

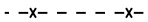
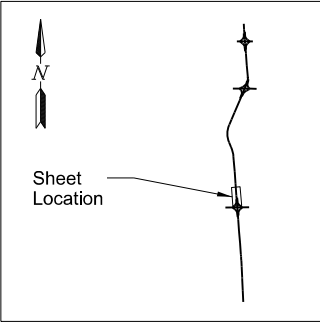


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	76	6

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
Sta 1960+00 to Sta 2000+00			8.4	ACRE
253	0201	HYDRAULIC MULCH		
Sta 1960+00 to Sta 2000+00			8.4	ACRE
260	0200	SILT FENCE SUPPORTED		
Sta 1920+00 to Sta 1960+00			49	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
Sta 1920+00 to Sta 1960+00			49	LF
261	0112	FIBER ROLLS 12IN		
Sta 1960+00 to Sta 2000+00			5,397	LF
261	0113	REMOVE FIBER ROLLS 12IN		
Sta 1960+00 to Sta 2000+00			5,397	LF

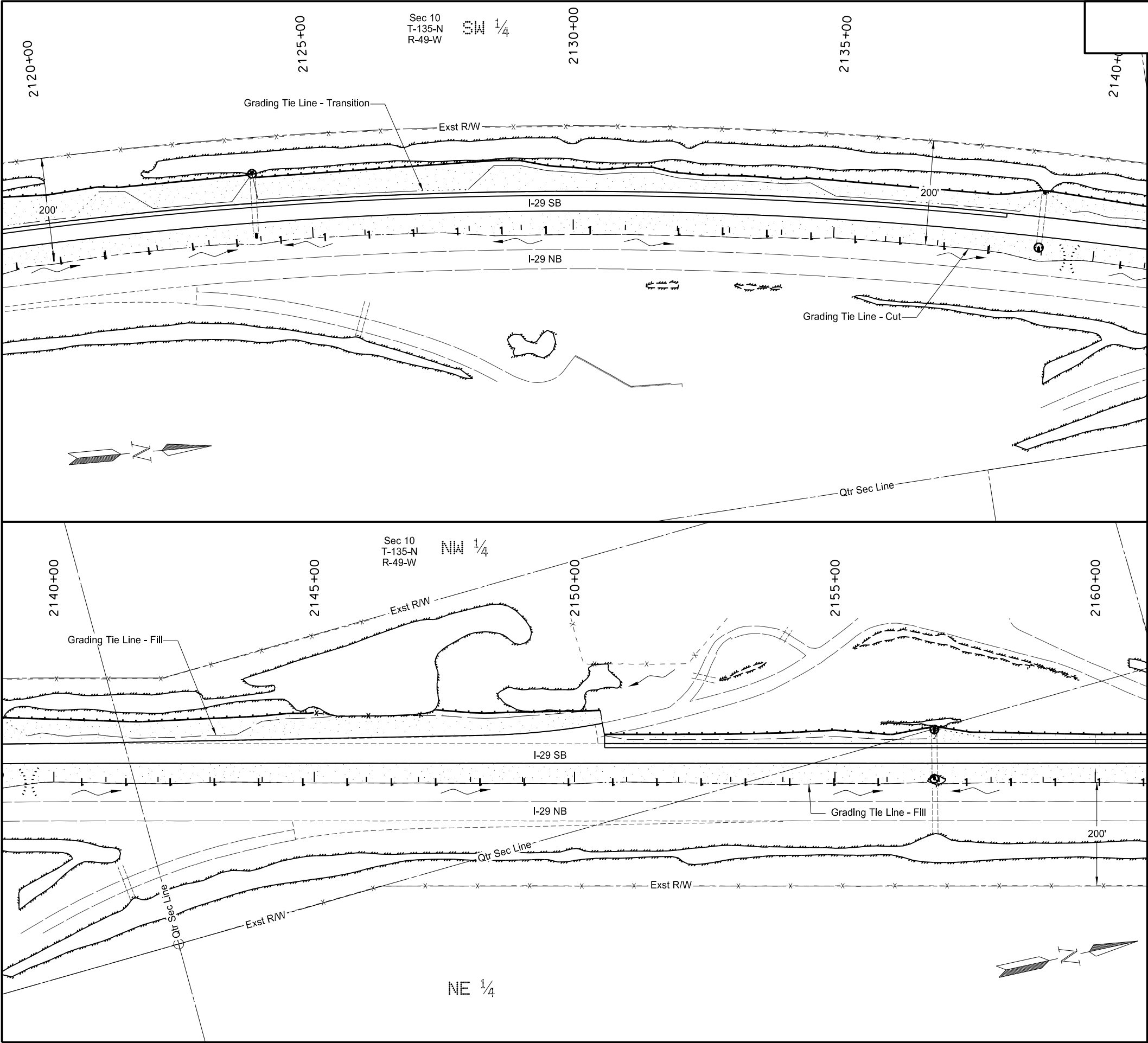
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Temporary Cover Crop & Hydraulic Mulch
-  Fiber Roll
-  Silt Fence



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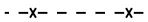
I-29 - N of Galchutt Exit to Christine Exit
Temporary Sediment and Erosion Control
Interstate 29
Sta 1960+00 to 2000+00 (SCL29)

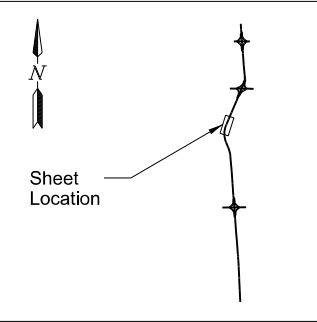


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	76	10

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
Sta 2120+00 to Sta 2160+00			7.2	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2120+00 to Sta 2160+00			7.2	ACRE
260	0200	SILT FENCE SUPPORTED		
Sta 2120+00 to Sta 2160+00			237	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
Sta 2120+00 to Sta 2160+00			237	LF
261	0112	FIBER ROLLS 12IN		
Sta 2120+00 to Sta 2160+00			4,624	LF
261	0113	REMOVE FIBER ROLLS 12IN		
Sta 2120+00 to Sta 2160+00			4,624	LF

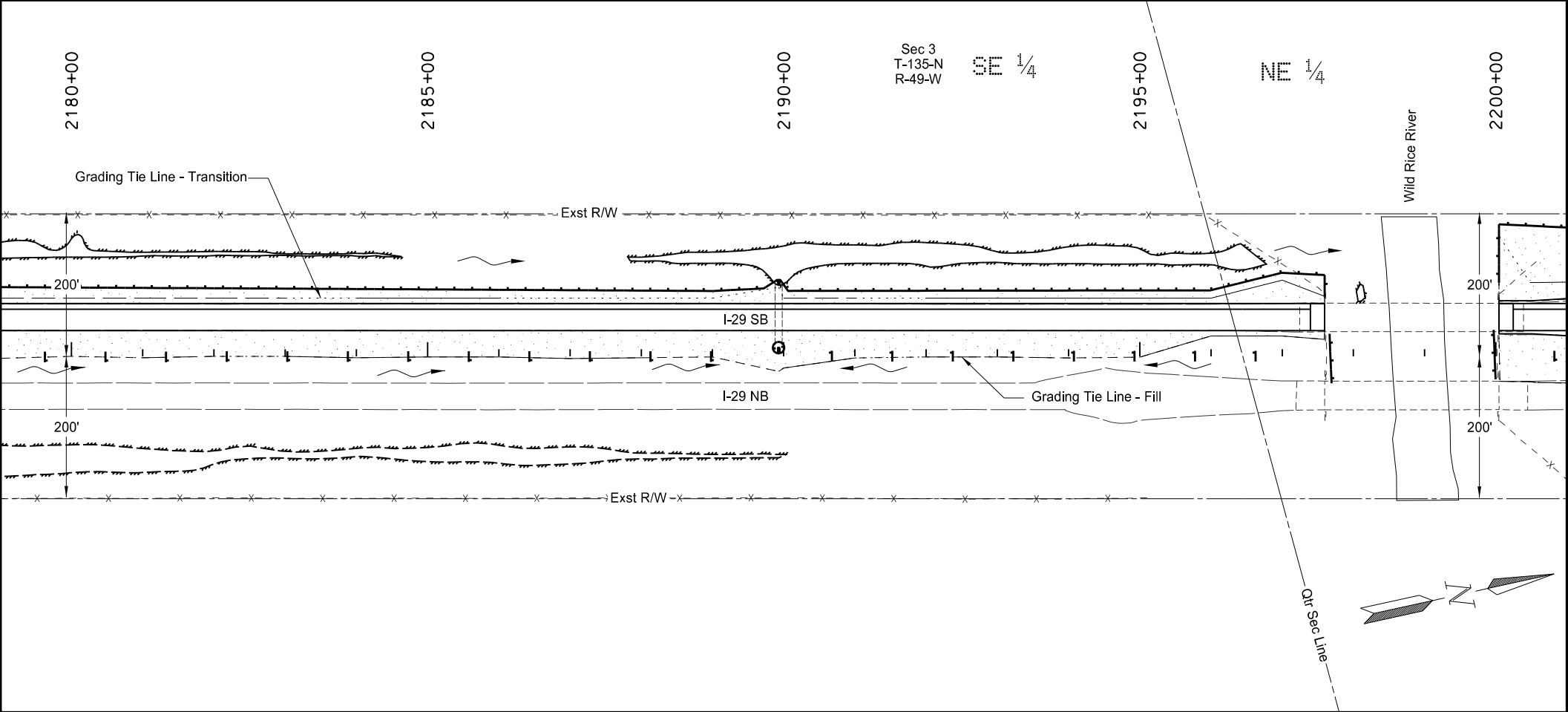
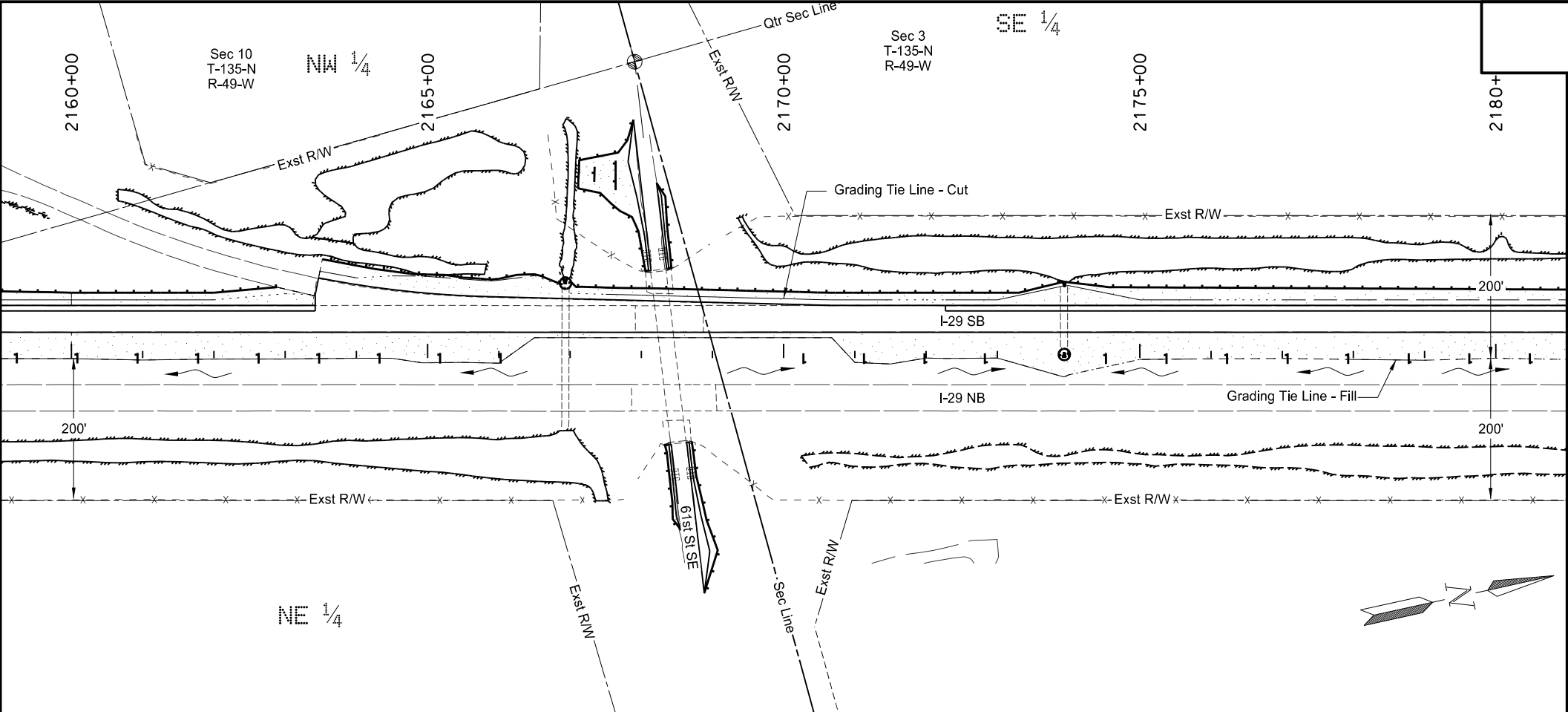
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Temporary Cover Crop & Hydraulic Mulch
-  Fiber Roll
-  Silt Fence



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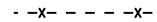
I-29 - N of Galchutt Exit to Christine Exit
Temporary Sediment and Erosion Control
Interstate 29
Sta 2120+00 to 2160+00 (SCL29)

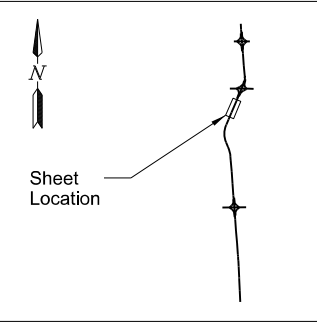


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	76	11

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 2160+00 to Sta 2200+00	4.7	ACRE
		Sta 2167+12 to Sta 2169+07 (Guardrail Grading)	0.2	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 2160+00 to Sta 2200+00	4.7	ACRE
		Sta 2167+12 to Sta 2169+07 (Guardrail Grading)	0.2	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 2160+00 to Sta 2200+00	4,833	LF
		Sta 2167+12 to Sta 2169+07 (Guardrail Grading)	859	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 2160+00 to Sta 2200+00	4,833	LF
		Sta 2167+12 to Sta 2169+07 (Guardrail Grading)	859	LF

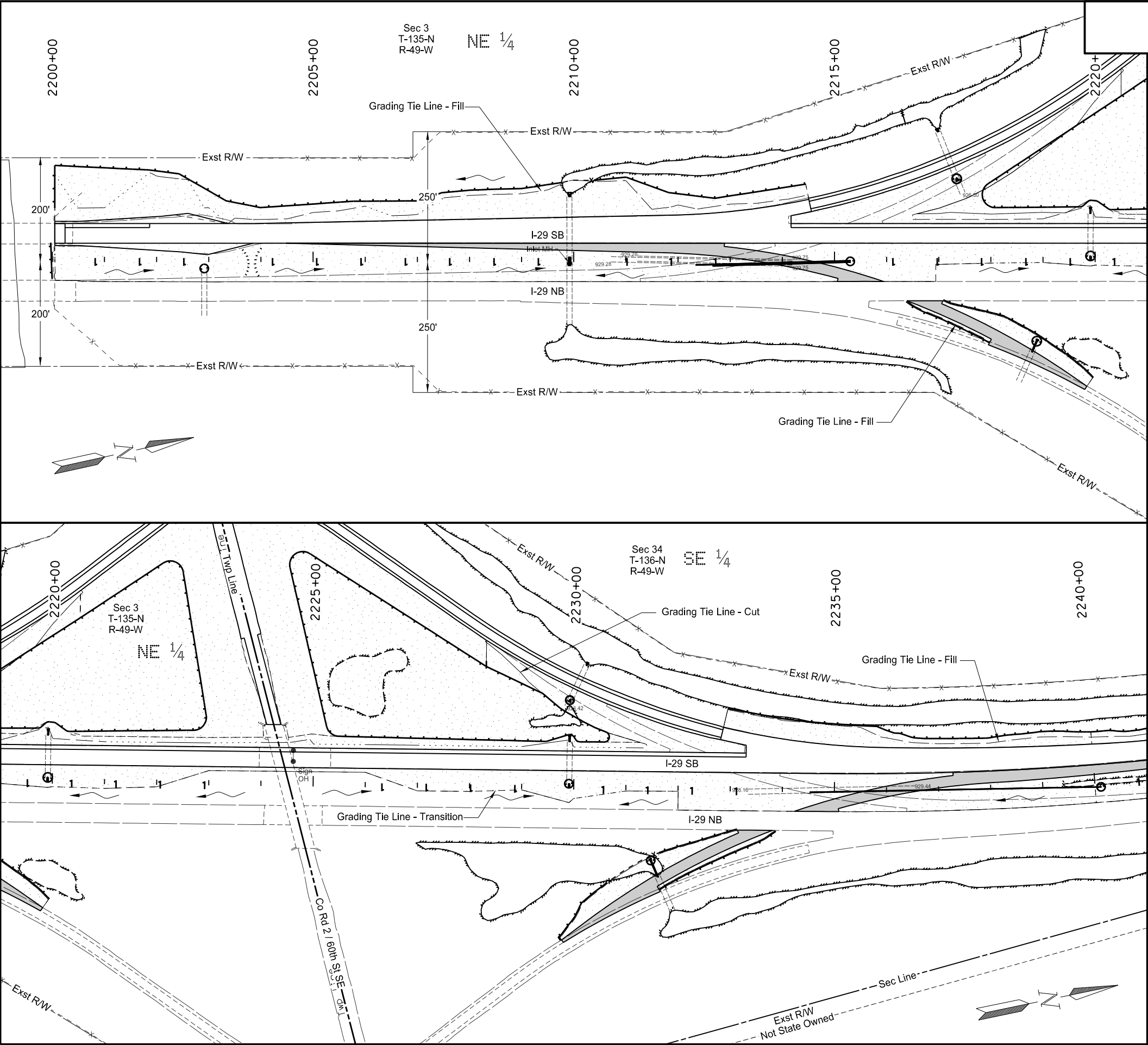
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Temporary Cover Crop & Hydraulic Mulch
-  Fiber Roll
-  Silt Fence



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I-29 - N of Galchutt Exit to Christine Exit
Temporary Sediment and Erosion Control
Interstate 29
Sta 2160+00 to 2200+00 (SCL29)

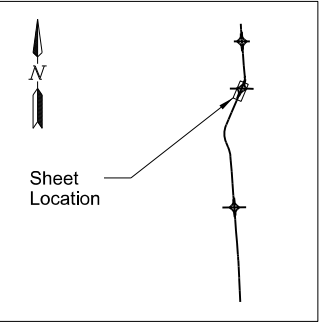


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	76	12

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
Sta 2200+00 to Sta 2240+00			16.7	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2200+00 to Sta 2240+00			16.7	ACRE
260	0200	SILT FENCE SUPPORTED		
Sta 2200+00 to Sta 2240+00			176	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
Sta 2200+00 to Sta 2240+00			176	LF
261	0112	FIBER ROLLS 12IN		
Sta 2200+00 to Sta 2240+00			7,280	LF
261	0113	REMOVE FIBER ROLLS 12IN		
Sta 2200+00 to Sta 2240+00			7,280	LF

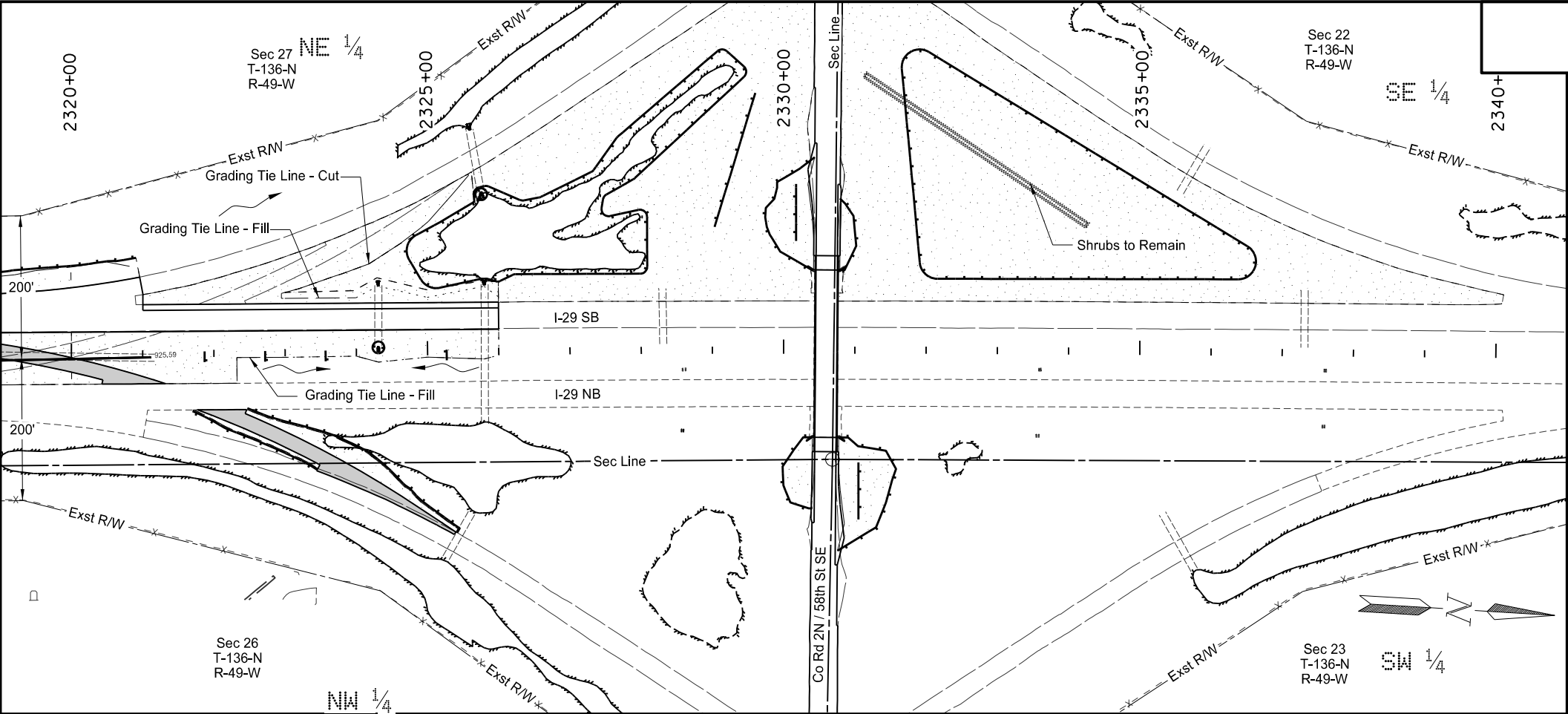
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

- Temporary Cover Crop & Hydraulic Mulch
- Fiber Roll
- Silt Fence



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I-29 - N of Galchutt Exit to Christine Exit
Temporary Sediment and Erosion Control
Interstate 29
Sta 2200+00 to 2240+00 (SCL29)



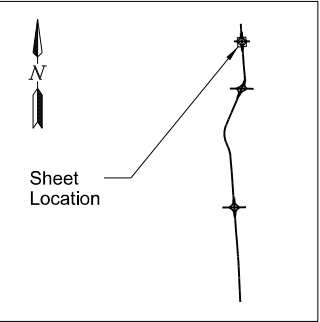
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	76	15

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
Sta 2320+00 to Sta 2340+00			9.2	ACRE
Sta 2329+74 to Sta 2331+58 (Guardrail Grading)			0.5	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2320+00 to Sta 2340+00			9.2	ACRE
Sta 2329+74 to Sta 2331+58 (Guardrail Grading)			0.5	ACRE
260	0200	SILT FENCE SUPPORTED		
Sta 2320+00 to Sta 2340+00			46	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
Sta 2320+00 to Sta 2340+00			46	LF
261	0112	FIBER ROLLS 12IN		
Sta 2320+00 to Sta 2340+00			3,845	LF
Sta 2329+74 to Sta 2331+58 (Guardrail Grading)			900	LF
261	0113	REMOVE FIBER ROLLS 12IN		
Sta 2320+00 to Sta 2340+00			3,845	LF
Sta 2329+74 to Sta 2331+58 (Guardrail Grading)			900	LF

Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

- Temporary Cover Crop & Hydraulic Mulch
- Fiber Roll
- - x - - - - x - - - -

Silt Fence

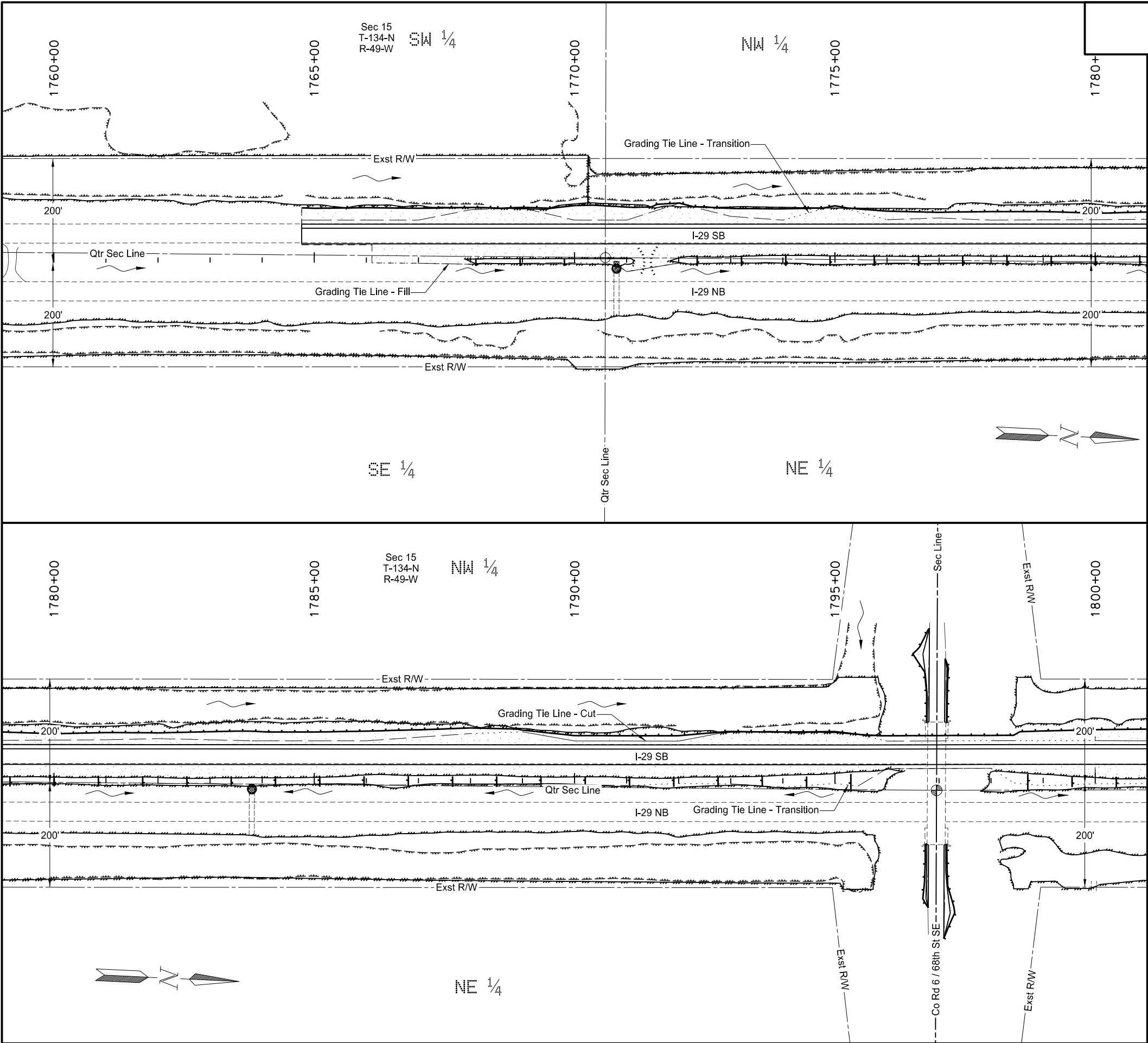


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I-29 - N of Galchutt Exit to Christine Exit

Temporary Sediment and Erosion Control




Interstate 29
Sta 2320+00 to 2340+00 (SCL29)

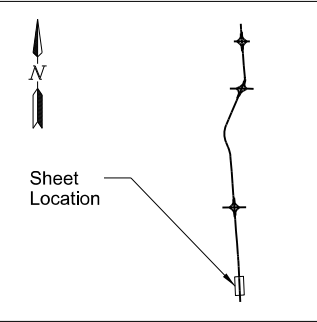


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 1760+00 to Sta 1800+00	3.9	ACRE
		Sta 1796+50 to Sta 1797+29 (Guardrail Grading)	0.1	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 1760+00 to Sta 1800+00	3.9	ACRE
		Sta 1796+50 to Sta 1797+29 (Guardrail Grading)	0.1	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 1760+00 to Sta 1800+00	4,307	LF
		Sta 1796+50 to Sta 1797+29 (Guardrail Grading)	638	LF

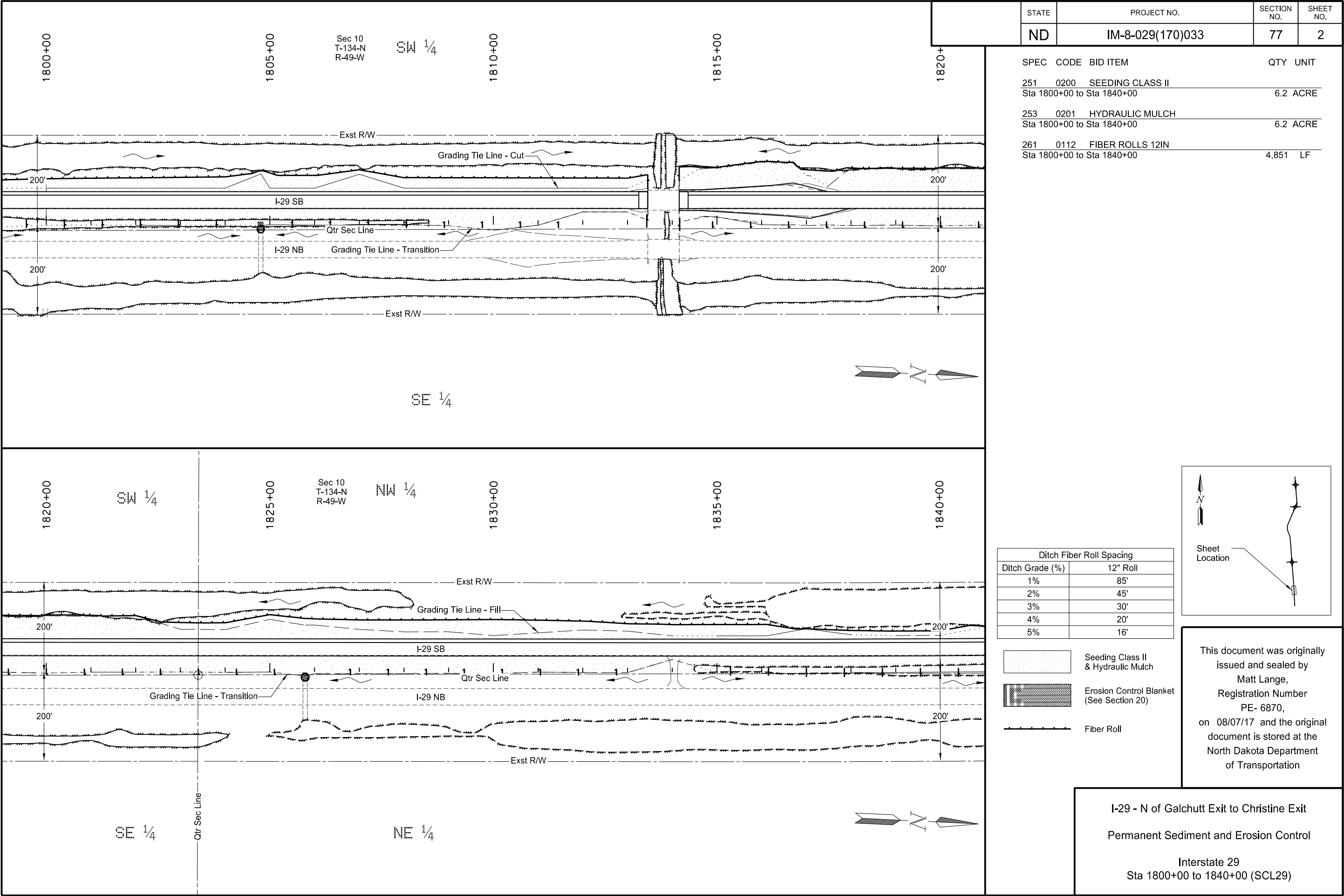
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

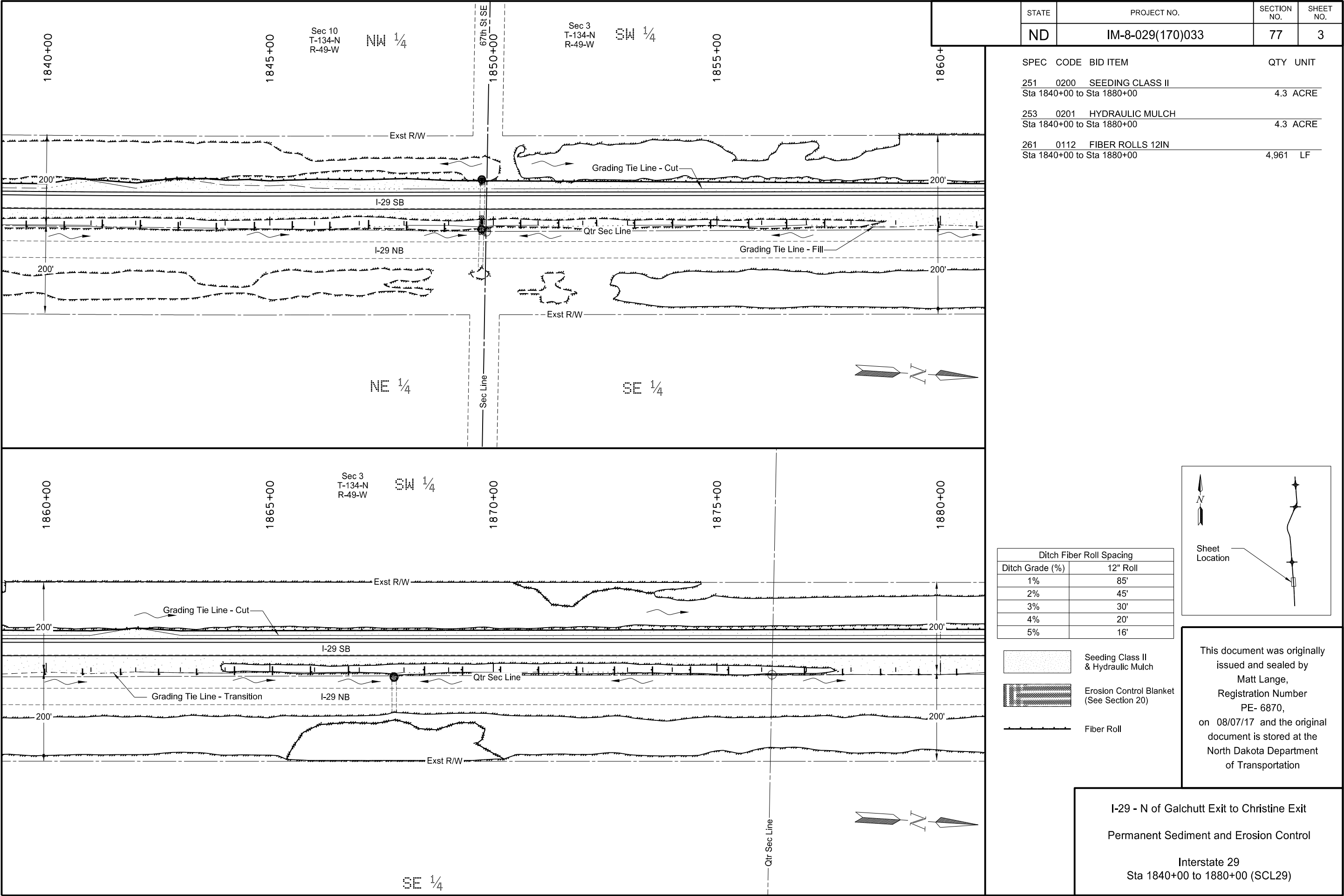
-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Fiber Roll



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I-29 - N of Galchutt Exit to Christine Exit
Permanent Sediment and Erosion Control
Interstate 29
Sta 1760+00 to 1800+00 (SCL29)





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	3

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
Sta 1840+00 to Sta 1880+00			4.3	ACRE
253	0201	HYDRAULIC MULCH		
Sta 1840+00 to Sta 1880+00			4.3	ACRE
261	0112	FIBER ROLLS 12IN		
Sta 1840+00 to Sta 1880+00			4,961	LF

Ditch Fiber Roll Spacing

Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

Seeding Class II & Hydraulic Mulch

Erosion Control Blanket (See Section 20)

Fiber Roll

N

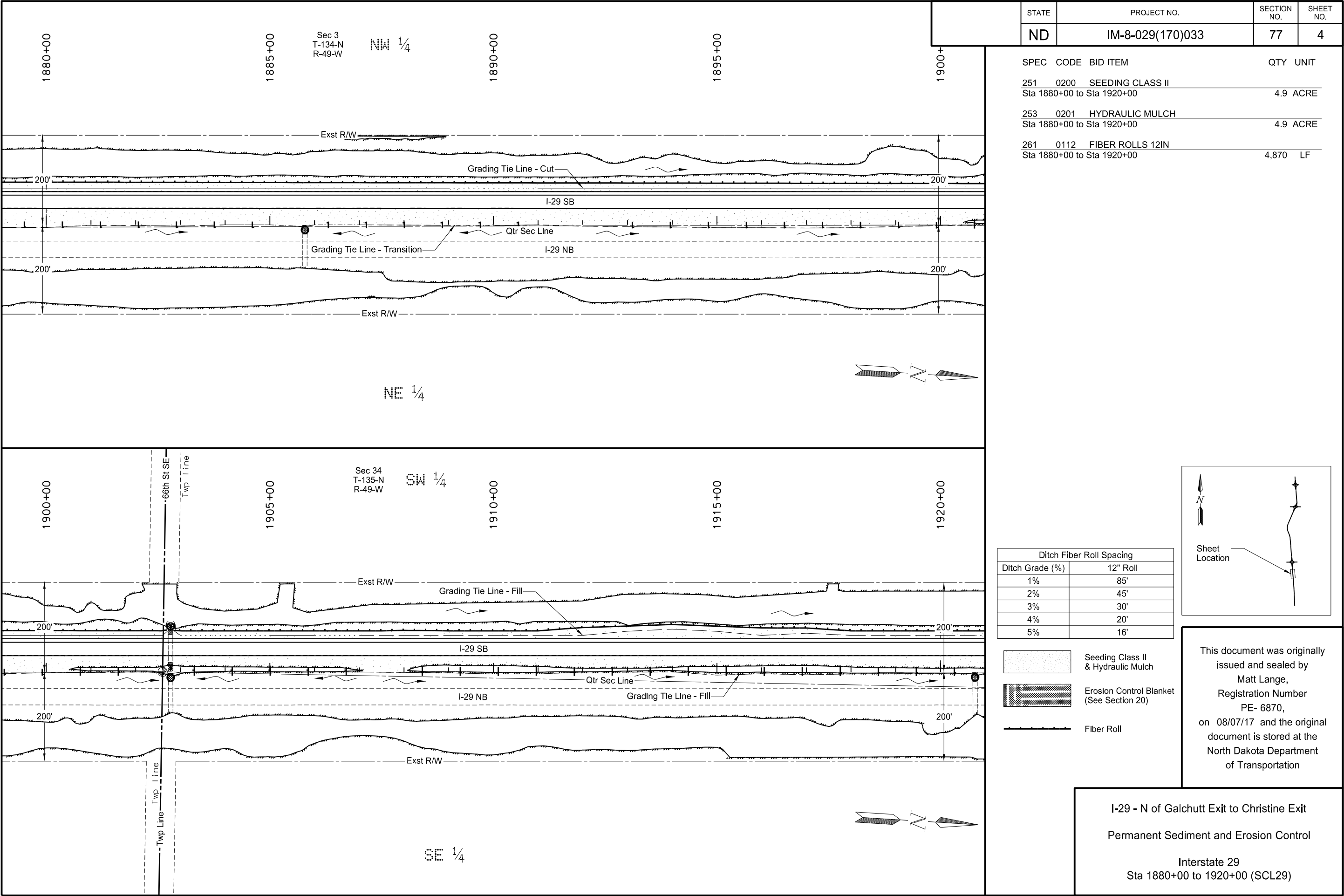
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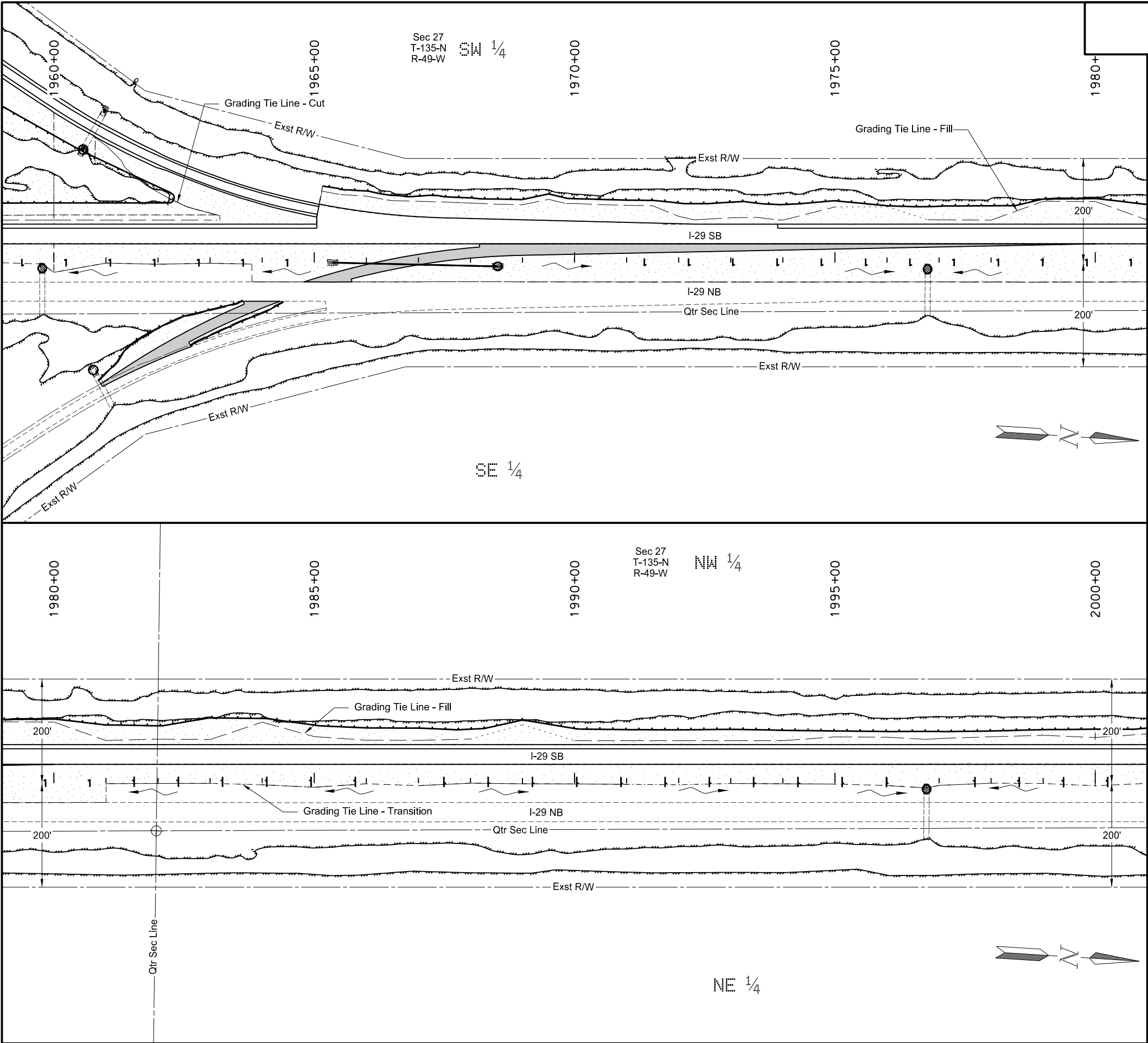
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I-29 - N of Galchutt Exit to Christine Exit

Permanent Sediment and Erosion Control

Interstate 29
Sta 1840+00 to 1880+00 (SCL29)


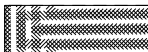



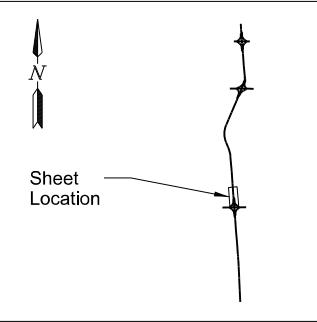


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	6

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
Sta 1960+00 to Sta 2000+00			8.4	ACRE
253	0201	HYDRAULIC MULCH		
Sta 1960+00 to Sta 2000+00			8.4	ACRE
261	0112	FIBER ROLLS 12IN		
Sta 1960+00 to Sta 2000+00			5,447	LF

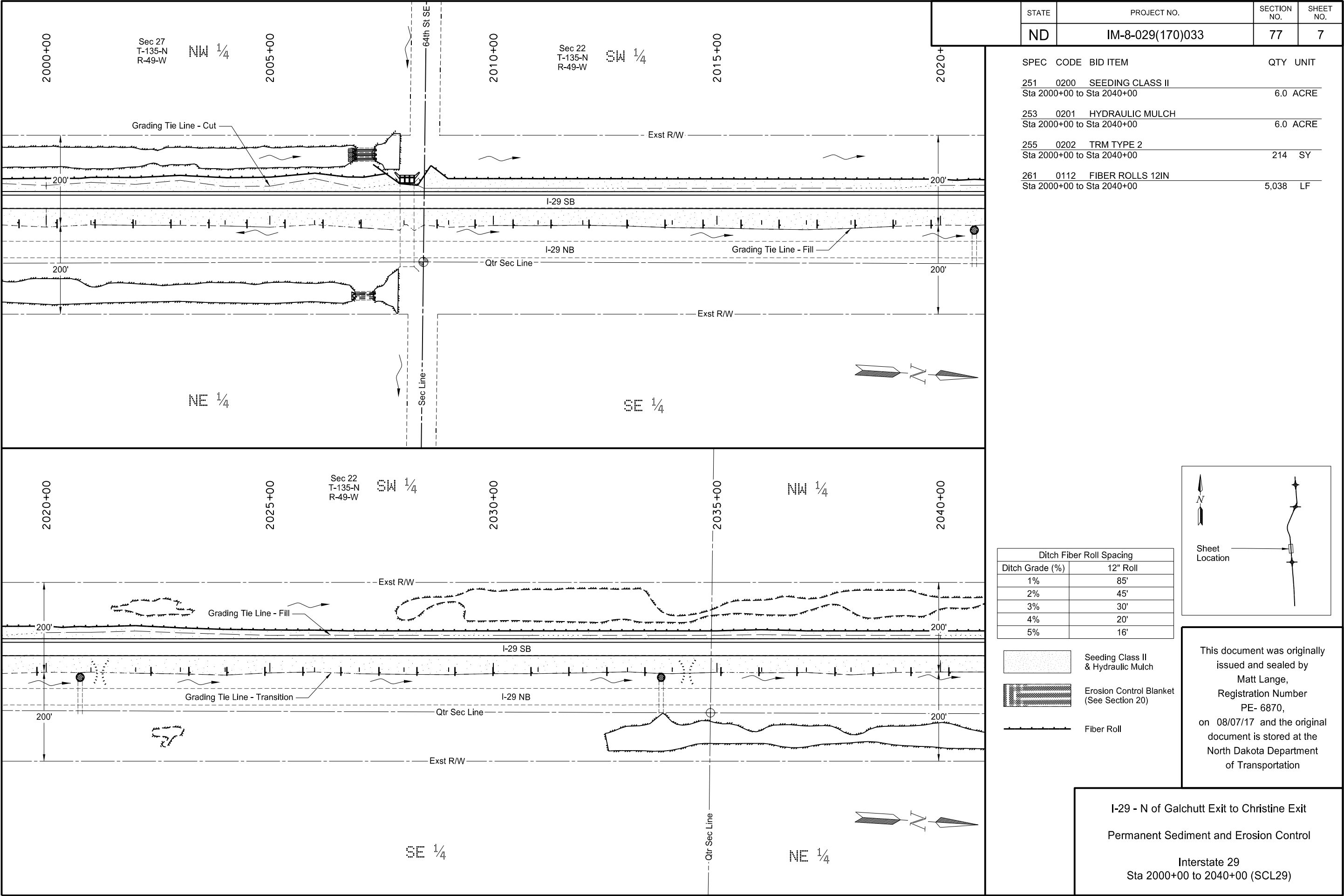
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

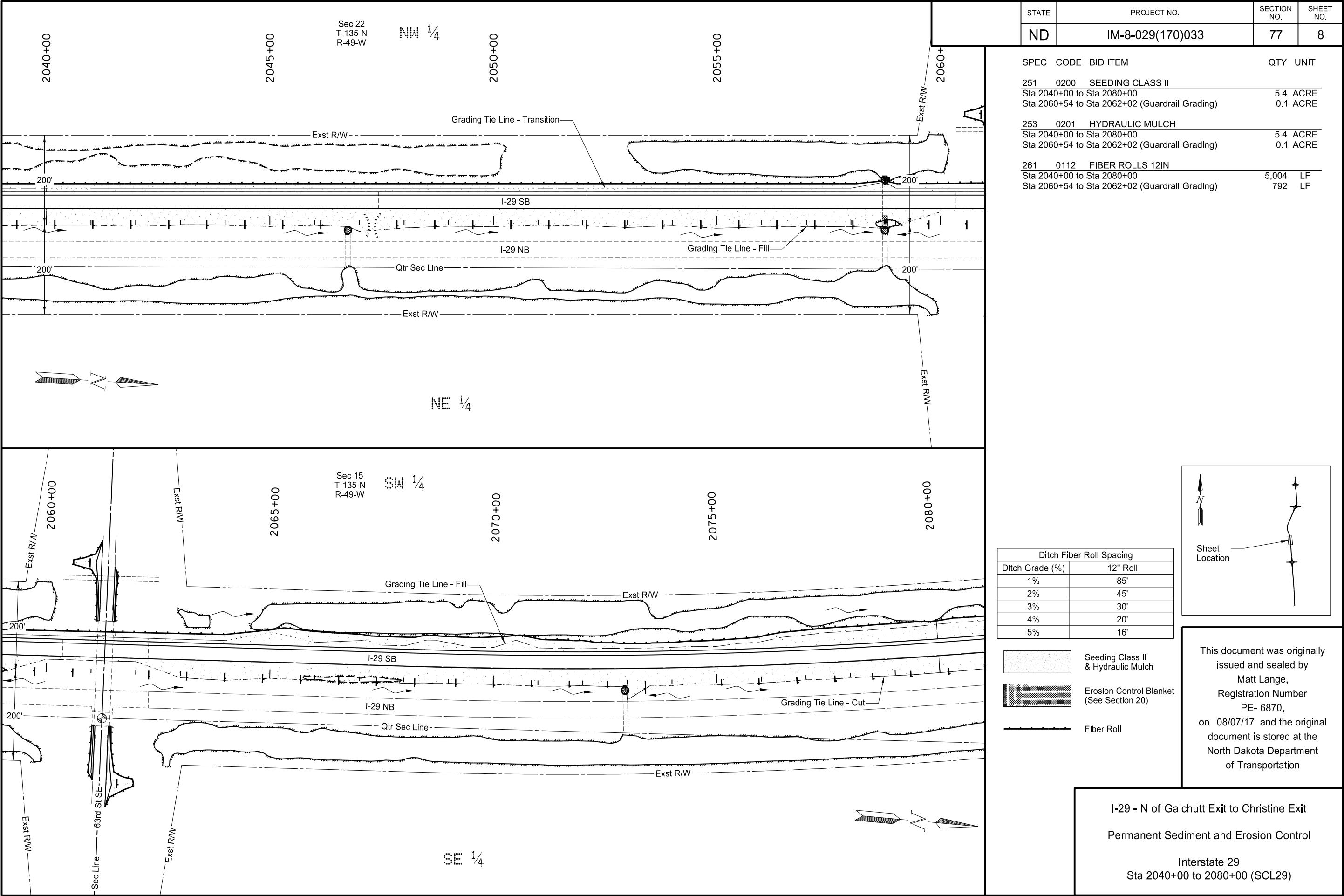
-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Fiber Roll

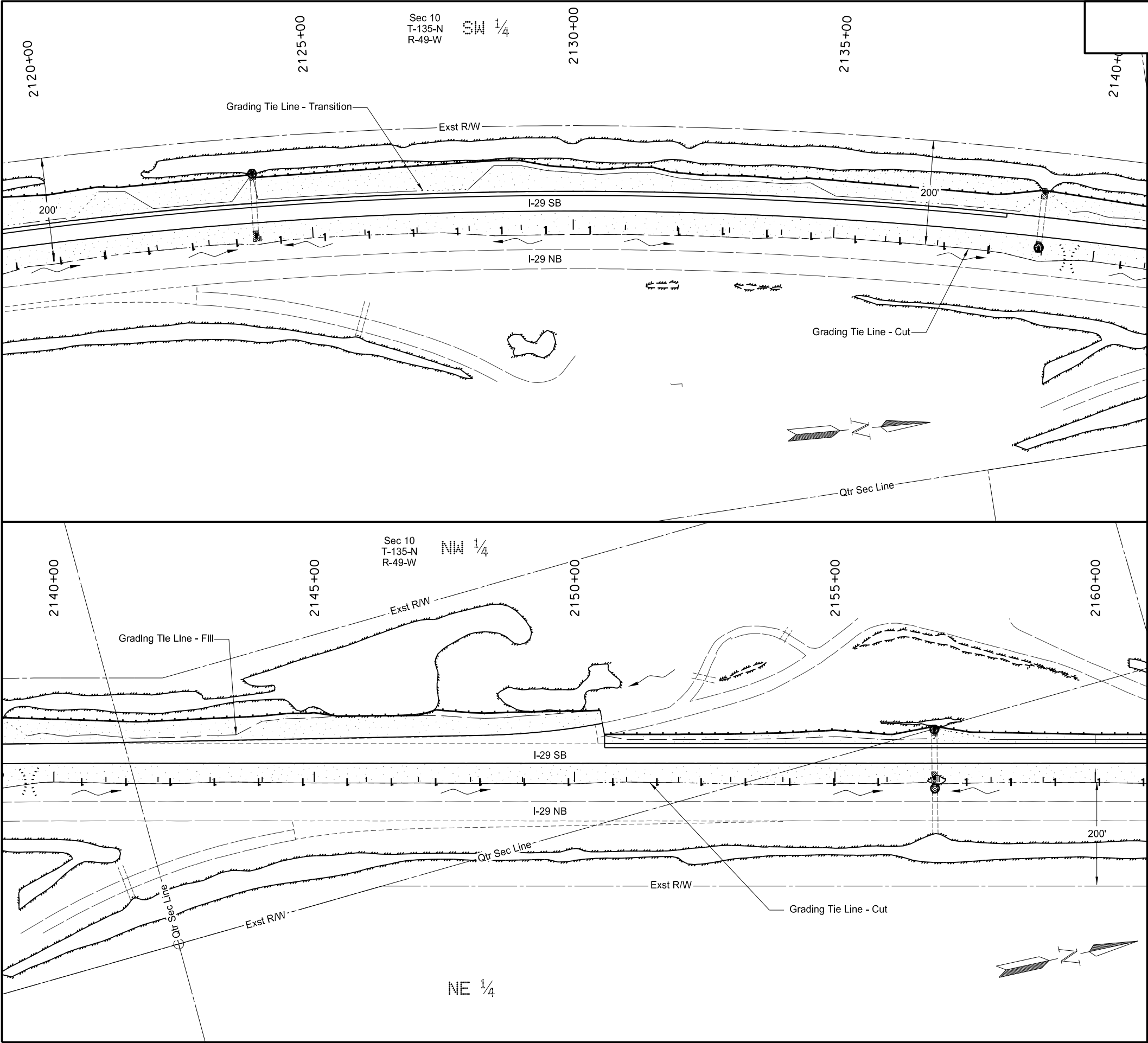


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I-29 - N of Galchutt Exit to Christine Exit
Permanent Sediment and Erosion Control
Interstate 29
Sta 1960+00 to 2000+00 (SCL29)



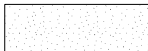




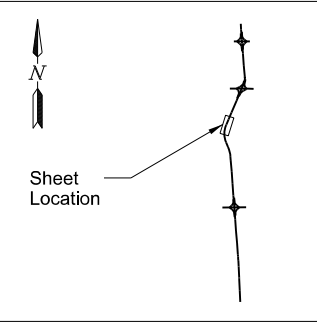


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	10

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
Sta 2120+00 to Sta 2160+00			7.8	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2120+00 to Sta 2160+00			7.8	ACRE
261	0112	FIBER ROLLS 12IN		
Sta 2120+00 to Sta 2160+00			4,861	LF

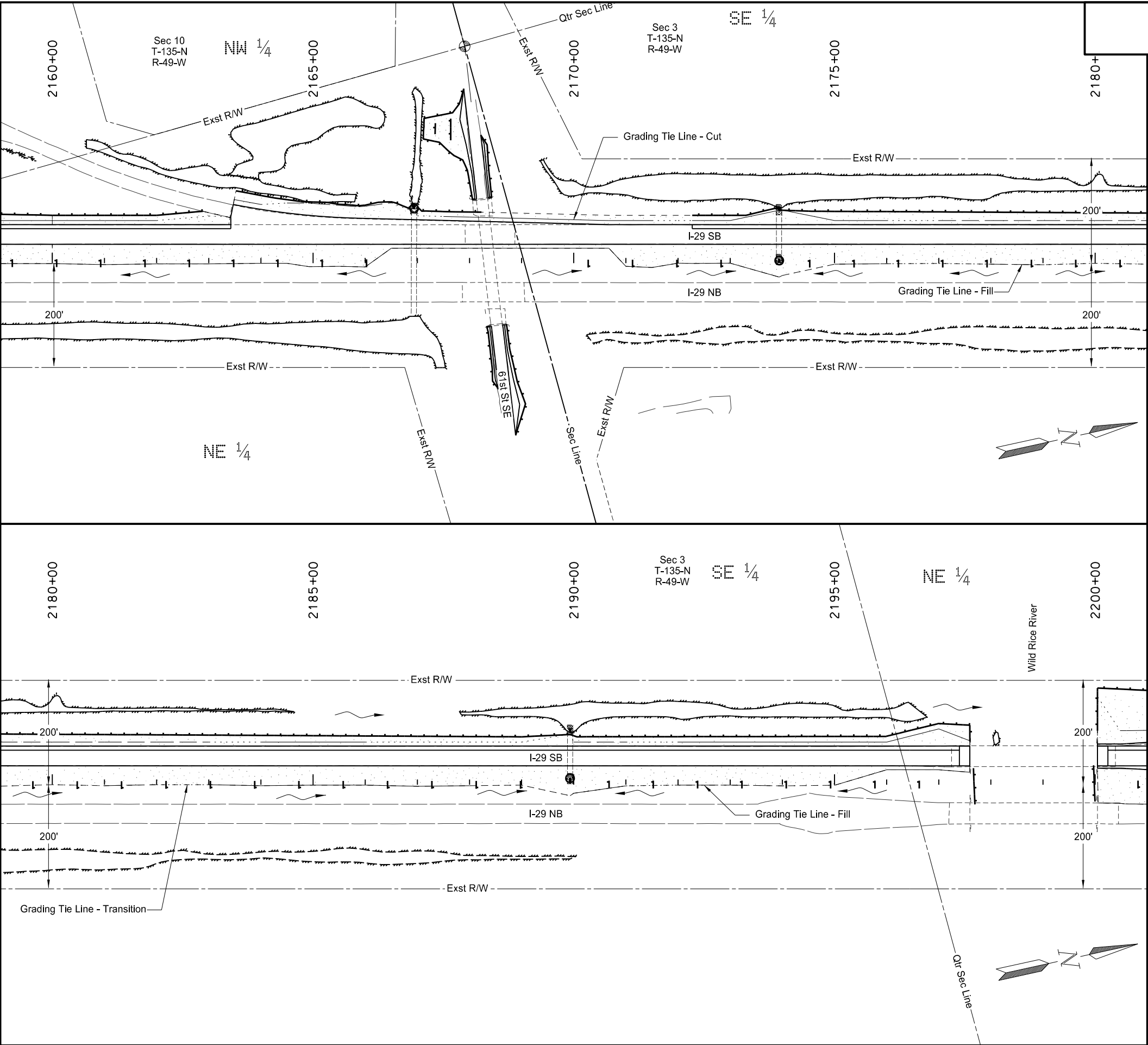
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Fiber Roll



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I-29 - N of Galchutt Exit to Christine Exit
Permanent Sediment and Erosion Control
Interstate 29
Sta 2120+00 to 2160+00 (SCL29)

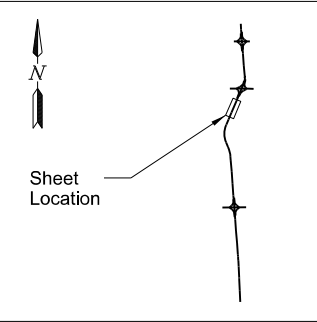


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	11

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
Sta 2160+00 to Sta 2200+00			4.7	ACRE
Sta 2167+12 to Sta 2169+07 (Guardrail Grading)			0.2	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2160+00 to Sta 2200+00			4.7	ACRE
Sta 2167+12 to Sta 2169+07 (Guardrail Grading)			0.2	ACRE
261	0112	FIBER ROLLS 12IN		
Sta 2160+00 to Sta 2200+00			4,111	LF
Sta 2167+12 to Sta 2169+07 (Guardrail Grading)			859	LF

Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Fiber Roll

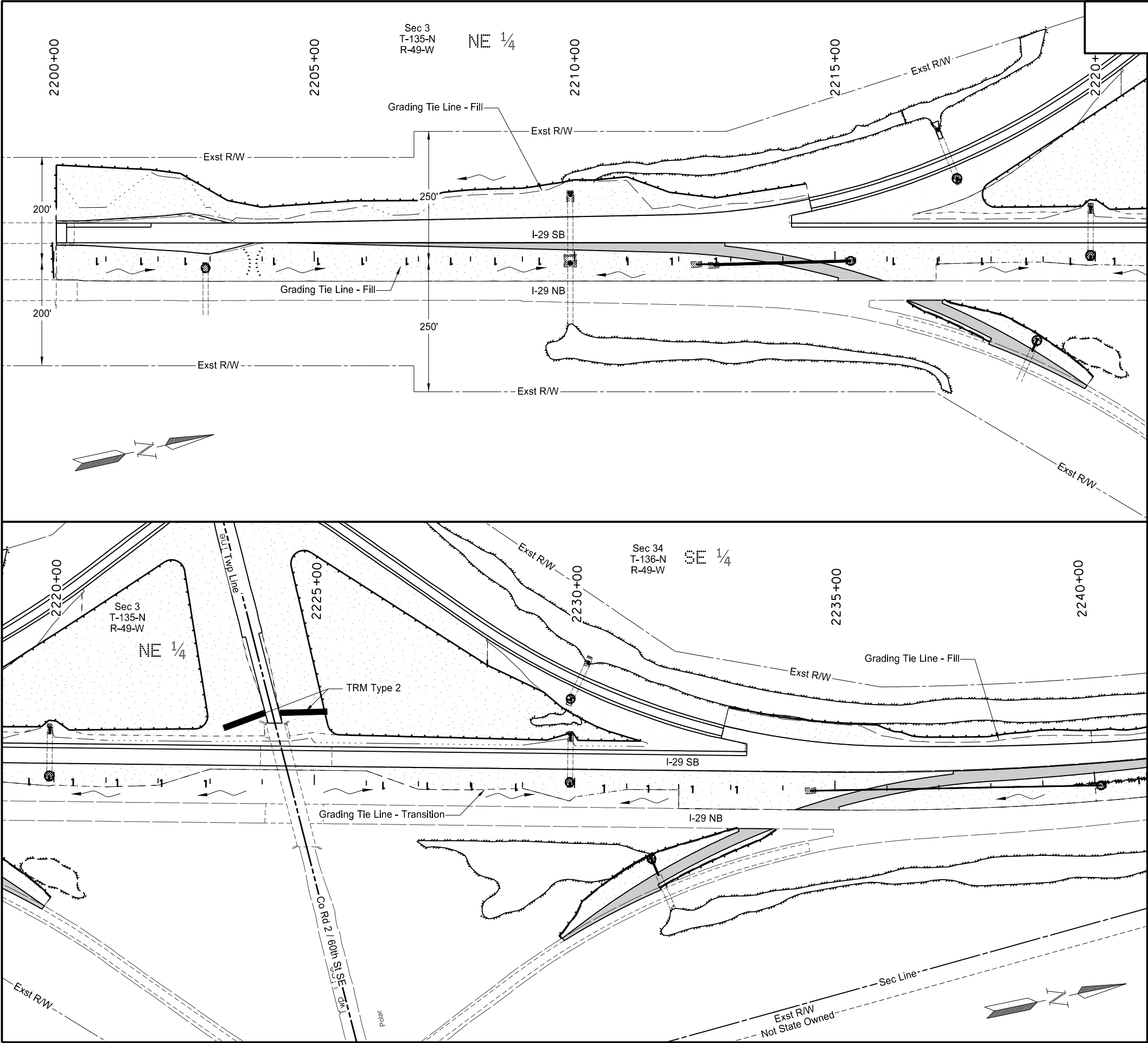


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I-29 - N of Galchutt Exit to Christine Exit

Permanent Sediment and Erosion Control





Interstate 29
Sta 2160+00 to 2200+00 (SCL29)

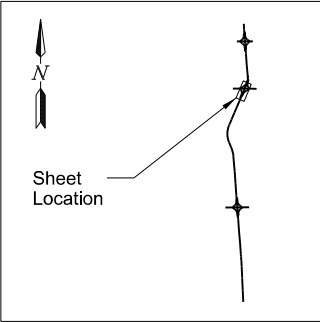


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	12

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
Sta 2200+00 to Sta 2240+00			16.8	ACRE
253	0201	HYDRAULIC MULCH		
Sta 2200+00 to Sta 2240+00			16.8	ACRE
261	0112	FIBER ROLLS 12IN		
Sta 2200+00 to Sta 2240+00			6,648	LF

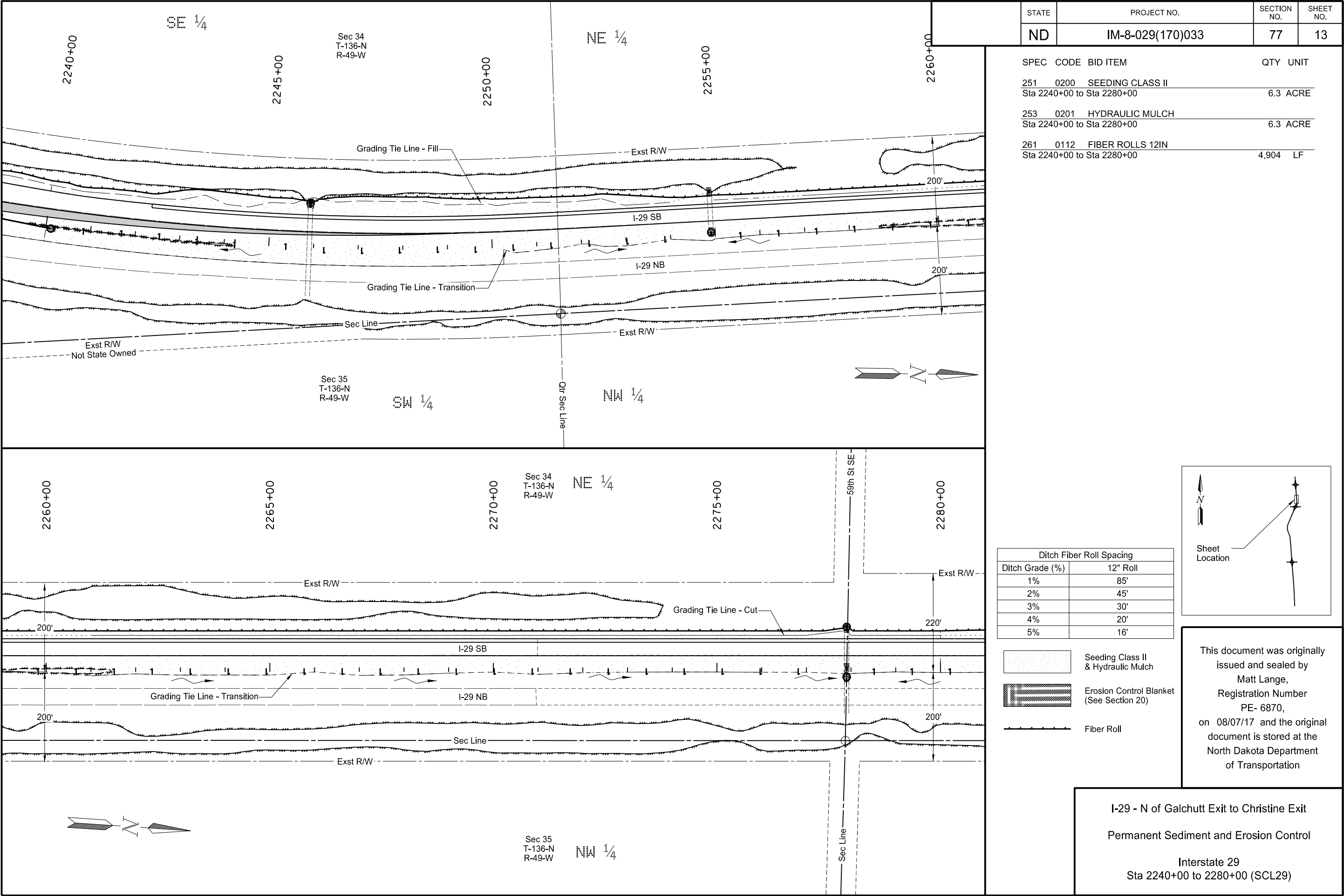
Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

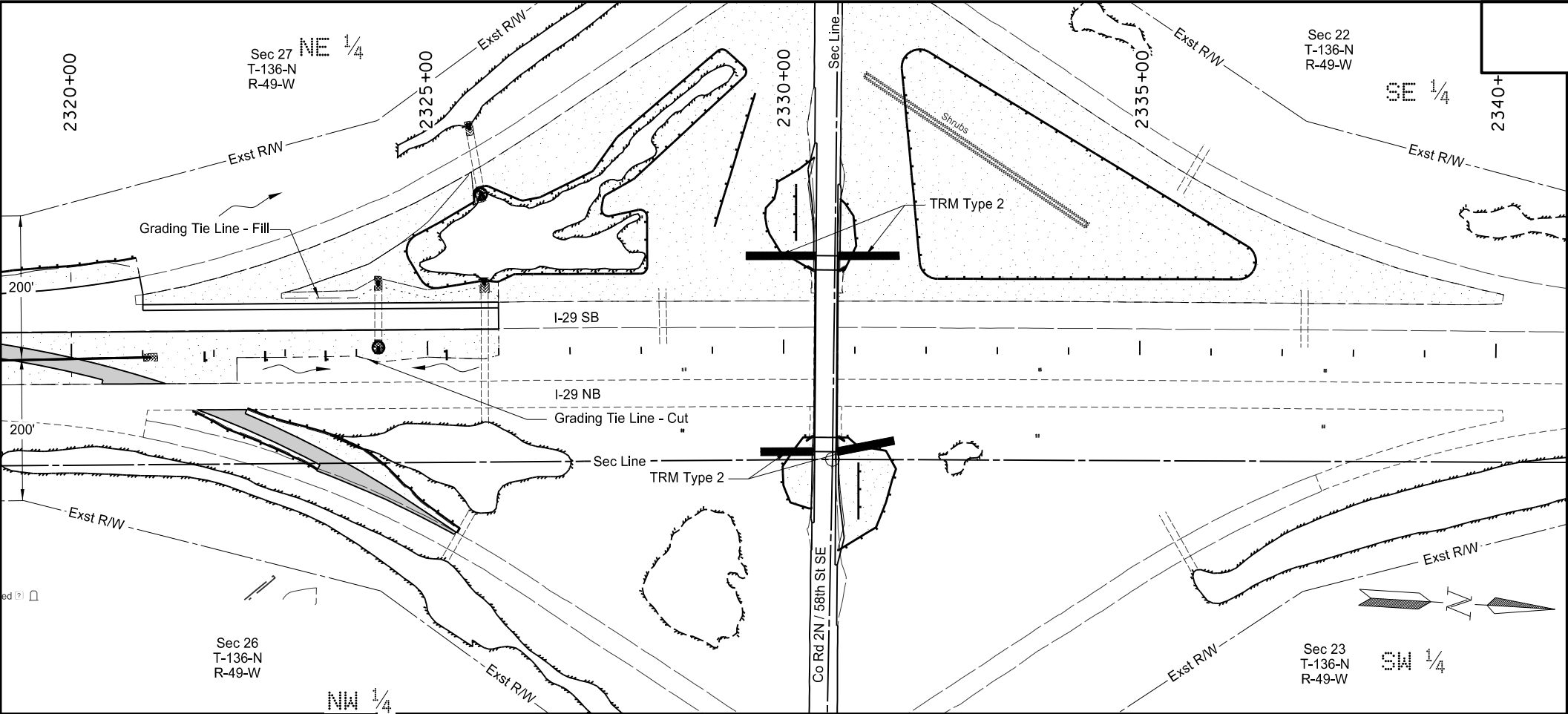
-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Riprap (See Section 20)
-  Fiber Roll



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I-29 - N of Galchutt Exit to Christine Exit
Permanent Sediment and Erosion Control
Interstate 29
Sta 2200+00 to 2240+00 (SCL29)


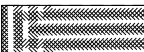



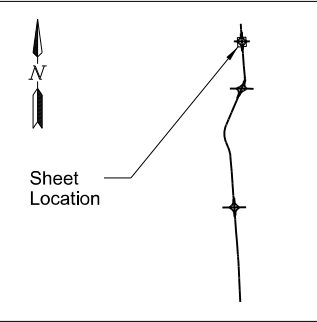


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	77	15

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 2320+00 to Sta 2340+00	9.2	ACRE
		Sta 2329+74 to Sta 2331+58 (Guardrail Grading)	0.5	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 2320+00 to Sta 2340+00	9.2	ACRE
		Sta 2329+74 to Sta 2331+58 (Guardrail Grading)	0.5	ACRE
255	0202	TRM TYPE 2		
		Sta 2320+00 to Sta 2340+00	415	SY
261	0112	FIBER ROLLS 12IN		
		Sta 2320+00 to Sta 2340+00	3,797	LF
		Sta 2329+74 to Sta 2331+58 (Guardrail Grading)	900	LF

Ditch Fiber Roll Spacing	
Ditch Grade (%)	12" Roll
1%	85'
2%	45'
3%	30'
4%	20'
5%	16'

-  Seeding Class II & Hydraulic Mulch
-  Erosion Control Blanket (See Section 20)
-  Fiber Roll

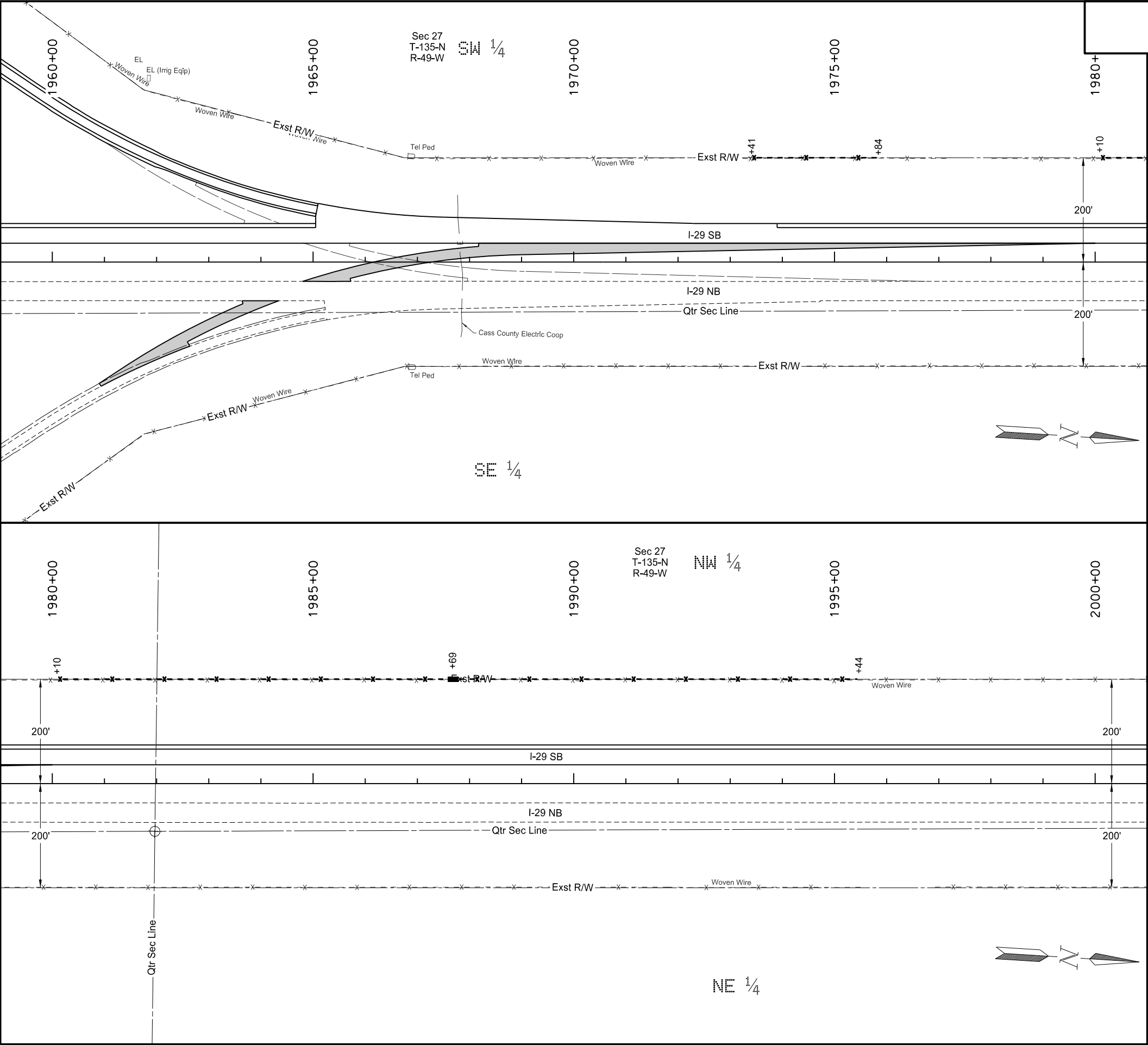


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I-29 - N of Galchutt Exit to Christine Exit

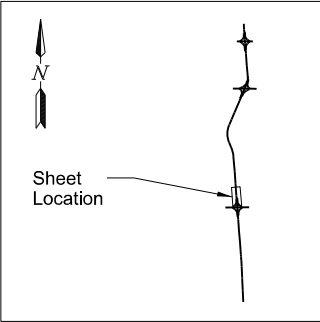
Permanent Sediment and Erosion Control

Interstate 29
Sta 2320+00 to 2340+00 (SCL29)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	80	5

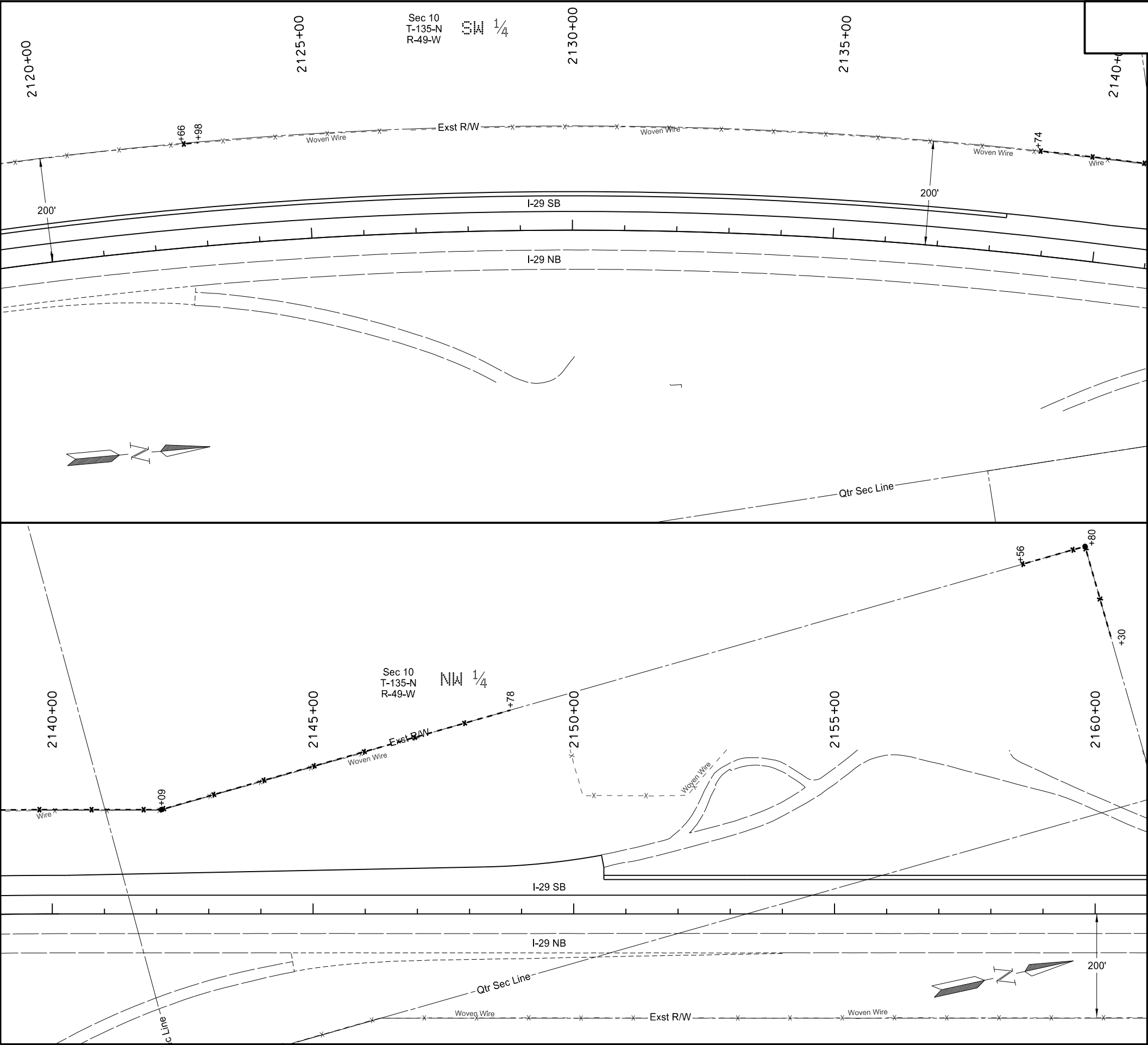
SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
Sta 1973+40.9 ~ 200.0' Lt to Sta 1975+83.9 ~ 200.0' Lt			243	LF
Sta 1980+09.9 ~ 200.0' Lt to Sta 1995+43.9 ~ 200.0' Lt			1,534	LF
752	0700	FENCE WOVEN WIRE		
Sta 1973+40.9 ~ 200.0' Lt to Sta 1975+83.9 ~ 200.0' Lt			243	LF
Sta 1980+09.9 ~ 200.0' Lt to Sta 1995+43.9 ~ 200.0' Lt			1,534	LF
752	4120	DOUBLE BRACE ASSEMBLY WOVEN WIRE		
Sta 1987+68.5 ~ 200.0' Lt			1	EA



- x- Fence Woven Wire
- Corner Assembly Woven Wire
- ▲ Fence Terminal
- Double Brace Assembly Woven Wire

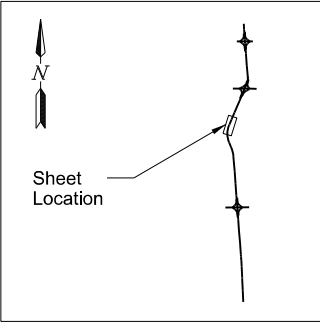
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I-29 - N of Galchutt Exit to Christine Exit
Fencing Layouts
Interstate 29
Sta 1960+00 to 2000+00 (SCL29)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	80	8

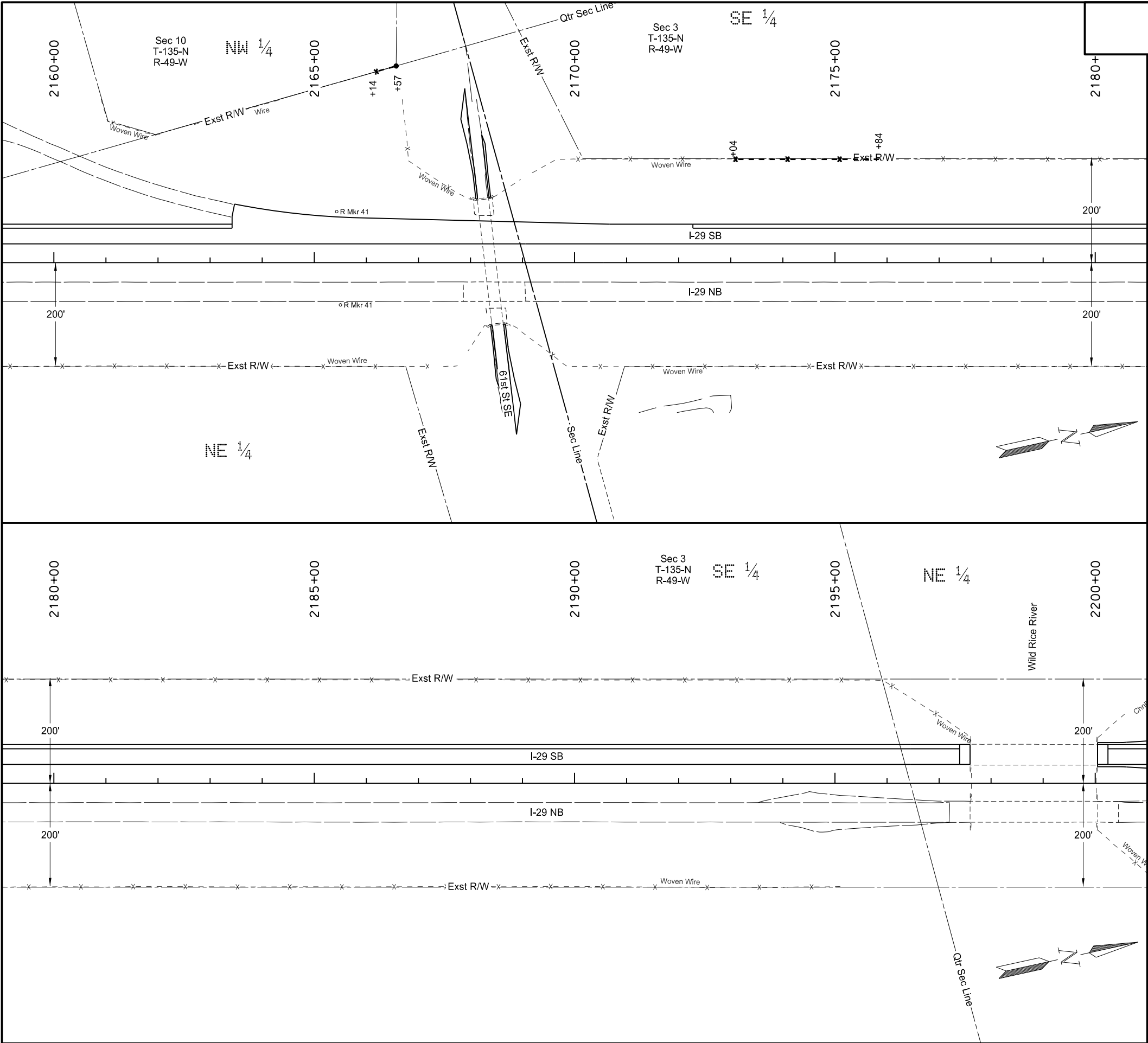
SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
Sta 2122+66.2 ~ 200.0' Lt to Sta 2122+98.2 ~ 200.0' Lt			33	LF
Sta 2138+73.5 ~ 200.0' Lt to Sta 2142+08.9 ~ 200.0' Lt			339	LF
Sta 2142+08.9 ~ 200.0' Lt to Sta 2148+78.4 ~ 390.8' Lt			696	LF
Sta 2158+56.4 ~ 669.5' Lt to Sta 2159+80.5 ~ 704.8' Lt			129	LF
Sta 2159+80.5 ~ 704.8' Lt to Sta 2160+30.4 ~ 529.7' Lt			182	LF
752	0700	FENCE WOVEN WIRE		
Sta 2122+66.2 ~ 200.0' Lt to Sta 2122+98.2 ~ 200.0' Lt			33	LF
Sta 2138+73.5 ~ 200.0' Lt to Sta 2142+08.9 ~ 200.0' Lt			339	LF
Sta 2142+08.9 ~ 200.0' Lt to Sta 2148+78.4 ~ 390.8' Lt			696	LF
Sta 2158+56.4 ~ 669.5' Lt to Sta 2159+80.5 ~ 704.8' Lt			129	LF
Sta 2159+80.5 ~ 704.8' Lt to Sta 2160+30.4 ~ 529.7' Lt			182	LF
752	3120	CORNER ASSEMBLY WOVEN WIRE		
Sta 2142+08.9 ~ 200.0' Lt			1	EA
Sta 2159+80.5 ~ 704.8' Lt			1	EA



- x- Fence Woven Wire
- Corner Assembly Woven Wire
- ▲ Fence Terminal
- Double Brace Assembly Woven Wire

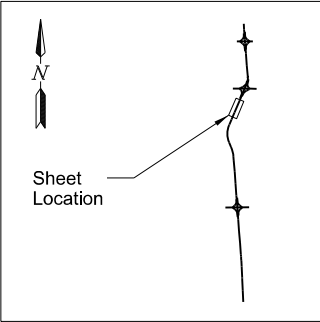
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I-29 - N of Galchutt Exit to Christine Exit
Fencing Layouts
Interstate 29
Sta 2120+00 to 2160+00 (SCL29)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	80	9

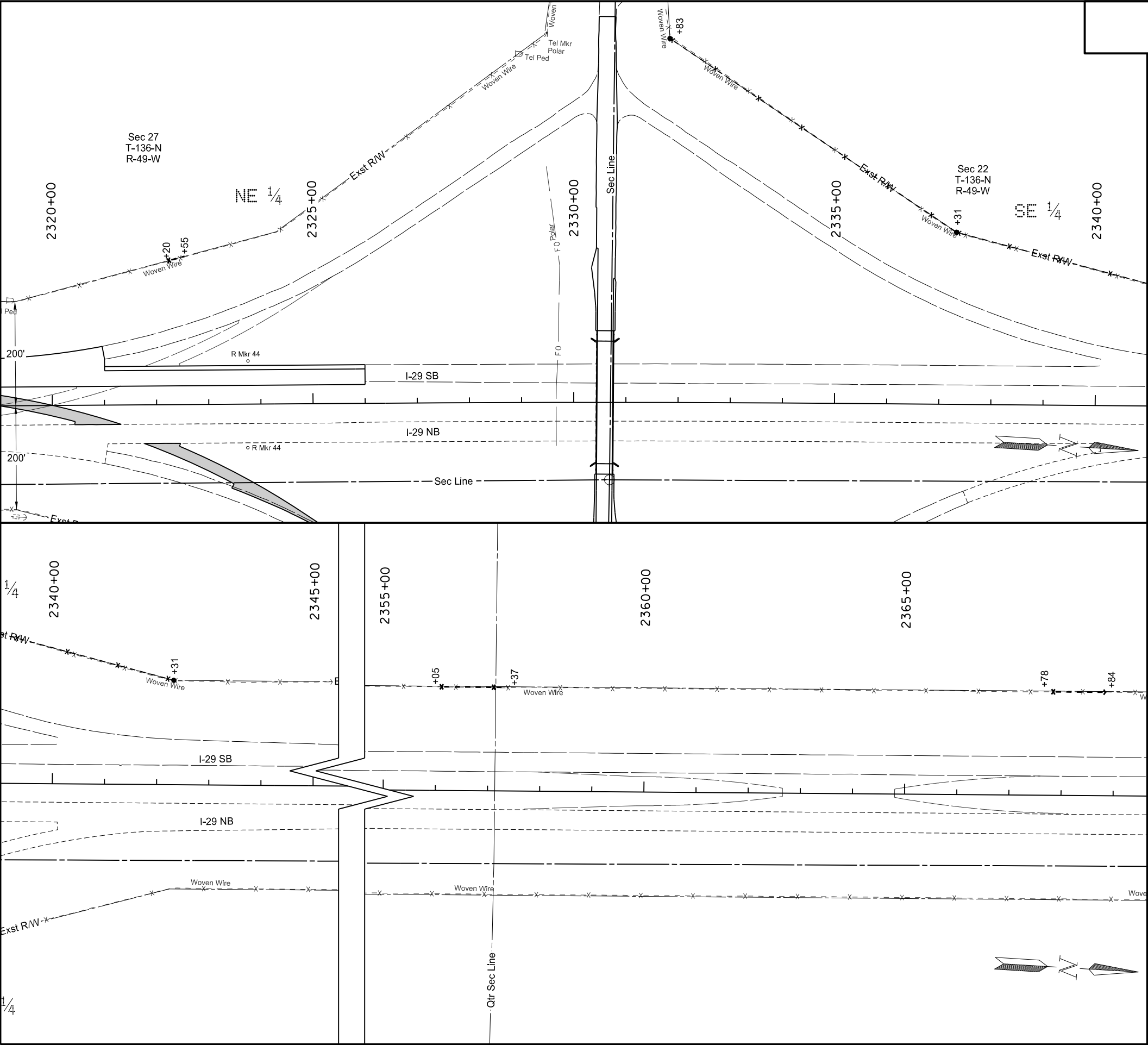
SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
Sta 2166+14.4 ~ 365.6' Lt to Sta 2166+57.3 ~ 377.8' Lt			45	LF
Sta 2173+04.4 ~ 200.0' Lt to Sta 2175+84.4 ~ 200.0' Lt			280	LF
752	0700	FENCE WOVEN WIRE		
Sta 2166+14.4 ~ 365.6' Lt to Sta 2166+57.3 ~ 377.8' Lt			45	LF
Sta 2173+04.4 ~ 200.0' Lt to Sta 2175+84.4 ~ 200.0' Lt			280	LF
752	3120	CORNER ASSEMBLY WOVEN WIRE		
Sta 2166+57.3 ~ 377.8' Lt			1	EA



- x- Fence Woven Wire
- Corner Assembly Woven Wire
- ▲ Fence Terminal
- Double Brace Assembly Woven Wire

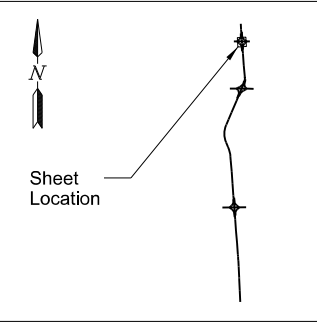
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I-29 - N of Galchutt Exit to Christine Exit
Fencing Layouts
Interstate 29
Sta 2160+00 to 2200+00 (SCL29)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	80	12

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
Sta 2322+20.5 ~ 275.1' Lt to Sta 2322+55.5 ~ 284.2' Lt				36 LF
Sta 2331+82.7 ~ 698.1' Lt to Sta 2337+31.5 ~ 330.0' Lt				664 LF
Sta 2337+31.5 ~ 330.0' Lt to Sta 2342+31.5 ~ 200' Lt				517 LF
Sta 2356+05.5 ~ 200.0' Lt to Sta 2357+37.5 ~ 200' Lt				132 LF
Sta 2367+78.5 ~ 200.0' Lt to Sta 2368+84.5 ~ 200' Lt				106 LF
752	0700	FENCE WOVEN WIRE		
Sta 2322+20.5 ~ 275.1' Lt to Sta 2322+55.5 ~ 284.2' Lt				36 LF
Sta 2331+82.7 ~ 698.1' Lt to Sta 2337+31.5 ~ 330.0' Lt				664 LF
Sta 2337+31.5 ~ 330.0' Lt to Sta 2342+31.5 ~ 200' Lt				517 LF
Sta 2356+05.5 ~ 200.0' Lt to Sta 2357+37.5 ~ 200' Lt				132 LF
Sta 2367+78.5 ~ 200.0' Lt to Sta 2368+84.5 ~ 200' Lt				106 LF
752	3120	CORNER ASSEMBLY WOVEN WIRE		
Sta 2331+82.7 ~ 698.1' Lt				1 EA
Sta 2337+31.5 ~ 330.0' Lt				1 EA
Sta 2342+31.5 ~ 200' Lt				1 EA



- x- Fence Woven Wire
- Corner Assembly Woven Wire
- ▲ Fence Terminal
- Double Brace Assembly Woven Wire

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I-29 - N of Galchutt Exit to Christine Exit
Fencing Layouts
Interstate 29
Sta 2320+00 to 2369+00 (SCL29)

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.			SECTION NO.	SHEET NO.				
											ND	IM-8-029(170)033			81	1				
HORIZONTAL ALIGNMENT				CURVE DATA			US PUBLIC LAND SURVEY DATA				SURVEY CONTROL POINTS									
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			DESC.	SEC-TWP-RGE	NORTHING	EASTING	PNT	NORTHING	EASTING	ELEV	STATION	OFFSET				
Interstate 29 (CHAIN SCL29)				CUR SCL29-1			SE Cor Sec 15 T-136-N R-49-W		357335.34	2892902.01	CONTROL POINT DESCRIPTION									
Begin	1654+38.41	284834.33	2894437.26	PI STA.	= 1691+34.68		E 1/4 Cor Sec 22 T-136-N R-49-W		354696.23	2893052.64	Primary Control (Station & Offset from Chain: SCL29)									
PC	1687+24.58	288118.48	2894321.95	Delta	= 0° 41' 01" (LT)		NW Cor Sec 22 T-136-N R-49-W		357065.83	2887623.52										
PI CUR SCL29-1	1691+34.68	288528.33	2894307.56	Da	= 0° 05' 00"		N 1/4 Cor Sec 22 T-136-N R-49-W		357203.68	2890250.30										
PT	1695+44.78	288937.97	2894288.28	R	= 68754.90'		NE Cor Sec 23 T-136-NR-49-W		357534.26	2898192.08	1-½" Alum Cap Stamped "NDDOT"									
1/4 Line	1717+78.81	291169.54	2894183.26	T	= 410.10'		N 1/4 Cor Sec 23 T-136-N R-49-W		357435.55	2895531.18	GPS 2	304393.43	2893354.11	946.74	1850+30	193 Lt				
Sec Line	1744+23.06	293810.87	2894058.92	L	= 820.20'		E 1/4 Cor Sec 23 T-136-N R-49-W		354898.42	2898355.43	1-½" Alum Cap Stamped "NDDOT"									
1/4 Line	1770+59.08	296443.98	2893935.34				S 1/4 Cor Sec 23 T-136-N R-49-W		352165.05	2895870.34	GPS 3	314904.51	2891990.59	945.31	1956+07	887 Lt				
PI	1795+44.16	298926.33	2893818.84	CUR SCL29-2			E 1/4 Cor Sec 26 T-136-N R-49-W		349627.09	2898687.38	1-½" Alum Cap Stamped "NDDOT"									
Station Equation Interstate 29 (SCL29) at 68th ST SE (EX68ST)				PI STA.	= 1840+78.73		Center Sec 26 T-136-N R-49-W		346892.52	2896220.23	GPS 4	333439.94	2891795.71	933.64	2142+83	294 Rt				
I-29 BK	1796+95.25	299077.23	2893811.23	Delta	= 0° 56' 06" (LT)		SE Cor Sec 26 T-136-N R-49-W		346991.52	2898855.95	1-½" Alum Cap Stamped "NDDOT"									
I-29 AHD	1796+95.25	299077.23	2893811.23	Da	= 0° 06' 00"		NE Cor Sec 26 T-136-N R-49-W		352262.58	2898518.75	GPS 5	352052.43	2892285.10	929.05	2331+19	768 Lt				
68th ST SE	15+00.00	299077.23	2893811.23	R	= 57295.80'		NE Cor Sec 27 T-136-N R-49-W		352056.88	2893203.26	1-½" Alum Cap Stamped "NDDOT"									
Sec Line	1796+95.25	299077.23	2893811.23	T	= 467.54'		NW Cor Sec 27 T-136-N R-49-W		351799.52	2887933.78										
PI	1798+44.33	299226.12	2893803.73	L	= 935.06'		N 1/4 Cor Sec 27 T-136-N R-49-W		351927.68	2890568.58										
1/4 Line	1823+39.51	301718.57	2893687.05				W 1/4 Cor Sec 27 T-136-N R-49-W		349167.63	2888116.30										
PC	1836+11.19	302988.86	2893627.58				S 1/4 Cor Sec 27 T-136-N R-49-W		346662.64	2890932.79	REFERENCE MARKERS									
PI CUR SCL29-2	1840+78.73	303455.89	2893605.72				SE Cor Sec 27 T-136-N R-49-W		346789.08	2893566.58										
PT	1845+46.25	303922.50	2893576.23				E 1/4 Cor Sec 27 T-136-N R-49-W		349422.48	2893384.91										
Sec Line	1849+83.82	304359.20	2893548.64				S 1/4 Cor Sec 34 T-136-N R-49-W		341394.56	2891293.28	R Mkr #	NORTHING	EASTING	STATION	O/S	ALIGNMENT				
1/4 Line	1876+23.38	306993.51	2893382.20				SW Cor Sec 34 T-136-N R-49-W		341272.12	2888662.20										
Twp Line	1902+60.25	309625.07	2893214.95				W 1/4 Cor Sec 34 T-136-N R-49-W		343904.12	2888480.57	32	288290.58	2894395.16	1688+94	79 Rt	SCL29				
1/4 Line	1929+05.53	312265.02	2893047.17				SE Cor Sec 34 T-136-N R-49-W		341517.33	2893924.25	32	288288.31	2894234.78	1688+98	81 Lt	SCL29				
Station Equation Interstate 29 (SCL29) at Colfax Ave (EXCOLFAX)							E 1/4 Cor Sec 34 T-136-N R-49-W		344153.24	2893745.33	33	293619.92	2894142.67	1742+28	75 Rt	SCL29				
I29 BK	1955+51.23	314905.40	2892879.37				E 1/4 Cor Sec 35 T-136-N R-49-W		344350.93	2899027.70	33	293584.17	2893994.56	1742+00	75 Lt	SCL29				
I29 AHD	1955+51.23	314905.40	2892879.37				S 1/4 Cor Sec 35 T-136-N R-49-W		341613.74	2896561.71	34	298834.32	2893739.29	1794+56	83 Lt	SCL29				
Colfax Ave	15+00.00	314905.40	2892879.37				SE Cor Sec 35 T-136-N R-49-W		341710.32	2899199.28	34	298840.86	2893903.63	1794+55	81 Rt	SCL29				
Sec Line	1955+51.23	314905.40	2892879.37				S 1/4 Cor Sec 2 T-135-N R-49-W		336276.11	2896910.89	35	304103.49	2893485.00	1847+33	81 Lt	SCL29				
1/4 Line	1981+97.86	317546.70	2892711.51				SE Cor Sec 2 T-135-N R-49-W		336368.65	2899536.92	35	304113.01	2893645.75	1847+32	80 Rt	SCL29				
Sec Line	2008+44.48	320187.99	2892543.61				SW Cor Sec 3 T-135-N R-49-W		335907.51	2889000.26	All coordinates and measurements on this document derived from the International Foot definition.		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation							
1/4 Line	2034+86.67	322824.85	2892375.93				E 1/4 Cor Sec 3 T-135-N R-49-W		338812.42	2894107.06										
Station Equation Interstate 29 (SCL29) at 63rd ST SE (EX63ST)							W 1/4 Cor Sec 3 T-135-N R-49-W		338552.25	2888833.58										
I-29 BK	2061+28.73	325461.58	2892208.26			<input type="checkbox"/> Assumed Coordinates					INITIALIZING BENCH MARK NDGPS Stations (OPUS)									
I-29 AHD	2061+28.73	325461.58	2892208.26			<input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345					<input checked="" type="checkbox"/> NAVD-88	<input type="checkbox"/> NGVD-29								
NOTES: Sheet 1 of 8				Date Survey Completed 1/31/2017						<input type="checkbox"/> GEOID 09	<input type="checkbox"/>									
Primary Control provided by NDDOT, 2016										<input checked="" type="checkbox"/> GEOID 12B										

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.			SECTION NO.	SHEET NO.			
											ND	IM-8-029(170)033			81	2			
HORIZONTAL ALIGNMENT				CURVE DATA			US PUBLIC LAND SURVEY DATA				REFERENCE MARKERS								
PNT	STATION		NORTHING	EASTING	ARC DEFINITION			DESC.	SEC-TWP-RGE	NORTHING	EASTING	R Mkr #	NORTHING	EASTING	STATION	O/S	ALIGNMENT		
Interstate 29 (CHAIN SCL29)				CUR SCL29-3				SE Cor CALC Sec 3 T-135-N R-49-W		336183.58	2894285.13								
63rd ST SE	15+00.00		325461.58	2892208.26	PI STA.	= 2079+79.10		SE Cor Sec 10 T-135-N R-49-W		330868.14	2894606.61	36	309373.03	2893148.76	1900+13	82 Lt	SCL29		
Sec Line	2061+28.73		325461.58	2892208.26	Delta	= 11° 17' 58" (LT)		E 1/4 Cor Sec 10 T-135-N R-49-W		333525.72	2894446.02	36	309383.34	2893313.28	1900+13	83 Rt	SCL29		
PC	2068+45.47		326176.88	2892162.78	Da	= 0° 30' 00"		S 1/4 Cor Sec 10 T-135-N R-49-W		330743.68	2891967.87	37	314641.50	2892814.43	1952+92	81 Lt	SCL29		
PI CUR SCL29-3	2079+79.10		327308.22	2892090.84	R	= 11459.20'		E 1/4 Cor Sec 15 T-135-N R-49-W		328233.76	2894779.16	37	314653.34	2892978.54	1952+93	83 Rt	SCL29		
1/4 Line-Tan	2087+83.61		328092.57	2891881.58	T	= 1133.63'		SE Cor Sec 15 T-135-N R-49-W		325599.08	2894951.03	38	319912.00	2892482.29	2005+73	79 Lt	SCL29		
PT	2091+05.38		328403.55	2891978.61	L	= 2259.91'		SW Cor Sec 15 T-135-N R-49-W		325334.10	2889665.29	38	319920.41	2892648.06	2005+71	87 Rt	SCL29		
PC	2101+15.81		329379.82	2891538.15				W 1/4 Cor Sec 15 T-135-N R-49-W		327976.54	2889500.66	39	325179.19	2892145.27	2058+51	81 Lt	SCL29		
Sec Line-Tan	2114+76.28		330706.56	2891184.19	CUR SCL29-4			Center Sec 15 T-135-N R-49-W		328105.06	2892138.01	39	325188.60	2892305.59	2058+50	80 Rt	SCL29		
PI CUR SCL29-4	2121+01.99		331298.89	2891026.16	PI STA.	= 2121+01.99		S 1/4 Cor Sec 15 T-135-N R-49-W		325466.59	2892308.14	40	330486.00	2891243.61	2112+53	79 Lt	SCL29		
PT	2140+12.85		333239.18	2891450.66	Delta	= 27° 16' 44" (RT)		SW Cor Sec 10 T-135-N R-49-W		330619.01	2889336.03	40	330504.94	2891402.70	2112+53	81 Rt	SCL29		
1/4 Line	2141+55.15		333378.18	2891481.07	Da	= 0° 42' 00"		W 1/4 Cor Sec 10 T-135-N R-49-W		333263.24	2889168.08	41	335731.98	2891895.70	2165+43	98 Lt	SCL29		
1/4 Line	2153+31.52		334527.37	2891732.50	R	= 8185.24'		Center Sec 10 T-135-N R-49-W		333394.19	2891803.08	41	335700.70	2892072.25	2165+50	81 Rt	SCL29		
Station Equation Interstate 29 (SCL29) at 61st ST SE (EX61ST)					T	= 1986.18'		N 1/4 Cor Sec 10 T-135-N R-49-W		336041.73	2891638.17	42	340849.57	2893201.51	2218+22	84 Rt	SCL29		
I-29 BK	2168+39.05		336000.07	2892054.69	L	= 3897.05'		E 1/4 Cor Sec 22 T-135-N R-49-W		322964.26	2895107.45	42	340887.47	2893041.73	2218+24	80 Lt	SCL29		
I-29 AHD	2168+39.05		336000.07	2892054.69				SE Cor Sec 22 T-135-N R-49-W		320329.01	2895263.91	43	346086.84	2893380.03	2270+99	80 Lt	SCL29		
61st ST SE	17+87.21		336000.07	2892054.69	CUR SCL29-5			SW Cor Sec 22 T-135-N R-49-W		320055.61	2889990.24	43	346093.15	2893543.43	2270+94	83 Rt	SCL29		
Sec Line	2169+05.32		336064.81	2892068.86	PI STA.	= 2243+06.73		W 1/4 Cor Sec 22 T-135-N R-49-W		322694.80	2889827.86	44	351360.86	2893184.19	2323+74	84 Rt	SCL29		
1/4 Line	2196+44.55		338740.75	2892654.31	Delta	= 16° 14' 38" (LT)		Center Sec 22 T-135-N R-49-W		322829.52	2892467.42	44	351350.89	2893018.16	2323+76	83 Lt	SCL29		
Station Equation Interstate 29 (SCL29) at 60th ST SE (EX60ST)					Da	= 1° 00' 00"		S 1/4 Cor Sec 22 T-135-N R-49-W		320192.29	2892626.70	45	356623.30	2892889.70	2376+46	79 Rt	SCL29		
I29 BK	2224+54.84		341486.10	2893254.94	R	= 5729.65'		E 1/4 Cor Sec 27 T-135-N R-49-W		317684.20	2895435.85	45	356621.66	2892727.77	2376+53	83 Lt	SCL29		
I29 AHD	2224+54.84		341486.10	2893254.94	Ls	= 200.00'		W 1/4 Cor Sec 27 T-135-N R-49-W		317418.13	2890164.01	46	361896.31	2892447.70	2429+35	83 Lt	SCL29		
60th ST SE	25+00.00		341486.10	2893254.94	Sc	= 1° 00' 00"		SW Cor Sec 27 T-135-N R-49-W		314780.59	2890337.78	46	361898.30	2892608.55	2429+29	78 Rt	SCL29		
Twp Line	2224+54.84		341486.10	2893254.94	Ts	= 917.73'		Center Sec 27 T-135-N R-49-W		317551.32	2892802.97	All coordinates and measurements on this document derived from the International Foot definition.						This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation	
TS	2233+89.00		342398.67	2893454.59	L	= 1824.42'		S 1/4 Cor Sec 27 T-135-N R-49-W		314910.30	2892979.25								
SC	2235+89.00		342594.29	2893496.20				NE Cor Sec 34 T-135-N R-49-W		315039.37	2895607.66								
PI CUR SCL29-5	2243+06.73		343295.20	2893650.74				E 1/4 Cor Sec 34 T-135-N R-49-W		312394.64	2895741.38								
CS	2250+13.41		344011.19	2893600.72				SE Cor Sec 34 T-135-N R-49-W		309749.77	2895875.48								
1/4 Line-Tan	2251+48.47		344146.01	2893592.69				W 1/4 Cor Sec 34 T-135-N R-49-W		312139.74	2890442.94	INITIALIZING BENCH MARK NDGPS Stations (OPUS)							
ST	2252+13.41		344210.80	2893588.27				SW Cor Sec 34 T-135-N R-49-W		309498.81	2890547.86								
Sec Line	2277+90.28		346781.70	2893412.86				Center Sec 34 T-135-N R-49-W		312267.43	2893097.11								
1/4 Line	2304+29.85		349415.14	2893233.18				N 1/4 Cor Sec 3 T-134-N R-49-W		309625.07	2893214.95								
PC	2326+38.76		351618.83	2893082.82				<input type="checkbox"/> Assumed Coordinates											
NOTES: Sheet 2 of 8 Primary Control provided by NDDOT, 2016					Date Survey Completed 1/31/2017			<input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345				<input checked="" type="checkbox"/> NAVD-88							
												<input type="checkbox"/> NGVD-29							
												<input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____							
											<input checked="" type="checkbox"/> GEOID 12B								

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.		SECTION NO.	SHEET NO.	
										ND	IM-8-029(170)033		81	3		
HORIZONTAL ALIGNMENT				CURVE DATA			US PUBLIC LAND SURVEY DATA				REFERENCE MARKERS					
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			DESC.	SEC-TWP-RGE	NORTHING	EASTING	R Mkr #	NORTHING	EASTING	STATION	O/S	ALIGNMENT
Interstate 29 (CHAIN SCL29)				CUR SCL29-6			W 1/4 Cor Sec 3 T-134-N R-49-W		306877.58	2890734.43						
Station Equation Interstate 29 (SCL29) at 58th ST SE (EX58ST)				PI STA. = 2330+70.36			E 1/4 Cor Sec 3 T-134-N R-49-W		307109.81	2896038.64						
I-29 BK	2330+60.62	341486.10	2893254.94	Delta = 0° 51' 48" (LT)			SE Cor Sec 3 T-134-N R-49-W		304476.41	2896201.36						
I-29 AHD	2330+60.62	341486.10	2893254.94	Da = 0° 06' 00"			S 1/4 Cor Sec 3 T-134-N R-49-W		304359.82	2893562.53						
58th ST SE	18+01.60	341486.10	2893254.94	R = 57295.80'			Center Sec 3 T-134-N R-49-W		306993.78	2893388.65						
PI CUR SCL29-6	2330+70.36	352049.53	2893053.44	T = 431.60'			NW Cor Sec 10 T-134-N R-49-W		304243.14	2890921.93						
PT	2335+01.95	352480.52	2893030.55	L = 863.19'			W 1/4 Cor Sec 10 T-134-N R-49-W		301603.36	2891049.87						
1/4 Line	2357+13.80	354689.26	2892913.25				SW Cor Sec 10 T-134-N R-49-W		298963.49	2891177.72						
Sec Line	2383+57.20	357328.94	2892773.07				E 1/4 Cor Sec 10 T-134-N R-49-W		301834.07	2896330.89						
End	2445+30.39	363493.45	2892445.69				SE Cor Sec 10 T-134-N R-49-W		299191.75	2896460.43						
							Center Sec 10 T-134-N R-49-W		301718.86	2893693.60						
Colfax Interchange SE Ramp (CHAIN EXCOLSER)				CUR EXCOLSER-1			W 1/4 Cor Sec 15 T-134-N R-49-W		296326.49	2891268.80						
Begin	0+00.00	313074.36	2893059.87	PI STA = 10+56.04			SW Cor Sec 15 T-134-N R-49-W		293689.28	2891359.62						
PC	6+40.20	313714.08	2893035.24	Delta = 32° 22' 37" (RT)			N 1/4 Cor Sec 15 T-134-N R-49-W		299077.81	2893824.68						
PI CUR EXCOLSER-1	10+56.04	314129.61	2893019.25	Da = 4° 00' 00"			E 1/4 Cor Sec 15 T-134-N R-49-W		296559.58	2896558.78						
PT	14+49.62	314489.10	2893228.25	R = 1432.39'			S 1/4 Cor Sec 15 T-134-N R-49-W		293809.41	2894026.45						
End	19+65.70	314935.27	2893487.64	T = 415.84'			Center Sec 15 T-134-N R-49-W		296443.55	2893925.57						
				L = 809.42'			W 1/4 Cor Sec 22 T-134-N R-49-W		291048.13	2891469.37						
							SW Cor Sec 22 T-134-N R-49-W		288407.02	2891579.02						
Colfax Interchange NE Ramp (CHAIN EXCOLNER)				CUR EXCOLNER-1			NE Cor Sec 22 T-134-N R-49-W		293927.44	2896657.19						
Begin	0+00.00	314935.27	2893487.78	PI STA = 9+41.11			E 1/4 Cor Sec 22 T-134-N R-49-W		291285.74	2896780.72						
PC	5+28.17	315357.38	2893170.32	Delta = 32° 09' 50" (RT)			SE Cor Sec 22 T-134-N R-49-W		288643.77	2896904.22						
PI CUR EXCOLNER-1	9+41.11	315687.41	2892922.11	Da = 4° 00' 00"			Center Sec 22 T-134-N R-49-W		291167.68	2894141.63						
PT	13+32.26	316098.92	2892887.69	R = 1432.39'			S 1/4 Cor Sec 22 T-134-N R-49-W		288526.07	2894256.81						
End	23+32.46	317095.64	2892804.30	T = 412.95'												
				L = 804.09'												
Colfax Interchange NW Ramp (CHAIN EXCOLNWR)				CUR EXCOLNWR-1												
Begin	0+00.00	314875.53	2892271.11	PI STA = 9+31.91												
PC	5+16.08	315321.68	2892530.49	Delta = 32° 22' 37" (LT)												
PI CUR EXCOLNWR-1	9+31.91	315681.18	2892739.49	Da = 4° 00' 00"												
PT	13+25.50	316096.71	2892723.50	R = 1432.39'												
End	19+65.70	316736.43	2892698.87	T = 415.84'												
				L = 809.42'												
NOTES: Sheet 3 of 8				Date Survey Completed 1/31/2017		<input type="checkbox"/> Assumed Coordinates <input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345				All coordinates and measurements on this document derived from the International Foot definition.		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation				
Primary Control provided by NDDOT, 2016										INITIALIZING BENCH MARK NDGPS Stations (OPUS)						
										<input checked="" type="checkbox"/> NAVD-88 <input type="checkbox"/> NGVD-29 <input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____ <input checked="" type="checkbox"/> GEOID 12B						

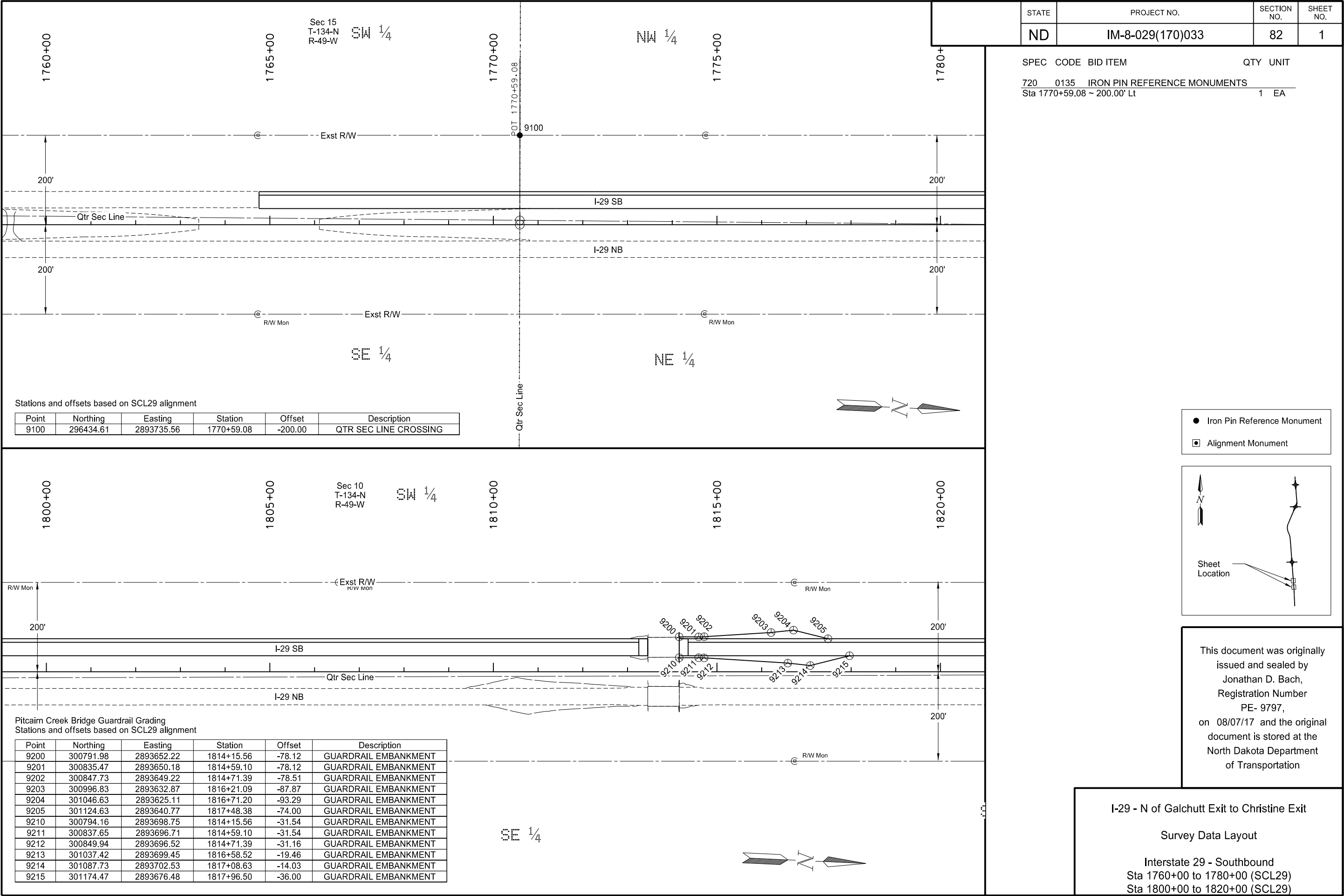
PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.	SECTION NO.	SHEET NO.		
										ND		IM-8-029(170)033	81	4		
HORIZONTAL ALIGNMENT				CURVE DATA			HORIZONTAL ALIGNMENT				CURVE DATA					
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			PNT	STATION	NORTHING	EASTING	ARC DEFINITION					
Colfax Interchange SW Ramp (CHAIN EXCOLSWR)				CUR EXCOLSWR-1			Rest Area SW Ramp (CHAIN EXTRASWR)				CUR EXTRASWR-1		CUR EXTRASWR-2			
Begin	0+00.00	312714.95	2892954.45	PI STA	= 14+13.15		Begin PC	0+00.00	333069.67	2891350.23	PI STA	= 0+92.91	PI STA	= 11+90.48		
PC	10+00.20	313711.66	2892871.06	Delta	= 32° 09' 50" (LT)		PI CUR EXTRASWR-1	0+92.91	333161.19	2891366.21	Delta	= 1° 17' 25" (RT)	Delta	= 15° 00' 00" (LT)		
PI CUR EXCOLSWR-1	14+13.15	314123.18	2892836.64	Da	= 4° 00' 00"		PT	1+85.81	333252.33	2891384.25	Da	= 0° 41' 40"	Da	= 4° 00' 00"		
PT	18+04.29	314453.21	2892588.43	R	= 1432.39'		PC	10+01.90	334052.88	2891542.70	R	= 8251.08'	R	= 1432.39'		
End	23+32.55	314875.51	2892270.82	T	= 412.95'		PI CUR EXTRASWR-2	11+90.48	334237.87	2891579.31	T	= 92.91'	T	= 188.58'		
				L	= 804.09'		PT	13+76.90	334426.04	2891566.80	L	= 185.81'	L	= 375.00'		
							PC	15+10.10	334558.94	2891557.96						
Rest Area SE Ramp (CHAIN EXTRASER)				CUR EXTRASER-1		CUR EXTRASER-2	PI CUR EXTRASWR-3				CUR EXTRASWR-3					
Begin PC	0+00.00	330604.51	2891373.92	PI STA	= 3+17.54	PI STA	= 10+91.59	End PT	17+55.30	334790.28	2891481.79	PI STA	= 16+34.37			
PI CUR EXTRASER-1	3+17.54	330920.94	2891347.49	Delta	= 4° 24' 16" (RT)	Delta	= 31° 01' 49" (RT)					Delta	= 23° 01' 05" (LT)			
PCC	6+34.76	331238.47	2891345.43	Da	= 0° 41' 38"	Da	= 3° 28' 55"					Da	= 9° 23' 15"			
PI CUR EXTRASER-2	10+91.59	331695.29	2891342.47	R	= 8257.24'	R	= 1645.56'					R	= 610.35'			
End PT	15+25.96	332088.25	2891575.41	T	= 317.54'	T	= 456.82'					T	= 124.28'			
				L	= 634.76'	L	= 891.20'					L	= 245.20'			
Rest Area NE Ramp (CHAIN EXRANER)				CUR EXRANER-1		CUR EXRANER-2	Walcott SE Ramp (CHAIN EX60SER)				CUR EX60SER-1		CUR EX60SER-2			
Begin	0+00.00	332466.55	2891877.68	PI STA	= 2+08.77	PI STA	= 10+73.46	Begin	0+00.00	339738.74	2892938.16	PI STA	= 10+64.49	PI STA	= 18+51.97	
PC	0+85.70	332552.24	2891878.72	Delta	= 19° 30' 00" (LT)	Delta	= 30° 00' 00" (RT)	PC	6+40.20	340360.53	3893090.58	Delta	= 33° 00' 00" (RT)	Delta	= 23° 25' 55" (LT)	
PI CUR EXRANER-1	2+08.77	332675.30	2891880.21	Da	= 8° 00' 00"	Da	= 4° 00' 00"	PI CUR EX60SER-1	10+64.49	340772.62	2893191.59	Da	= 4° 00' 00"	Da	= 14° 00' 00"	
PT	3+29.45	332791.79	2891840.54	R	= 716.20'	R	= 1432.39'	PT	14+65.20	341063.22	2893500.75	R	= 1432.39'	R	= 409.26'	
PC	6+89.65	333132.77	2891724.43	T	= 123.07'	T	= 383.81'	PC	14+67.10	341269.99	2893720.43	T	= 424.29'	T	= 84.87'	
PI CUR EXRANER-2	10+73.46	333496.09	2891600.71	L	= 243.75'	L	= 750.00'	PI CUR EX60SER-2	18+51.97	341328.12	2893782.57	L	= 825.00'	L	= 167.37'	
PT	14+39.65	333594.50	2891675.23					PT	19+34.47	341406.04	2893816.20					
End	24+39.85	334853.76	2891869.42					End	20+52.56	341514.47	2893862.98					
Rest Area NW Ramp (CHAIN EXRANWR)				CUR EXRANWR-1												
Begin	0+00.00	335049.97	2891525.83	PI STA	= 5+47.12											
PC	2+55.70	335254.79	2891678.91	Delta	= 23° 00' 00" (LT)											
PI CUR EXRANWR-1	5+47.12	335488.22	2891853.36	Da	= 4° 00' 00"											
PT	8+30.70	335771.26	2891922.74	R	= 1432.39'											
End	14+70.90	336393.06	2892075.16	T	= 291.42'											
				L	= 575.00'											
NOTES: Sheet 4 of 8							<input type="checkbox"/> Assumed Coordinates				All coordinates and measurements on this document derived from the International Foot definition.		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation			
Primary Control provided by NDDOT, 2016							<input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345								INITIALIZING BENCH MARK NDGPS Stations (OPUS)	
							<input checked="" type="checkbox"/> NAVD-88 <input type="checkbox"/> NGVD-29 <input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____ <input checked="" type="checkbox"/> GEOID 12B									

