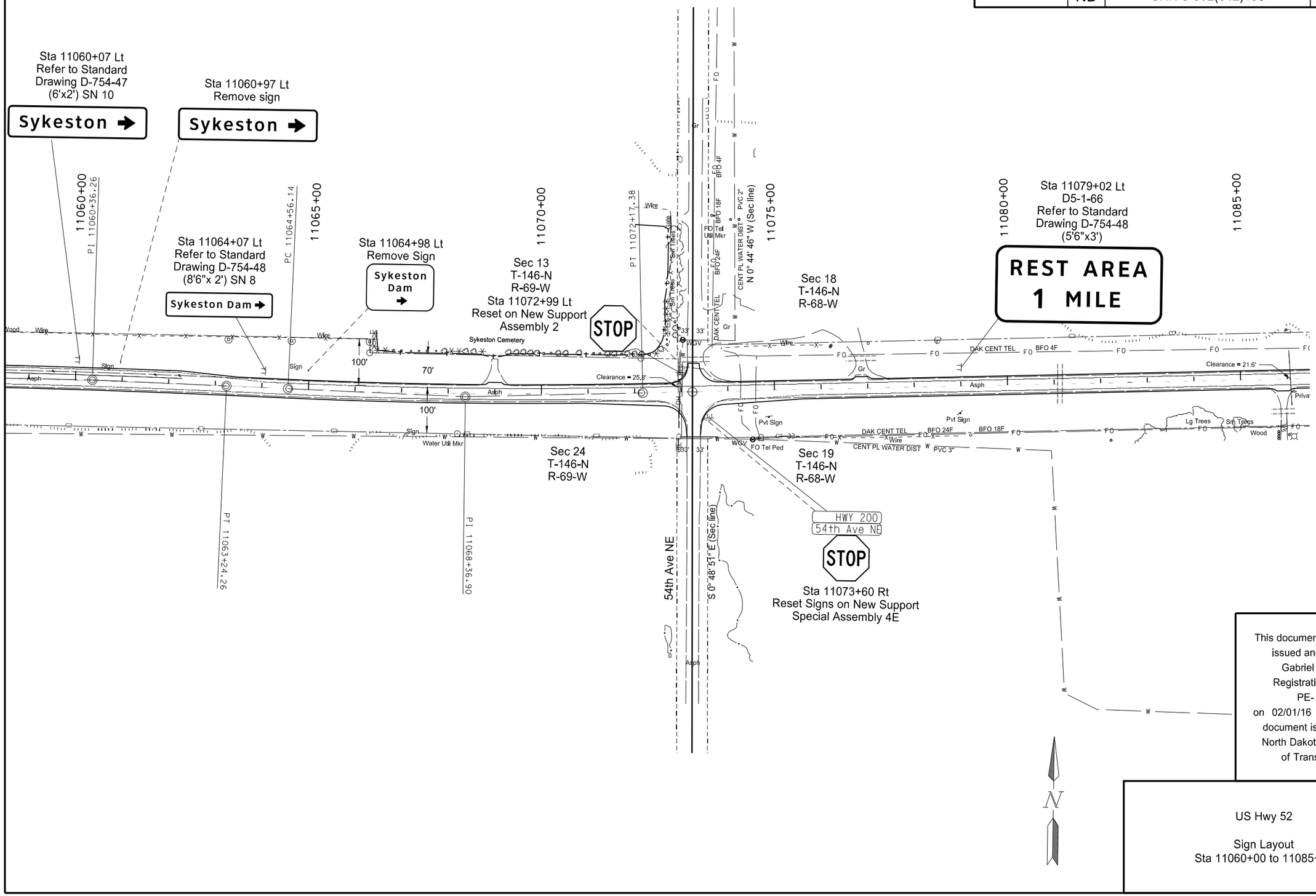
US Hwy 52

Sign Layout
Sta 11035+00 to 11060+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	39



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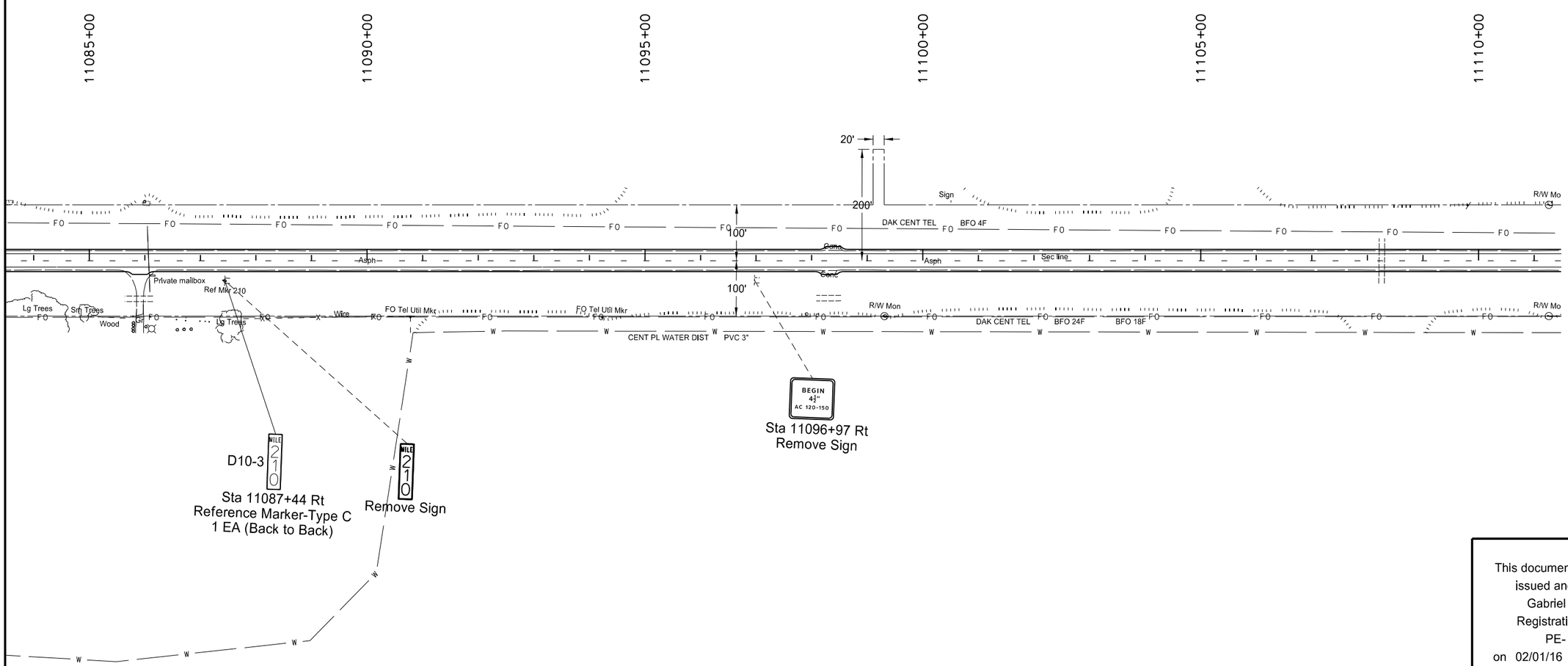
US Hwy 52

Sign Layout
Sta 11060+00 to 11085+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	40



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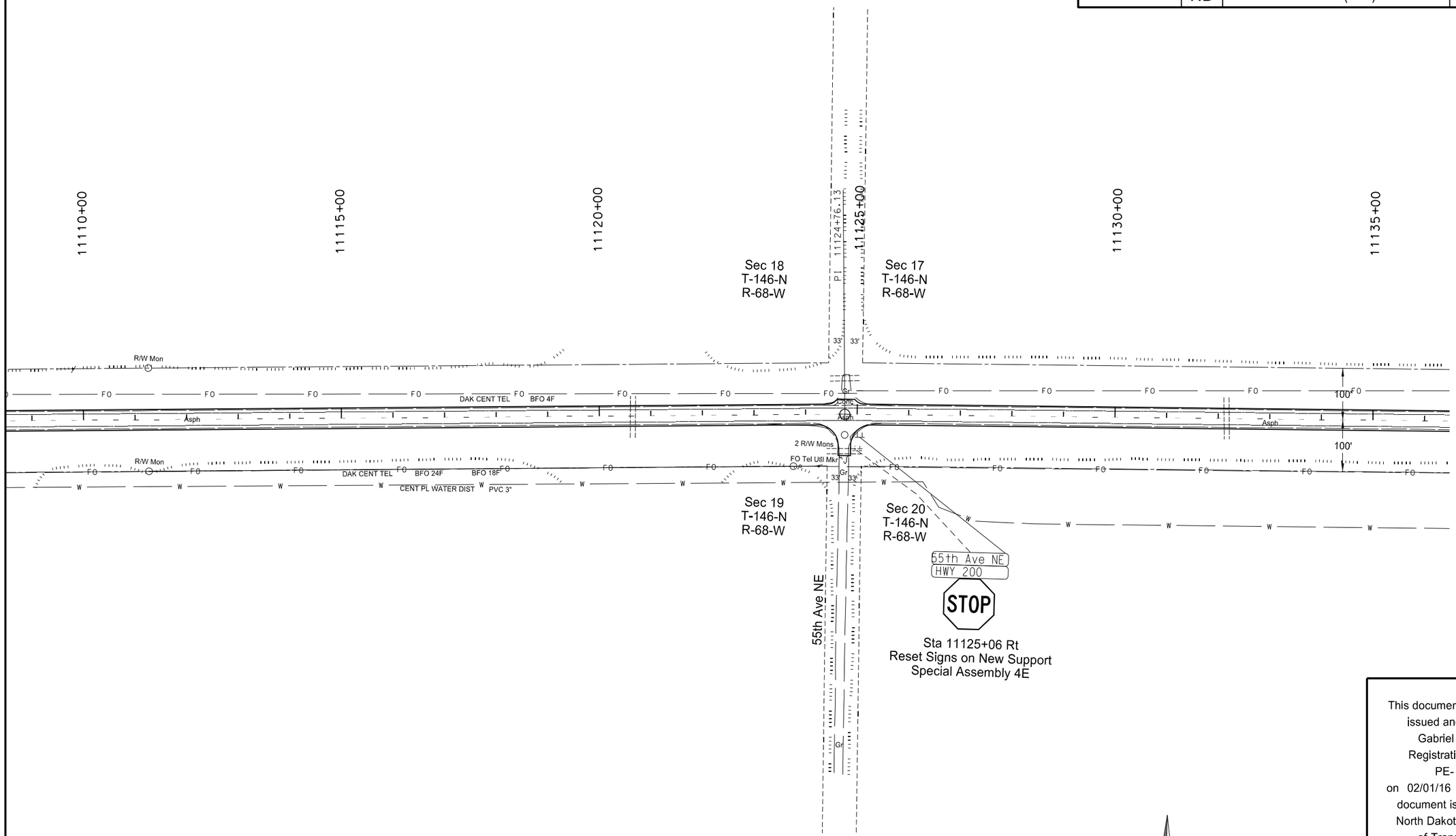
US Hwy 52

Sign Layout
Sta 11085+00 to 11110+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	41



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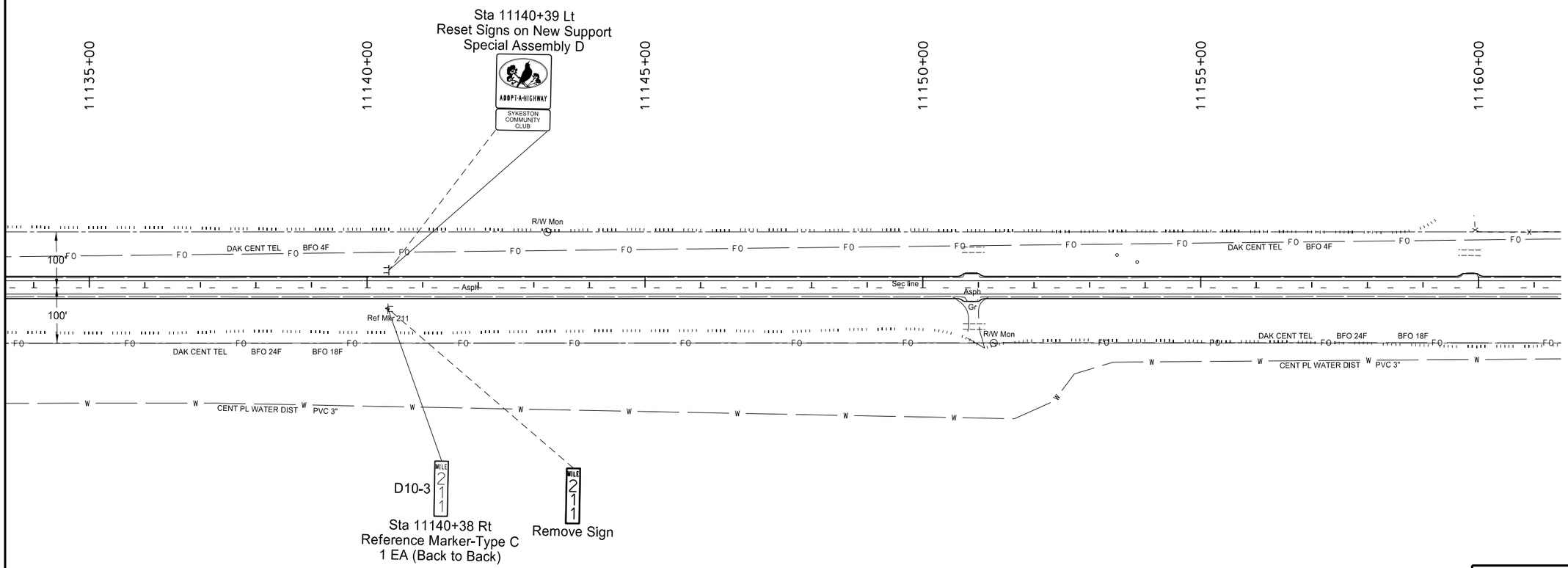
US Hwy 52

Sign Layout
Sta 11110+00 to 11135+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	42



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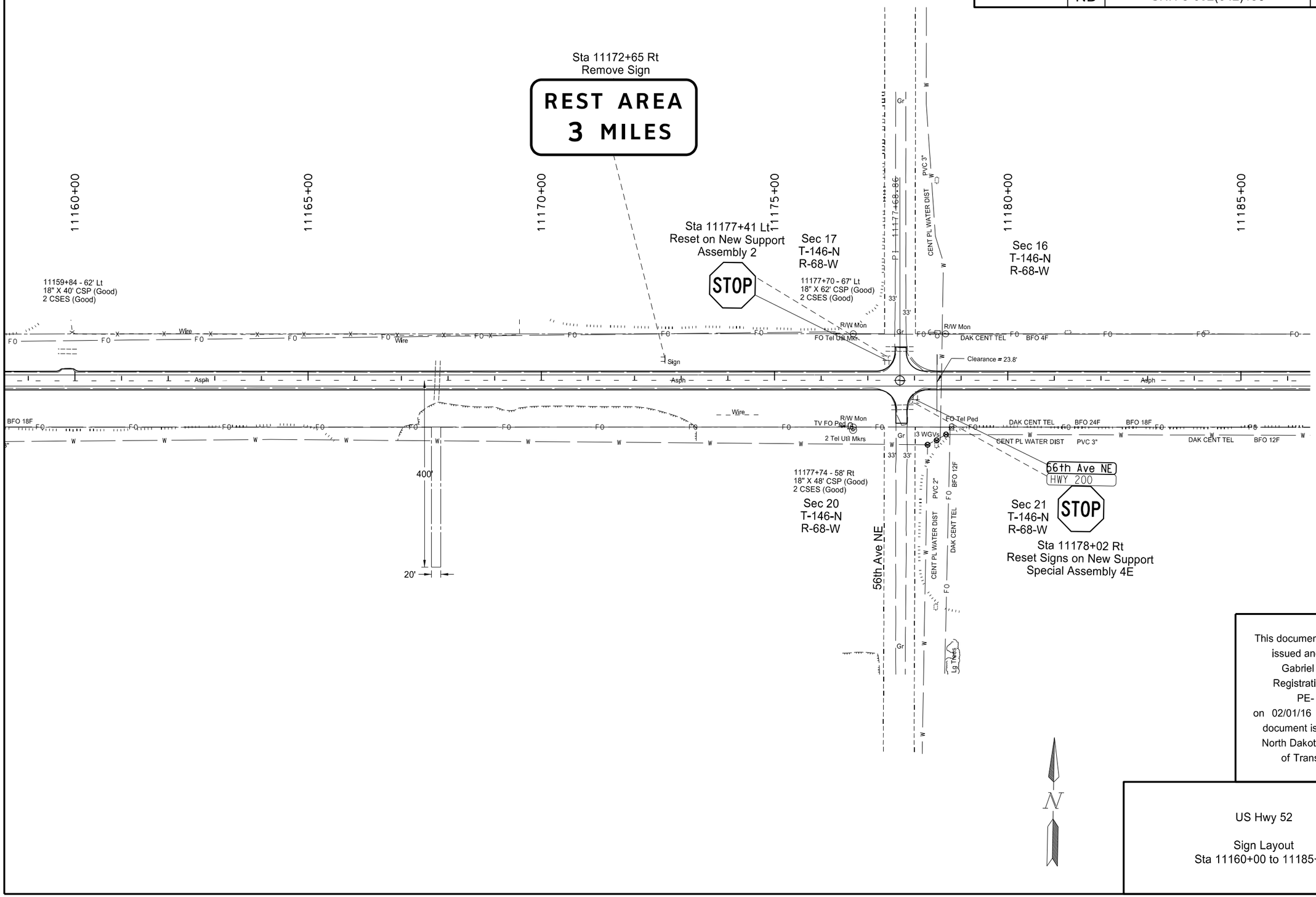
US Hwy 52

Sign Layout
Sta 11135+00 to 11160+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	43



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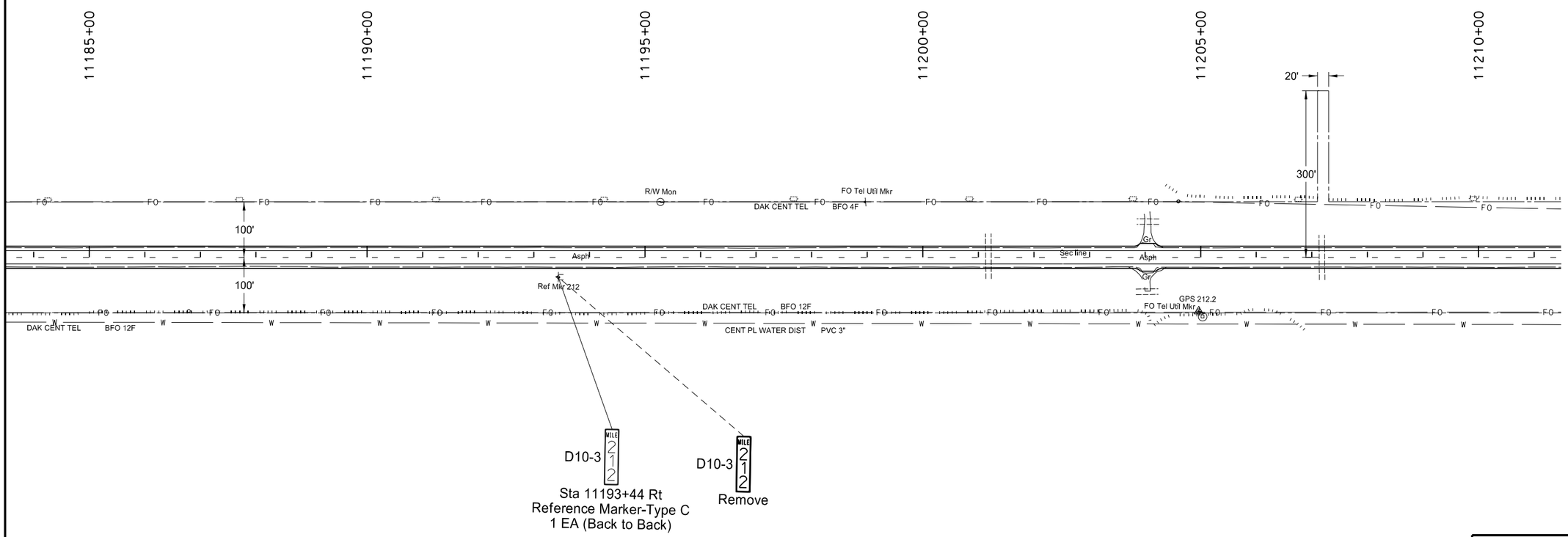
US Hwy 52

Sign Layout
Sta 11160+00 to 11185+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	44



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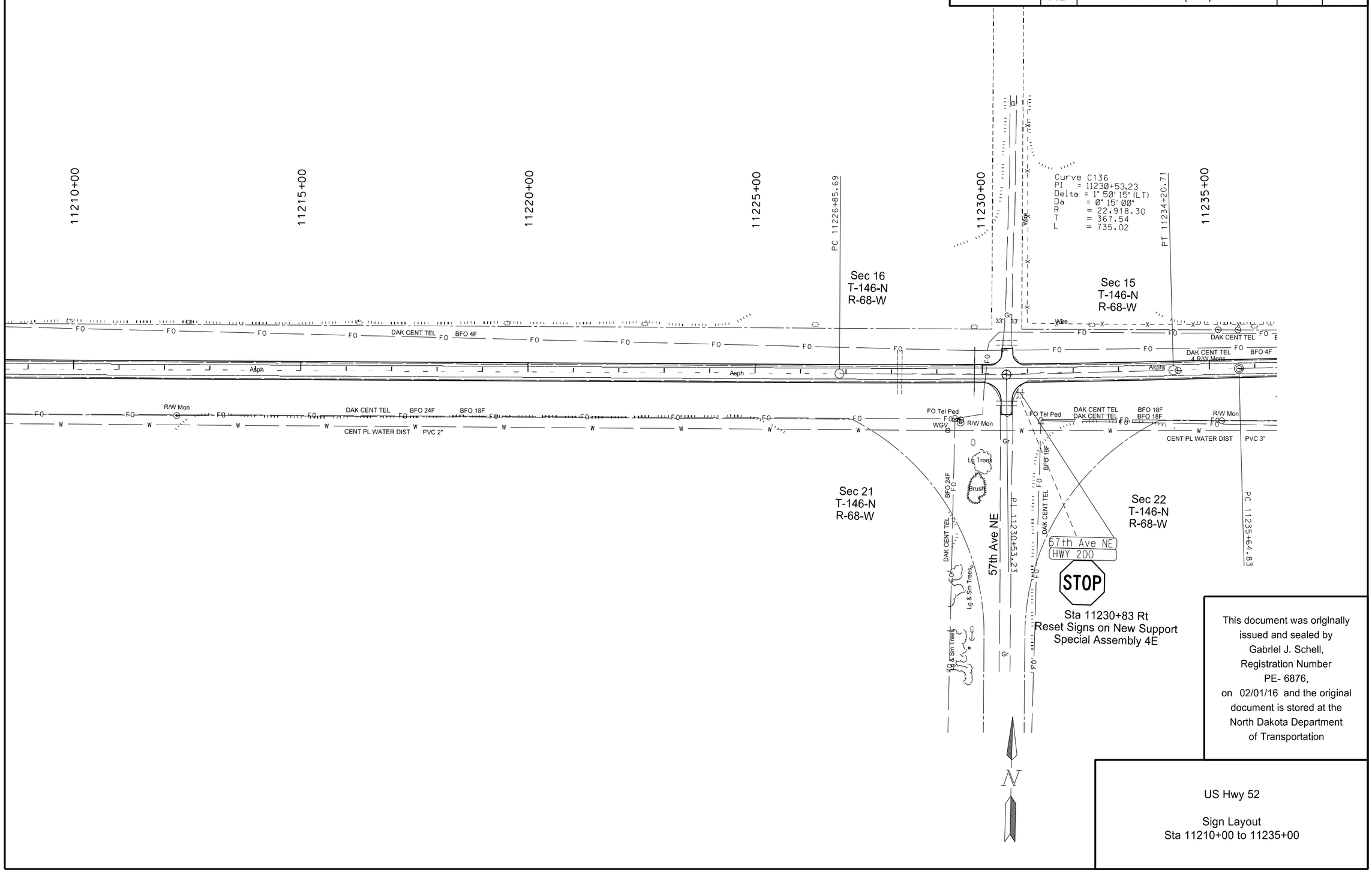
US Hwy 52

Sign Layout
Sta 11185+00 to 11210+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	45



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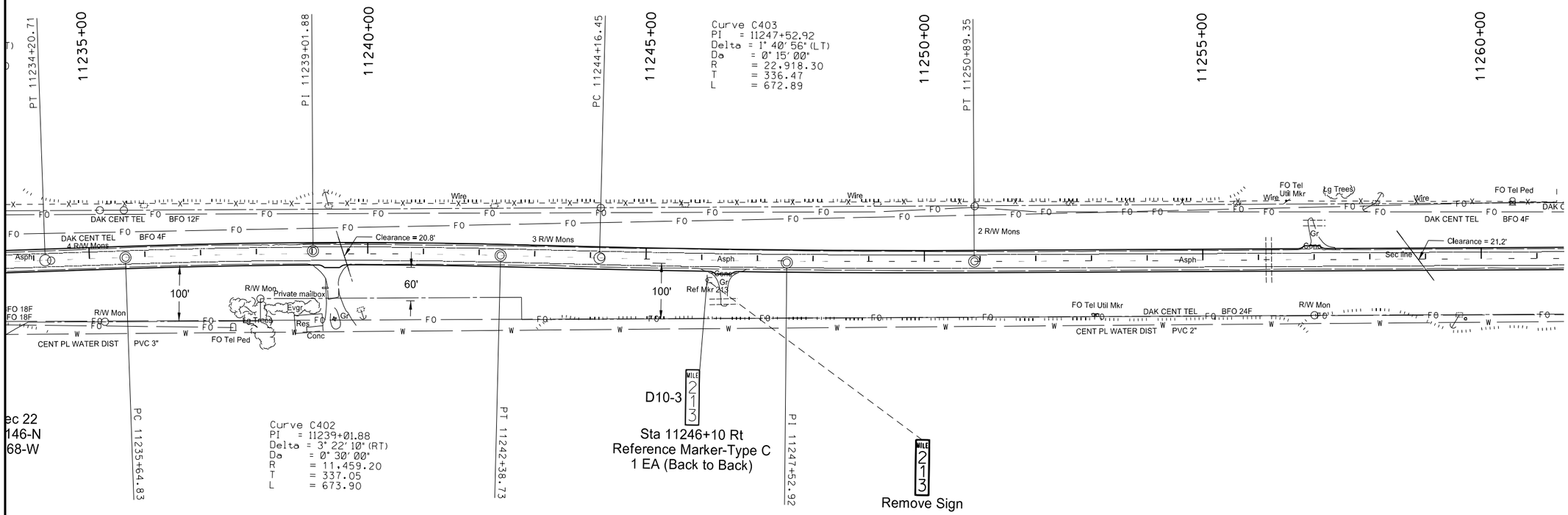
US Hwy 52

Sign Layout
Sta 11210+00 to 11235+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	46



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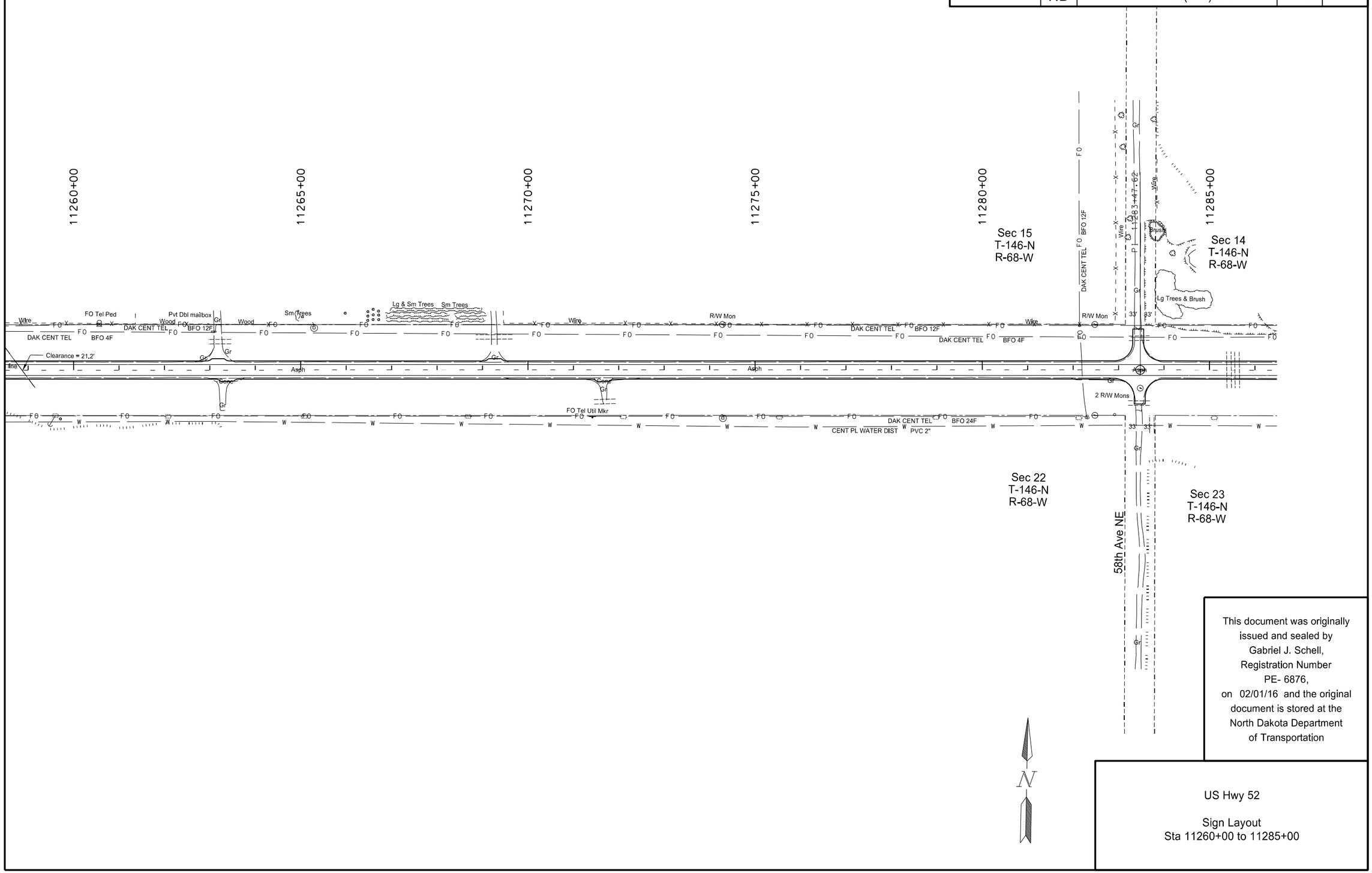
US Hwy 52

Sign Layout
Sta 11235+00 to 11260+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	47



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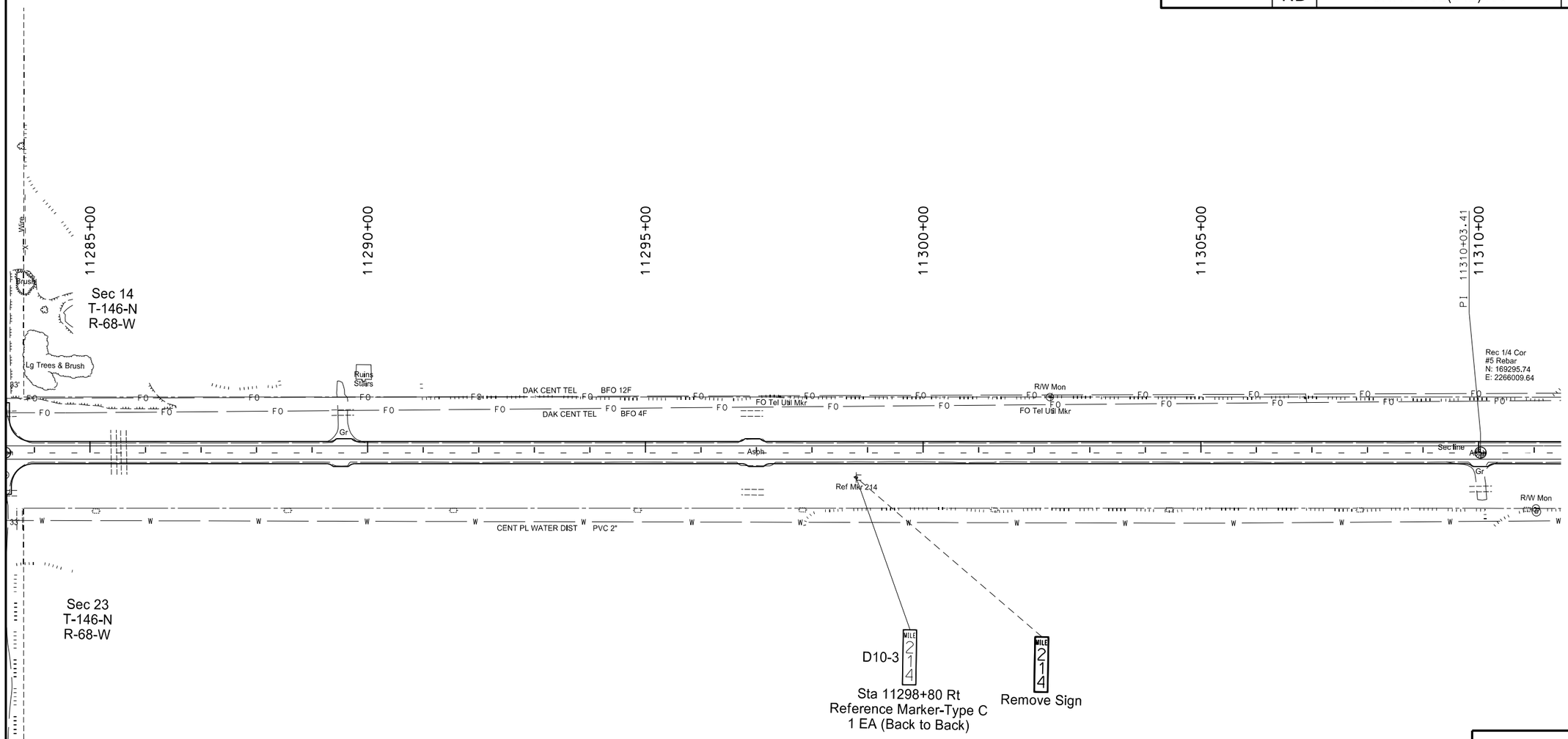
US Hwy 52

Sign Layout
Sta 11260+00 to 11285+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	48



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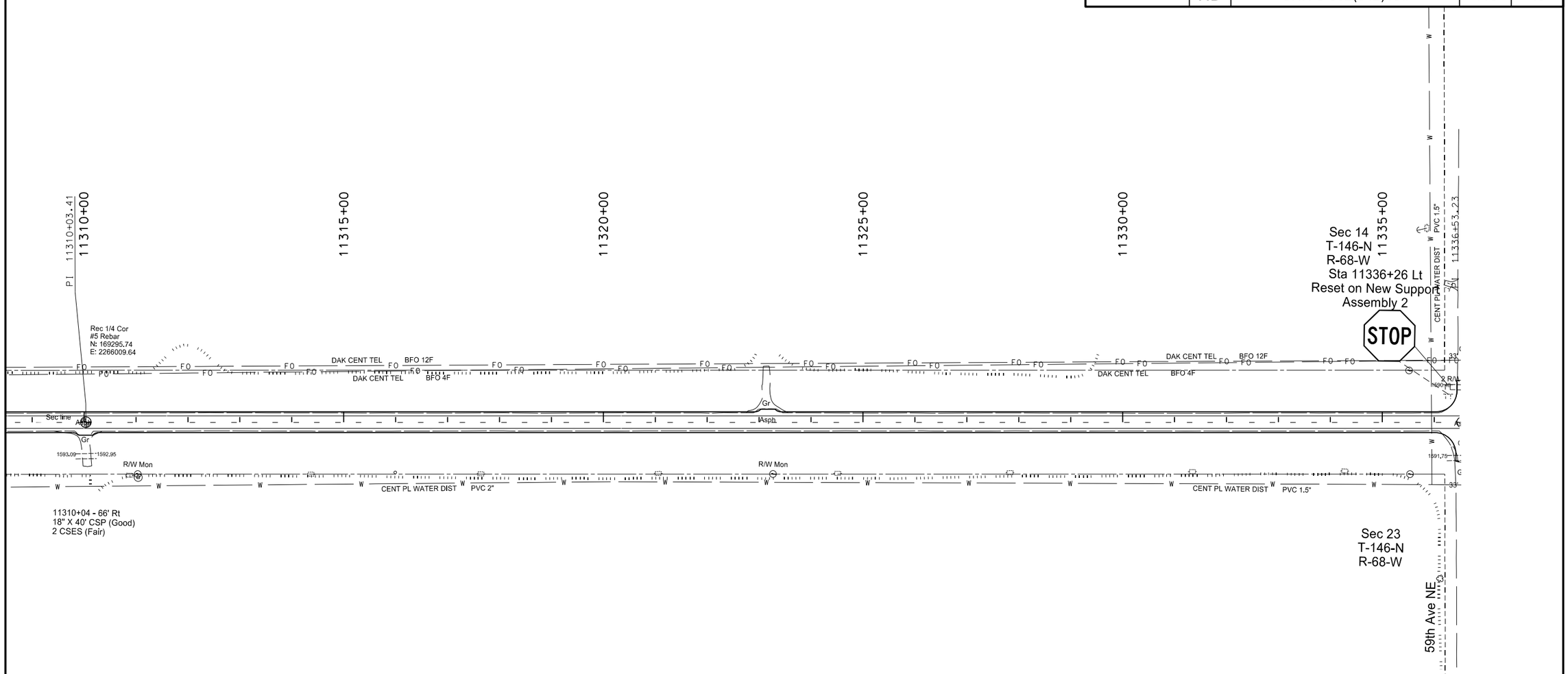
US Hwy 52

Sign Layout
Sta 111285+00 to 11310+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	49