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S												STATE	PROJECT NO.	SECTION NO.	SHEET NO.	
										ND		IM-8-029(170)033		81	5	
HORIZONTAL ALIGNMENT				CURVE DATA				HORIZONTAL ALIGNMENT				CURVE DATA				
PNT	STATION	NORTHING	EASTING	ARC DEFINITION				PNT	STATION	NORTHING	EASTING	ARC DEFINITION				
Walcott NE Ramp (CHAIN EX60NER)				CUR EX60NER-1		CUR EX60NER-2		Christine SE Ramp (CHAIN EX58SER)				CUR EX58SER-1				
Begin	0+00.00	341514.48	2893863.21	PI STA	= 7+69.85	PI STA	= 17+82.64	Begin	0+00.00	350209.27	2893243.15	PI STA	= 10+56.33			
PC	3+47.18	341828.70	2893715.56	Delta	= 32° 52' 51" (RT)	Delta	= 8° 09' 23" (LT)	PC	6+40.20	350484.88	2893215.55	Delta	= 32° 23' 54" (RT)			
PI CUR EX60NER-1	7+69.85	342211.25	2893535.81	Da	= 4° 00' 00"	Da	= 0° 59' 15"	PI CUR EX60SWR-1	10+56.33	351264.61	2893197.61	Da	= 4° 00' 00"			
PT	11+69.20	342630.10	2893592.53	R	= 1432.39'	R	= 5801.80'	PT	14+50.16	351625.25	2893405.21	R	= 1432.39'			
PC	13+68.97	342828.07	2893619.34	T	= 422.67'	T	= 413.66'	End	19+64.33	352070.87	2893661.73	T	= 416.13'			
PI CUR EX60NER-2	17+82.64	343237.99	2893674.86	L	= 822.02'	L	= 825.93'					L	= 809.96'			
End PT	21+94.90	343651.64	2893671.66													
								Christine NE Ramp (CHAIN EX58NER)				CUR EX58NER-1				
Walcott NW Ramp (CHAIN EX60NWR)				CUR EX60NWR-1		CUR EX60NWR-2		Begin	0+00.00	352070.94	2893663.22	PI STA	= 9+36.36			
Begin	0+00.00	341621.23	2892721.06	PI STA	= 1+79.48	PI STA	= 10+01.44	PC	5+19.92	352488.30	2893353.18	Delta	= 32° 25' 18" (RT)			
PC	0+98.51	341547.47	2892687.66	Delta	= 22° 22' 56" (RT)	Delta	= 33° 57' 01" (LT)	PI CUR EX58NER-1	9+36.36	352822.60	2893104.84	Da	= 4° 00' 00"			
PI CUR EX60NWR-1	1+79.48	341621.23	2892721.06	Da	= 13° 59' 59"	Da	= 4° 00' 00"	PT	13+30.46	353237.93	2893074.45	R	= 1432.39'			
PT	2+58.38	341676.72	2892780.02	R	= 409.26'	R	= 1432.39'	End	23+30.66	354235.46	2893001.44	T	= 416.44'			
PC	5+64.19	341886.29	2893002.73	T	= 80.97'	T	= 437.24'					L	= 810.54'			
PI CUR EX60NWR-2	10+01.44	342185.93	2893321.16	L	= 159.87'	L	= 848.75'									
PCC	14+12.94	342612.33	2893417.96					Christine NW Ramp (CHAIN EX58NWR)				CUR EX58NWR-1				
PI CUR EX60NWR-3	17+29.35	342920.89	2893488.01	CUR EX60NWR-3				Begin	0+00.00	352005.87	2892455.17	PI STA	= 9+39.76			
End PT	20+45.10	343235.33	2893523.22	PI STA	= 17+29.35				PC	5+27.38	352460.22	2892712.95	Delta	= 32° 07' 18" (LT)		
				Delta	= 6° 24' 07" (LT)				PI CUR EX58NWR-1	9+39.76	352815.48	2892922.33	Da	= 4° 00' 00"		
				Da	= 1° 00' 47"				PT	13+30.42	353227.70	2892910.76	R	= 1432.39'		
				R	= 5657.63'				End	19+70.62	353867.65	2892892.80	T	= 412.38'		
				T	= 316.41'								L	= 803.04'		
				L	= 632.16'											
Walcott SW Ramp (CHAIN EX60SWR)				CUR EX60SWR-1												
Begin	0+00.00	339283.87	2892707.62	PI STA	= 14+76.08											
PC	10+00.20	340265.04	2892901.80	Delta	= 36° 45' 20" (LT)											
PI CUR EX60SWR-1	14+76.08	340731.86	2892994.20	Da	= 4° 00' 00"											
PT	19+19.09	341161.16	2892788.87	R	= 1432.39'											
End	22+47.83	341457.73	2892647.03	T	= 475.88'											
				L	= 918.89'											
								<input type="checkbox"/> Assumed Coordinates				INITIALIZING BENCH MARK NDGPS Stations (OPUS)		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation		
								<input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345				<input checked="" type="checkbox"/> NAVD-88 <input type="checkbox"/> NGVD-29				
												<input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____ <input checked="" type="checkbox"/> GEOID 12B				
NOTES: Sheet 5 of 8 Primary Control provided by NDDOT, 2016				Date Survey Completed 1/31/2017												

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.		SECTION NO.	SHEET NO.
										ND	IM-8-029(170)033		81	6	
HORIZONTAL ALIGNMENT				CURVE DATA			HORIZONTAL ALIGNMENT				CURVE DATA				
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			PNT	STATION	NORTHING	EASTING	ARC DEFINITION				
Christine SW Ramp (CHAIN EX58SWR)				CUR EX58SWR-1			61st Street SE (CHAIN EX61ST)				CUR EX61ST-1		CUR EX61ST-2		
Begin	0+00.00	349850.37	2893139.34	PI STA	= 14+12.85		Begin	10+00.00	336022.97	2891269.63	PI STA	= 13+69.00		PI STA	= 27+97.16
PC	10+00.20	350846.69	2893051.32	Delta	= 32° 08' 31" (LT)		PC	12+61.00	336036.24	2891530.29	Delta	= 8° 37' 24" (RT)		Delta	= 9° 37' 24" (LT)
PI CUR EX58SWR-1	14+12.85	351257.74	2893015.00	Da	= 4° 00' 00"		PI CUR EX61ST-1	13+69.00	336041.72	2891638.15	Da	= 4° 00' 00"		Da	= 4° 00' 00"
PT	18+03.75	351586.47	2892765.56	R	= 1432.39'		PT	14+76.58	336030.98	2891745.61	R	= 1432.39'		R	= 1432.39'
End	23+30.36	352005.98	2892447.24	T	= 412.65'		Station Equation 61st ST SE (EX61ST) at Interstate 29 (SCL29)				T	= 108.00'		T	= 120.57'
				L	= 803.55'		61st ST SE	17+87.21	336000.07	2892054.69	L	= 215.58'		L	= 240.58'
							I-29 BK	2168+39.05	336000.07	2892054.69					
68th Street SE (CHAIN EX68ST)							I-29 AHD	2168+39.05	336000.07	2892054.69					
Begin	0+00.00	299012.51	2892312.63				PC	26+76.58	335911.57	2892393.65					
Station Equation 68th ST SE (EX68ST) at Interstate 29 (SCL29)							PI CUR EX61ST-2	27+97.16	335899.57	2893059.63					
68th ST SE	15+00.00	299077.23	2893811.23				PT	29+17.17	335907.80	2893179.92					
I-29 BK	1796+95.25	299077.23	2893811.23				End	32+97.87	335933.78	2893559.73					
I-29 AHD	1796+95.25	299077.23	2893811.23												
PI	15+13.46	299077.81	2893824.68				60th Street SE (CHAIN EX60ST)								
End	30+00.00	299142.01	2895309.83				Begin	10+00.00	341416.18	2891756.57					
							Station Equation 60th ST SE (EX60ST) at Interstate 29 (SCL29)								
Colfax Ave (CHAIN EXCOLFAX)							60th ST SE	25+00.00	341486.10	2893254.94					
Begin	0+00.00	314831.83	2891381.19				I29 BK	2224+54.84	341486.10	2893254.94					
Station Equation Colfax Ave (EXCOLFAX) at Interstate 29 (SCL29)							I29 AHD	2224+54.84	341486.10	2893254.94					
Colfax Ave	15+00.00	314905.40	2892879.37				PI	31+70.04	341517.33	2893924.25					
I29 BK	1955+51.23	314905.40	2892879.37				End	40+00.02	341547.65	2894753.67					
I29 AHD	1955+51.23	314905.40	2892879.37												
End	29+88.43	314978.40	2894366.01				58th Street SE (CHAIN EX58ST)								
							Begin	8+00.00	351984.80	2892055.58					
63rd Street SE (CHAIN EX63ST)							Station Equation 58th ST SE (EX58ST) at Interstate 29 (SCL29)								
Begin	0+00.00	325386.48	2890710.14				58th ST SE	18+01.60	341486.10	2893254.94					
Station Equation 63rd ST SE (EX63ST) at Interstate 29 (SCL29)							I-29 BK	2330+60.62	341486.10	2893254.94					
63rd ST SE	15+00.00	325461.58	2892208.26				I-29 AHD	2330+60.62	341486.10	2893254.94					
I-29 BK	2061+28.73	325461.58	2892208.26				PI	19+50.05	352046.91	2893203.95	All coordinates and measurements on this document derived from the International Foot definition.		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation		
I-29 AHD	2061+28.73	325461.58	2892208.26			End	28+00.00	352091.33	2894052.74						
End	30+00.00	325536.68	2893706.38			<input type="checkbox"/> Assumed Coordinates <input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345				INITIALIZING BENCH MARK NDGPS Stations (OPUS)					
										<input checked="" type="checkbox"/> NAVD-88 <input type="checkbox"/> NGVD-29					
										<input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____ <input checked="" type="checkbox"/> GEOID 12B					
NOTES: Sheet 6 of 8 Primary Control provided by NDDOT, 2016				Date Survey Completed 1/31/2017											

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.	SECTION NO.	SHEET NO.
										ND		IM-8-029(170)033	81	7
HORIZONTAL ALIGNMENT				CURVE DATA			HORIZONTAL ALIGNMENT				CURVE DATA			
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			PNT	STATION	NORTHING	EASTING	ARC DEFINITION			
Colfax SE Ramp Connection (CHAIN RC_37_N_SER)				CUR RC_37_N_SER-1			Walcott SW Ramp Connection (CHAIN RC_42_S_SWR)				CUR RC_42_S_SWR-1			
Begin	100+00.00	312832.86	2892971.00	PI STA.	= 111+36.11		Begin	2200+00.00	339087.65	2892772.06	PI STA.	= 2215+25.42		
PI	100+80.07	312912.77	2892965.93	Delta	= 32° 22' 37" (RT)		PI	2200+49.35	339135.86	2892782.60	Delta	= 36° 45' 20" (LT)		
PC	107+20.27	313552.50	2892941.30	Da	= 4° 00' 00"		PC	2210+49.55	340117.07	2892976.56	Da	= 4° 00' 00"		
PI CUR RC_37_N_SER-1	111+36.11	313968.03	2892925.31	R	= 1432.39'		PI CUR RC_42_S_SWR-1	2215+25.42	340583.91	2893068.85	R	= 1432.39'		
PT	115+29.70	314327.52	2893134.31	T	= 415.84'		PT	2219+68.44	341013.17	2892863.43	T	= 475.88'		
End	117+16.60	314489.10	2893228.25	L	= 798.70'		End	2221+37.73	341165.88	2892790.35	L	= 918.89'		
Colfax SW Ramp Connection (CHAIN RC_37_S_SWR)				CUR RC_37_S_SWR-1			Walcott SE Ramp Connection (CHAIN RC_42_N_SER)				CUR RC_42_N_SER-5			
Begin	1200+00.00	312404.88	2893078.32	PI STA.	= 1215+72.18		Begin	300+00.00	339534.54	2892787.03	PI STA.	= 311+44.57		
PI	1201+59.03	312563.59	2893068.23	Delta	= 32° 09' 50" (LT)		PI	300+80.07	339612.76	2892804.14	Delta	= 33° 00' 00" (RT)		
PC	1211+59.23	313560.31	2892984.83	Da	= 4° 00' 00"		PC	307+20.27	340234.56	2892956.56	Da	= 4° 00' 00"		
PI CUR RC_37_S_SWR-1	1215+72.18	313971.82	2892950.40	R	= 1432.39'		PI CUR RC_42_N_SER-5	311+44.57	340646.65	2893057.57	R	= 1432.39'		
PT	1219+63.33	314301.85	2892702.18	T	= 412.95'		PT	315+45.27	340937.25	2893366.73	T	= 424.29'		
End	1221+52.71	314453.20	2892588.35	L	= 804.10'		End	317+29.20	341063.22	2893500.75	L	= 825.00'		
Colfax NE Ramp Connection (CHAIN RC_37_N_NER)				CUR RC_37_N_NER-1										
Begin	200+00.00	315357.38	2893170.32	PI STA	= 206+02.33									
PC	201+89.38	315508.73	2893056.50	Delta	= 32° 09' 50" (RT)									
PI CUR RC_37_N_NER-1	206+02.33	315838.76	2892808.29	Da	= 4° 00' 00"									
PT	209+93.47	316250.28	2892773.86	R	= 1432.39'									
PI	219+93.67	317247.00	2892690.48	T	= 412.95'									
End	220+93.73	317346.85	2892684.13	L	= 804.10'									
Colfax NW Ramp Connection (CHAIN RC_37_S_NWR)				CUR RC_37_S_NWR-1										
Begin	1300+00.00	315321.69	2892530.41	PI STA	= 1306+02.74									
PC	1301+83.91	315483.28	2892624.35	Delta	= 32° 22' 34" (LT)									
PI CUR RC_37_S_NWR-1	1306+02.74	315842.78	2892833.33	Da	= 4° 00' 00"									
PT	1309+96.31	316258.29	2892817.33	R	= 1432.39'									
PI	1316+36.51	316898.02	2892792.70	T	= 415.83'									
End	1317+65.85	317027.10	2892784.49	L	= 809.40'									
											<div>All coordinates and measurements on this document derived from the International Foot definition.</div> <div>INITIALIZING BENCH MARK NDGPS Stations (OPUS)</div> <div><div><input checked="" type="checkbox"/> NAVD-88</div><div><input type="checkbox"/> NGVD-29</div><div><input type="checkbox"/> GEOID 09</div><div><input checked="" type="checkbox"/> GEOID 12B</div></div> <div><div></div><div></div></div>			
							<div><input type="checkbox"/> Assumed Coordinates</div>							
							<div><input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345</div>							
NOTES: Sheet 7 of 8						Date Survey Completed 1/31/2017								
Primary Control provided by NDDOT, 2016														

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I 29_NORTH OF GALCHUTT EXIT TO CHRISTINE EXIT N/S											STATE	PROJECT NO.	SECTION NO.	SHEET NO.	
										ND		IM-8-029(170)033	81	8	
HORIZONTAL ALIGNMENT				CURVE DATA			HORIZONTAL ALIGNMENT				CURVE DATA				
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			PNT	STATION	NORTHING	EASTING	ARC DEFINITION				
Walcott NE Ramp Connection (CHAIN RC_42_N_NER)				CUR RC_42_N_NER-3		CUR RC_42_N_NER-4		Christine SE Ramp Connection (CHAIN RC_44_N_SER)				CUR RC_44_N_SER-5			
Begin	400+00.00	341828.70	2893715.56	PI STA	= 406+25.86	PI STA	= 415+38.36	Begin	500+00.00	349967.49	2893155.40	PI STA.	= 511+36.40		
PC	401+85.90	341996.95	2893636.50	Delta	= 34° 08' 56" (RT)	Delta	= 10° 00' 04" (RT)	PI	500+80.07	350047.37	2893149.95	Delta	= 32° 23' 54" (RT)		
PI CUR RC_42_N_NER-3	406+25.86	342395.14	2893449.40	Da	= 4° 00' 00"	Da	= 1° 00' 19"	PC	507+20.27	350686.98	2893122.35	Da	= 4° 00' 00"		
PRC	410+39.62	342829.71	2893518.08	R	= 1432.39'	R	= 5700.00'	PI CUR RC_44_N_SER-5	511+36.40	351102.72	2893104.41	R	= 1432.39'		
PI CUR RC_42_N_NER-4	415+38.36	343323.81	2893586.05	T	= 439.96'	T	= 498.75'	PT	515+30.23	351463.36	2893312.02	T	= 416.13'		
PRC	420+34.58	343822.20	2893567.17	L	= 853.72'	L	= 994.96'	End	517+17.03	351625.25	2893405.21	L	= 809.96'		
PI CUR RC_42_N_NER-5	420+84.49	343872.10	2893566.28												
End PT	421+34.40	343921.98	2893564.52	CUR RC_42_N_NER-5				Crossover South SW (CHAIN XO_S_SW)				CUR XO_S_SW-1		CUR XO_S_SW-2	
				PI STA	= 420+84.49			Begin PC	200+00.00	295422.08	2893936.61	PI STA	= 201+71.58	PI STA	= 206+63.91
				Delta	= 01° 00' 19" (LT)			PI CUR XO_S_SW-1	201+71.58	295593.417	2893928.51	Delta	= 9° 48' 25" (RT)	Delta	= 9° 48' 25" (LT)
				Da	= 1° 00' 25"			PT	203+42.33	295763.74	2893949.73	Da	= 2° 51' 53"	Da	= 2° 51' 53"
				R	= 5689.65'			PC	204+92.33	295912.58	2893968.28	R	= 2000.00'	R	= 2000.00'
				T	= 49.91'			PI CUR XO_S_SW-2	206+63.91	296082.85	2893989.49	T	= 171.58'	T	= 171.58'
				L	= 99.82'			PT	208+34.65	296254.24	2893981.40	L	= 342.33'	L	= 342.33'
								End	210+48.14	296467.71	2893979.33				
Walcott NW Ramp Connection (CHAIN RC_42_S_NWR)				CUR RC_42_S_NWR-1		CUR RC_42_S_NWR-2									
Begin	2300+00.00	341881.46	2893001.74	PI STA	= 2306+22.84	PI STA	= 2313+65.15	Crossover North SE (CHAIN XO_N_SE)				CUR XO_N_SE-1		CUR XO_N_SE-2	
PC	2301+75.20	342001.48	2893129.38	Delta	= 34° 42' 33" (LT)	Delta	= 06° 24' 14" (LT)	Begin PC	600+00.00	354748.75	2892954.40	PI STA	= 603+85.07	PI STA	= 608+77.39
PI CUR RC_42_S_NWR-1	2306+22.84	342308.14	2893455.48	Da	= 4° 00' 00"	Da	= 0° 59' 41"	PC	602+13.48	354961.36	2892935.13	Delta	= 9° 48' 25" (LT)	Delta	= 9° 48' 25" (RT)
PRC	2310+42.93	342745.91	2893548.84	R	= 1432.39'	R	= 5759.83'	PI CUR XO_N_SE-1	603+85.07	355132.71	2892926.06	Da	= 2° 51' 53"	Da	= 2° 51' 53"
PI CUR RC_42_S_NWR-2	2313+65.15	343062.02	2893611.40	T	= 447.64'	T	= 322.22'	PT	605+55.81	355300.00	2892887.94	R	= 2000.00'	R	= 2000.00'
End PT	2316+86.70	343383.12	2893638.22	L	= 867.73'	L	= 643.77'	PC	607+05.81	355446.25	2892854.61	T	= 171.58'	T	= 171.58'
								PI CUR XO_N_SE-2	608+77.39	355613.54	2892816.48	L	= 342.33'	L	= 342.33'
Christine SW Ramp Connection (CHAIN RC_44_S_SWR)				CUR RC_44_S_SWR-1				End PT	610+48.14	355784.89	2892807.41				
Begin	3200+00.00	349566.50	2893263.50	PI STA.	= 3215+44.61										
PI	3201+31.76	349697.95	2893254.54	Delta	= 32° 08' 31" (LT)										
PC	3200+31.96	350694.28	2893166.62	Da	= 4° 00' 00"										
PI CUR RC_44_S_SWR-1	3215+44.61	351105.34	2893130.35	R	= 1432.39'										
PT	3219+35.51	351434.09	2892880.94	T	= 412.65'										
End	3221+25.00	351585.06	2892766.42	L	= 803.55'										
												All coordinates and measurements on this document derived from the International Foot definition.		This document was originally issued and sealed by Carl P. Olson, Registration Number LS- 4687 , on 08/07/17 and the original document is stored at the North Dakota Department of Transportation	
												INITIALIZING BENCH MARK NDGPS Stations (OPUS)			
												<input checked="" type="checkbox"/> NAVD-88 <input type="checkbox"/> NGVD-29			
NOTES: Sheet 8 of 8												<input type="checkbox"/> GEOID 09 <input type="checkbox"/> _____			
Primary Control provided by NDDOT, 2016						Date Survey Completed 1/31/2017		<input type="checkbox"/> Assumed Coordinates <input checked="" type="checkbox"/> All coordinates on this sheet are Richland County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999345				<input checked="" type="checkbox"/> GEOID 12B			

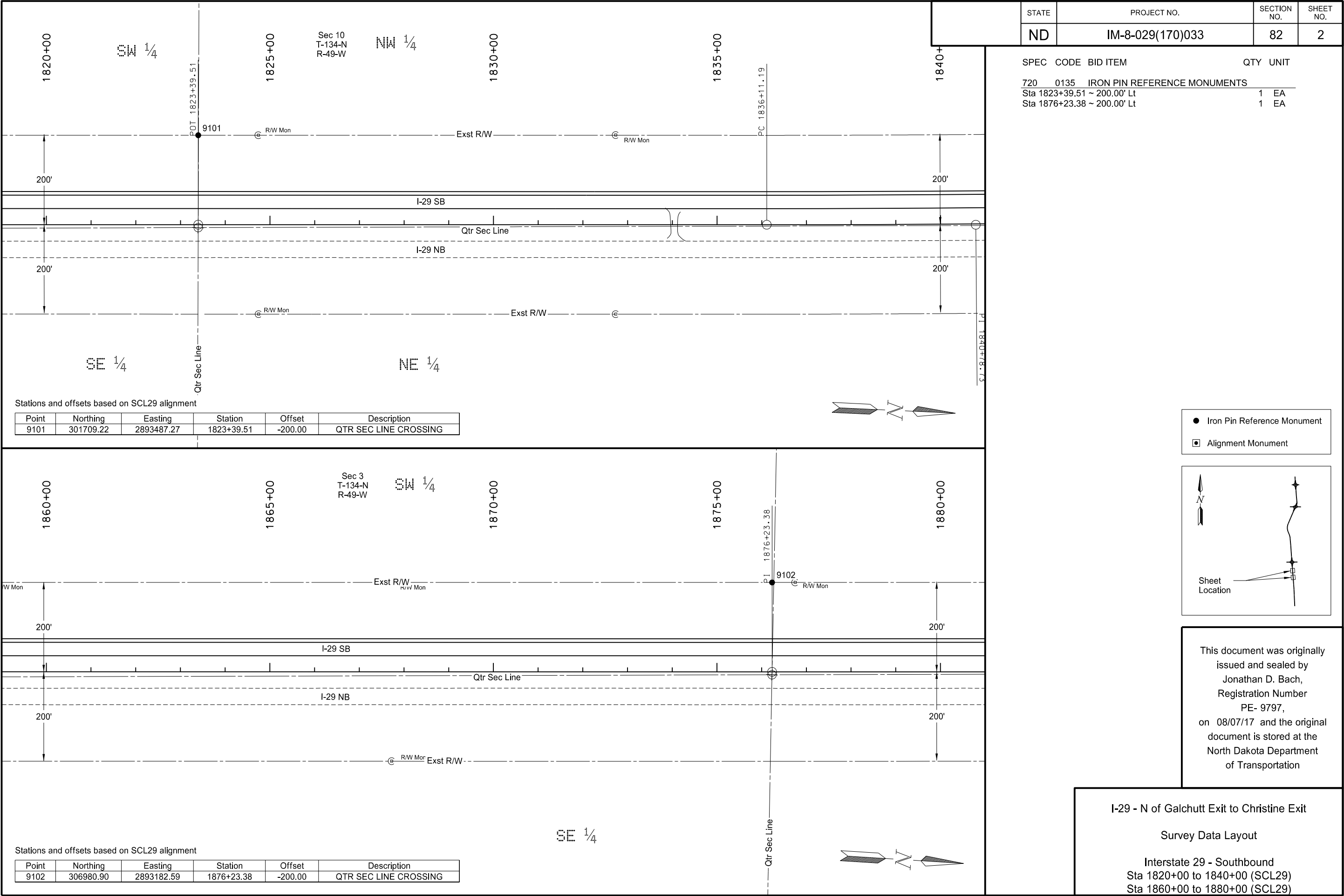


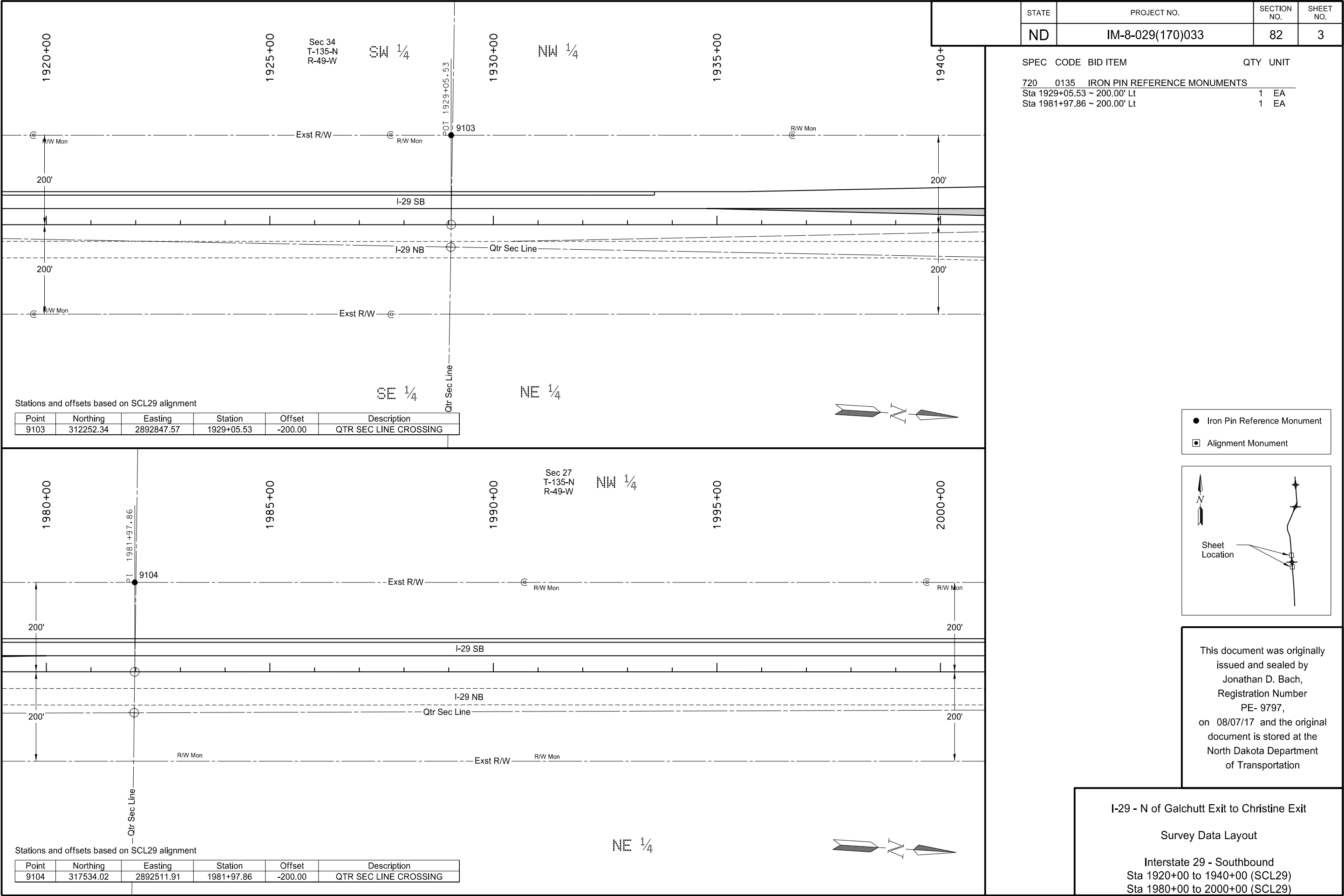
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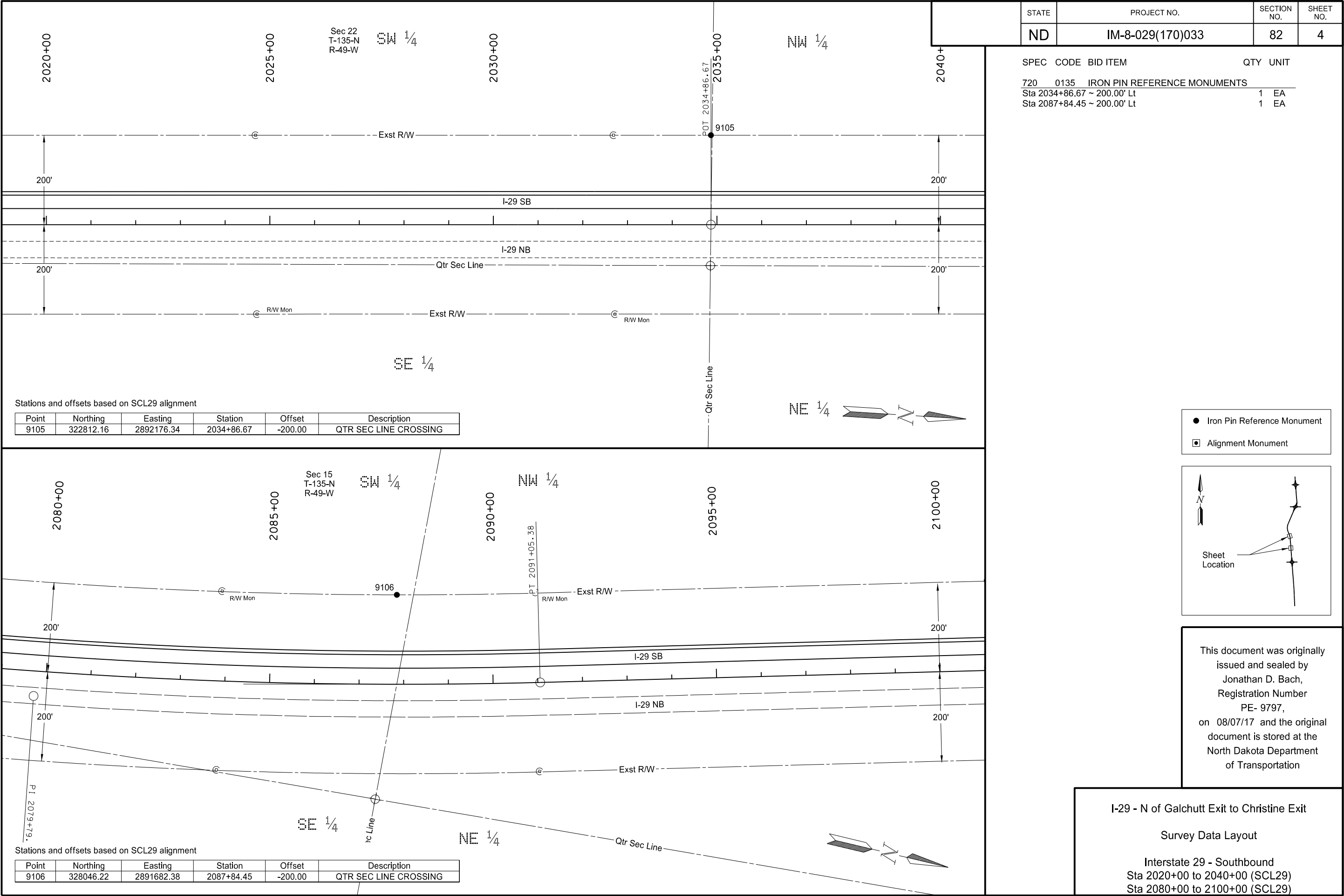
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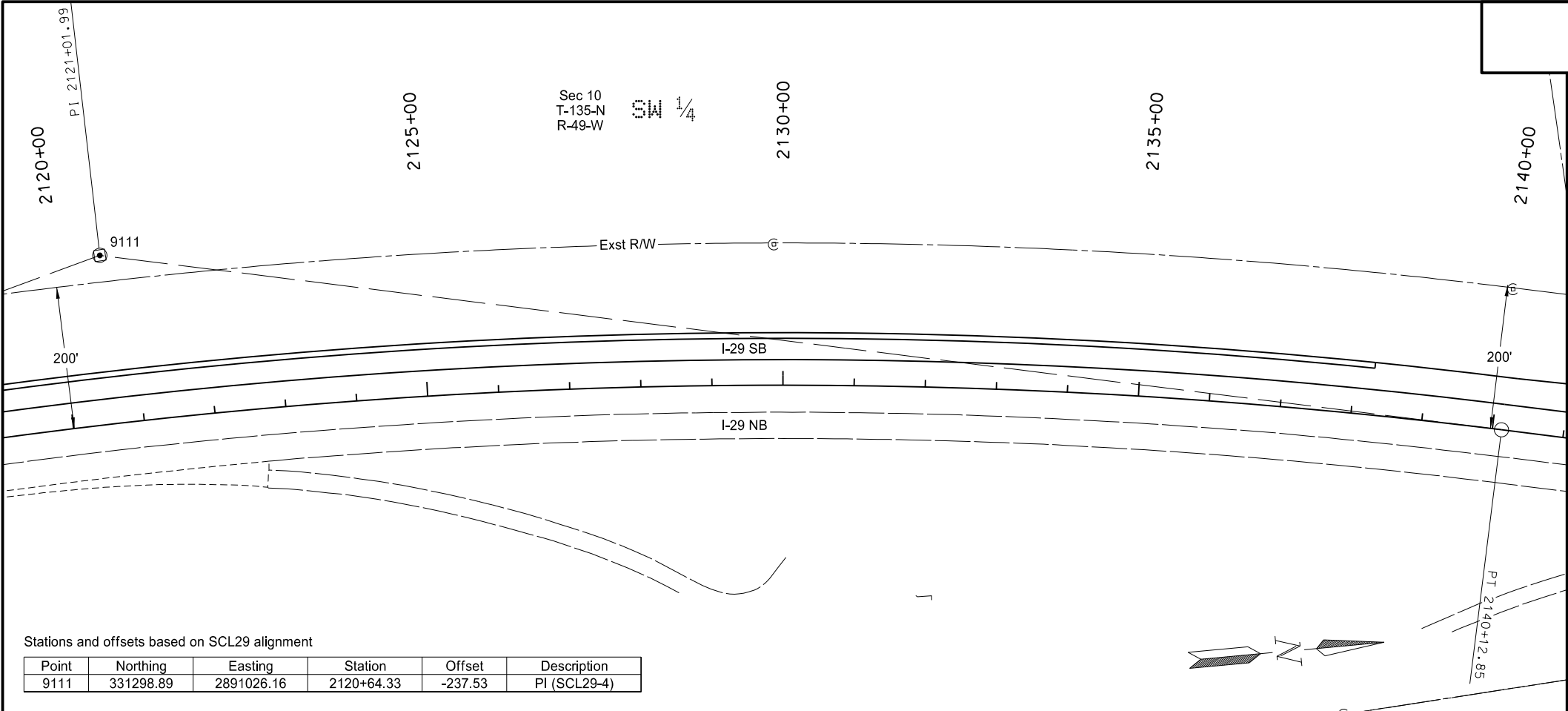
jonathanbach

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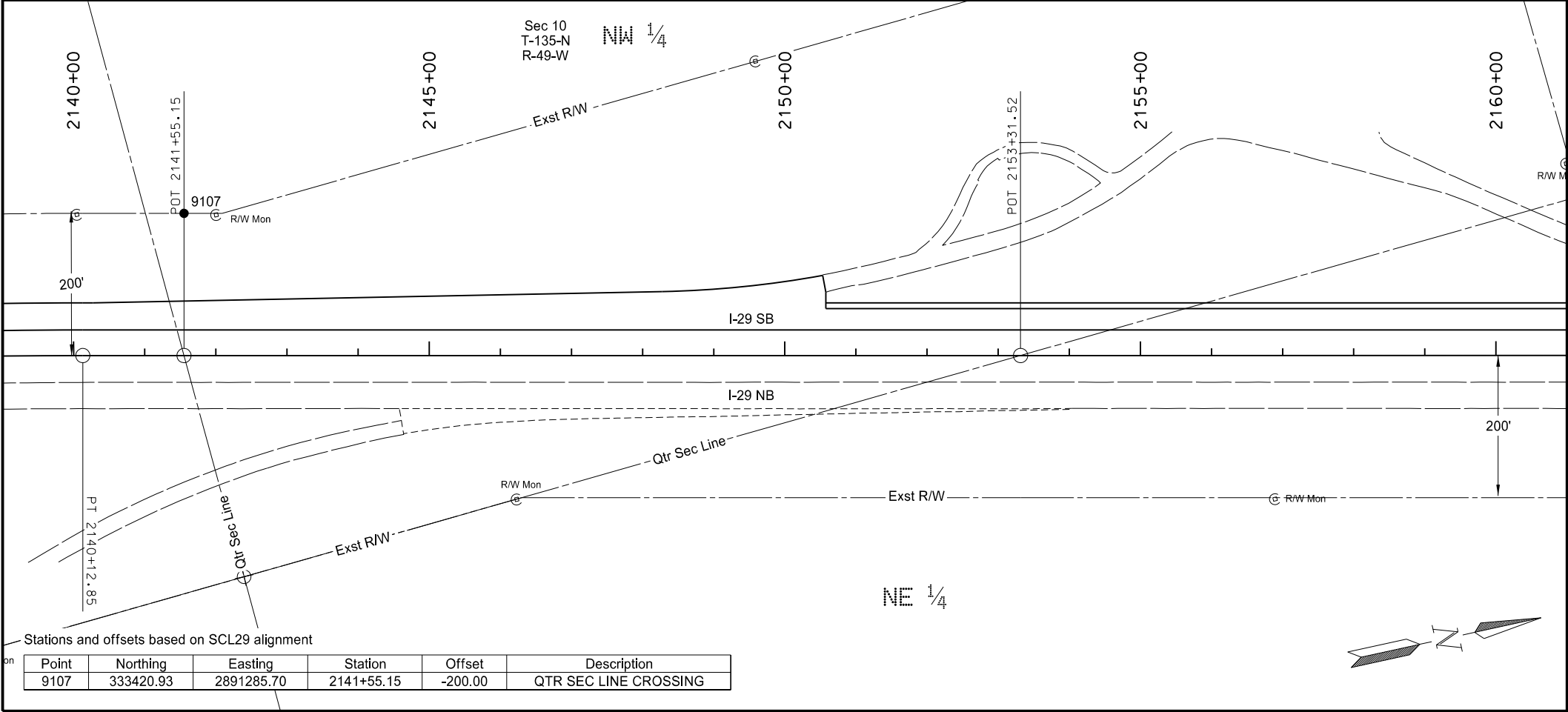






Stations and offsets based on SCL29 alignment

Point	Northing	Easting	Station	Offset	Description
9111	331298.89	2891026.16	2120+64.33	-237.53	PI (SCL29-4)



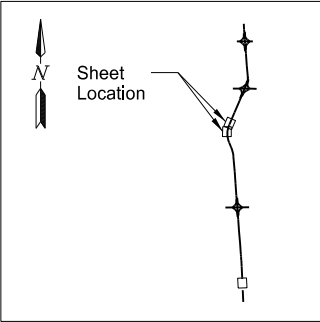
Stations and offsets based on SCL29 alignment

Point	Northing	Easting	Station	Offset	Description
9107	333420.93	2891285.70	2141+55.15	-200.00	QTR SEC LINE CROSSING

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	82	5

SPEC	CODE	BID ITEM	QTY	UNIT
720	0125	ALIGNMENT MONUMENTS		
		Sta 2120+64.33 ~ 237.53' Lt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 2141+55.15 ~ 200.00' Lt	1	EA

- Iron Pin Reference Monument
- Alignment Monument

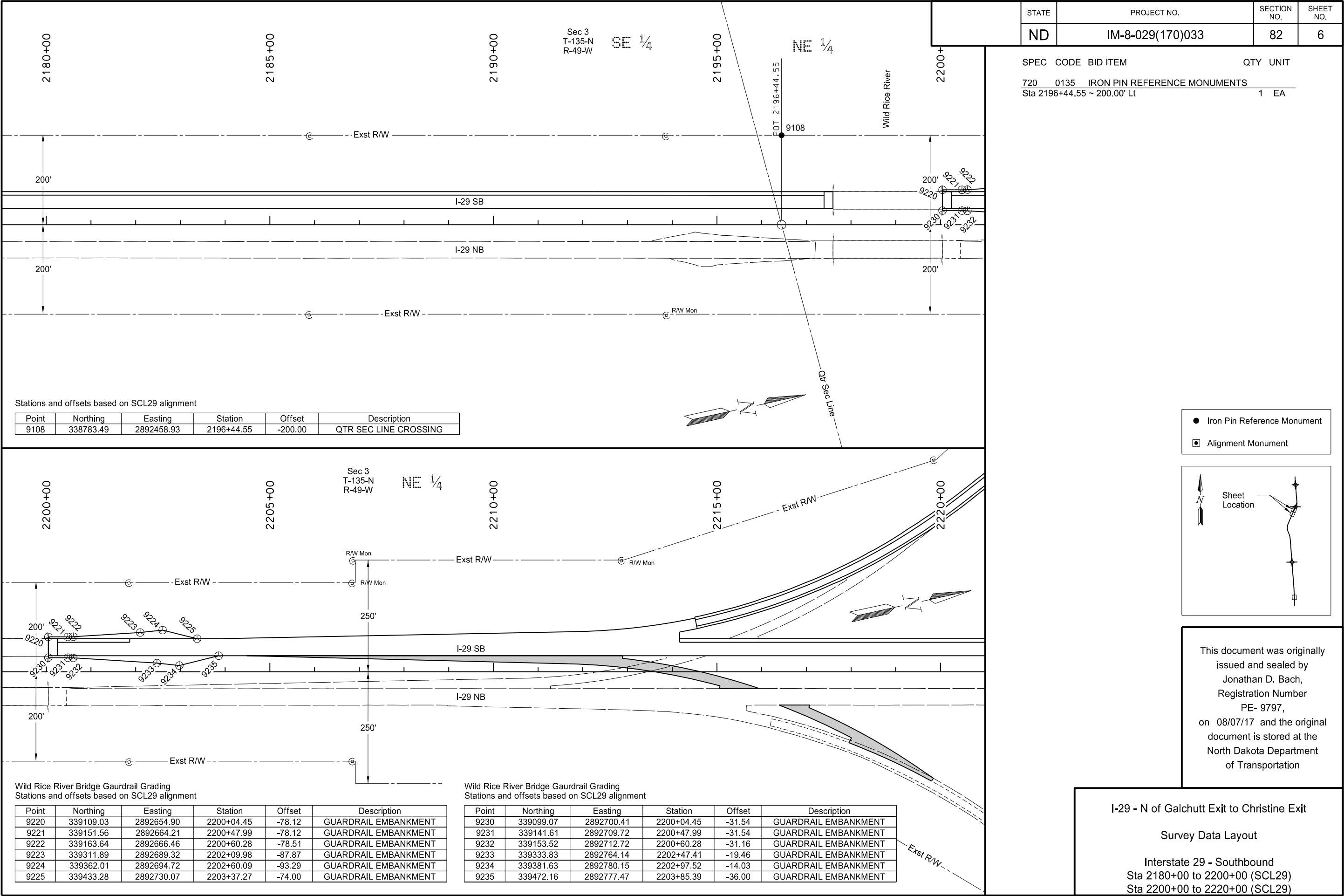


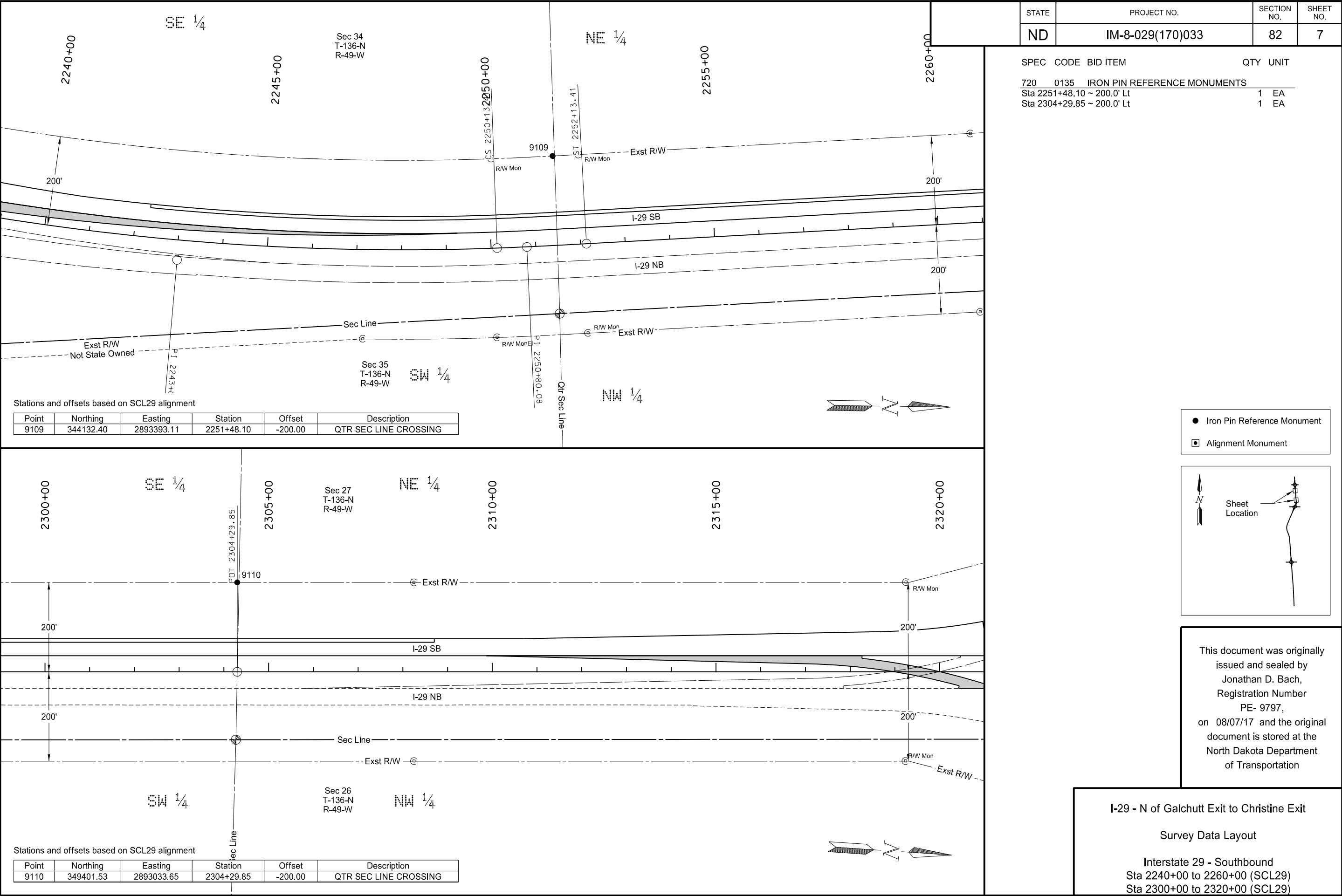
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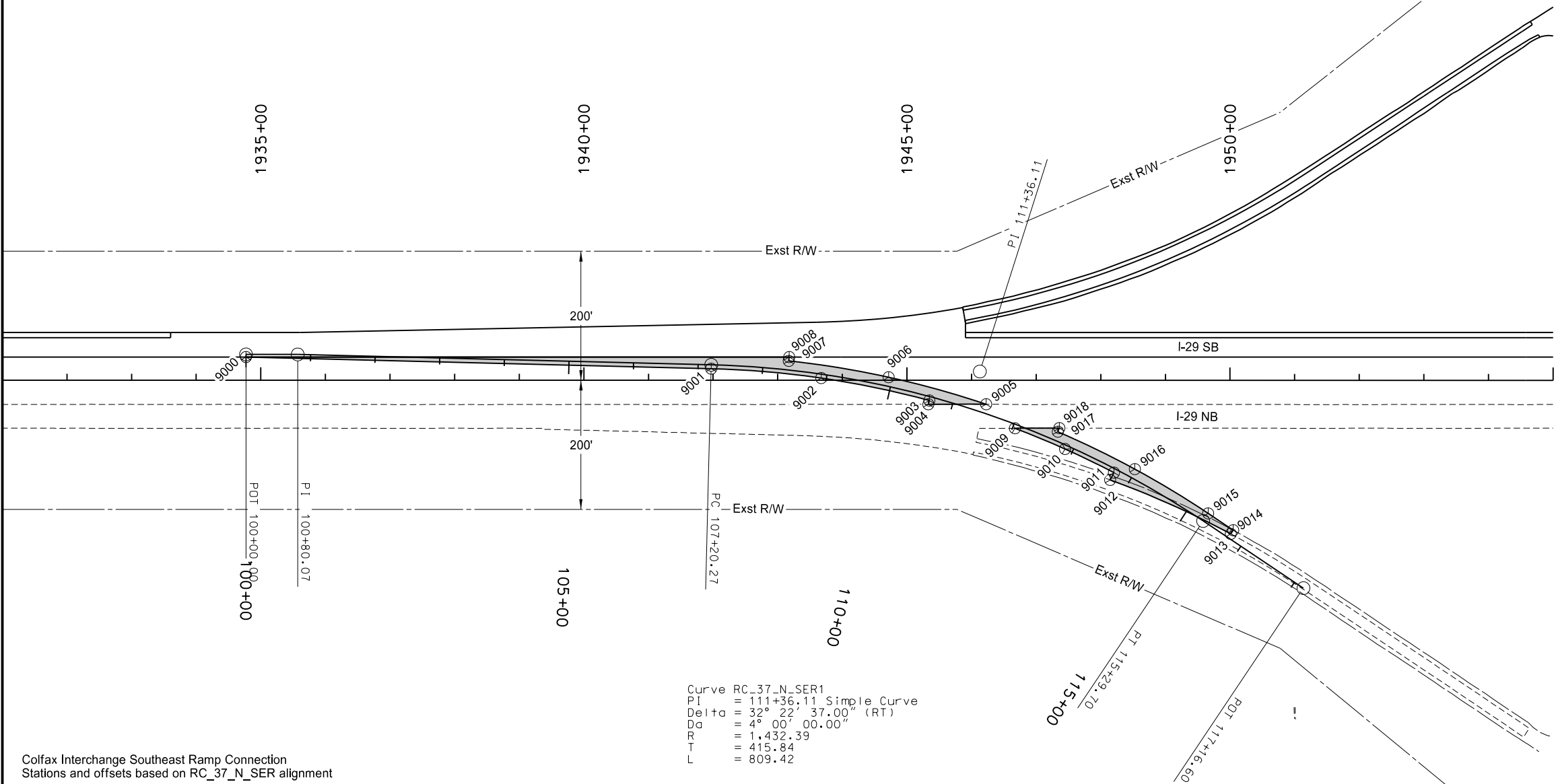
I-29 - N of Galchutt Exit to Christine Exit

Survey Data Layout

Interstate 29 - Southbound
Sta 2120+00 to 2140+00 (SCL29)
Sta 2140+00 to 2160+00 (SCL29)

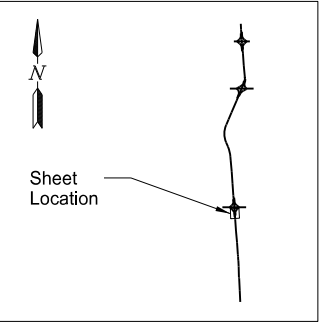






Colfax Interchange Southeast Ramp Connection
Stations and offsets based on RC_37_N_SER alignment

Point	Northing	Easting	Station	Offset	Description
9000	312833.11	2892975.00	100+00.00	4.00	EAST EDGE OF SB
9001	313552.73	2892947.30	107+20.27	6.00	BEGIN CURVE RT
9002	313723.62	2892950.97	108+92.03	6.00	MID CURVE RT
9003	313892.84	2892975.06	110+63.78	6.00	MID CURVE RT
9004	313891.64	2892980.93	110+63.78	12.00	WEST EDGE OF NB
9005	313980.92	2892975.25	111+49.33	-14.00	WEST EDGE OF NB
9006	313827.67	2892943.08	109+94.18	-14.00	MID CURVE LT
9007	313671.85	2892927.67	108+39.04	-14.00	BEGIN CURVE LT
9008	313672.11	2892921.68	108+39.04	-20.00	EAST EDGE OF SB
9009	314027.68	2893009.51	112+03.59	6.00	EAST EDGE OF NB
9010	314107.23	2893036.61	112+88.00	6.00	MID CURVE RT
9011	314185.04	2893068.35	113+72.40	6.00	END CURVE RT
9012	314179.87	2893080.04	113+72.40	18.78	WEST EDGE OF RAMP
9013	314371.50	2893151.58	115+76.40	-7.17	WEST EDGE OF RAMP
9014	314374.93	2893145.68	115+76.40	-14.00	WEST EDGE OF RAMP
9015	314334.56	2893122.21	115+29.70	-14.00	END CURVE LT
9016	314217.00	2893060.89	113+98.35	-14.00	MID CURVE
9017	314094.32	2893010.60	112+66.99	-14.00	MID CURVE
9018	314096.34	2893004.95	112+66.99	-20.00	EAST EDGE OF NB

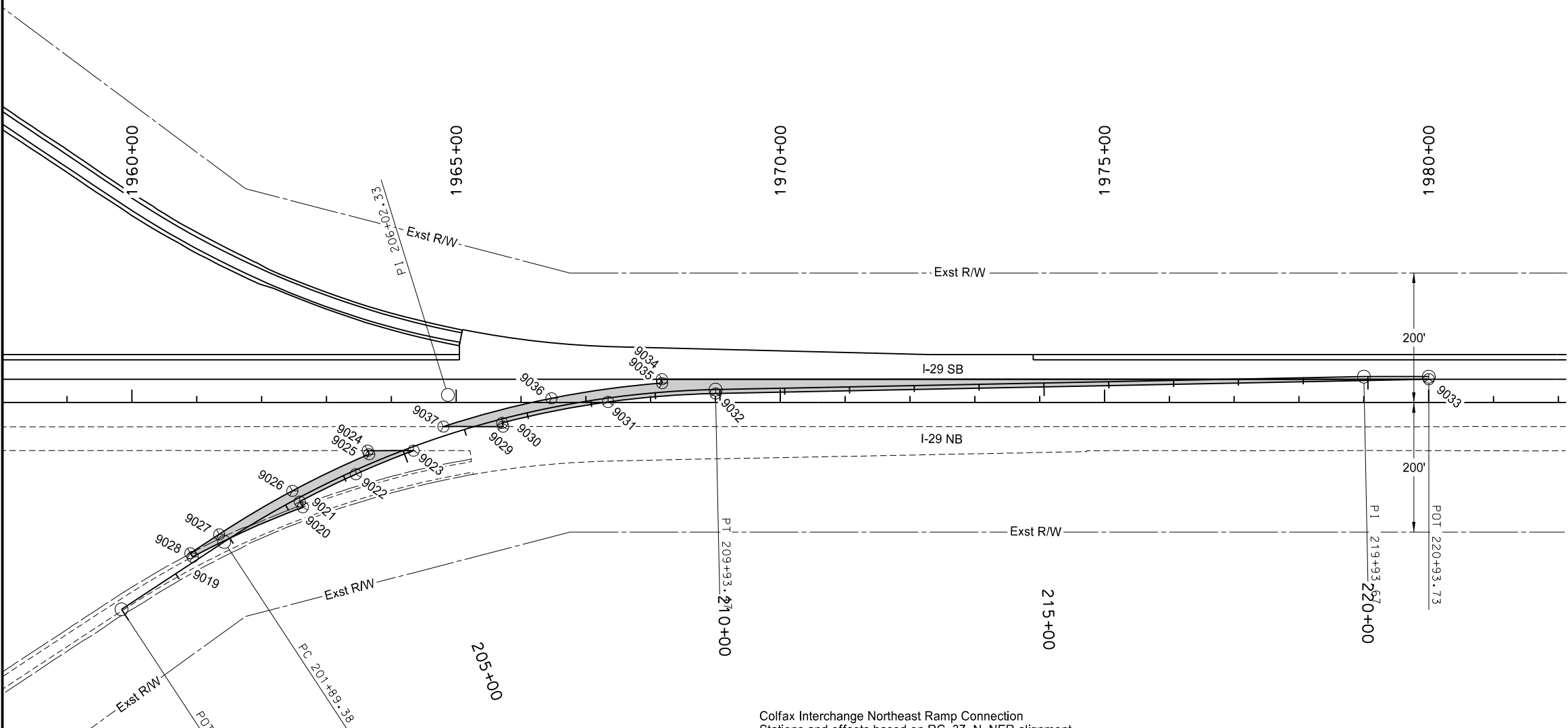


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I-29 - N of Galchutt Exit to Christine Exit

Survey Data Layout

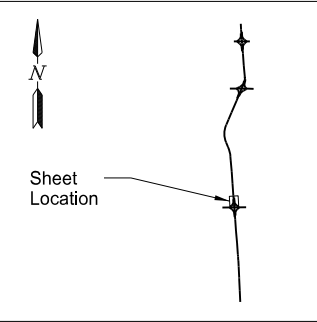
Colfax Interchange Southeast Ramp Connection
Sta 100+00 to 115+76 (RC_37_N_SER)



Curve RC_37_N_NER1
P I = 206+02.33 Simple Curve
Delta = 32° 09' 50.00" (RT)
D a = 4" 00' 00.00"
R T = 1,432.39
L = 412.95
L = 804.10

Colfax Interchange Northeast Ramp Connection
Stations and offsets based on RC_37_N_NER alignment

Point	Northing	Easting	Station	Offset	Description
9019	315461.78	2893082.57	201+36.18	-7.38	WEST EDGE OF RAMP
9020	315626.47	2892995.34	203+21.88	15.83	WEST EDGE OF RAMP
9021	315621.31	2892986.97	203+21.88	6.00	BEGIN CURVE RT
9022	315704.83	2892939.30	204+18.47	6.00	MID CURVE RT
9023	315791.38	2892897.37	205+15.07	6.00	EAST EDGE OF NB
9024	315720.75	2892901.91	204+49.55	-20.00	EAST EDGE OF NB
9025	315723.43	2892907.28	204+49.55	-14.00	MID CURVE LT
9026	315608.74	2892971.23	203+19.46	-14.00	MID CURVE LT
9027	315500.32	2893045.31	201+89.38	-14.00	BEGIN CURVE LT
9028	315457.80	2893077.28	201+36.18	-14.00	WEST EDGE OF RAMP
9029	315926.90	2892851.65	206+58.93	12.00	WEST EDGE OF NB
9030	315925.03	2892845.95	206+58.93	6.00	MID CURVE RT
9031	316085.97	2892803.37	208+26.20	6.00	MID CURVE RT
9032	316250.78	2892779.84	209+93.47	6.00	END CURVE RT
9033	317347.11	2892688.12	220+93.73	4.00	EAST EDGE OF SB
9034	316166.57	2892763.15	209+12.04	-20.00	EAST EDGE OF SB
9035	316167.41	2892769.09	209+12.04	-14.00	END CURVE LT
9036	315998.55	2892803.30	207+41.32	-14.00	MID CURVE LT
9037	315834.96	2892857.35	205+70.60	-14.00	WEST EDGE OF NB

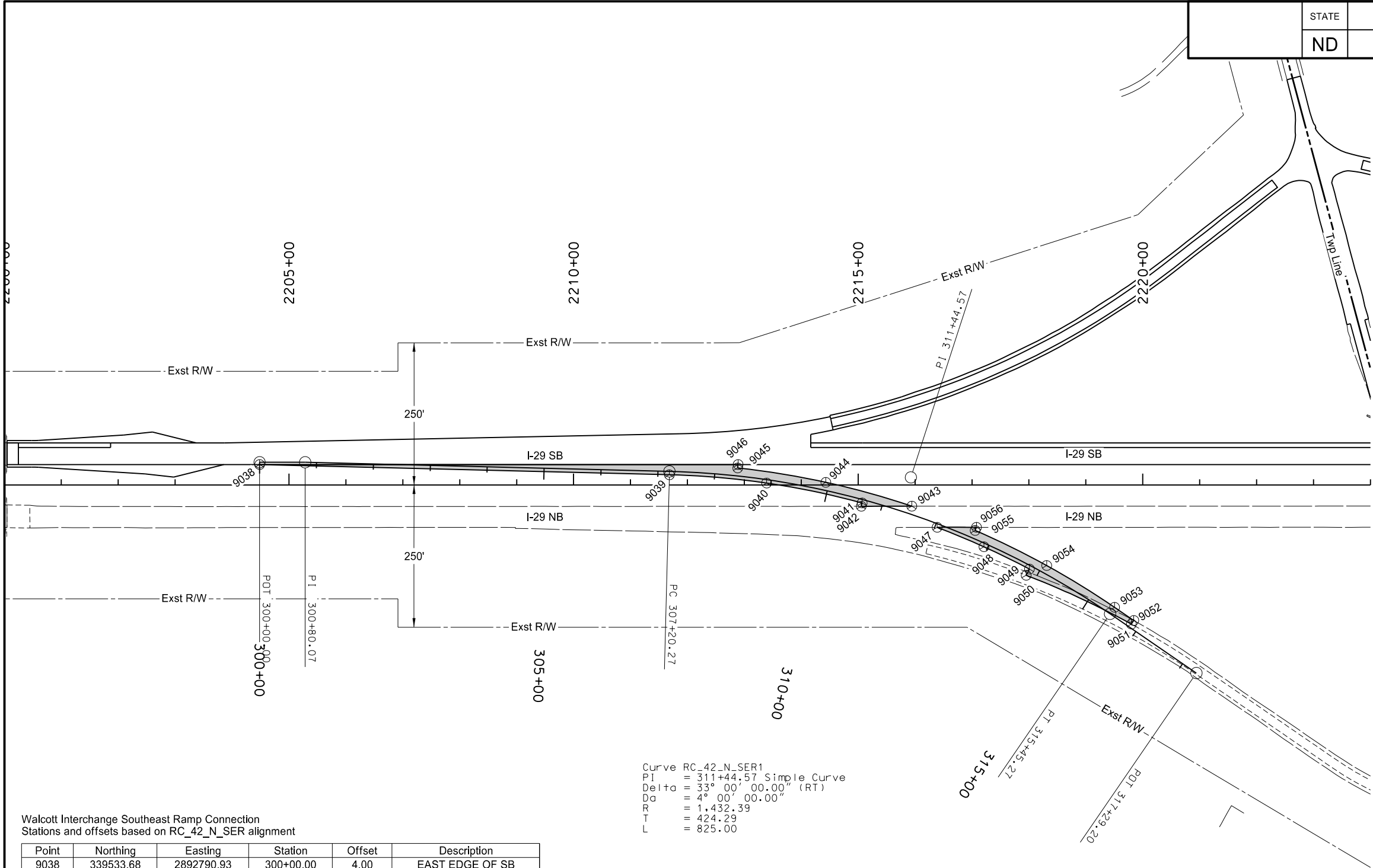


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I-29 - N of Galchutt Exit to Christine Exit

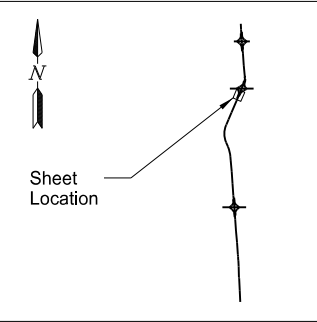
Survey Data Layout

Colfax Interchange Northeast Ramp Connection
Sta 201+36 to 220+94 (RC_37_N_NER)



Walcott Interchange Southeast Ramp Connection
Stations and offsets based on RC_42_N_SER alignment

Point	Northing	Easting	Station	Offset	Description
9038	339533.68	2892790.93	300+00.00	4.00	EAST EDGE OF SB
9039	340233.13	2892962.38	307+20.27	6.00	BEGIN CURVE RT
9040	340396.90	2893013.14	308+92.56	6.00	MID CURVE RT
9041	340553.40	2893083.18	310+64.84	6.00	MID CURVE RT
9042	340550.63	2893088.50	310+64.84	12.00	WEST EDGE OF NB
9043	340637.45	2893107.34	311+49.76	-14.00	WEST EDGE OF NB
9044	340498.81	2893034.10	309+94.40	-14.00	MID CURVE LT
9045	340353.05	2892976.30	308+39.04	-14.00	MID CURVE LT
9046	340354.95	2892970.61	308+39.04	-20.00	EAST EDGE OF SB
9047	340672.94	2893153.13	312+03.98	6.00	EAST EDGE OF NB
9048	340745.98	2893204.11	312+93.44	6.00	MID CURVE RT
9049	340815.69	2893259.54	313+82.90	6.00	END CURVE RT
9050	340807.78	2893268.88	313+82.90	18.25	WEST EDGE OF RAMP
9051	340969.95	2893392.17	315+86.20	-6.41	WEST EDGE OF RAMP
9052	340975.48	2893386.96	315+86.20	-14.00	WEST EDGE OF RAMP
9053	340947.45	2893357.14	315+45.27	-14.00	END CURVE LT
9054	340846.70	2893259.86	314+06.52	-14.00	MID CURVE LT
9055	340737.01	2893172.77	312+67.77	-14.00	MID CURVE LT
9056	340740.51	2893167.90	312+67.77	-20.00	EAST EDGE OF NB

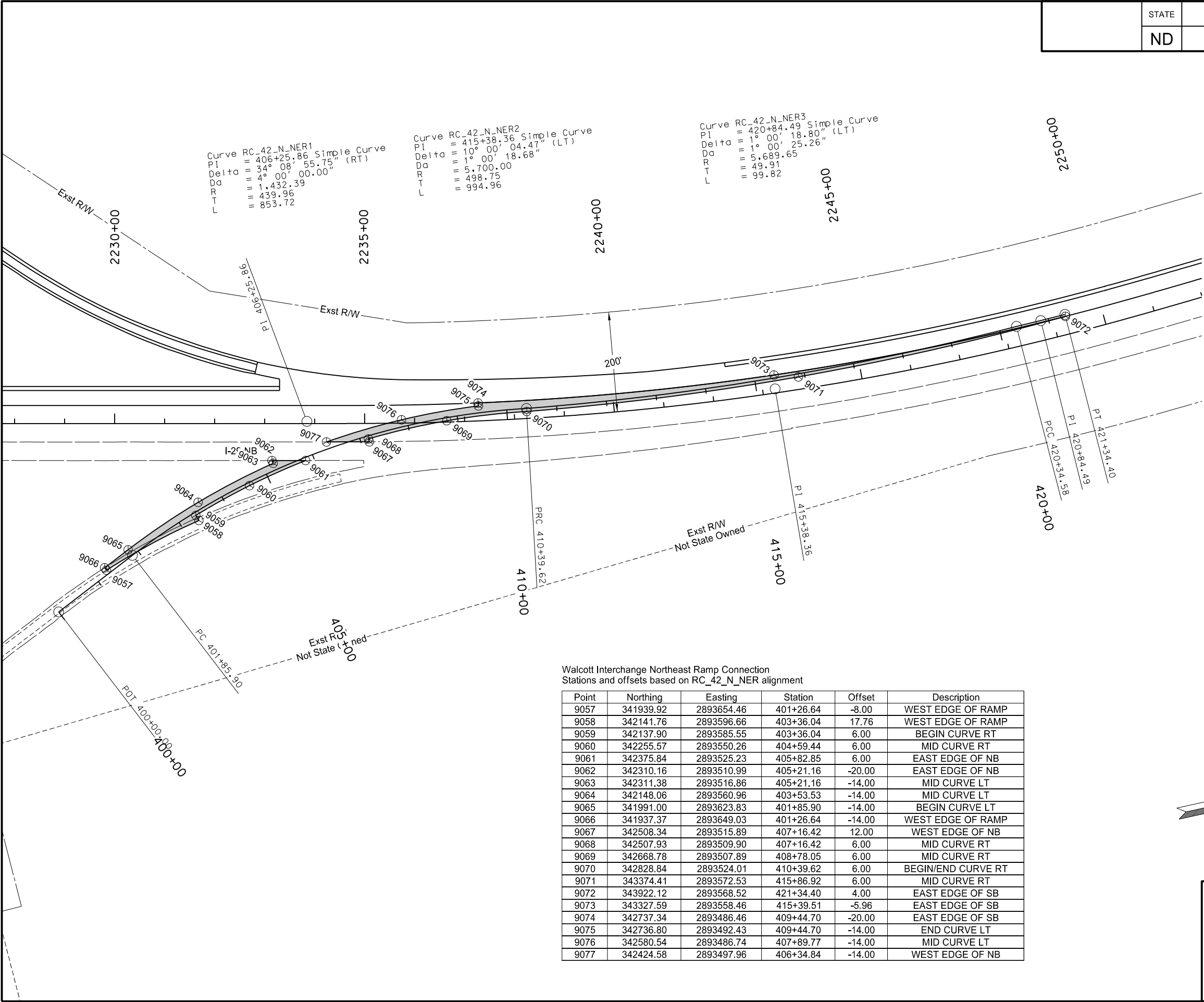


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I-29 - N of Galchutt Exit to Christine Exit

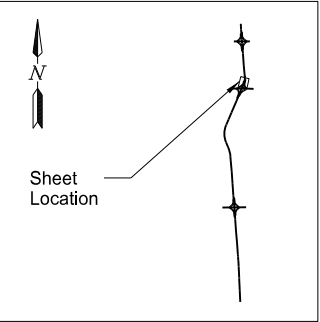
Survey Data Layout

Walcott Interchange Southeast Ramp Connection
Sta 300+00 to 315+86 (RC_42_N_SER)



Walcott Interchange Northeast Ramp Connection
Stations and offsets based on RC_42_N_NER alignment

Point	Northing	Easting	Station	Offset	Description
9057	341939.92	2893654.46	401+26.64	-8.00	WEST EDGE OF RAMP
9058	342141.76	2893596.66	403+36.04	17.76	WEST EDGE OF RAMP
9059	342137.90	2893585.55	403+36.04	6.00	BEGIN CURVE RT
9060	342255.57	2893550.26	404+59.44	6.00	MID CURVE RT
9061	342375.84	2893525.23	405+82.85	6.00	EAST EDGE OF NB
9062	342310.16	2893510.99	405+21.16	-20.00	EAST EDGE OF NB
9063	342311.38	2893516.86	405+21.16	-14.00	MID CURVE LT
9064	342148.06	2893560.96	403+53.53	-14.00	MID CURVE LT
9065	341991.00	2893623.83	401+85.90	-14.00	BEGIN CURVE LT
9066	341937.37	2893649.03	401+26.64	-14.00	WEST EDGE OF RAMP
9067	342508.34	2893515.89	407+16.42	12.00	WEST EDGE OF NB
9068	342507.93	2893509.90	407+16.42	6.00	MID CURVE RT
9069	342668.78	2893507.89	408+78.05	6.00	MID CURVE RT
9070	342828.84	2893524.01	410+39.62	6.00	BEGIN/END CURVE RT
9071	343374.41	2893572.53	415+86.92	6.00	MID CURVE RT
9072	343922.12	2893568.52	421+34.40	4.00	EAST EDGE OF SB
9073	343327.59	2893558.46	415+39.51	-5.96	EAST EDGE OF SB
9074	342737.34	2893486.46	409+44.70	-20.00	EAST EDGE OF SB
9075	342736.80	2893492.43	409+44.70	-14.00	END CURVE LT
9076	342580.54	2893486.74	407+89.77	-14.00	MID CURVE LT
9077	342424.58	2893497.96	406+34.84	-14.00	WEST EDGE OF NB

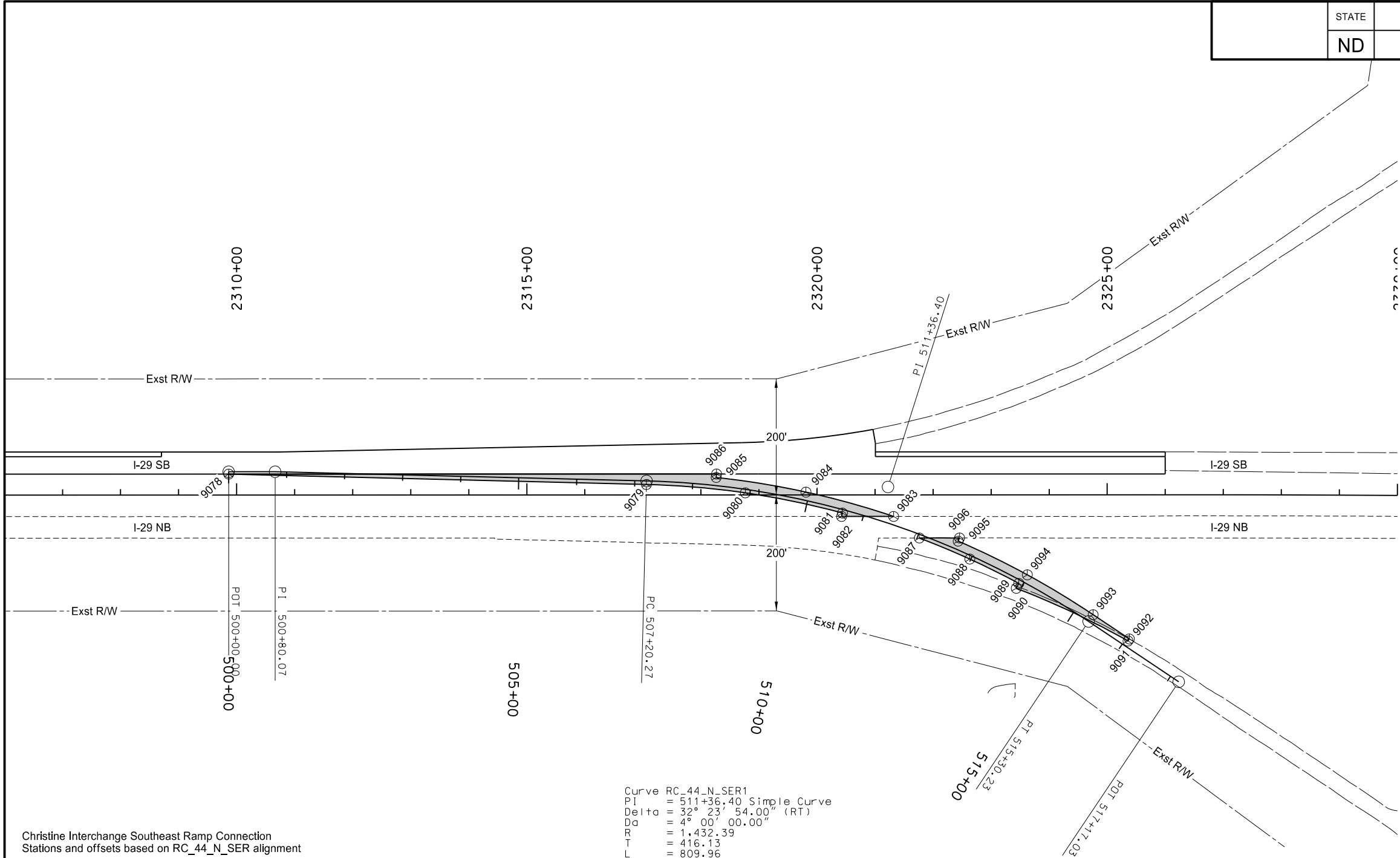


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I-29 - N of Galchutt Exit to Christine Exit

Survey Data Layout

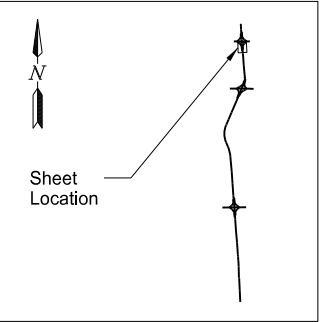
Walcott Interchange Northeast Ramp Connection
Sta 401+27 to 421+34 (RC_42_N_NER)



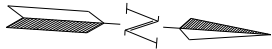
Curve RC_44_N_SER1
PI = 511+36.40 Simple Curve
Delta = 32° 23' 54.00" (RT)
Da = 4° 00' 00.00" (RT)
R = 1.432.39
T = 416.13
L = 809.96

Christine Interchange Southeast Ramp Connection
Stations and offsets based on RC_44_N_SER alignment

Point	Northing	Easting	Station	Offset	Description
9078	349967.76	2893159.39	500+00.00	4.00	EAST EDGE OF SB
9079	350687.24	2893128.35	507+20.27	6.00	BEGIN CURVE RT
9080	350858.20	2893131.23	508+92.08	6.00	MID CURVE RT
9081	351027.58	2893154.54	510+63.88	6.00	MID CURVE RT
9082	351026.41	2893160.42	510+63.88	12.00	WEST EDGE OF NB
9083	351115.84	2893154.38	511+49.62	-14.00	WEST EDGE OF NB
9084	350962.31	2893122.87	509+94.33	-14.00	MID CURVE LT
9085	350806.26	2893108.16	508+39.04	-14.00	MID CURVE LT
9086	350806.50	2893102.17	508+39.04	-20.00	EAST EDGE OF SB
9087	351162.53	2893188.36	512+03.64	6.00	EAST EDGE OF NB
9088	351251.82	2893218.68	512+98.36	6.00	MID CURVE RT
9089	351338.91	2893254.84	513+93.07	6.00	END CURVE RT
9090	351334.97	2893263.53	513+93.07	15.54	WEST EDGE OF RAMP
9091	351533.32	2893340.95	516+05.30	-9.83	WEST EDGE OF RAMP
9092	351535.40	2893337.33	516+05.30	-14.00	WEST EDGE OF RAMP
9093	351470.34	2893299.88	515+30.23	-14.00	END CURVE LT
9094	351352.55	2893239.08	513+98.91	-14.00	MID CURVE LT
9095	351229.69	2893189.32	512+67.60	-14.00	MID CURVE LT
9096	351231.69	2893183.67	512+67.60	-20.00	EAST EDGE OF NB



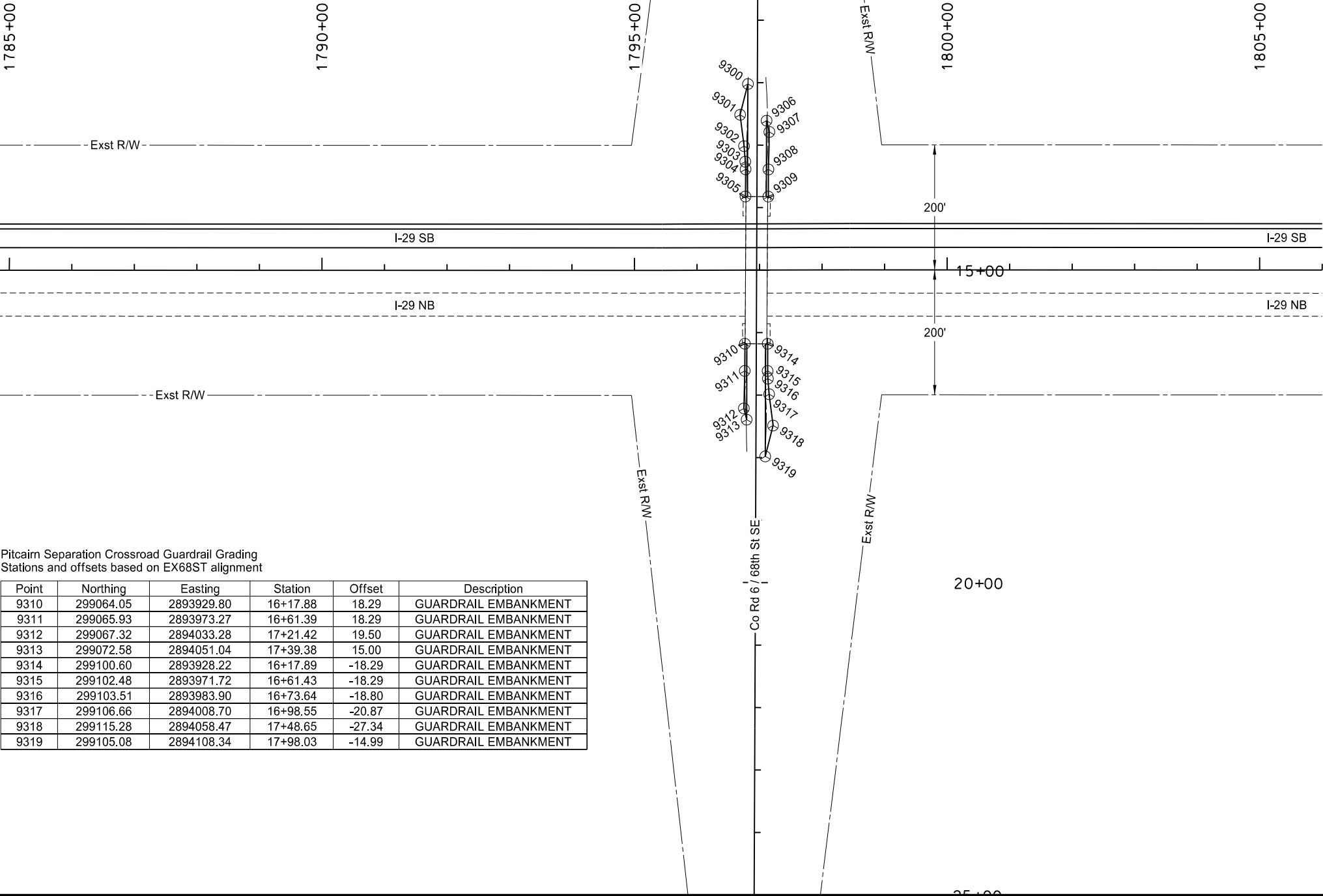
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I-29 - N of Galchutt Exit to Christine Exit
Survey Data Layout
Christine Interchange Southeast Ramp Connection
Sta 500+00 to 516+05 (RC_44_N_SER)

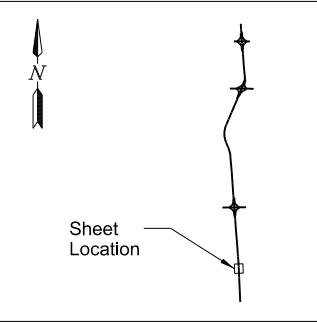
Pitcairn Separation Crossroad Guardrail Grading
Stations and offsets based on EX68ST alignment

Point	Northing	Easting	Station	Offset	Description
9300	299049.40	2893514.35	12+02.19	15.00	GUARDRAIL EMBANKMENT
9301	299039.19	2893564.21	12+51.57	27.34	GUARDRAIL EMBANKMENT
9302	299047.82	2893613.99	13+01.67	20.88	GUARDRAIL EMBANKMENT
9303	299050.97	2893638.79	13+26.58	18.80	GUARDRAIL EMBANKMENT
9304	299052.00	2893650.96	13+38.79	18.29	GUARDRAIL EMBANKMENT
9305	299053.88	2893694.47	13+82.33	18.29	GUARDRAIL EMBANKMENT
9306	299081.90	2893571.64	12+60.83	-15.00	GUARDRAIL EMBANKMENT
9307	299087.16	2893589.40	12+78.80	-19.49	GUARDRAIL EMBANKMENT
9308	299088.55	2893649.42	13+38.82	-18.29	GUARDRAIL EMBANKMENT
9309	299090.43	2893692.89	13+82.33	-18.29	GUARDRAIL EMBANKMENT



Pitcairn Separation Crossroad Guardrail Grading
Stations and offsets based on EX68ST alignment

Point	Northing	Easting	Station	Offset	Description
9310	299064.05	2893929.80	16+17.88	18.29	GUARDRAIL EMBANKMENT
9311	299065.93	2893973.27	16+61.39	18.29	GUARDRAIL EMBANKMENT
9312	299067.32	2894033.28	17+21.42	19.50	GUARDRAIL EMBANKMENT
9313	299072.58	2894051.04	17+39.38	15.00	GUARDRAIL EMBANKMENT
9314	299100.60	2893928.22	16+17.89	-18.29	GUARDRAIL EMBANKMENT
9315	299102.48	2893971.72	16+61.43	-18.29	GUARDRAIL EMBANKMENT
9316	299103.51	2893983.90	16+73.64	-18.80	GUARDRAIL EMBANKMENT
9317	299106.66	2894008.70	16+98.55	-20.87	GUARDRAIL EMBANKMENT
9318	299115.28	2894058.47	17+48.65	-27.34	GUARDRAIL EMBANKMENT
9319	299105.08	2894108.34	17+98.03	-14.99	GUARDRAIL EMBANKMENT



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I-29 - N of Galchutt Exit to Christine Exit

Survey Data Layout

Pitcairn Separation Crossroad
Sta 12+01 to 17+99 (EX68ST)

Colfax Separation Crossroad Guardrail Grading
Stations and offsets based on EX63ST alignment

Point	Northing	Easting	Station	Offset	Description
9320	325431.71	2891911.92	12+02.53	15.00	GUARDRAIL EMBANKMENT
9321	325421.85	2891961.85	12+51.91	27.34	GUARDRAIL EMBANKMENT
9322	325430.82	2892011.57	13+02.01	20.88	GUARDRAIL EMBANKMENT
9323	325434.14	2892036.35	13+26.92	18.80	GUARDRAIL EMBANKMENT
9324	325435.26	2892048.51	13+39.13	18.29	GUARDRAIL EMBANKMENT
9325	325437.44	2892092.00	13+82.67	18.29	GUARDRAIL EMBANKMENT
9326	325464.61	2891968.99	12+61.17	-15.00	GUARDRAIL EMBANKMENT
9327	325469.99	2891986.71	12+79.14	-19.49	GUARDRAIL EMBANKMENT
9328	325471.80	2892046.72	13+39.17	-18.29	GUARDRAIL EMBANKMENT
9329	325473.98	2892090.17	13+82.67	-18.29	GUARDRAIL EMBANKMENT

2050+00

2055+00

2060+00

10+00

2065+00

2070+00

200'

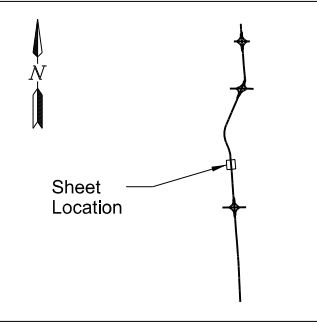
200'

15+00

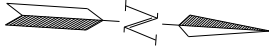
20+00

Colfax Separation Crossroad Guardrail Grading
Stations and offsets based on EX63ST alignment

Point	Northing	Easting	Station	Offset	Description
9330	325449.21	2892326.72	16+17.69	18.29	GUARDRAIL EMBANKMENT
9331	325451.38	2892370.18	16+61.20	18.29	GUARDRAIL EMBANKMENT
9332	325453.19	2892430.19	17+21.22	19.49	GUARDRAIL EMBANKMENT
9333	325458.58	2892447.91	17+39.19	15.00	GUARDRAIL EMBANKMENT
9334	325485.74	2892324.89	16+17.69	-18.29	GUARDRAIL EMBANKMENT
9335	325487.92	2892368.38	16+61.23	-18.29	GUARDRAIL EMBANKMENT
9336	325489.04	2892380.55	16+73.44	-18.80	GUARDRAIL EMBANKMENT
9337	325492.36	2892405.33	16+98.36	-20.88	GUARDRAIL EMBANKMENT
9338	325501.33	2892455.04	17+48.46	-27.34	GUARDRAIL EMBANKMENT
9339	325491.47	2892504.98	17+97.84	-15.00	GUARDRAIL EMBANKMENT



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I-29 - N of Galchutt Exit to Christine Exit

Survey Data Layout

Colfax Separation Crossroad
Sta 12+01 to 17+99 (EX63ST)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	82	16

Christine Interchange Crossroad Guardrail Grading
Stations and offsets based on EX58ST alignment

Point	Northing	Easting	Station	Offset	Description
9360	352000.73	2892683.45	14+27.81	18.00	GUARDRAIL EMBANKMENT
9361	352004.95	2892761.44	15+05.92	18.00	GUARDRAIL EMBANKMENT
9362	351997.68	2892799.06	15+43.09	27.29	GUARDRAIL EMBANKMENT
9363	352006.41	2892845.65	15+90.08	21.08	GUARDRAIL EMBANKMENT
9364	352009.85	2892870.53	16+15.11	19.00	GUARDRAIL EMBANKMENT
9365	352011.00	2892882.58	16+27.20	18.50	GUARDRAIL EMBANKMENT
9366	352012.99	2892919.42	16+64.10	18.50	GUARDRAIL EMBANKMENT
9367	352041.88	2892777.62	15+24.07	-18.00	GUARDRAIL EMBANKMENT
9368	352044.02	2892817.28	15+63.79	-18.00	GUARDRAIL EMBANKMENT
9369	352046.01	2892823.73	15+70.34	-19.64	GUARDRAIL EMBANKMENT
9370	352047.95	2892880.61	16+27.24	-18.50	GUARDRAIL EMBANKMENT
9371	352049.94	2892917.42	16+64.10	-18.50	GUARDRAIL EMBANKMENT

2315+00

2320+00

2325+00

2330+00

10+00

15+00

2335+00

200'

200'

I-29 SB

I-29 NB

POT 18+01.60

+55

PI 19+50.05

20+00

Exst R/W

Exst R/W

Exst R/W

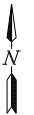
Co Rd 2N / 58th St SE

25+00

POT 28+00.00

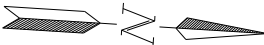
Christine Interchange Crossroad Guardrail Grading
Stations and offsets based on EX58ST alignment

Point	Northing	Easting	Station	Offset	Description
9372	352027.84	2893194.02	19+39.10	18.50	GUARDRAIL EMBANKMENT
9373	352029.83	2893230.82	19+75.99	18.46	GUARDRAIL EMBANKMENT
9374	352031.77	2893287.70	20+32.90	19.49	GUARDRAIL EMBANKMENT
9375	352033.61	2893293.69	20+38.97	17.96	GUARDRAIL EMBANKMENT
9376	352035.59	2893332.15	20+77.49	18.00	GUARDRAIL EMBANKMENT
9377	352064.79	2893192.02	19+39.10	-18.50	GUARDRAIL EMBANKMENT
9378	352066.78	2893228.86	19+75.96	-18.54	GUARDRAIL EMBANKMENT
9379	352067.93	2893240.91	19+88.06	-19.06	GUARDRAIL EMBANKMENT
9380	352071.36	2893265.79	20+13.08	-21.19	GUARDRAIL EMBANKMENT
9381	352080.10	2893312.38	20+60.06	-27.48	GUARDRAIL EMBANKMENT
9382	352072.66	2893350.89	20+98.14	-18.04	GUARDRAIL EMBANKMENT
9383	352077.06	2893435.63	21+82.99	-18.00	GUARDRAIL EMBANKMENT



Sheet
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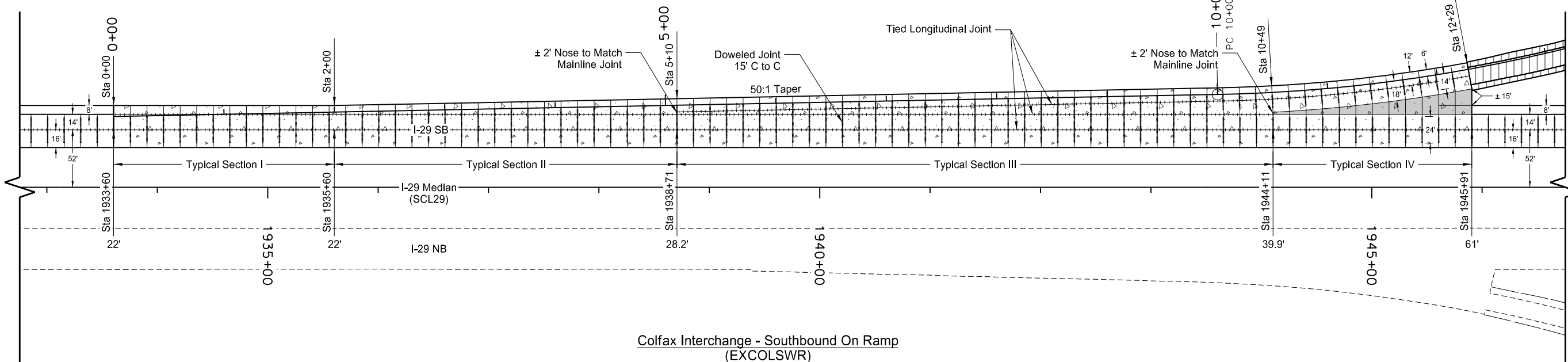


I-29 - N of Galchutt Exit to Christine Exit

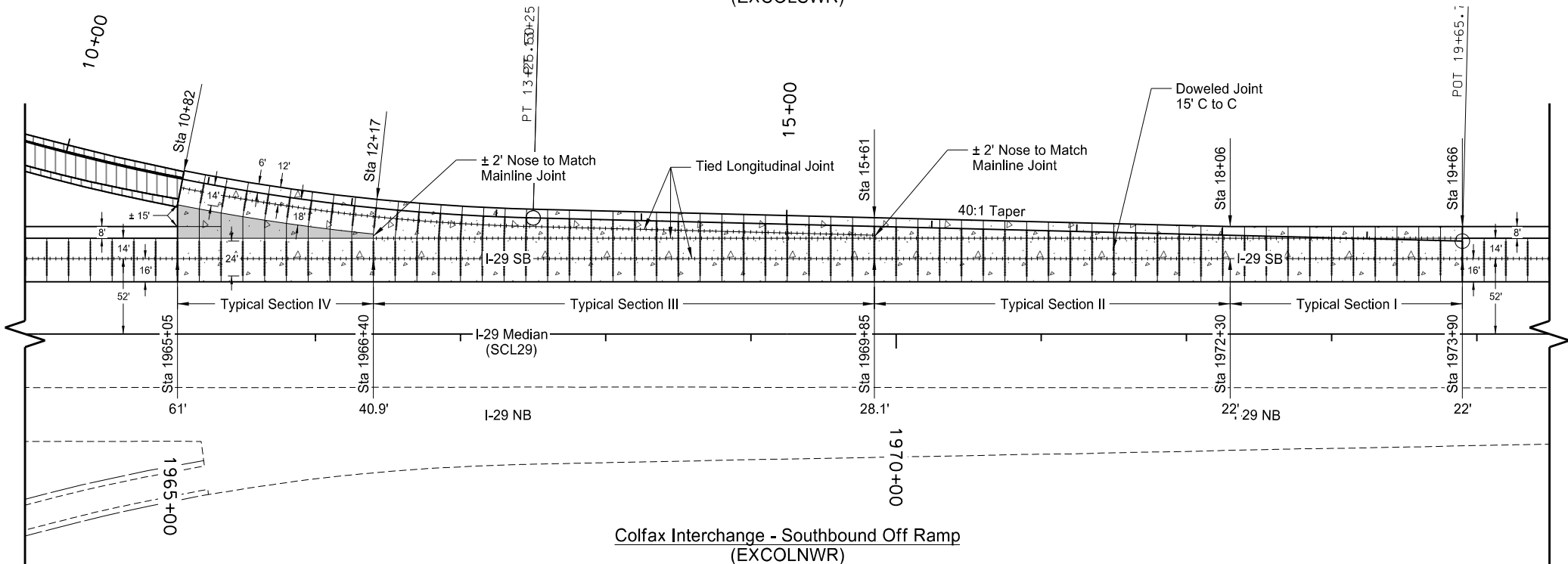
Survey Data Layout

Christine Interchange Crossroad
Sta 15+06 to 20+98 (EX58ST)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	90	1



Colfax Interchange - Southbound On Ramp
(EXCOLSWR)



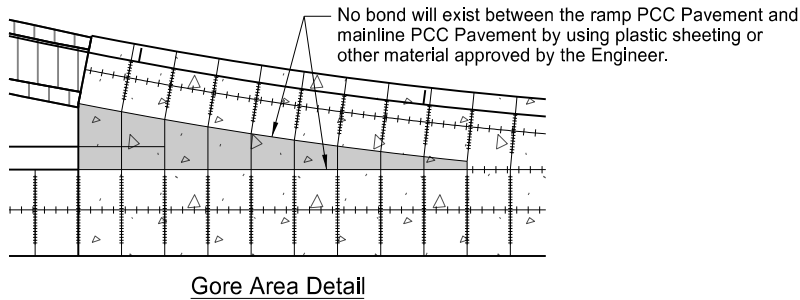
Colfax Interchange - Southbound Off Ramp
(EXCOLNWR)

- Notes:
1. Refer to Section 30 for Typical Sections I, II, III, & IV.
 2. Refer to Section 10 for Paving Quantities

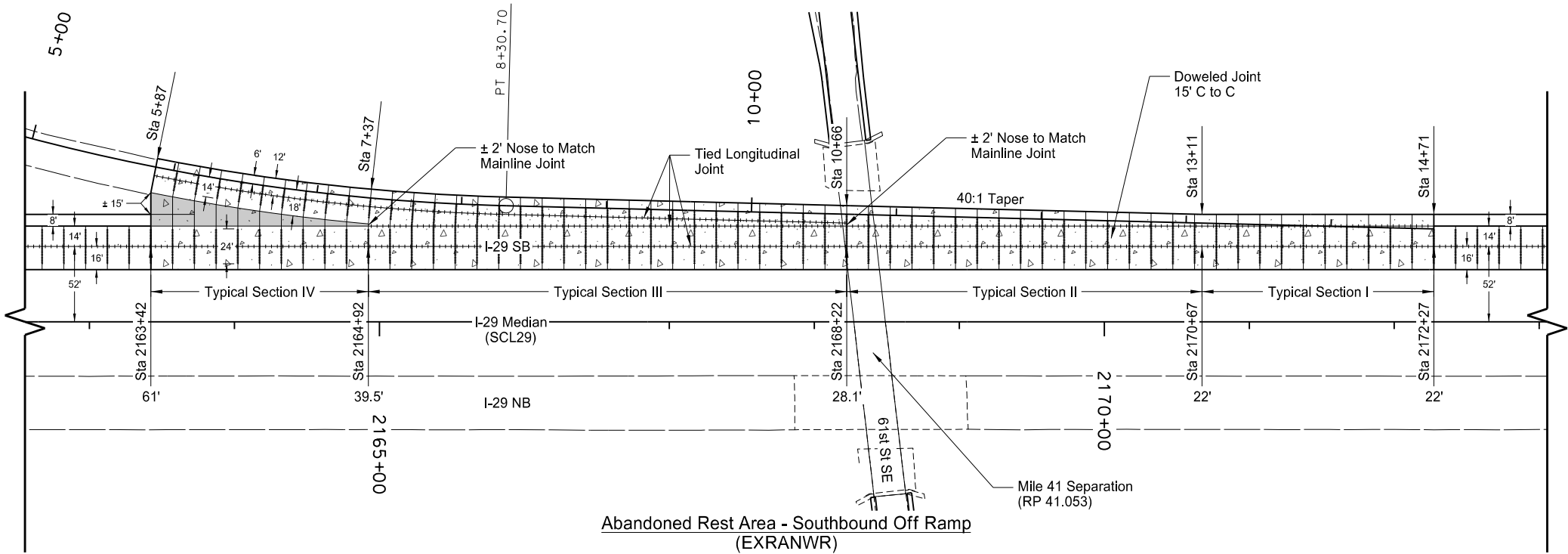
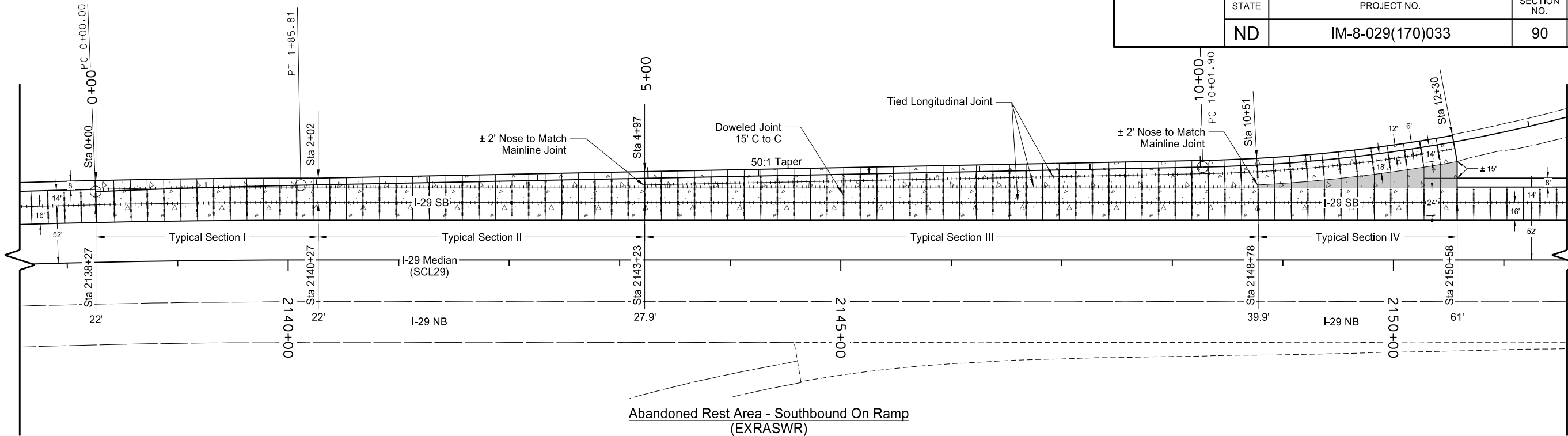
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I-29 - N of Galchutt Exit to Chirstine Exit
Ramp Taper Paving Layout
Colfax Interchange (RP 37.043)

- Untied Joint
- Tied Joint
- Doweled Joint
- PCC Pavement
- HMA
- Gore Area



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	90	2

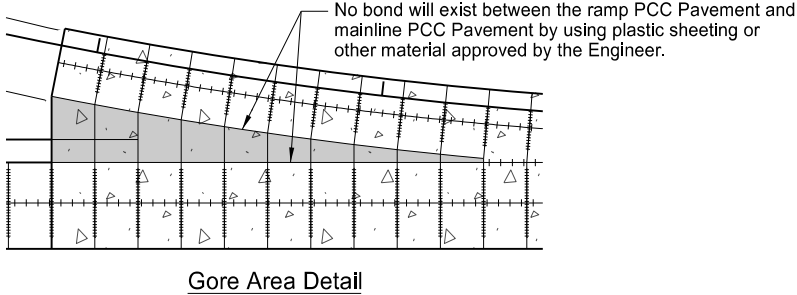


- Notes:
1. Refer to Section 30 for Typical Sections I, II, III, & IV.
 2. Refer to Section 10 for Paving Quantities

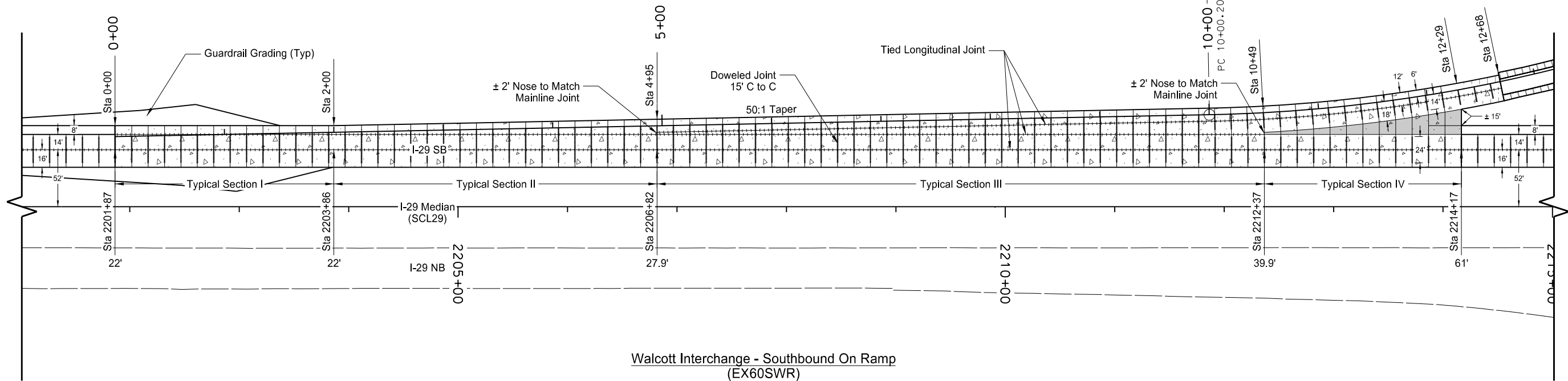
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I-29 - N of Galchutt Exit to Chirstine Exit
Ramp Taper Paving Layout
Abandoned Rest Area

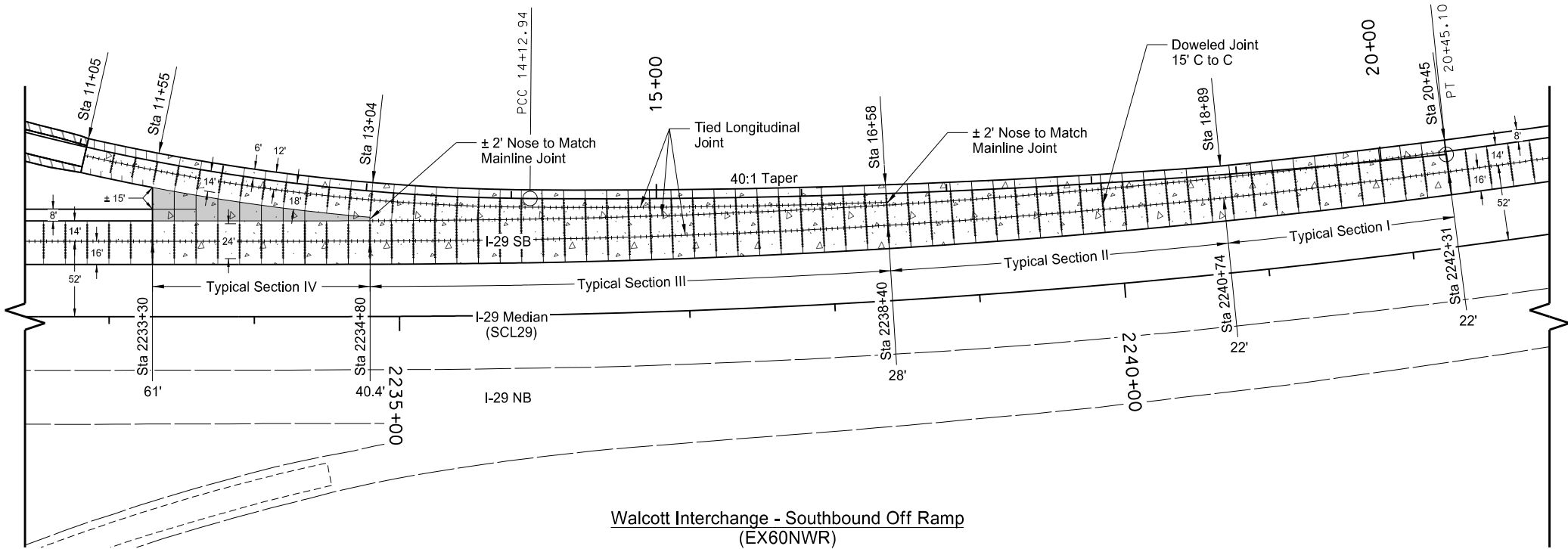
- Untied Joint
- Tied Joint
- Doweled Joint
- PCC Pavement
- HMA
- Gore Area



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	90	3



Walcott Interchange - Southbound On Ramp
(EX60SWR)



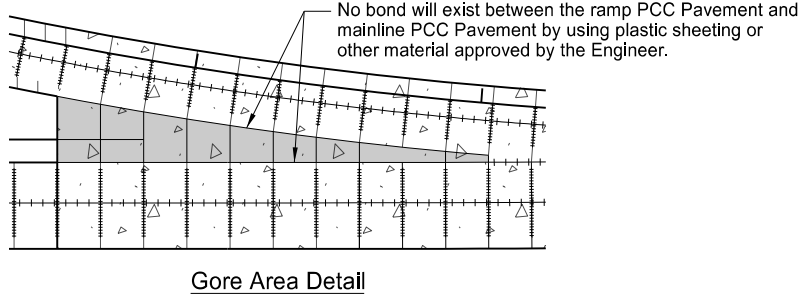
Walcott Interchange - Southbound Off Ramp
(EX60NWR)

- Notes:
1. Refer to Section 30 for Typical Sections I, II, III, & IV.
 2. Refer to Section 10 for Paving Quantities

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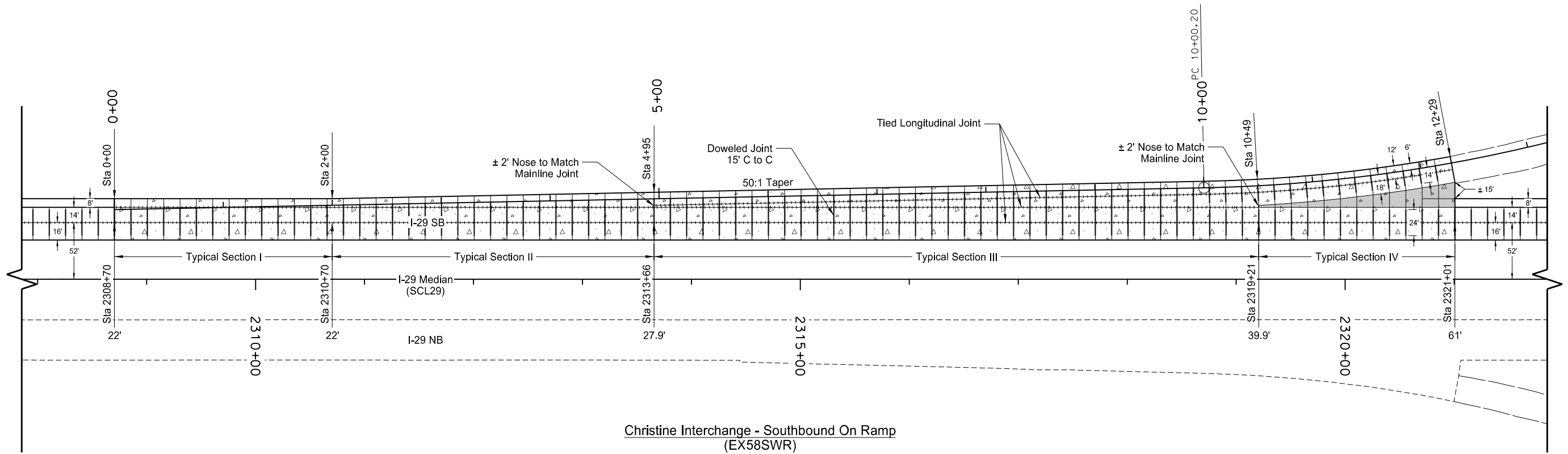
I-29 - N of Galchutt Exit to Chirstine Exit
Ramp Taper Paving Layout
Walcott Interchange (RP 42.169)

- Untied Joint
- Tied Joint
- Doweled Joint
- PCC Pavement
- HMA
- Gore Area



Gore Area Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	90	4



Christine Interchange - Southbound On Ramp
(EX58SWR)

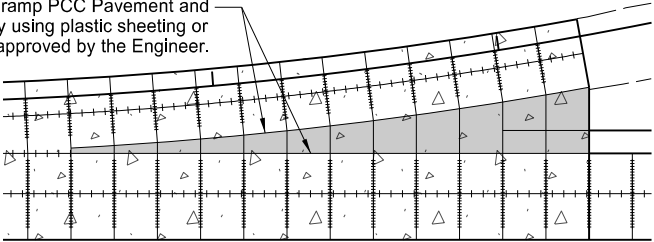
- Notes:
1. Refer to Section 30 for Typical Sections I, II, III, & IV.
 2. Refer to Section 10 for Paving Quantities

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I-29 - N of Galchutt Exit to Chirstine Exit
Ramp Taper Paving Layout
Christine Interchange (RP 44.126)

- Untied Joint
- Tied Joint
- Doweled Joint
- PCC Pavement
- HMA
- Gore Area

No bond will exist between the ramp PCC Pavement and mainline PCC Pavement by using plastic sheeting or other material approved by the Engineer.



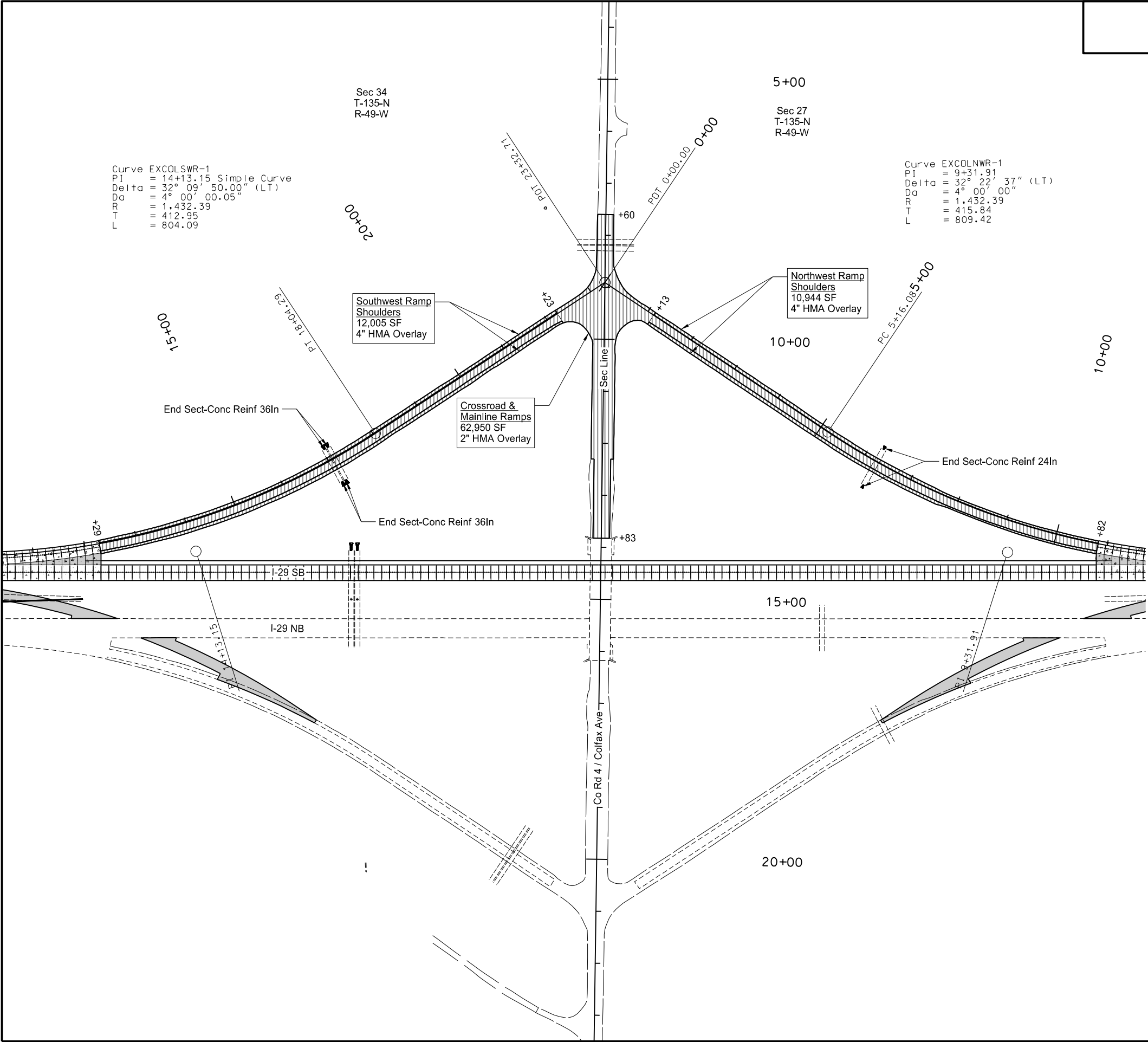
Gore Area Detail

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	90	5

SPEC CODE BID ITEM QTY UNIT

714	3020	END SECT-CONC REINF 24IN		
		Sta 6+26 ~ 27.6' Lt (EXCOLNWR)	1	EA
		Sta 6+26 ~ 51.4' Rt (EXCOLNWR)	1	EA

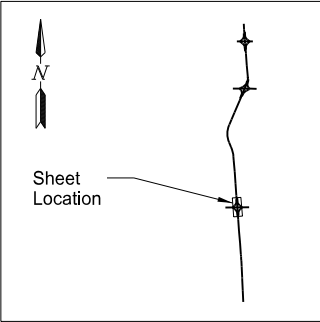
714	3035	END SECT-CONC REINF 36IN		
		Sta 17+03 ~ 47.0' Rt (EXCOLSWR)	1	EA
		Sta 17+04 ~ 24.6' Lt (EXCOLSWR)	1	EA
		Sta 17+10 ~ 47.0' Rt (EXCOLSWR)	1	EA
		Sta 17+12 ~ 24.5' Lt (EXCOLSWR)	1	EA



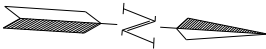
Curve EXCOLSWR-1
PI = 14+13.15 Simple Curve
Delta = 32° 09' 50.00" (LT)
Da = 4° 00' 00.05"
R = 1,432.39
T = 412.95
L = 804.09

Curve EXCOLNWR-1
PI = 9+31.91
Delta = 32° 22' 37" (LT)
Da = 4° 00' 00"
R = 1,432.39
T = 415.84
L = 809.42

Notes:
1. Refer to Section 10 for Paving Quantities



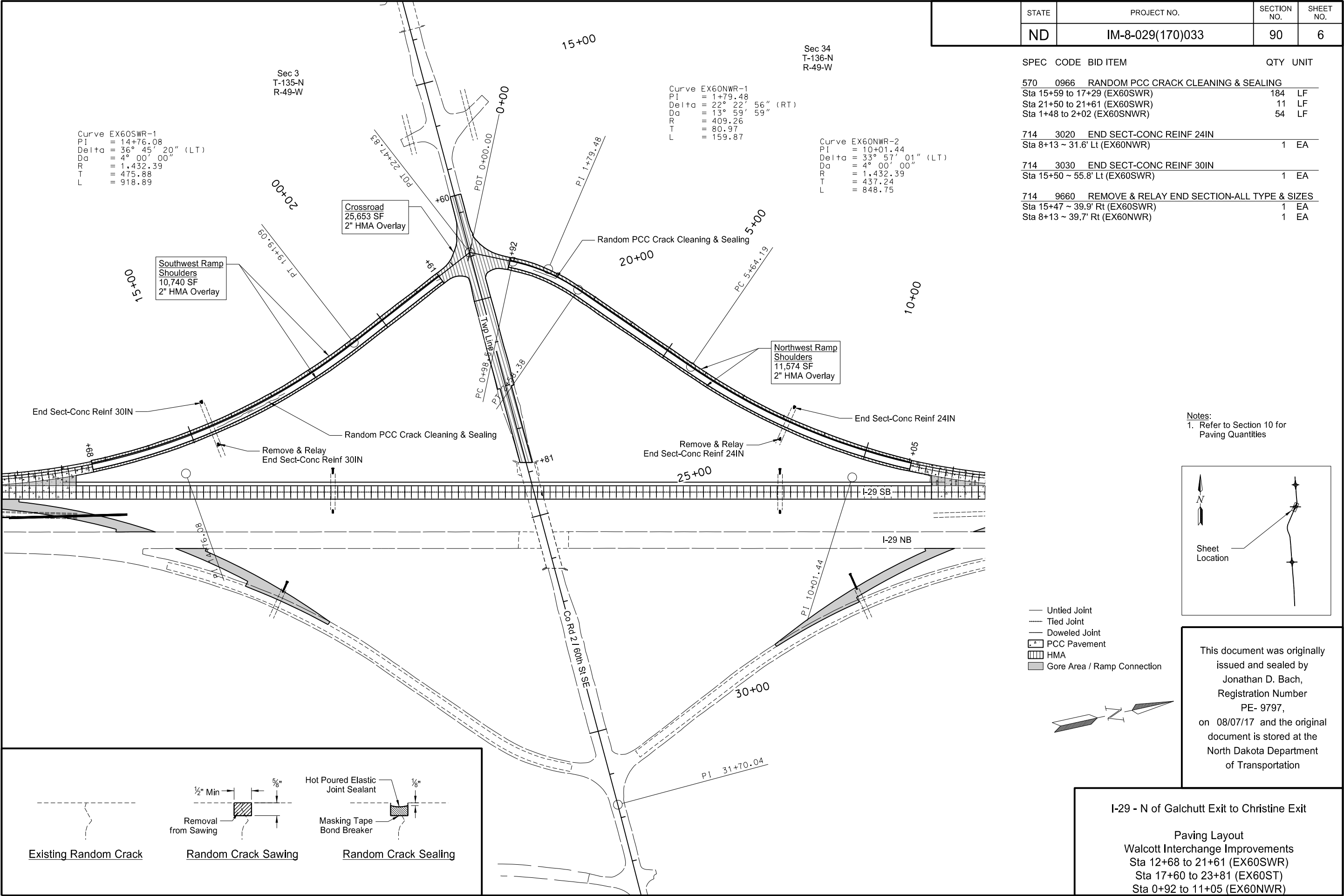
- Untied Joint
- Tied Joint
- - - Doweled Joint
- ▨ PCC Pavement
- ▨ HMA
- ▨ Gore Area / Ramp Connection