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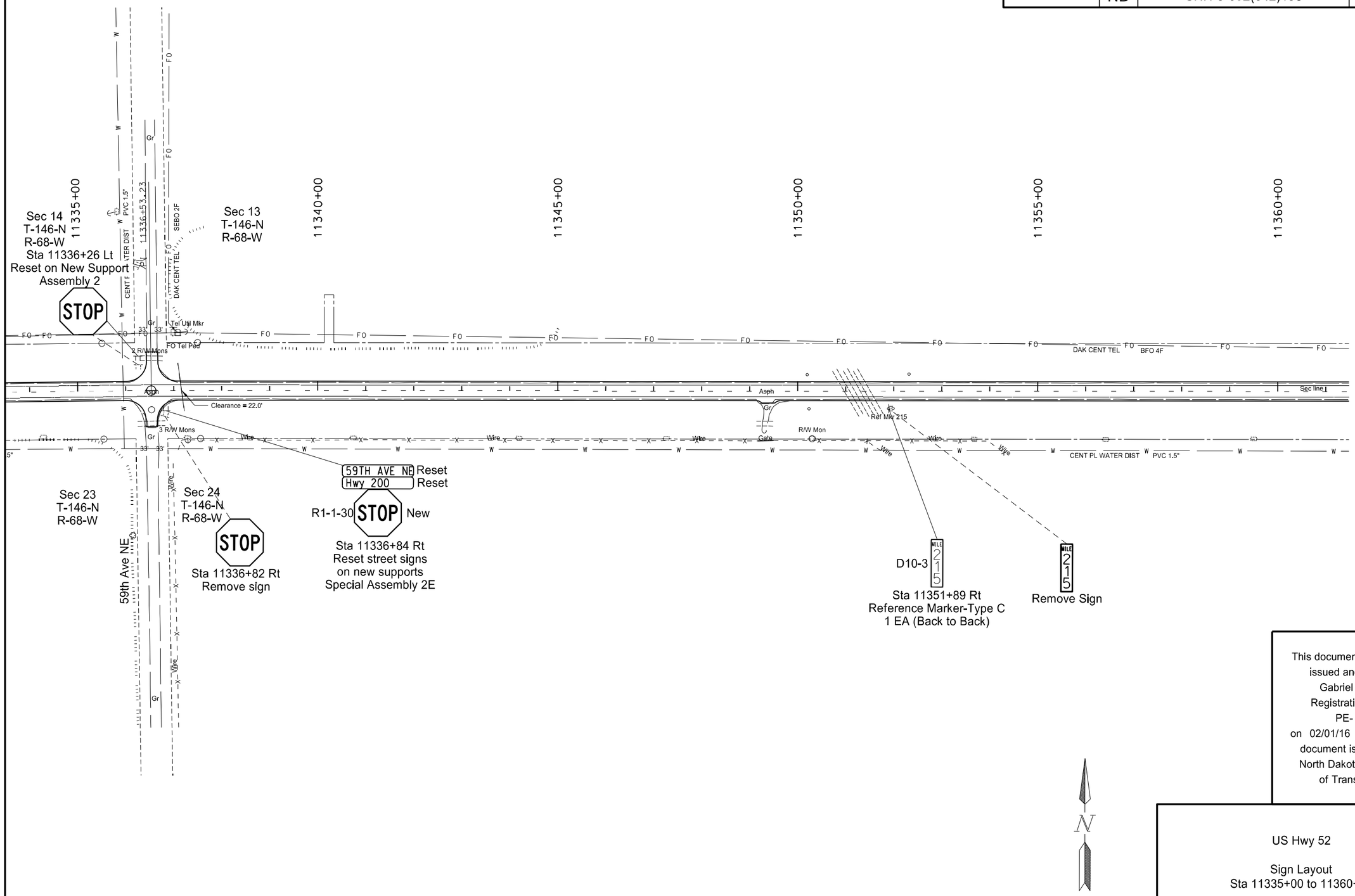
US Hwy 52

Sign Layout
Sta 11310+00 to 11335+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	50



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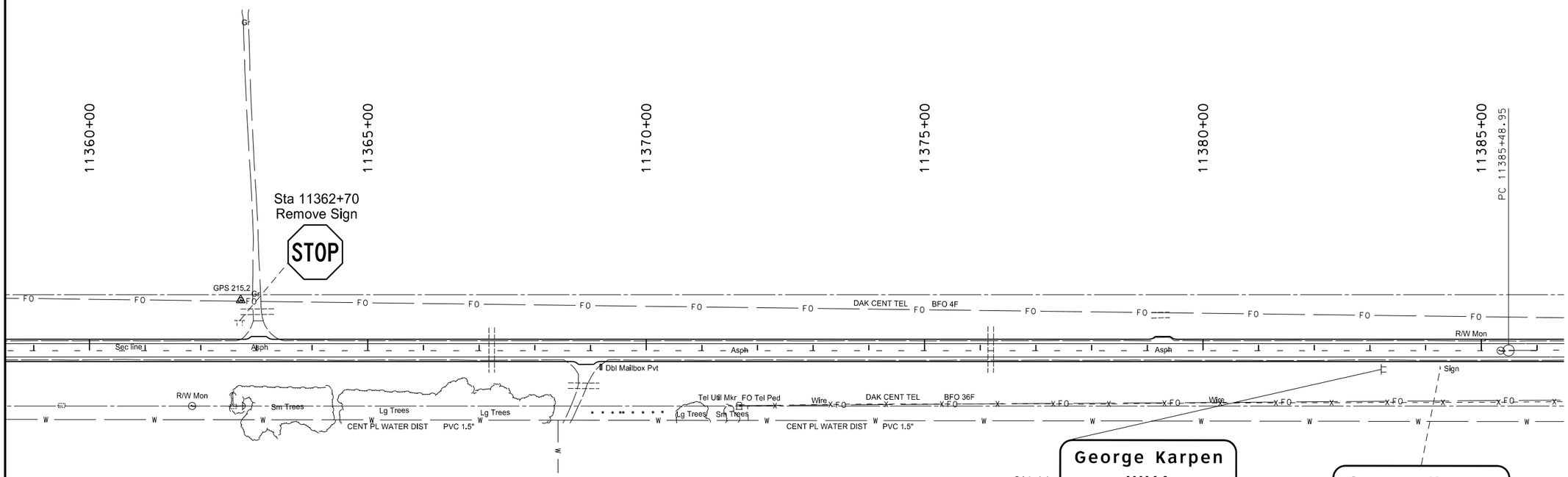
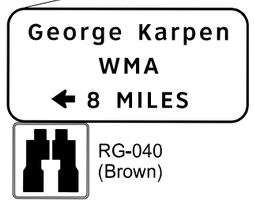
US Hwy 52

Sign Layout
Sta 11335+00 to 11360+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	51

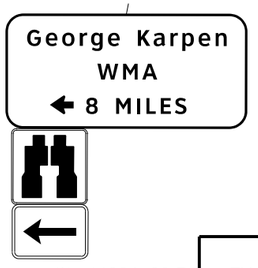


SN 11



RG-040
(Brown)

Sta 11383+21 Rt
Special Assembly P



Sta 11384+26 Rt
Remove signs

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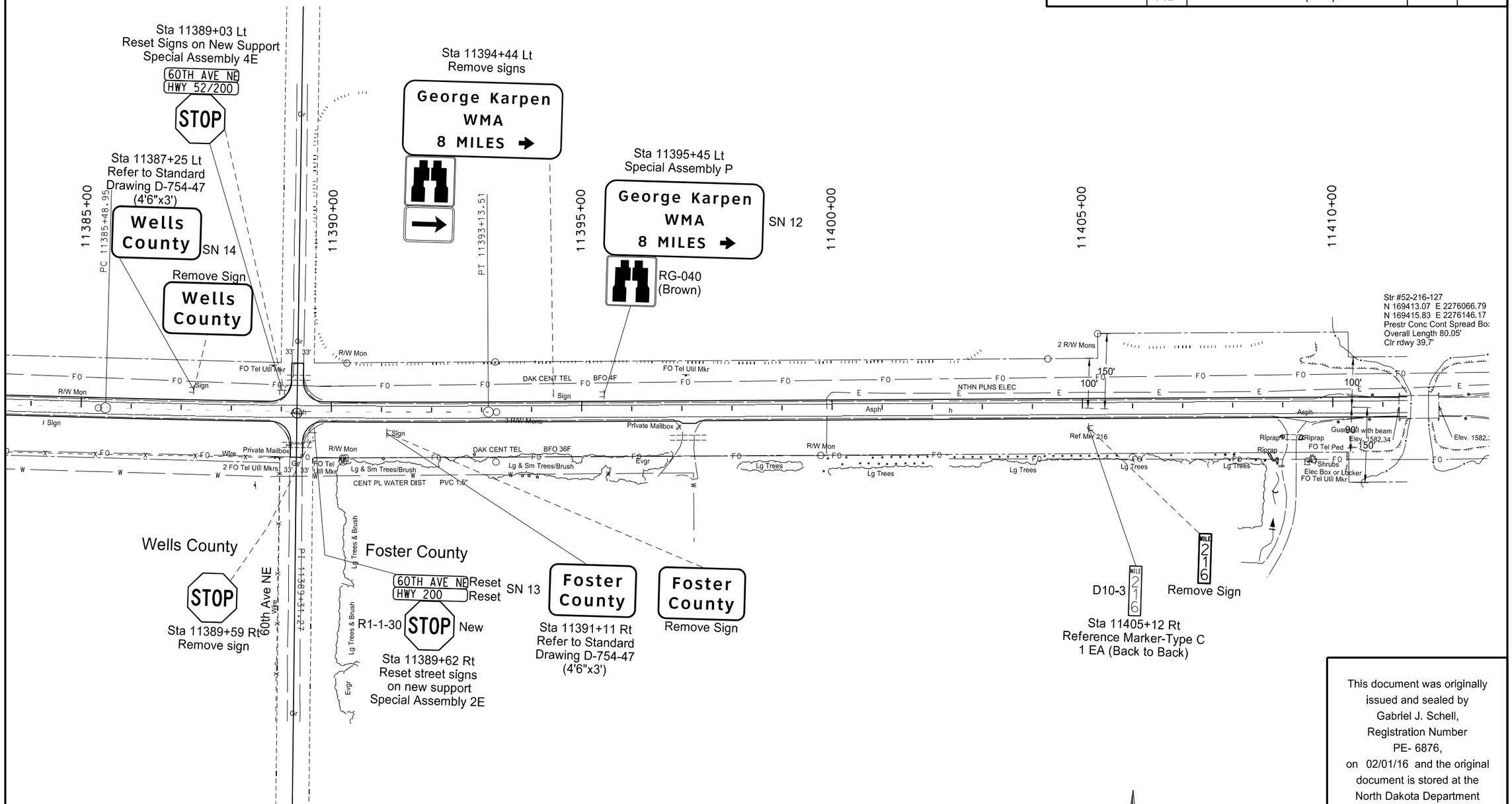
US Hwy 52

Sign Layout
Sta 11360+00 to 11385+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	52



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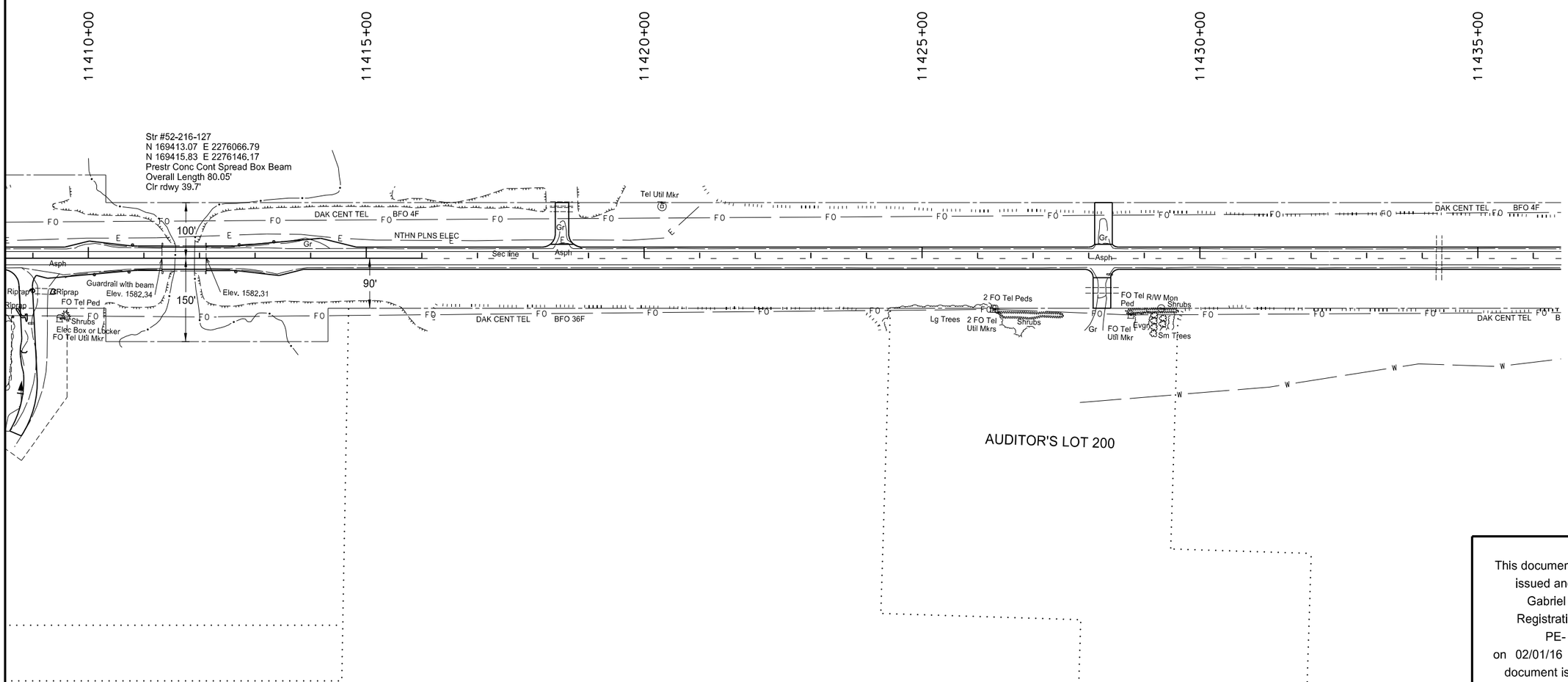
US Hwy 52

Sign Layout
Sta 11385+00 to 11410+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	53



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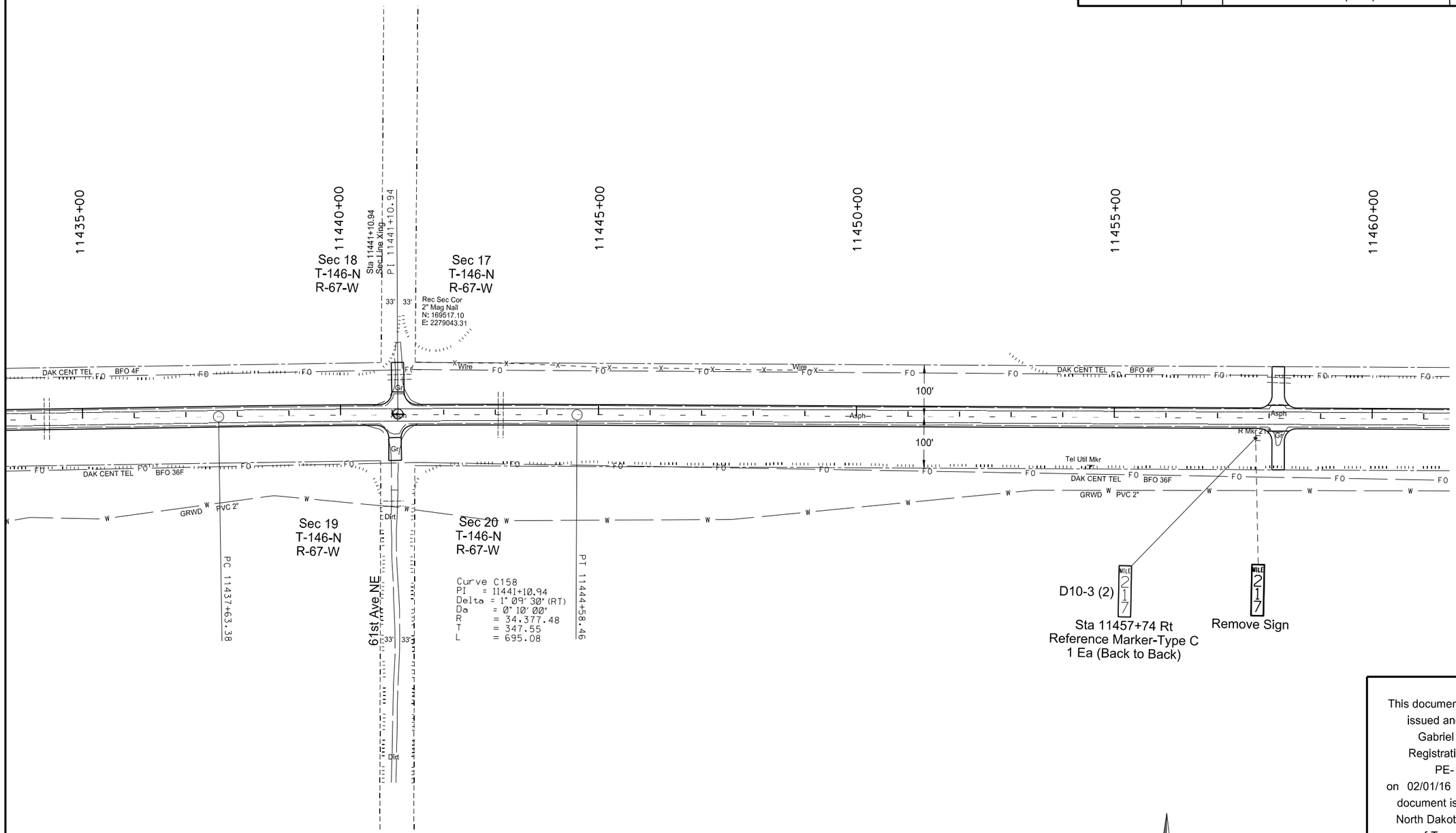
US Hwy 52

Sign Layout
Sta 11410+00 to 11435+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	54



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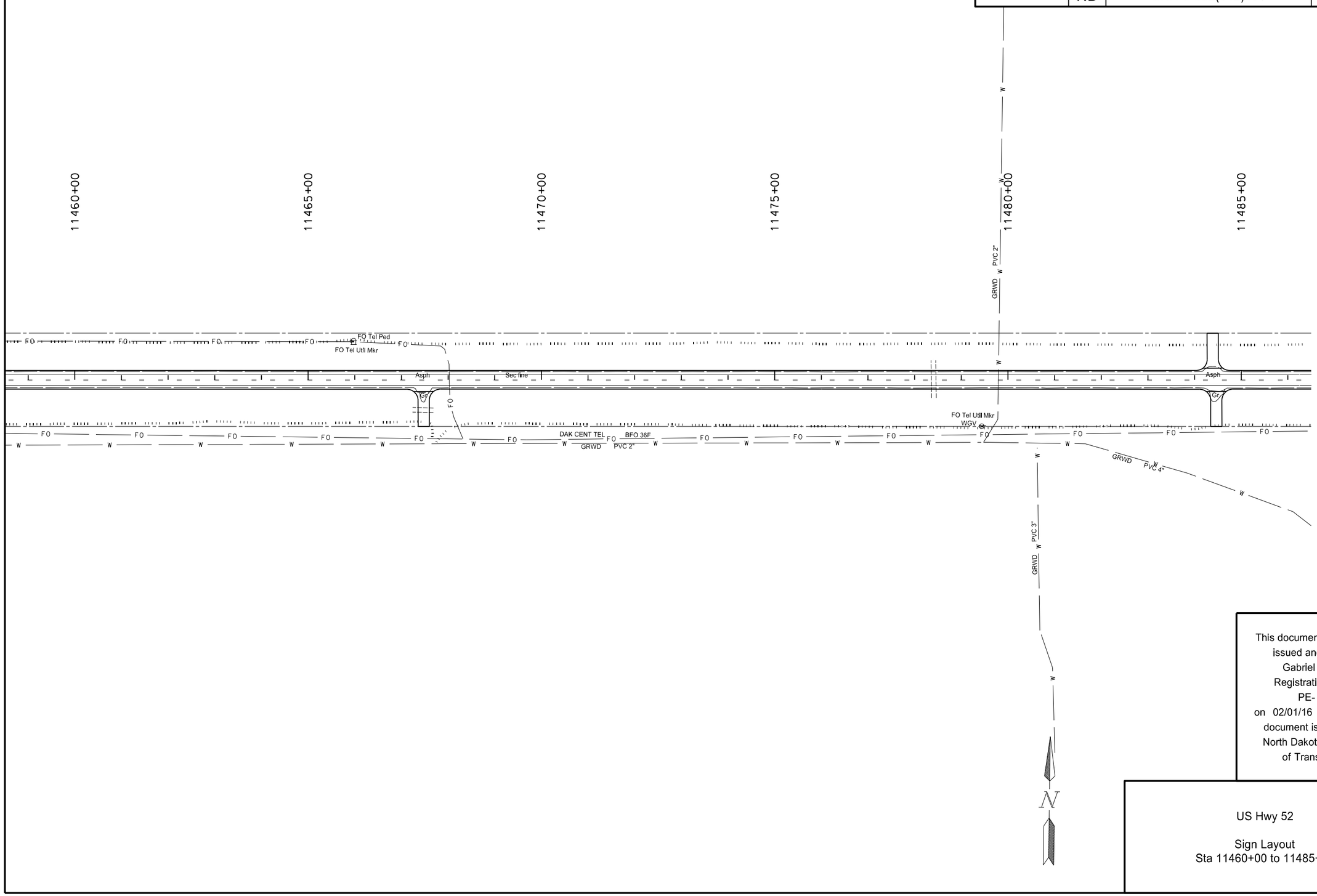
US Hwy 52

Sign Layout
Sta 11435+00 to 11460+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	55



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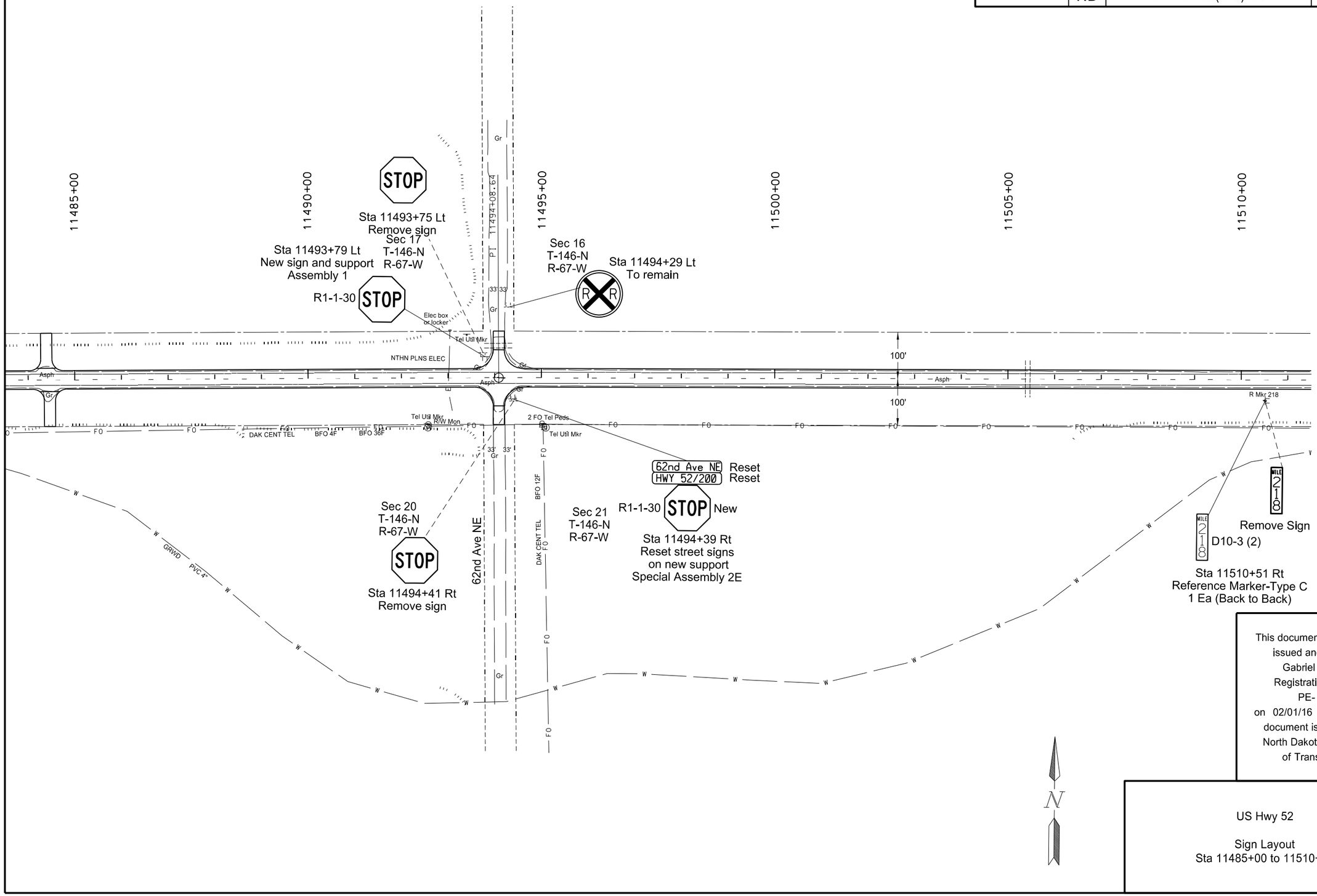
US Hwy 52

Sign Layout
Sta 11460+00 to 11485+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	56



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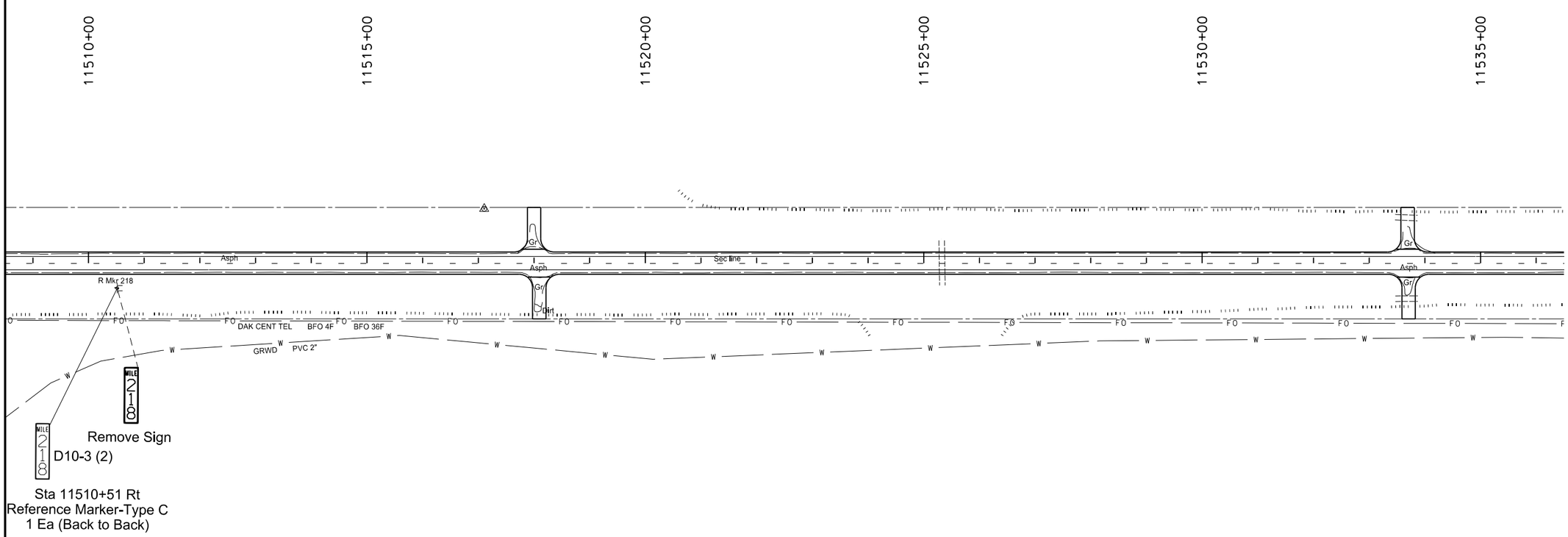
US Hwy 52

Sign Layout
Sta 11485+00 to 11510+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	57



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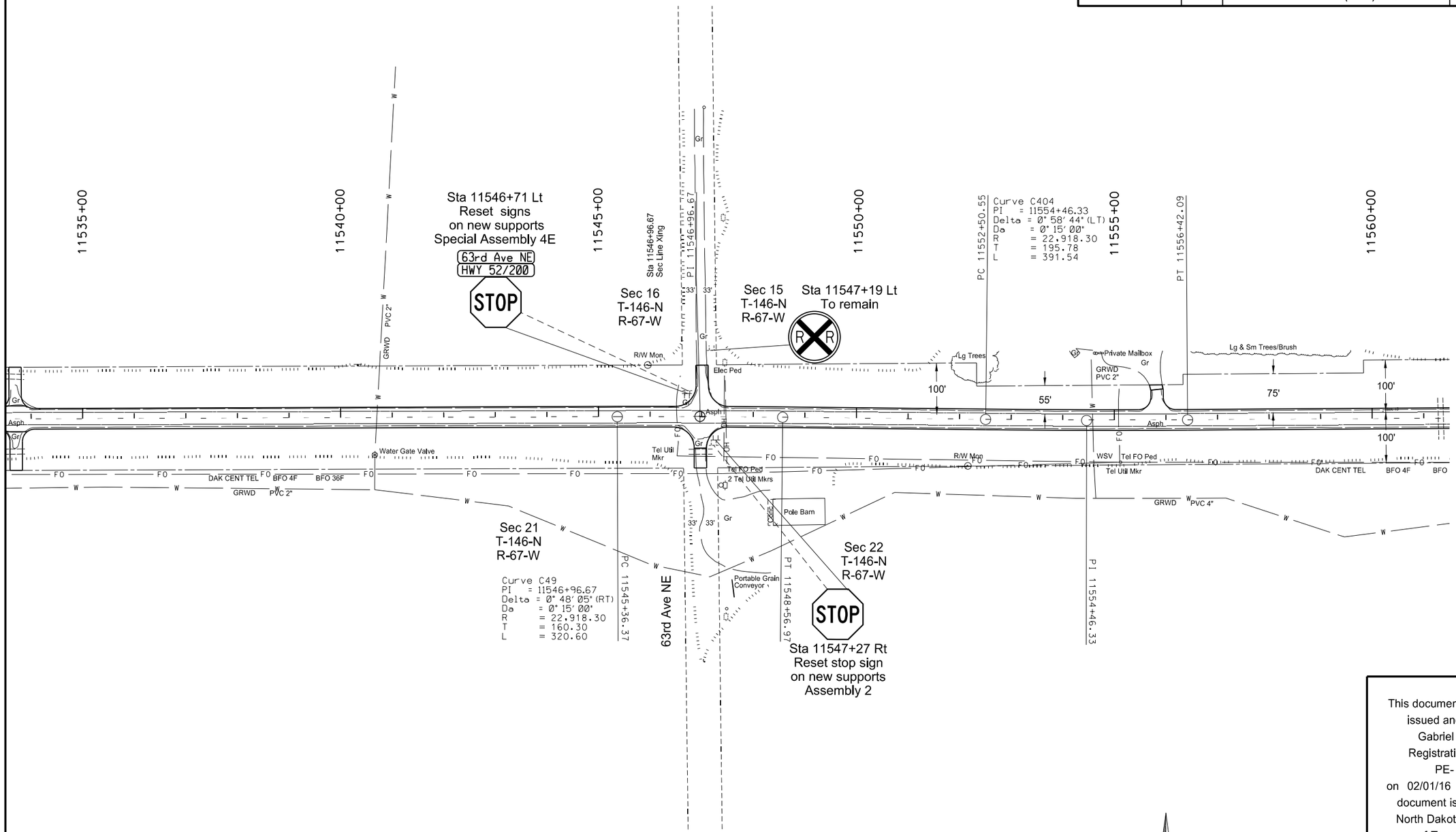
US Hwy 52

Sign Layout
Sta 11510+00 to 11535+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	58



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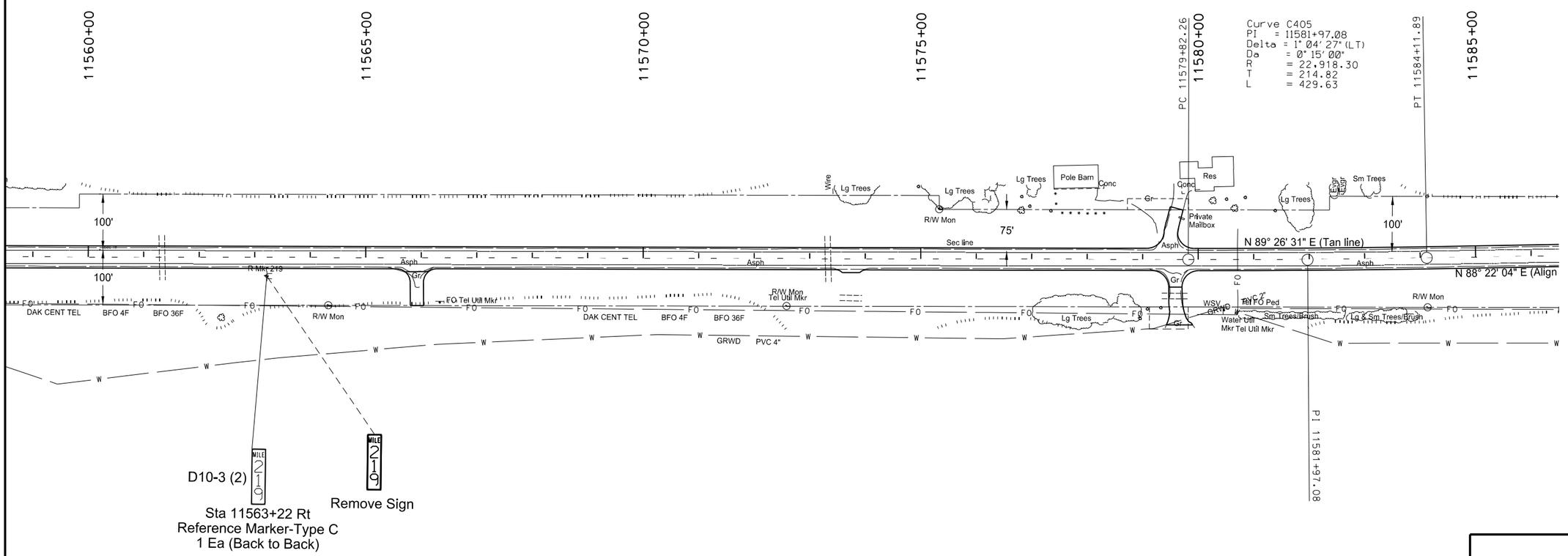
US Hwy 52

Sign Layout
Sta 11535+00 to 11560+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	59



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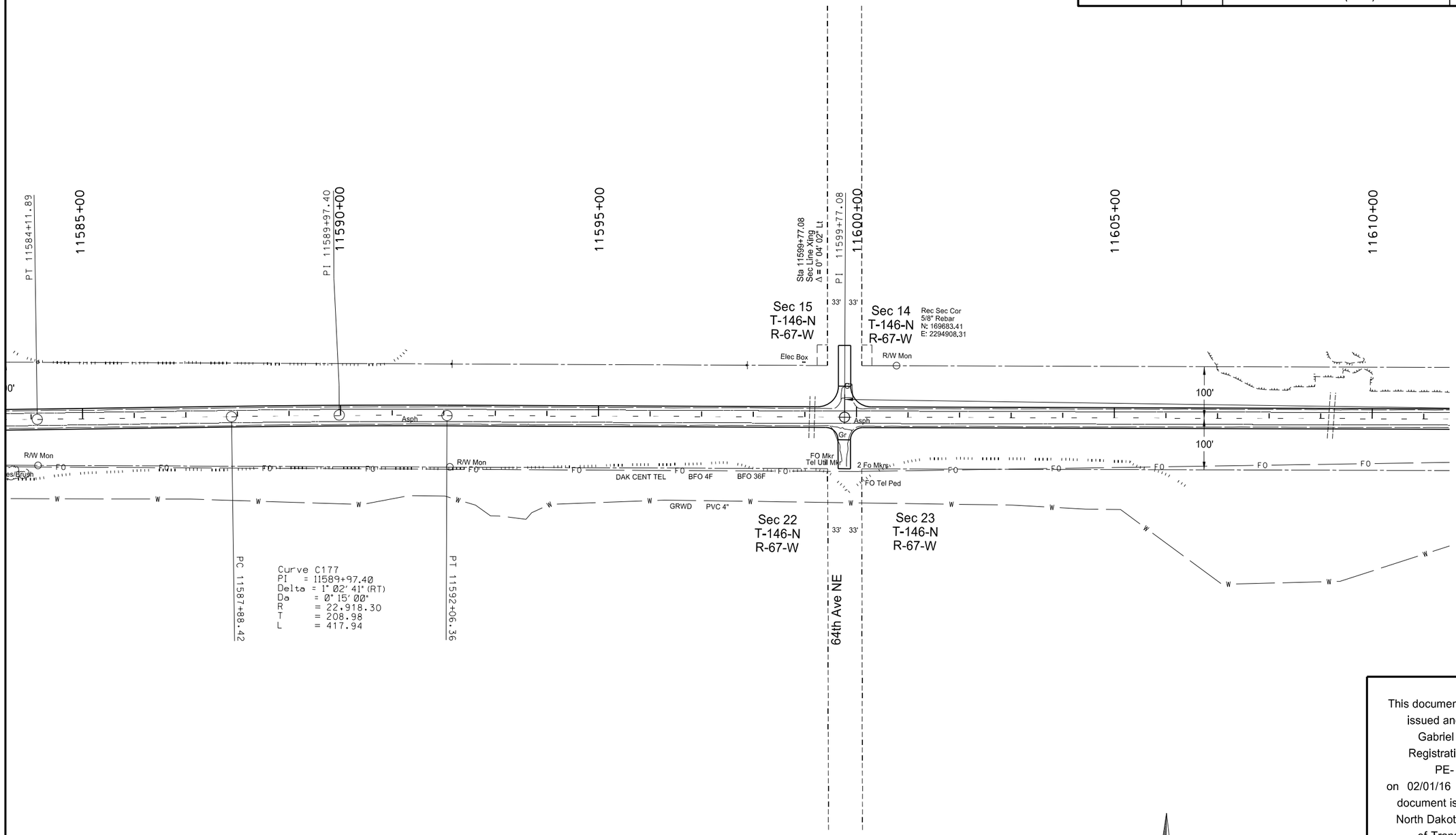
US Hwy 52

Sign Layout
Sta 11560+00 to 11585+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	60



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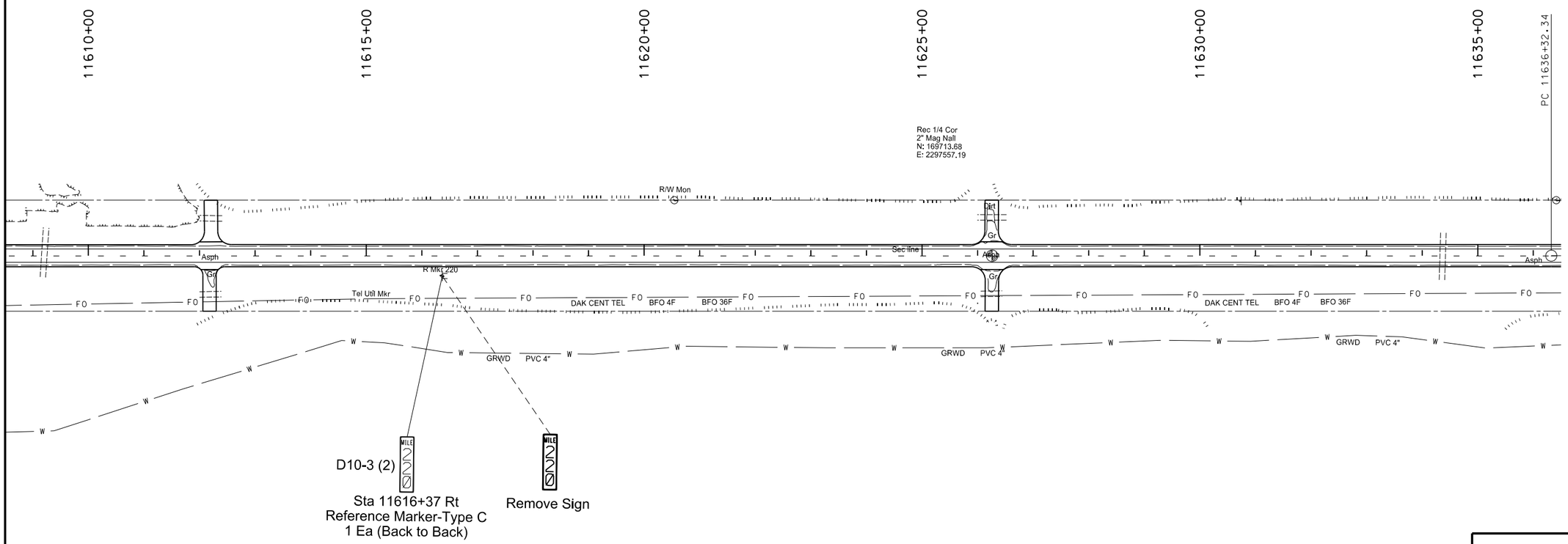
US Hwy 52