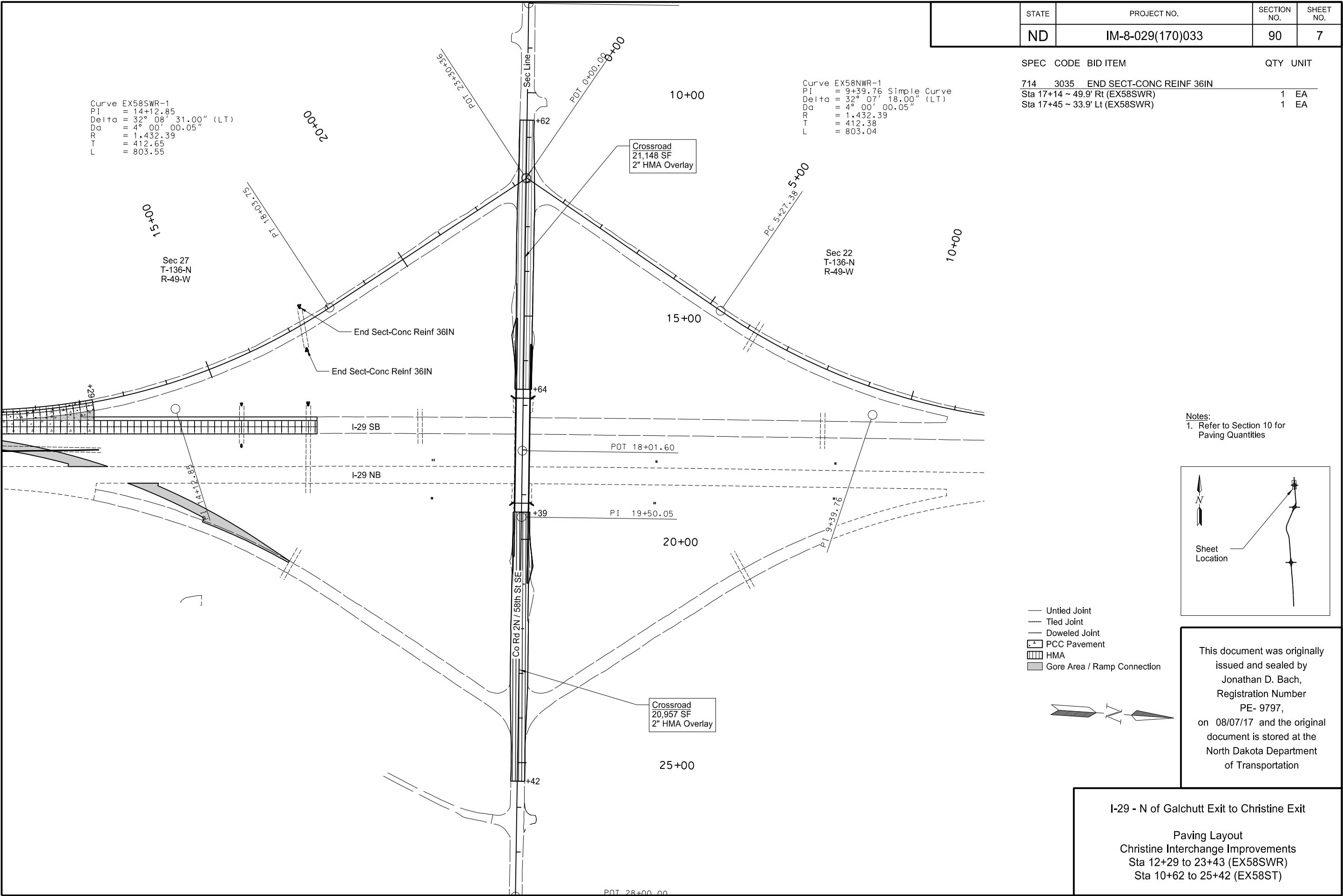


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I-29 - N of Galchutt Exit to Christine Exit

Paving Layout
Colfax Interchange Improvements
Sta 12+29 to 22+23 (EXCOLSWR)
Sta 7+60 to 13+83 (EXCOLFAX)
Sta 1+13 to 10+82 (EXCOLNWR)



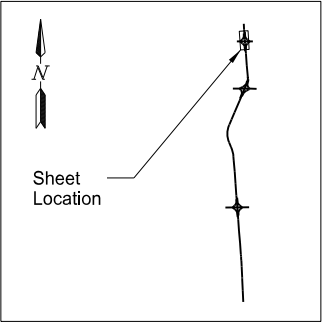


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	90	7

SPEC CODE BID ITEM QTY UNIT

714	3035	END SECT-CONC REINF 36IN		
		Sta 17+14 ~ 49.9' Rt (EX58SWR)	1	EA
		Sta 17+45 ~ 33.9' Lt (EX58SWR)	1	EA

Notes:
1. Refer to Section 10 for Paving Quantities



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I-29 - N of Galchutt Exit to Christine Exit

Paving Layout
Christine Interchange Improvements
Sta 12+29 to 23+43 (EX58SWR)
Sta 10+62 to 25+42 (EX58ST)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED					TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.							
			1	2	3	4	5			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)							6	
E5-1-48	48"x48"	EXIT ARROW	3				6	6	35	210
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES	2	2		4	4	4	34	136
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	5	10	10	14	14	19	266
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)							18	
G20-10-108	108"x48"	CONTRACTOR SIGN	1	1	2	2	2	2	64	128
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS							37	
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW							30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	2	2	4	4	4	4	59	236
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)							10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)							10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)							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			5			5	23	115
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			6	6	6	6	32	192
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back	2	2		4	6	6	5	30
R1-2-60	60"x60"	YIELD	3		6		6	6	29	174
R2-1-48	48"x60"	SPEED LIMIT ___	10	10	31	20	24	31	39	1209
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)							10	
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	5	5	6	10	10	10	10	100
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT							35	
R4-1-48	48"x60"	DO NOT PASS			23		2	23	39	897
R4-7-48	48"x60"	KEEP RIGHT SYMBOL			2			2	39	78
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			14			14	28	392
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			5			5	35	175
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW			2			2	35	70
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW							35	
W1-6-48	48"x24"	LARGE ARROW			2			2	26	52
W3-1-48	48"x48"	STOP AHEAD SYMBOL							35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL							35	

[illegible][illegible]

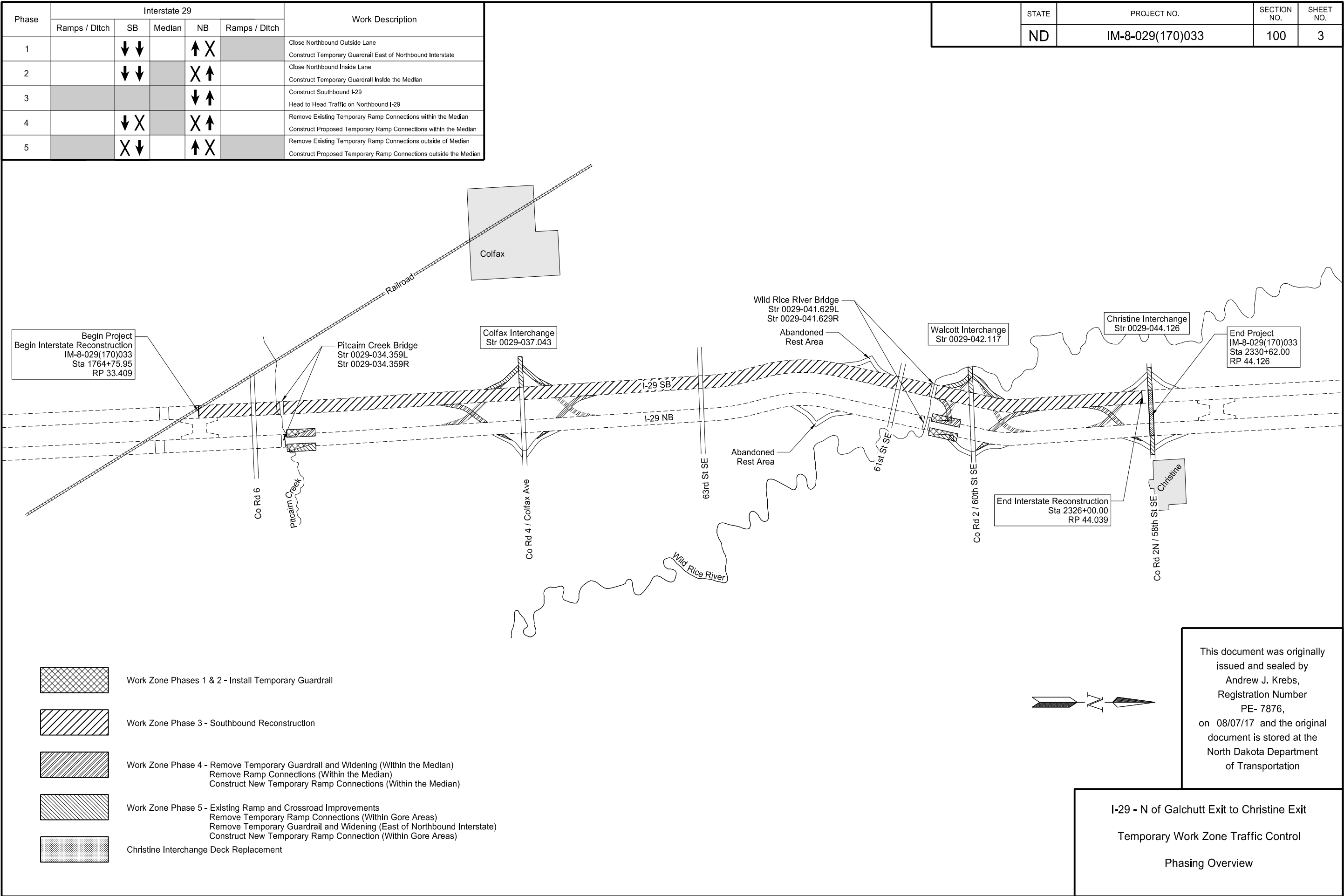
SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	9590

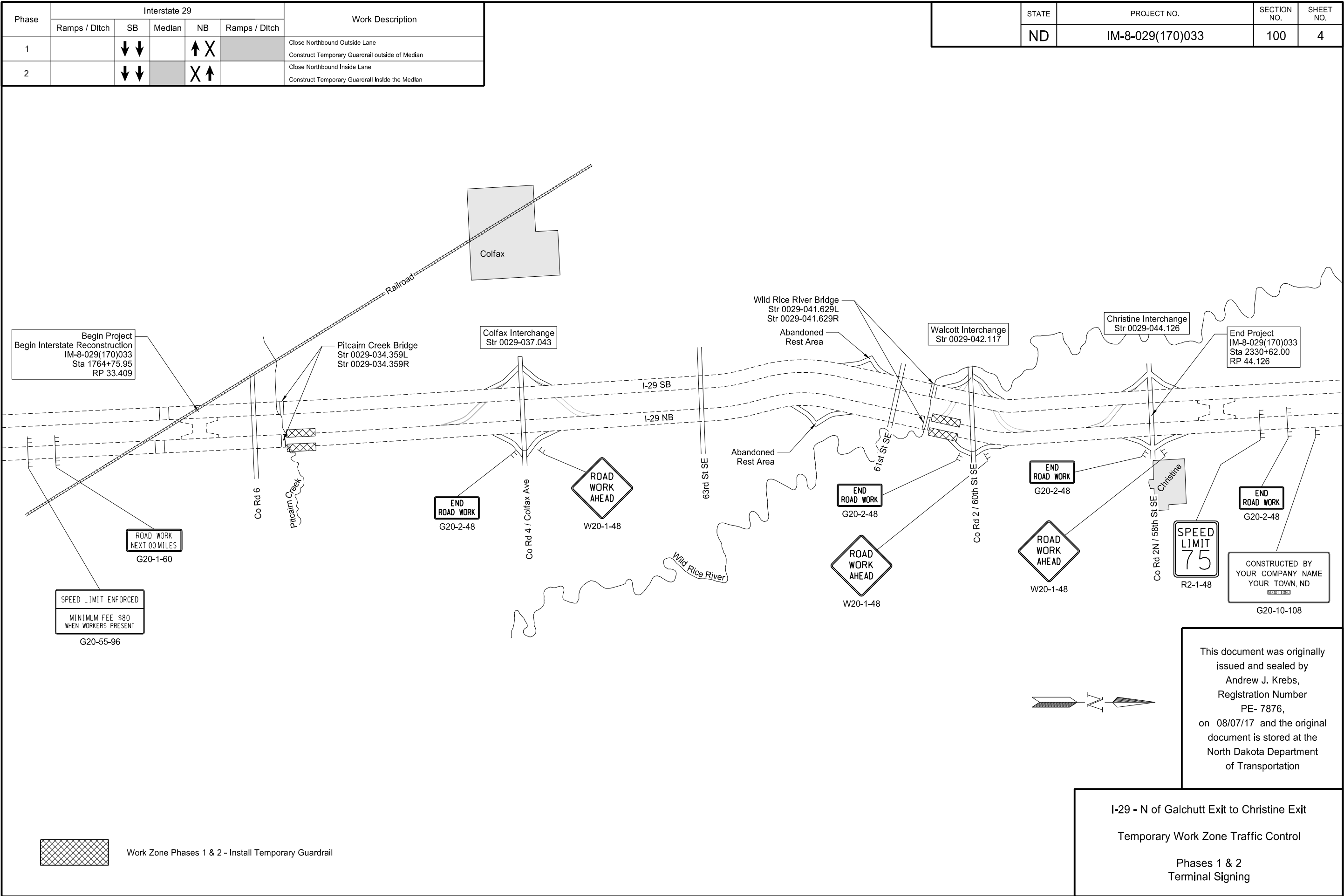
[illegible]

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
I-29 - N of Galchutt Exit to Christine
Temporary Work Zone Traffic Control





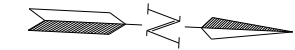
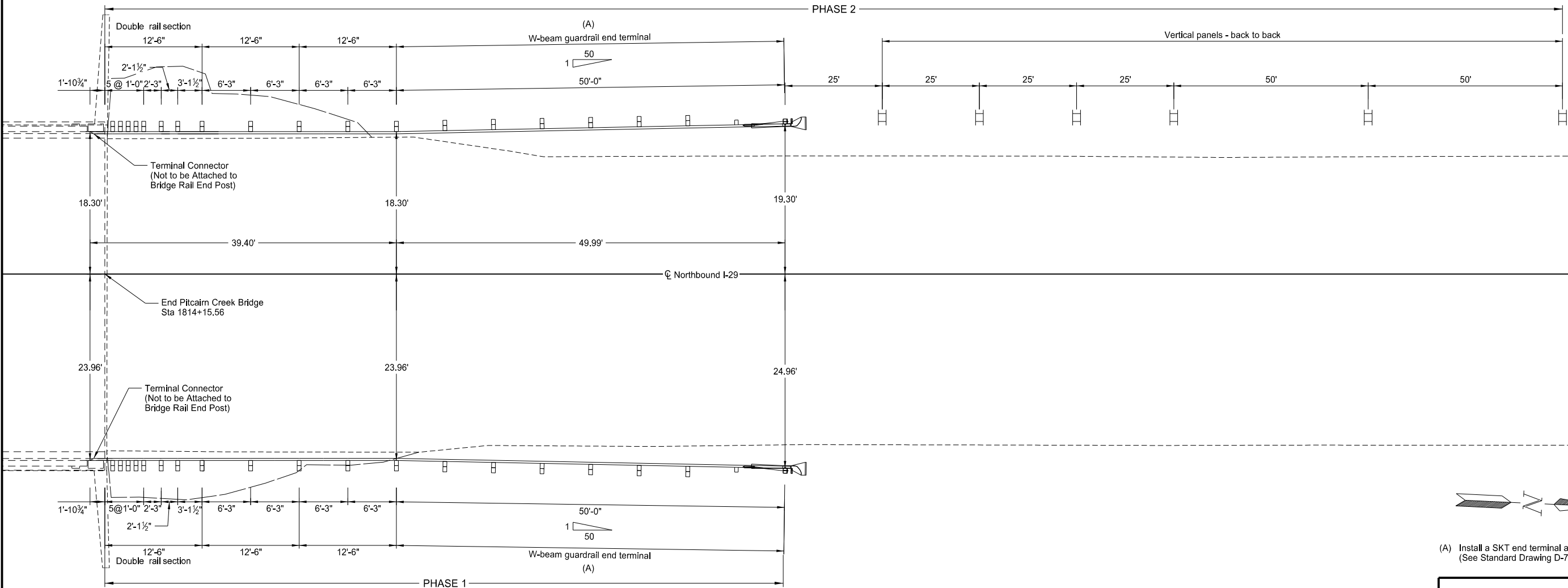
8/2/2017

6:11:13 PM

seankelly

P:\State\NDDOT\5216106\CADD\80029033.170\Design\Plans\100\100WZ_0004_TerminalSigning_Phases1&2.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	5



(A) Install a SKT end terminal at this location
(See Standard Drawing D-764-05).

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SPEC	CODE	BID ITEM	QTY	UNIT
704	1081	VERTICAL PANELS-BACK TO BACK		
		Sta 1815+16 to Sta 1816+03 Rt Mdn (Phase 2)	6	EA
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 1814+13.66 to Sta 1815+03.05 Rt (Phase 1)	1	EA
		Sta 1814+13.66 to Sta 1815+03.05 Rt Mdn (Phase 2)	1	EA

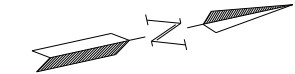
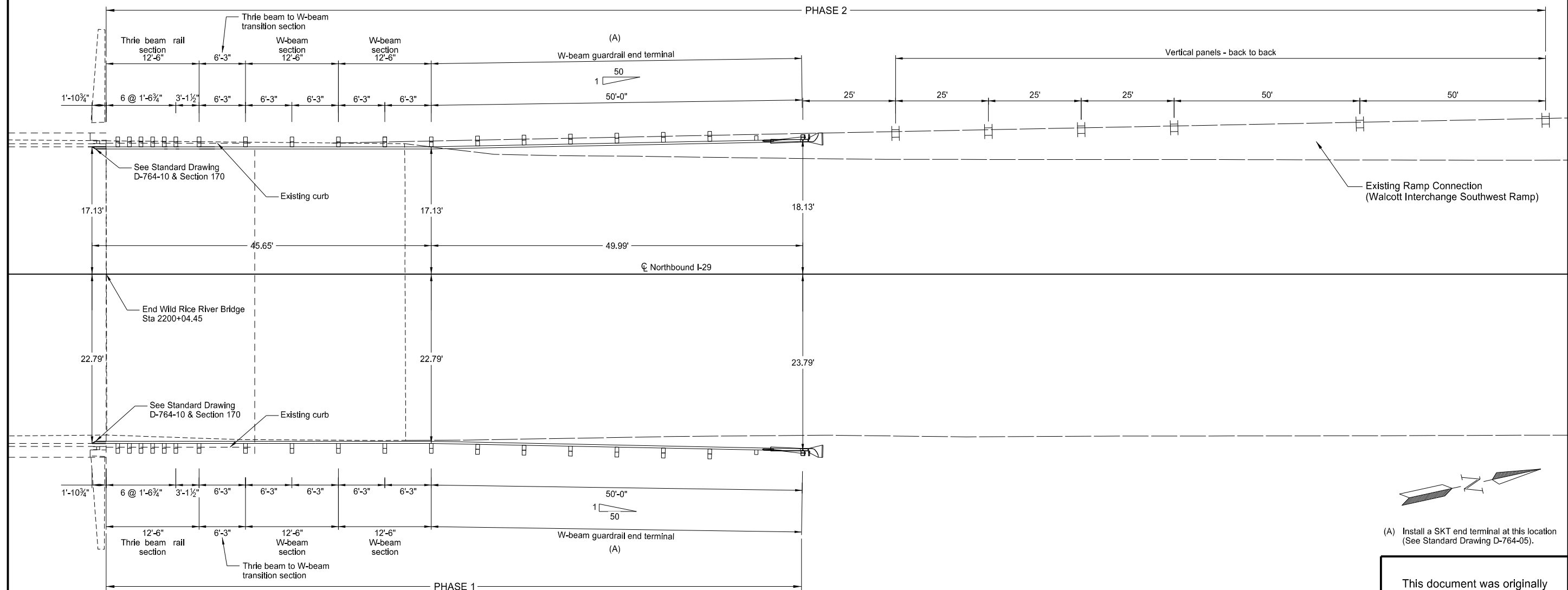
23 USC § 409 Documents
NDDOT Reserves All Objections

I-29 - N of Galchutt Exit to Christine Exit

Temporary Work Zone Traffic Control

Phase 1 & 2 - Temporary Guardrail
Str 0029-034.359R

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	6



(A) Install a SKT end terminal at this location
(See Standard Drawing D-764-05).

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QTY UNIT

SPEC CODE BID ITEM

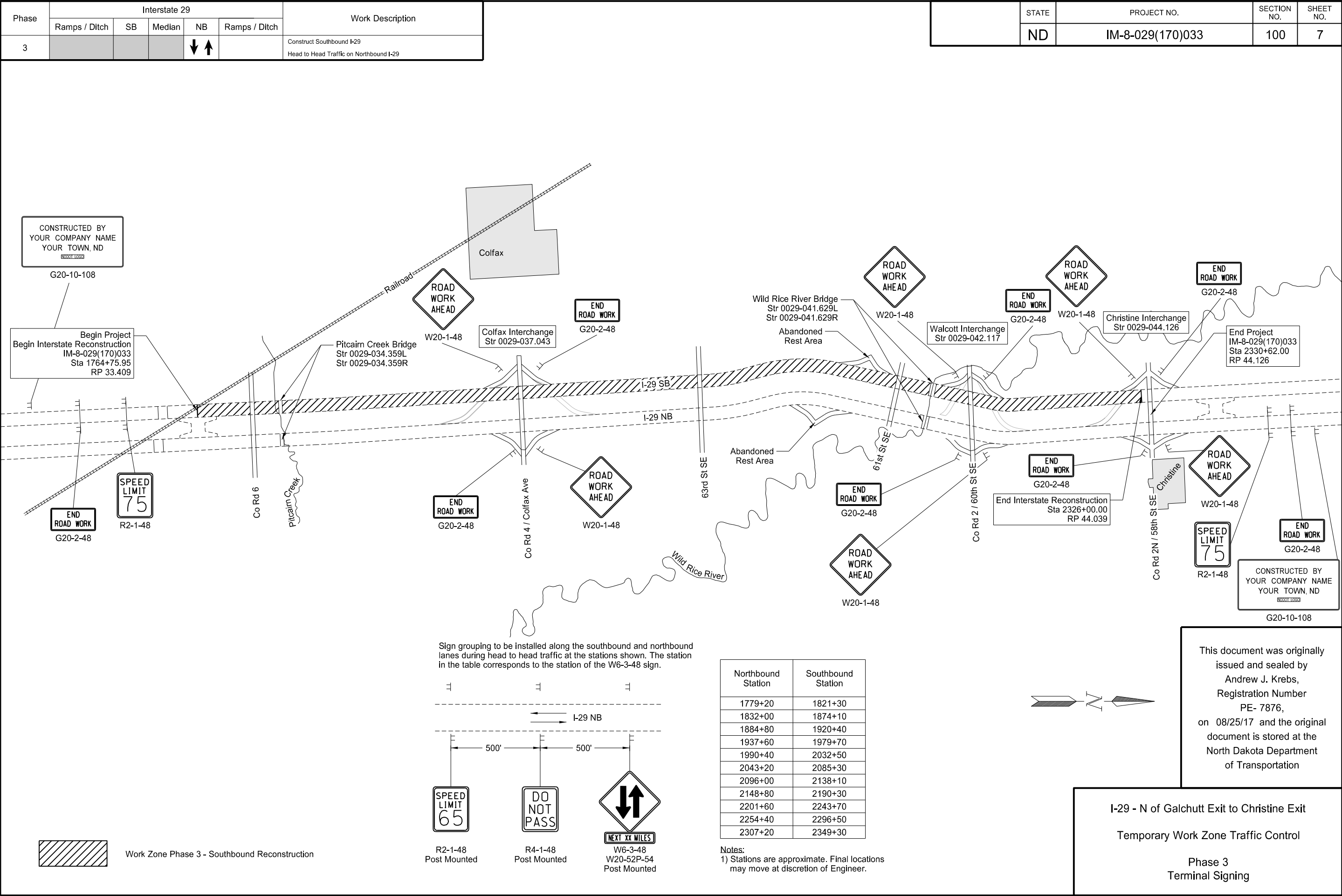
704	1081	VERTICAL PANELS-BACK TO BACK		
		Sta 2201+04 to Sta 2201+92 Rt Mdn (Phase 2)	6	EA
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 2200+02.55 to Sta 2200+98.19 Rt (Phase 1)	1	EA
		Sta 2200+02.55 to Sta 2200+98.19 Rt Mdn (Phase 2)	1	EA

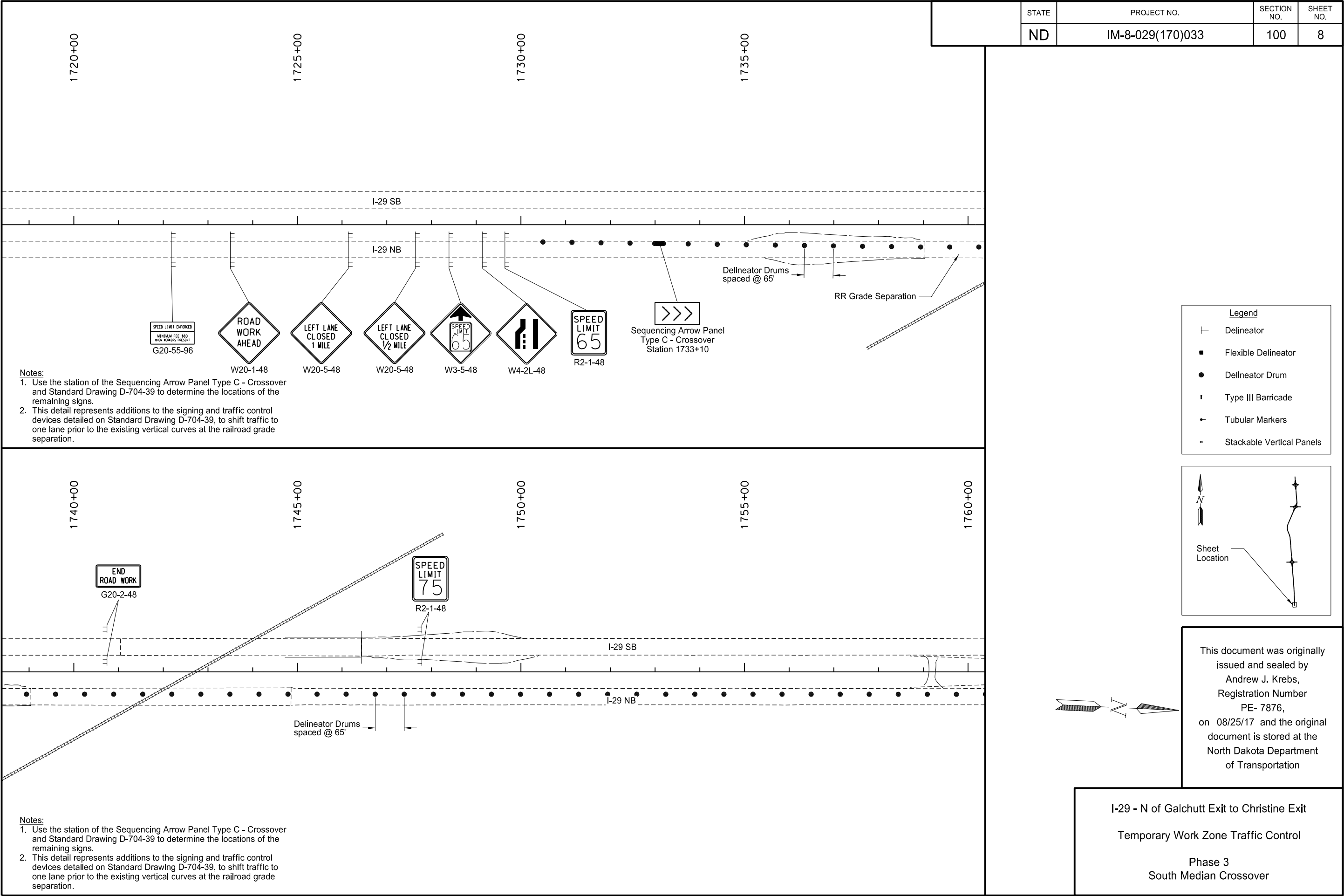
I-29 - N of Galchutt Exit to Christine Exit

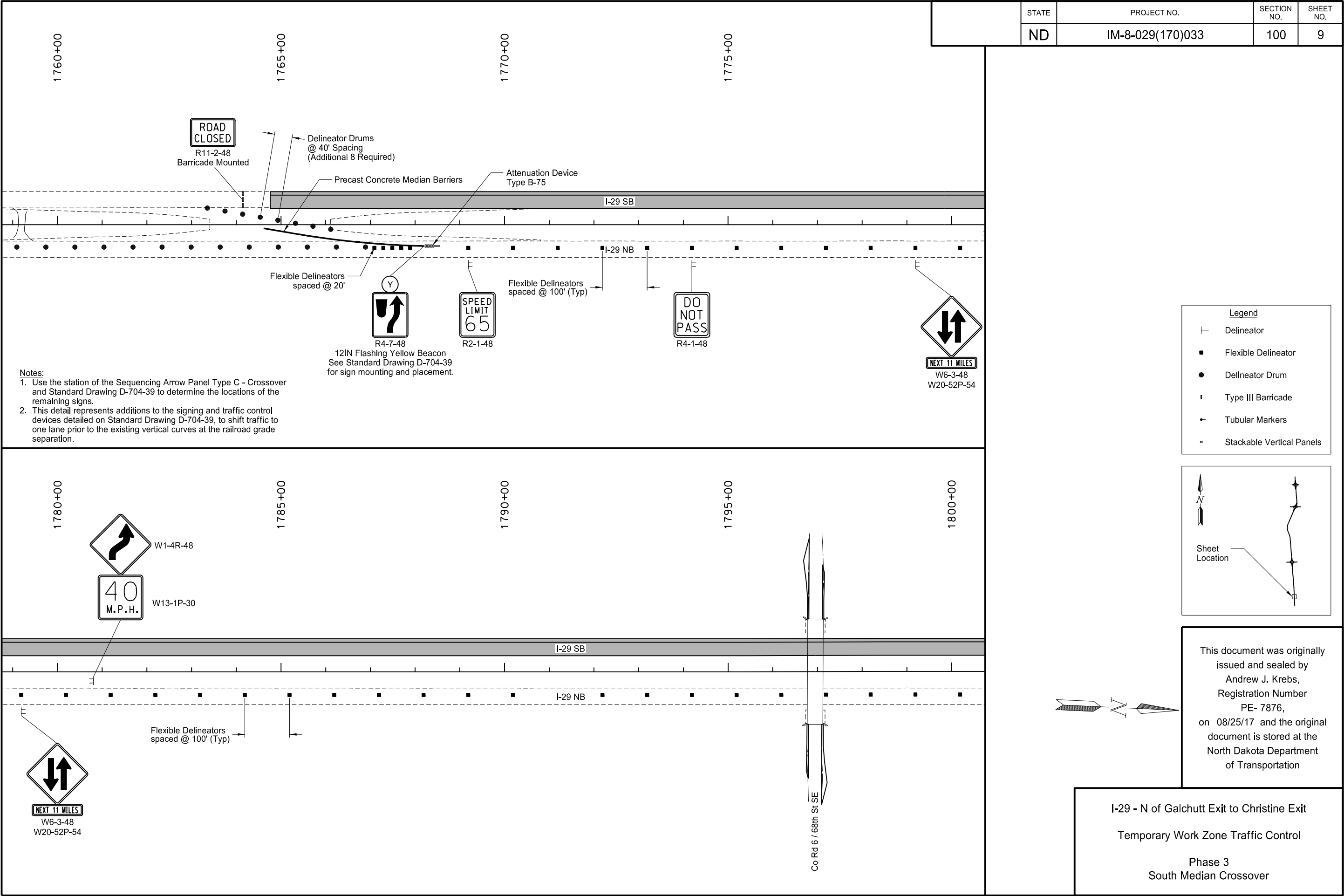
Temporary Work Zone Traffic Control

Phase 1 & 2 - Temporary Guardrail
Str 0029-041.629R

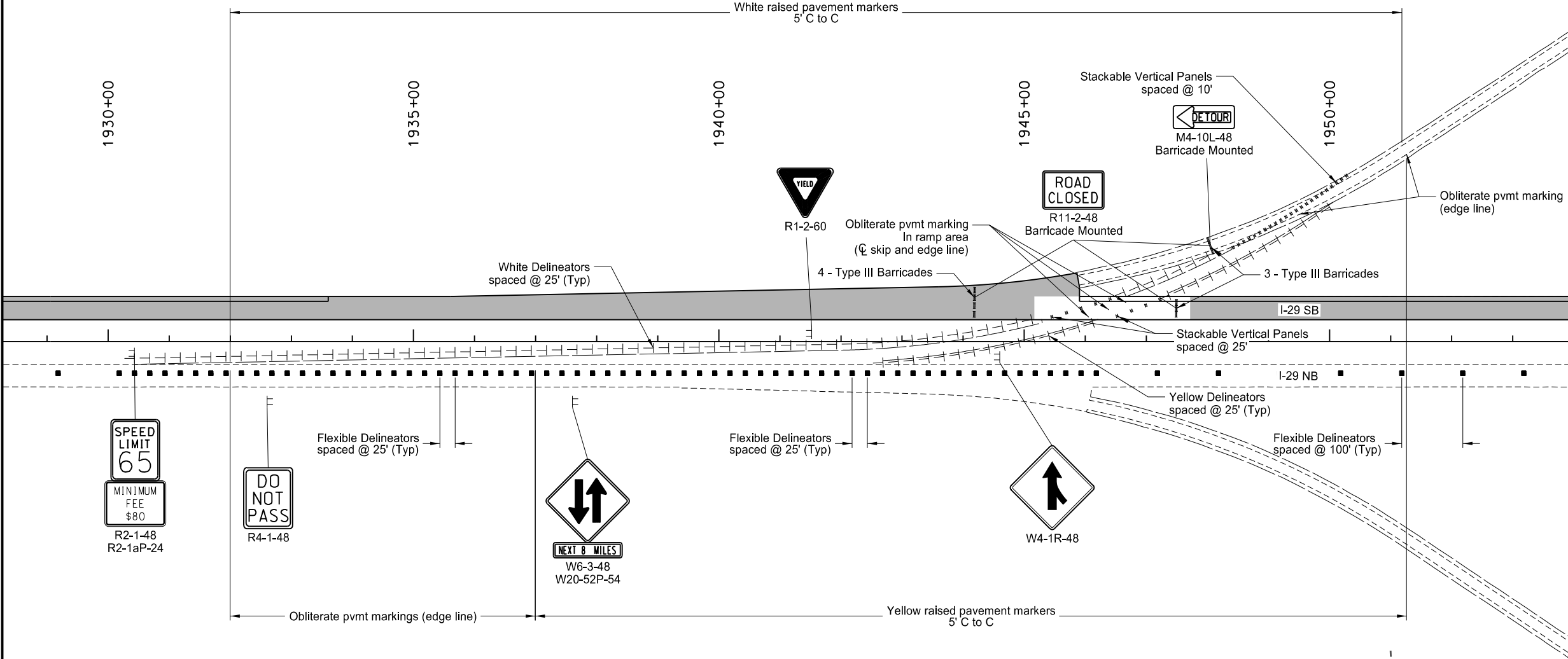
23 USC § 409 Documents
NDDOT Reserves All Objections



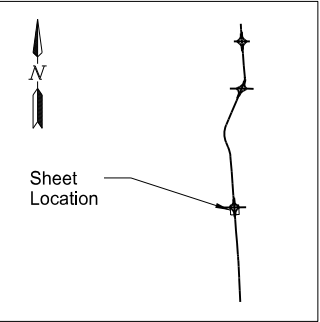




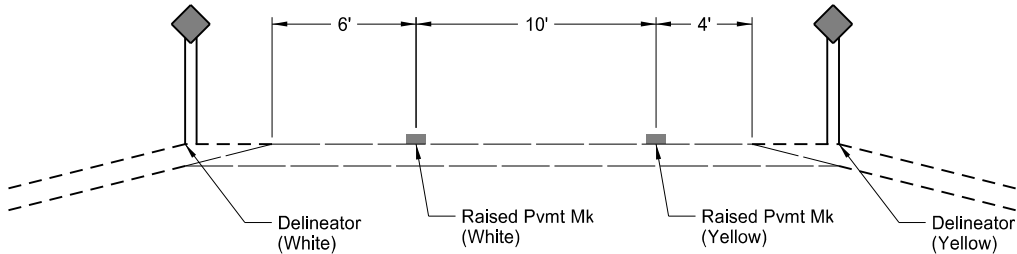
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	10



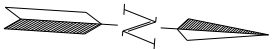
Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels



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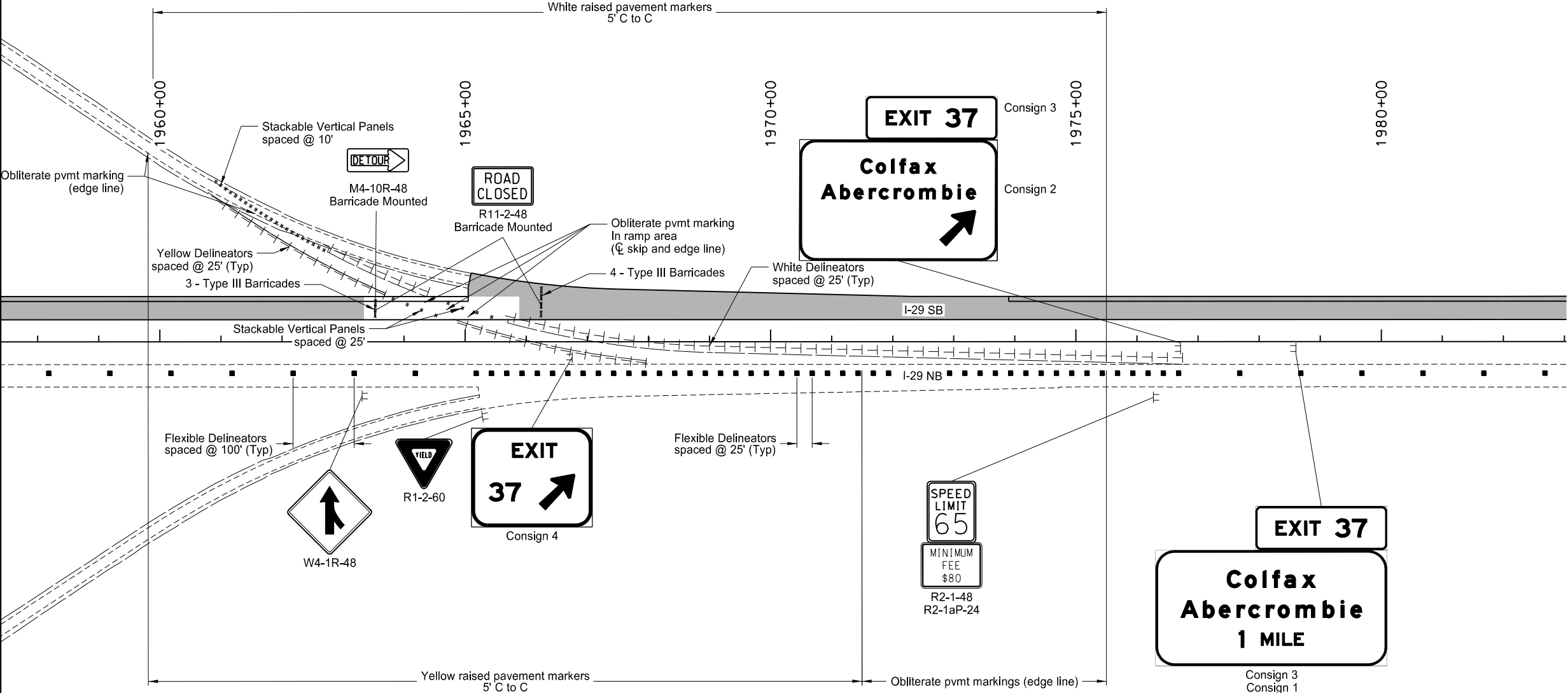


Typical Section
Ramp Connection Traffic Control Devices

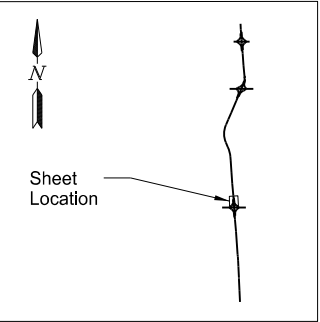


I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 3
Colfax Interchange

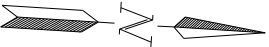
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	ND	IM-8-029(170)033	100	11



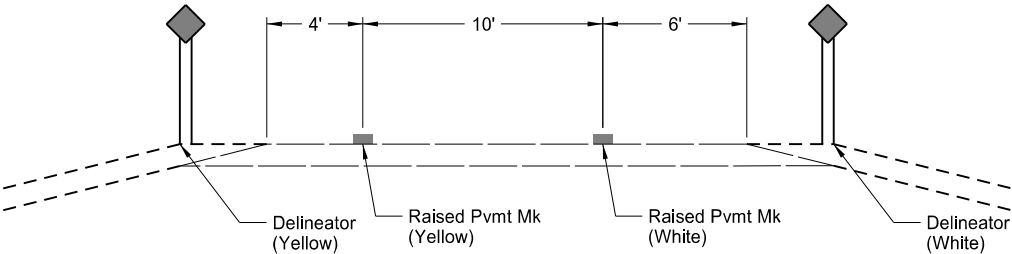
Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels



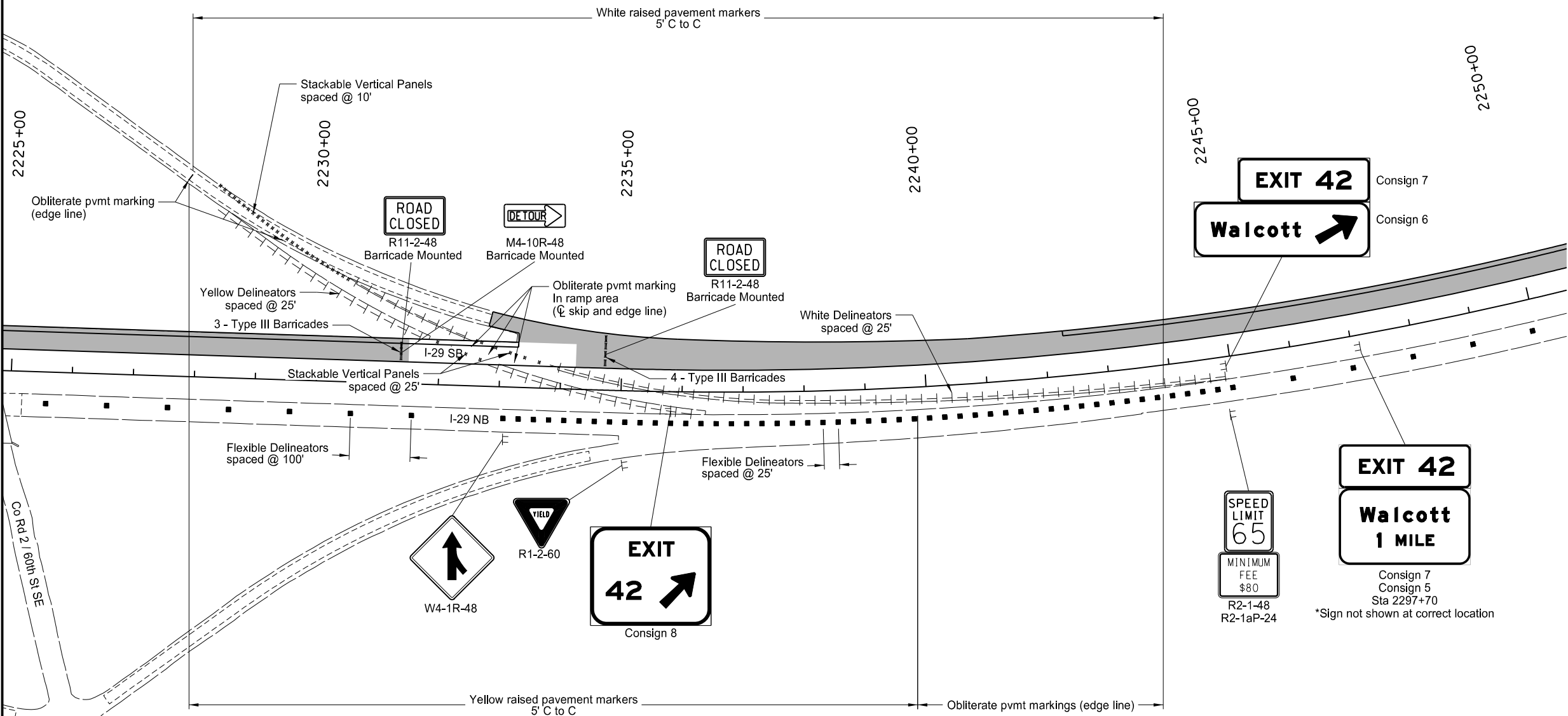
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I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 3
Colfax Interchange



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	13



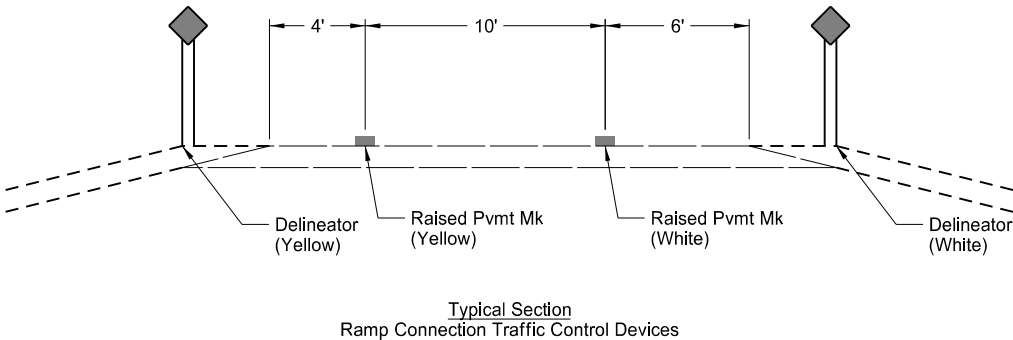
Legend

- Delineator
- Flexible Delineator
- Delineator Drum
- Type III Barricade
- Tubular Markers
- Stackable Vertical Panels

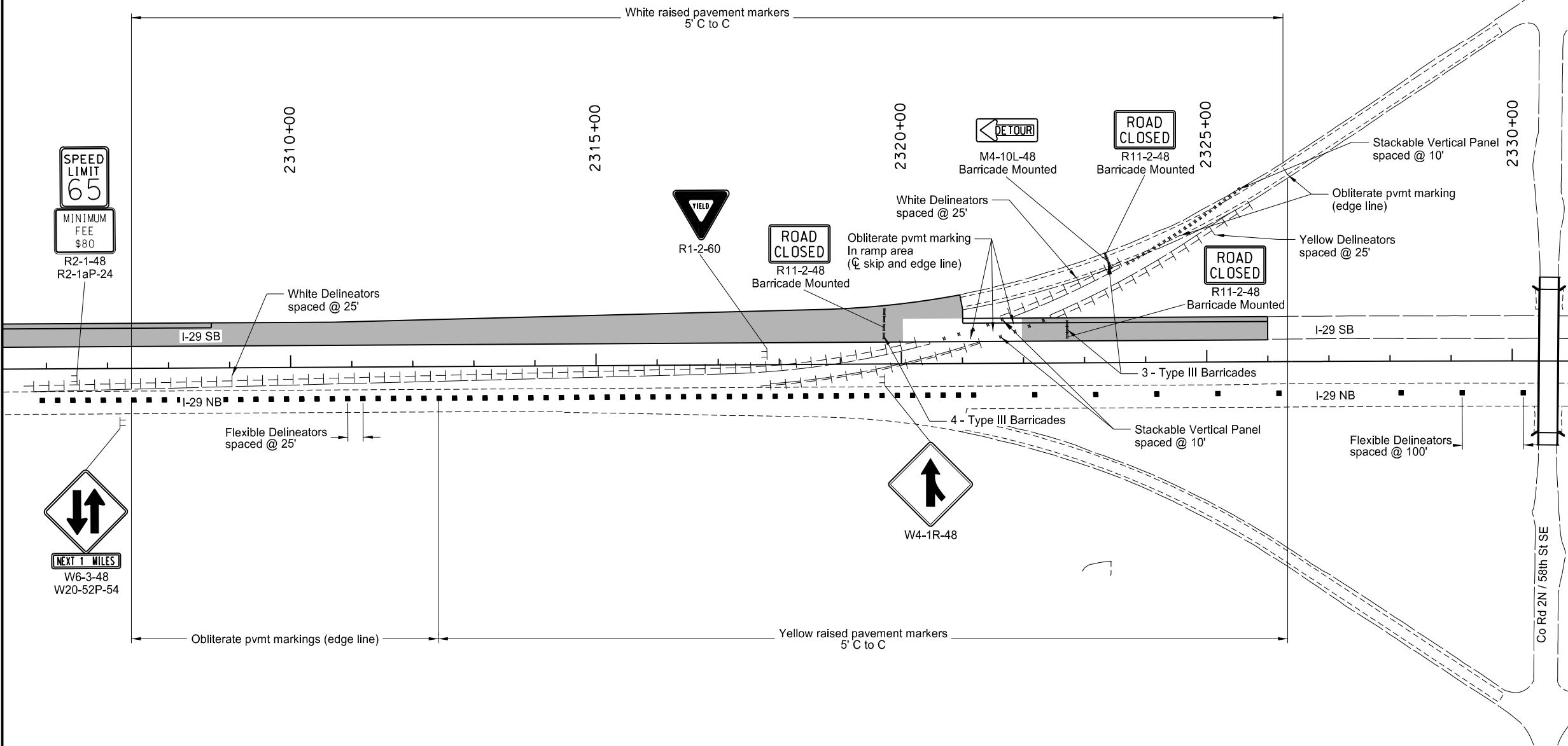
Sheet Location

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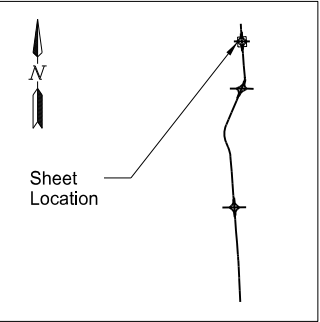
I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 3
Walcott Interchange



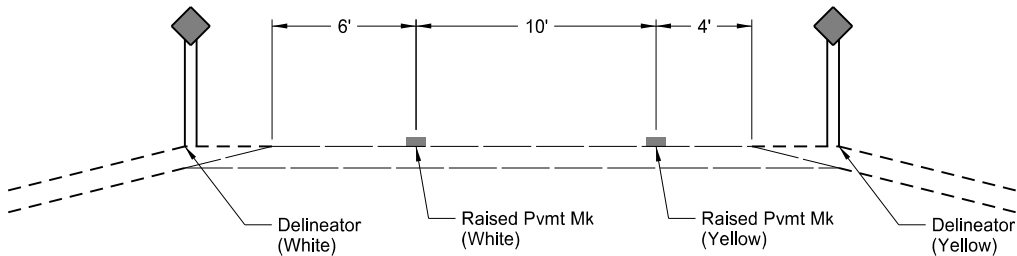
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	14



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels

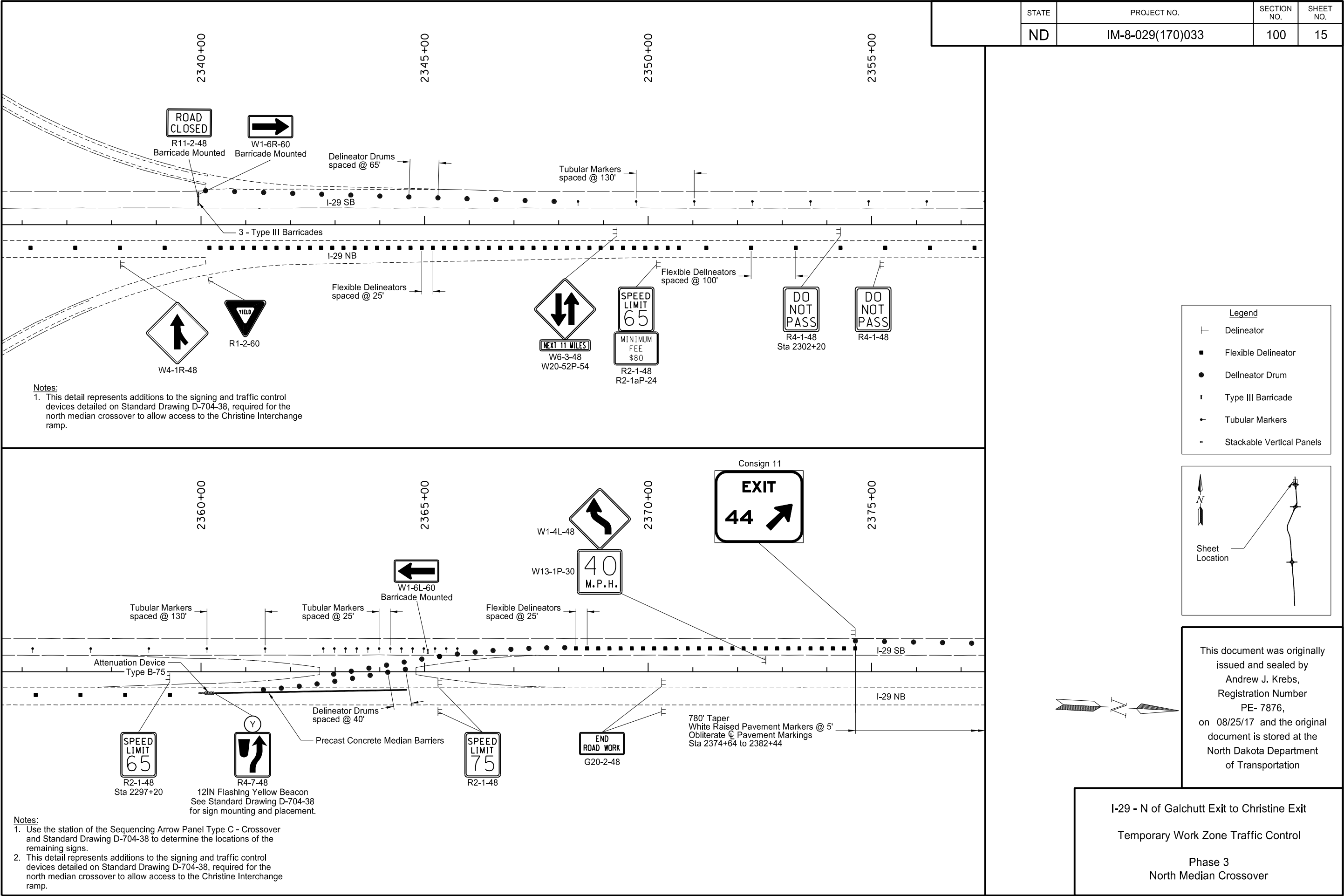


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Typical Section
Ramp Connection Traffic Control Devices

I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 3
Christine Interchange



Legend

Delineator

Flexible Delineator

Delineator Drum

Type III Barricade

Tubular Markers

Stackable Vertical Panels

Sheet Location

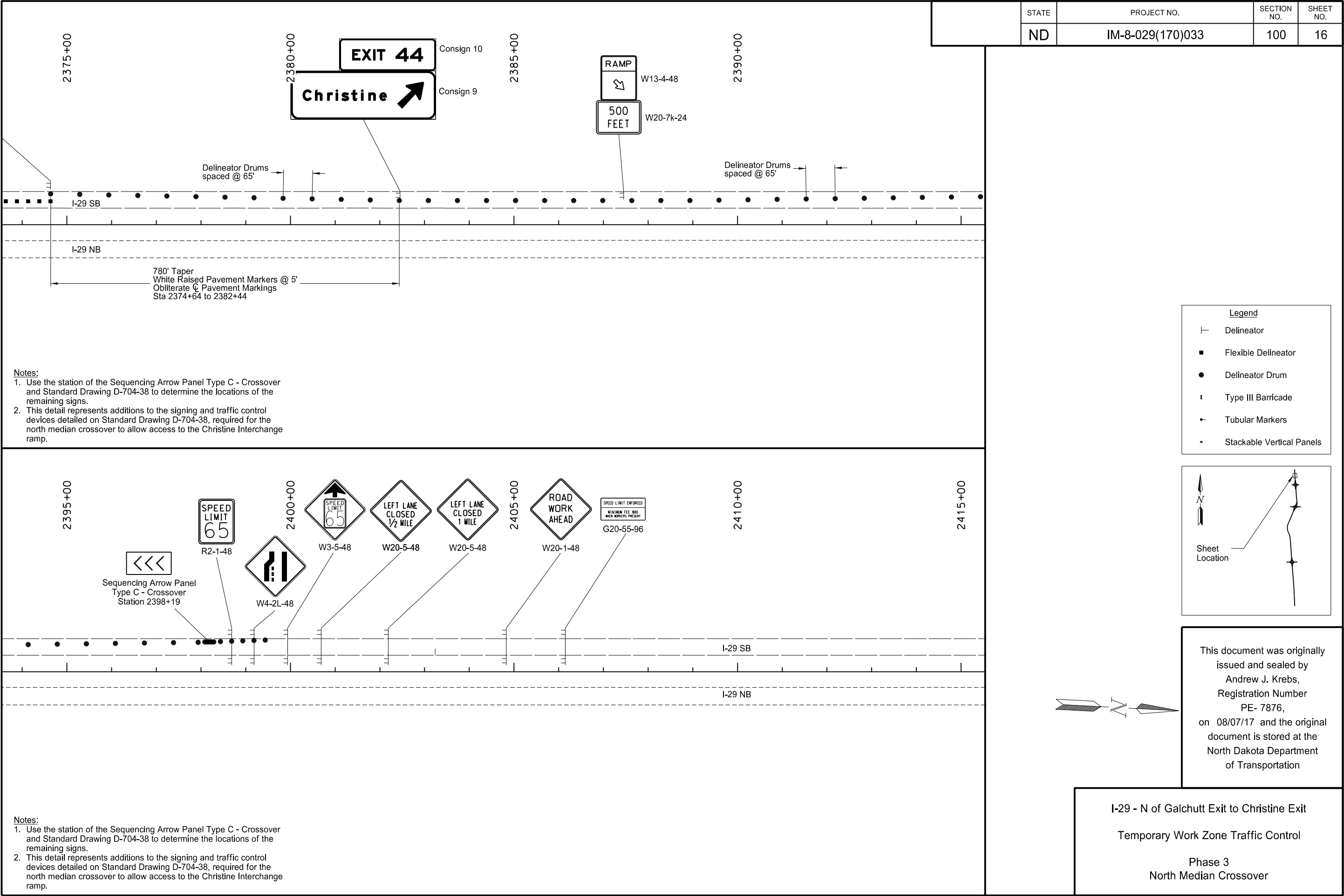
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I-29 - N of Galchutt Exit to Christine Exit

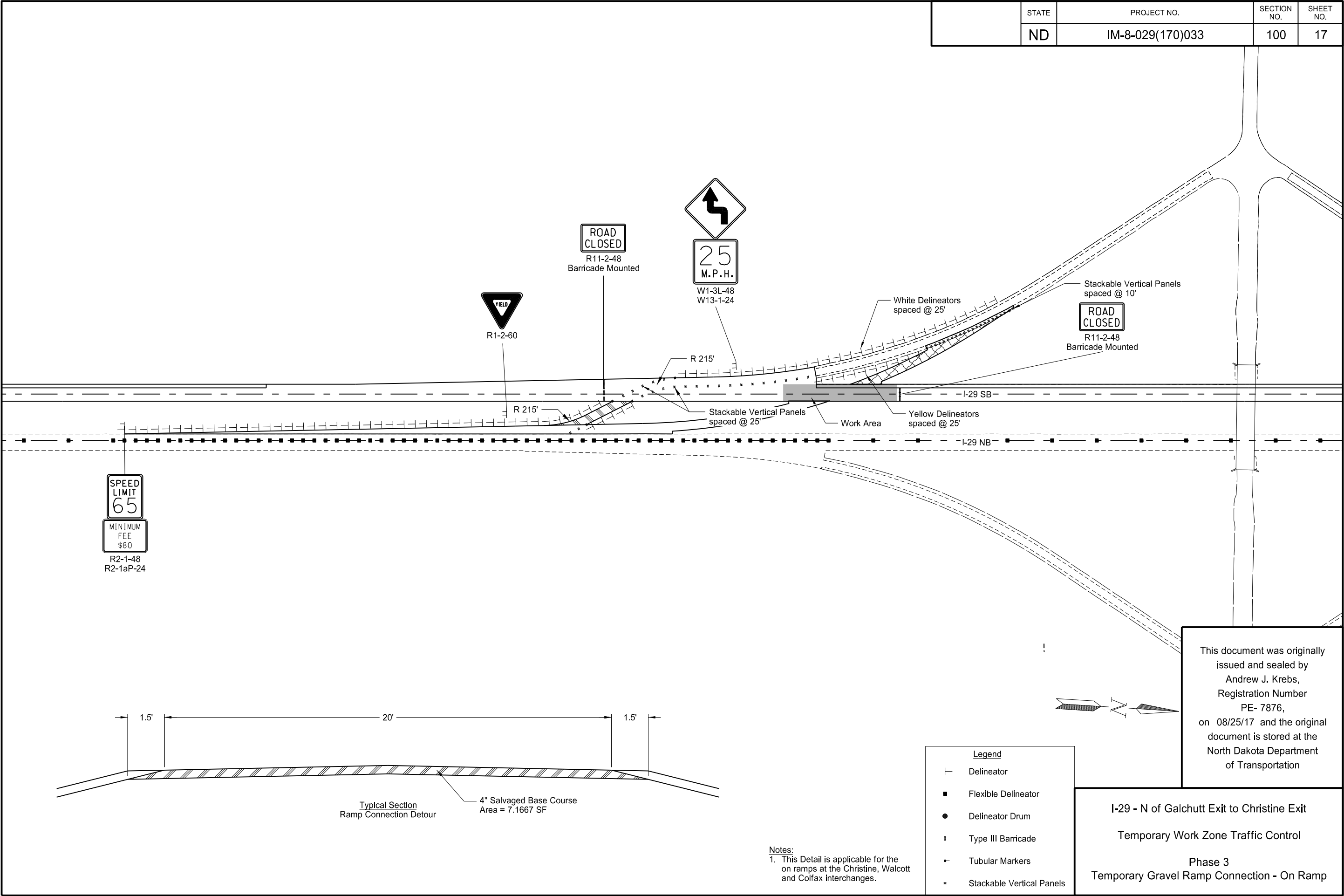
Temporary Work Zone Traffic Control

Phase 3

North Median Crossover



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	17



SPEED
LIMIT
65
MINIMUM
FEE
\$80
R2-1-48
R2-1aP-24

ROAD
CLOSED
R11-2-48
Barricade Mounted

YIELD
R1-2-60

25
M.P.H.
W1-3L-48
W13-1-24

Stackable Vertical Panels
spaced @ 10'
ROAD
CLOSED
R11-2-48
Barricade Mounted

White Delineators
spaced @ 25'

Yellow Delineators
spaced @ 25'

Work Area

Stackable Vertical Panels
spaced @ 25'

R 215'

R 215'

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I-29 - N of Galchutt Exit to Christine Exit

Temporary Work Zone Traffic Control

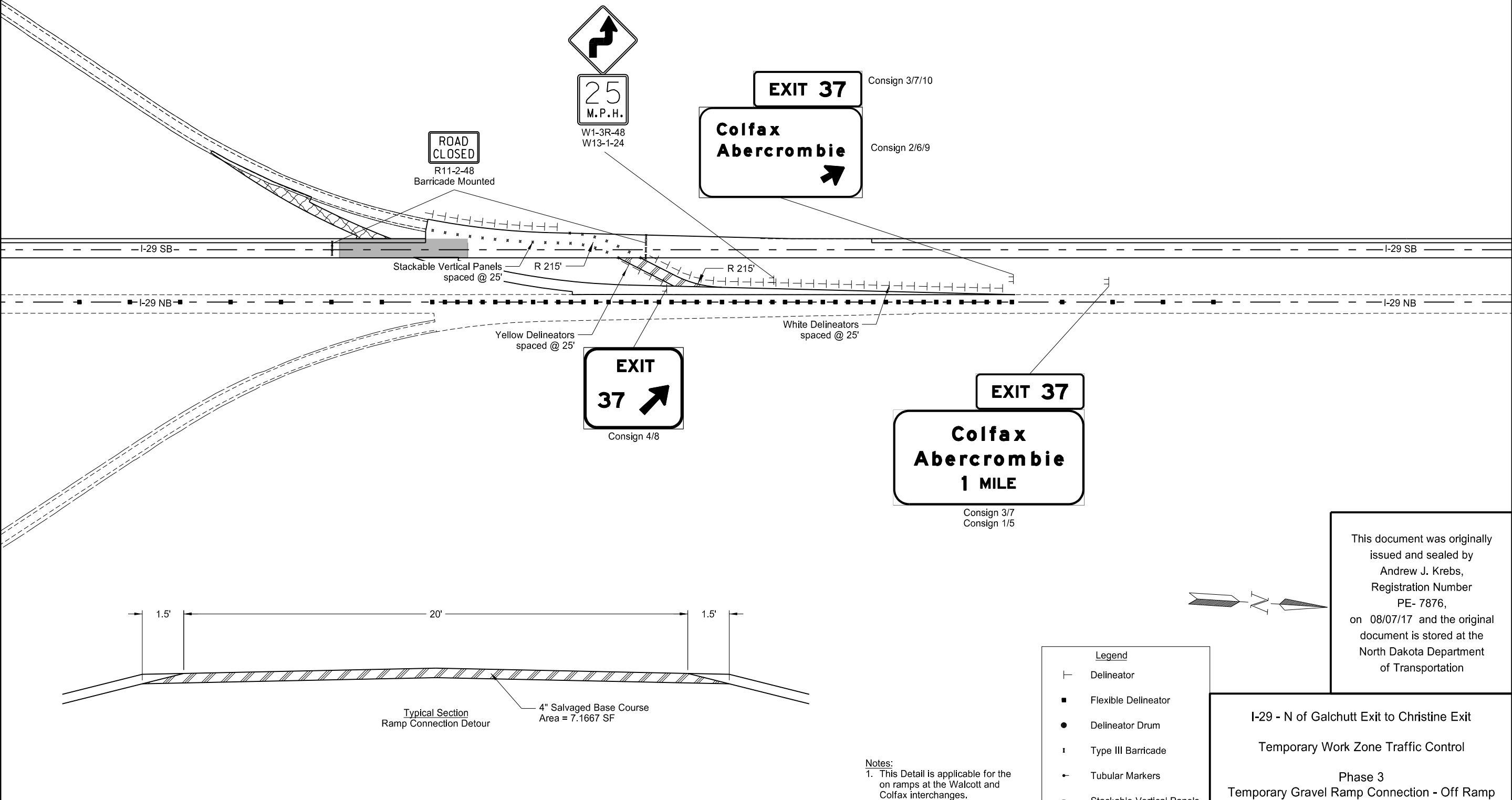
Phase 3
Temporary Gravel Ramp Connection - On Ramp

- Legend
- Delineator
 - Flexible Delineator
 - Delineator Drum
 - Type III Barricade
 - Tubular Markers
 - Stackable Vertical Panels

Notes:
1. This Detail is applicable for the
on ramps at the Christine, Walcott
and Colfax interchanges.