Sign Layout
Sta 11585+00 to 11610+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	61



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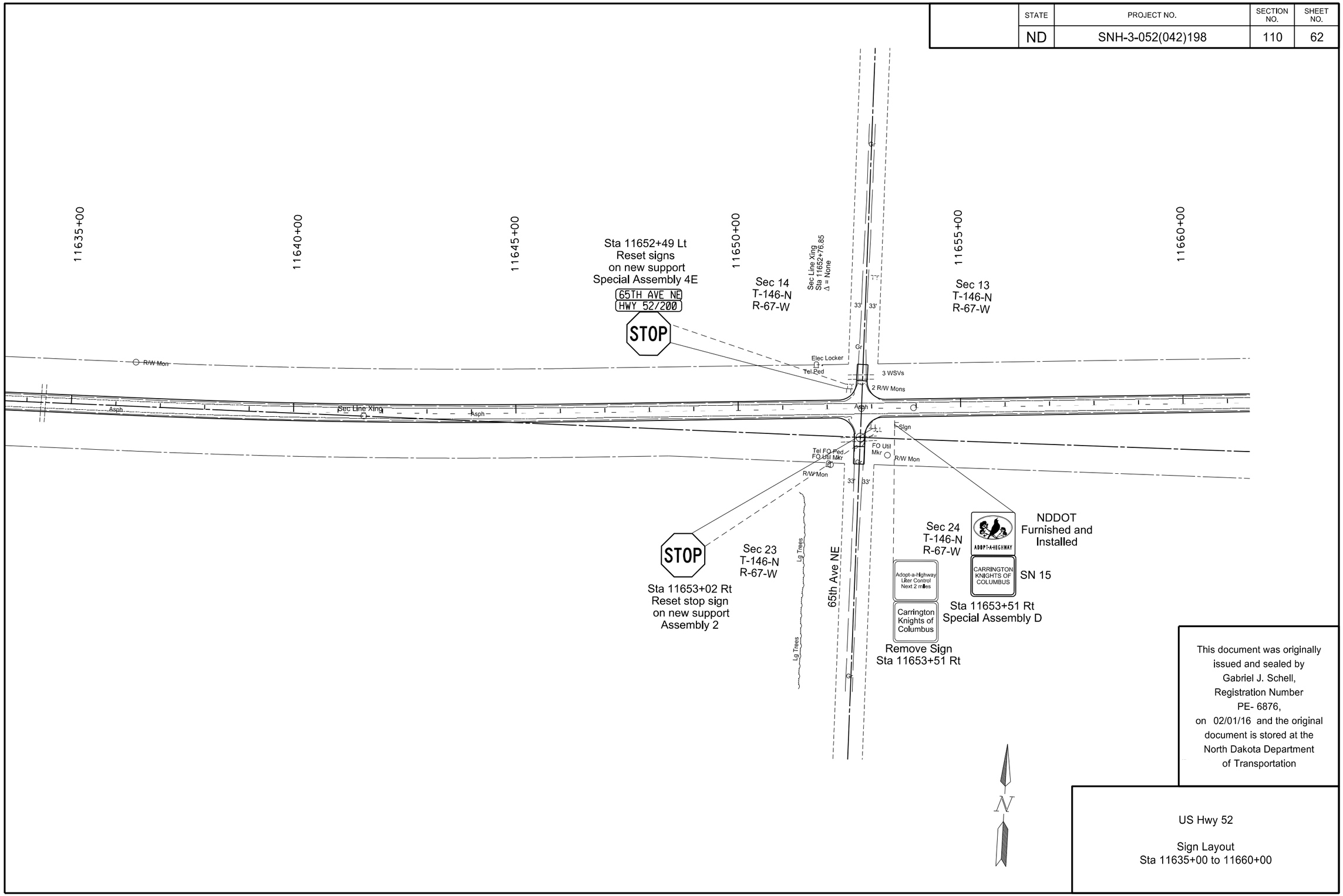
N

US Hwy 52

Sign Layout
Sta 11610+00 to 11635+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	62



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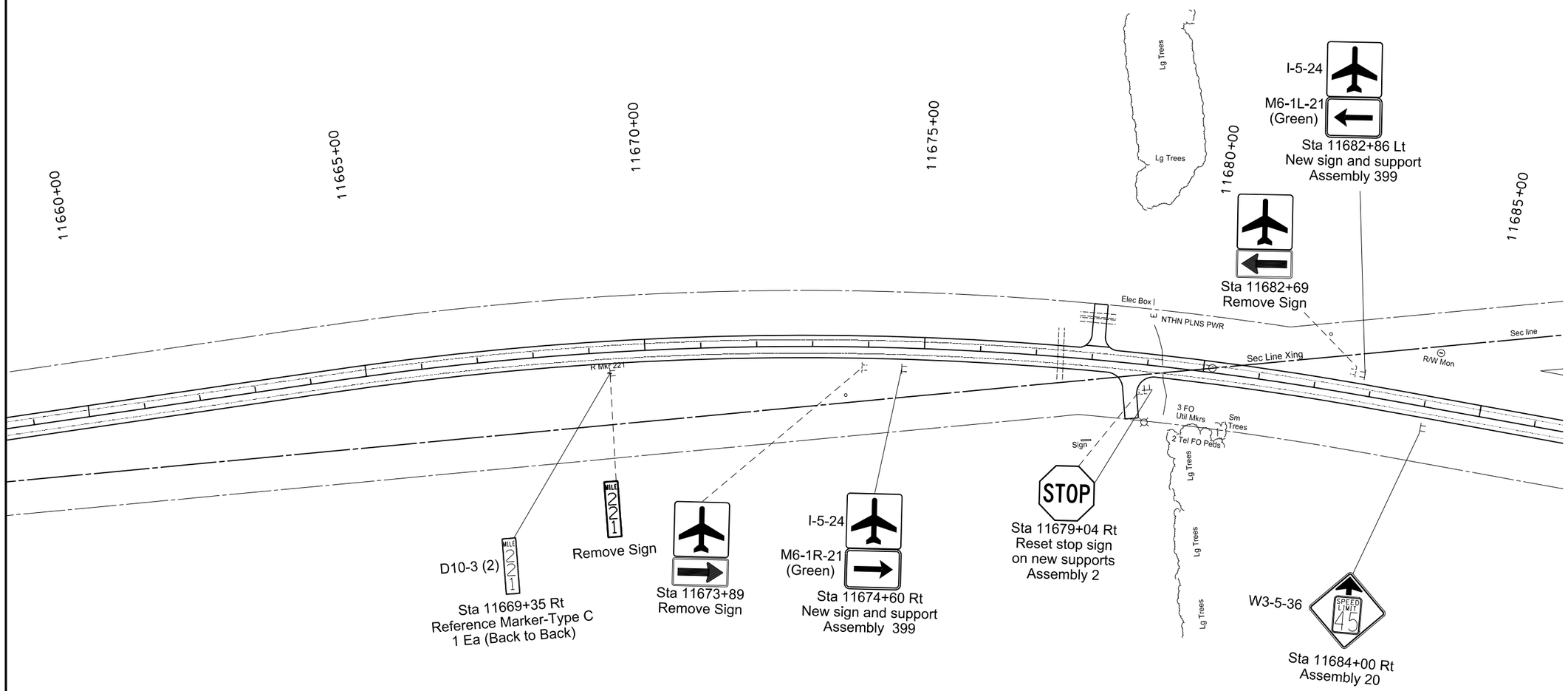
US Hwy 52

Sign Layout
Sta 11635+00 to 11660+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	63



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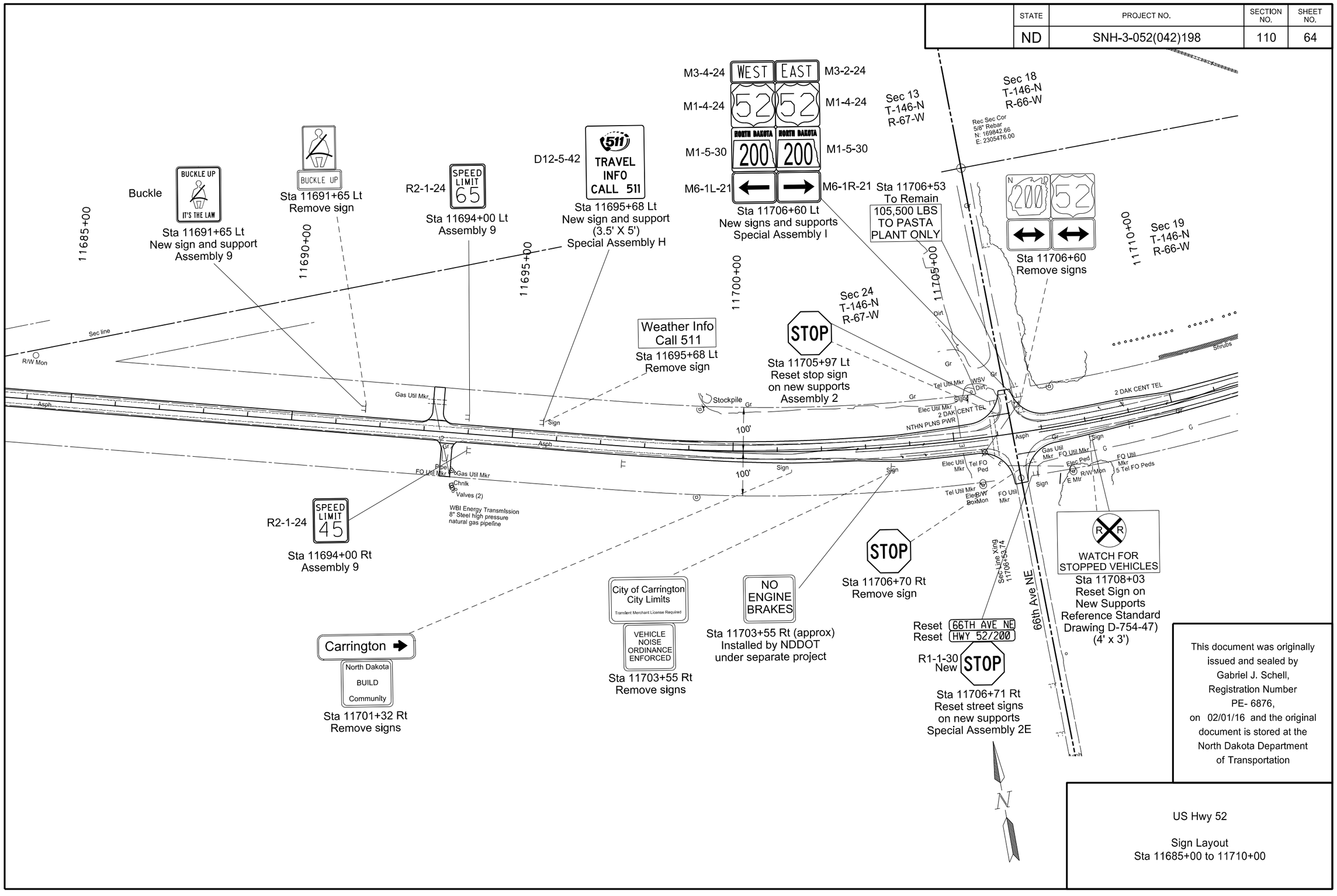
US Hwy 52

Sign Layout
Sta 11660+00 to 11685+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	64



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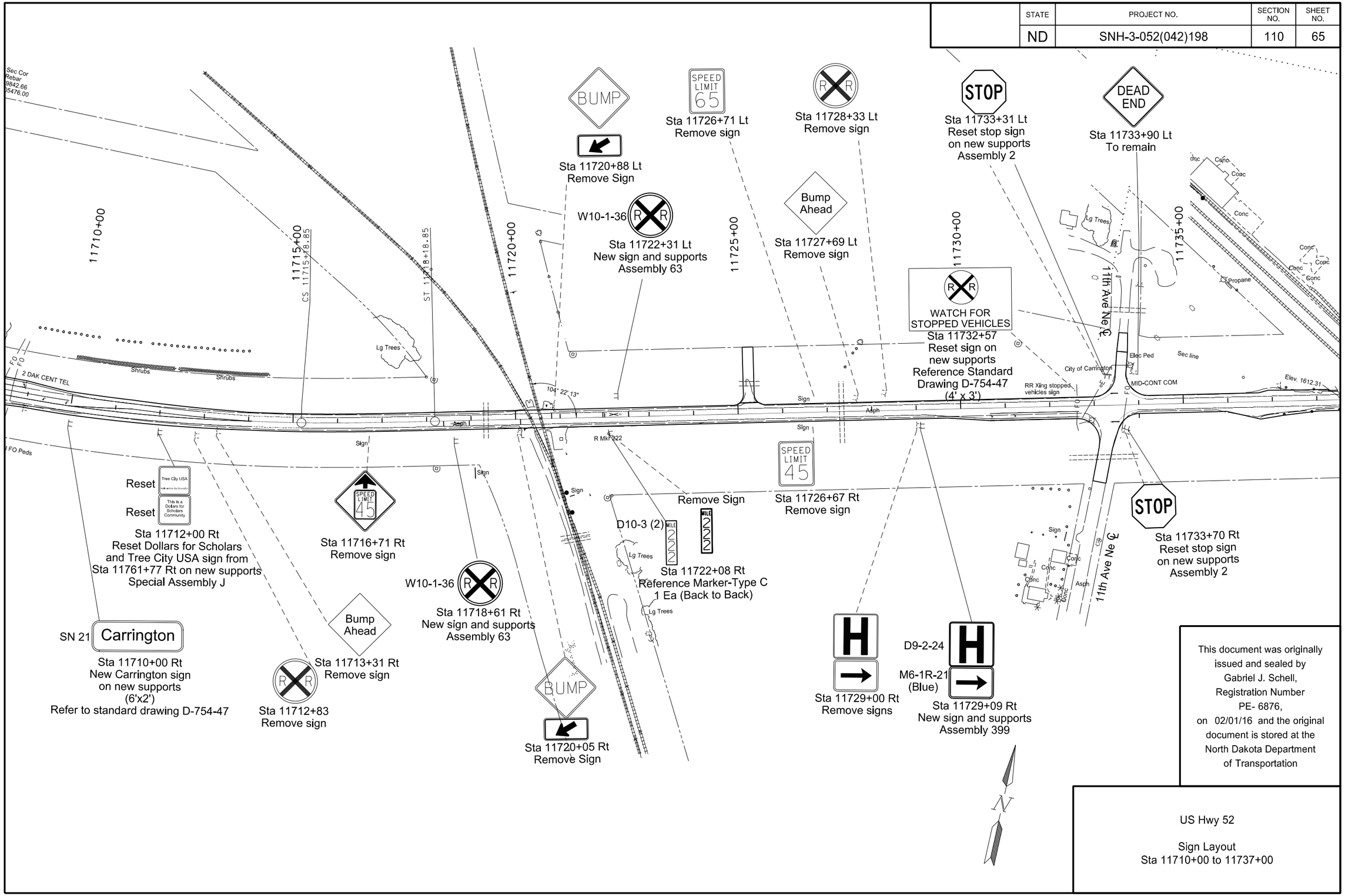
US Hwy 52

Sign Layout
Sta 11685+00 to 11710+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	65



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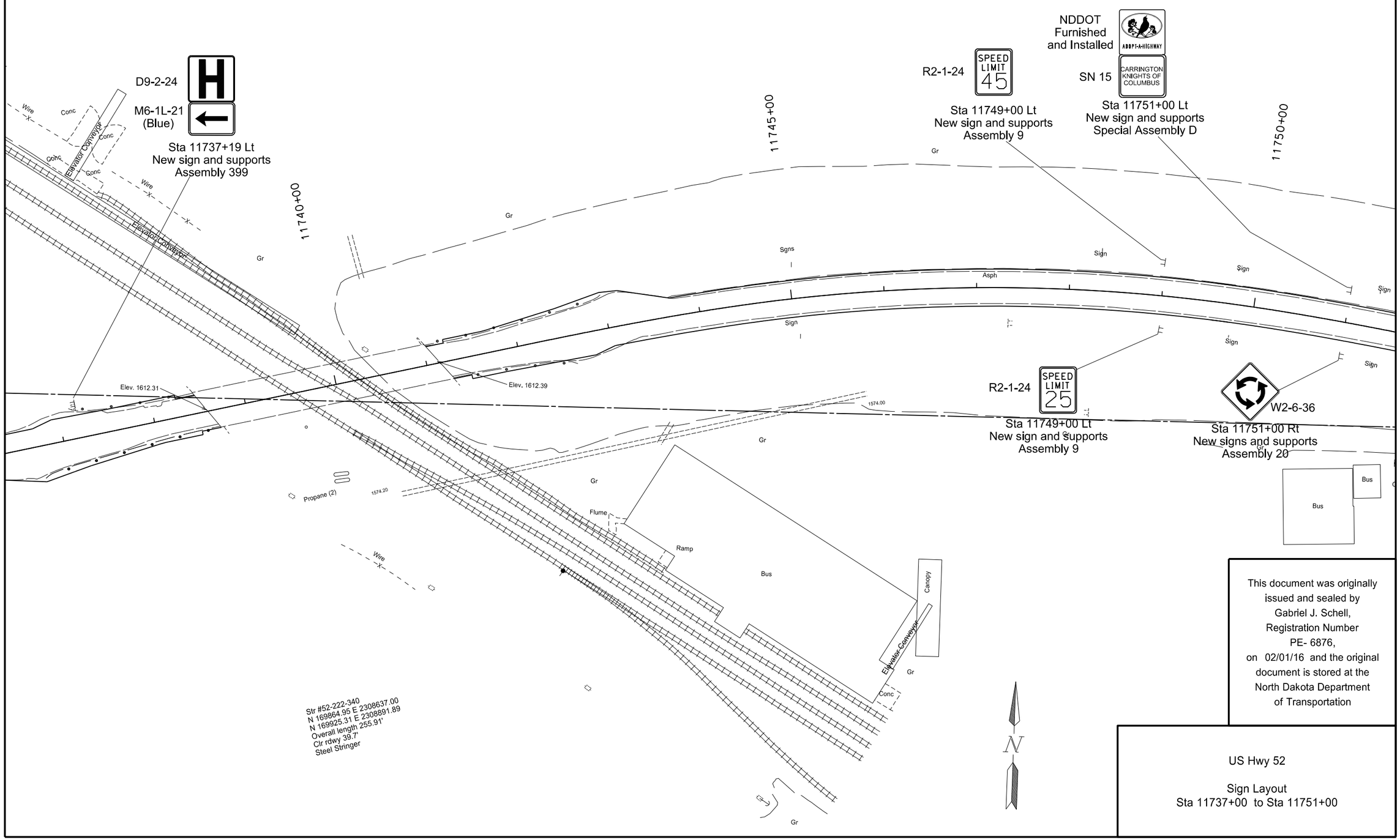
US Hwy 52

Sign Layout
Sta 11710+00 to 11737+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	66



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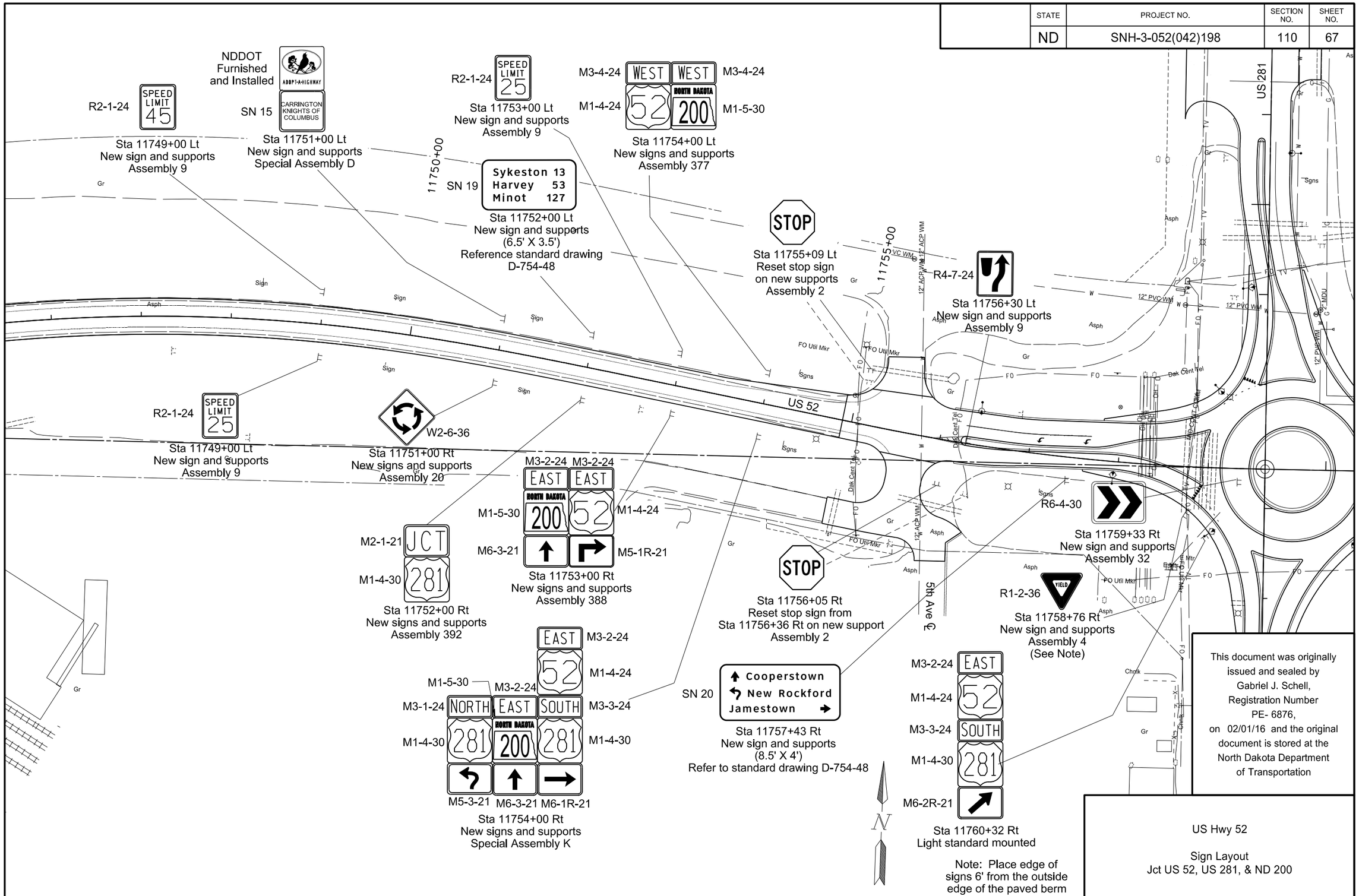
US Hwy 52

Sign Layout
Sta 11737+00 to Sta 11751+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	67



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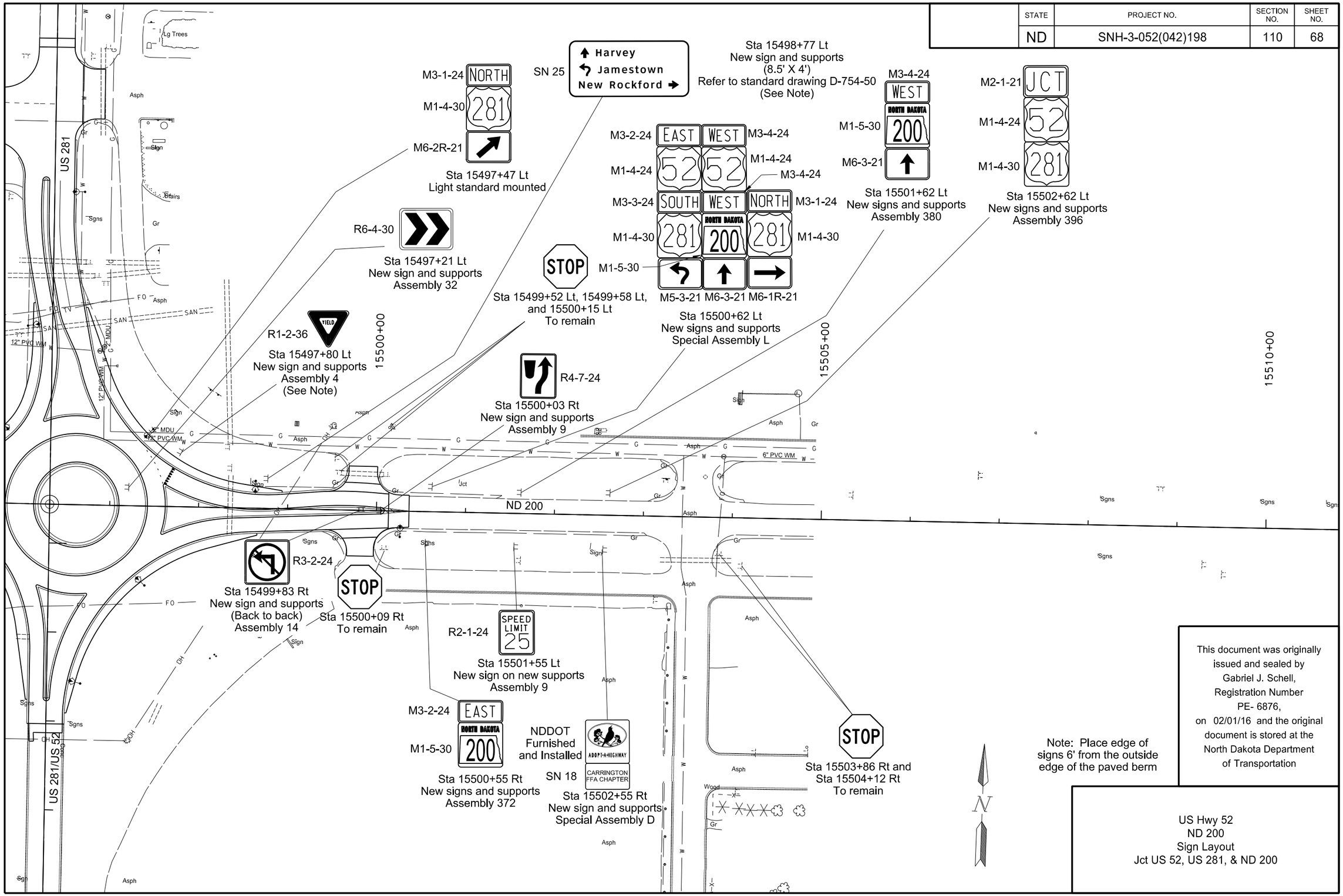
US Hwy 52

Sign Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	68



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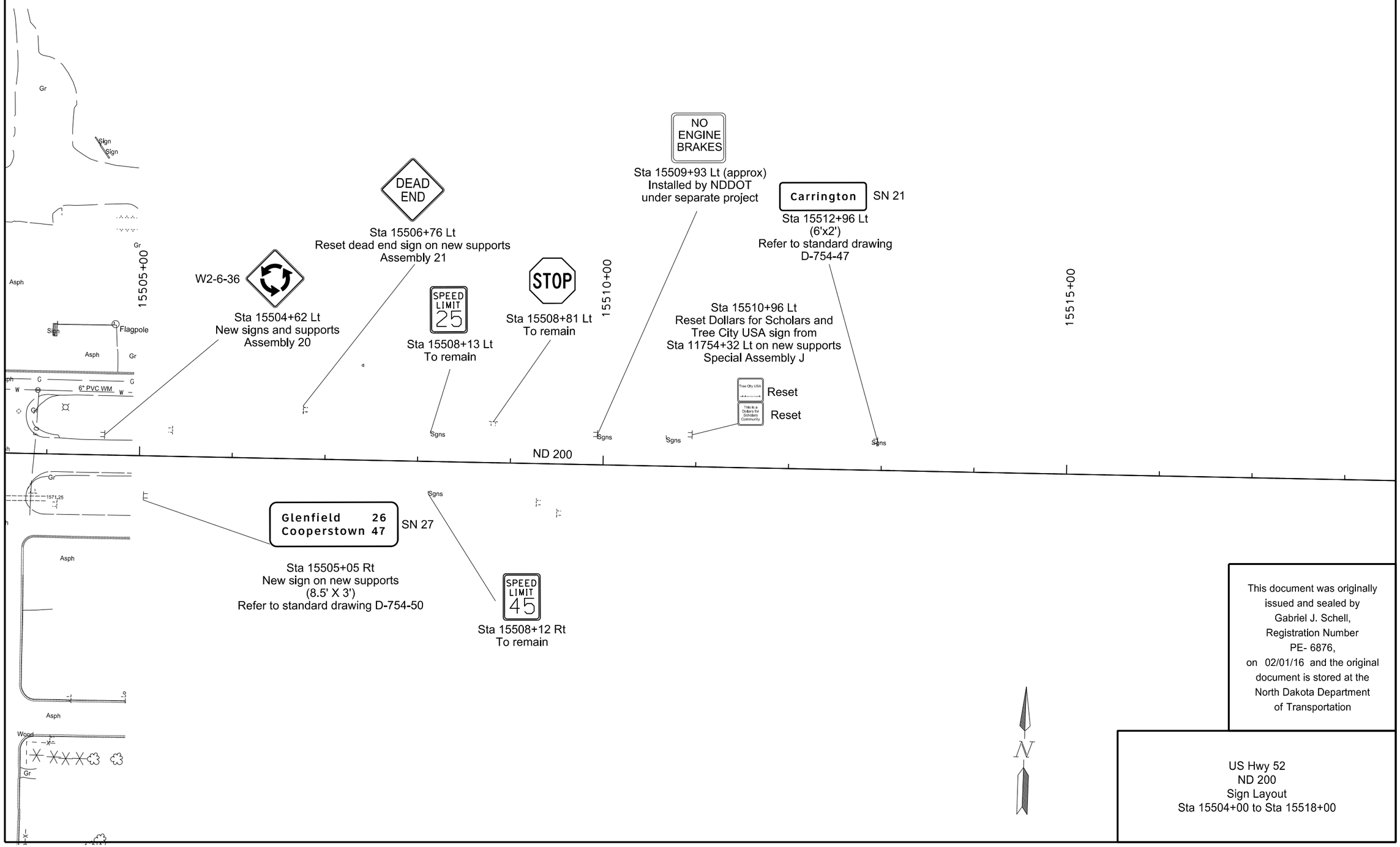
US Hwy 52
ND 200
Sign Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	69



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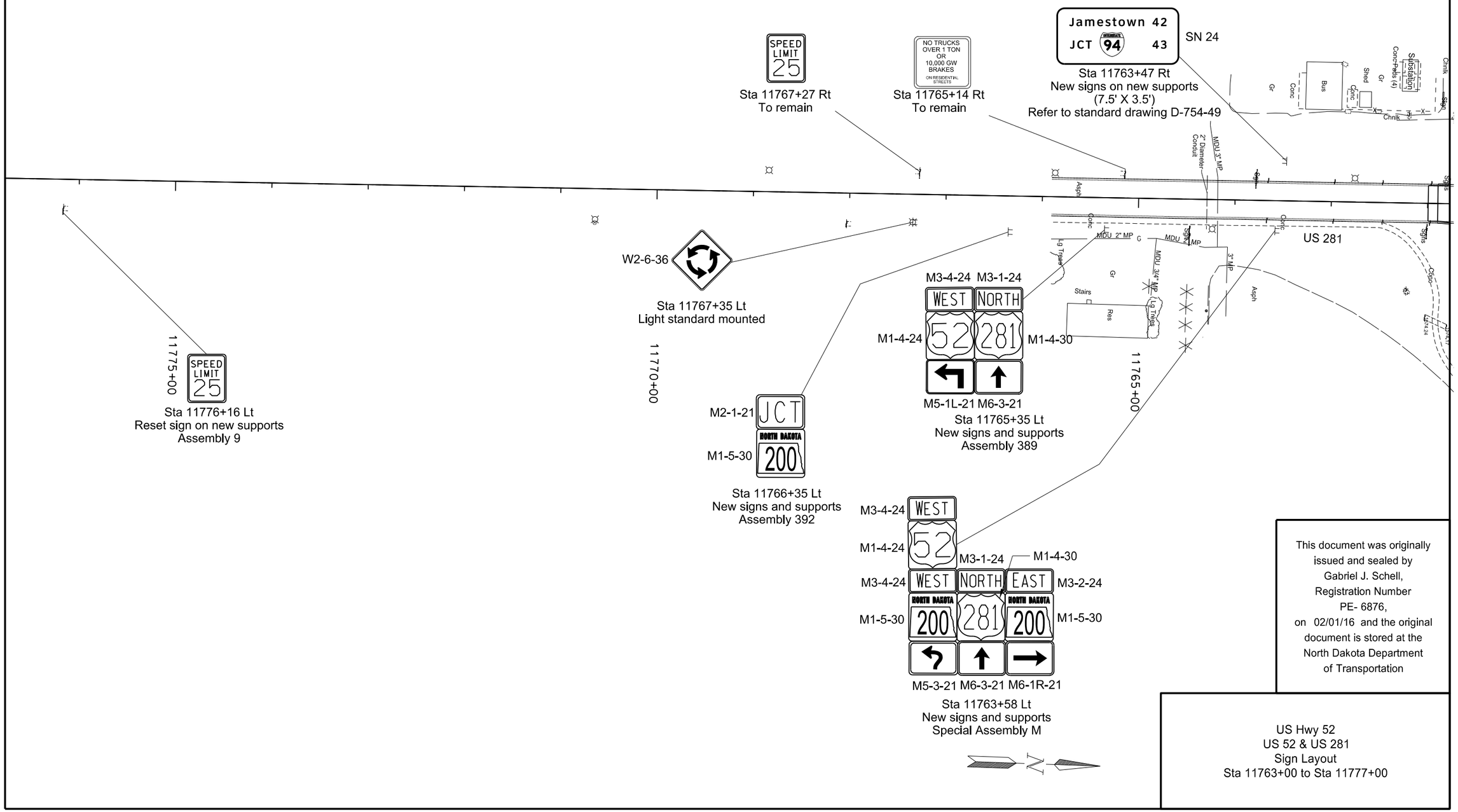
US Hwy 52
ND 200
Sign Layout
Sta 15504+00 to Sta 15518+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	70



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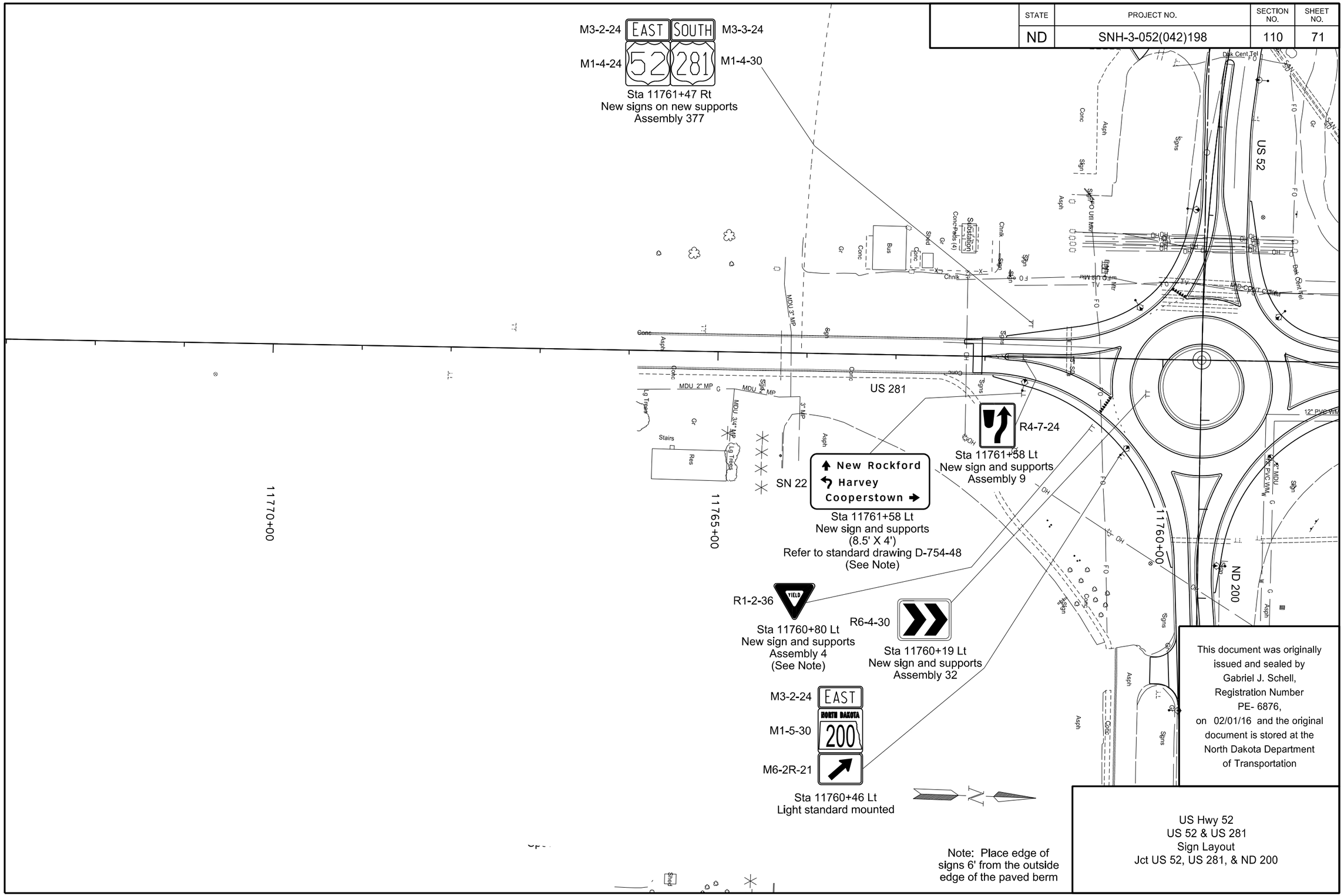
US Hwy 52
US 52 & US 281
Sign Layout
Sta 11763+00 to Sta 11777+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	71



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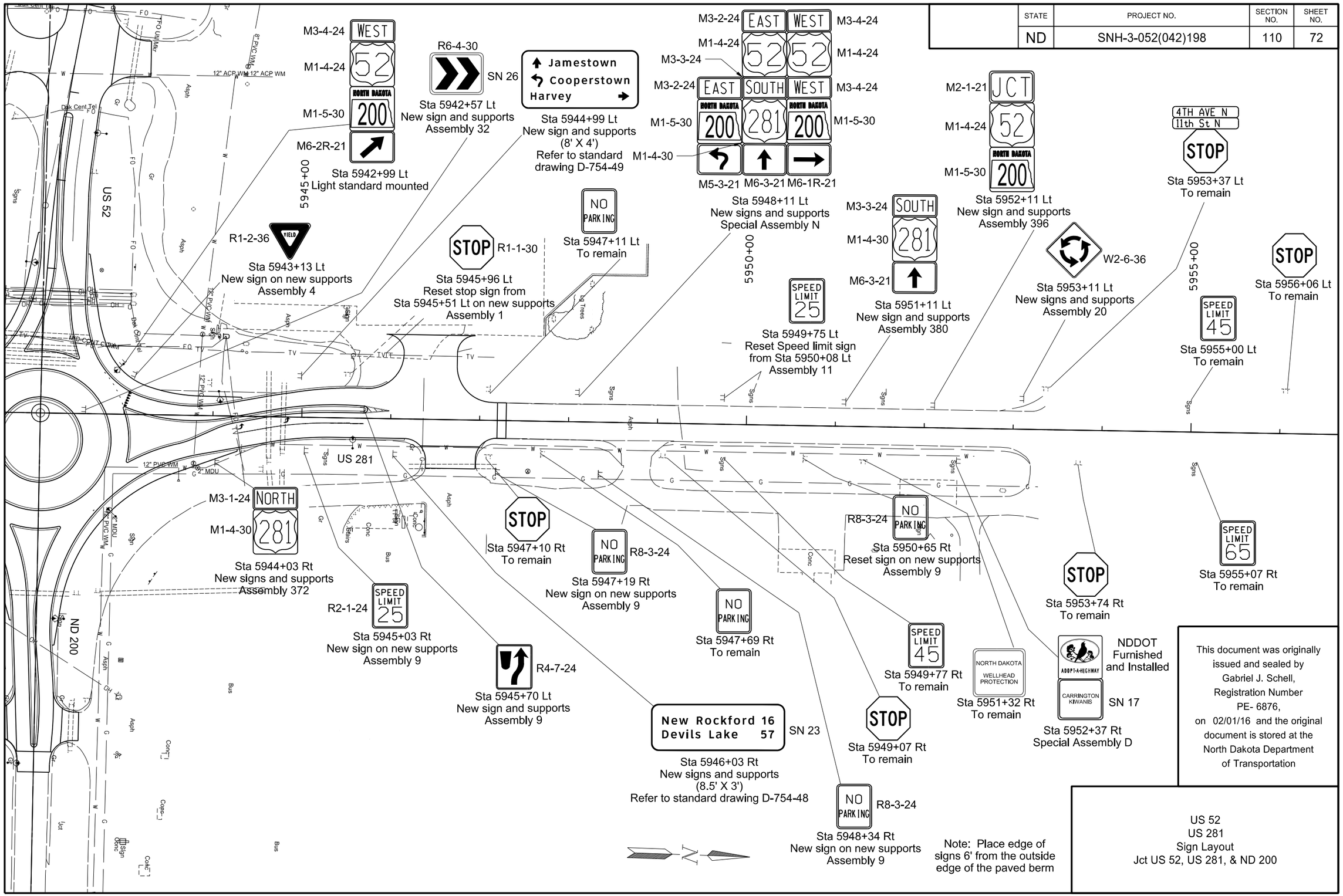
US Hwy 52
US 52 & US 281
Sign Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	72



Note: Place edge of signs 6' from the outside edge of the paved berm

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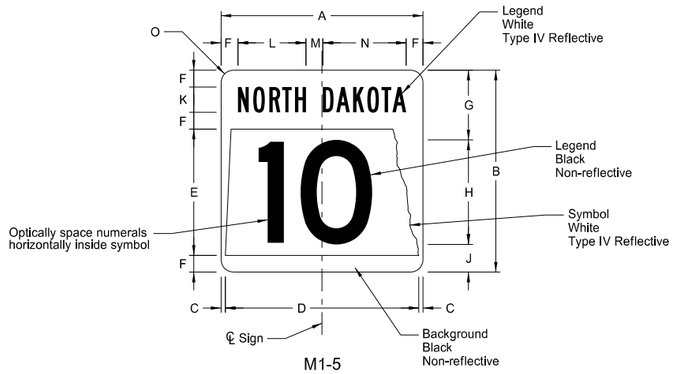
US 52
US 281
Sign Layout
Jct US 52, US 281, & ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	73

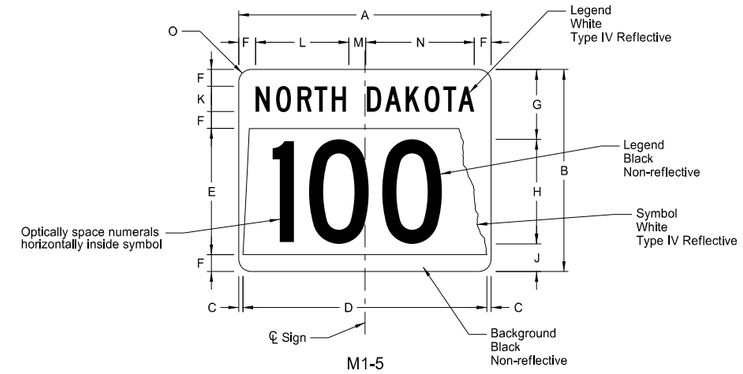


M1-5

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%

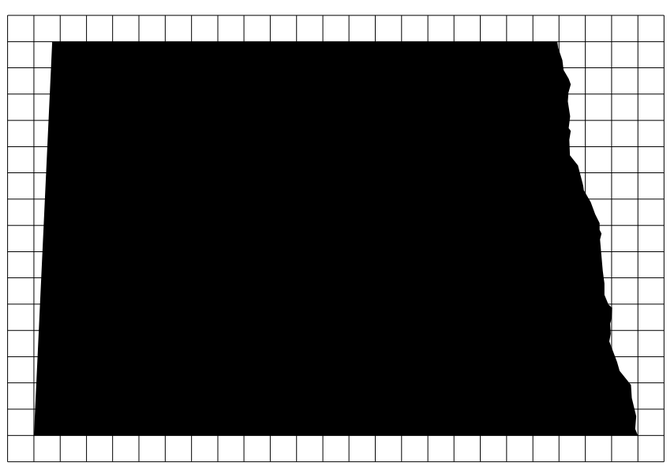


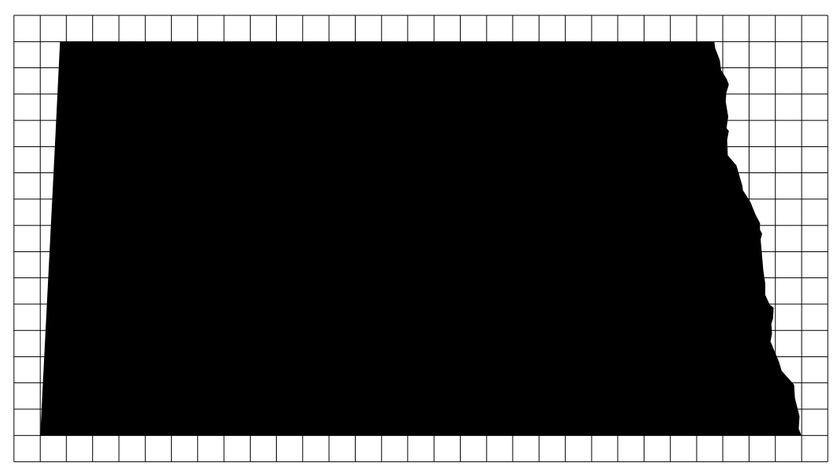
M1-5

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 Shield Details for Route Markers and Guide Signs

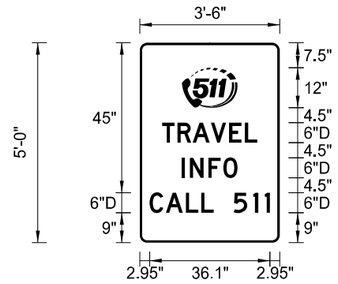
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	74

SIGN NUMBER	SN X (D12-5-42)
WIDTH x HEIGHT	3'-6" x 5'-0"
BORDER WIDTH	0.75" (inset 0")
CORNER RADIUS	2.25"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
511 LOGO	12.7	40.5	16.6	12	0

AREA: 17.5 Sq.Ft.

STATION(S):
11695+68 Lt



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Misc_Guide.ssi

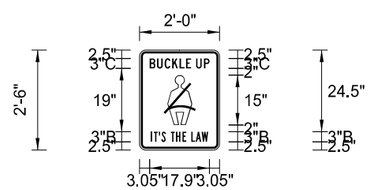
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
T	R	A	V	E	L														28.6	6	D 2000
6.7	11.3	15.9	21.4	26.8	31.6																
I	N	F	O																16.7	6	D 2000
12.7	15.1	20.6	25.1																		
C	A	L	L																19.2	6	D 2000
3	7.8	13.8	18.5																		
5	1	1																	10.9	6	D 2000
28.2	34.1	37.5																			

SIGN NUMBER	Rest Area
WIDTH x HEIGHT	2'-0" x 2'-6"
BORDER WIDTH	0.63" (inset 0.38")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: XI Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Non-reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGLE
Seat Belt	7.2	7.5	9.7	15	0

AREA: 5.0 Sq.Ft.

STATION(S):
11691+65 Lt



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Misc_Regulatory.ssi

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
B	U	C	K	L	E	U	P												17.9	3	C 2000
3	5.2	7.5	9.8	12	13.9	17	19.3														
I	T	'	S	T	H	E	L	A	W										17.1	3	B 2000
3.4	4.3	5.7	6.6	9.4	10.9	12.9	15.5	16.8	18.6												

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Sign Details

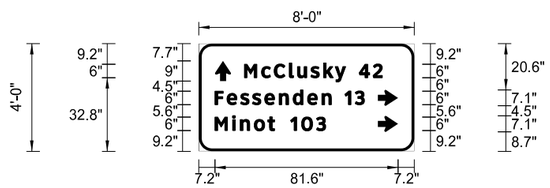
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	75

SIGN NUMBER	SN1
WIDTH x HEIGHT	8'-0" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	7.2	31.3	7.1	9	90
ARDD	79.8	20.3	7.1	9	0
ARDD	73.9	8.6	7.1	9	0

STATION(S):
10500+52 Lt

AREA: 32.0 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssl

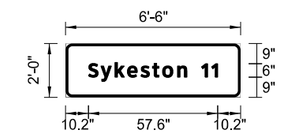
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
M	c	C	l	u	s	k	y													45.1	6/4.9	ClearviewHwy-5-W
20.3	27.9	33.6	40.3	44	49.9	55.6	60.7															
4	2																			10.4	6	ClearviewHwy-5-W
71.4	77.6																					
F	e	s	s	e	n	d	e	n												51.8	6/4.9	ClearviewHwy-5-W
7.2	12.6	18.6	23.8	29.4	35.8	42	48.4	54.9														
1	3																			8.8	6	ClearviewHwy-5-W
65	69.6																					
M	i	n	o	t																26.5	6/4.9	ClearviewHwy-5-W
7.2	14.9	18.5	24.7	30.8																		
1	0	3																		15.7	6	ClearviewHwy-5-W
40.9	45.8	52.4																				

SIGN NUMBER	SN2
WIDTH x HEIGHT	6'-6" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
10498+60 Rt

AREA: 13.0 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssl

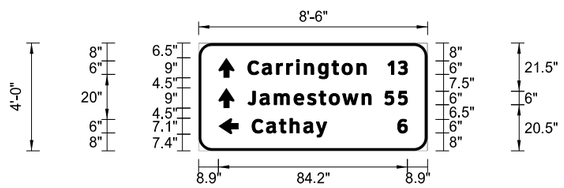
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n		1	1										57.6	6/4.9	ClearviewHwy-5-W
10.2	15.7	22	27.6	33.5	38.7	43.2	49.9	54.1	60.6	65.1												

SIGN NUMBER	SN3
WIDTH x HEIGHT	8'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	8.9	32.5	7.1	9	90
ARDD	8.9	19	7.1	9	90
ARDD	8.9	7.4	7.1	9	180

STATION(S):
11012+34 Rt

AREA: 34.0 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
C	a	r	r	i	n	g	t	o	n											52.8	6/4.9	ClearviewHwy-5-W
22	28.3	34.7	39.2	43.6	47.1	53.3	59.4	63.9	70.6													
1	3																			8.8	6	ClearviewHwy-5-W
84.3	88.9																					
J	a	m	e	s	t	o	w	n												54.9	6/4.9	ClearviewHwy-5-W
22	27.3	33.7	42.5	48.5	53.7	58.2	64.2	72.8														
5	5																			10.1	6	ClearviewHwy-5-W
82.9	88.9																					
C	a	t	h	a	y															33.3	6/4.9	ClearviewHwy-5-W
23.8	30.2	36	40.7	46.8	52.4																	
6																				4.3	6	ClearviewHwy-5-W
88.7																						

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Sign Details

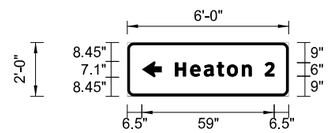
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	76

SIGN NUMBER	SN4
WIDTH x HEIGHT	6'-0" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	6.5	8.4	7.1	9	180

STATION(S):
10699+57 RT

AREA: 12.0 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssi

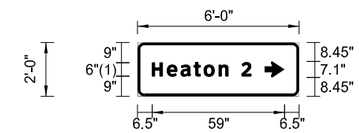
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
H	e	a	t	o	n														33.9	6/4.9	ClearviewHwy-5-W
21.5	28.2	34.3	40	44.5	51.2																
2																			4.1	6	ClearviewHwy-5-W
61.4																					

SIGN NUMBER	SN5
WIDTH x HEIGHT	6'-0" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	56.5	8.4	7.1	9	0

STATION(S):
10707+82 Lt

AREA: 12.0 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssi

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
H	e	a	t	o	n														33.9	6/4.9	ClearviewHwy-5-W
6.5	13.2	19.3	25.1	29.6	36.2																
2																			4.1	6	ClearviewHwy-5-W
46.4																					

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Sign Details

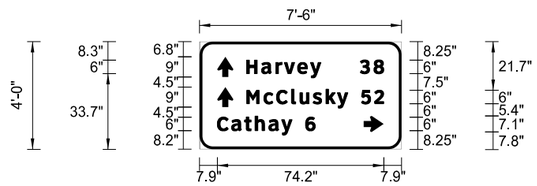
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	77

SIGN NUMBER	SN6
WIDTH x HEIGHT	7'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	7.9	32.2	7.1	9	90
ARDD	7.9	18.8	7.1	9	90
ARDD	73.1	7.7	7.1	9	0

STATION(S):
11031+30 Lt

AREA: 30.0 Sq.Ft.



PANEL STYLE: ND_Conv_DIstance.ssl

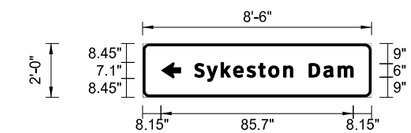
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
H	a	r	v	e	y															33.1	6/4.9	ClearviewHwy-5-W
21	27.6	34	37.8	43.7	49.4																	
3	8																			10.5	6	ClearviewHwy-5-W
71.6	77.7																					
M	c	C	l	u	s	k	y													45.1	6/4.9	ClearviewHwy-5-W
21	28.6	34.3	41	44.7	50.6	56.3	61.4															
5	2																			10	6	ClearviewHwy-5-W
72.1	77.9																					
C	a	t	h	a	y															33.3	6/4.9	ClearviewHwy-5-W
7.9	14.3	20	24.8	30.9	36.5																	
6																				4.3	6	ClearviewHwy-5-W
47.2																						

SIGN NUMBER	SN7
WIDTH x HEIGHT	8'-6" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	8.1	8.4	7.1	9	180

STATION(S):
11049+81 Rt

AREA: 17.0 Sq.Ft.



PANEL STYLE: ND_Conv_Recreation.ssl

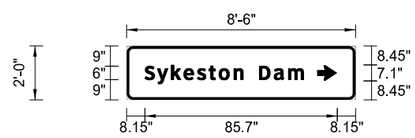
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n		D	a	m									70.8	6/4.9	ClearviewHwy-5-W
23.1	28.7	34.9	40.5	46.5	51.6	56.1	62.8	67	74.1	80.7	87.1											

SIGN NUMBER	SN8
WIDTH x HEIGHT	8'-6" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	84.9	8.4	7.1	9	0

STATION(S):
11064+07 Lt

AREA: 17.0 Sq.Ft.



PANEL STYLE: ND_Conv_Recreation.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n		D	a	m									70.8	6/4.9	ClearviewHwy-5-W
8.1	13.7	19.9	25.5	31.5	36.6	41.2	47.8	52	59.1	65.7	72.1											

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Sign Details

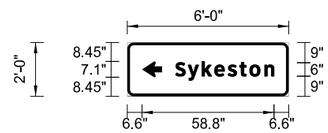
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	78

SIGN NUMBER	SN9
WIDTH x HEIGHT	6'-0" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	6.6	8.4	7.1	9	180

STATION(S):
11051+86 Rt

AREA: 12.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

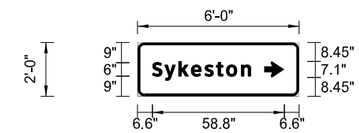
LETTER POSITION (X)								LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n	43.9	6/4.9	ClearviewHwy-5-W
21.6	27.1	33.4	38.9	44.9	50.1	54.6	61.3			

SIGN NUMBER	SN10
WIDTH x HEIGHT	6'-0" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	56.4	8.4	7.1	9	0

STATION(S):
11060+07 Lt

AREA: 12.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)								LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n	43.9	6/4.9	ClearviewHwy-5-W
6.6	12.1	18.4	23.9	29.9	35.1	39.6	46.3			

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Sign Details

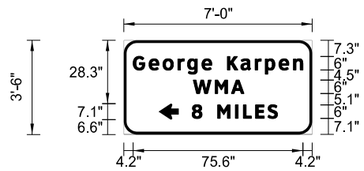
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	79

SIGN NUMBER	SN11
WIDTH x HEIGHT	7'-0" x 3'-6"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	15.5	6.6	7.1	9	180

STATION(S):
11383+21 Rt

AREA: 24.5 Sq.Ft.



PANEL STYLE: ND_Conv_Recreation.ssl

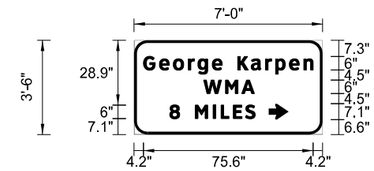
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
G	e	o	r	g	e		K	a	r	p	e	n								75.6	6/4.9	ClearviewHwy-5-W
4.2	11.3	17.5	24.2	28.4	34.8	39.3	46.2	52.2	58.5	63	69.2	75.6										
W	M	A																		22.6	6	ClearviewHwy-5-W
31	40.7	48																				
8		M	I	L	E	S														38	6	ClearviewHwy-5-W
30.5	34.9	41.8	49.8	53.3	58.8	64.2																

SIGN NUMBER	SN12
WIDTH x HEIGHT	7'-0" x 3'-6"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	59.9	6.7	7.1	9	0

STATION(S):
11395+45 Lt

AREA: 24.5 Sq.Ft.



PANEL STYLE: ND_Conv_Recreation.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
G	e	o	r	g	e		K	a	r	p	e	n								75.6	6/4.9	ClearviewHwy-5-W
4.2	11.3	17.5	24.2	28.4	34.8	39.3	46.2	52.2	58.5	63	69.2	75.6										
W	M	A																		22.6	6	ClearviewHwy-5-W
31	40.7	48																				
8		M	I	L	E	S														38	6	ClearviewHwy-5-W
15.9	20.3	27.3	35.2	38.8	44.2	49.6																

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Sign Details

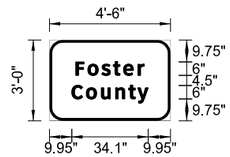
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	80

SIGN NUMBER	SN13
WIDTH x HEIGHT	4'-6" 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

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
11391+11 Rt

AREA: 13.5 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

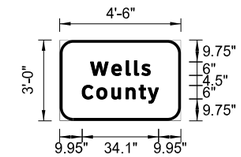
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
F	o	s	t	e	r															30.5	6/4.9	ClearviewHwy-5-W
11.8	17.1	23.3	28.5	33	39.5																	
C	o	u	n	t	y															34.1	6/4.9	ClearviewHwy-5-W
10	16.4	23.1	29.5	35.3	39.3																	

SIGN NUMBER	SN14
WIDTH x HEIGHT	4'-6" 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

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
11387+25 Lt

AREA: 13.5 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
W	e	l	l	s																26.7	6/4.9	ClearviewHwy-5-W
13.7	23.1	29.6	33.3	36.5																		
C	o	u	n	t	y															34.1	6/4.9	ClearviewHwy-5-W
10	16.4	23.1	29.5	35.3	39.3																	

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Sign Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	81

SIGN NUMBER	SN15
WIDTH x HEIGHT	2'-6" 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	X	Y	WID	HT	ANGLE

STATION(S):
11653+51 Rt
11751+00 Lt

AREA: 3.8 Sq.Ft.

PANEL STYLE: ND_Adopt-a-Highway.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
C	A	R	R	I	N	G	T	O	N										23.1	3	ClearviewHwy-2-W
3.5	5.7	8.4	10.9	13.3	14.6	17.2	19.7	21.8	24.7												
K	N	I	G	H	T	S		O	F										21.2	3	ClearviewHwy-2-W
4.4	6.8	9.5	10.7	13.4	15.8	17.7	19.4	21.4	24.3												
C	O	L	U	M	B	U	S												19.1	3	ClearviewHwy-2-W
5.4	7.8	10.7	12.5	15.1	18.1	20.5	22.9														

SIGN NUMBER	SN16
WIDTH x HEIGHT	2'-6" 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	X	Y	WID	HT	ANGLE

STATION(S):
10545+52 Lt

AREA: 3.8 Sq.Ft.

PANEL STYLE: ND_Adopt-a-Highway.ssl

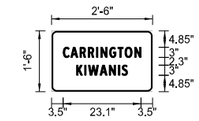
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
B	O	W	D	O	N		S	E	V	E	N	T	H						27.9	3	ClearviewHwy-1-W
1.1	3	5.3	8.3	10.4	12.8	14.4	16.2	18.2	19.7	21.9	23.7	25.7	27.6								
D	A	Y		A	D	V	E	N	T	I	S	T							23.3	3	ClearviewHwy-1-W
3.4	5.4	7.4	9	10.5	12.8	14.8	17	18.8	20.8	22.6	23.6	25.4									
C	H	U	R	C	H														11.9	3	ClearviewHwy-1-W
9	11.1	13.3	15.5	17.5	19.5																

SIGN NUMBER	SN17
WIDTH x HEIGHT	2'-6" 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	X	Y	WID	HT	ANGLE

STATION(S):
5952+37

AREA: 3.8 Sq.Ft.



PANEL STYLE: ND_Adopt-a-Highway.ssl

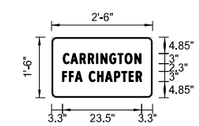
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
C	A	R	R	I	N	G	T	O	N										23.1	3	ClearviewHwy-2-W
3.5	5.7	8.4	10.9	13.3	14.6	17.2	19.7	21.8	24.7												
K	I	W	A	N	I	S													15.1	3	ClearviewHwy-2-W
7.4	9.8	10.9	14.4	17.1	19.8	20.9															

SIGN NUMBER	SN18
WIDTH x HEIGHT	2'-6" 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	X	Y	WID	HT	ANGLE

STATION(S):
15502+55 Rt

AREA: 3.8 Sq.Ft.



PANEL STYLE: ND_Adopt-a-Highway.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
C	A	R	R	I	N	G	T	O	N										23.1	3	ClearviewHwy-2-W
3.5	5.7	8.4	10.9	13.3	14.6	17.2	19.7	21.8	24.7												
F	F	A		C	H	A	P	T	E	R									23.5	3	ClearviewHwy-2-W
3.3	5.2	7	9.1	11.2	13.6	16	18.7	20.8	23	25.1											

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Sign Details

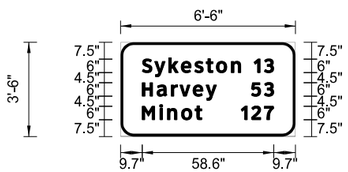
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	82

SIGN NUMBER	SN19
WIDTH x HEIGHT	6'-6" x 3'-6"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
11752+00 Lt

AREA: 22.8 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssi

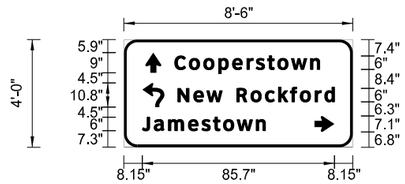
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
S	y	k	e	s	t	o	n													43.9	6/4.9	ClearviewHwy-5-W
9.7	15.3	21.5	27.1	33.1	38.2	42.7	49.4															
1	3																			8.8	6	ClearviewHwy-5-W
59.5	64.1																					
H	a	r	v	e	y															33.1	6/4.9	ClearviewHwy-5-W
9.7	16.3	22.7	26.4	32.3	38.1																	
5	3																			9.9	6	ClearviewHwy-5-W
58.3	64.1																					
M	i	n	o	t																26.5	6/4.9	ClearviewHwy-5-W
9.7	17.4	21	27.2	33.3																		
1	2	7																		14.6	6	ClearviewHwy-5-W
53.7	58.4	64.1																				

SIGN NUMBER	SN20
WIDTH x HEIGHT	8'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	9.6	33.1	7.1	9	90
AR_FISHOOK	8.2	17.9	9.9	10.8	0
ARDD	84.9	6.8	7.1	9	0

STATION(S):
11757+43 Rt

AREA: 34.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
C	o	o	p	e	r	s	t	o	w	n										64.6	6/4.9	ClearviewHwy-5-W
22.7	29.1	35.6	42.2	48.4	54.8	58.9	64	68.5	74.6	83.1												
N	e	w		R	o	c	k	f	o	r	d									69.8	6/4.9	ClearviewHwy-5-W
24	31.1	36.9	43.8	50.3	56.6	63	68.8	74.2	78.5	85.2	89.5											
J	a	m	e	s	t	o	w	n												54.9	6/4.9	ClearviewHwy-5-W
8.2	13.5	19.9	28.7	34.7	39.8	44.4	50.4	58.9														

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Sign Details

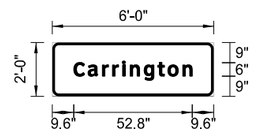
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	83

SIGN NUMBER	SN21
WIDTH x HEIGHT	6'-0" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
11710+00 Rt
15512+96 Lt

AREA: 12.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

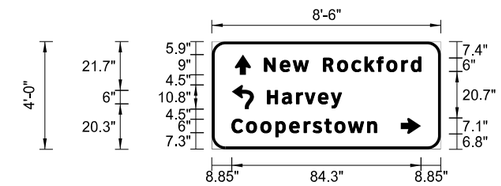
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
C	a	r	r	i	n	g	t	o	n											52.8	6/4.9	ClearviewHwy-5-W
9.6	16	22.3	26.8	31.2	34.8	41	47	51.5	58.2													

SIGN NUMBER	SN22
WIDTH x HEIGHT	8'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	10.2	33.1	7.1	9	90
AR_FISHOOK	8.9	17.9	9.9	10.8	0
ARDD	84.2	6.8	7.1	9	0

STATION(S):
11761+58 Lt

AREA: 34.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
N	e	w		R	o	c	k	f	o	r	d									69.8	6/4.9	ClearviewHwy-5-W
23.4	30.4	36.2	43.1	49.6	55.9	62.3	68.1	73.5	77.9	84.5	88.8											
H	a	r	v	e	y															33.1	6/4.9	ClearviewHwy-5-W
24.7	31.3	37.7	41.5	47.4	53.1																	
C	o	o	p	e	r	s	t	o	w	n										64.6	6/4.9	ClearviewHwy-5-W
8.9	15.3	21.8	28.4	34.6	41	45.1	50.2	54.7	60.8	69.3												

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Sign Details

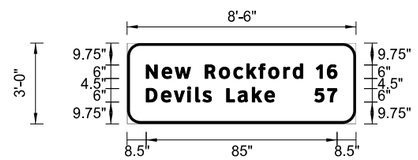
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	84

SIGN NUMBER	SN23
WIDTH x HEIGHT	8'-6" 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

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5946+03 Rt

AREA: 25.5 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssl

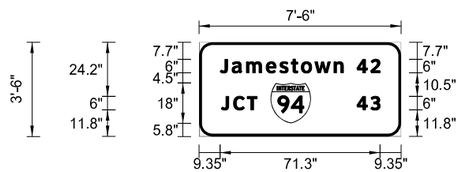
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
N	e	w		R	o	c	k	f	o	r	d									69.8	6/4.9	ClearviewHwy-5-W
8.5	15.6	21.4	28.3	34.8	41.1	47.5	53.3	58.6	63	69.7	74											
1	6																			9.2	6	ClearviewHwy-5-W
84.3	89.2																					
D	e	v	i	l	s		L	a	k	e										57.2	6/4.9	ClearviewHwy-5-W
8.5	15.2	21	27	30.5	33.8	37.6	44.4	49.4	55.8	61.3												
5	7																			9.9	6	ClearviewHwy-5-W
83.6	89.3																					

SIGN NUMBER	SN24
WIDTH x HEIGHT	7'-6" x 3'-6"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: 3A Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: 3A Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
M1_1	31.8	5.8	18	18	0

STATION(S):
11763+47 Rt

AREA: 26.3 Sq.Ft.



PANEL STYLE: ND_Conv_Distance.ssl

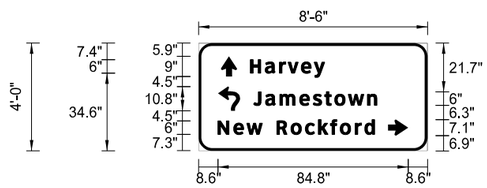
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
J	a	m	e	s	t	o	w	n												54.9	6/4.9	ClearviewHwy-5-W
9.4	14.7	21	29.9	35.9	41	45.5	51.6	60.1														
4	2																			10.4	6	ClearviewHwy-5-W
70.3	76.5																					
J	C	T																		16	6	ClearviewHwy-5-W
9.8	15.3	21.5																				
4	3																			10.3	6	ClearviewHwy-5-W
70.3	76.5																					

SIGN NUMBER	SN25
WIDTH x HEIGHT	8'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	10	33.1	7.1	9	90
AR_FISHOOK	8.6	17.9	9.9	10.8	0
ARDD	84.4	6.8	7.1	9	0

STATION(S):
15498+62 Lt

AREA: 34.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
H	a	r	v	e	y															33.1	6/4.9	ClearviewHwy-5-W
23.1	29.7	36.1	39.8	45.7	51.5																	
J	a	m	e	s	t	o	w	n												54.9	6/4.9	ClearviewHwy-5-W
24.5	29.8	36.2	45	51	56.2	60.7	66.7	75.3														
N	e	w		R	o	c	k	f	o	r	d									69.8	6/4.9	ClearviewHwy-5-W
8.6	15.6	21.5	28.4	34.9	41.2	47.6	53.4	58.7	63.1	69.8	74.1											

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Sign Details

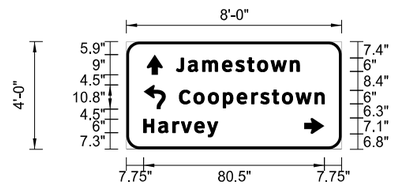
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	85

SIGN NUMBER	SN26
WIDTH x HEIGHT	8'-0" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ARDD	9.1	33.1	7.1	9	90
AR_FISHOOK	7.8	17.9	9.9	10.8	0
ARDD	79.3	6.8	7.1	9	0

STATION(S):
5944+99 Lt

AREA: 32.0 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

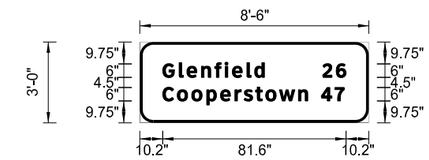
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
J	a	m	e	s	t	o	w	n												54.9	6/4.9	ClearviewHwy-5-W
22.2	27.6	33.9	42.8	48.8	53.9	58.4	64.4	73														
C	o	o	p	e	r	s	t	o	w	n										64.6	6/4.9	ClearviewHwy-5-W
23.6	30.1	36.5	43.2	49.4	55.8	59.8	65	69.5	75.5	84.1												
H	a	r	v	e	y															33.1	6/4.9	ClearviewHwy-5-W
7.8	14.3	20.7	24.5	30.4	36.1																	

SIGN NUMBER	SS27
WIDTH x HEIGHT	8'-6" 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

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
15505+05 Rt

AREA: 25.5 Sq.Ft.



PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
G	l	e	n	f	i	e	l	d												45.3	6/4.9	ClearviewHwy-5-W
10.2	17.5	20.9	27.4	33.4	37.9	41.2	47.6	51.1														
2	6																			10.4	6	ClearviewHwy-5-W
81.4	87.5																					
C	o	o	p	e	r	s	t	o	w	n										64.6	6/4.9	ClearviewHwy-5-W
10.2	16.6	23.1	29.8	35.9	42.4	46.4	51.6	56.1	62.1	70.6												
4	7																			10.3	6	ClearviewHwy-5-W
80.8	86.9																					

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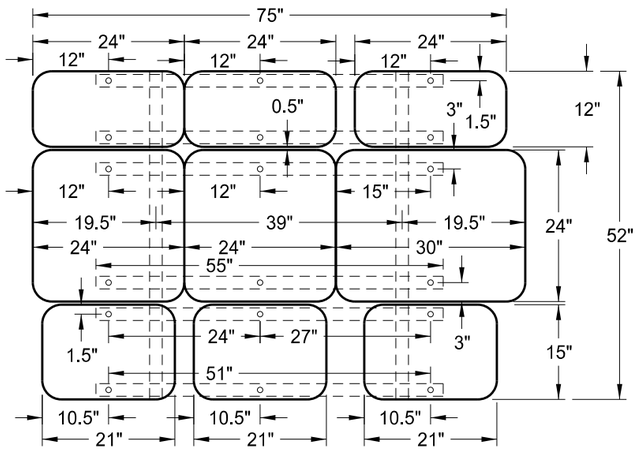
Sign Details

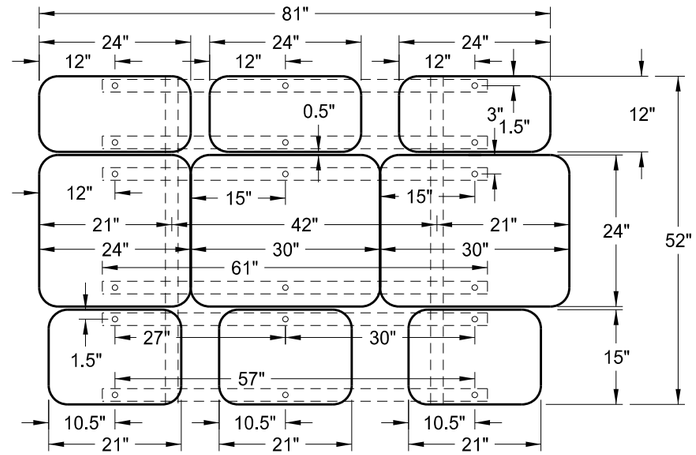
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	86



SPECIAL ASSEMBLY A

STA 14176+54 RT (ND 200)
STA 11016+34 RT

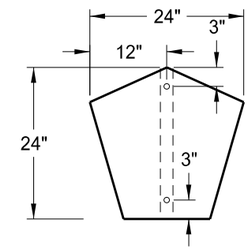
AREA: 25.57 SF



SPECIAL ASSEMBLY B

STA 10491+87 RT

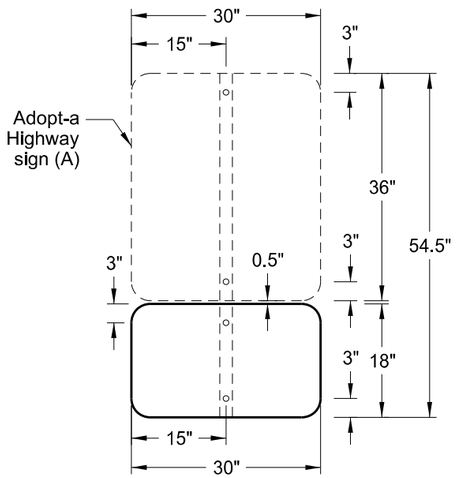
AREA: 26.57 SF



SPECIAL ASSEMBLY C

STA 14180+62 RT (ND 200)

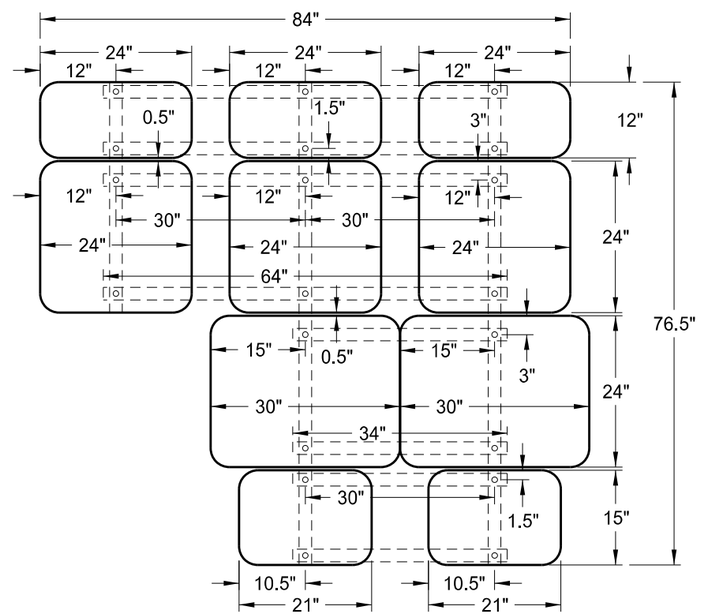
AREA: 2.41 SF



SPECIAL ASSEMBLY D

STA 10545+52 LT
STA 10981+84 RT
STA 11140+39 LT
STA 11653+51 RT
STA 11751+00 LT
STA 15502+55 RT (ND 200)
STA 5952+37 RT (US 281)

TOTAL AREA: 11.25 SF
PAY AREA: 3.75



SPECIAL ASSEMBLY E

STA 11020+15 RT

AREA: 32.38 SF

Notes:

(A) The Adopt-a-Highway signs shall be installed by state forces. The contractor shall furnish and install the remaining signs and supports as shown in the special assembly details

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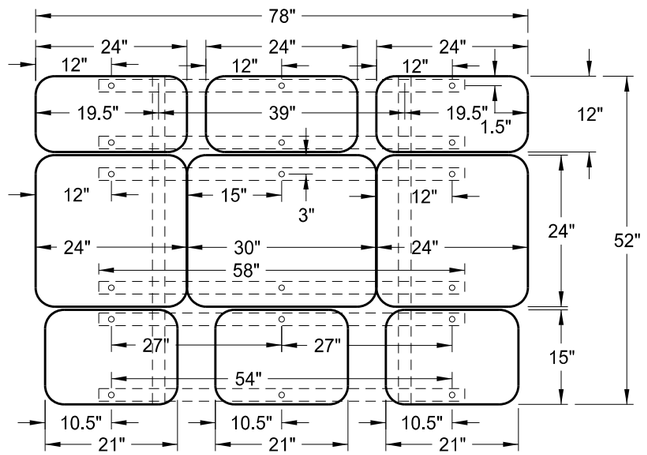
Special Assembly Details

US 52

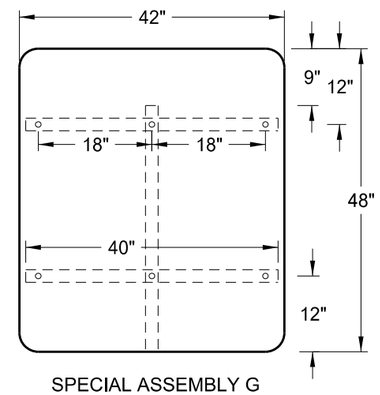
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	87