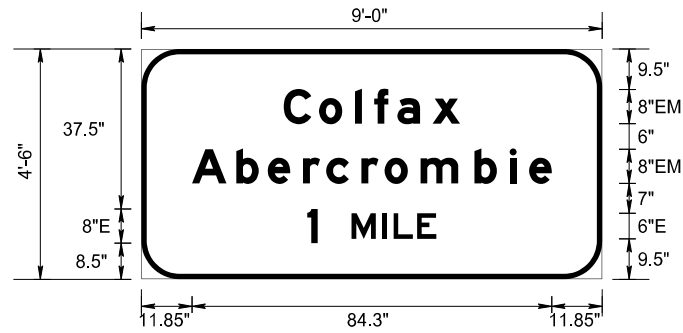
Typical Section
Ramp Connection Detour
4" Salvaged Base Course
Area = 7.1667 SF

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	18



SYMBOL	X	Y	WID	HT	ANGLE

AREA: 40.5 Sq.Ft.

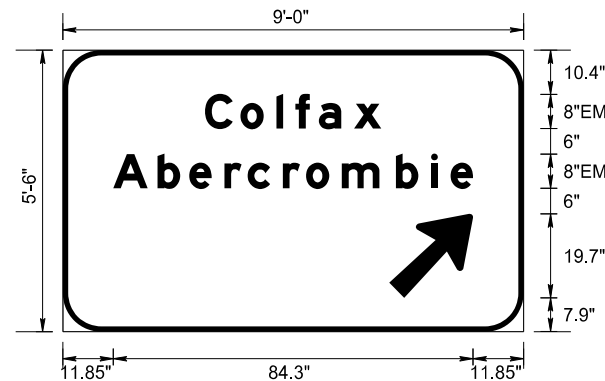


Letter locations are panel edge to lower left corner

[illegible]

SYMBOL	X	Y	WID	HT	ANGLE
ARGORE	76.5	8	15.1	25	45

AREA: 49.5 Sq.Ft.

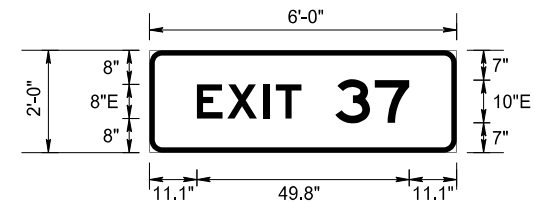


Letter locations are panel edge to lower left corner

[illegible]

SYMBOL	X	Y	WID	HT	ANGLE

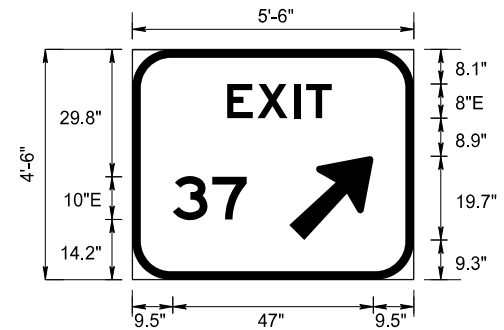
AREA: 12.0 Sq.Ft.



Letter locations are panel edge to lower left corner

SIGN NUMBER	Consign 4	<p>STATION(S): 1 Sign</p> <p>Diagram showing a rectangular sign with dimensions: 5'-6" width, 29.8" height. The sign features the word "EXIT" in large, bold, black letters. The sign has a 9" corner radius. The mounting is 8.1" high. The background is IV Reflective. The legend/border is IV Reflective. The color is White.</p>	<p>AREA: 24.8 Sq.Ft.</p>
WIDTH x HEIGHT	5'-6" x 4'-6"		
BORDER WIDTH	2" (inset 0")		
CORNER RADIUS	9"		
MOUNTING	Ground		
BACKGROUND	TYPE: IV Reflective COLOR: Green		
LEGEND/BORDER	TYPE: IV Reflective COLOR: White		

AREA: 24.8 Sq.Ft.



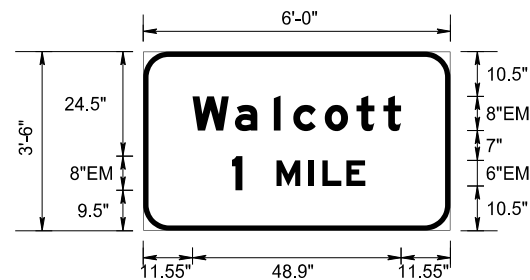
Letter locations are panel edge to lower left corner

[illegible]

Phase 3 Temporary Construction Signing Details

[illegible]

AREA: 21.0 Sq.Ft.



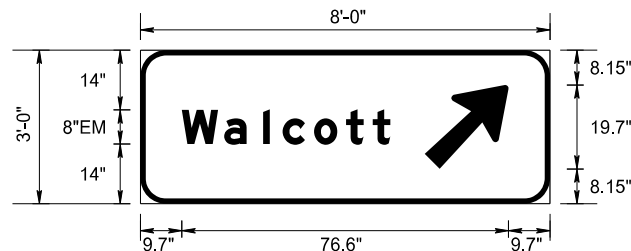
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible][illegible][illegible]

SYMBOL	X	Y	WID	HT	ANGL
ARGORE	66.6	8.2	15.1	25	45

AREA: 24.0 Sq.Ft.

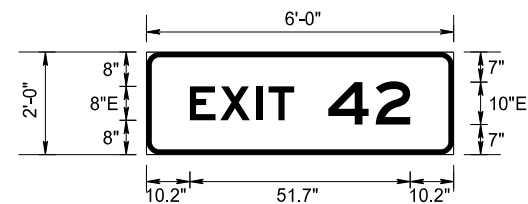


Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible][illegible][illegible]

AREA: 12.0 Sq.Ft.



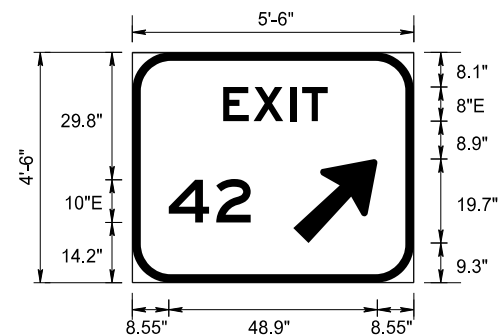
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible][illegible]

SYMBOL	X	Y	WID	HT	ANGL
ARGORE	37.8	9.3	15.1	25	45

AREA: 24.8 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITION (X)																	LENGTH	SIZE	SERIES
E	X	I	T														24.5	8	E 2000
21.3	28.4	37	39.8																

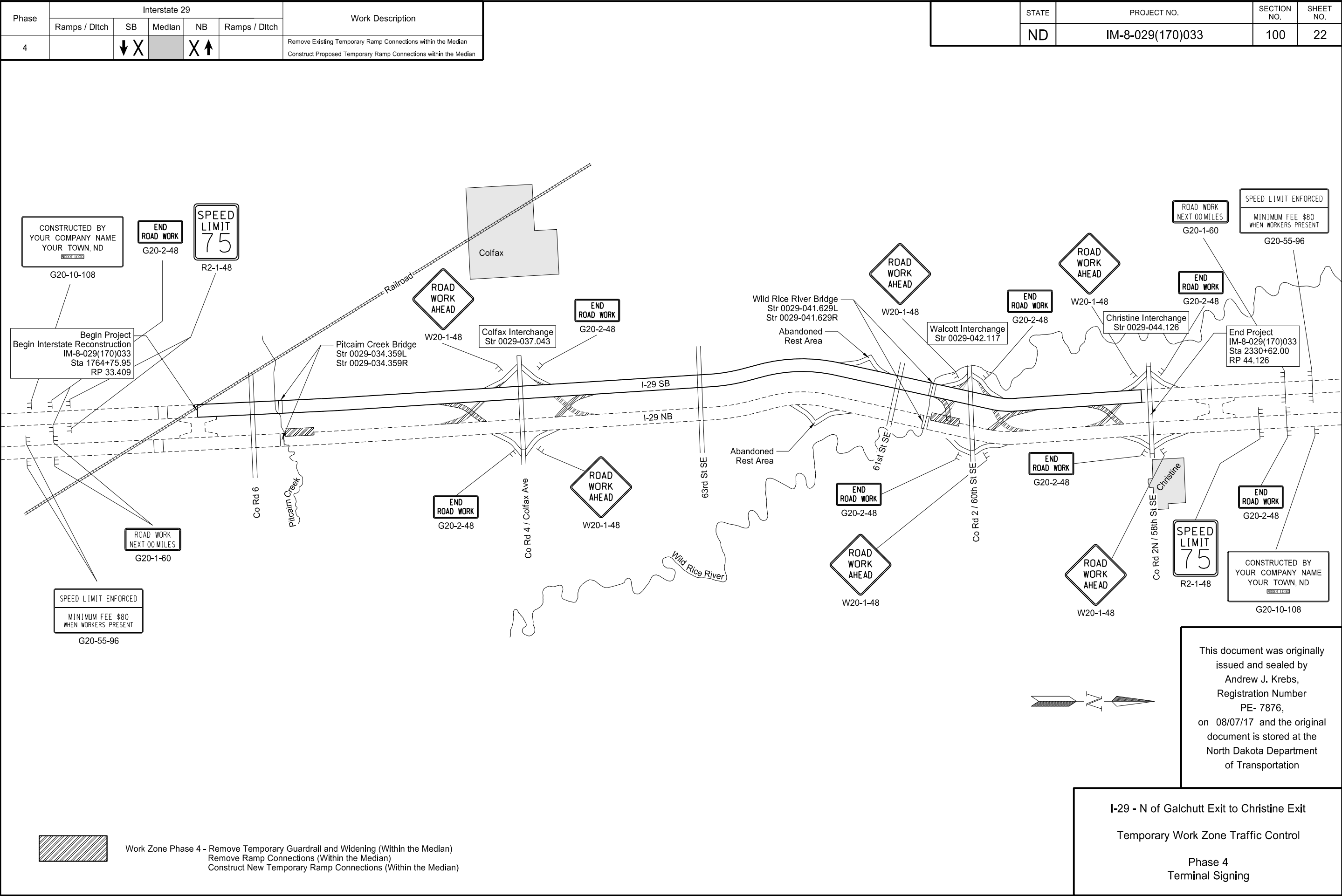
[illegible]

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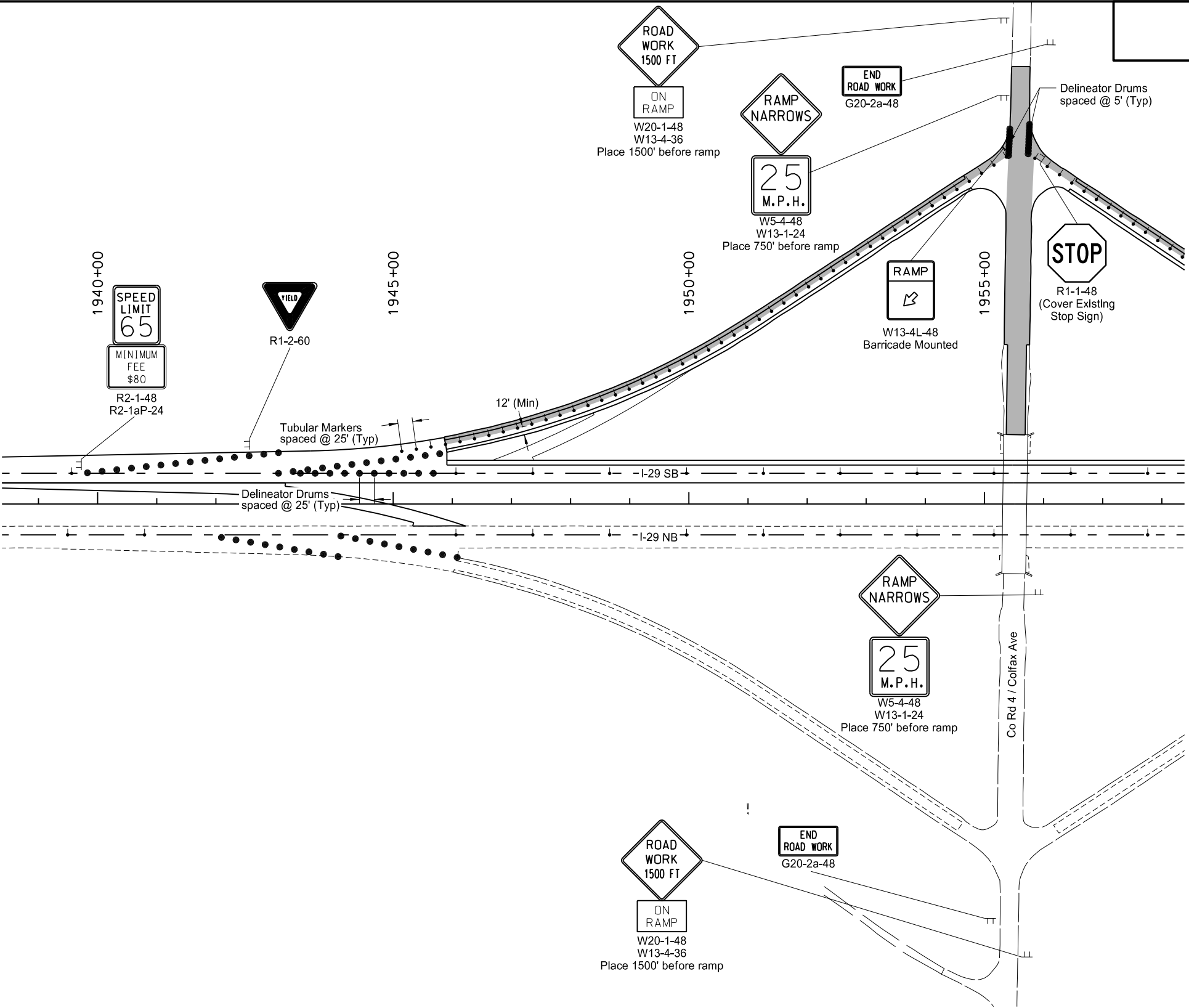
I-29 - N of Galchutt Exit to Christine Exit

Temporary Work Zone Traffic Control

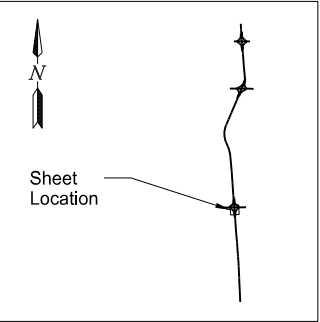
Phase 3 Temporary Construction Signing Details



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	24



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels

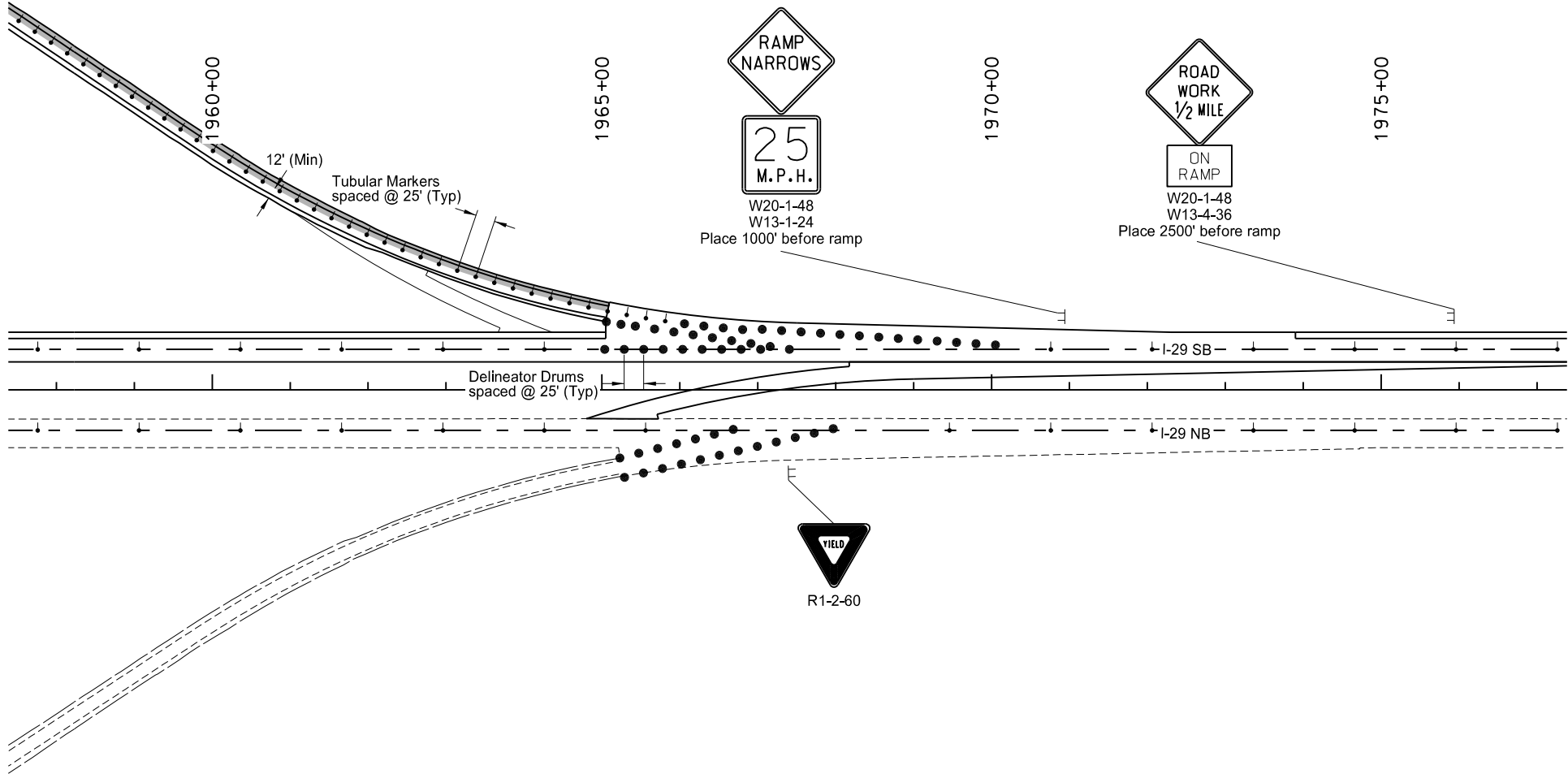


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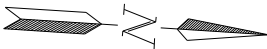
I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Colfax Interchange

Note:
The traffic control detailed on this sheets is for the work on the Colfax Interchange ramps. This detail shall be for work on the right half of the ramp.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	25



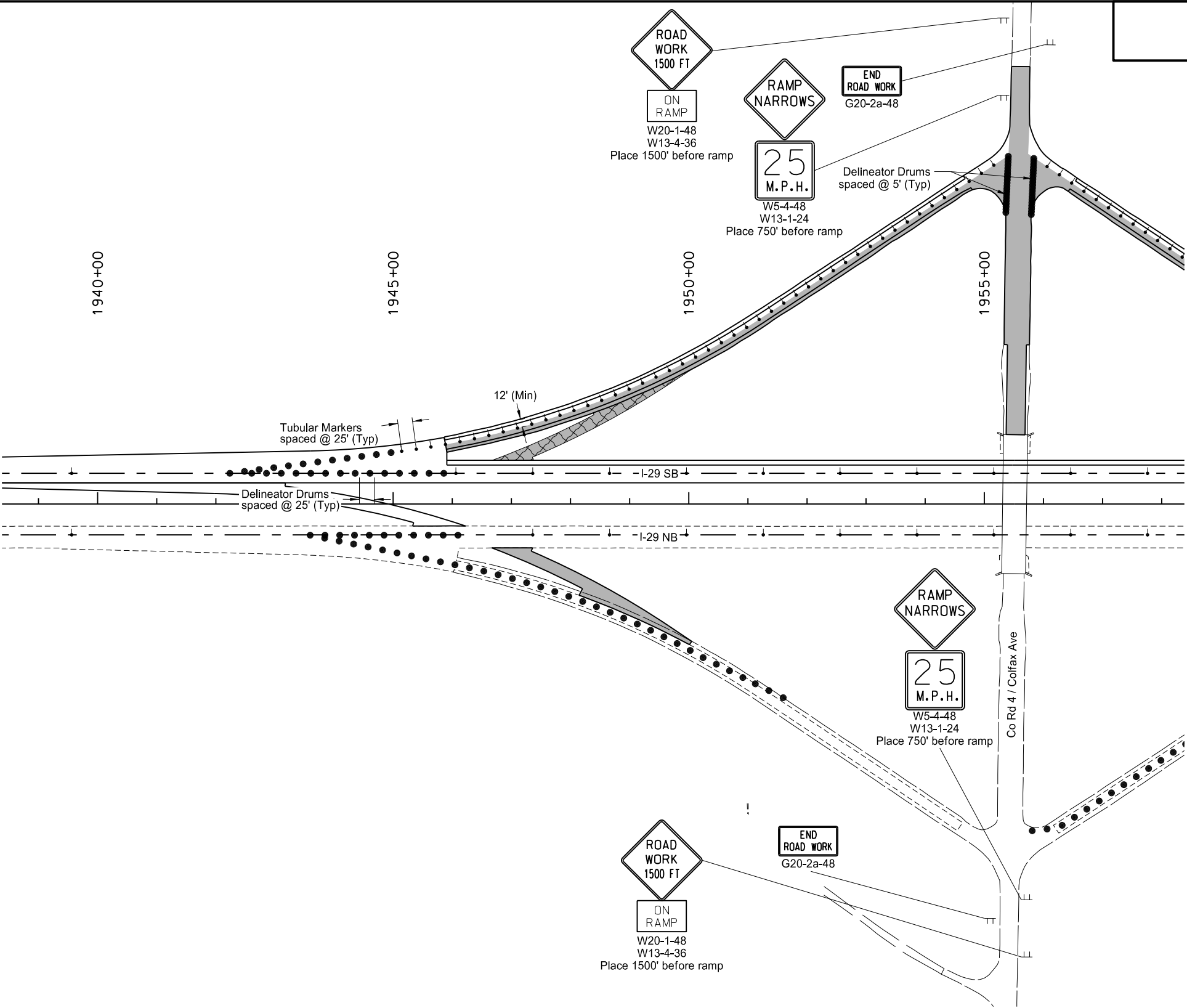
Note:
The traffic control detailed on this sheets is for the work on the Colfax Interchange ramps. This detail represents work on the right half of the ramp.



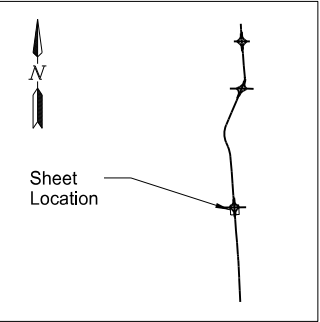
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I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Colfax Interchange

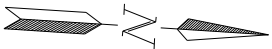
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	26



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels



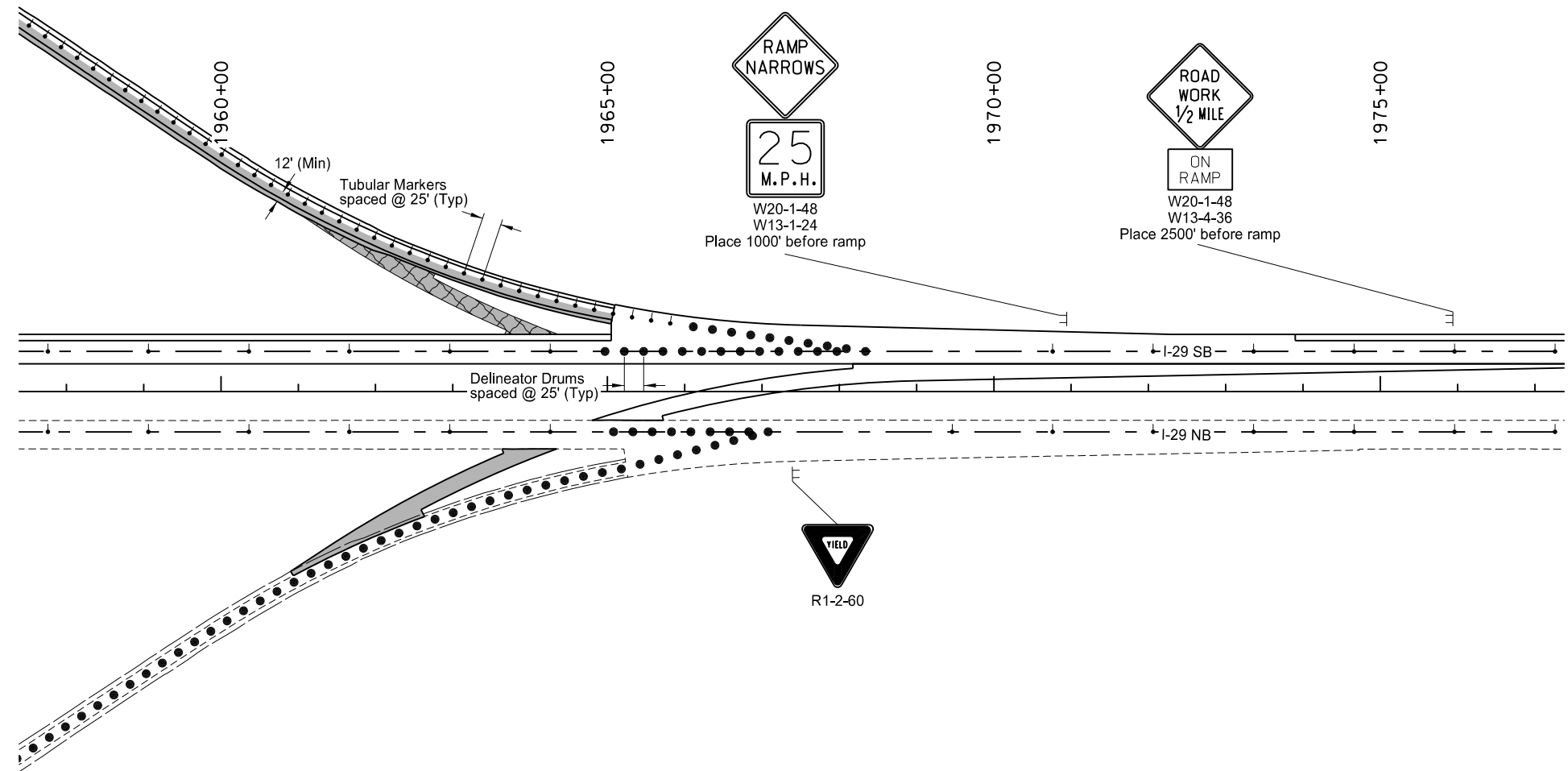
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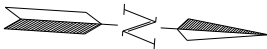
Note:
The traffic control detailed on this sheets is for the work on the Colfax Interchange ramps. This detail represents work on the left half of the ramp and the construction of the proposed ramp connections within the gore area.

I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Colfax Interchange

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	27



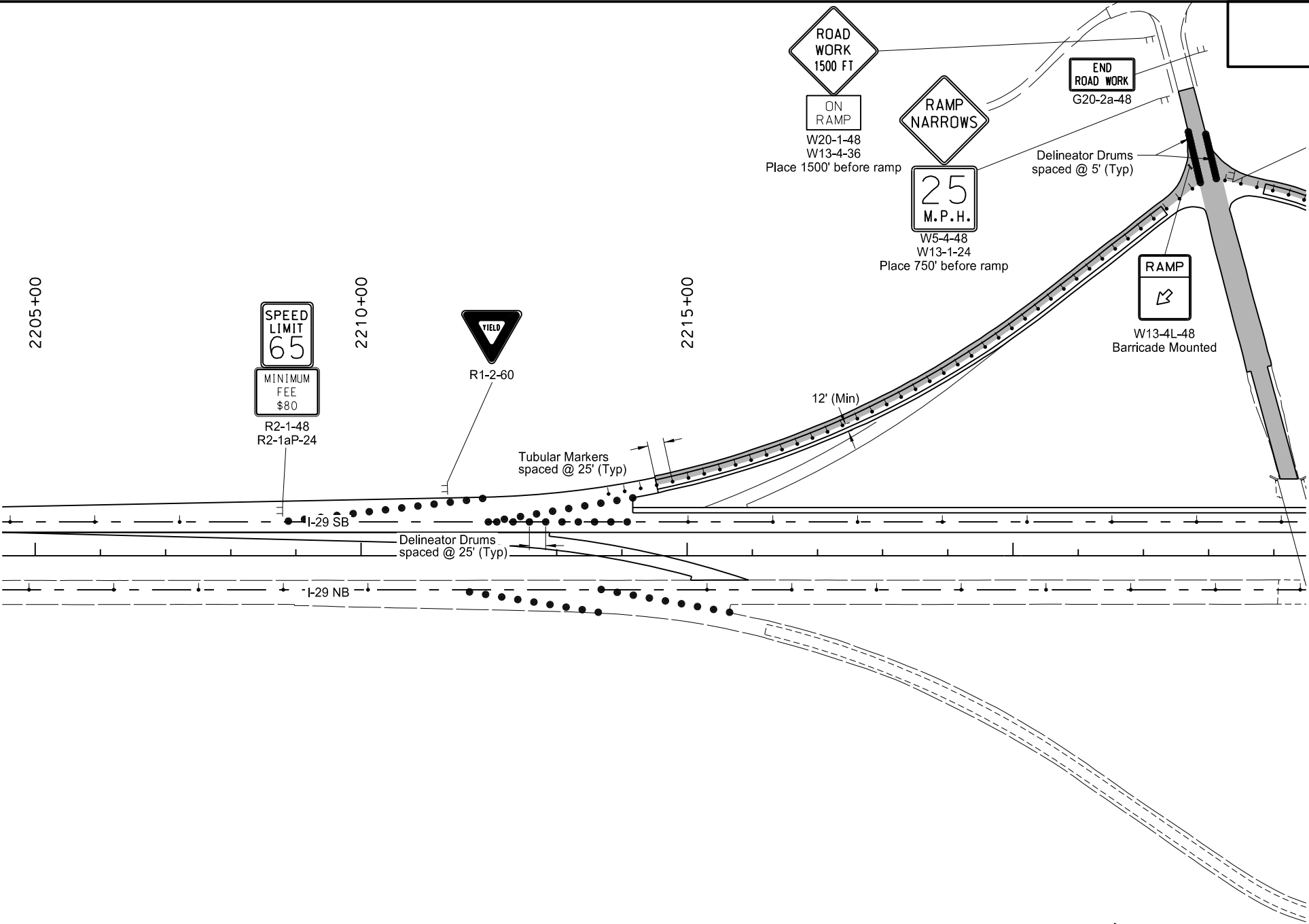
Note:
The traffic control detailed on this sheets is for the work on the Colfax Interchange ramps. This detail represents work on the left half of the ramp and the construction of the proposed ramp connections within the gore area.



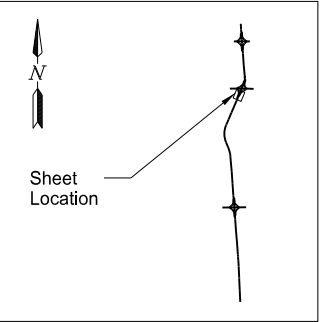
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I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Colfax Interchange

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	28



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels

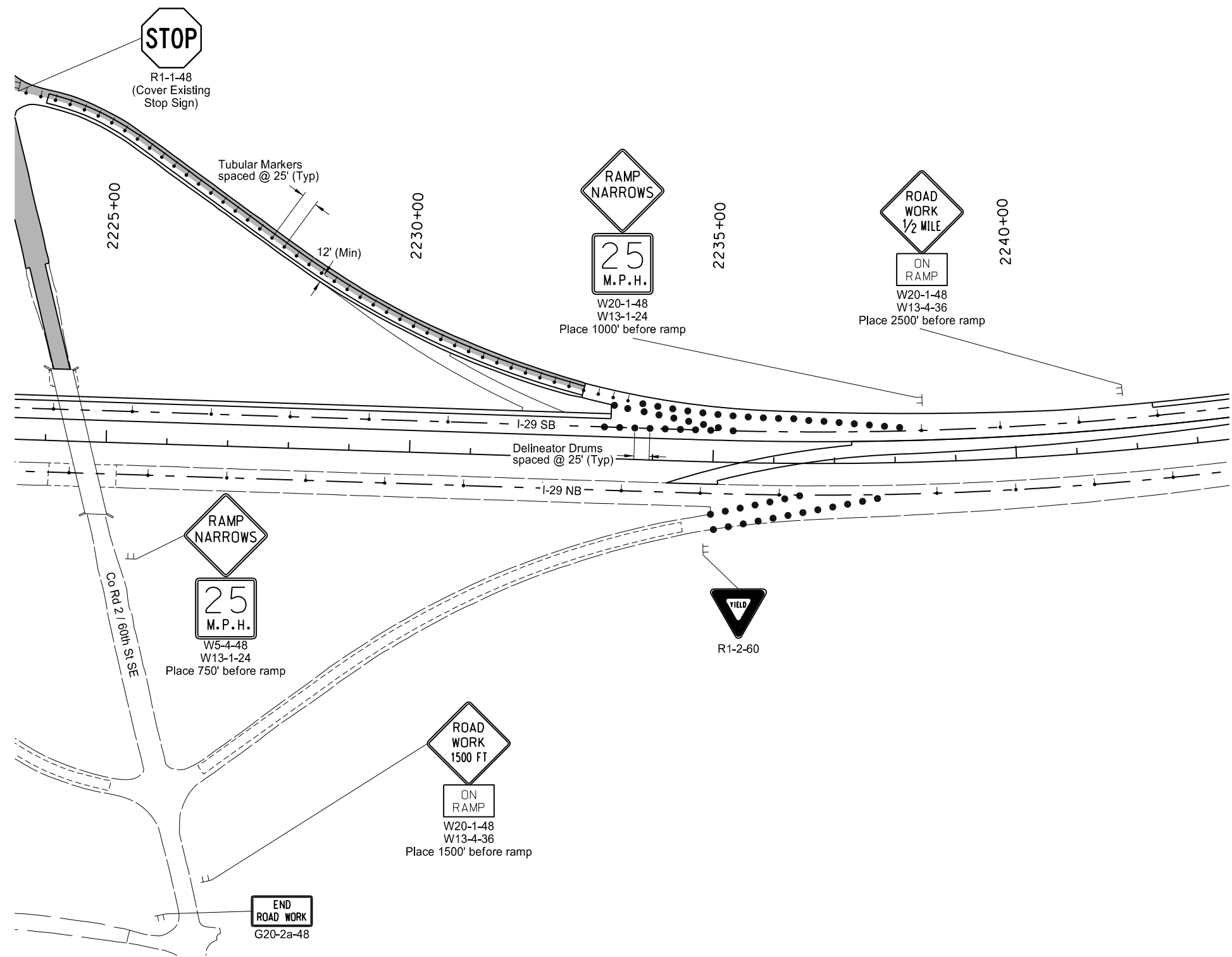


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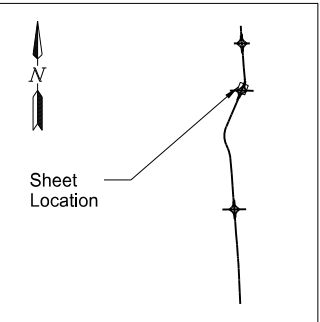
Note:
The traffic control detailed on this sheets is for the work on the Walcott Interchange ramps. This detail represents work on the left half of the ramp and the construction of the proposed ramp connections within the gore area.

I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Walcott Interchange

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	29



Legend	
—	Delineator
■	Flexible Delineator
●	Delineator Drum
+	Type III Barricade
—	Tubular Markers
—	Stackable Vertical Panels



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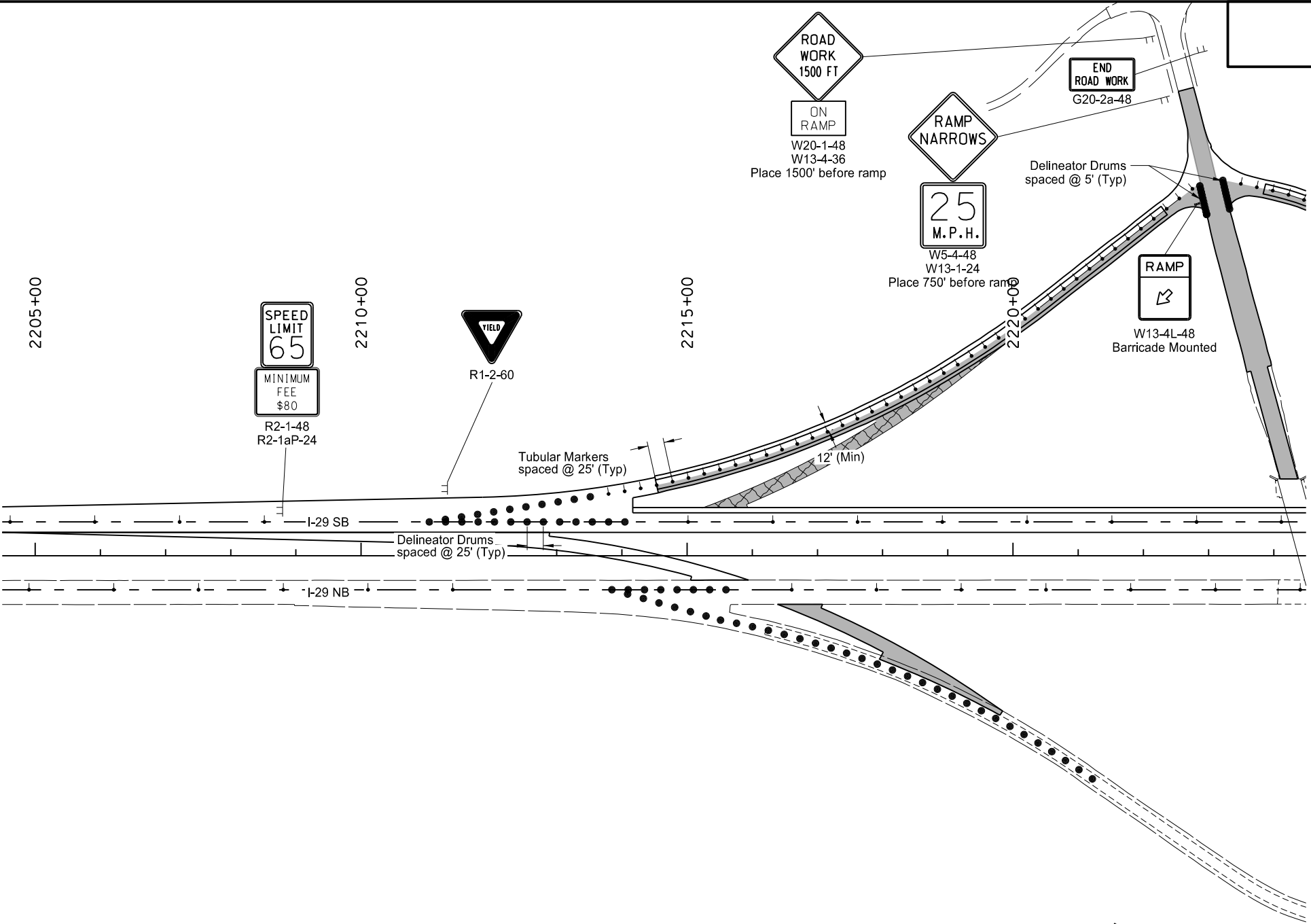
I-29 - N of Galchutt Exit to Christine Exit

Temporary Work Zone Traffic Control

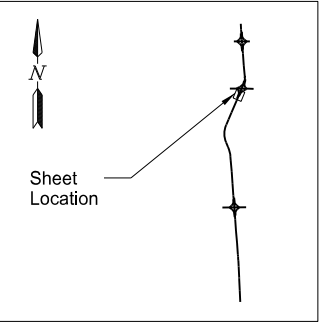
Phase 5
Walcott Interchange

Note:
The traffic control detailed on this sheets is for the work on the Walcott Interchange ramps. This detail represents work on the left half of the ramp and the construction of the proposed ramp connections within the gore area.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	30



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels

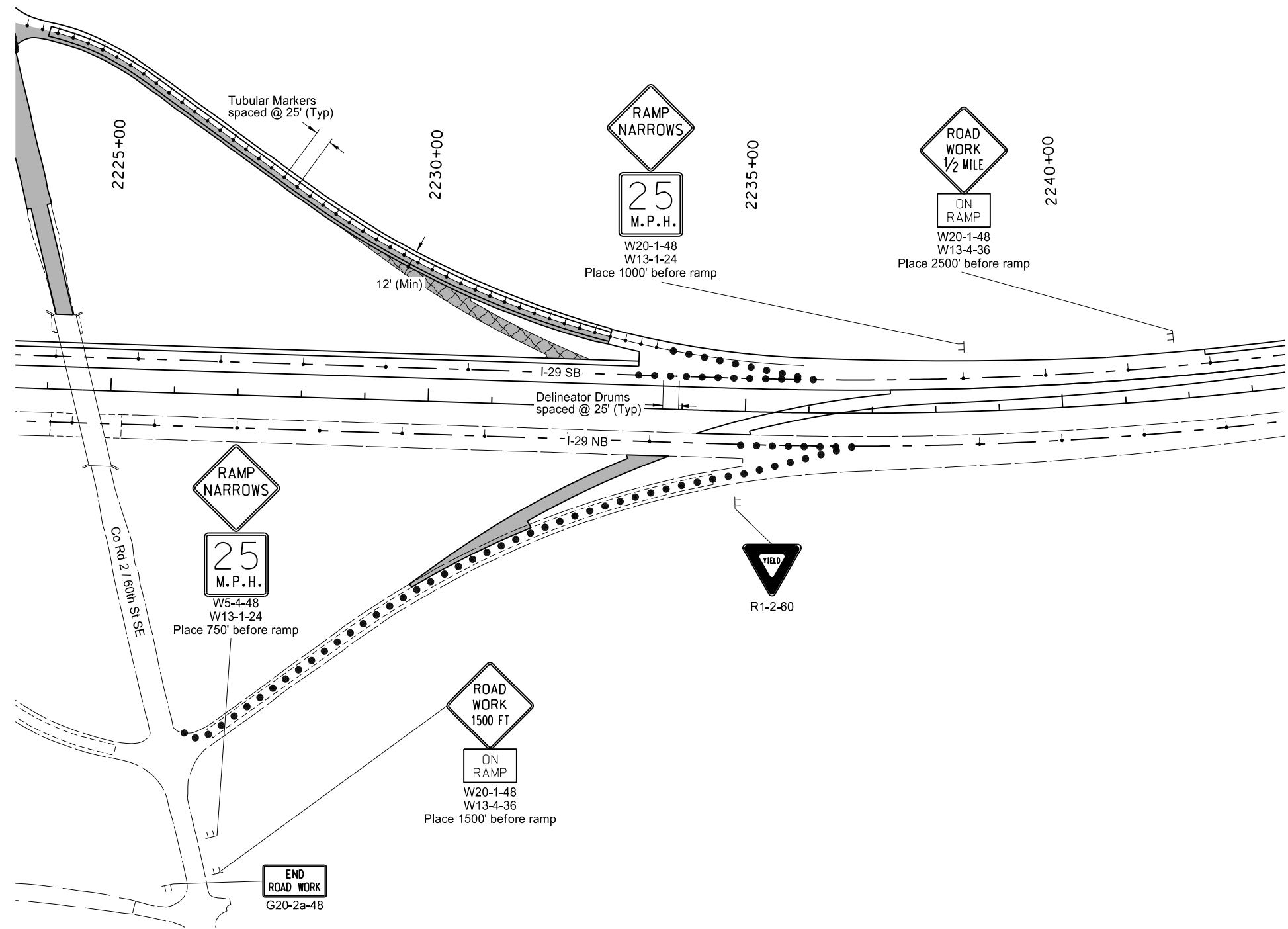


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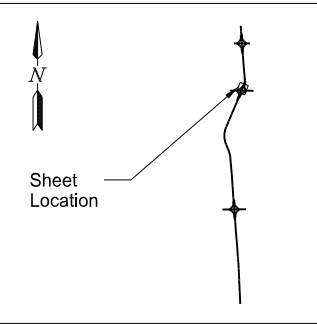
Note:
The traffic control detailed on this sheets is for the work on the Walcott Interchange. This detail represents work on the left half of the ramps and the construction of the new ramp connections within the gore area.

I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Walcott Interchange

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	31



Legend	
	Delineator
	Flexible Delineator
	Delineator Drum
	Type III Barricade
	Tubular Markers
	Stackable Vertical Panels

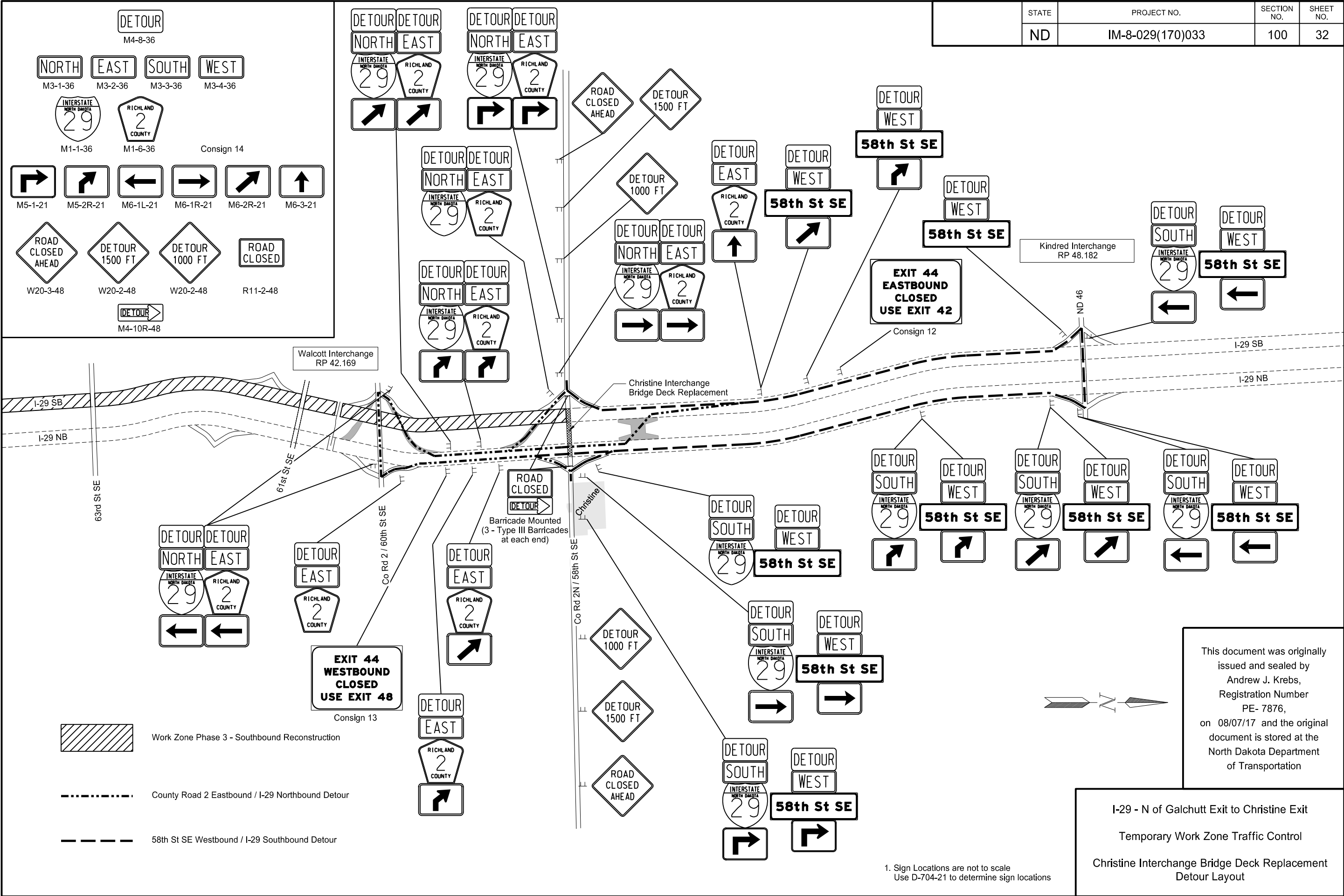


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Note:
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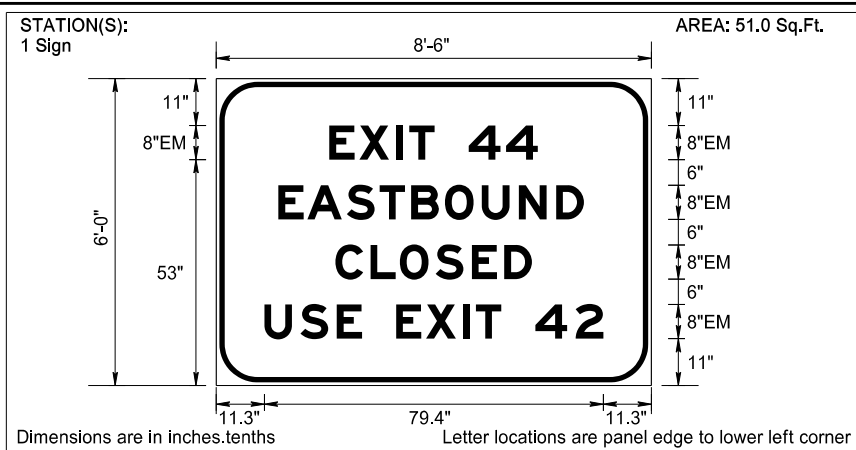
I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Phase 5
Walcott Interchange

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	32



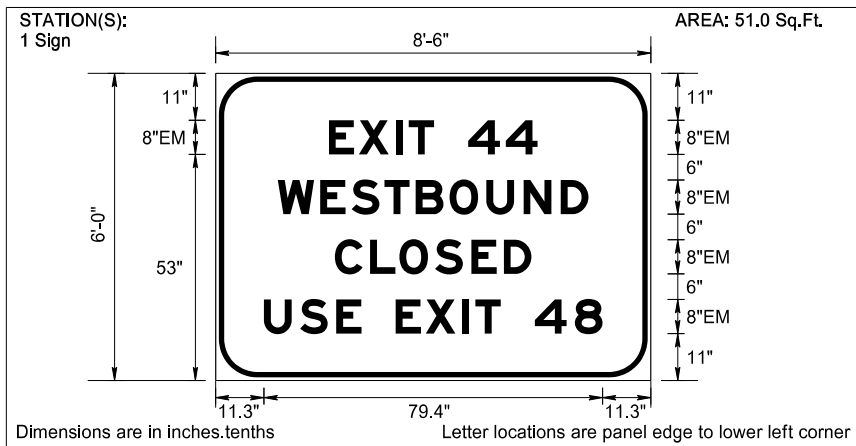
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	33

SIGN NUMBER	Consign 12
WIDTH x HEIGHT	8'-6" x 6'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: XI Reflective
	COLOR: Orange
LEGEND/BORDER	TYPE: Non-Reflective
	COLOR: Black

[illegible]

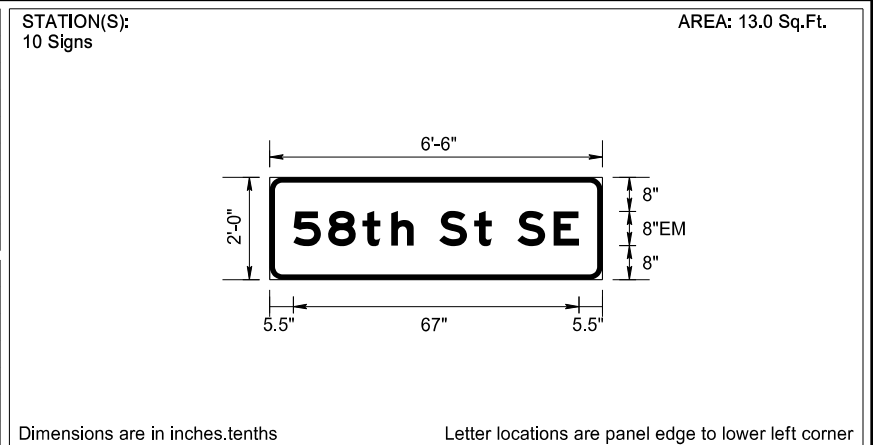
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
E	X	I	T	4	4														48.9	8	EM 2000
26.5	33.6	42.2	45.2	59.2	68																
E	A	S	T	B	O	U	N	D											71.6	8	EM 2000
14.6	21.4	30.6	38.3	45.7	53.6	62.2	71	79.7													
C	L	O	S	E	D														46.1	8	EM 2000
27.9	36.2	43	51.4	59.9	67.5																
U	S	E		E	X	I	T		4	2									79.4	8	EM 2000
11.3	19.8	28.2	34.2	42.2	49.2	57.8	60.9	66.8	74.8	84.2											

SIGN NUMBER	Consign 13
WIDTH x HEIGHT	8'-6" x 6'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: XI Reflective
	COLOR: Orange
LEGEND/BORDER	TYPE: Non-Reflective
	COLOR: Black

[illegible]

LETTER POSITION (X)																			LENGTH	SIZE	SERIES	
E	X	I	T	4	4														48.9	8	EM 2000	
26.6	33.6	42.2	45.3	59.2	68																	
W	E	S	T	B	O	U	N	D												72.8	8	EM 2000
14.6	24.5	31.9	39.6	46.9	54.8	63.5	72.2	80.9														
C	L	O	S	E	D															46.1	8	EM 2000
28	36.2	43.1	51.5	60	67.6																	
U	S	E		E	X	I	T		4	8										79.4	8	EM 2000
11.3	19.8	28.3	34.2	42.2	49.2	57.9	60.9	66.8	74.8	84.2												

SIGN NUMBER	Consign14
WIDTH x HEIGHT	6'-6" x 2'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Orange
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: Black

[illegible][illegible]

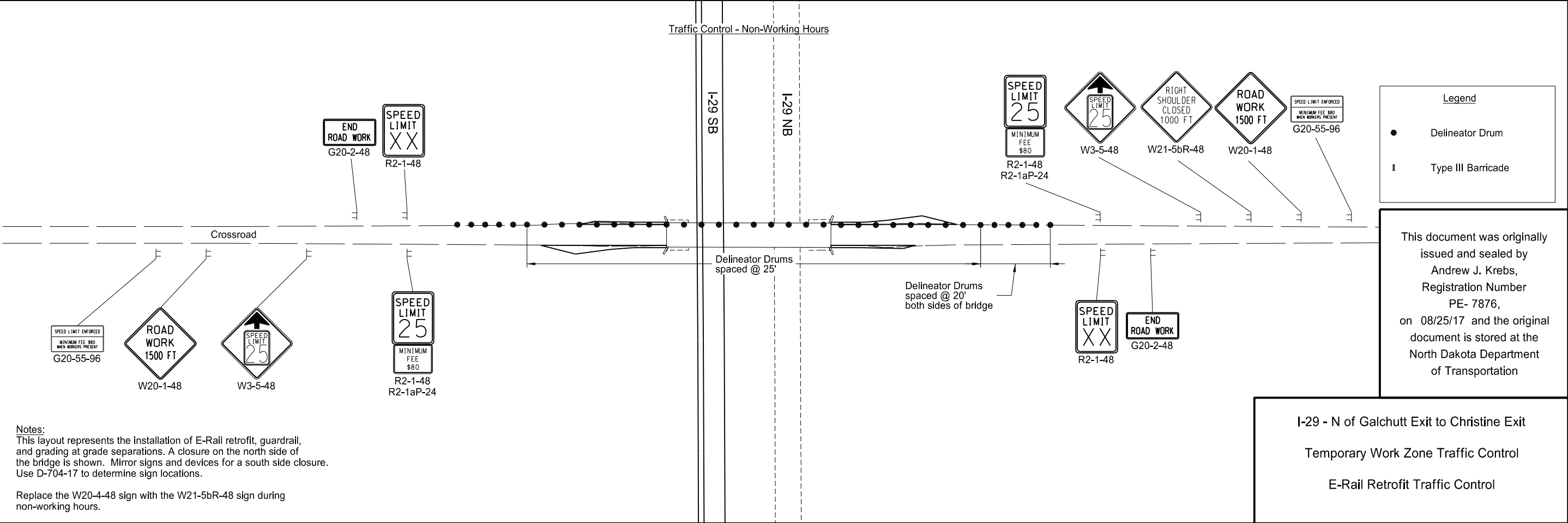
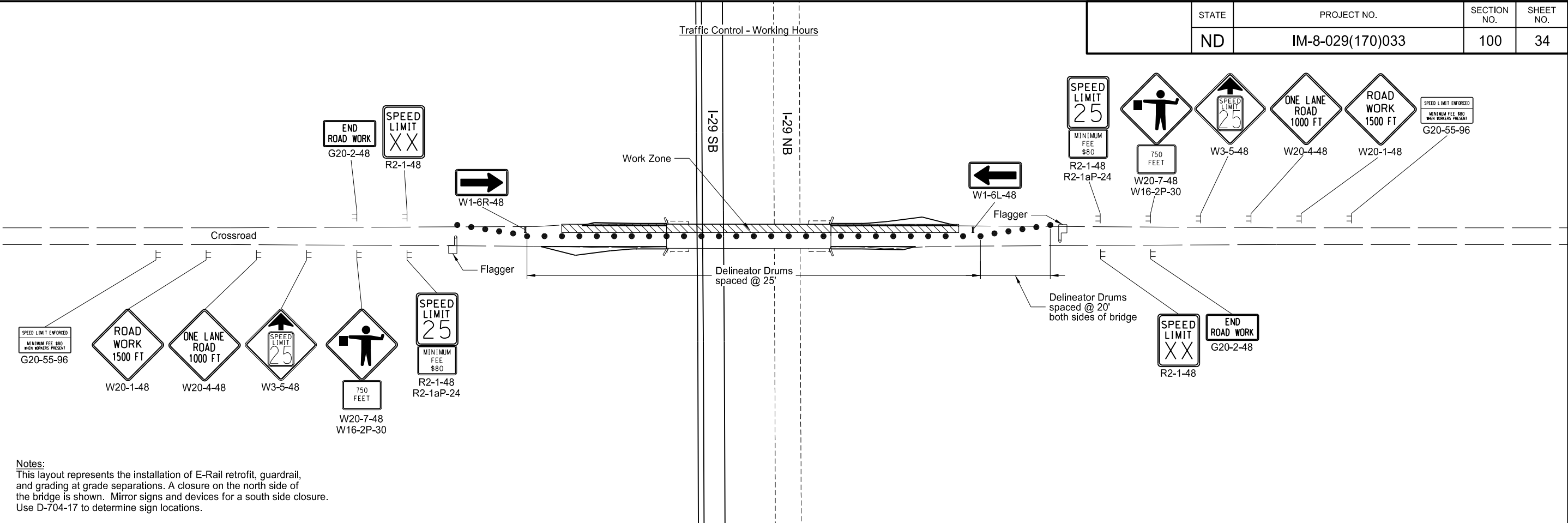
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I-29 - N of Galchutt Exit to Christine Exit