SPECIAL ASSEMBLY F

STA 11023+68 LT

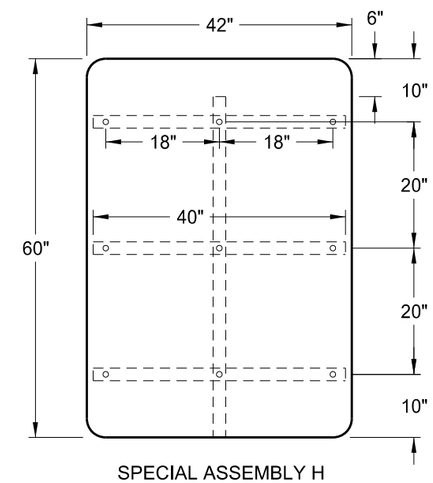
AREA: 25.57 SF



SPECIAL ASSEMBLY G

STA 11022+25 RT
STA 11028+42 LT

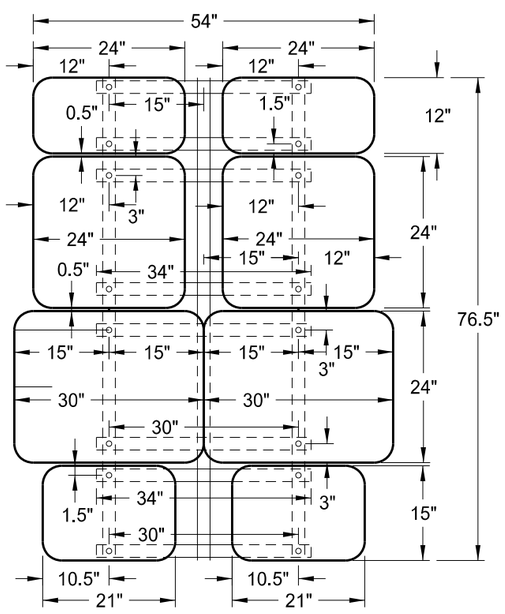
AREA: 14 SF



SPECIAL ASSEMBLY H

STA 11695+68 LT

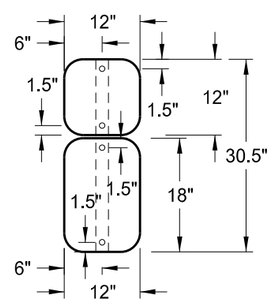
AREA: 17.5 SF



SPECIAL ASSEMBLY I

STA 11706+60 LT

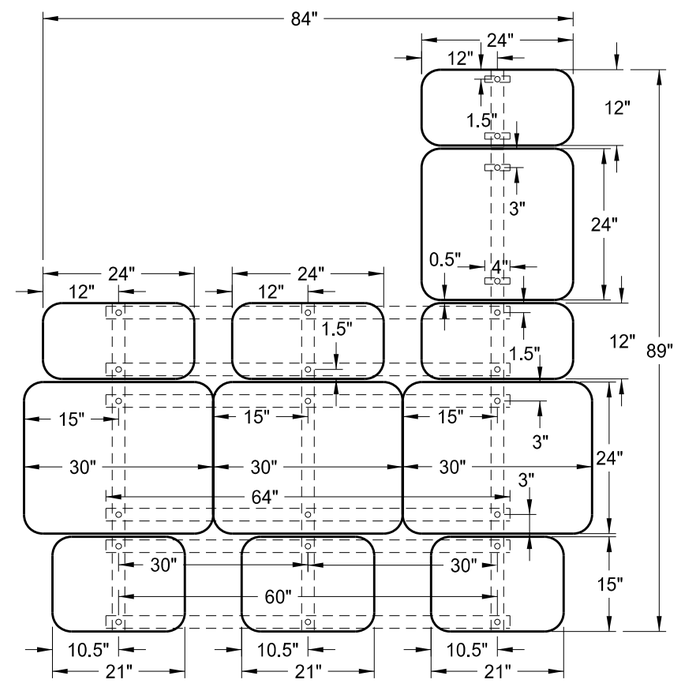
AREA: 26.38 SF



SPECIAL ASSEMBLY J

STA 15510+96 LT (ND 200)
STA 11712+00 RT

AREA: 2.5 SF



SPECIAL ASSEMBLY K

STA 11754+00 RT

AREA: 33.57 SF

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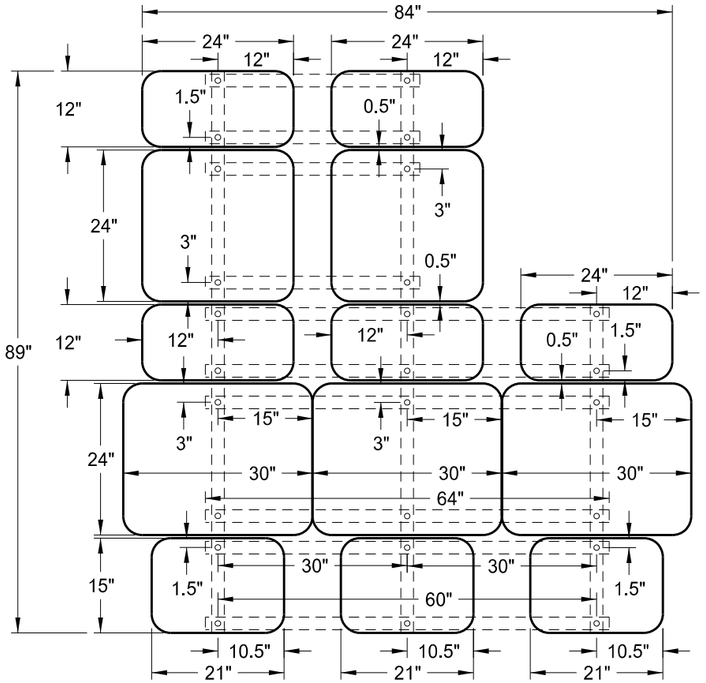
Special Assembly Details

US 52

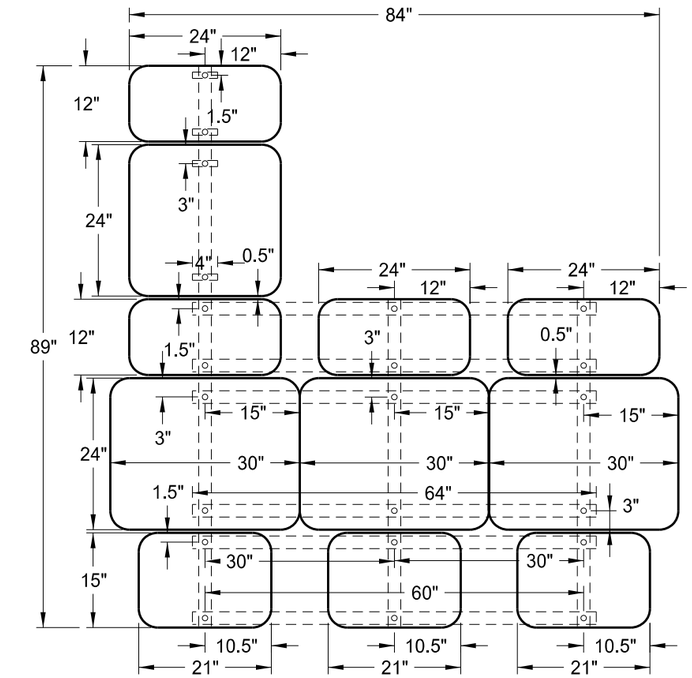
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	88



SPECIAL ASSEMBLY L

STA 15500+62 LT (ND 200)

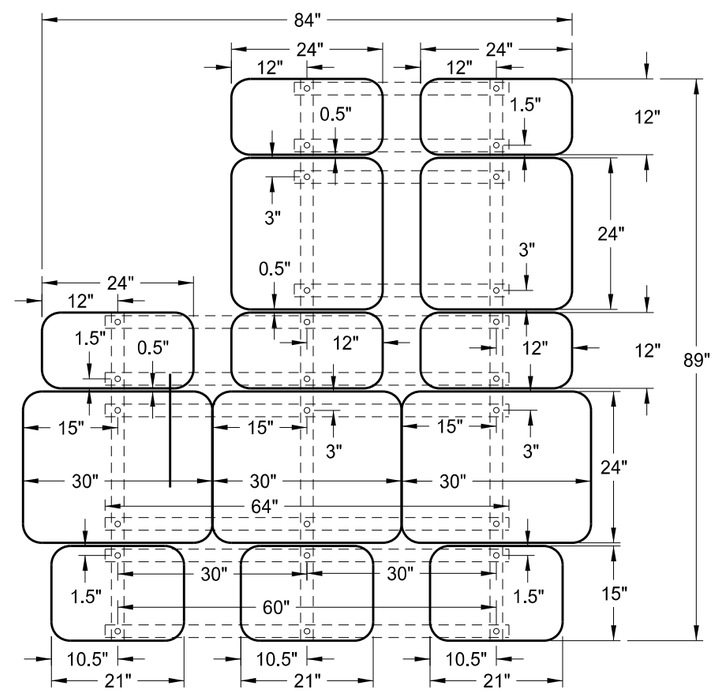
AREA: 39.57 SF



SPECIAL ASSEMBLY M

STA 11763+58 LT

AREA: 33.57 SF



SPECIAL ASSEMBLY N

STA 5948+11 LT (US 281)

AREA: 39.57 SF

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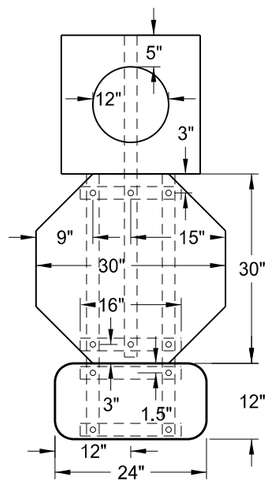
Special Assembly Details

US 52

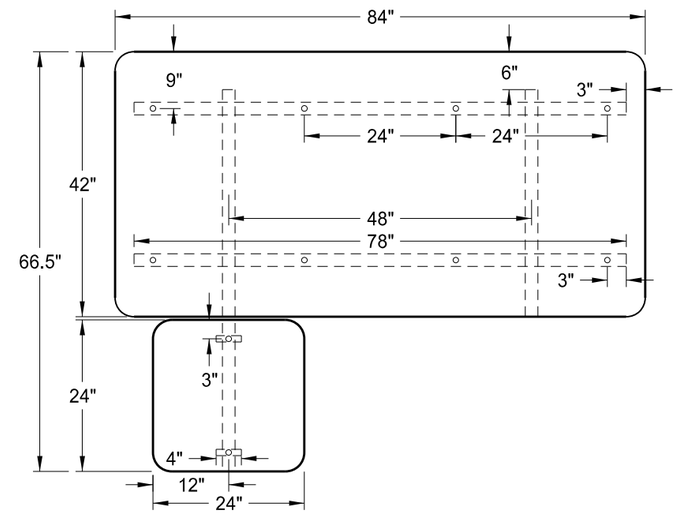
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	110	89



SPECIAL ASSEMBLY O
(Stop Sign w/Flashing Beacon)

STA 10491+64 RT
STA 10491+66 LT

AREA: 7.18 SF



SPECIAL ASSEMBLY P

STA 11383+21 RT
STA 11395+45 LT

AREA: 28.5 SF

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Special Assembly Details

US 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	1

Edge Line (4-IN White)

Chain	Begin Station	End Station	Length
ND 30	4661+63	4665+09	350
US 52	10488+55	11754+90	126,640
ND 200	14178+50	14180+85	240
	Total: (x2)		254,460

EB BARRIER STRIPE (4-IN Yellow)

Begin Station	End Station	Length
11388+00	11393+00	500
11407+00	11416+00	900
11714+07	11754+90	4,083
Total:		5,483

WB BARRIER STRIPE (4-IN Yellow)

Begin Station	End Station	Length
11399+00	11416+00	1,700
11714+07	11754+90	4,083
Total:		5,783

Center Skip (4-IN Yellow)

Begin Station	End Station	Description	Length
10500+39	11013+50	CL	12,830
11028+53	11049+00	CL	520
11064+07	11388+00	CL	8,100
11388+00	11393+00	WB	130
11393+00	11399+00	CL	150
11399+00	11407+00	EB	200
11416+00	11698+63	CL	7,070
Total:			29,000

Pavement Marking Details Summary - Section 120, Sheets No. 2 - 6

Begin Station	End Station	Description	Sheet No.	PVMT MK PAINTED-MESSAGE (SF)	PVMT MK PAINTED 4IN LINE (LF) Yellow	PVMT MK PAINTED 8IN LINE (LF)	PVMT MK PAINTED 24IN LINE (LF)
14174+00	10500+39	W Jct ND 200 WB Right Turn Lane	2	48	2,313	530	50
11013+50	11028+53	ND 30 WB Right Turn Lane	3	48	2,420	530	50
11049+00	11064+07	Hughes Ave S WB Right Turn Lane	4	48	1,935	542	50
11698+63	11705+77	19th Ave N EB Left and Righ: Turn Lanes	5	80	2,256	500	40
11706+93	11714+07	19th Ave N WB Left and Right Turn Lanes	5	80	2,256	500	40
11718+37	11722+55	Railroad Crossing	6	265	-	-	-
11729+21	11732+65	11th Ave NE EB Right Turn Lane	6	32	-	200	34
Total:				601	11,180	2,802	264

Pavement Marking Details Summary - Section 120, Sheet No. 7

Description	Sheet No.	PREF. PATT. PVMT MK Message Grooved (SF)	PREF. PATT. PVMT MK 4IN Line Grooved White (LF)	PREF. PATT. PVMT MK 4IN Line Grooved Yellow (LF)	PREF. PATT. PVMT MK 8IN Line Grooved White (LF)	PREF. PATT. PVMT MK 8IN Line Grooved Yellow (LF)
Roundabout Detail	7	142	106	712	328	70
Total:		142	106	712	328	70

SUMMARY PERMANENT PAVEMENT MARKING

SPEC	CODE	ITEM	QUANTITY	
762	103	PVMT MK PAINTED-MESSAGE	601	SF
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	142	SF
762	1104	PVMT MK PAINTED 4IN LINE (WHITE)	254,460	LF
762	1104	PVMT MK PAINTED 4IN LINE (YELLOW)	51,446	LF
762	1108	PVMT MK PAINTED 8IN LINE (WHITE)	2,802	LF
762	1124	PVMT MK PAINTED 24IN LINE (WHITE)	264	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED (WHITE)	106	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED (YELLOW)	712	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED (WHITE)	328	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED (YELLOW)	70	LF

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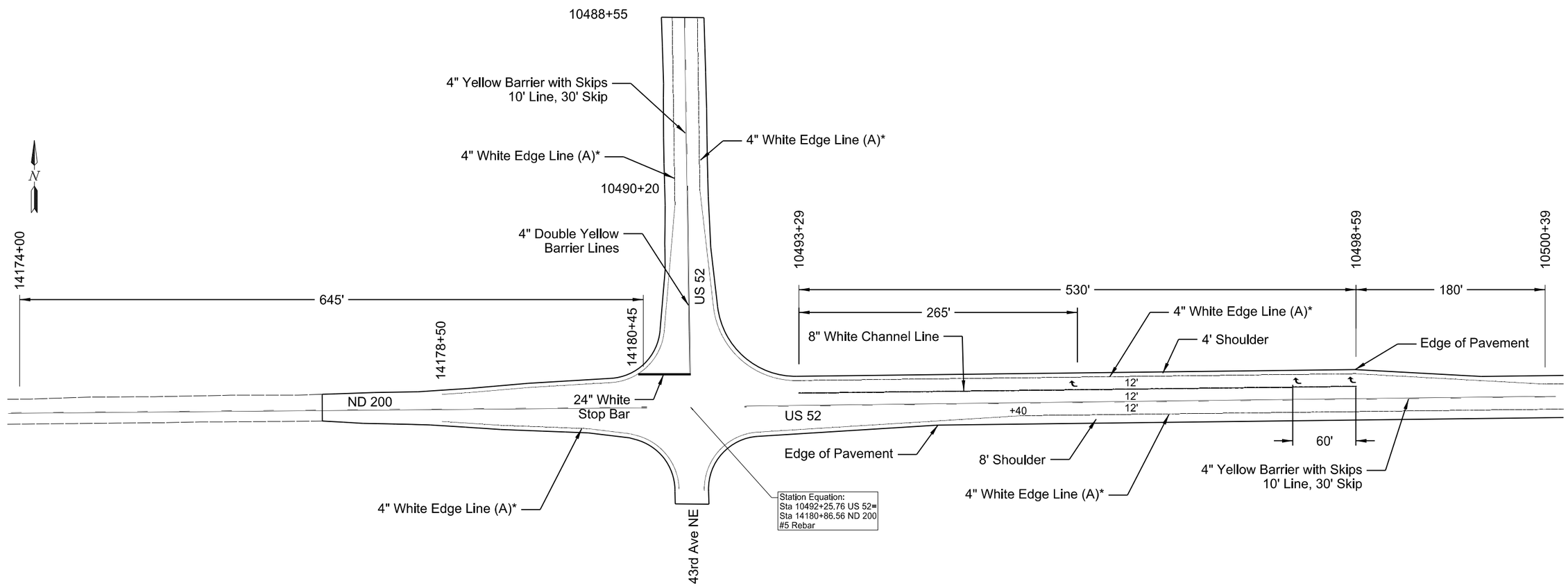
US 52
Pavement Marking
Locations and Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	2



NOTE:
(A)* Edgeline quantities indicated (A)* are included in Section 120, Sheet 1

Westbound Right Turning Lane
Beginning of Project to STA 10500+39

762 103 PVMT MK PAINTED-MESSAGE

RT Arrows (3)	48	SF

762 1104 PVMT MK PAINTED 4IN LINE

4" Yellow Barrier with Skips		
-ND 200	805	LF
-US 52 North Approach	205	LF
-US 52 East Approach	955	LF
4" Dbl Yellow Barrier Line	348	LF
Total	2313	LF

762 1108 PVMT MK PAINTED 8IN LINE

8" White Channel Line	530	LF

762 1124 PVMT MK PAINTED 24IN LINE

24" White Stop Bar	50	LF

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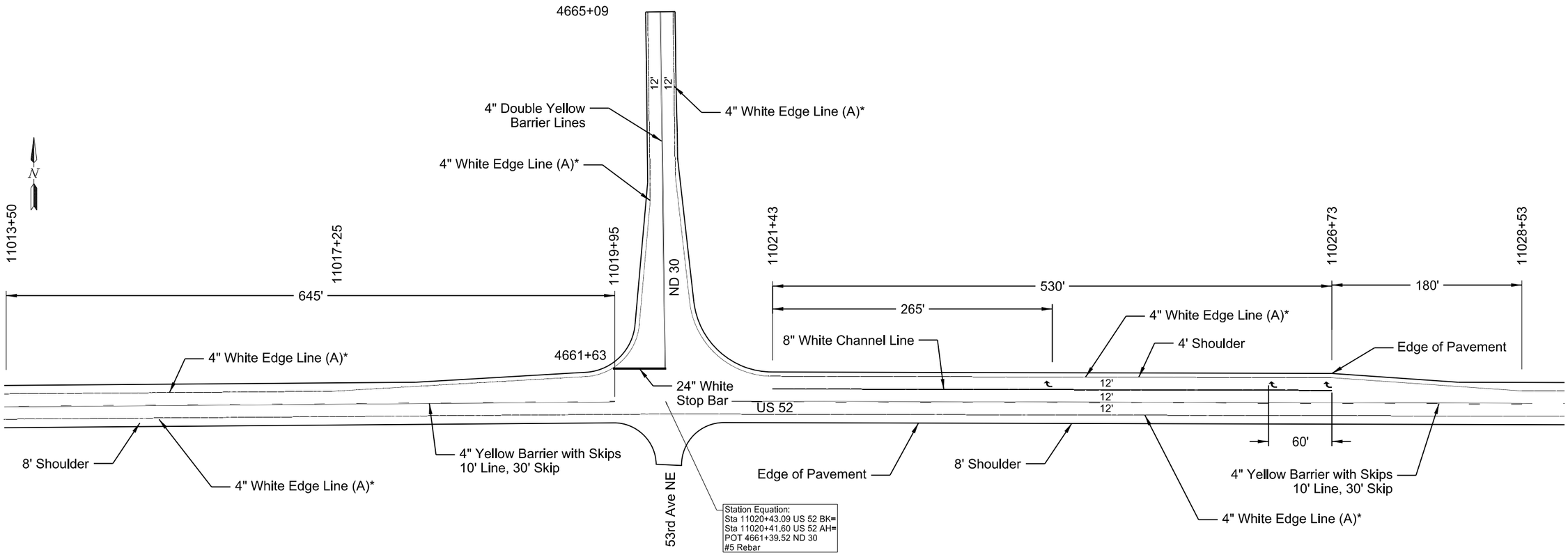
US 52
Pavement Marking Detail
W Jct ND 200 E

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	3



NOTE:
(A)* Edgeline quantities indicated (A)* are included in Section 120, Sheet 1

Westbound Right Turn Lane
STA 11013+50 to STA 11028+53

762 103 PVMT MK PAINTED-MESSAGE

RT Arrows (3)	48	SF

762 1104 PVMT MK PAINTED 4IN LINE

4" Yellow Barrier with Skips		
-US 52 West Approach	805	LF
-US 52 East Approach	940	LF
4" Dbl Yellow Barrier Line	675	LF
Total	2420	LF

762 1108 PVMT MK PAINTED 8IN LINE

8" White Channel Line	530	LF

762 1124 PVMT MK PAINTED 24IN LINE

24" White Stop Bar	50	LF

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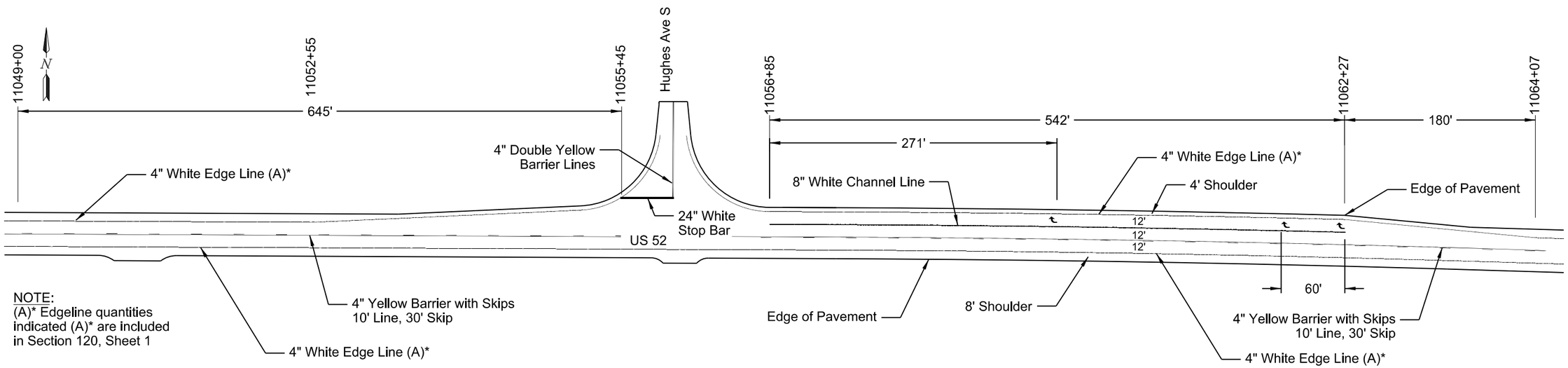
US 52
Pavement Marking Detail
ND 30

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	4



NOTE:
(A)* Edgeline quantities indicated (A)* are included in Section 120, Sheet 1

Westbound Right Turn Lane
STA 11049+00 to STA 11064+07

762 103 PVMT MK PAINTED-MESSAGE		
RT Arrows (3)	48	SF
762 1104 PVMT MK PAINTED 4IN LINE		
4" Yellow Barrier with Skips		
-US 52 West Approach	805	LF
-US 52 East Approach	950	LF
4" Dbl Yellow Barrier Line	180	LF
Total	1935	LF
762 1108 PVMT MK PAINTED 8IN LINE		
8" White Channel Line	542	LF
762 1124 PVMT MK PAINTED 24IN LINE		
24" White Stop Bar	50	LF

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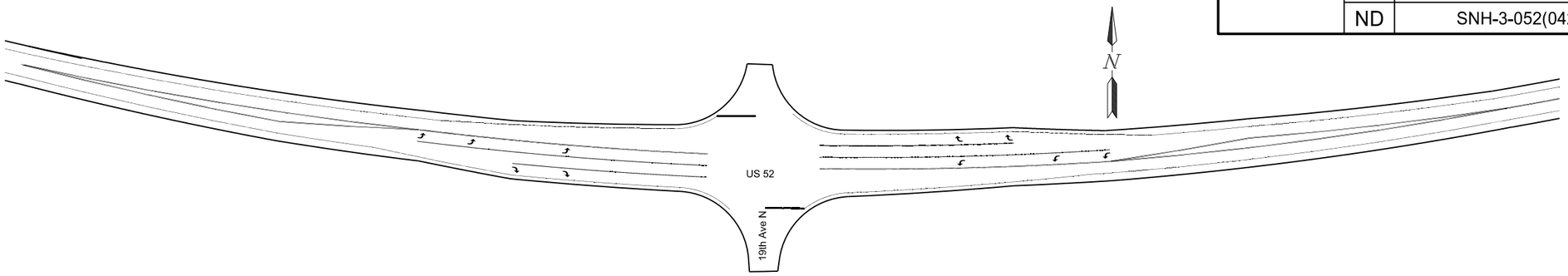
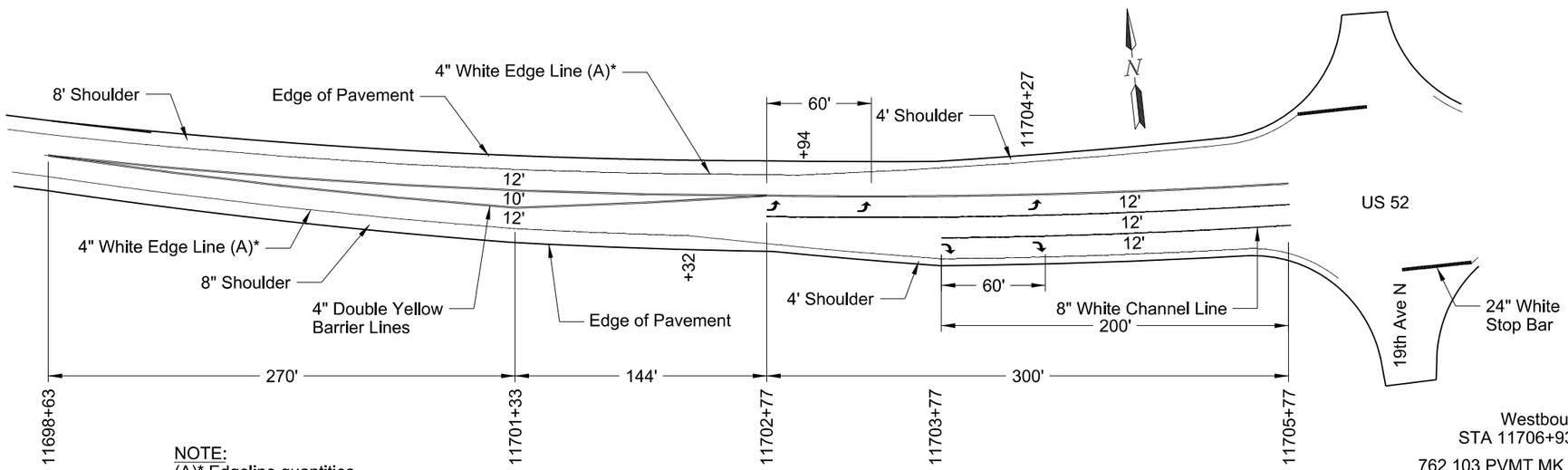
US 52
Pavement Marking Detail
Hughes Ave S

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	5





NOTE:
(A)* Edgeline quantities indicated (A)* are included in Section 120, Sheet 1

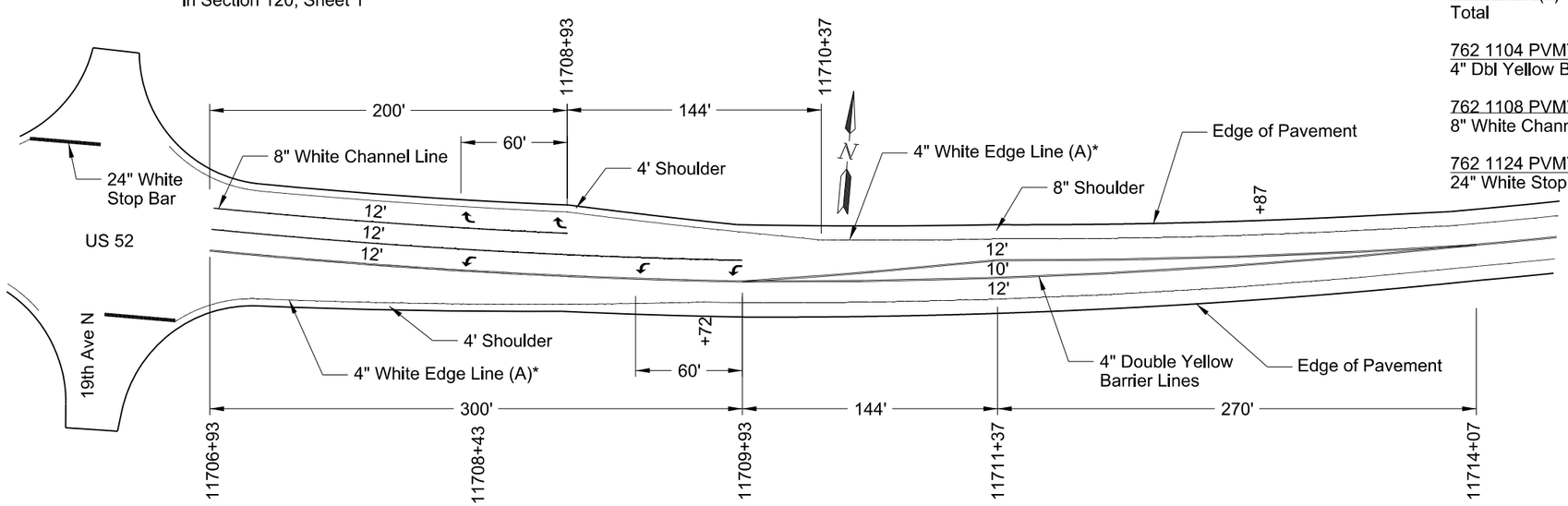
Eastbound Turn Lane
STA 11698+63 to STA 11705+77

762 103 PVMT MK PAINTED-MESSAGE		
LT Arrows (3)	48	SF
RT Arrows (2)	32	SF
Total	80	SF

762 1104 PVMT MK PAINTED 4IN LINE		
4" Dbl Yellow Barrier Lines	2256	LF

762 1108 PVMT MK PAINTED 8IN LINE		
8" White Channel Line	500	LF

762 1124 PVMT MK PAINTED 24IN LINE		
24" White Stop Bar	40	LF



Westbound Turn Lane
STA 11706+93 to STA 11714+07

762 103 PVMT MK PAINTED-MESSAGE		
LT Arrows (3)	48	SF
RT Arrows (2)	32	SF
Total	80	SF

762 1104 PVMT MK PAINTED 4IN LINE		
4" Dbl Yellow Barrier Lines	2256	LF

762 1108 PVMT MK PAINTED 8IN LINE		
8" White Channel Line	500	LF

762 1124 PVMT MK PAINTED 24IN LINE		
24" White Stop Bar	40	LF

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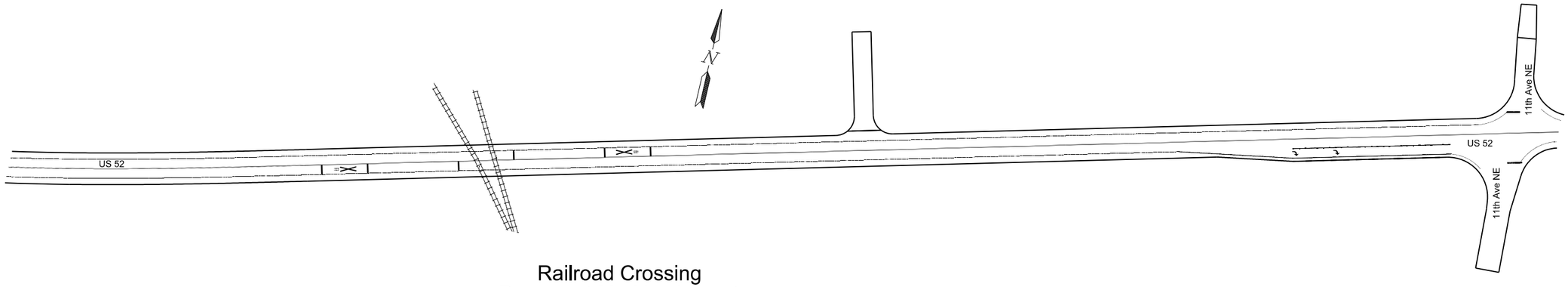
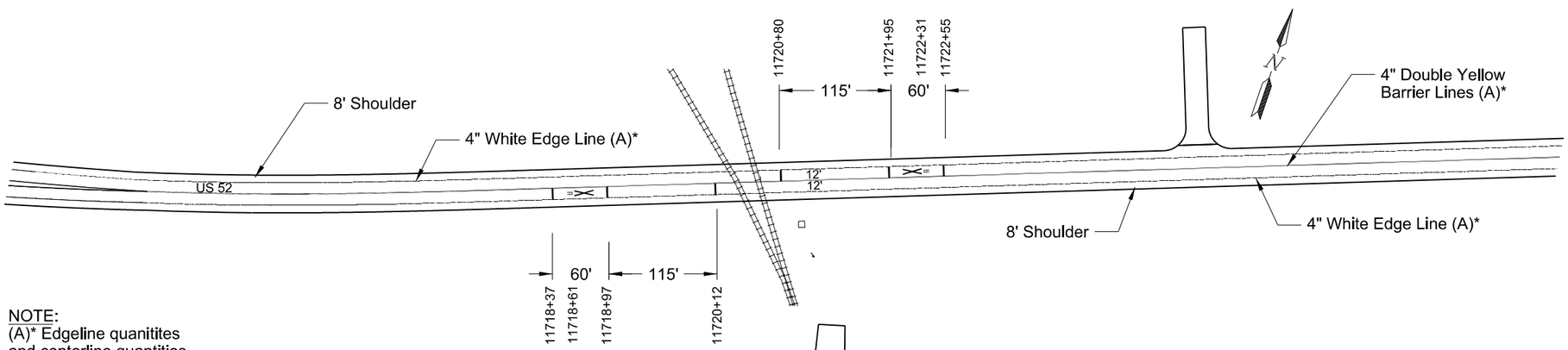
US 52
Pavement Marking Detail
19th Ave N

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	6



Railroad Crossing Pavement Marking Layout

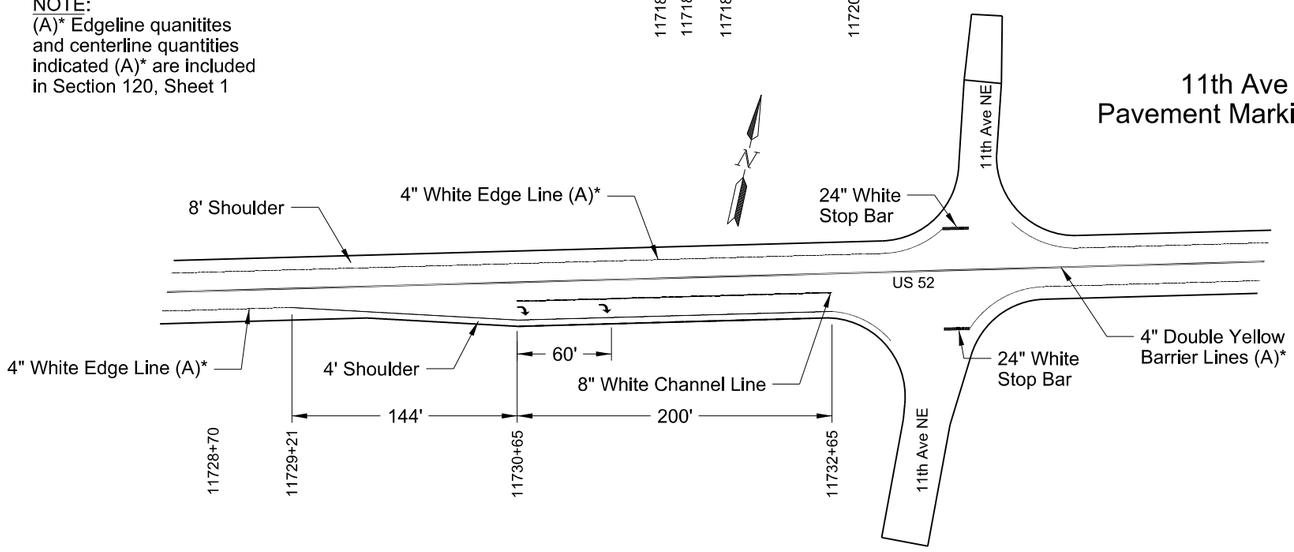


Westbound and Eastbound RR Crossing
STA 11718+37 to STA 11722+55

762 103 PVMT MK PAINTED-MESSAGE	
Bands (6)	144 SF
R (4)	16 SF
Railroad cross (4)	105 SF
Total	265 SF

NOTE:
(A)* Edgeline quanitites and centerline quantities indicated (A)* are included in Section 120, Sheet 1

11th Ave NE Pavement Marking Layout



Eastbound Turn Lane
STA 11729+21 to STA 11732+65

762 103 PVMT MK PAINTED-MESSAGE	
RT Arrows (2)	32 SF

762 1108 PVMT MK PAINTED 8IN LINE	
8" White Channel Line	200 LF

762 1124 PVMT MK PAINTED 24IN LINE	
24" White Stop Bar	34 LF

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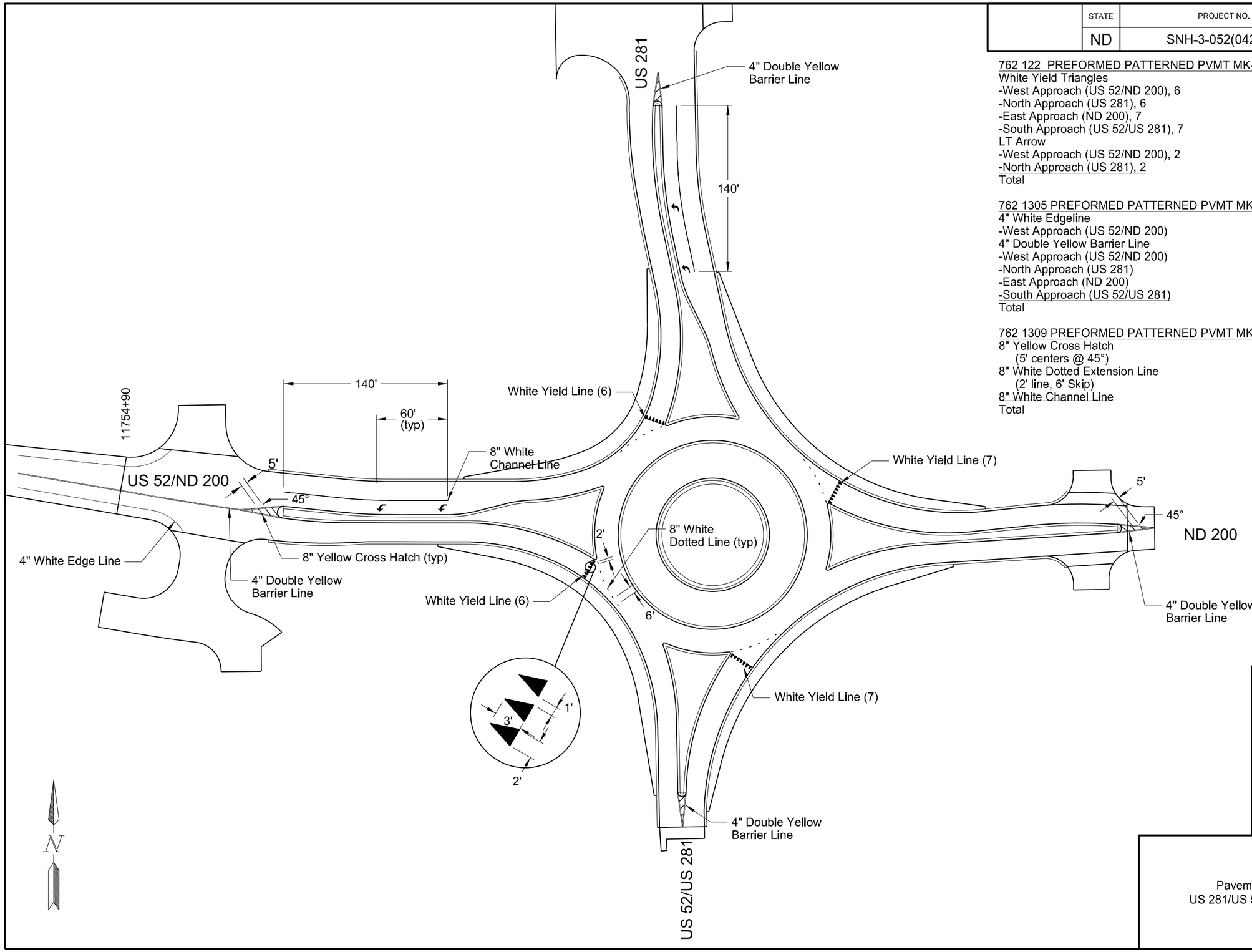
US 52
Pavement Marking Detail
Railroad Crossing & 11th Ave NE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	120	7



762 122 PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)

White Yield Triangles		
-West Approach (US 52/ND 200), 6	18	SF
-North Approach (US 281), 6	18	SF
-East Approach (ND 200), 7	21	SF
-South Approach (US 52/US 281), 7	21	SF
LT Arrow		
-West Approach (US 52/ND 200), 2	32	SF
-North Approach (US 281), 2	32	SF
Total	142	SF

762 1305 PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED

4" White Edgeline		
-West Approach (US 52/ND 200)	106	LF
4" Double Yellow Barrier Line		
-West Approach (US 52/ND 200)	353	LF
-North Approach (US 281)	114	LF
-East Approach (ND 200)	127	LF
-South Approach (US 52/US 281)	118	LF
Total	818	LF

762 1309 PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED

8" Yellow Cross Hatch (5' centers @ 45°)	70	LF
8" White Dotted Extension Line (2' line, 6' Skip)	48	LF
8" White Channel Line	280	LF
Total	398	LF

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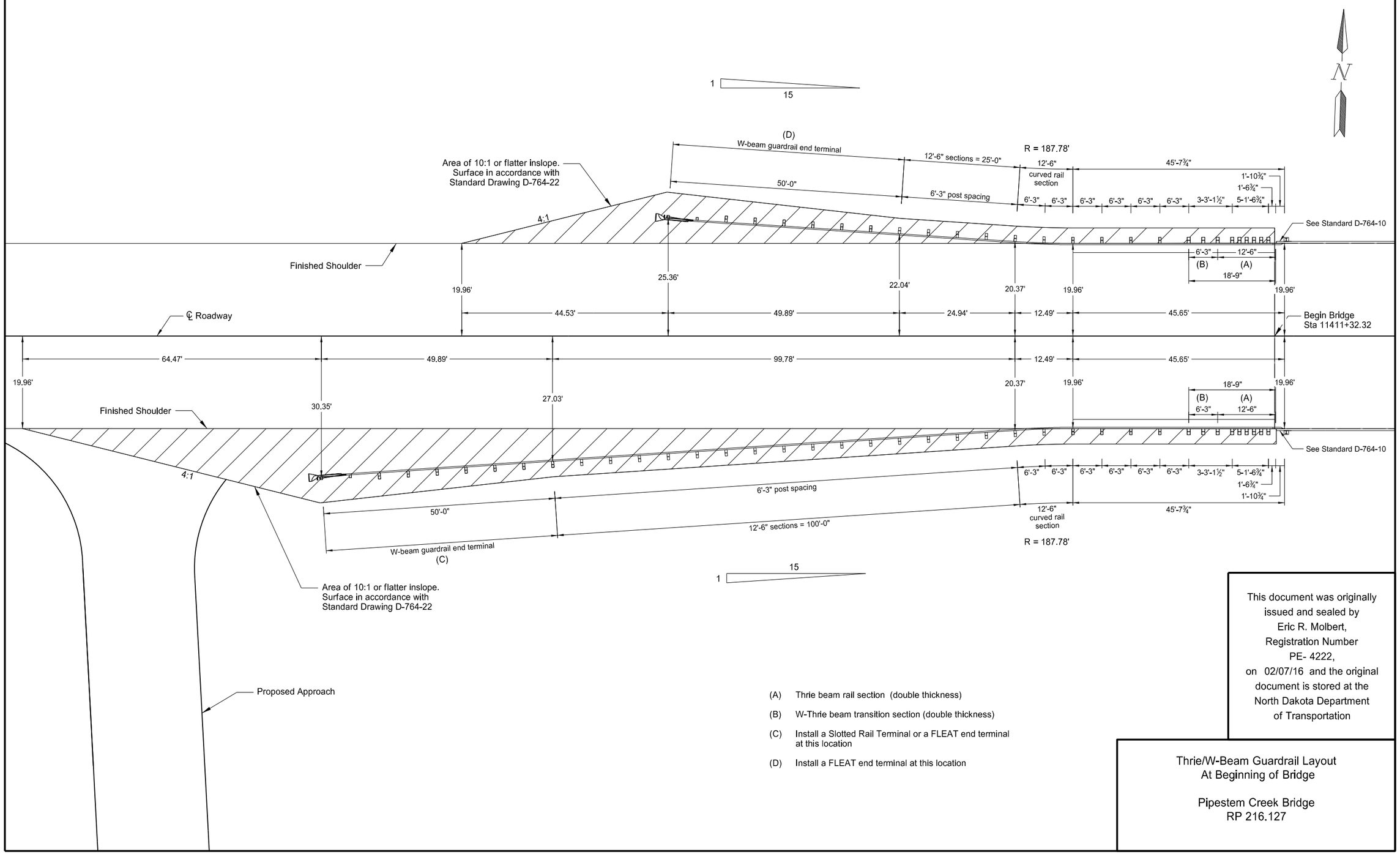
US 52
Pavement Marking Detail
US 281/US 52/ND 200 Roundabout

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	1



(A) Thrie beam rail section (double thickness)

(B) W-Thrie beam transition section (double thickness)

(C) Install a Slotted Rail Terminal or a FLEAT end terminal at this location

(D) Install a FLEAT end terminal at this location

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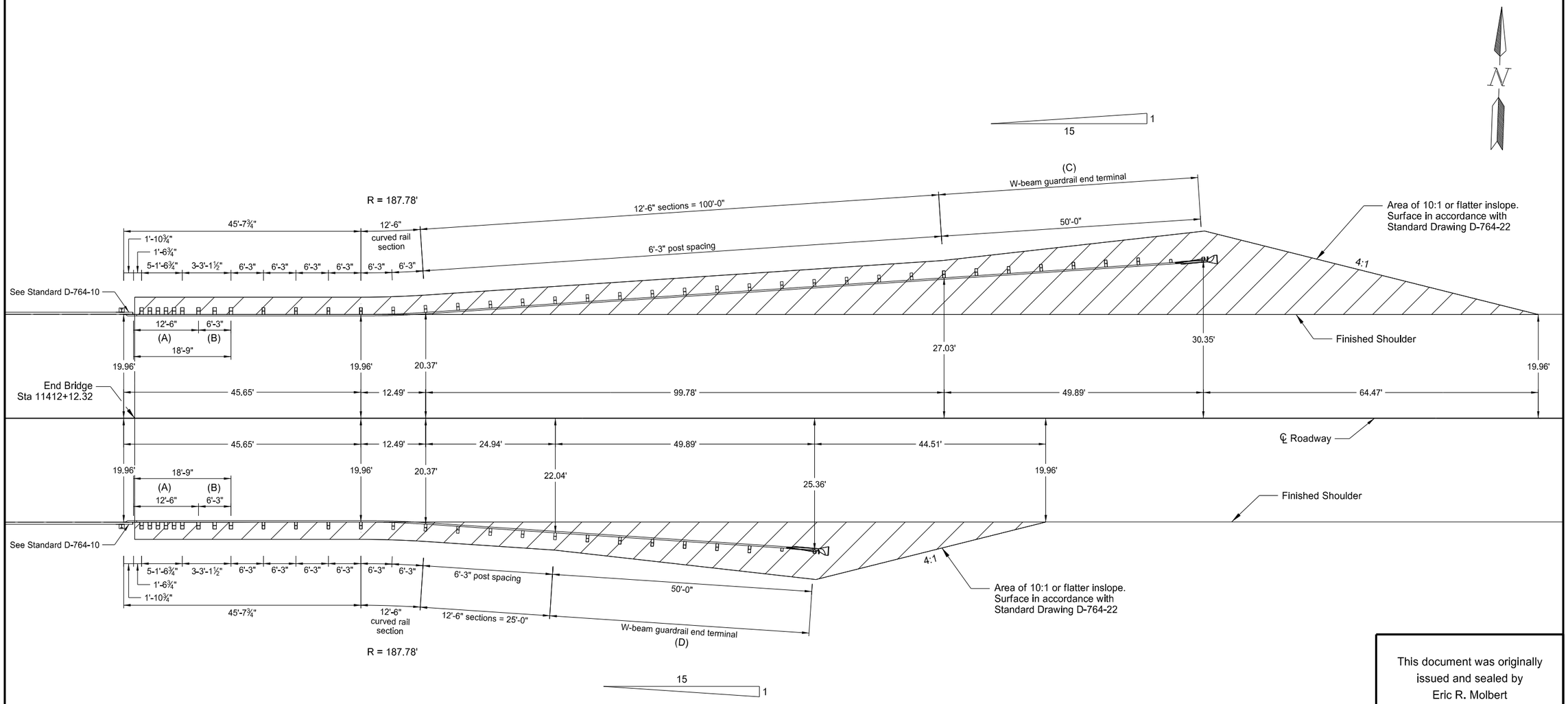
Thrie/W-Beam Guardrail Layout
At Beginning of Bridge

Pipestem Creek Bridge
RP 216.127

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	2



(A) Thrie beam rail section (double thickness)

(B) W-Thrie beam transition section (double thickness)

(C) Install a Slotted Rail Terminal or a FLEAT end terminal at this location

(D) Install a FLEAT end terminal at this location

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Thrie/W-Beam Guardrail Layout
At End of Bridge

Pipestem Creek Bridge
RP 216.127

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	3

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES

THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS

LOCATION	(A) 5/8" @ x 16" LONG BUTTON HEAD BOLT	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 6" x 6" x 14" TIMBER BLOCK	(A) 5/8" @ x 1 1/4" LONG BUTTON HEAD BOLT	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFL-ECTOR-IZED PLATES	(A) 8"x8" x 6' WOOD POST	(A) 8"x8" x 22" WOOD OFF-SET BLOCK	(A) 8"x8" x 18" WOOD OFF-SET BLOCK	(A) 8"x8" x 14" WOOD OFF-SET BLOCK	(A) 6'-3" DOUBLE W-THRIE BEAM TRANS-ITION SECTION	(A) 12'-6" DOUBLE THRIE BEAM SEC-TION	(A) 2' 6" THRIE BEAM TERM-INAL CON-ENECTOR	(A) 5/8" @ x 18" LONG BUT-TON HEAD BOLT	(A) 7/8" @ x VAR-IABLE LONG BOLT	(A) 3/4" @ x 2-1/2" LONG POST BOLT
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 11409+24 to 11411+34 Rt	26	16	26	56	5	1	9	4	2	1	2	1	1	1	7	5	2
Sta 11409+99 to 11411+34 Lt	14	10	14	32	2	1	6	4	2	1	2	1	1	1	7	5	2
Sta 11412+10 to 11413+46 Rt	14	10	14	32	2	1	6	4	2	1	2	1	1	1	7	5	2
Sta 11412+10 to 11414+21 Lt	26	16	26	56	5	1	9	4	2	1	2	1	1	1	7	5	2
TOTAL	80	52	80	176	14	4	30	16	8	4	8	4	4	4	28	20	8

W-beam guardrail

Sta 11409+24 to 11411+34 Rt	62.5	LF
Sta 11409+99 to 11411+34 Lt	25.0	LF
Sta 11412+10 to 11413+46 Rt	25.0	LF
Sta 11412+10 to 11414+21 Lt	62.5	LF
Total	175.0	LF

W-beam guardrail end terminal

Sta 11409+24 to 11411+34 Rt	1	EA
Sta 11409+99 to 11411+34 Lt	1	EA
Sta 11412+10 to 11413+46 Rt	1	EA
Sta 11412+10 to 11414+21 Lt	1	EA
Total	4	EA

Remove W-beam guardrail & posts

Sta 11409+24 to 11411+34 Rt	126.8	LF
Sta 11409+99 to 11411+34 Lt	63.2	LF
Sta 11412+10 to 11413+46 Rt	63.2	LF
Sta 11412+10 to 11414+21 Lt	126.8	LF
Total	379.9	LF

Remove end treatment & transition

Sta 11409+24 to 11411+34 Rt	1	EA
Sta 11409+99 to 11411+34 Lt	1	EA
Sta 11412+10 to 11413+46 Rt	1	EA
Sta 11412+10 to 11414+21 Lt	1	EA
Total	4	EA

Reset W-beam guardrail

Sta 11409+24 to 11411+34 Rt	64.3	LF
Sta 11409+99 to 11411+34 Lt	38.2	LF
Sta 11412+10 to 11413+46 Rt	38.2	LF
Sta 11412+10 to 11414+21 Lt	64.3	LF
Total	204.9	LF

(A) Include these items in the price bid for the item "W-Beam Guardrail".

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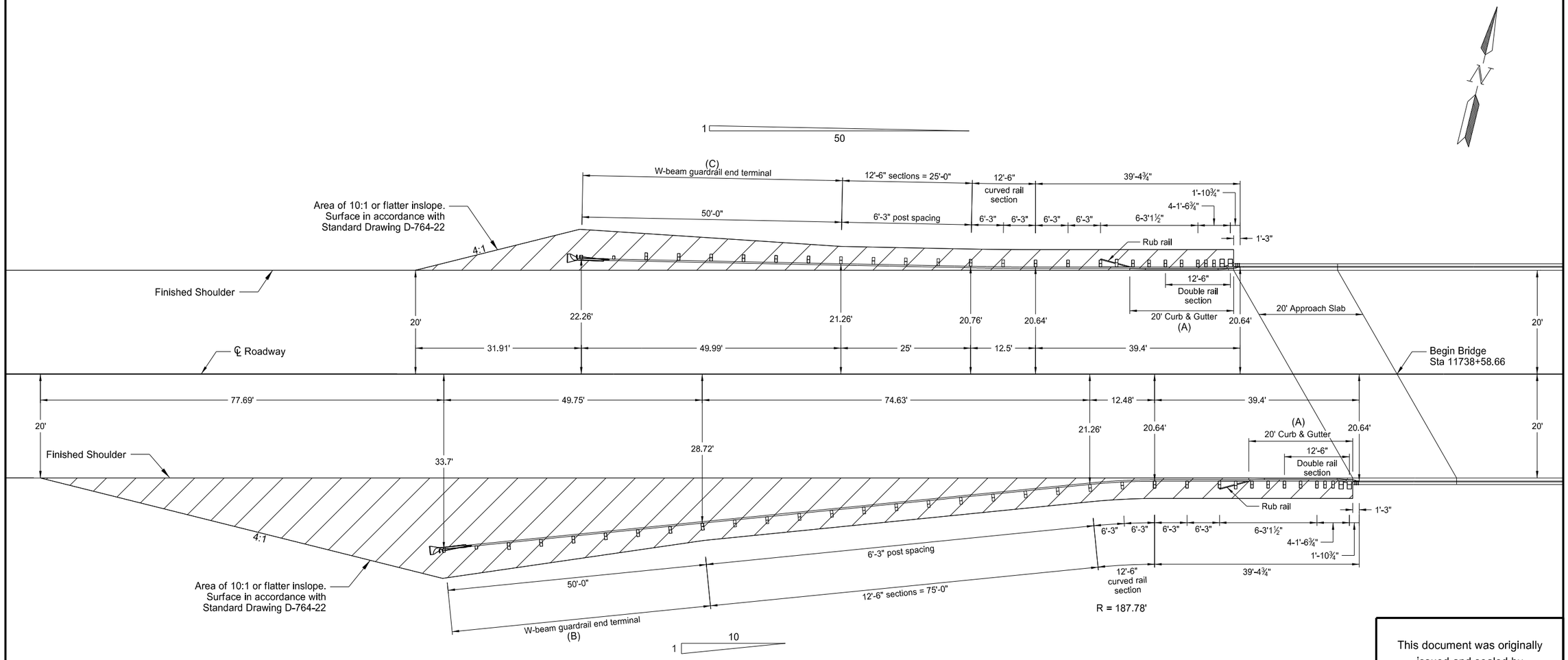
Thrie/W-Beam Guardrail Quantities

Pipestem Creek Bridge

RP 216.127

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	4



(A) Install curb and gutter in accordance with Standard Drawing D-748-1, except that there will be height and width transitions as shown in Standard Drawing D-764-9.

(B) Install a FLEAT end terminal at this location

(C) Install a Sequential Kinking Terminal end terminal at this location

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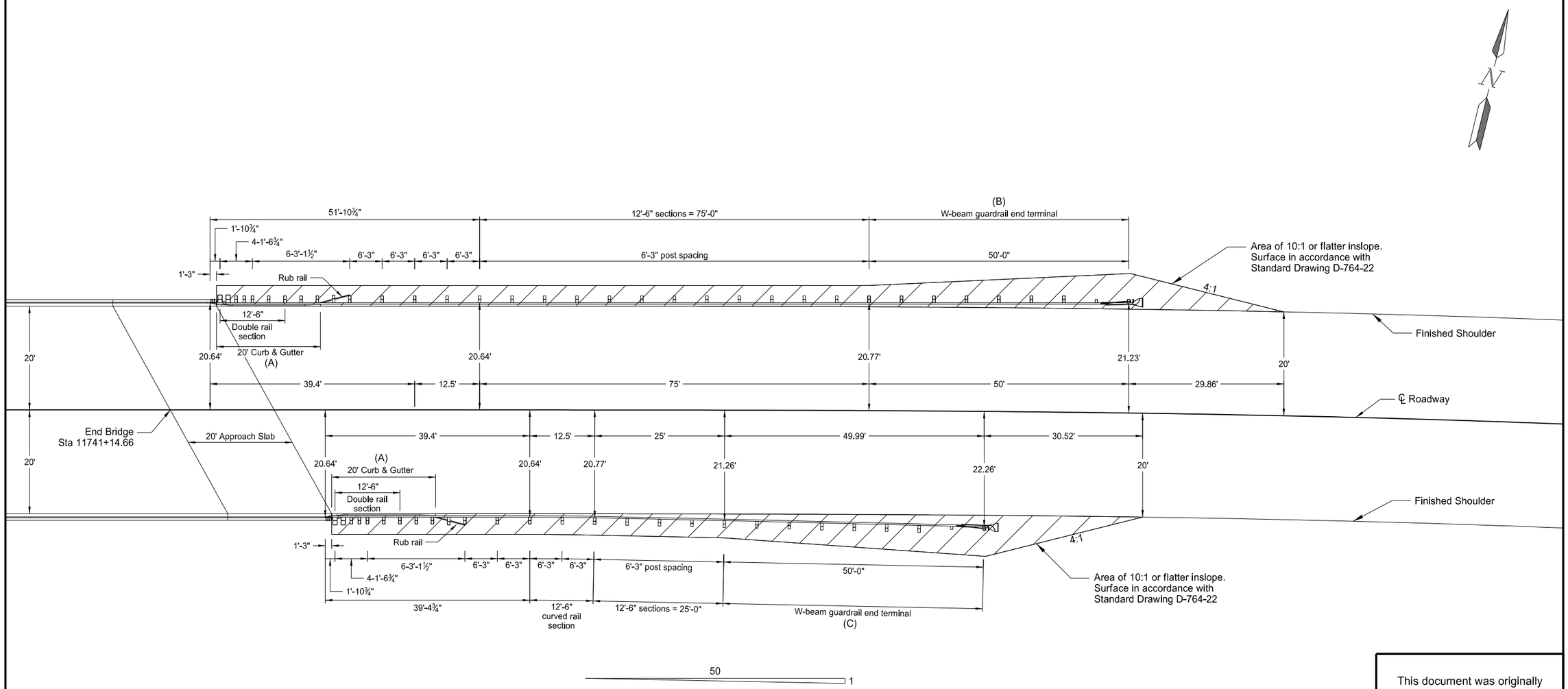
W-Beam Guardrail Layout
At Beginning of Bridge

Canadian Pacific Overhead Bridge
RP 222.340

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	5



(A) Install curb and gutter in accordance with Standard Drawing D-748-1, except that there will be height and width transitions as shown in Standard Drawing D-764-9

(B) Install at FLEAT end terminal at this location

(C) Install a Sequential Kinking Terminal end terminal at this location

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W-Beam Guardrail Layout
At End of Bridge

Canadian Pacific Overhead Bridge
RP 222.340

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	130	6

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES

W-BEAM GUARDRAIL AT BRIDGE ENDS

LOCATION	(A) TERM-INAL CON-NECTOR	(A) 5/8" Ø x 22" LONG GUARD-RAIL BOLT	(A) 5/8" Ø x 20" LONG GUARD-RAIL BOLT	(A) 7/8" Ø x 9" LONG H.S. HEX HEAD BOLT	(A) 5/8" Ø x 18" LONG GUARD-RAIL BOLT	(A) 6"x 8" x 14" WOOD OFF-SET BLOCK	(A) 6"x 8" x 6' TIMBER POST	(A) 5/8" Ø x 1 1/4" LONG GUARD-RAIL BOLT	(A) 12'-6" DOUBLE RAIL SECTION	(A) 12'-6" STRAIGHT RAIL SECTION	(A) 12'-6" CURVED RAIL SECTION	(A) 5/8" Ø x 11" LONG HEX HEAD BOLT	(A) 1/2" Ø x 4" LONG LAG SCREW	(A) 6" x 8" x 7'-0" TIMBER POSTS	(A) RUB RAIL END SHOE	(A) C 6 x 8.2 x 14'-6 1/4" RUB RAIL SECTION	(A) C 6 x 8.2 x 12'-7" BENT RUB RAIL SECTION	(A) 5/8" Ø x 1 1/2" LONG GUARD-RAIL BOLT	(A) 7 3/4" x 4 ½" x 3/8" RUB RAIL SPLICE PLATE	(A) 10"x 10" x 8'-0" TIMBER POST	(A) 10"x 8" x 21" TAPERED TIMBER BLOCK	(A) 6"x 8" x 21" TIMBER BLOCK	(A) 6"x 9 3/4" x 14" TIMBER BLOCK	(A) REFL-ECTOR-IZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 11736+71 to 11738+50 Rt	1	2	10	4	18	11	16	64	1	5	1	2	1	3	1	1	1	4	1	2	2	7	1	11
Sta 11736+99 to 11738+28 Lt	1	2	10	4	14	7	12	48	1	3	1	2	1	3	1	1	1	4	1	2	2	7	1	9
Sta 11741+44 to 11742+74 Rt	1	2	10	4	14	7	12	48	1	3	1	2	1	3	1	1	1	4	1	2	2	7	1	9
Sta 11741+21 to 11743+01 Lt	1	2	10	4	16	9	14	56	1	5		2	1	3	1	1	1	4	1	2	2	7	1	11
TOTAL	4	8	40	16	62	34	54	216	4	16	3	8	4	12	4	4	4	16	4	8	8	28	4	40

W-beam guardrail

Sta 11736+71 to 11738+50 Rt	62.5	LF
Sta 11736+99 to 11738+28 Lt	37.5	LF
Sta 11741+44 to 11742+74 Rt	37.5	LF
Sta 11741+21 to 11743+00 Lt	62.5	LF
Total	200.0	LF

Reset W-beam guardrail

Sta 11736+71 to 11738+50 Rt	84.5	LF
Sta 11736+99 to 11738+28 Lt	48.5	LF
Sta 11741+44 to 11742+74 Rt	48.0	LF
Sta 11741+21 to 11743+00 Lt	85.4	LF
Total	266.4	LF

(A) Include these items in the price bid for the item "W-Beam Guardrail"

W-beam guardrail end terminal

Sta 11736+71 to 11738+50 Rt	1	ea
Sta 11736+99 to 11738+28 Lt	1	ea
Sta 11741+44 to 11742+74 Rt	1	ea
Sta 11741+21 to 11743+00 Lt	1	ea
Total	4	ea

Remove end treatment & transition

Sta 11736+71 to 11738+50 Rt	1	ea
Sta 11736+99 to 11738+28 Lt	1	ea
Sta 11741+44 to 11742+74 Rt	1	ea
Sta 11741+21 to 11743+00 Lt	1	ea
Total	4	ea

Remove W-beam guardrail & posts

Sta 11736+71 to 11738+50 Rt	147.0	LF
Sta 11736+99 to 11738+28 Lt	86.0	LF
Sta 11741+44 to 11742+74 Rt	85.5	LF
Sta 11741+21 to 11743+00 Lt	147.9	LF
Total	466.4	LF

Curb & Gutter - Type I Special

Sta 11736+71 to 11738+50 Rt	20.0	LF
Sta 11736+99 to 11738+28 Lt	20.0	LF
Sta 11741+44 to 11742+74 Rt	20.0	LF
Sta 11741+21 to 11743+00 Lt	20.0	LF
Total	80.0	LF

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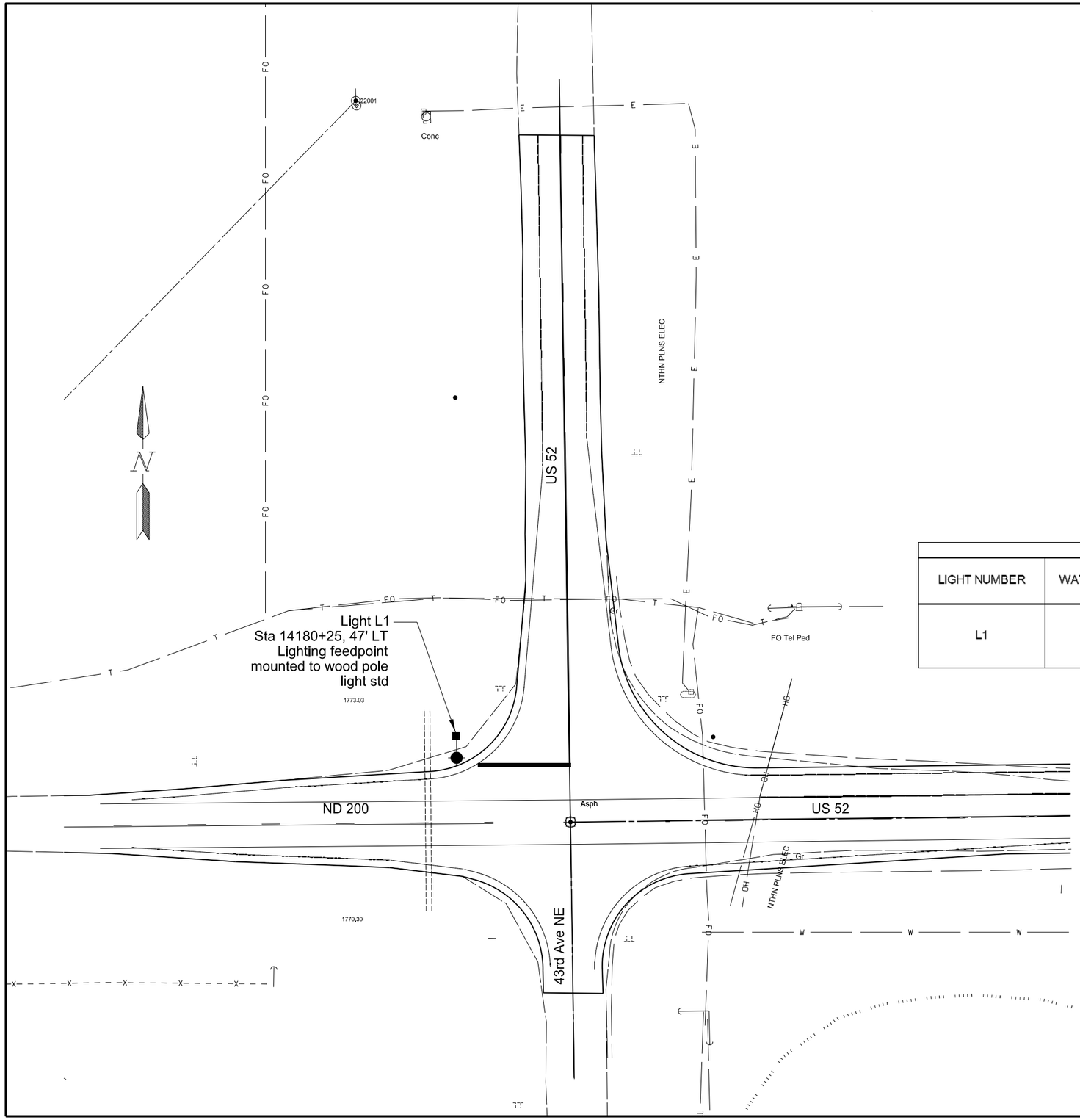
W-Beam Guardrail Quantities

Canadian Pacific Overhead Bridge

RP 222.340

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	1



770 0007 DESTINATION LIGHTING 1 EA

Lighting Quantities (A)				
FEED POINT-TYPE II-POLE MOUNTED	LED LUMINAIRE	50FT WOOD SERVICE POLE		DESTINATION LIGHTING
EA	EA	EA		EA
1	1	1		1

(A) Include these items in the contract unit price for "Destination Lighting."

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L1	LED	II	Wooden Pole	38'±	10'	Wooden pole to be 50' overall in length. Luminaire to have a minimum mounting height of approximatly 38' to roadway surface. Luminaire operated at 240V

Note:
1. 32' clear zone used

This document was originally issued and sealed by Christopher Horner, Registration Number PE- 5949, on 02/01/16 and the original document is stored at the North Dakota Department of Transportation

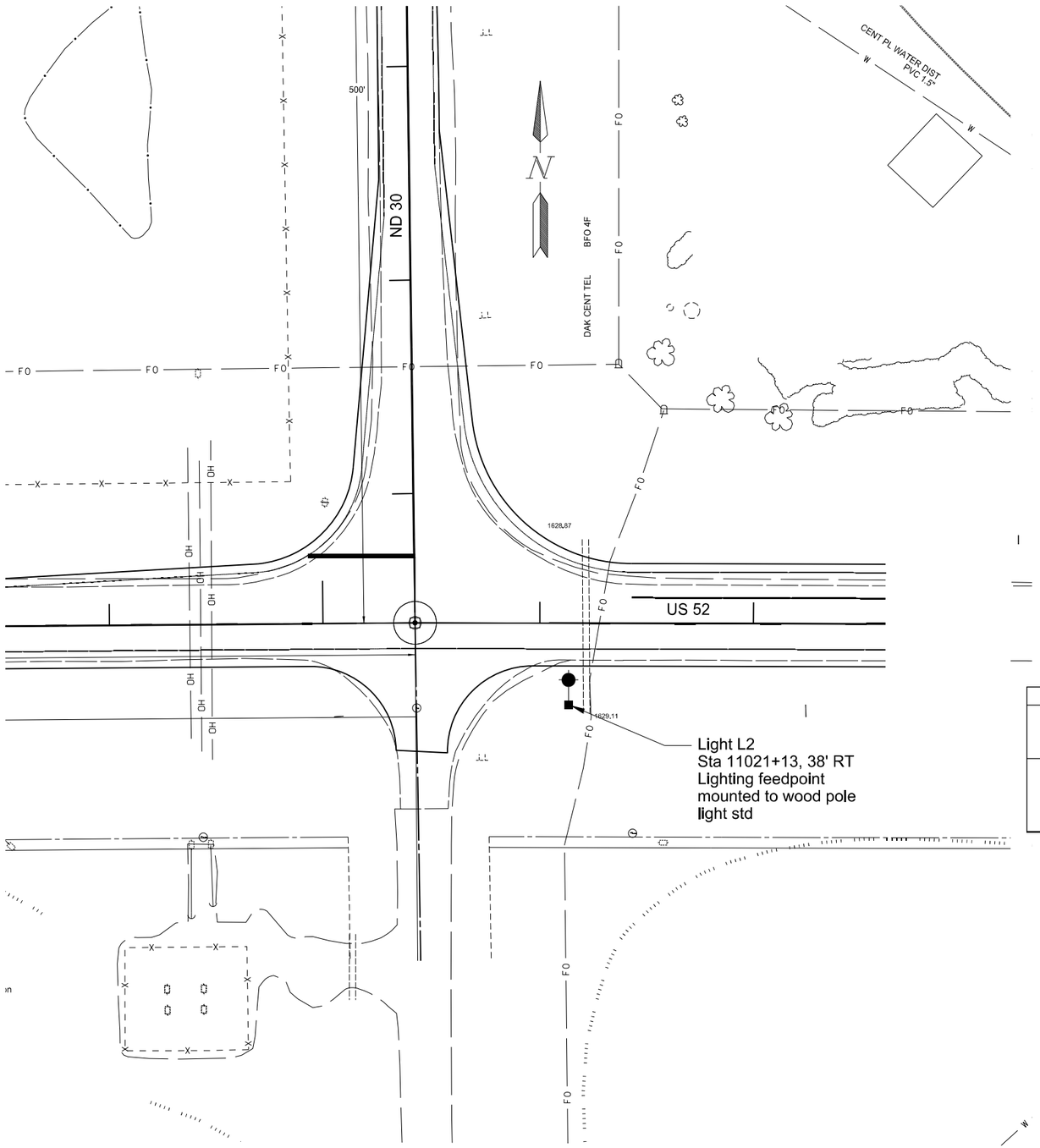
Destination Lighting

Lighting Layout

US 52/W Jct ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	2

770 0007 DESTINATION LIGHTING 1 EA



Lighting Quantities (A)				
FEED POINT-TYPE II-PAD MOUNTED	LED LUMINAIRE	50FT WOOD SERVICE POLE		DESTINATION LIGHTING
EA	EA	EA		EA
1	1	1		1

(A) Include these items in the contract unit price for "Destination Lighting."

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L2	LED	II	Wooden Pole	38'±	10'	Wooden pole to be 50' overall in length. Luminaire to have a minimum mounting height of approximatly 38' to roadway surface. Luminaire operated at 240V

Note:
1. 32' clear zone used

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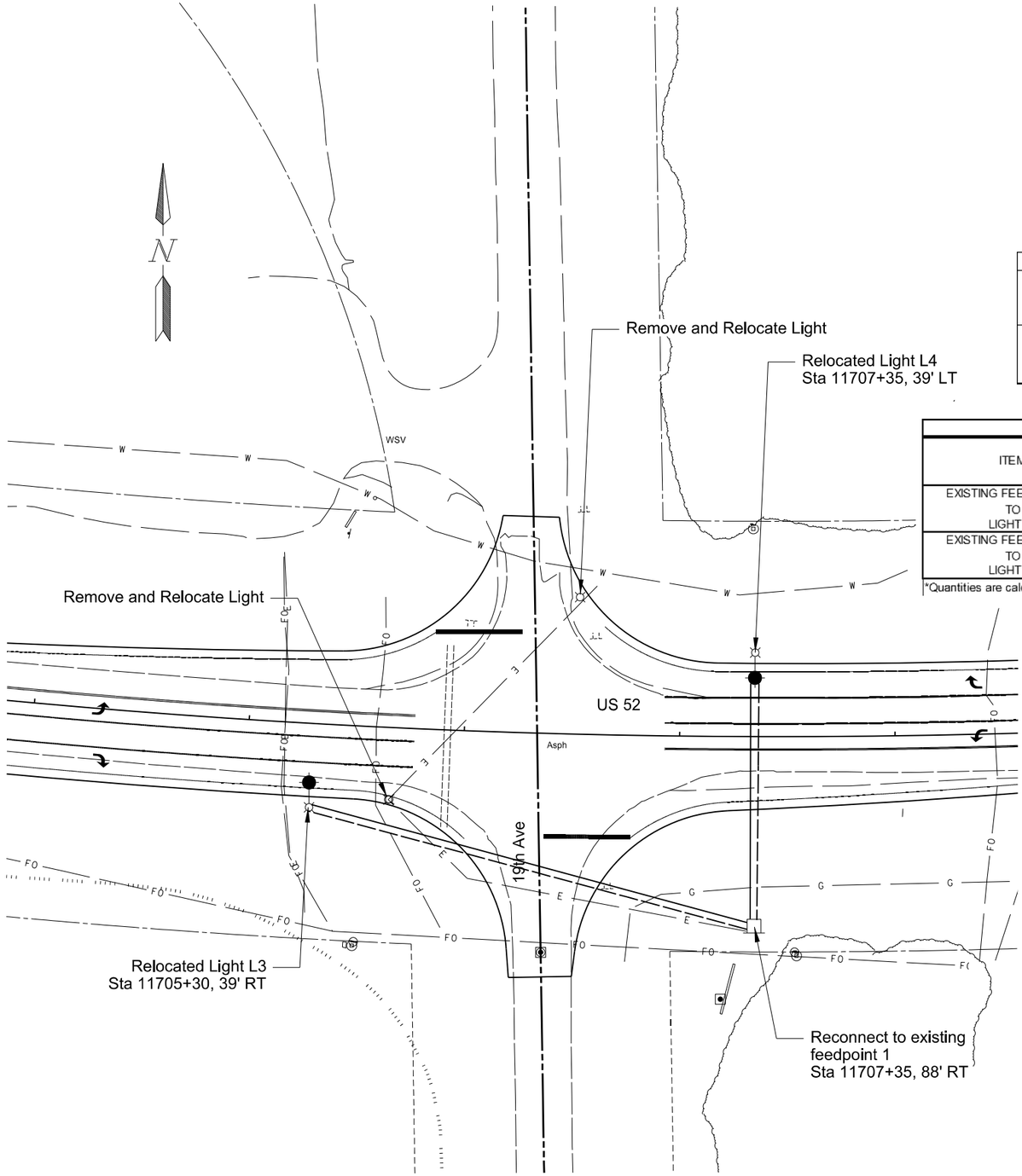
Destination Lighting

Lighting Layout

US 52/ND 30

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	3

770 4525 REVISE LIGHTING SYSTEM 1 EA



LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L3,L4	Existing	-	Existing	-	-	Install existing light standard on new concrete foundation.

CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		WIRE RUN	
		TOTAL L.F.	SIZE IN INCHES TYPE	TOTAL L.F.	(QUANTITY) SIZE - TYPE Remarks
EXISTING FEED POINT 1 TO LIGHT L3	11707+35, 88' RT to 11705+30, 39' RT	215	2"	458 229	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW
EXISTING FEED POINT 1 TO LIGHT L4	11707+35, 88' RT to 11707+35, 39' LT	127	2"	282 141	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate horizontal distances

Lighting Quantities (A)

REMOVE CONCRETE FOUNDATION	CONCRETE FOUNDATION-HIGHWAY LIGHTING	2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO6-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	RELOCATE LIGHT STANDARD	RELOCATE LUMINAIRE		REVISE LIGHTING SYSTEM
EA	EA	LF	LF	LF	EA	EA		EA
2	2	342	740	370	2	2		1

(A) Include these items in the contract unit price for "Revise Lighting System."