Temporary Work Zone Traffic Control

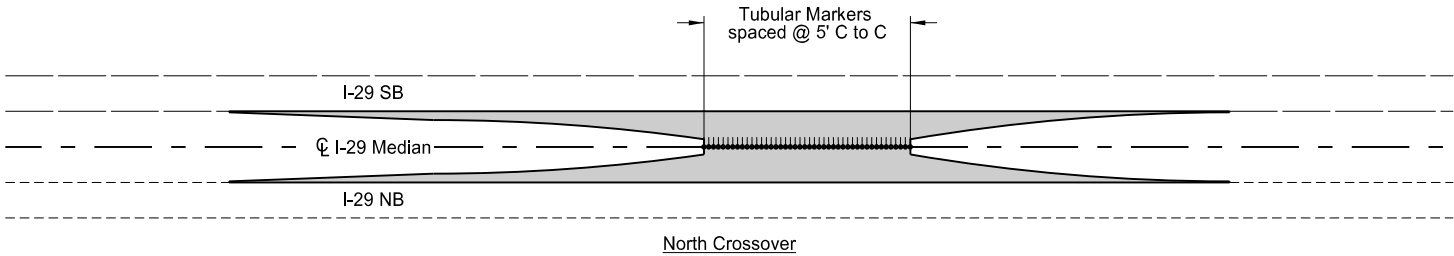
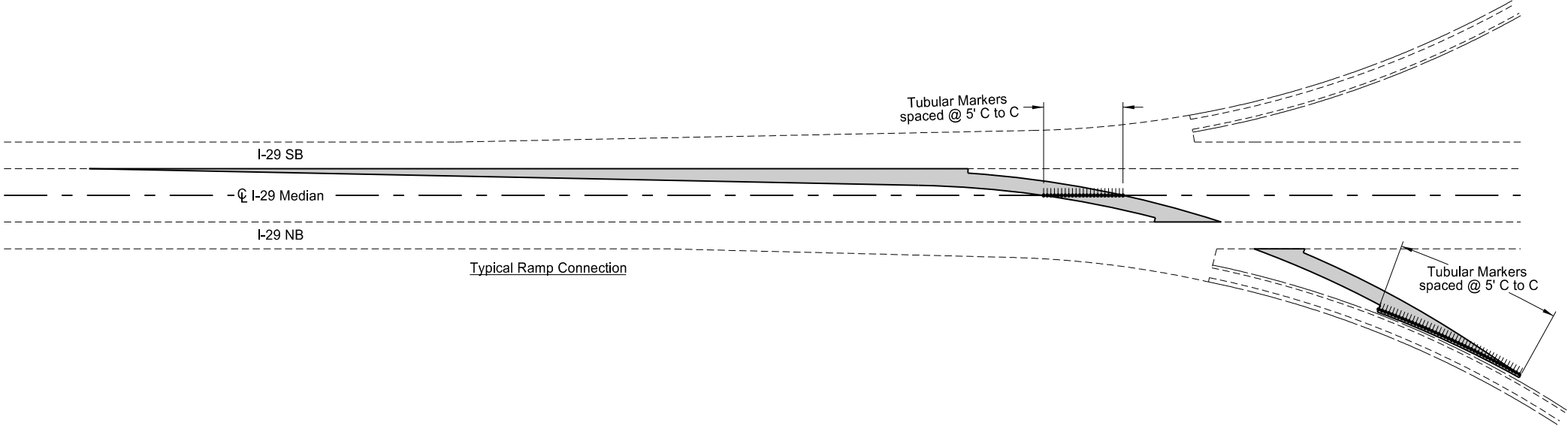
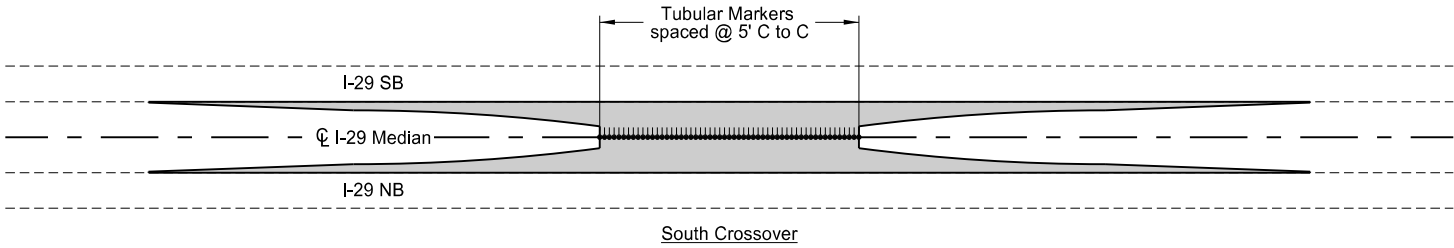
Christine Interchange Deck Replacement Temporary Construction Detour Signing Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	100	34



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	100	35

704	1067	TUBULAR MARKERS		
		South Median Crossover (Phases 4 & 5)	55	EA
		Colfax Interchange Ramp Connections (Phase 4)	46	EA
		Colfax Interchange Ramp Connections (Phase 5)	132	EA
		Walcott Interchange Ramp Connections (Phase 4)	56	EA
		Walcott Interchange Ramp Connections (Phase 5)	162	EA
		Christine Interchange Ramp Connections (Phase 4)	24	EA
		Christine Interchange Ramp Connections (Phase 5)	68	EA
		North Median Crossover (Phases 4 & 5)	44	EA



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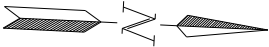
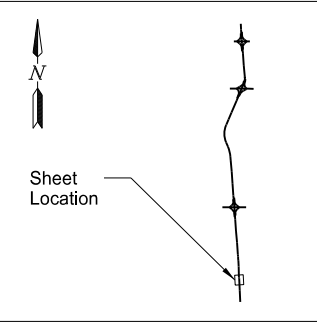
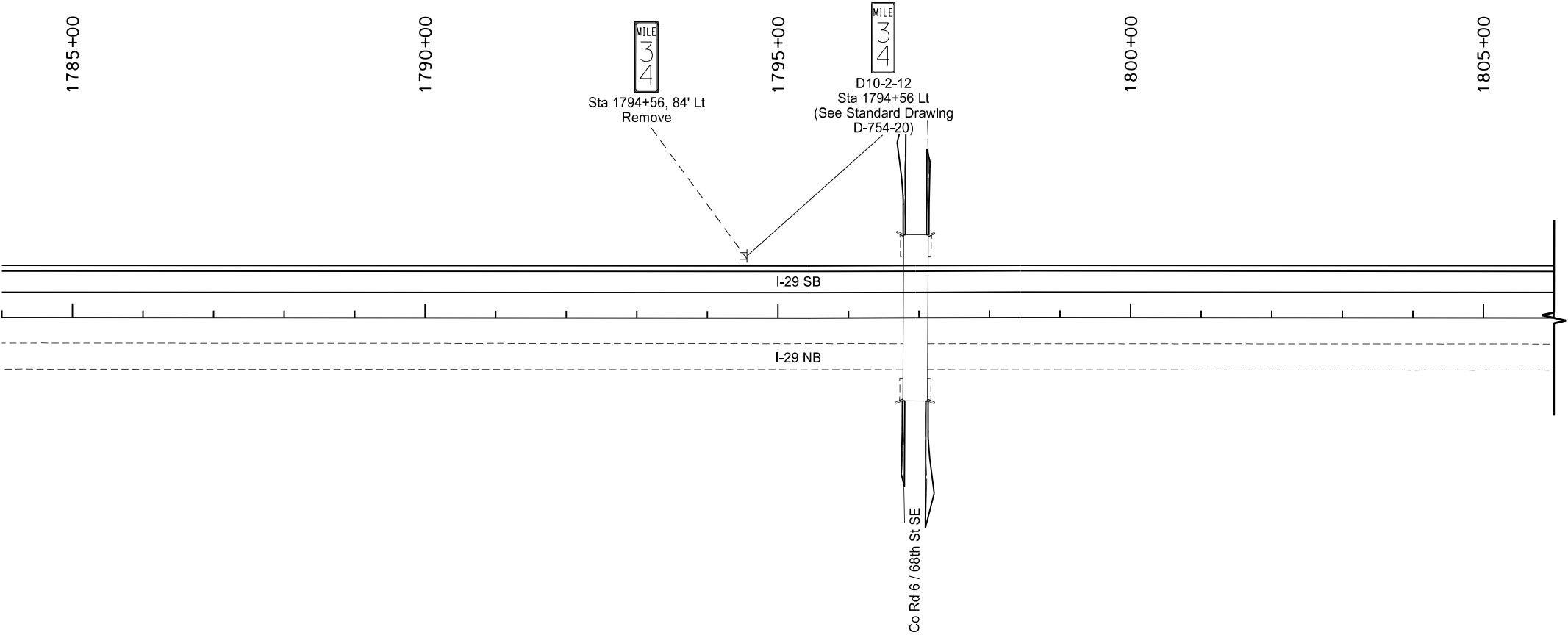
I-29 - N of Galchutt Exit to Christine Exit
Temporary Work Zone Traffic Control
Tubular Markers Detail

Notes:
1. All tubular markers are triple-weighted.
2. Refer to Section 6 for additional information.

																									PROJECT NO.		SECTION NO.	SHEET NO.				
																							N.D.		IM-8-029(170)033		110	2				
Sign / Assembly		Flat Sheet For Signs		Panel For Signs		Overlay Panel		Vert Clear-ance	Galv Steel Sheet		Galv Steel Post W-Shape Posts			Max Post	Post Space	Fuse Joint	Std Pipe Fdn			W-Shape	Remove Sign Fdns		Reset Sign	Reset Sign	Stub Post	Multi Dir						
Station / RP		IV XI		IV XI		IV XI		FT	Standard Pipe		Size	1st LF	2nd LF	3rd LF	LF	FT	EA	Dia FT	Dep FT	Vol CY	Pile LF	Conc Fdn	W-Shape Pile	Panel EA	Support EA	EA	EA	Comments				
I-29 Southbound (SCL29)																																
1918+60 Lt		R2-1		20.0				7.0	14.8		4.0			14.9				1.3	7.5	0.4		1					1					
1928+60 Lt		SA-A		22.5				7.0	17.2		4.0			17.5				1.3	7.5	0.4		1					1					
1973+90 Lt		SS3				246.6		5.0			W10x39	25.5	25.8	32.4	8.3						28		2									
2000+05 Lt		SS4				148.0		5.0			W8x24	19.8	21.1	23.0	9.3						28		2									
2026+70 Lt		SS5				230.1		5.0			W8x31	22.4	22.5	24.3	8.3						28		2									
2186+87 Lt		R2-1		20.0				7.0	14.8		4.0			14.9				1.3	7.5	0.4		1					1					
2196+87 Lt		SA-B		13.5				7.0	14.2		3.5			15.9				1.3	6.0	0.3		1										
2200+32 Lt		SS6				19.5		7.0			W4x13	13.0	13.6	35.7	3.3						28											
2242+31 Lt		SS9				144.8		5.0			W8x24	22.7	22.7	28.9	5.5						28		2									
2295+11 Lt		SS10				133.8		5.0			W6x20	20.2	20.4	21.5	5.5						28		2									
2303+70 Lt		SA-A		22.5				7.0	17.2		4.0			17.5				1.3	7.5	0.4		1					1					
Sub Total		58.5		40.0		922.8		Total	78.2		Total	249.7								1.9	168	5	10	0	0	0	4					
Colfax NW Ramp (EXCOLNWR)																																
5+14 Lt		SS12				31.5		7.0			W4x13	13.8	14.7	22.7	5.3						28	2										
7+79 Lt		SS13				21.0		7.0			W4x13	12.8	13.7	32.0	5.3						28		2									
9+87 Rt		SS1				32.5		7.0	15.0		15.0	3.5		15.9	3.3		1.3	6.0	0.6		2											
Sub Total				85.0				Total	30.0		Total	55.0								0.6	56	4	2	0	0	0	0					
Walcott NW Ramp (EX60NWR)																																
4+93 Lt		SS14				16.0		7.0			W4x13	12.4	13.0	37.7	4.0						28											
10+58 Rt		SS7				32.5		7.0	15.0		15.0	3.5		15.9	3.3		1.3	6.0	0.6		2											
Sub Total				48.5				Total	30.0		Total	25.4								0.6	28	2	0	0	0	0	0	0				
Colfax Ave / Co Rd 4 (EXCOLFAX)																																
13+47 Lt		SS11				29.8		5.0			W4x13	12.8	13.9	24.1	4.3						28											
Sub Total				29.8				Total	0.0		Total	26.7								0.0	28	0	0	0	0	0	0	0				
60th St SE / Co Rd 2 (EX60ST)																																
23+47 Lt		SS11				29.8		5.0			W4x13	12.8	13.9	24.1	4.3						28											
Sub Total				29.8				Total	0.0		Total	26.7								0.0	28	0	0	0	0	0	0	0				
Grand Total		58.5		40.0		1,115.9		Total	138.2		Total	383.5								3.1	308	11	12	0	0	0	4					
																							This document was originally issued and sealed by Jessica R. Karls, Registration Number 8408, on 8/7/2017 and is stored at the North Dakota Department of Transportation.					Sign Summary Round Steel Pipe & W-Shape I-29 - N of Galchutt Exit to Christine Exit				
8/7/2017 4:23:55PM Page 1 of 1																																

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	3

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 1794+56 Lt	1	EA



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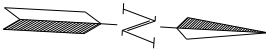
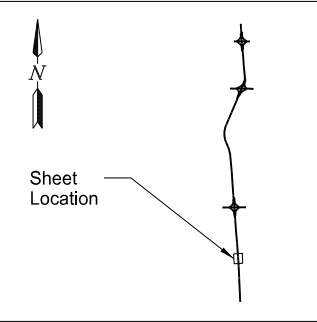
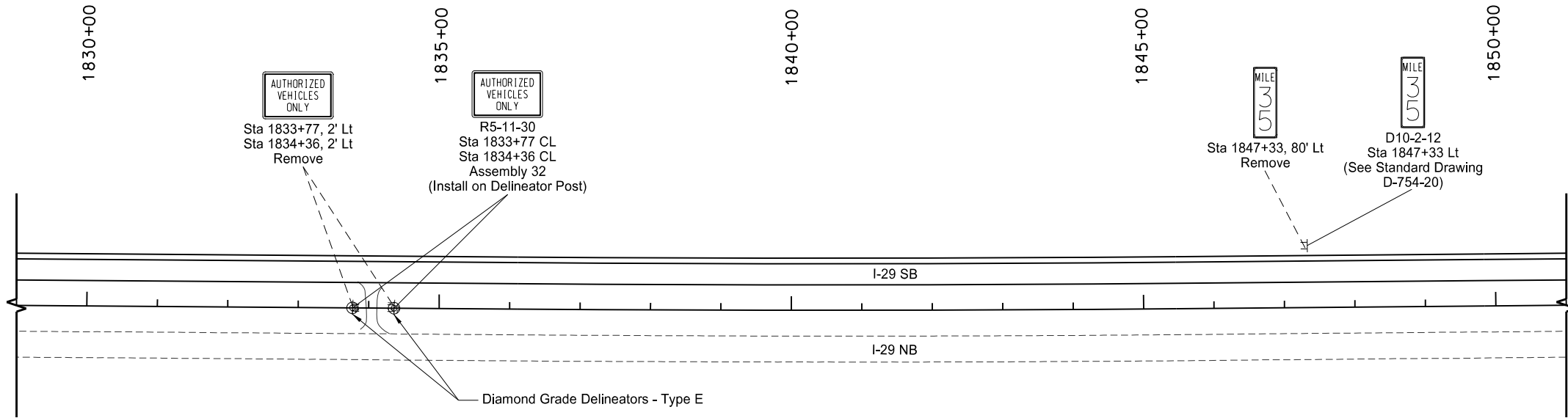
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1785+00 to 1805+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	4

SPEC	CODE	BID ITEM	QTY	UNIT
754	0199	DIAMOND GRADE DELINEATORS-TYPE E		
		Sta 1833+77 Centerline	1	EA
		Sta 1834+36 Centerline	1	EA
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 1847+33 Lt	1	EA



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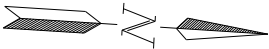
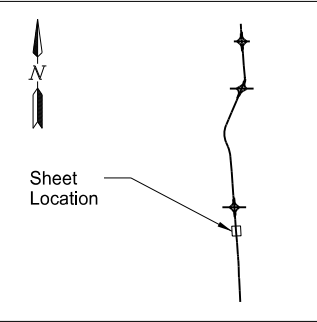
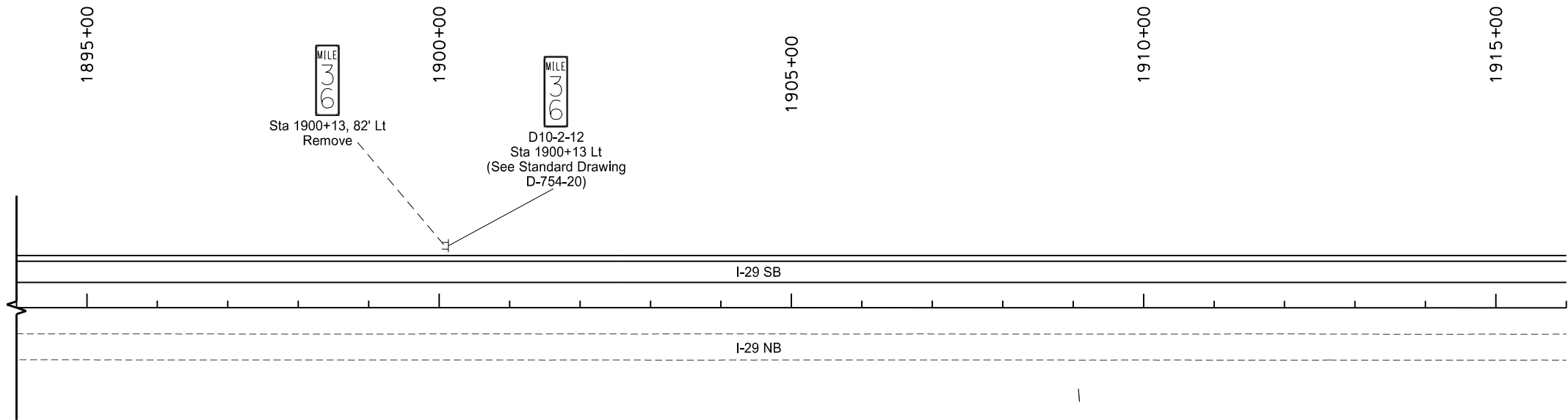
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1830+00 to 1850+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	5

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 1900+13 Lt	1	EA



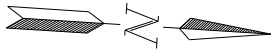
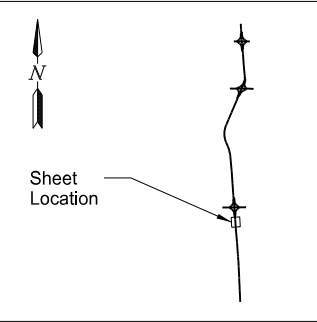
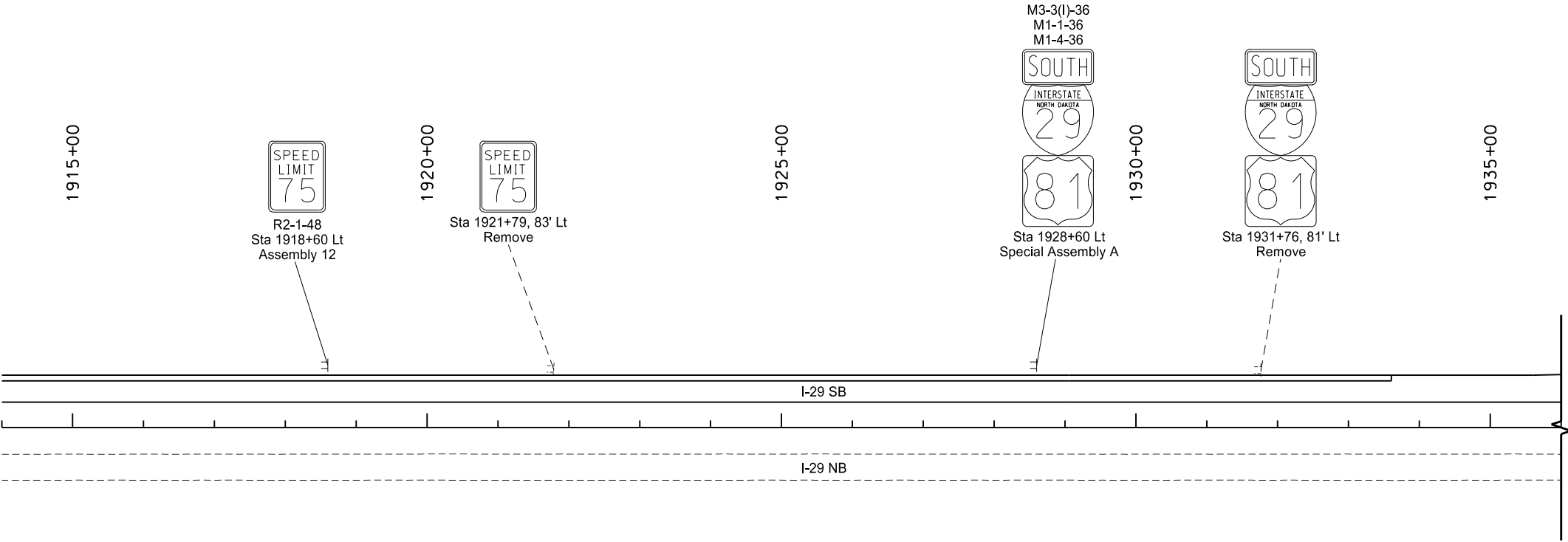
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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1895+00 to 1915+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	6



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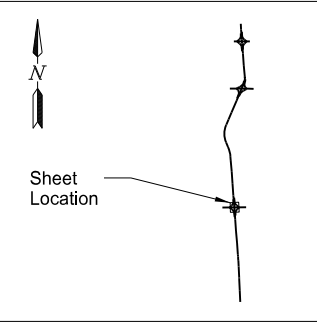
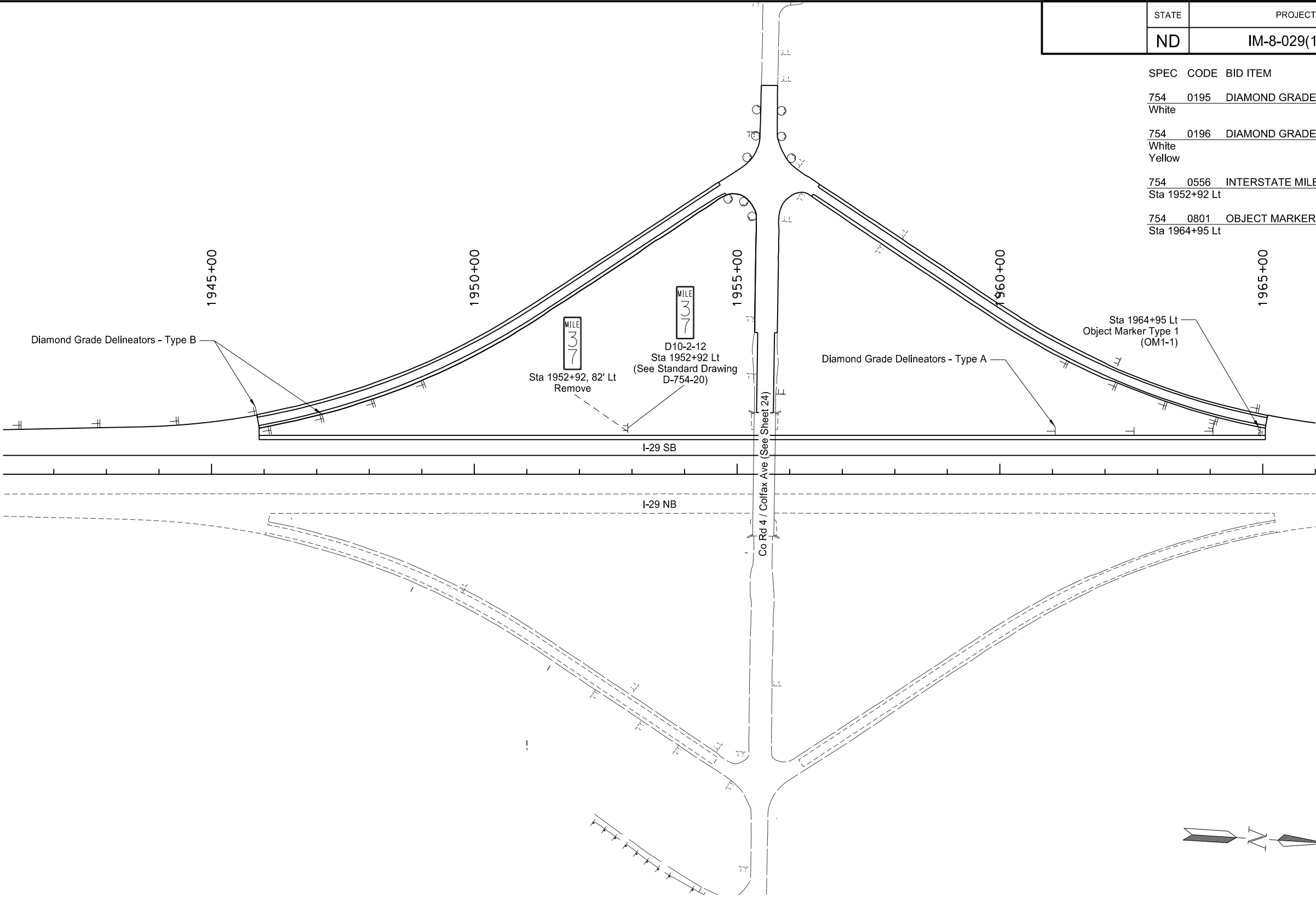
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1915+00 to 1935+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	7

SPEC	CODE	BID ITEM	QTY	UNIT
754	0195	DIAMOND GRADE DELINEATORS-TYPE A		
		White	3	EA
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
		White	5	EA
		Yellow	8	EA
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 1952+92 Lt	1	EA
754	0801	OBJECT MARKERS - TYPE I		
		Sta 1964+95 Lt	1	EA



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I-29 - N of Galchutt Exit to Christine Exit

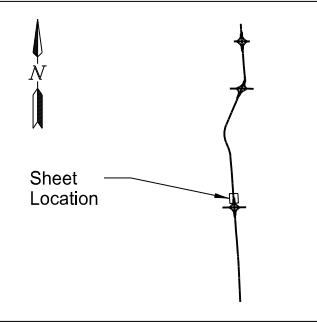
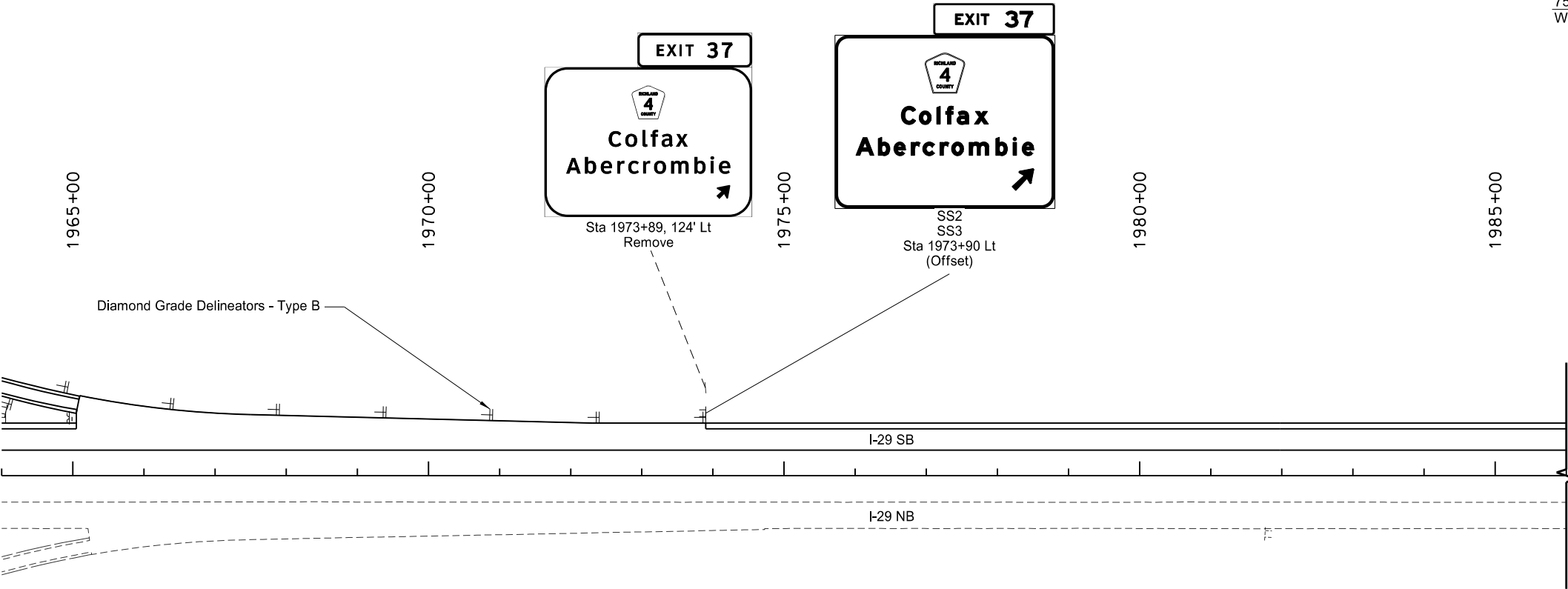
Permanent Signing

I-29 Southbound
Sta 1945+00 to 1965+00 (SCL29)

Note:
See D-754-22A to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	8

SPEC	CODE	BID ITEM	QTY	UNIT
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
White			6	EA



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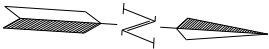
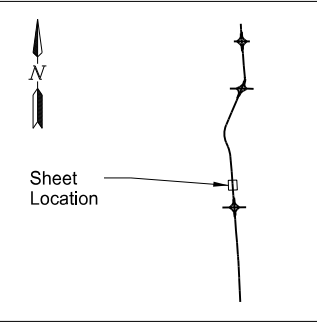
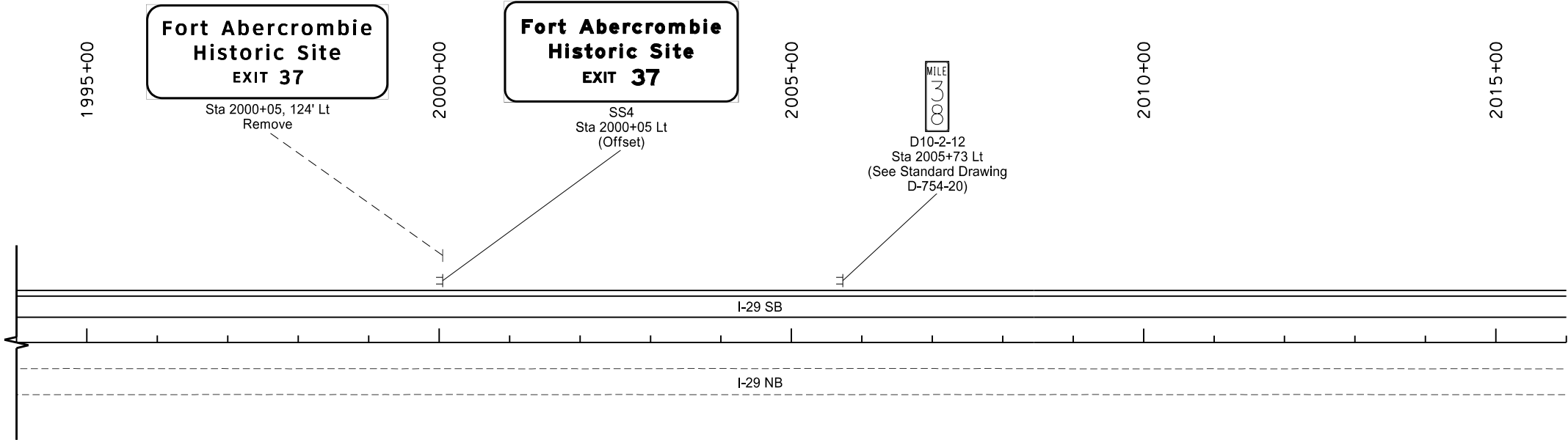
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1965+00 to 1985+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	9

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 2005+73 Lt	1	EA



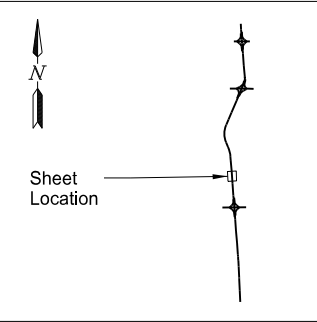
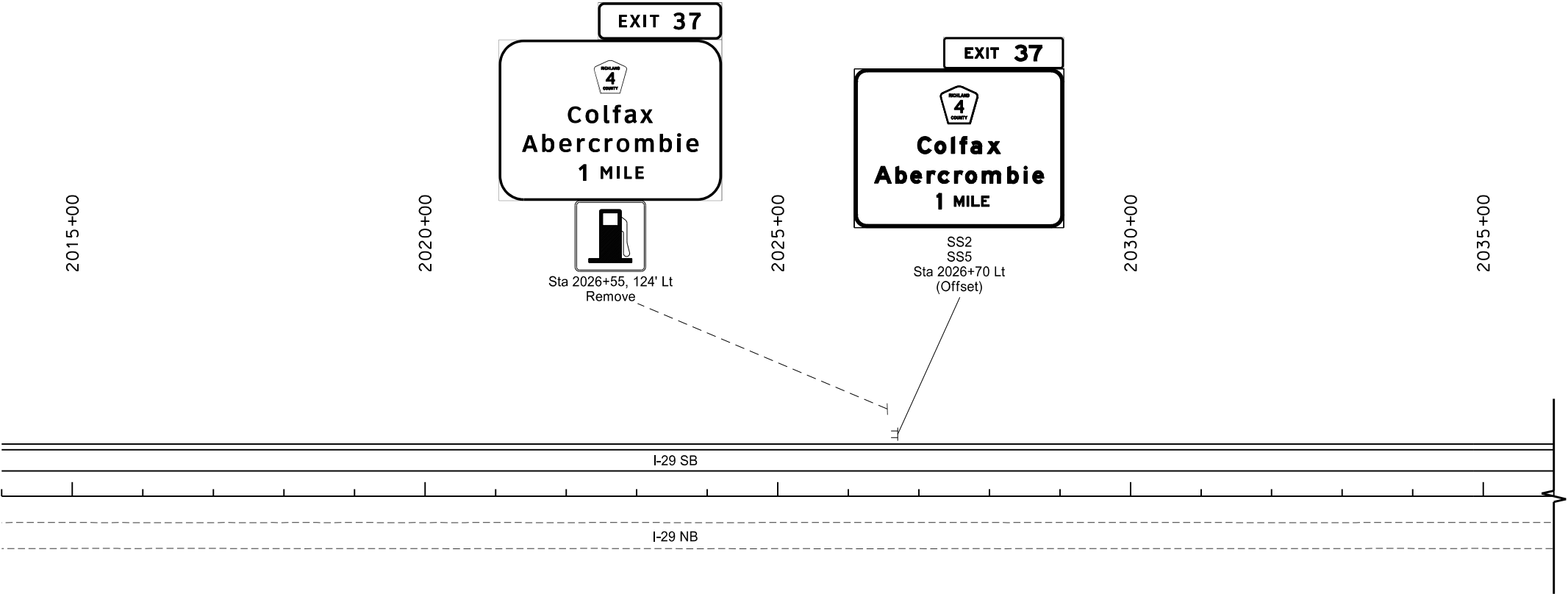
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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 1995+00 to 2015+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	10

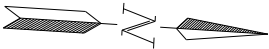
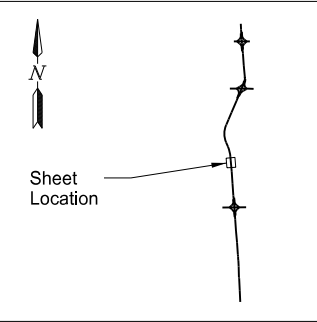
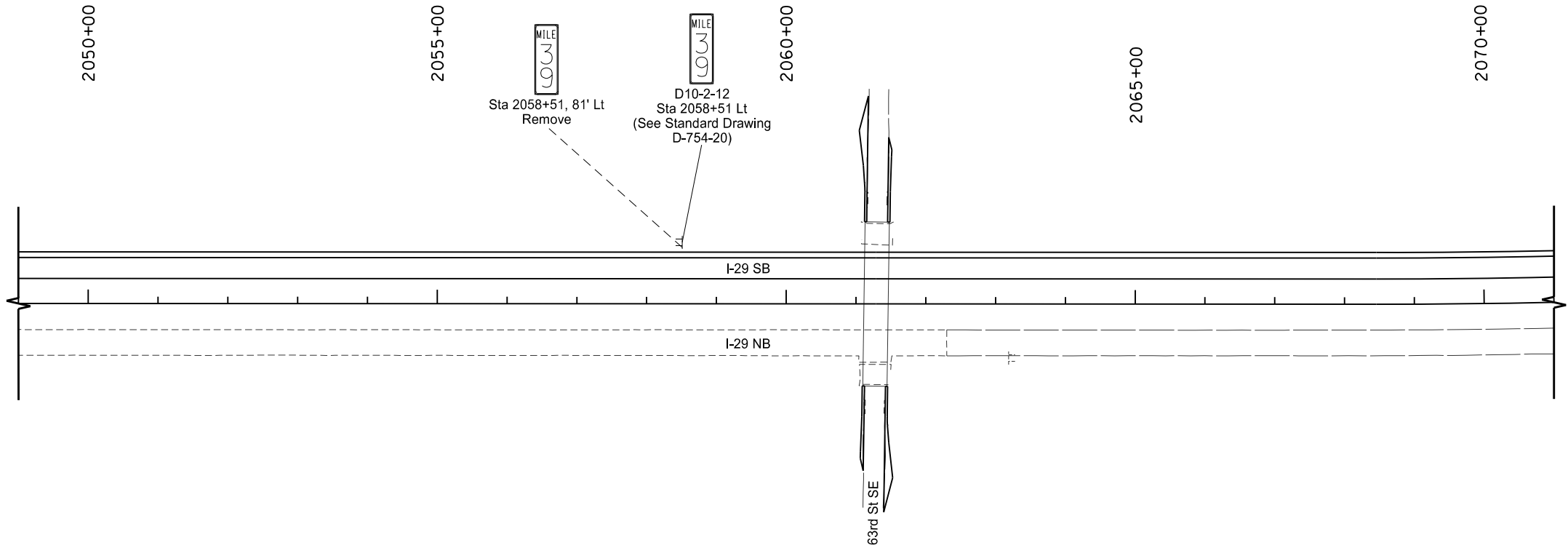


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I-29 - N of Galchutt Exit to Christine Exit
Permanent Signing
I-29 Southbound
Sta 2015+00 to 2035+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	11

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 2058+51 Lt	1	EA



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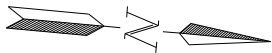
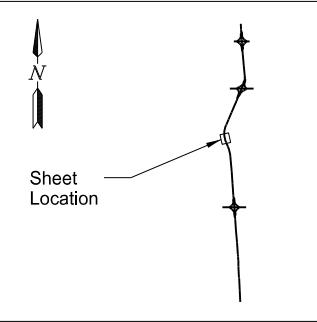
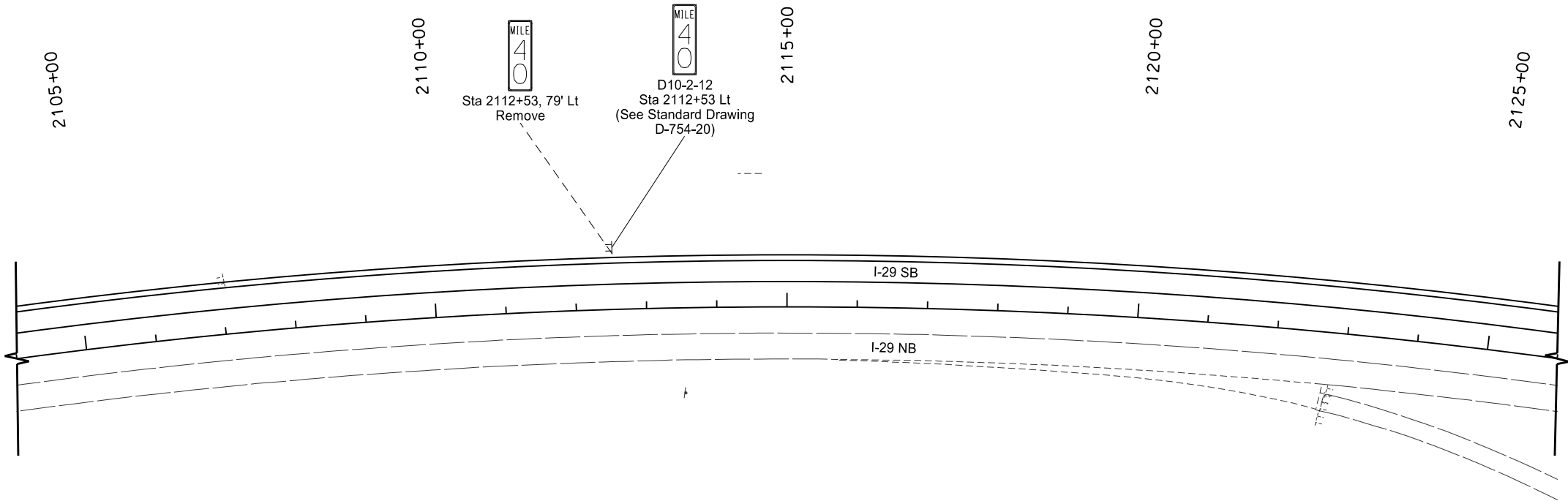
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 2050+00 to 2070+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	12

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 2112+53 Lt	1	EA



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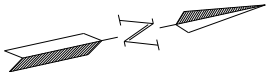
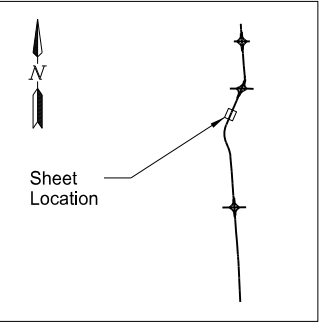
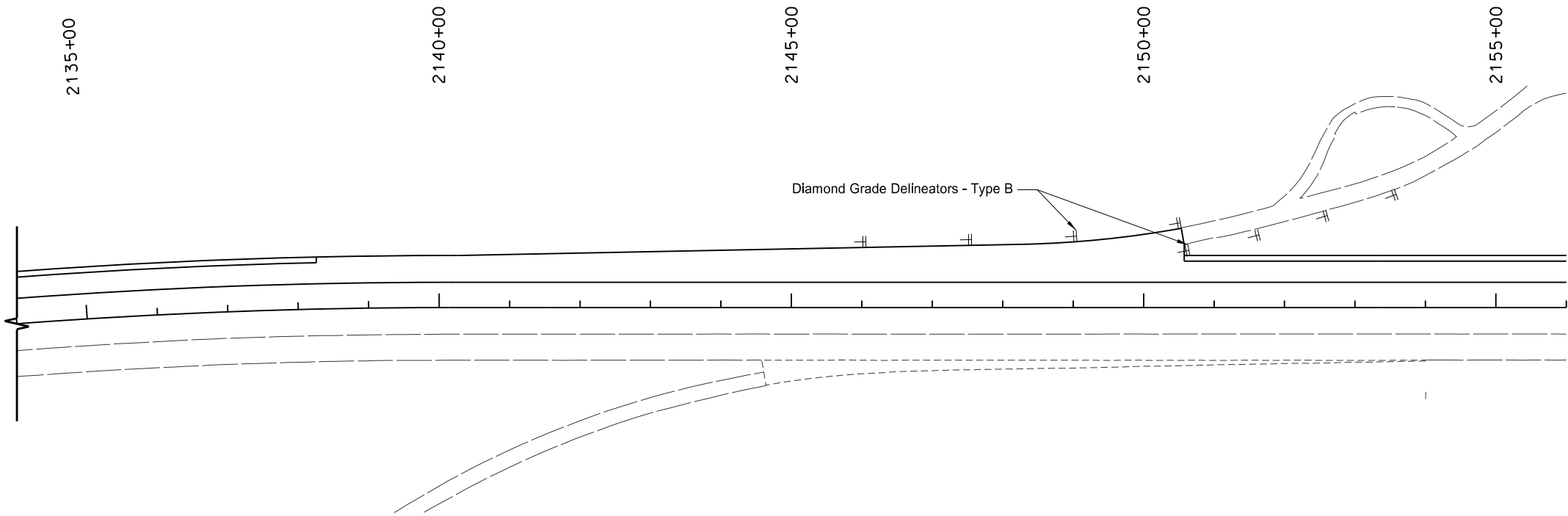
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 2105+00 to 2125+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	13

SPEC	CODE	BID ITEM	QTY	UNIT
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
White			4	EA
Yellow			4	EA



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I-29 - N of Galchutt Exit to Christine Exit

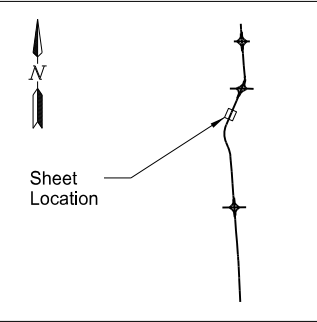
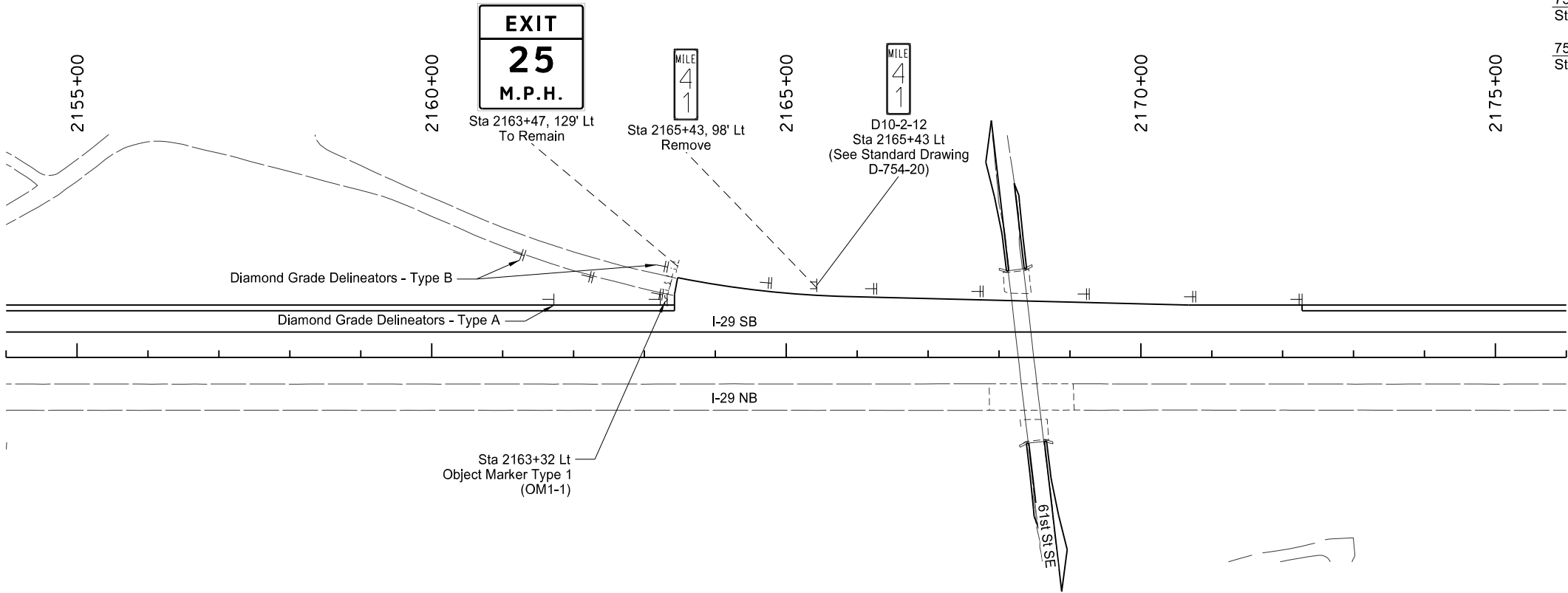
Permanent Signing

I-29 Southbound
Sta 2135+00 to 2155+00 (SCL29)

Note:
See D-754-22B to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	14

SPEC	CODE	BID ITEM	QTY	UNIT
754	0195	DIAMOND GRADE DELINEATORS-TYPE A		
White			2	EA
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
White			7	EA
Yellow			3	EA
754	0556	INTERSTATE MILE POSTS-TYPE B		
Sta 2165+43 Lt			1	EA
754	0801	OBJECT MARKERS - TYPE I		
Sta 2163+32 Lt			1	EA



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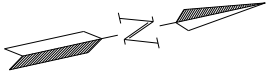
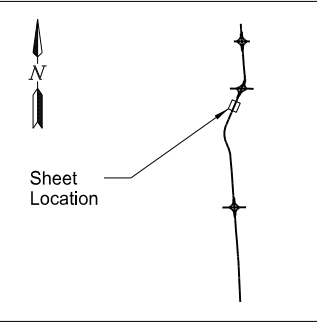
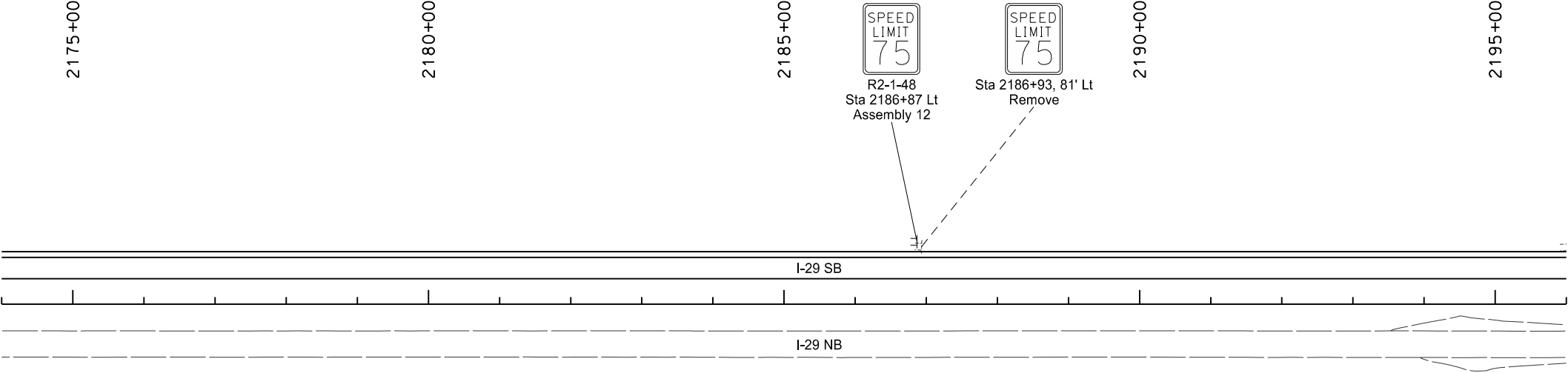
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 2155+00 to 2175+00 (SCL29)

Note:
See D-754-22B to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	15



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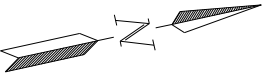
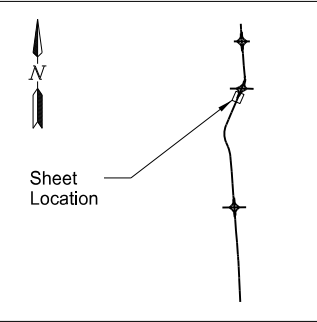
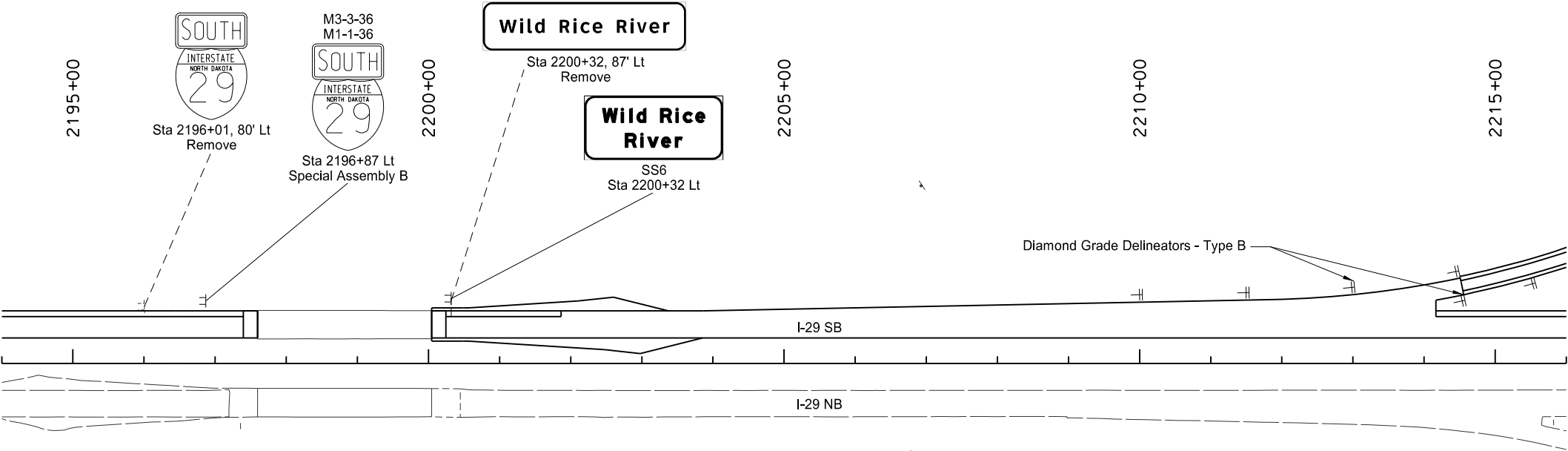
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 2175+00 to 2195+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	16

SPEC	CODE	BID ITEM	QTY	UNIT
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
White			4	EA
Yellow			2	EA



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I-29 - N of Galchutt Exit to Christine Exit

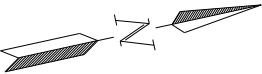
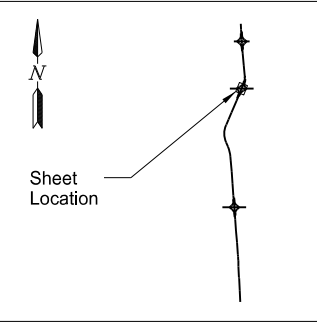
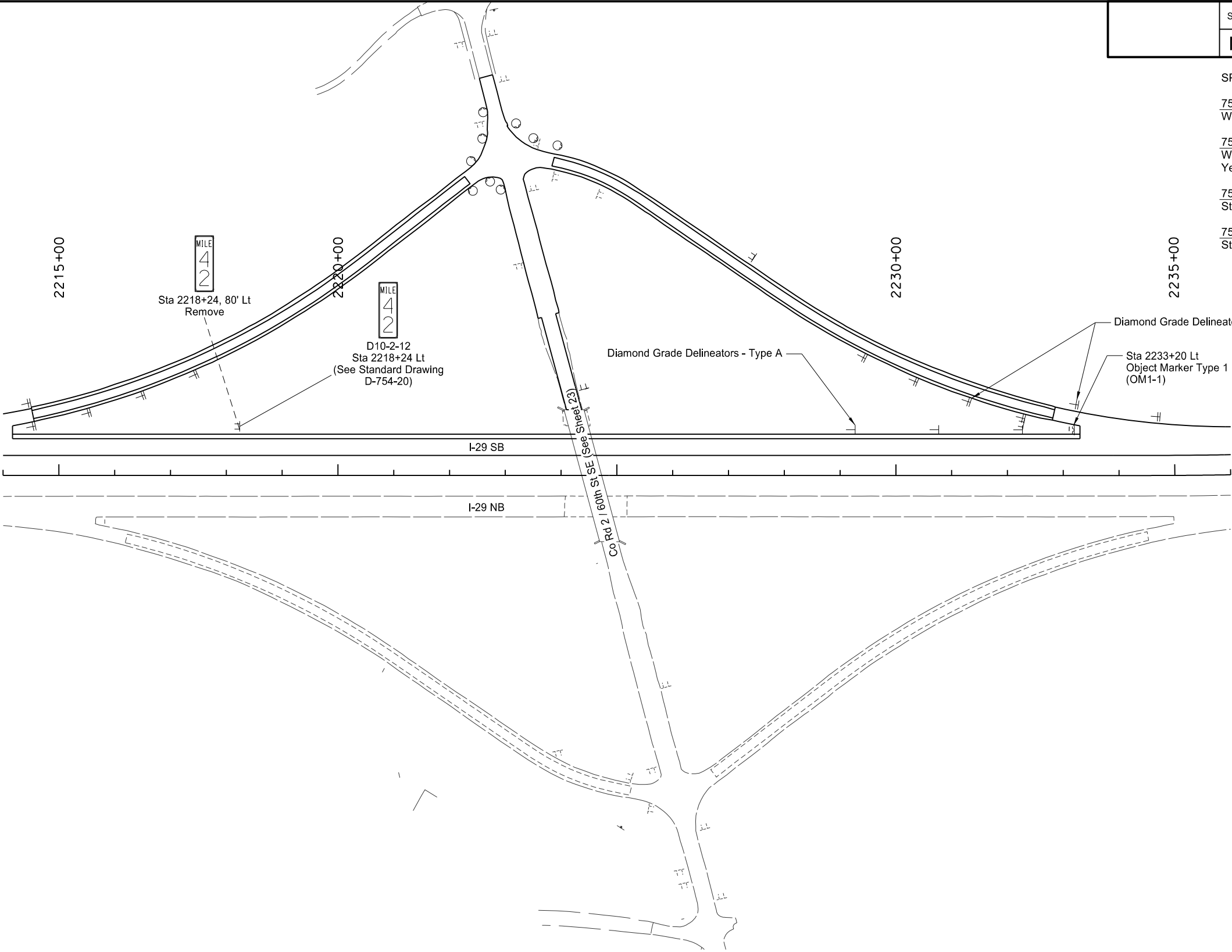
Permanent Signing

I-29 Southbound
Sta 2195+00 to 2215+00 (SCL29)

Note:
See D-754-22A to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	17

SPEC	CODE	BID ITEM	QTY	UNIT
754	0195	DIAMOND GRADE DELINEATORS-TYPE A		
		White	3	EA
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
		White	2	EA
		Yellow	6	EA
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 2218+24 Lt	1	EA
754	0801	OBJECT MARKERS - TYPE I		
		Sta 2233+20 Lt	1	EA



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I-29 - N of Galchutt Exit to Christine Exit

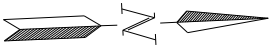
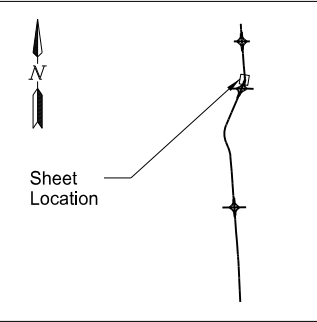
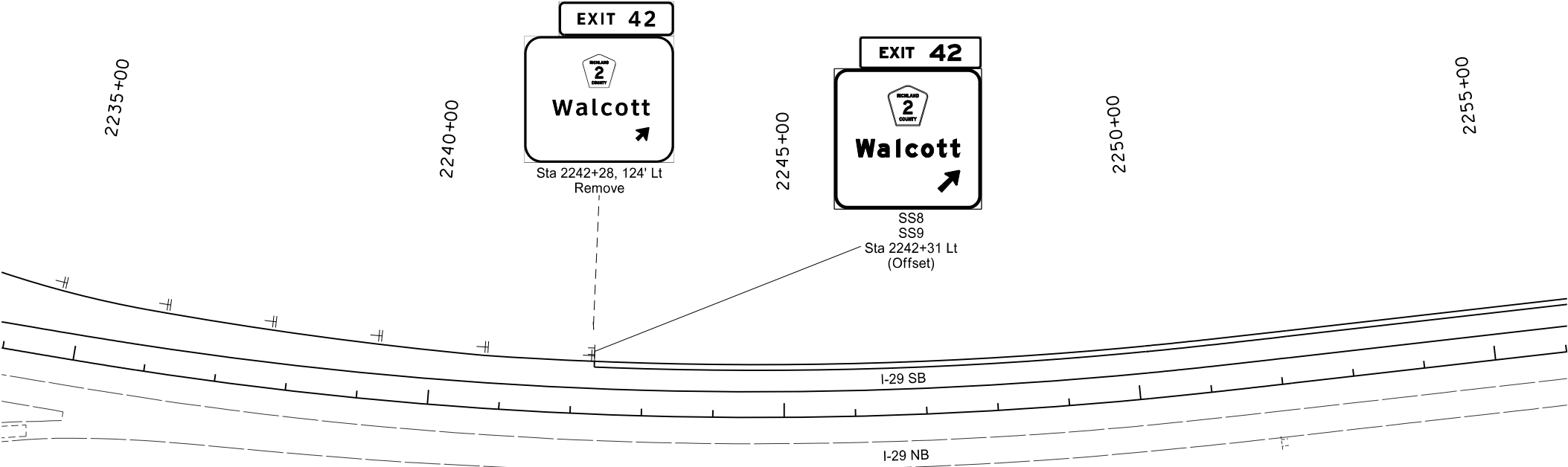
Permanent Signing

I-29 Southbound
Sta 2215+00 to 2235+00 (SCL29)