Notes:
1. 26' clear zone used
2. Place light poles 5' from the edge of pavement

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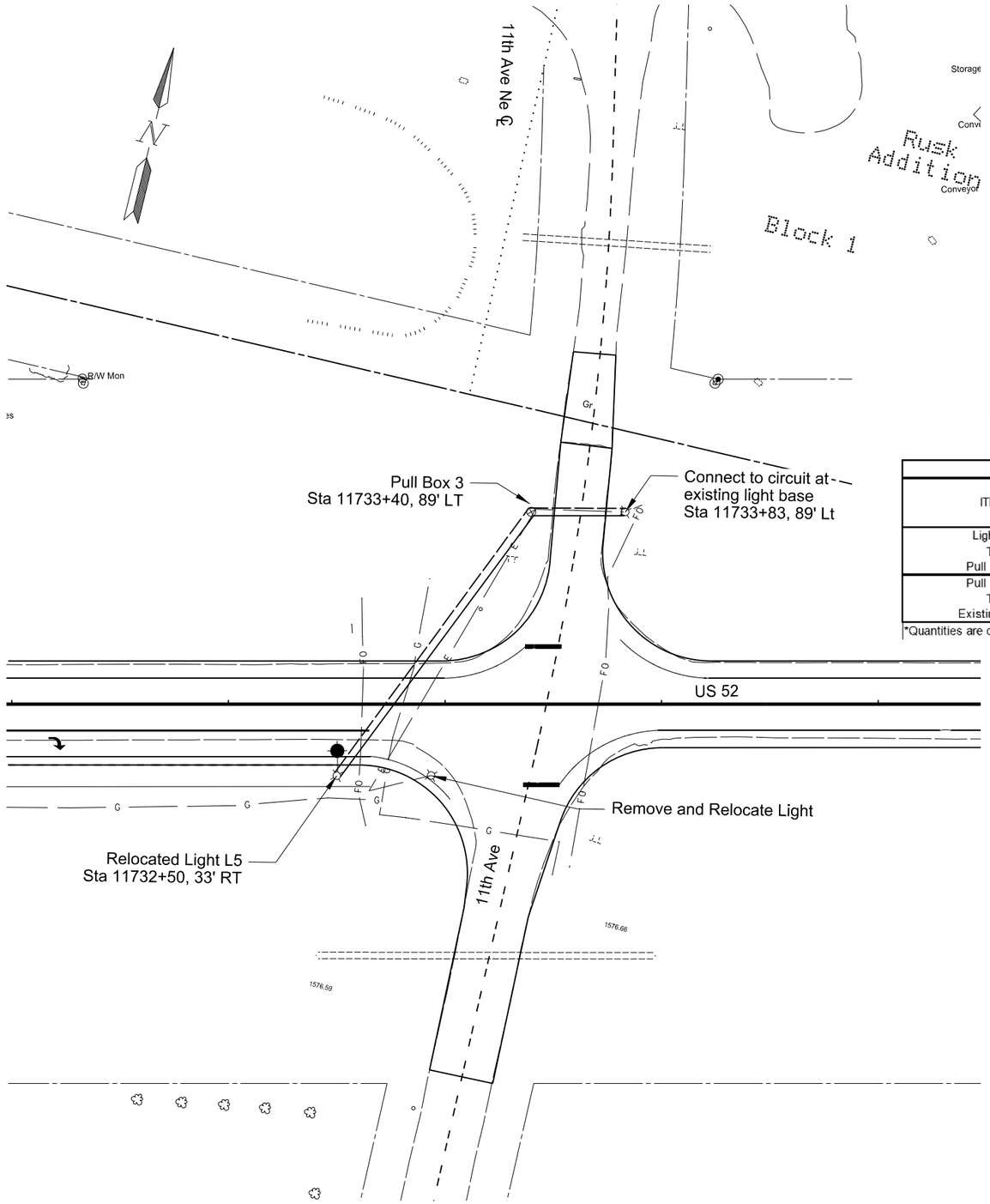
Lighting Modifications

Lighting Layout

US 52/19th Avenue

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	4

770 4525 REVISE LIGHTING SYSTEM 1 EA



LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L5	Existing	-	Existing	-	-	Install existing light standard on new concrete foundation.

CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		WIRE RUN	
		TOTAL L.F.	SIZE IN INCHES TYPE	TOTAL L.F.	(QUANTITY) SIZE - TYPE Remarks
Light L5 TO Pull Box 3	11732+50, 33' RT to 11733+40, 89' LT	151	2"	318 159	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Pull Box 3 TO Existing Light	11733+40, 89' LT to 11733+83, 89' LT	43	2"	102 51	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate vertical and horizontal distances

Lighting Quantities (A)

REMOVE CONCRETE FOUNDATION	CONCRETE FOUNDATION-HIGHWAY LIGHTING	PULL BOX	2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO6-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	RELOCATE LIGHT STANDARD	RELOCATE LUMINAIRE		REVISE LIGHTING SYSTEM
EA	EA	EA	LF	LF	LF	EA	EA		EA
1	1	1	194	420	210	1	1		1

(A) Include these items in the contract unit price for "Revise Lighting System."

Notes:
1. 26' clear zone used
2. Place light poles 5' from the edge of pavement

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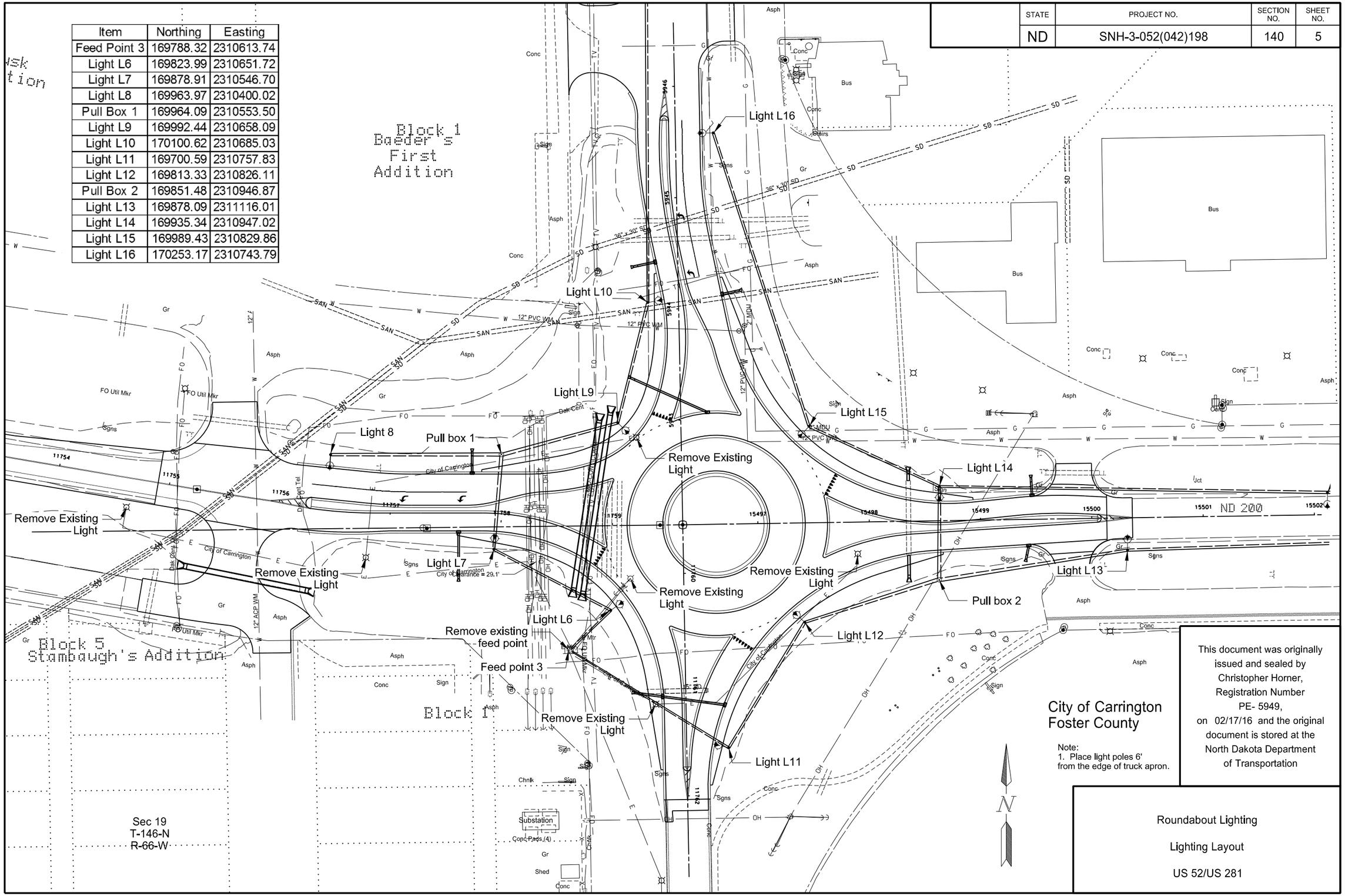
Lighting Modifications

Lighting Layout

US 52/11th Avenue

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	5

Item	Northing	Easting
Feed Point 3	169788.32	2310613.74
Light L6	169823.99	2310651.72
Light L7	169878.91	2310546.70
Light L8	169963.97	2310400.02
Pull Box 1	169964.09	2310553.50
Light L9	169992.44	2310658.09
Light L10	170100.62	2310685.03
Light L11	169700.59	2310757.83
Light L12	169813.33	2310826.11
Pull Box 2	169851.48	2310946.87
Light L13	169878.09	2311116.01
Light L14	169935.34	2310947.02
Light L15	169989.43	2310829.86
Light L16	170253.17	2310743.79



City of Carrington
Foster County

Note:
1. Place light poles 6' from the edge of truck apron.

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Roundabout Lighting

Lighting Layout

US 52/US 281

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	6

770 0001 LIGHTING SYSTEM 1 EA

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS TYPE	STANDARDS MTG. HT.	STANDARDS ARM LG.	REMARKS
L6 - L16	LED	III	Round Tapered Steel	40'	12'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.

CABLE & CONDUIT SCHEDULE

ITEM	NORTHING	EASTING	CONDUIT RUN TOTAL L.F.	CONDUIT RUN SIZE IN INCHES TYPE	WIRE RUN TOTAL L.F.	WIRE RUN (QUANTITY) SIZE - TYPE Remarks
FEED POINT 3 TO LIGHT L6	169788.32 169823.99	2310613.74 2310651.72	52	2"	132 66	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L6 TO LIGHT L7	169823.99 169878.91	2310651.72 2310546.7	119	2"	254 127	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L7 TO PULL BOX 1	169878.91 169964.09	2310546.7 2310553.5	85	2"	184 92	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
PULL BOX 1 TO LIGHT L8	169964.09 169963.97	2310553.5 2310400.02	154	2"	644 322	(4) UNDERGROUND CONDUCTOR NO. 4 RHW (2) UNDERGROUND CONDUCTOR NO. 6 THW
PULL BOX 1 TO LIGHT L9	169964.09 169992.44	2310553.5 2310658.09	108	2"	230 115	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L9 TO LIGHT L10	169992.44 170100.62	2310658.09 2310685.03	111	2"	238 119	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
FEED POINT 3 TO LIGHT L11	169788.32 169700.59	2310613.74 2310757.83	168	2"	364 182	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L11 TO LIGHT L12	169700.59 169813.33	2310757.83 2310826.11	134	2"	284 142	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L12 TO PULL BOX 2	169813.33 169851.48	2310826.11 2310946.87	127	2"	268 134	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
PULL BOX 2 TO LIGHT L13	169851.48 169878.09	2310946.87 2311116.01	171	2"	712 356	(4) UNDERGROUND CONDUCTOR NO. 4 RHW (2) UNDERGROUND CONDUCTOR NO. 6 THW
PULL BOX 2 TO LIGHT L14	169851.48 169935.34	2310946.87 2310947.02	84	2"	182 91	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L14 TO LIGHT L15	169935.34 169989.43	2310947.02 2310829.86	129	2"	274 137	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
LIGHT L15 TO LIGHT L16	169989.43 170253.17	2310829.86 2310743.79	277	2"	570 285	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate horizontal distances

Lighting Quantities (A)

CONCRETE FOUNDATION-HIGHWAY LIGHTING	PULL BOX	2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO4-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	FEED POINT-TYPE II-PAD MOUNTED	LT STD 12FT MA 40FT MT HT	LED LUMINAIRE	REMOVE LIGHT STANDARD	REMOVE WOOD POLE LIGHT STANDARD	REMOVE CONCRETE FOUNDATION	REMOVE FEED POINT		LIGHTING SYSTEM
EA	EA	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA		EA
11	2	1719	4336	2168	1	11	11	5	1	5	1		1

(A) Include these items in the contract unit price for " Lighting System."

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Roundabout Lighting

Quantities

US 52/US 281

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	7

770 0001 LIGHTING SYSTEM 1 EA

CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN TOTAL L.F.	CONDUIT RUN SIZE IN INCHES TYPE	WIRE RUN TOTAL L.F.	WIRE RUN (QUANTITY) SIZE - TYPE Remarks
Light L10 TO Light L17	5944+06, 28' RT to 5947+33, 23' LT	327	2"	670 335	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L17 TO Light L19	5947+33, 23' LT to 5950+88, 23' LT	355	2"	726 363	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L19 TO Light L21	5950+88, 23' LT to 5954+43, 23' LT	355	2"	726 363	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L17 TO Pull Box 4	5947+33, 23' LT to 5947+33, 35' RT	58	2"	130 65	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Pull Box 4 TO Light L18	5947+33, 35' RT to 5949+13, 24' RT	180	2"	380 190	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L18 TO Light L20	5949+13, 24' RT to 5952+68, 24' RT	355	2"	726 363	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate horizontal distances

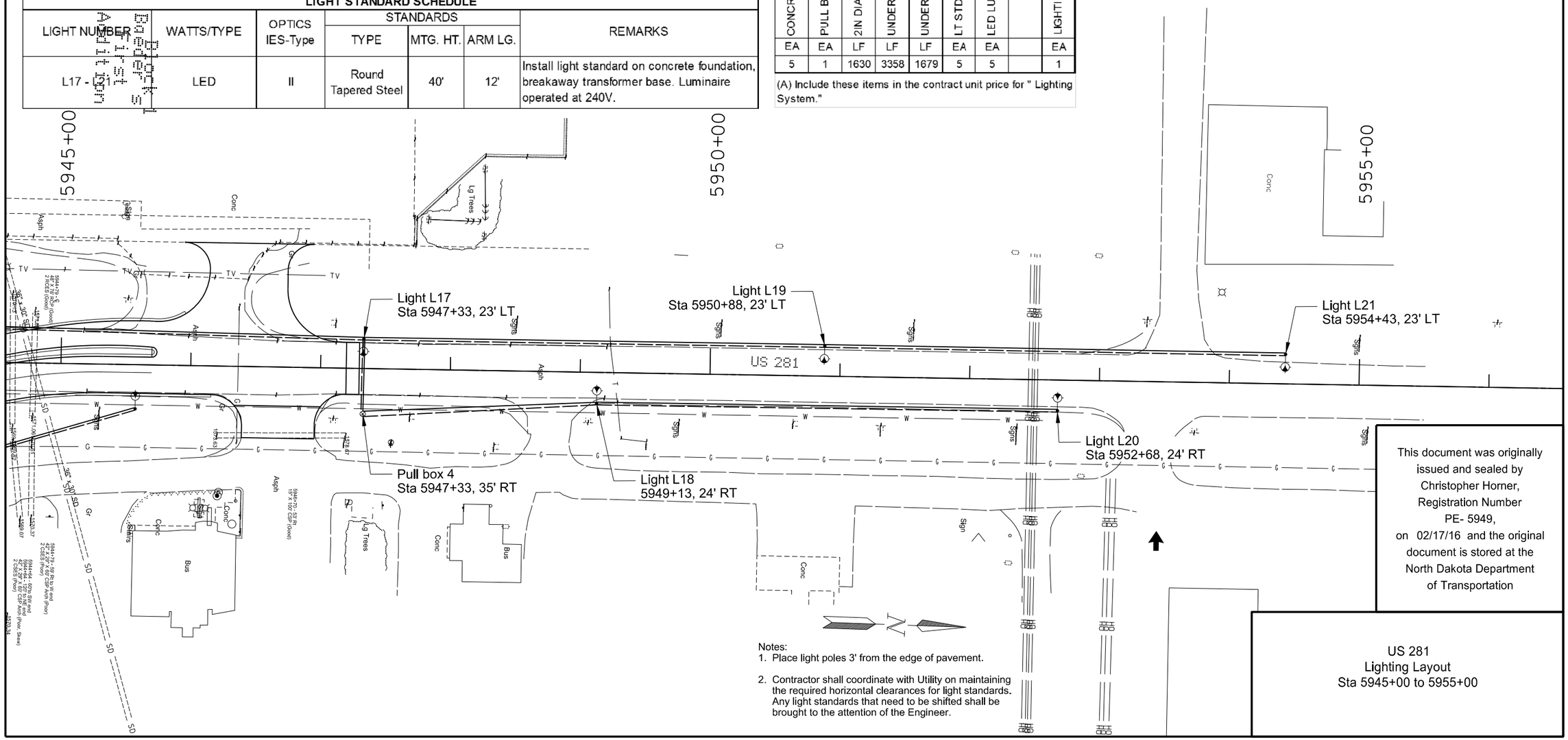
LIGHT STANDARD SCHEDULE

LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS TYPE	STANDARDS MTG. HT.	STANDARDS ARM LG.	REMARKS
L17 - L21	LED	II	Round Tapered Steel	40'	12'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.

Lighting Quantities (A)

CONCRETE FOUNDATION-HIGHWAY LIGHTING	PULL BOX	2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO4-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	LT STD 12FT MA 40FT MT HT	LED LUMINAIRE		LIGHTING SYSTEM
EA	EA	LF	LF	LF	EA	EA		EA
5	1	1630	3358	1679	5	5		1

(A) Include these items in the contract unit price for " Lighting System."



Notes:
1. Place light poles 3' from the edge of pavement.
2. Contractor shall coordinate with Utility on maintaining the required horizontal clearances for light standards. Any light standards that need to be shifted shall be brought to the attention of the Engineer.

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US 281
Lighting Layout
Sta 5945+00 to 5955+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	8

CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		WIRE RUN	
		TOTAL L.F.	SIZE IN INCHES TYPE	TOTAL L.F.	(QUANTITY) SIZE - TYPE Remarks
Light L14 TO Light L22	15498+64, 31' LT to 15502+12, 20' LT	349	2"	714 357	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L22 TO Light L24	15502+12, 20' LT to 15505+57, 20' LT	345	2"	706 353	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L24 TO Light L26	15505+57, 20' LT to 15508+77, 20' LT	320	2"	656 328	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L13 TO Light L23	15500+32, 29' RT to 15504+02, 23' RT	371	2"	758 379	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW
Light L23 TO Light L25	15504+02, 23' RT to 15507+17, 23' RT	315	2"	646 323	(2) UNDERGROUND CONDUCTOR NO. 4 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate horizontal distances

LIGHT STANDARD SCHEDULE

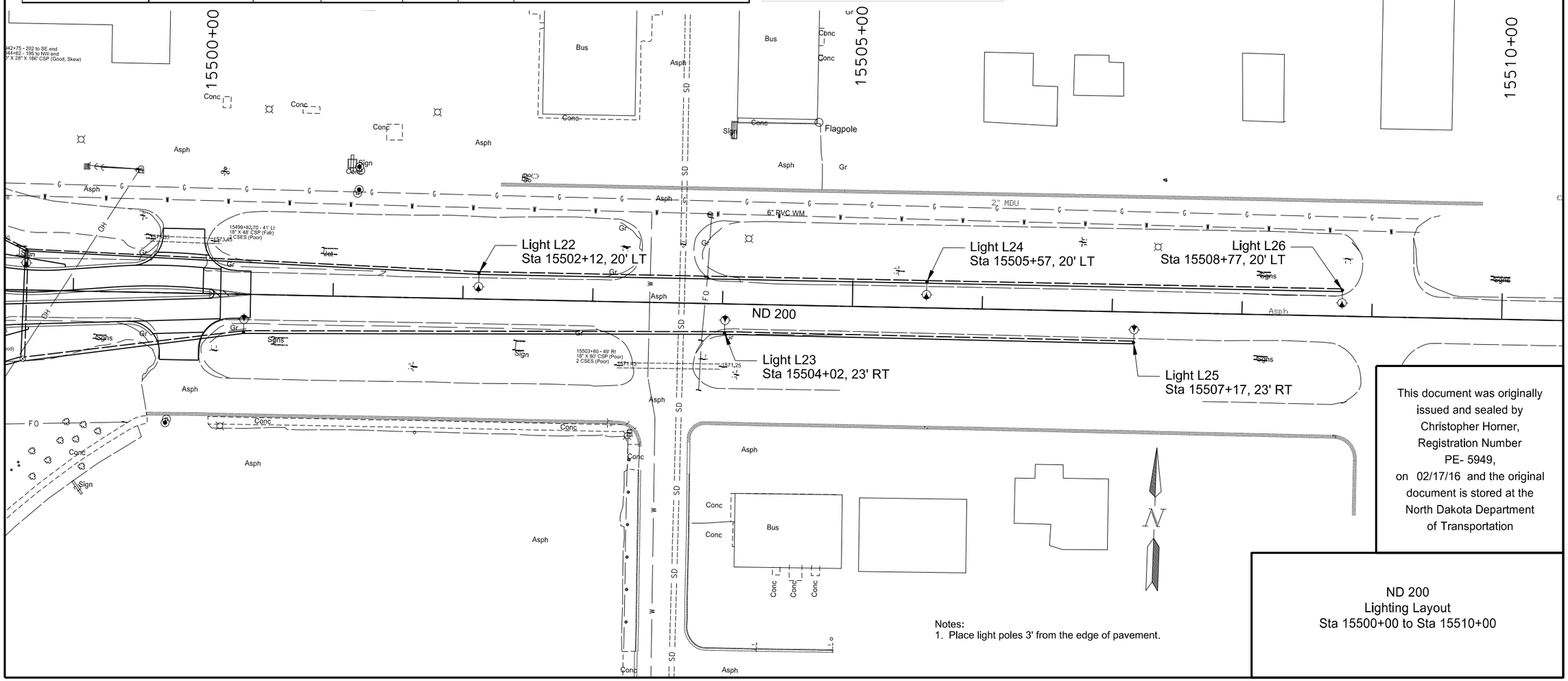
LIGHT NUMBER	WATTS/TYPE	OPTICS IES-Type	STANDARDS			REMARKS
			TYPE	MTG. HT.	ARM LG.	
L22 - L26	LED	II	Round Tapered Steel	40'	12'	Install light standard on concrete foundation, breakaway transformer base. Luminaire operated at 240V.

Lighting Quantities (A)

CONCRETE FOUNDATION-HIGHWAY LIGHTING	2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO4-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	LT STD 12FT MA 40FT MT HT	LED LUMINAIRE		LIGHTING SYSTEM
EA	EA	LF	LF	EA	EA		EA
5	1700	3480	1740	5	5		1

(A) Include these items in the contract unit price for " Lighting System."

770 0001 LIGHTING SYSTEM 1 EA



Notes:
1. Place light poles 3' from the edge of pavement.

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ND 200
Lighting Layout
Sta 15500+00 to Sta 15510+00

LIGHT STANDARD FOUNDATION SELECTION TABLE		
Description	Footing Depth "D" 24" & 30" Diameter	Footing Depth "D" 36" & 42" Diameter
Light Standard		
40' Mounting Height (12' Single Mast Arm)	8'	7'

NOTES FOR LIGHT STANDARD FOUNDATIONS:

1. For Light Standards, the foundation diameter will be the largest of the following scenarios:

   - Anchor bolt circle diameter plus 12"
   - Light base plus 6"
   - 24"

   It is the contractor's responsibility to determine the foundation diameter and include the corresponding costs for the actual diameter in the unit price bid for "CONCRETE FOUNDATION-HIGHWAY LIGHTING".

2. The contractor may use temporary casing to maintain the opening prior to placement of concrete. The casing will be removed prior to curing of the concrete. If casing is used, it will be of sufficient strength to withstand handling and installation procedures. The contractor will submit a casing material proposal to the engineer for review two weeks prior to ordering casing material. Include all costs associated with the temporary casing in the unit price bid for "CONCRETE FOUNDATION-HIGHWAY LIGHTING". Permanent casing of the foundation will not be used.

3. Include all costs associated with the construction of the foundation in the unit price bid for "CONCRETE FOUNDATION-HIGHWAY LIGHTING". This includes but not limited to excavation, concrete, reinforcing steel, anchor bolts and ground rod.

4. See Standard Drawing D-770-1 for additional foundation information.

5. Light standards will have a minimum of 4 anchor bolts.

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US 52

CONCRETE FOUNDATIONS
HIGHWAY LIGHTING

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	10

LEGEND

- LED LUMINAIRE, 240 VOLT
- LIGHT STANDARD, REFER TO SCHEDULES AND SPECS
- PHASE A CONDUCTOR
- PHASE B CONDUCTOR
- EQUIP GROUND CONDUCTOR
- IN-LINE FUSE, REFER TO SPECS

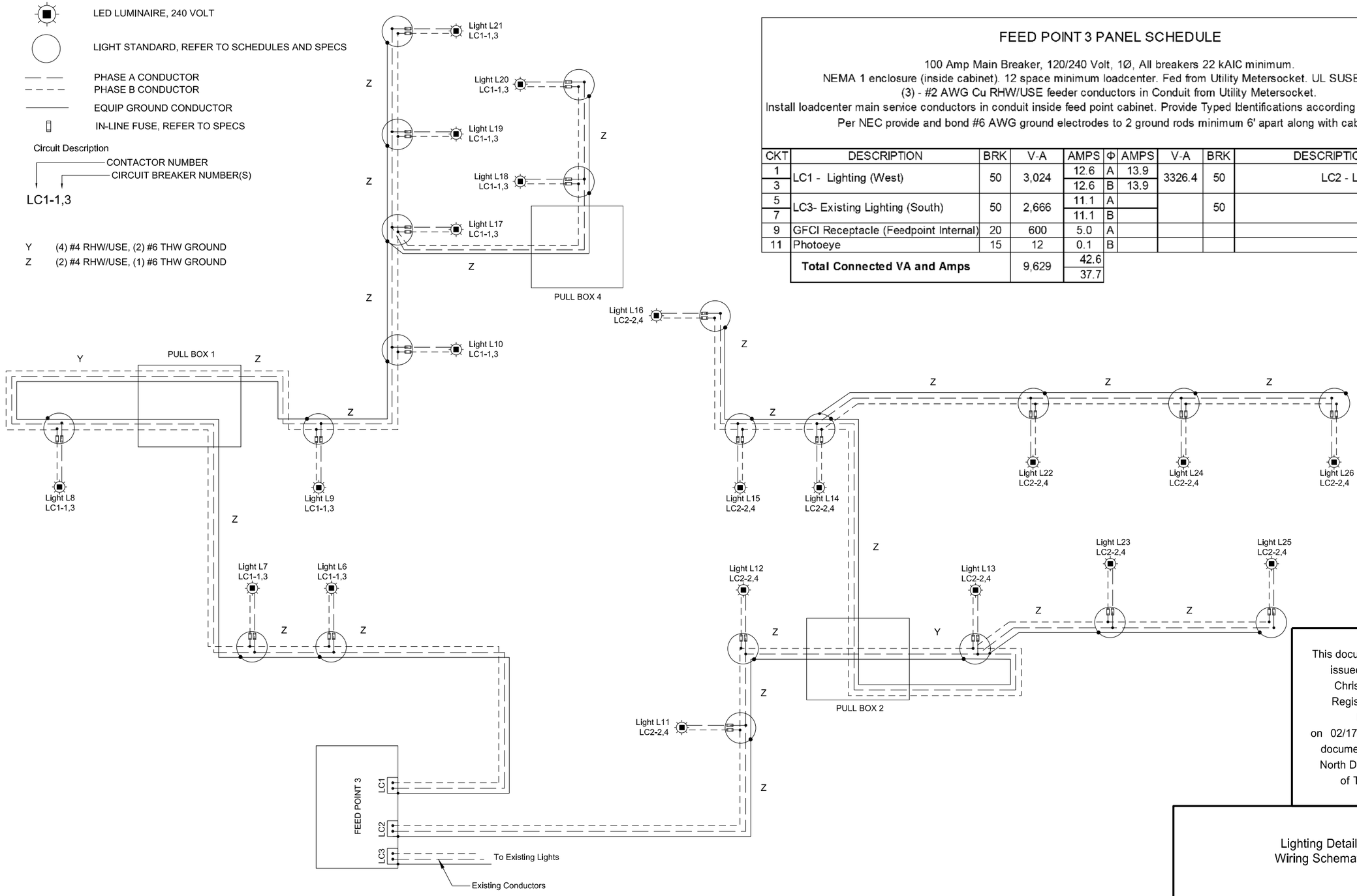
Circuit Description
CONTACTOR NUMBER
CIRCUIT BREAKER NUMBER(S)
LC1-1,3

Y (4) #4 RHW/USE, (2) #6 THW GROUND
Z (2) #4 RHW/USE, (1) #6 THW GROUND

FEED POINT 3 PANEL SCHEDULE

100 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) - #2 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 #6 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 - Lighting (West)	50	3,024	12.6	A	13.9	3326.4	50	LC2 - Lighting (East)	2
3				12.6	B	13.9				4
5	LC3- Existing Lighting (South)	50	2,666	11.1	A			50	Spare	6
7				11.1	B					8
9	GFCI Receptacle (Feedpoint Internal)	20	600	5.0	A				(Space)	10
11	Photoeye	15	12	0.1	B				(Space)	12
	Total Connected VA and Amps		9,629	42.6						
				37.7						



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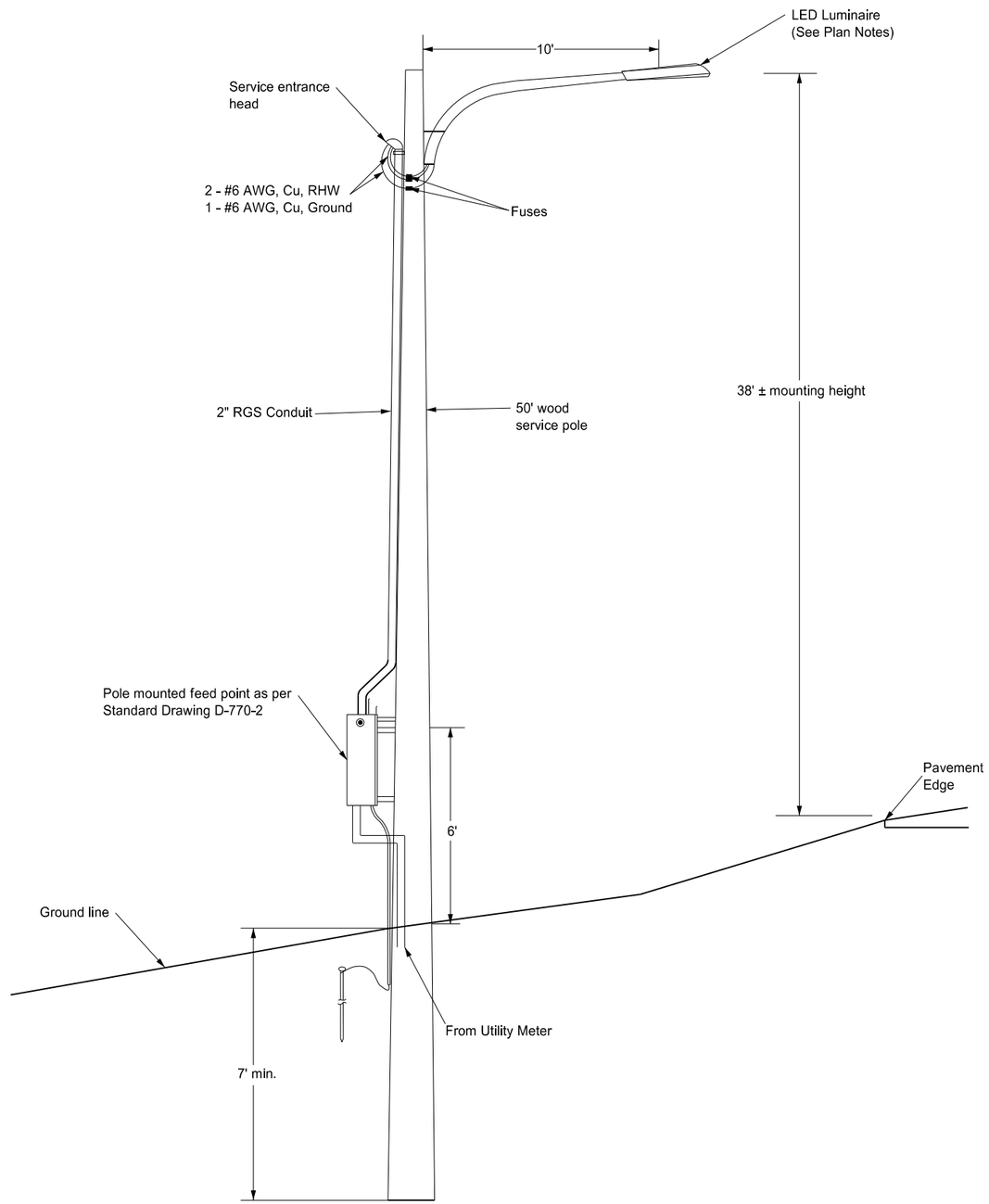
Lighting Details
Wiring Schematic

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	140	11



Destination Lighting Detail

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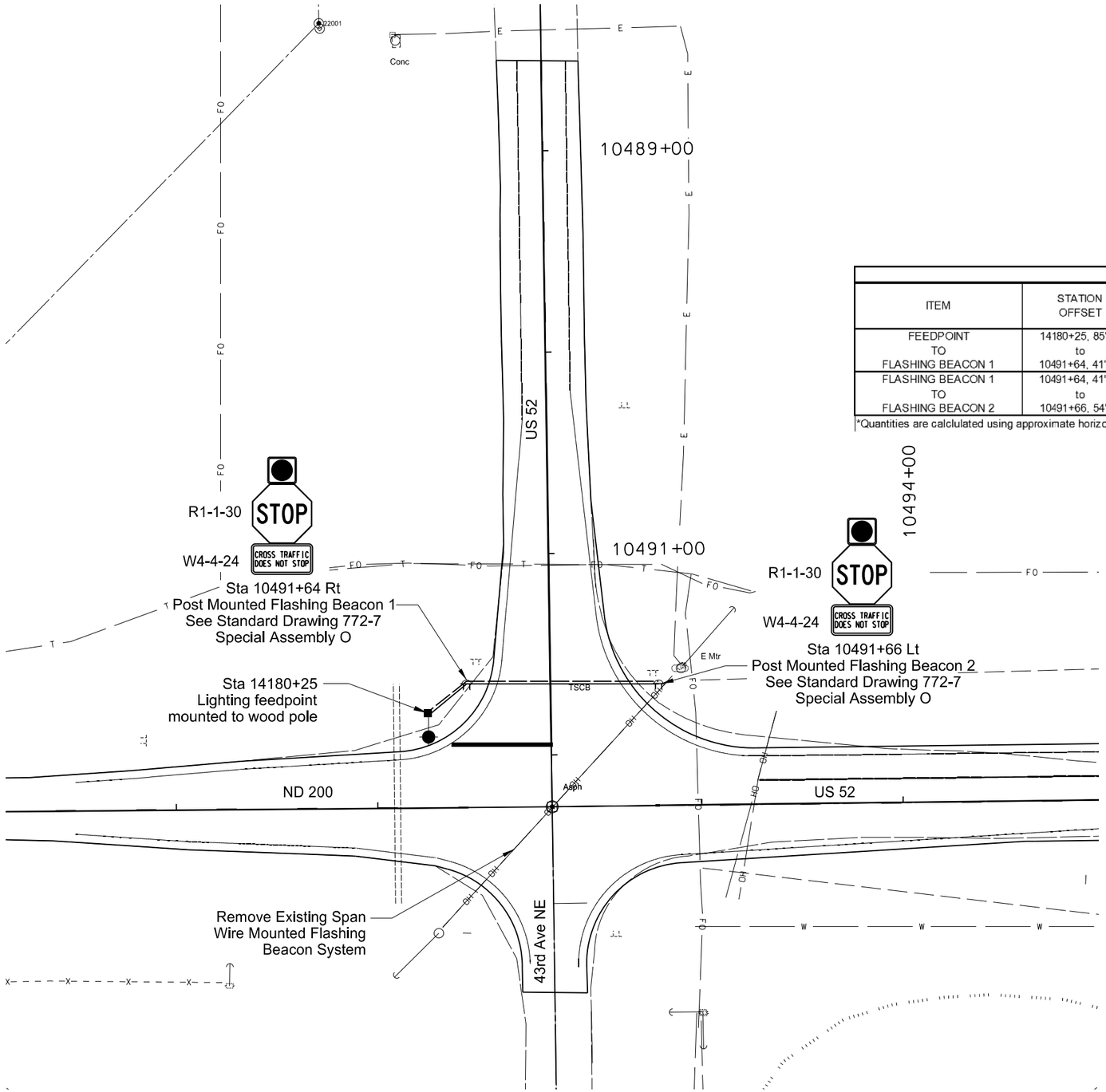
Destination Lighting

Wood Pole Light Standard Detail

US 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	150	1



772 2110 FLASHING BEACON-POST MOUNTED
Sta 10491+64 Rt 1 EA
Sta 10491+66 Lt 1 EA
Total 2 EA

772 3150 REMOVE FLASHING BEACON SYSTEM 1 EA

CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN TOTAL L.F.	CONDUIT RUN SIZE IN INCHES TYPE	WIRE RUN TOTAL L.F.	WIRE RUN (QUANTITY) SIZE - TYPE Remarks
FEEDPOINT TO FLASHING BEACON 1	14180+25, 85' LT to 10491+64, 41' RT	25	1"	50 25	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW
FLASHING BEACON 1 TO FLASHING BEACON 2	10491+64, 41' RT to 10491+66, 54' LT	95	1"	190 95	(2) UNDERGROUND CONDUCTOR NO. 6 RHW UNDERGROUND CONDUCTOR NO. 6 THW

*Quantities are calclulated using approximate horizontal distances

Flashing Beacon Quantities (A)

2IN DIAMETER RIGID CONDUIT	UNDERGROUND CONDUCTOR NO6-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW			FLASHING BEACON-POST MOUNTED
LF	LF	LF			EA
120	240	120			2

(A) Include these items in the contract unit price for "Flashing Beacon-Post Mounted."

N

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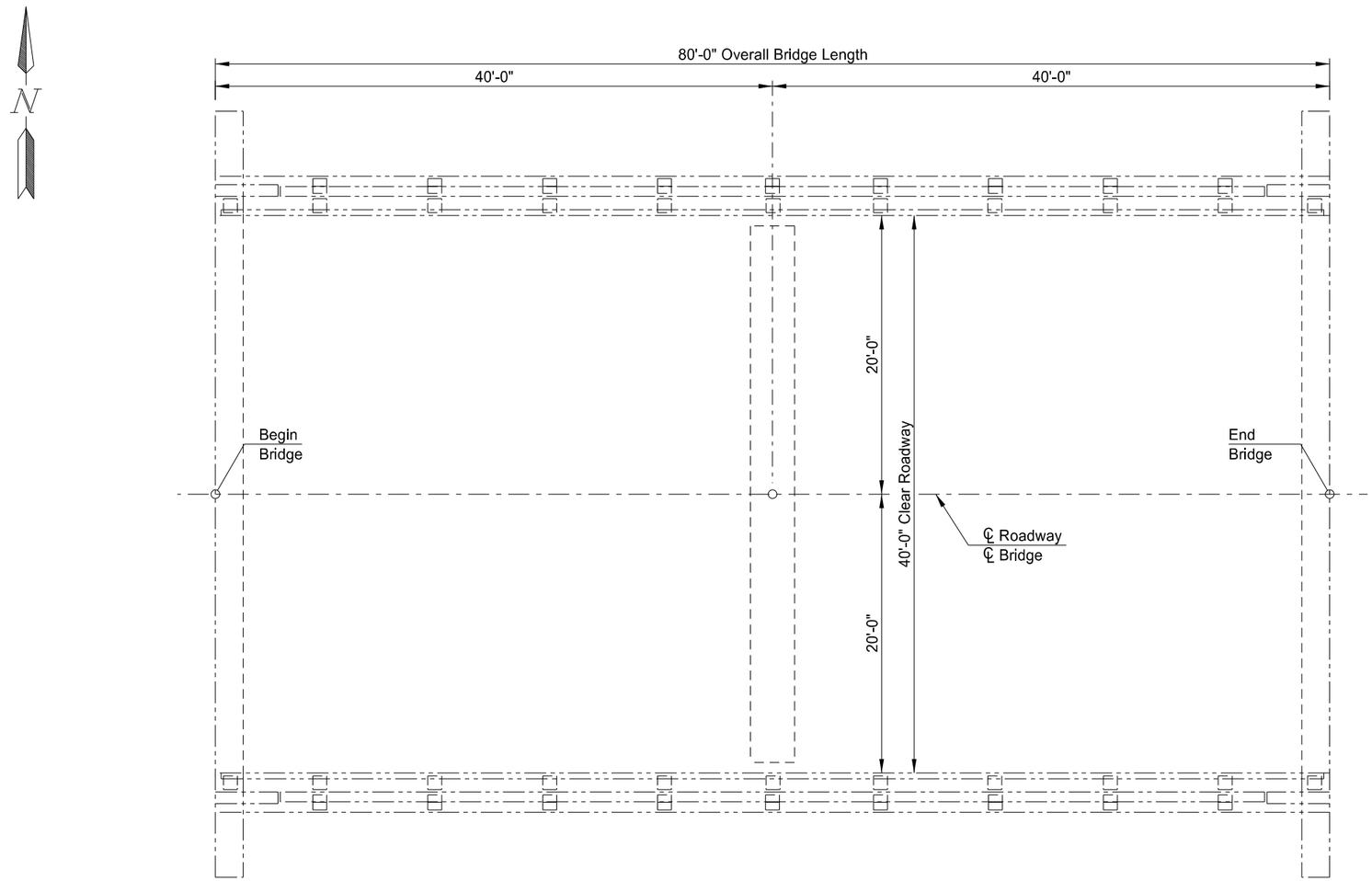
Flashing Beacon

US 52/W Jct ND 200

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	170	1



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BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	0130	CLASS AAE-3 CONCRETE	CY	0.6
650	0704	OVERLAY CONCRETE	CY	17.8
650	0720	CLASS 1 REMOVAL	SY	355.6
650	0721	CLASS 2 REMOVAL	SY	71.1
650	0722	CLASS 2-A REMOVAL	LF	128
650	0723	CLASS 3 REMOVAL	SY	17.8
650	0724	CLASS 4 REMOVAL	SY	3.6

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PIPESTEM CREEK

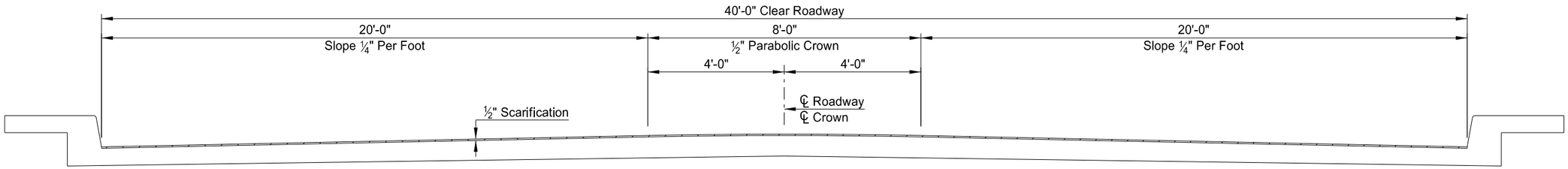
BRIDGE LAYOUT

PROJECT: SNH-3-052(042)198

FOSTER COUNTY

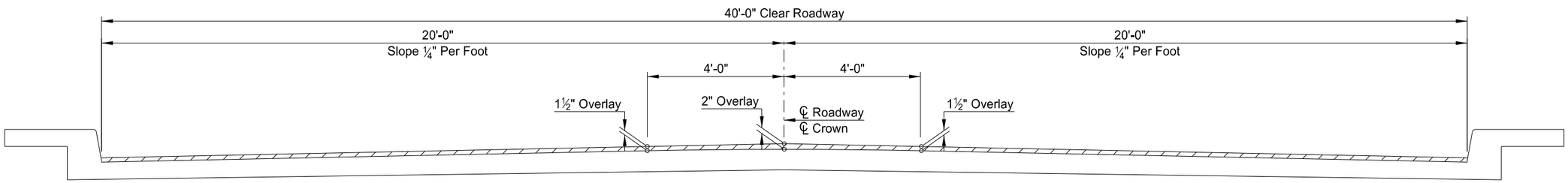
01/20/2016 — Terrence R. Udland
DATE — BRIDGE ENGINEER

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	170	2



(SHOWING REMOVAL)

TYPICAL DECK SECTION



(SHOWING OVERLAY)

TYPICAL DECK SECTION

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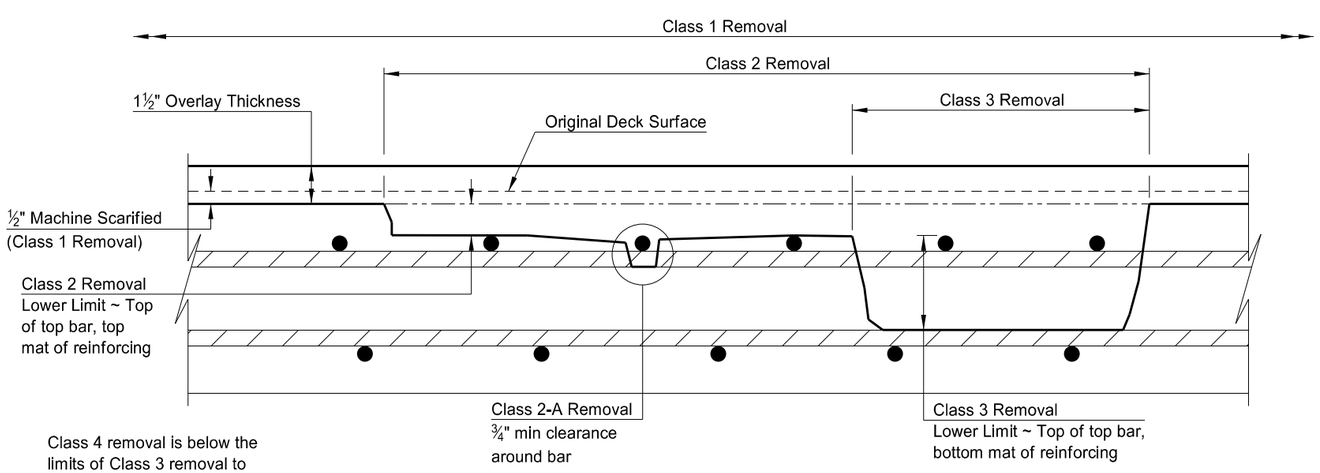


(OVERLAY CLASSIFICATIONS)

BRIDGE DECK SECTION

NOTE:

100 SCOPE OF WORK: Work at this site consists of a bridge deck overlay. Maintain one lane of traffic across the bridge at all times.

602 CONCRETE: Provide aggregate for concrete that meets the requirements of Section 802.01 C.2, "Coarse Aggregate" and Section 802.01 C.3, "Fine Aggregate."

650 CLASS 2-A REMOVAL: Class 2-A removal is paid for the top bar in the top mat of reinforcing only.

650 OVERLAY CONCRETE: Use size 5 coarse aggregate composed of crushed stone. Use crushed stone that has at least one fractured face on 75 percent of the particles retained on the number 4 sieve.

Place overlay concrete before September 15 unless authorized by the Bridge Engineer.

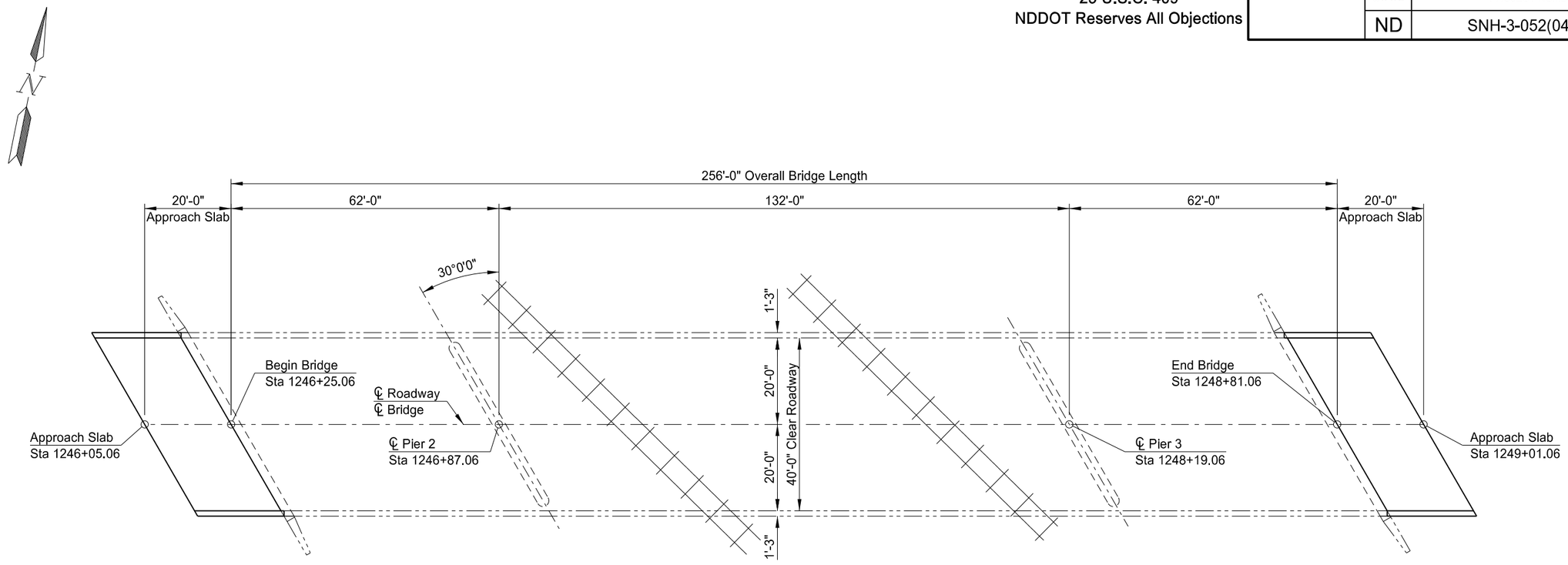
QUANTITIES	
CLASS AAE-3 CONCRETE	0.6 CY
OVERLAY CONCRETE	17.8 CY
CLASS 1 REMOVAL	355.6 SY
CLASS 2 REMOVAL	71.1 SY
CLASS 2-A REMOVAL	128 LF
CLASS 3 REMOVAL	17.8 SY
CLASS 4 REMOVAL	3.6 SY

PIPESTEM CREEK

DECK OVERLAY DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	170	3



BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB - REMOVE AND REPLACE	SY	189

NOTES:

100 SCOPE OF WORK: The work at this site consists of removing and replacing the 20' approach slab on both ends of the bridge.

602 BRIDGE APPROACH SLAB - REMOVE AND REPLACE: Remove and replace the approach slab at each end of the bridge. Ensure no damage is done to the parts of the structure that is to remain in place.

Provide aggregate for the concrete that meets the requirements of Section 802.01 C.2, "Coarse Aggregate" and Section 802.01 C.3, "Fine Aggregate."

Mechanically finish approach slabs as specified in Section 602.04 D, "Deck Finishing."

Cure approach slab concrete as specified in Section 602.04F.2 " Deck Slab Concrete".

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
CANADIAN PACIFIC OVERHEAD

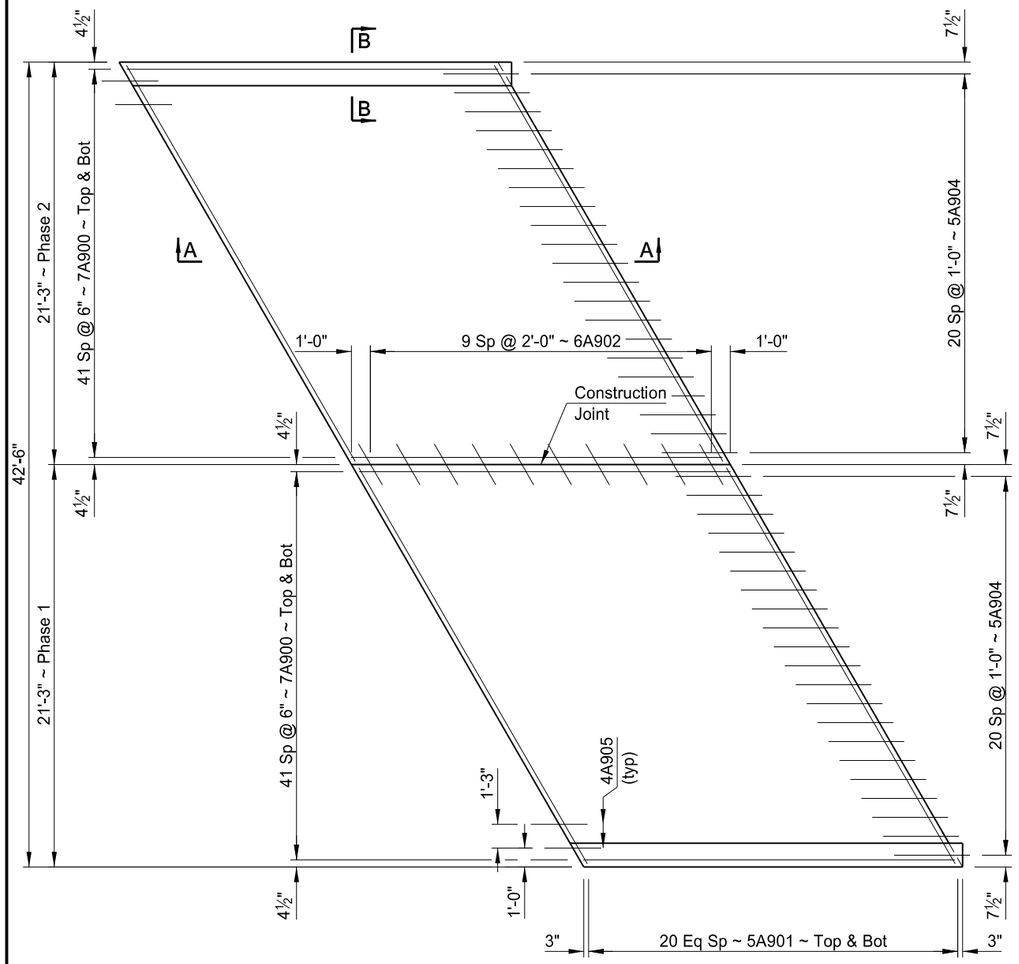
BRIDGE LAYOUT

PROJECT: SNH-3-052(042)198
STATION: 1247+53.06
FOSTER COUNTY

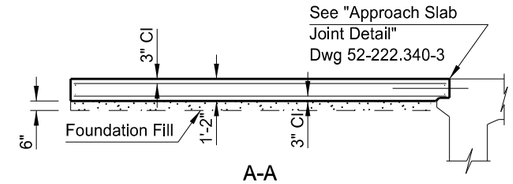
01/20/2016 — Terrence R. Udland
DATE — BRIDGE ENGINEER

23 U.S.C. 409
NDDOT Reserves All Objections

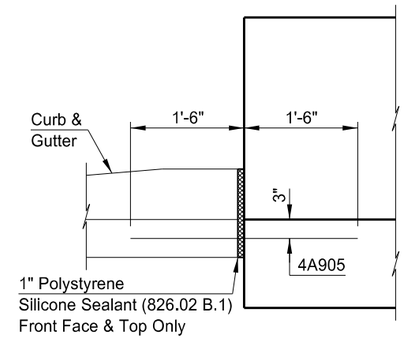
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	170	4



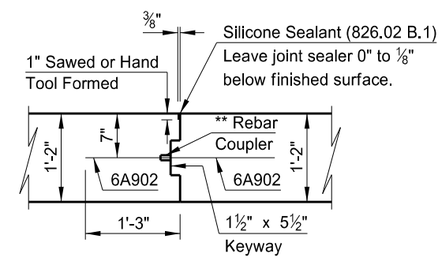
PLAN



A-A

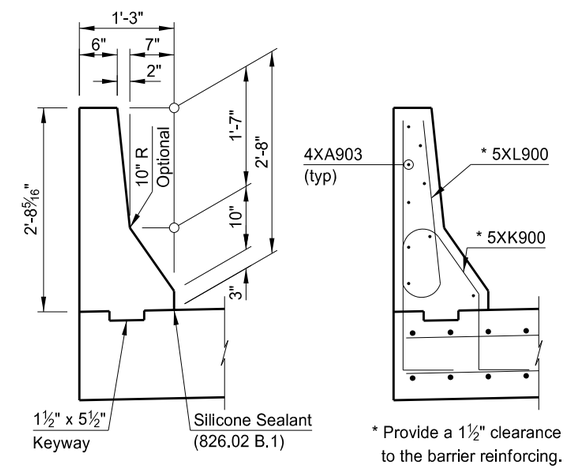


DETAIL "A"



CONSTRUCTION JOINT DETAIL

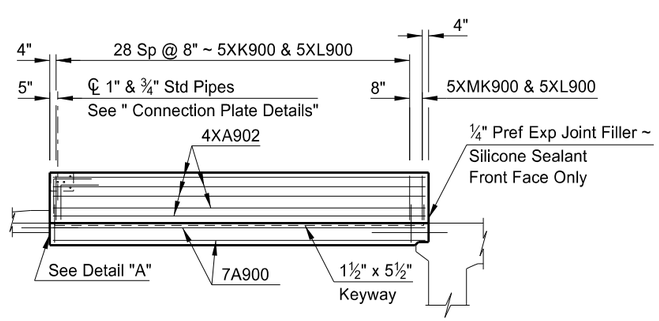
* Use approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel.



SHOWING DIMENSIONS

SHOWING REINFORCING

B-B



ELEVATION

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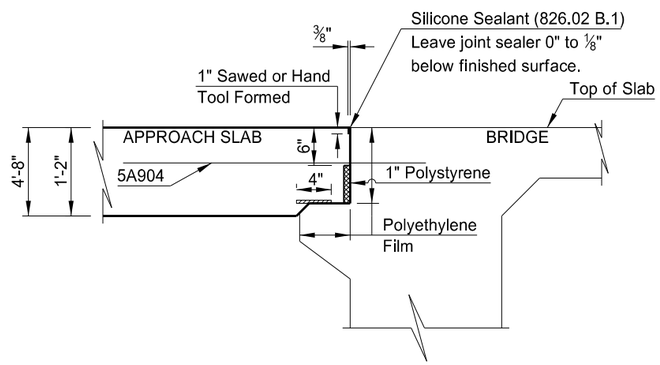
QUANTITIES
SEE DWG52-222.340-5

CANADIAN PACIFIC OVERHEAD

APPROACH SLAB DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	170	5



APPROACH SLAB JOINT DETAIL

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, and labor required to build the approach slabs and barriers in the pay item "Bridge Approach Slab-Remove & Replace." Use Class AE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612 and foundation fill that meets the requirements of Section 210. Use polyethylene film that meets the requirements of ASTM C171.

Apply surface Finish "D" to the inside and top surfaces of the approach slab barriers.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out.

Install 5A904 according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02 of the NDDOT Standard Specification. Embed the bars 1'-0" minimum into the abutment.

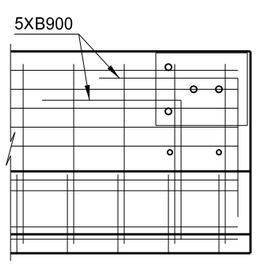
SKEW ANGLE = 0°

BAR LIST - ONE SLAB

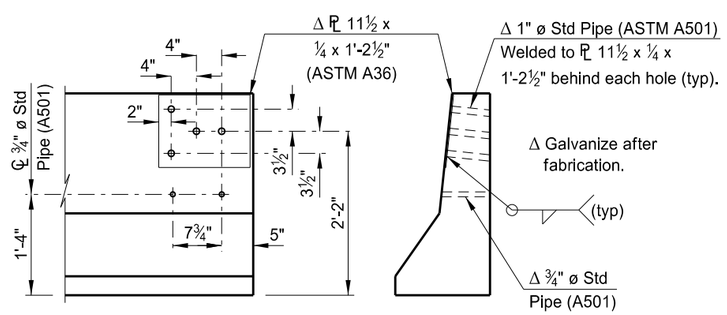
SIZE	MARK	NO.	LENGTH
7	A900	168	19'-8"
5	A901	84	24'-1"
6	A902	20	1'-3"
4	XA903	18	19'-8"
5	A904	42	4'-0"
4	A905	4	3'-0"
5	XB900	4	3'-8"
5	XK900	58	5'-7"
5	XL900	60	5'-0"
5	XMK900	2	4'-1"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
9,995	39.9

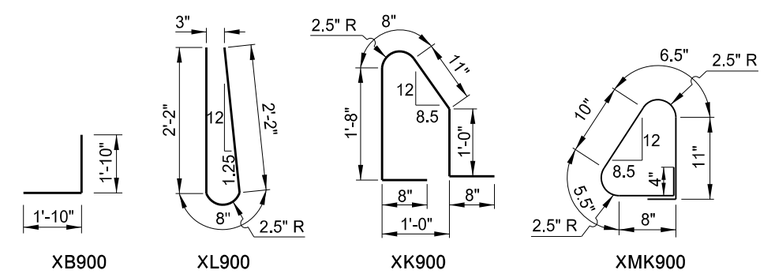


SHOWING REINFORCING



SHOWING DIMENSIONS

(SHOWING FRONT FACE)
CONNECTION PLATE DETAILS



BENT BAR DETAILS

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QUANTITIES	(ONE SLAB)
APPROACH SLAB	94.5 SY

CANADIAN PACIFIC OVERHEAD

APPROACH SLAB DETAILS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	180	1

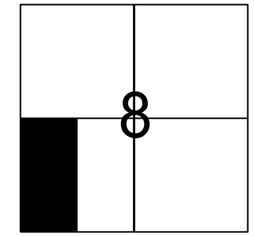
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

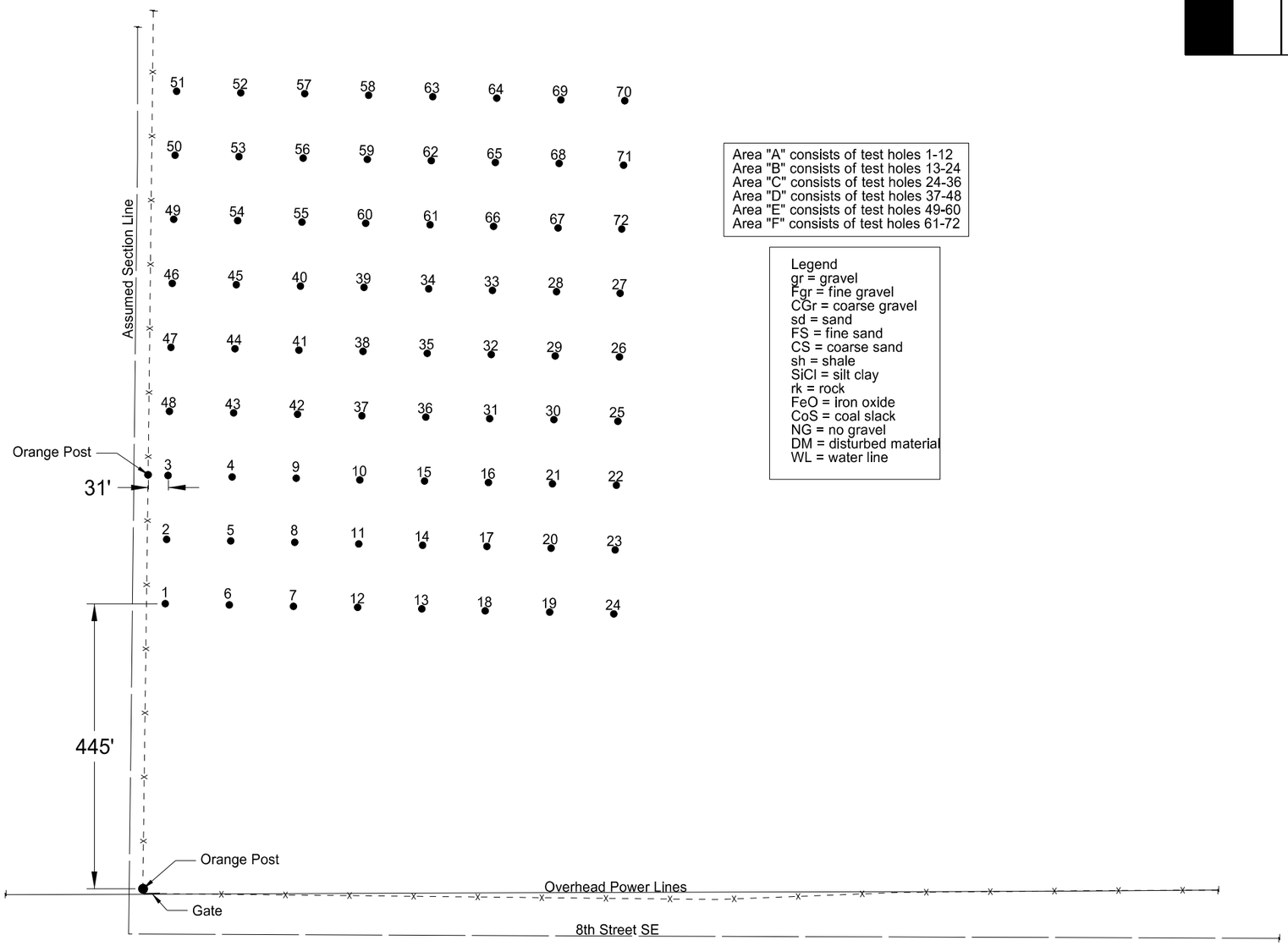
TEST HOLE PLAT

Location: W1/2SW1/4 8-144-71 County: Kidder

Ownership: Milton and Karen Hirchert

LOCATION OF PIT IN SECTION





Area "A" consists of test holes 1-12
Area "B" consists of test holes 13-24
Area "C" consists of test holes 24-36
Area "D" consists of test holes 37-48
Area "E" consists of test holes 49-60
Area "F" consists of test holes 61-72

Legend
gr = gravel
Fgr = fine gravel
CGr = coarse gravel
sd = sand
FS = fine sand
CS = coarse sand
sh = shale
SiCl = silt clay
rk = rock
FeO = iron oxide
CoS = coal slack
NG = no gravel
DM = disturbed material
WL = water line

Scale 1" = 200"

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	180	2

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
1	2.0	2.0 gr	2	11	21	29	+gr
		6.0 Fgr					
		2.0 gr					
		1.0 FS					
		1.0 Fgr					
		2.0 gr					
		2.0 Fgr					
		1.0 gr					
		1.0 Fgr					
2	1.5	0.5 Fgr	5	18	27	35	+gr
		2.0 gr					
		1.0 FS					
		9.0 Fgr					
		1.0 CS					
		1.0 Fgr					
		1.0 gr					
		1.0 sd					
		1.0 Fgr					
		1.0 gr					
3	0.5	5.0 Fgr	3	13	23	32	+gr
		0.5 CS					
		4.0 Fgr					
		2.0 gr					
		3.0 Fgr					
		5.0 gr					
4	0.5	2.5 gr	4	13	22	32	+gr
		4.0 Fgr					
		2.0 gr					
		4.0 Fgr					
		3.0 gr					
		2.0 Fgr					
		2.0 gr					
5	0.5	1.5 gr	3	13	23	31	+gr
		7.5 Fgr					
		0.5 FS					
		3.0 gr					
		1.0 Fgr					
		1.0 CS					
		2.0 gr					
		2.0 Fgr					
		1.0 CGr					
		1.0 gr					
6	2.0	1.0 gr	1	15	24	33	+gr
		6.0 Fgr					
		2.0 gr					
		2.0 Fgr					
		1.0 sd					
		2.0 Fgr					
		1.0 gr					
		3.0 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
7	1.0	10.0 Fgr	3	18	29	39	+gr
		4.0 gr					
		3.0 Fgr					
		2.0 gr					
8	1.0	2.0 gr	3	17	22	31	+gr
		5.0 Fgr					
		6.5 gr					
		4.5 Fgr					
		1.0 gr					
9	1.5	1.5 gr	2	12	21	28	+gr
		2.0 sd					
		15.0 Fgr					
10	0.5	6.5 Fgr	1	9	17	26	+gr
		1.0 FS					
		1.0 gr					
		2.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		1.5 gr					
		0.5 sd					
		1.0 gr					
		1.0 Fgr					
		1.0 gr					
11	1.5	3.5 Fgr	1	12	23	31	+gr
		3.0 sd					
		9.0 Fgr					
		3.0 gr					
12	0.5	2.5 gr	6	15	26	37	+gr
		4.0 Fgr					
		2.0 gr					
		1.0 Fgr					
		5.0 gr					
		1.0 Fgr					
		2.0 gr					
		2.0 CGr					
13	1.0	2.0 gr	1	13	23	31	+gr
		5.5 Fgr					
		0.5 sd					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		1.0 sd					
		1.0 Fgr					
		1.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
14	1.0	2.0 gr	4	14	25	35	+gr
		1.0 Fgr					
		1.0 sd					
		3.0 Fgr					
		6.0 gr					
		3.0 Fgr					
		2.0 gr					
15	1.0	10.0 Fgr	1	13	25	35	+gr
		3.0 gr					
		3.0 Fgr					
		2.0 gr					
		1.0 Fgr					
16	1.5	1.5 gr	0	8	18	29	+gr
		5.0 Fgr					
		5.0 gr					
		6.0 Fgr					
		1.0 gr					
17	1.5	0.5 gr	0	11	23	33	+gr
		8.0 Fgr					
		5.0 gr					
		5.0 Fgr					
18	1.0	2.0 gr	0	6	15	24	+gr
		2.0 Fgr					
		1.0 FS					
		4.0 Fgr					
		4.0 gr					
		3.0 Fgr					
		2.0 gr					
		1.0 Fgr					
19	1.0	1.0 gr	2	15	25	35	+gr
		8.0 Fgr					
		3.0 gr					
		4.0 Fgr					
		2.0 gr					
		1.0 CGr					
20	1.0	5.0 Fgr	1	9	21	31	+gr
		2.0 gr					
		2.0 Fgr					
		7.0 gr					
		2.0 CGr					
		1.0 gr					
21	1.5	0.5 gr	1	13	23	33	+gr
		5.5 Fgr					
		0.5 gr					
		6.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		2.0 gr					
		2.0 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	% Retained on #4 Screen
22	1.0	8.0 Fgr	0	12	24	34	+gr
		6.0 gr					
		1.0 Fgr					
		3.0 gr					
		1.0 FS					
23	1.5	1.5 gr	2	13	25	34	+gr
		4.0 Fgr					
		1.0 CS					
		3.0 Fgr					
		3.0 gr					
		2.0 CGr					
		1.0 gr					
		2.0 Fgr					
		1.0 gr					
24	1.0	3.0 Fgr	2	10	20	29	+gr
		1.0 FS					
		3.0 Fgr					
		6.0 gr					
		1.0 Fgr					
		5.0 gr					
25	1.0	2.0 Fgr	1	10	22	31	+gr
		2.0 sd					
		7.0 Fgr					
		3.0 gr					
		5.0 Fgr					
26	1.0	1.0 Fgr	3	14	23	34	+gr
		2.0 gr					
		4.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		4.0 gr					

RANGE 71 **TWP** 144 **SEC** 8

COUNTY Kidder Aug-15

PROSPECTED BY Rogstad/Usher

INSPECTED & APPROVED Jeffrey Swank Aug-15

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	180	3

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
27	2.0	2.0 Fgr	2	13	22	31	+gr
		1.0 gr					
		2.0 sd					
		4.5 Fgr					
		2.5 gr					
		4.0 Fgr					
		1.0 CGr					
		1.0 Fgr					
28	1.0	2.0 gr	1	13	23	34	+gr
		5.0 Fgr					
		1.0 sd					
		1.0 gr					
		2.0 Fgr					
		4.0 gr					
		1.0 CS					
		3.0 gr					
29	0.5	2.5 gr	0	14	26	38	+gr
		4.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		3.0 gr					
		2.0 Fgr					
		5.0 gr					
30	1.0	2.0 gr	4	13	25	37	+gr
		5.0 Fgr					
		12.0 gr					
31	1.0	8.5 Fgr	0	13	22	32	+gr
		0.5 sd					
		2.0 gr					
		1.0 Fgr					
		2.0 gr					
		1.0 CGr					
		2.0 Fgr					
		2.0 gr					
32	1.0	2.0 gr	2	10	21	31	+gr
		2.0 Fgr					
		1.0 sd					
		1.0 Fgr					
		1.0 gr					
		1.0 sd					
		4.0 gr					
		1.0 Fgr					
		6.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
33	1.0	1.0 gr	1	13	26	37	+gr
		2.0 Fgr					
		1.0 sd					
		6.0 Fgr					
		1.0 gr					
		3.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		1.0 CGr					
		1.0 gr					
		2.0 gr					
34	1.5	2.5 gr	4	18	29	40	+gr
		1.5 FS					
		3.5 Fgr					
		7.0 gr					
		2.0 CGr					
		2.0 gr					
35	1.0	3.0 Fgr	2	16	25	35	+gr
		1.0 sd					
		5.0 Fgr					
		1.0 gr					
		3.0 Fgr					
		3.0 CGr					
		2.0 gr					
		1.0 Fgr					
36	1.0	1.0 gr	0	9	20	29	+gr
		2.0 Fgr					
		1.0 sd					
		3.0 Fgr					
		2.0 gr					
		1.0 CS					
		5.5 gr					
		1.5 FS					
		2.0 Fgr					
37	1.0	5.0 Fgr	1	15	27	37	+gr
		1.0 sd					
		4.0 gr					
		2.0 Fgr					
		3.0 gr					
		2.0 Fgr					
38	0.5	1.5 gr	1	11	22	33	+gr
		5.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		2.0 gr					
		1.0 sd					
		4.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
39	2.0	7.0 Fgr	3	17	27	36	+gr
		2.0 gr					
		1.0 sd					
		1.0 gr					
		2.0 Fgr					
		1.0 gr					
		1.0 CGr					
		2.0 gr					
		1.0 Fgr					
40	2.0	2.0 Fgr	1	9	21	33	+gr
		1.0 sd					
		1.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		3.0 gr					
		2.0 Fgr					
		1.0 gr					
41	1.5	3.5 Fgr	1	12	23	34	+gr
		1.0 CS					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		2.0 gr					
		2.0 gr					
		1.0 Fgr					
42	1.0	3.0 gr	0	11	22	33	+gr
		4.0 Fgr					
		5.0 gr					
		1.0 FS					
		1.0 gr					
		2.0 Fgr					
		1.0 CGr					
		2.0 gr					
43	1.0	2.0 Fgr	0	13	24	33	+gr
		2.0 sd					
		8.0 Fgr					
		5.0 gr					
		2.0 Fgr					
44	1.0	2.0 gr	0	9	22	36	+gr
		2.0 Fgr					
		6.0 gr					
		2.0 Fgr					
		1.0 gr					
		3.0 Fgr					
		3.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
45	1.0	2.0 gr	0	6	18	31	+gr
		3.0 Fgr					
		7.0 gr					
		4.0 Fgr					
		3.0 gr					
46	1.0	2.0 gr	2	17	26	34	+gr
		2.5 Fgr					
		0.5 sd					
		4.0 gr					
		2.0 Fgr					
		4.0 gr					
		3.0 Fgr					
		4.0 gr					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr					
47	0.5	2.5 gr	2	12	23	34	+gr
		3.0 Fgr					
		1.0 CS					
		5.0 gr					
		1.0 CGr					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		2.0 gr					
48	1.0	1.0 gr	0	8	16	25	+gr
		2.0 Fgr					
		1.0 sd					
		9.0 Fgr					
		1.0 gr					
		5.0 Fgr					

RANGE 71 **TWP** 144 **SEC** 8

COUNTY Kidder Aug-15

PROSPECTED BY Rogstad/Usher

INSPECTED & APPROVED Jeffrey Swank Aug-15

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SNH-3-052(042)198	180	4

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
49	1.0	1.0 gr	0	9	20	32	+gr
		1.0 Fgr					
		2.0 FS					
		2.0 gr					
		2.0 Fgr					
		2.0 gr					
		1.0 Fgr					
		5.0 gr					
		2.0 Fgr					
		1.0 gr					
50	1.0	7.0 Fgr	0	13	26	36	+gr
		2.0 gr					
		1.0 Fgr					
		4.0 gr					
		2.0 Fgr					
		1.0 gr					
		2.0 Fgr					
51	1.0	4.0 Fgr	0	11	23	31	+gr
		2.0 gr					
		1.0 sd					
		2.0 Fgr					
		10.0 gr					
52	2.0	1.0 Fgr	1	16	26	35	+gr
		1.0 sd					
		15.0 Fgr					
		1.0 gr					
53	1.0	1.0 gr	1	13	23	33	+gr
		6.0 Fgr					
		4.0 gr					
		1.0 Fgr					
		7.0 gr					
54	2.0	5.0 Fgr	1	13	23	32	+gr
		2.0 gr					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		1.0 gr					
		2.0 Fgr					
		4.0 gr					
55	4.0	9.0 Fgr	0	11	22	31	+gr
		1.0 gr					
		3.0 Fgr					
		1.0 sd					
		1.0 gr					
		1.0 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
56	1.0	2.0 gr	2	14	25	35	+gr
		3.0 Fgr					
		2.0 gr					
		1.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		7.0 gr					
57	2.0	6.0 Fgr	0	9	21	30	+gr
		3.0 gr					
		1.0 sd					
		1.0 Fgr					
		3.0 gr					
		2.0 sd					
		2.0 Fgr					
58	1.0	1.0 gr	0	10	20	31	+gr
		4.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		2.0 gr					
		2.0 CGr					
		6.0 gr					
59	1.0	4.0 Fgr	0	13	24	33	+gr
		1.0 sd					
		1.0 Fgr					
		1.0 FS					
		2.0 gr					
		5.0 Fgr					
		1.0 gr					
		4.0 Fgr					
60	2.0	3.0 Fgr	1	9	20	30	+gr
		1.0 gr					
		2.0 Fgr					
		8.0 gr					
		2.0 Fgr					
		1.0 gr					
61	3.0	1.0 gr	0	15	27	37	+gr
		7.0 Fgr					
		2.0 gr					
		2.0 Fgr					
		1.0 gr					
62	1.0	2.0 gr	0	12	23	34	+gr
		2.0 Fgr					
		1.0 sd					
		14.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
63	1.0	9.0 Fgr	0	11	22	32	+gr
		2.0 gr					
		1.0 Fgr					
		2.0 gr					
		4.0 Fgr					
		1.0 gr					
64	1.0	3.0 Fgr	0	12	20	30	+gr
		1.0 FS					
		3.0 Fgr					
		7.0 gr					
		3.0 Fgr					
		2.0 gr					
65	1.0	7.0 Fgr	0	11	22	31	+gr
		2.0 gr					
		1.0 Fgr					
		4.0 gr					
		4.0 Fgr					
		1.0 gr					
66	3.0	2.0 gr	0	8	19	30	+gr
		4.0 Fgr					
		2.0 gr					
		1.0 Fgr					
		5.0 gr					
		1.0 Fgr					
		1.0 FS					
		1.0 gr					
67	0.5	9.5 Fgr	1	13	25	37	+gr
		5.0 gr					
		2.0 Fgr					
		1.0 gr					
		2.0 Fgr					
68	0.5	2.5 gr	0	8	17	28	+gr
		1.0 sd					
		2.0 Fgr					
		1.0 sd					
		2.5 Fgr					
		0.5 CS					
		2.0 gr					
		1.0 Fgr					
		7.0 gr					
69	3.0	5.0 Fgr	1	16	28	38	+gr
		3.0 gr					
		1.0 sd					
		1.0 gr					
		3.0 Fgr					
		4.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
70	0.5	2.5 gr	0	10	18	28	+gr
		3.5 Fgr					
		0.5 FS					
		4.0 gr					
		2.0 FS					
		7.0 gr					
71	1.5	0.5 Fgr	0	10	21	31	+gr
		1.0 gr					
		7.0 Fgr					
		2.0 gr					
		6.0 Fgr					
		2.0 gr					
72	0.5	2.5 gr	1	12	22	32	+gr
		6.0 Fgr					
		6.0 gr					
		1.0 Fgr					
		4.0 gr					

RANGE 71 **TWP** 144 **SEC** 8

COUNTY Kidder Aug-15

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