Note:
See D-754-22A to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	18

SPEC	CODE	BID ITEM	QTY	UNIT
754	0196	DIAMOND GRADE DELINEATORS-TYPE B		
White			5	EA



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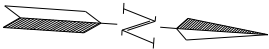
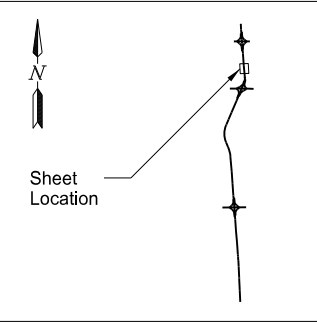
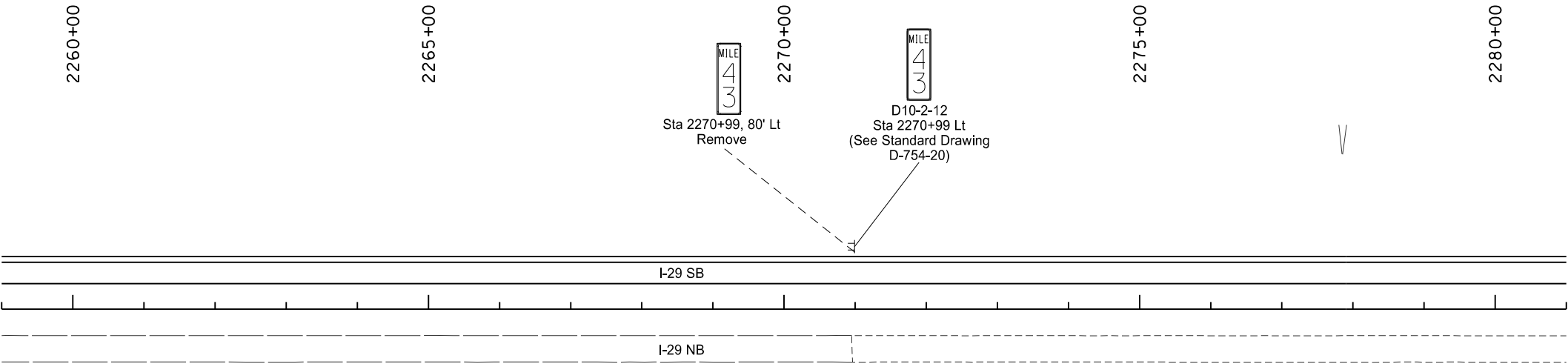
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

I-29 Southbound
Sta 2235+00 to 2255+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	19

SPEC	CODE	BID ITEM	QTY	UNIT
754	0556	INTERSTATE MILE POSTS-TYPE B		
		Sta 2770+99 Lt	1	EA



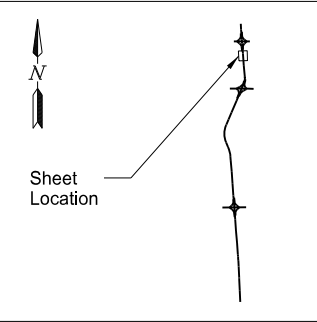
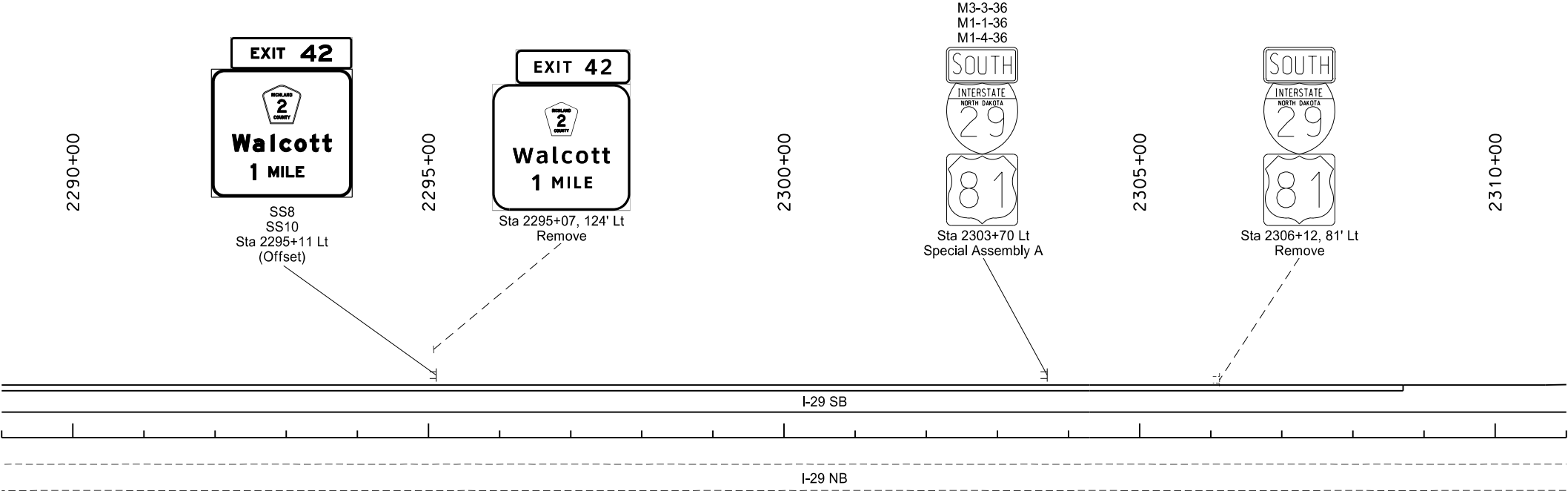
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I-29 - N of Galchutt Exit to Christine Exit

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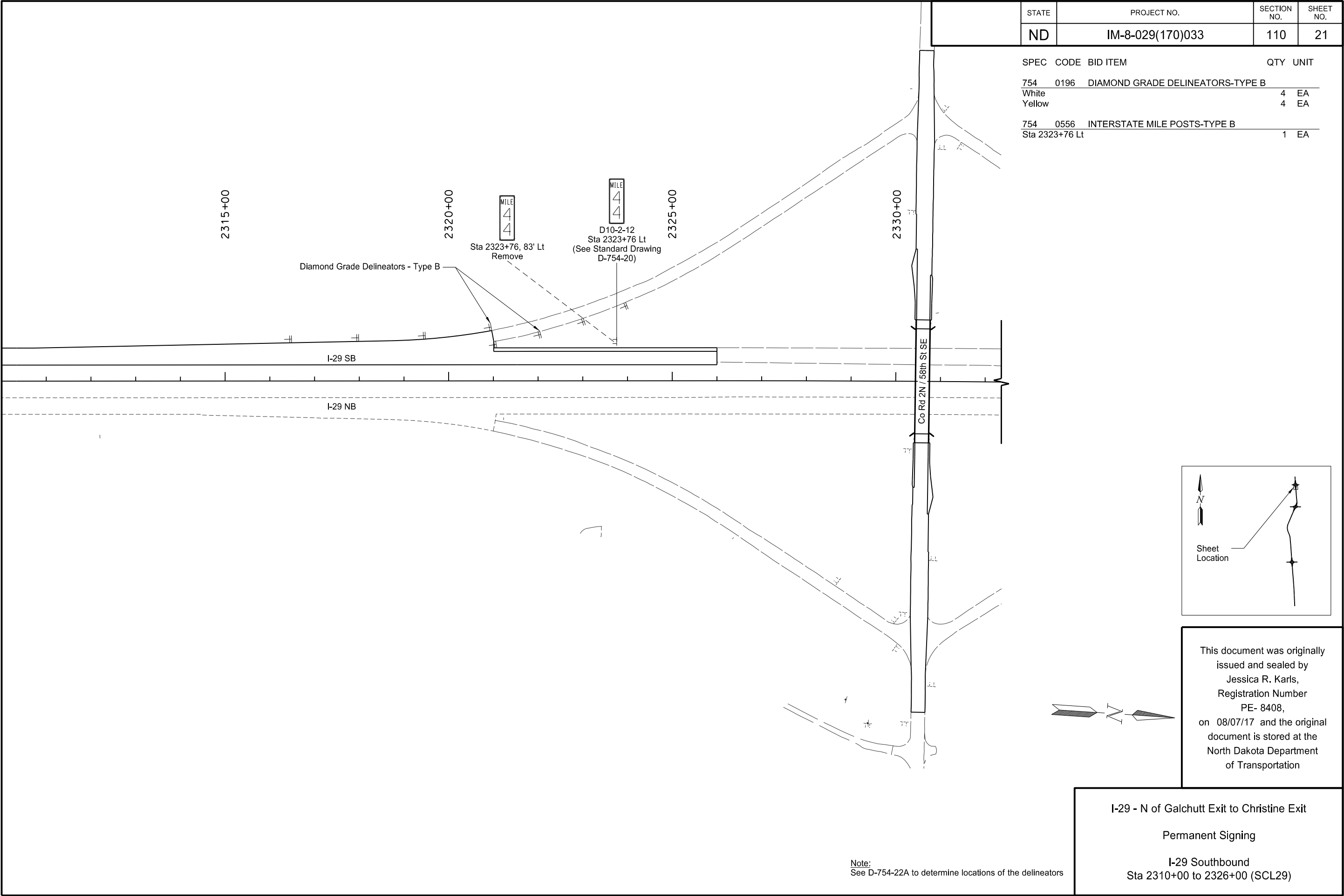
I-29 Southbound
Sta 2260+00 to 2280+00 (SCL29)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	20



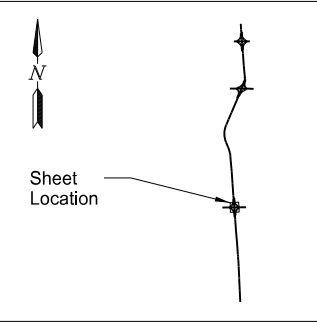
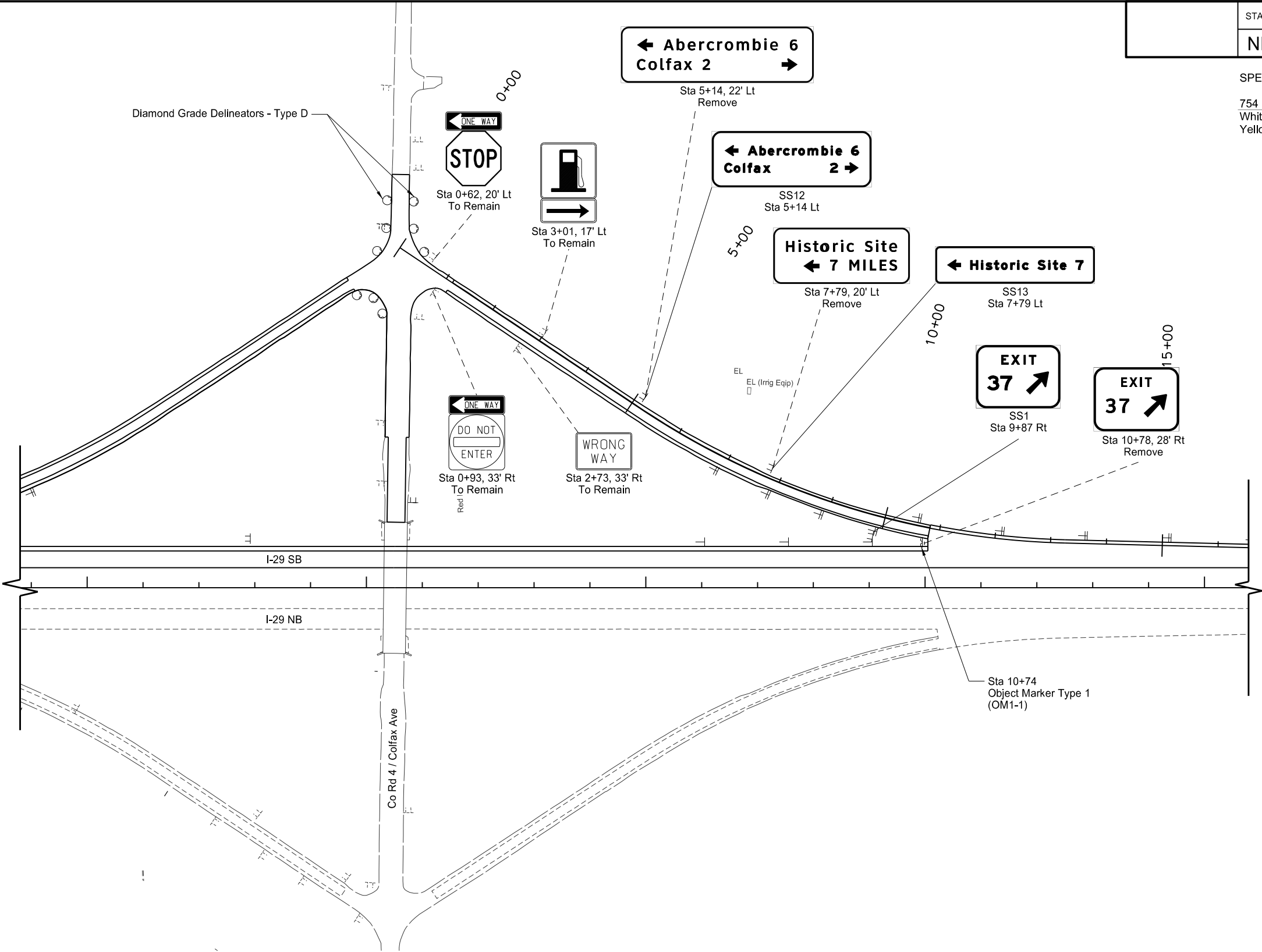
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I-29 - N of Galchutt Exit to Christine Exit
Permanent Signing
I-29 Southbound
Sta 2290+00 to 2310+00 (SCL29)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	110	22

SPEC	CODE	BID ITEM	QTY	UNIT
754	0198	DIAMOND GRADE DELINEATORS-TYPE D		
White			6	EA
Yellow			3	EA



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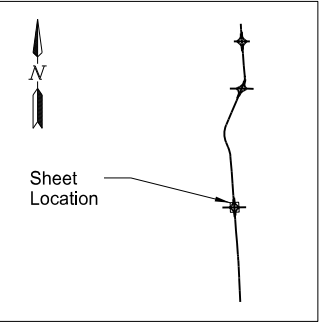
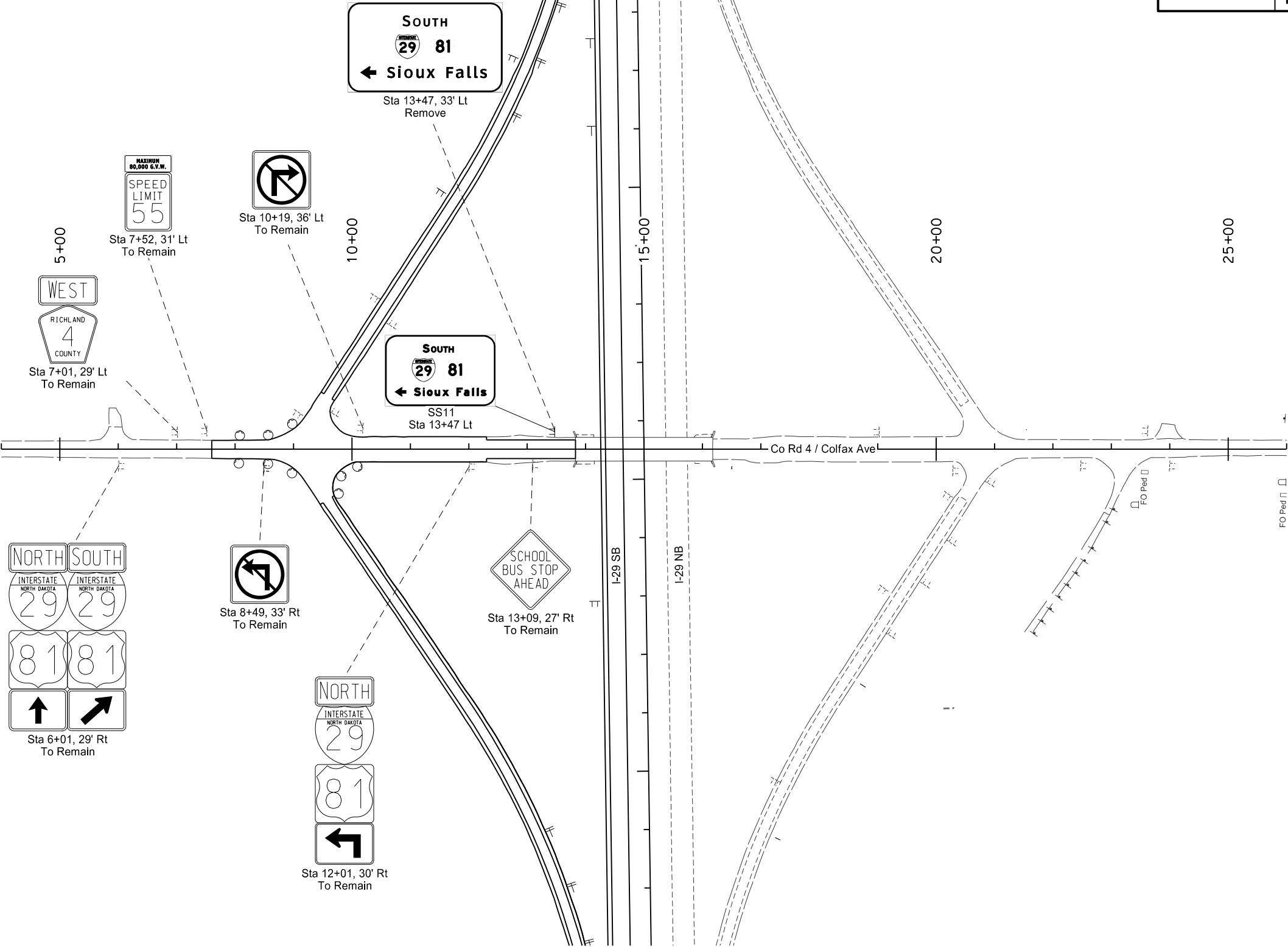
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Colfax Interchange Northwest Ramp
Sta 0+00 to 16+00 (EXCOLNWR)

Note:
See D-754-22A to determine locations of the delineators

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	23



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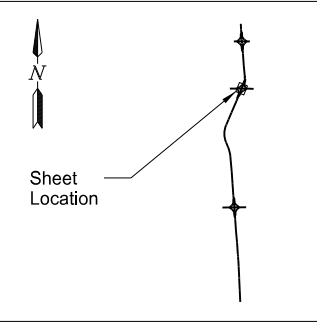
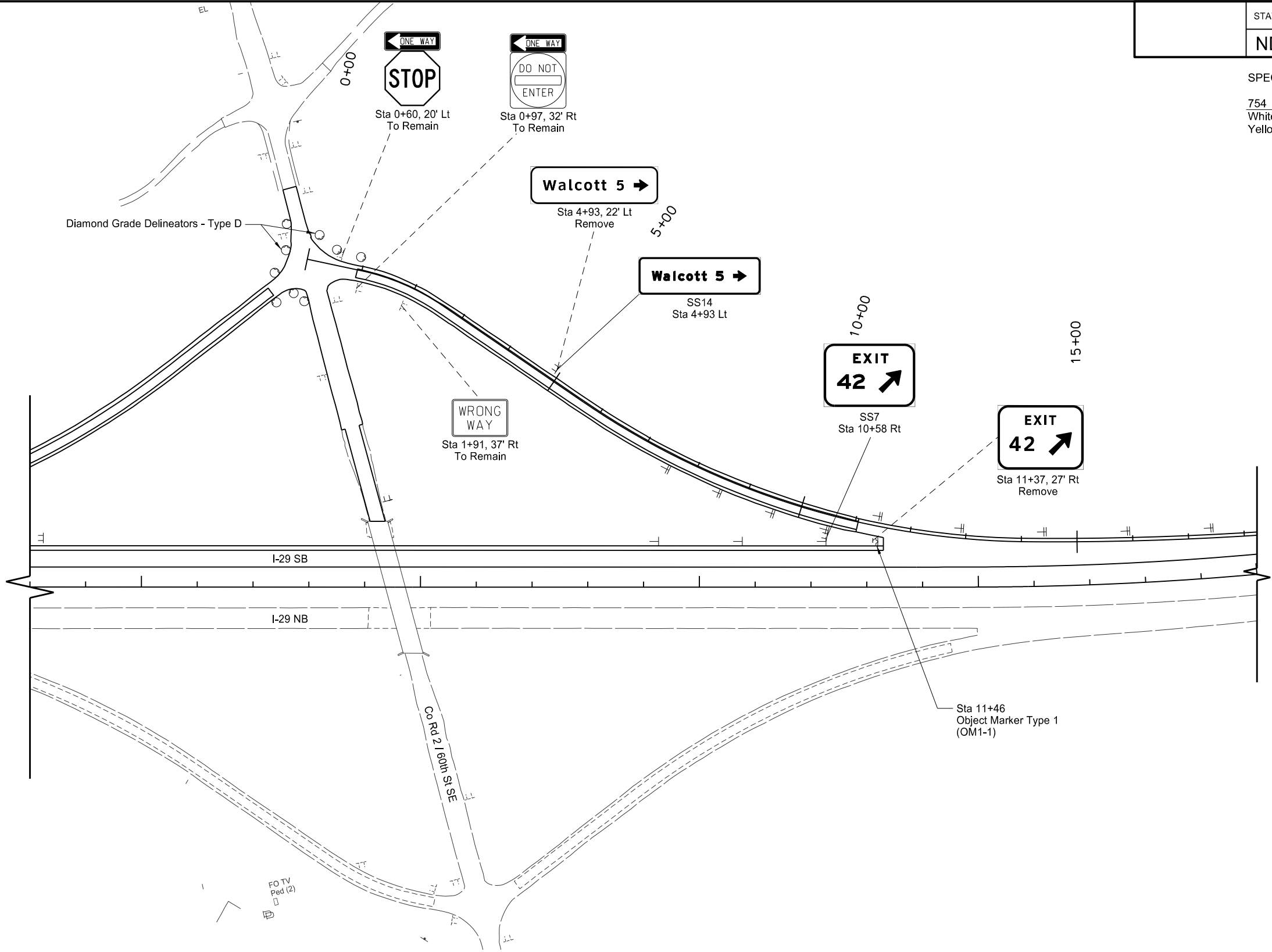
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Colfax Interchange Crossroad
Sta 5+00 to 25+00 (EXCOLFAX)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	24

SPEC	CODE	BID ITEM	QTY	UNIT
754	0198	DIAMOND GRADE DELINEATORS-TYPE D		
		White	6	EA
		Yellow	3	EA



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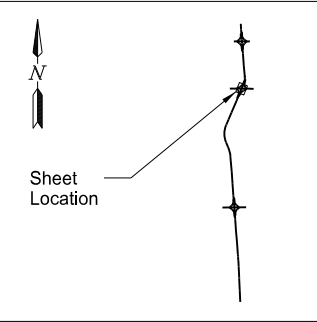
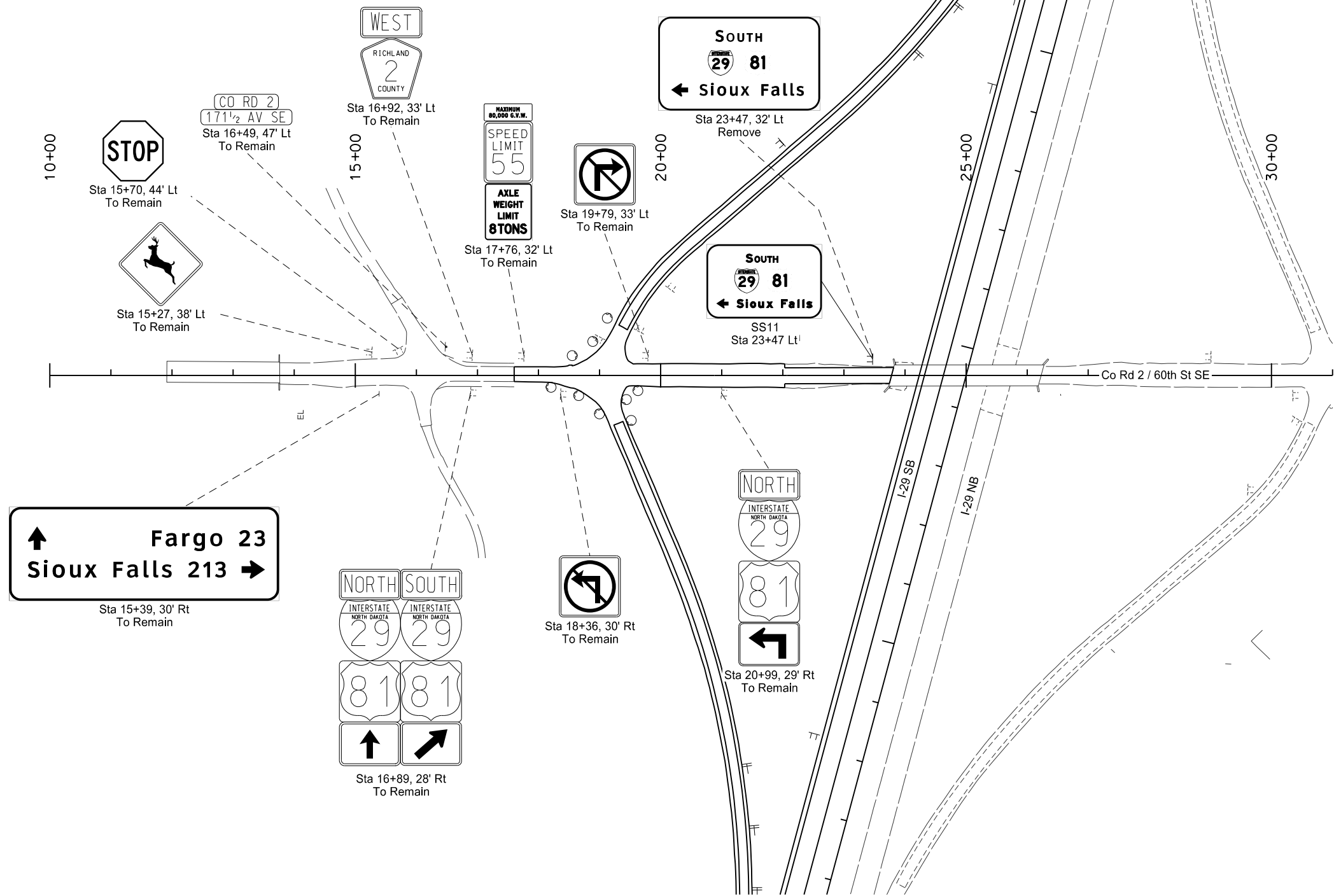
I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Walcott Interchange Northwest Ramp
Sta 0+00 to 18+00 (EX60NWR)

Note:
See D-754-22A to determine locations of the delineators

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	110	25



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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

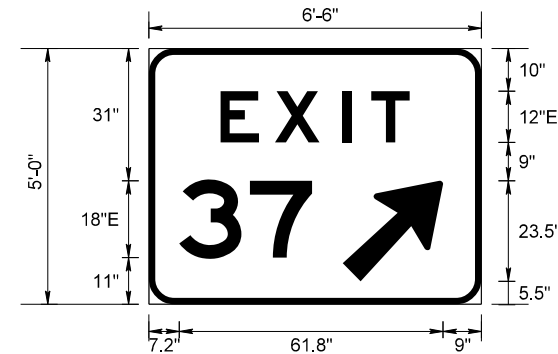
Walcott Interchange Crossroad
Sta 10+00 to 30+00 (EX60ST)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	26

SIGN NUMBER	SS1
WIDTH x HEIGHT	6'-6" x 5'-0"
BORDER WIDTH	1.5" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGL
ARGORE	45.5	5.4	18.3	30	45

STATION(S): 9+87 Rt	AREA: 32.5 Sq.Ft.
------------------------	-------------------



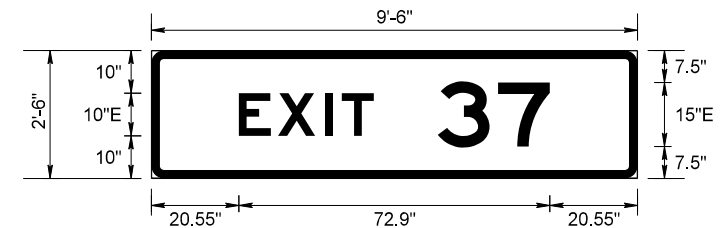
Dimensions are in inches.tenths Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	SS2
WIDTH x HEIGHT	9'-6" x 2'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

[illegible]

STATION(S): 1973+90 Lt 2026+70 Lt	AREA: 23.8 Sq.Ft.
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Dimensions are in inches.tenths Letter locations are panel edge to lower left corner

[illegible]

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I-29 - N of Galchutt Exit to Christine Exit

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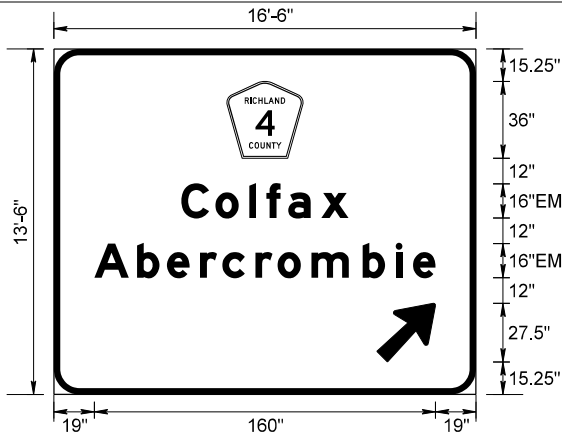
Sign Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	110	27

SIGN NUMBER	SS3
WIDTH x HEIGHT	16'-6" x 13'-6"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
M1_6_2	81.1	110.8	35.7	36	0
ND_16IN_TYPE A	151.5	15.2	22.2	35	315

STATION(S)
1973+90 Lt



AREA: 222.8 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	SS4
WIDTH x HEIGHT	18'-6" x 8'-0"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

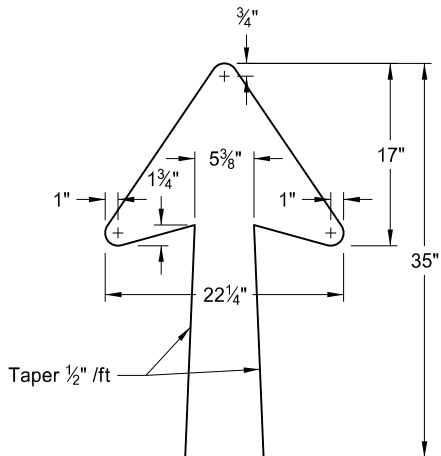
STATION(S)
2000+05



AREA: 148.0 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

ND 16IN TYPE A

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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Sign Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	110	28

SIGN NUMBER	SS5
WIDTH x HEIGHT	16'-6" x 12'-6"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
M1_6_2	81.1	99	35.7	36	0

STATION(S):
2026+70 Lt

Dimensions are in inches, tenths

Diagram illustrating the dimensions and layout of the sign. The sign is rectangular, measuring 16'-6" wide and 12'-6" high. The layout includes a central text area with "Colfax" and "Abercrombie" in large letters, and "1 MILE" below it. A shield-shaped logo is positioned at the top center, containing the text "REHMAN", "4", and "COUNTY". The diagram shows the sign's placement on a post, with dimensions for the sign face, border, and mounting hardware.

Letter locations are panel edge to lower left corner

[illegible][illegible][illegible]

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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signin

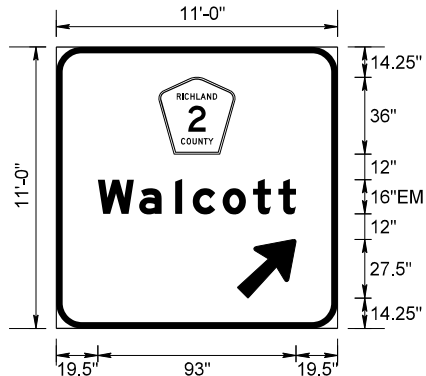
Sign Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	110	30

SIGN NUMBER	SS9
WIDTH x HEIGHT	11'-0" x 11'-0"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
M1_6_2	48.1	81.8	35.7	36	0
ND_16IN_TYPE A	85	14.2	22.2	35	315

STATION(S)
2242+31 Lt



AREA: 121.0 Sq.Ft.

Dimensions are in inches.tenths

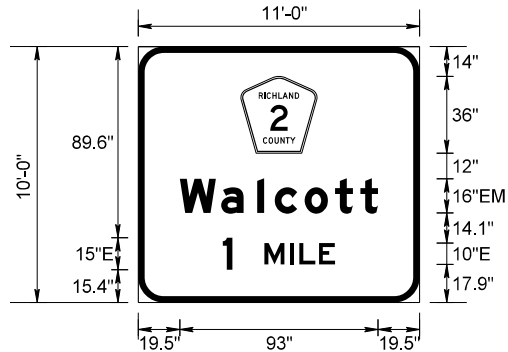
Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	SS10
WIDTH x HEIGHT	11'-0" x 10'-0"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
M1_6_2	48.1	70	35.7	36	0

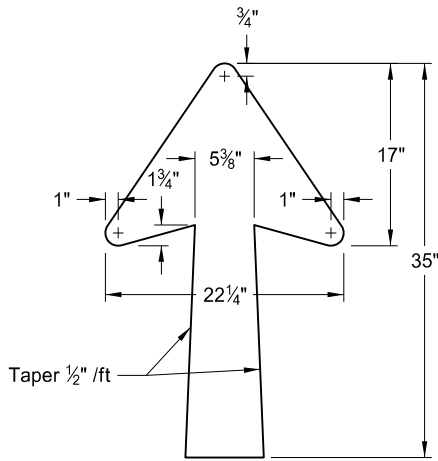
STATION(S)
2295+11 Lt



AREA: 110.0 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

ND_16IN_TYPE A

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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Sign Details

SYMBOL	X	Y	WID	HT	ANGLE
M1_1	26.4	17.3	18	18	0
M1_4	50.4	17.3	18	18	0
ND_6IN_TYPE B	6.9	15	12	13.5	90

[illegible]

SYMBOL	X	Y	WID	HT	ANGLE
ND_8IN_TYPE D	9.5	21	8	12	90
ND_8IN_TYPE D	104.5	7	8	12	270

LETTER POSITION (X)																		LENGTH	SIZE	SERIES	
A	b	e	r	c	r	o	m	b	i	e									69.6	8/6	D 2000
29.5	38.1	44.6	51.3	55.4	62	66.1	73.2	83.8	90.9	94.4											
6																			5.4	8	D 2000
111.1																					
C	o	l	f	a	x														34	8/6	D 2000
9.5	17.2	24.3	27.5	31.4	37.2																
2																			5.4	8	D 2000
91.1																					

Diagram of a rectangular traffic sign for Interstate 29 South, Sioux Falls. The sign is white with a black border. It features a black arrow pointing left, the Interstate 29 shield, the number 81 in a shield, the word SOUTH, and the text Sioux Falls. Dimensions are provided for the sign and its mounting hardware.

Measurement	Value
Overall Width	8'-6"
Overall Height	3'-6"
Top Mounting Hole Spacing	6.7"
Bottom Mounting Hole Spacing	6.7"
Left Mounting Hole Spacing	6.9"
Right Mounting Hole Spacing	6.9"
Sign Body Width	88.2"
Sign Body Height	29.3"
Top Mounting Hole Diameter	7.7"
Bottom Mounting Hole Diameter	7.7"
Left Mounting Hole Diameter	6.7"
Right Mounting Hole Diameter	6.7"
Top Mounting Hole Center to Center	18"
Bottom Mounting Hole Center to Center	18"
Left Mounting Hole Center to Center	15"
Right Mounting Hole Center to Center	15"
Top Mounting Hole Edge to Edge	15"
Bottom Mounting Hole Edge to Edge	15"
Left Mounting Hole Edge to Edge	12"
Right Mounting Hole Edge to Edge	12"
Top Mounting Hole Edge to Sign Body	6.7"
Bottom Mounting Hole Edge to Sign Body	6.7"
Left Mounting Hole Edge to Sign Body	6.9"
Right Mounting Hole Edge to Sign Body	6.9"

Dimensions are in inches.tenths Letter locations are panel edge to lower left corner
 PANEL STYLE: ND_Conv_Destination.ssl

SYMBOL		X	Y	WID	HT	ANGLE
ND_8IN_TYPE	D	10.5	8	8	12	90

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
H	i	s	t	o	r	i	c		S	i	t	e								
30.5	39	42.2	46.6	50.7	57.9	62.6	66.1	70.8	78.8	86.4	89.2	93.4						67.6		
7																		8/6		
110.1																		D 2000		

SYMBOL		X	Y	WID	HT	ANGLE
ND_8IN_TYPE	D	73.5	8	8	12	270

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
W	a	l	c	o	t	t												37.5	8/6	D 2000
10.5	18.8	26	29.5	35.5	41.3	44.8														
5																		5,4	8	D 2000
60																				

Diagram of a rectangular sign with dimensions and text. The sign is 10'-6" wide and 2'-0" high. It features a black arrow pointing left, followed by the text "Historic Site 7". The sign is divided into three horizontal sections: a top section (8" high), a middle section (8" high), and a bottom section (8" high). The sign is mounted on a post, with dimensions of 10.5" and 105" indicated for the mounting hardware.

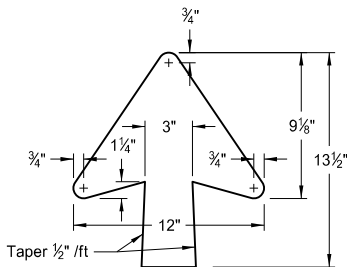
Dimensions are in inches.tenths Letter locations are panel edge to lower left corner

POSITION (X)										LENGTH	SIZE	SERIES
S	i	t	e							67.6	8/6	D 2000
78.8	86.4	89.2	93.4									
										5.4	8	D 2000

Diagram of a rectangular sign with dimensions and text. The sign is 8'-0" wide and 2'-0" high. It features the text "Walcott 5" followed by a right-pointing arrow. The sign is mounted on a wall with a 2'-0" height. The mounting hardware is specified as 8" D (depth) and 8" (width) for the top and bottom brackets, and 10.55" (width) for the side brackets. The sign itself is 74.9" wide and 10.55" high.

Dimensions are in inches.tenths Letter locations are panel edge to lower left corner

POSITION (X)										LENGTH	SIZE	SERIES
										37.5	8/6	D 2000
										5,4	8	D 2000



ND 6IN TYPE B

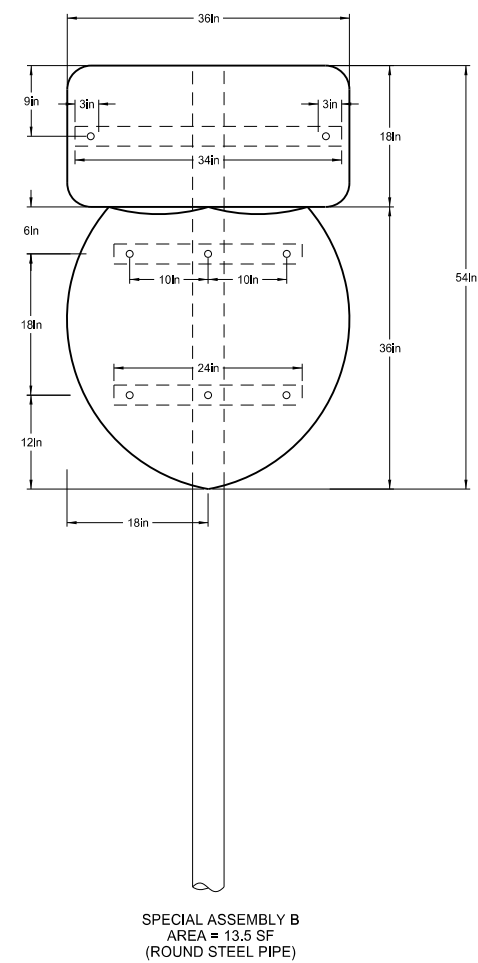
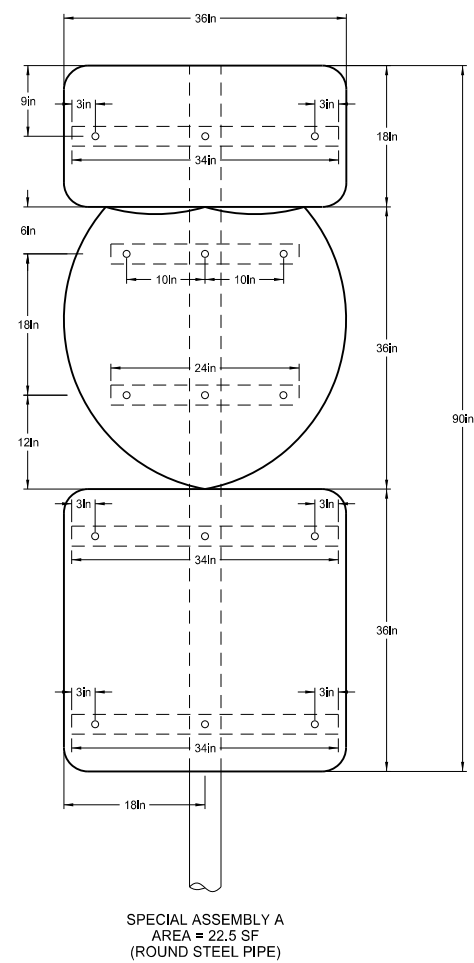
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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Sign Details

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	110	32



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I-29 - N of Galchutt Exit to Christine Exit

Permanent Signing

Special Assemblies

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE

PROJECT NO.

SECTION
NO.

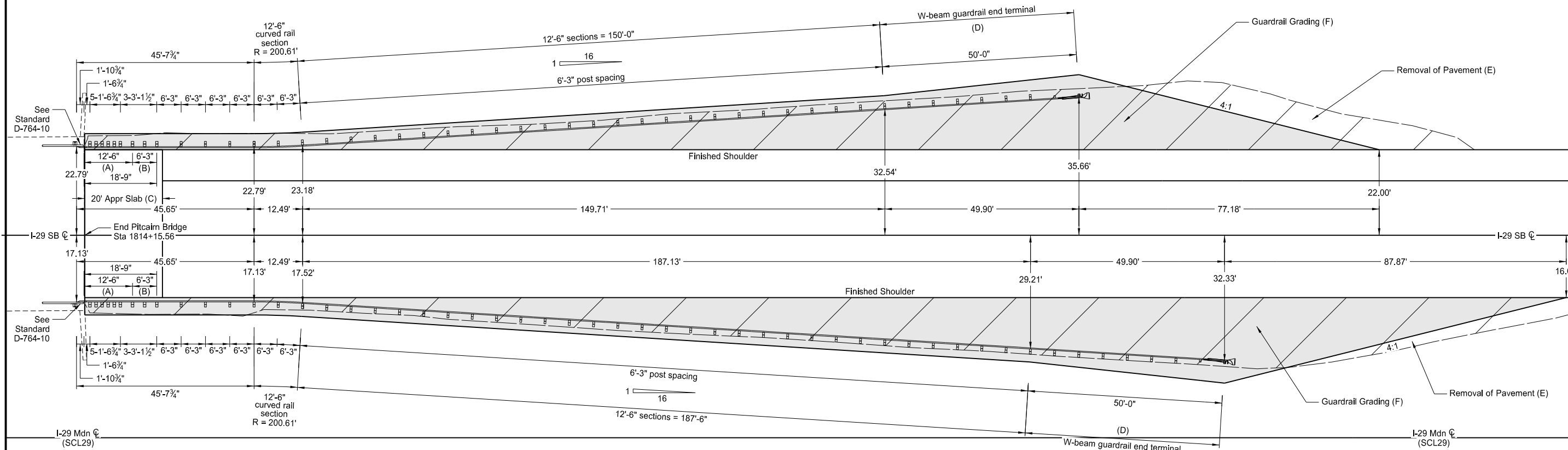
SHEET
NO.

ND

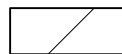
IM-8-029(170)033

130

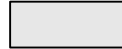
1



- (A) Thrie beam rail section (double thickness).
(B) W-Thrie beam transition section (double thickness).
(C) Install curb and gutter on proposed approach slab. Refer to Section 170.
(D) Install either a FLEAT or Slotted Rail Terminal (SRT) end terminal at this location (Standard D-764-06 or D-764-07).
If the FLEAT is installed, use the flare shown on this detail.
If the SRT is installed, use the flare shown on Standard Drawing D-764-07.
(E) Existing area of 10:1 or flatter embankment. Remove existing 2" asphalt pavement and 6" aggregate base. See Section 40 for removal quantities.
(F) Embankment included in Section 11 earthwork summary. Surface this area with 2" HMA and 6" aggregate base course. See Section 10 for paving quantities. See Standard D-764-22 for additional grading details.



Removal of Pavement



Guardrail Grading

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I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Layout

Pitcairn Creek
Str 0029-034.359L

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE

PROJECT NO.

SECTION
NO.

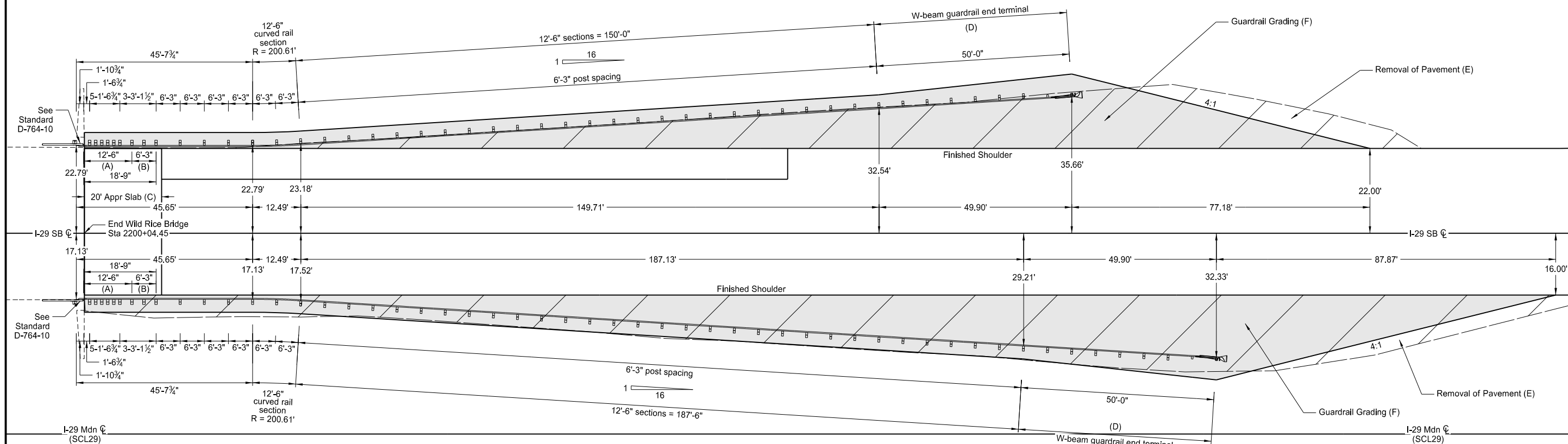
SHEET
NO.

ND

IM-8-029(170)033

130

2



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I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Layout

Wild Rice River
Str 0029-041.629L

23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	130	3

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES (B)																
THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS																
LOCATION	(A) 2'-6" THRIE BEAM TERMINAL CONNECTOR	(A) 5/8" Ø x 18" LONG GUARDRAIL BOLT	(A) 6" x 8" x 14" TIMBER BLOCK	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 8" x 8" x 6'-0" TIMBER POST	(A) 8" x 8" x 22" WOOD OFFSET BLOCK	(A) 8" x 8" x 18" WOOD OFFSET BLOCK	(A) 8" x 8" x 14" WOOD OFFSET BLOCK	(A) 5/8" Ø x 1 1/4" LONG GUARDRAIL BOLT	(A) 12'-6" DOUBLE THRIE BEAM SECTION	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) 6'-3" DOUBLE W-THRIE BEAM TRANSITION SECTION	(A) 7/8" Ø x VARIABLE LONG GUARDRAIL BOLT	(A) 3/4" Ø x 2-1/2 LONG POST BOLT	(A) (C) REFLECT- ORIZED PLATES
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Sta 1814+13.46 to 1814+71.59 Lt	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	11
Sta 1814+13.46 to 1814+84.07 Lt Mdn	1	25	8	8	9	7	1	1	64	1	3	1	1	5	2	12
Sta 2200+02.35 to 2200+60.48 Lt	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	11
Sta 2200+02.35 to 2200+72.96 Lt Mdn	1	25	8	8	9	7	1	1	64	1	3	1	1	5	2	12
TOTAL	4	96	28	28	36	28	4	4	240	4	10	4	4	20	8	46

(A) Include these items in the contract unit price for "W-BEAM GUARDRAIL".
(B) This table is for new components only.
(C) Install all new reflectorized plates.

SPEC CODE BID ITEM QTY UNIT

764 0131 W-BEAM GUARDRAIL
Sta 1814+13.46 to 1814+71.59 Lt 58.2 LF
Sta 1814+13.46 to 1814+84.07 Lt Mdn 70.7 LF
Sta 2200+02.35 to 2200+60.48 Lt 58.2 LF
Sta 2200+02.35 to 2200+72.96 Lt Mdn 70.7 LF

764 0145 W-BEAM GUARDRAIL END TERMINAL
Sta 1816+21.30 to 1816+71.20 Lt 1 EA
Sta 1816+58.73 to 1817+08.63 Lt Mdn 1 EA
Sta 2202+10.19 to 2202+60.09 Lt 1 EA
Sta 2202+47.62 to 2202+97.52 Lt Mdn 1 EA

764 0151 REMOVE W-BEAM GUARDRAIL & POSTS
Sta 1814+13.46 to 1816+46.24 Lt 233.2 LF
Sta 1814+13.46 to 1816+71.21 Lt Mdn 258.2 LF
Sta 2200+02.35 to 2202+35.13 Lt 233.2 LF
Sta 2200+02.35 to 2202+60.10 Lt Mdn 258.2 LF

764 1050 RESET W-BEAM GUARDRAIL
Sta 1814+71.59 to 1816+21.30 Lt 150.0 LF
Sta 1814+84.07 to 1816+58.73 Lt Mdn 175.0 LF
Sta 2200+60.48 to 2202+10.19 Lt 150.0 LF
Sta 2200+72.96 to 2202+47.62 Lt Mdn 175.0 LF

764 2081 REMOVE END TREATMENT & TRANSITION
Sta 1816+46.24 to 1816+96.14 Lt 1 EA
Sta 1816+71.21 to 1817+21.11 Lt Mdn 1 EA
Sta 2202+35.13 to 2202+85.03 Lt 1 EA
Sta 2202+60.10 to 2203+10.00 Lt Mdn 1 EA

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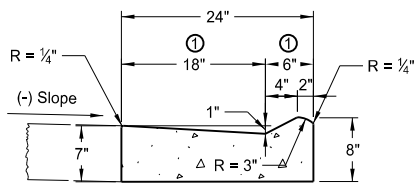
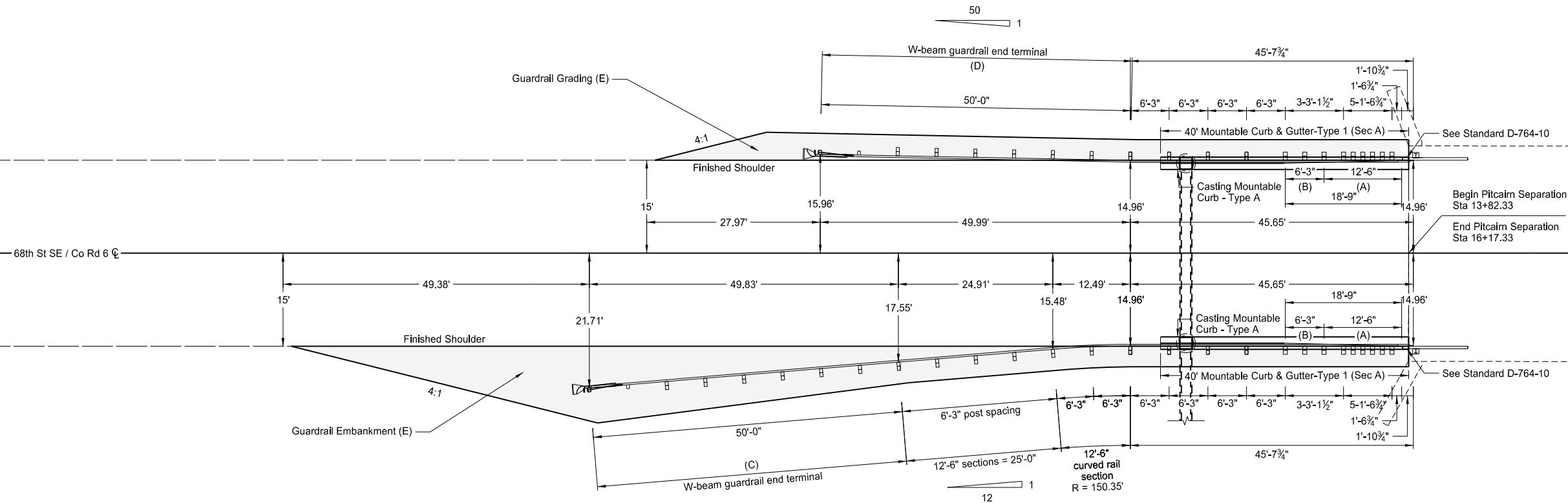
I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Quantities

Pitcairn Creek (Str 0029-034.359L)
Wild Rice River (Str 0029-041.629L)

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	130	4



Mountable Curb & Gutter Type 1 (Sec A)
Begin/End Bridge Tie-In Detail

Notes:

- ① Transition flow line to 12" offsets for standard Mountable Curb & Gutter Type 1 (Sec A) as shown on Standard D-748-01 over 20' starting from begin/end bridge tie in location.

- (A) Thrie beam rail section (double thickness).
(B) W-Thrie beam transition section (double thickness).
(C) Install a FLEAT end terminal at this location (Standard D-764-06).
(D) Install either a FLEAT or Sequential Kinging Terminal (SKT) end terminal at this location (Standard D-764-06 or D-764-05).
If the FLEAT is installed, use the flare shown on Standard D-764-06.
If the SKT is installed, use a 50:1 taper for this end terminal.
(E) Surface this area with 2" HMA and 6" aggregate base course. See Section 10 for paving quantities. See Standard D-764-22 for additional grading details.

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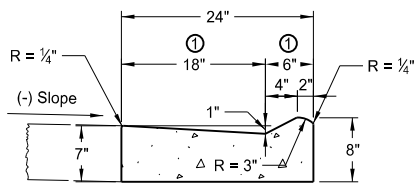
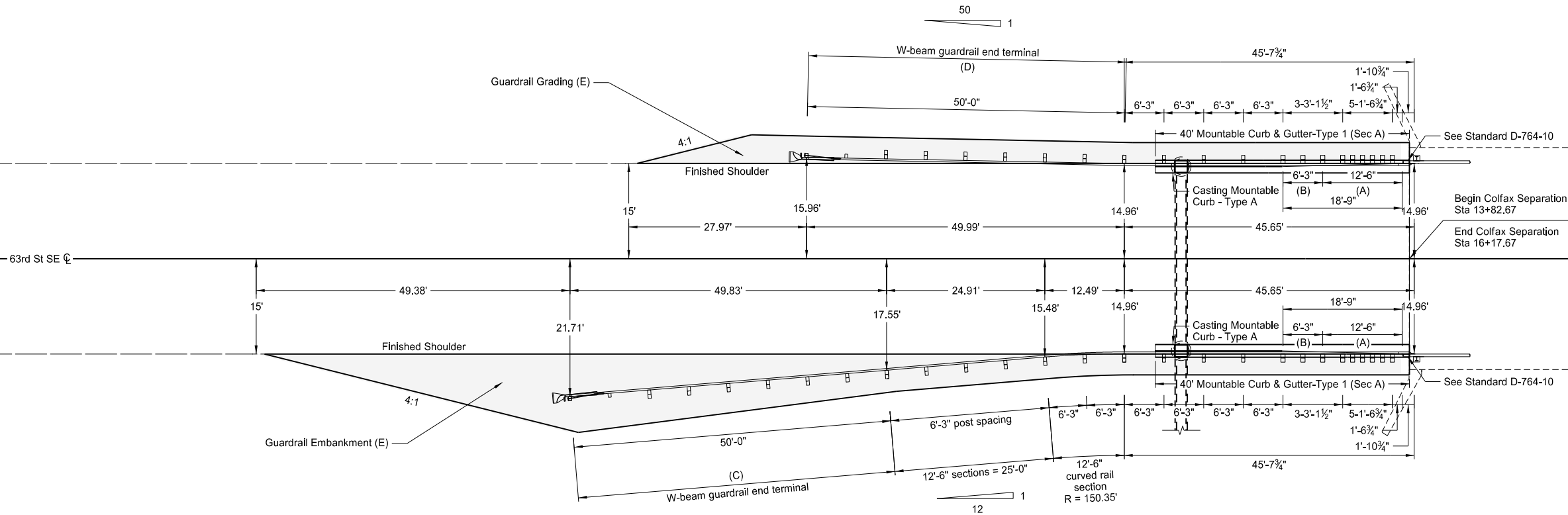
I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Layout
At Both Ends of Bridge

Pitcairn Separation Crossroad (Str 0029-034.040)

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	130	5



Mountable Curb & Gutter Type 1 (Sec A)
Begin/End Bridge Tie-In Detail

Notes:

- ① Transition flow line to 12" offsets for standard Mountable Curb & Gutter Type 1 (Sec A) as shown on Standard D-748-01 over 20' starting from begin/end bridge tie in location.

- (A) Thrie beam rail section (double thickness).
(B) W-Thrie beam transition section (double thickness).
(C) Install a FLEAT end terminal at this location (Standard D-764-06).
(D) Install either a FLEAT or Sequential Kinging Terminal (SKT) end terminal at this location (Standard D-764-06 or D-764-05).
If the FLEAT is installed, use the flare shown on Standard D-764-06.
If the SKT is installed, use a 50:1 taper for this end terminal.
(E) Surface this area with 2" HMA and 6" aggregate base course. See Section 10 for paving quantities. See Standard D-764-22 for additional grading details.

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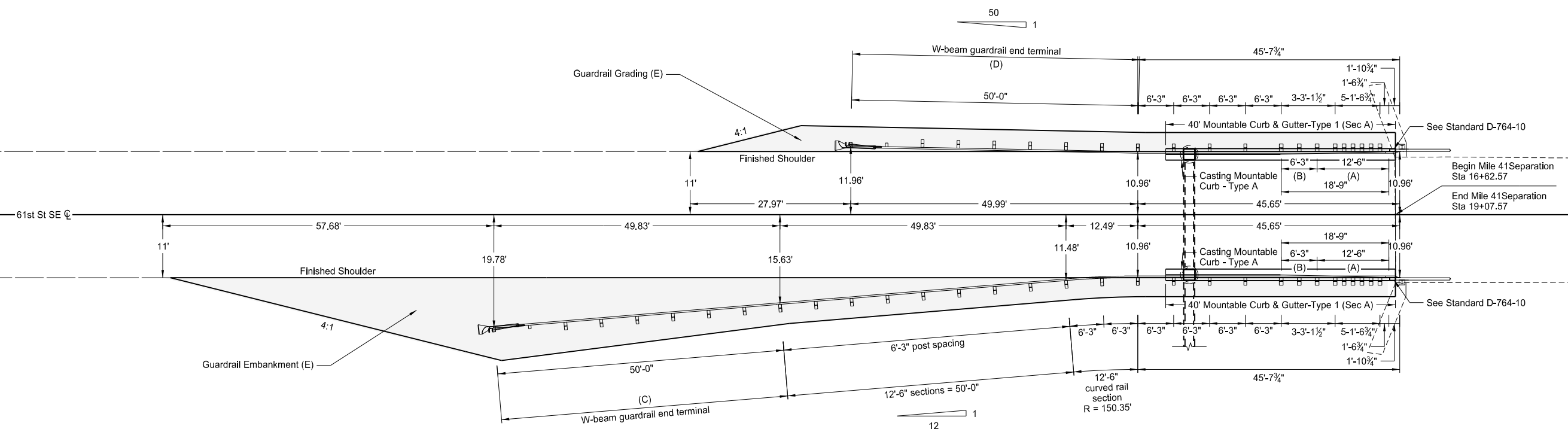
I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Layout
At Both Ends of Bridge

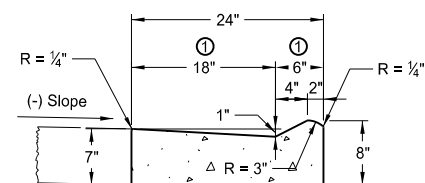
Colfax Separation Crossroad (Str 0029-039.047)

23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	130	6



- (A) Thrie beam rail section (double thickness).
 - (B) W-Thrie beam transition section (double thickness).
 - (C) Install a FLEAT end terminal at this location (Standard D-764-06).
 - (D) Install either a FLEAT or Sequential Kinging Terminal (SKT) end terminal at this location (Standard D-764-06 or D-764-05).
- If the FLEAT is installed, use the flare shown on Standard D-764-06.
- If the SKT is installed, use a 50:1 taper for this end terminal.
- (E) Surface this area with 2" HMA and 6" aggregate base course. See Section 10 for paving quantities. See Standard D-764-22 for additional grading details.



Mountable Curb & Gutter Type 1 (Sec A)
Begin/End Bridge Tie-In Detail

Notes:

- ① Transition flow line to 12" offsets for standard Mountable Curb & Gutter Type 1 (Sec A) as shown on Standard D-748-01 over 20' starting from begin/end bridge tie in location.

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I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Layout At Both Ends of Bridge

Mile 41 Separation Crossroad (Str 0029-041.053)

23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	130	7

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES (B)																	
THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS																	
LOCATION	(A) 2'-6" THRIE BEAM TERMINAL CONNECTOR	(A) 5/8" Ø x 18" LONG GUARDRAIL BOLT	(A) 6" x 8" x 14" TIMBER BLOCK	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 8" x 8" x 6'-0" TIMBER POST	(A) 8" x 8" x 22" WOOD OFFSET BLOCK	(A) 8" x 8" x 18" WOOD OFFSET BLOCK	(A) 8" x 8" x 14" WOOD OFFSET BLOCK	(A) 5/8" Ø x 1 1/4" LONG GUARDRAIL BOLT	(A) 12'-6" DOUBLE THRIE BEAM SECTION	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) 6'-3" DOUBLE W-THRIE BEAM TRANSITION SECTION	(A) 7/8" Ø x VARIABLE LONG GUARDRAIL BOLT	(A) 3/4" Ø x 2-1/2 LONG POST BOLT	(A) (C) REFLECT- ORIZED PLATES	(D) EMBANK- MENT
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY
Sta 13+00.06 to 13+24.97 Rt (EX68ST) (E)			4	4													
Sta 13+24.97 to 13+83.10 Rt (EX68ST)	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	5	19
Sta 13+37.46 to 13+83.10 Lt (EX68ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 16+16.56 to 16+62.21 Rt (EX68ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 16+16.56 to 16+74.69 Lt (EX68ST)	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	5	10
Sta 16+74.69 to 16+99.61 Lt (EX68ST) (E)			4	4													
Sta 13+00.40 to 13+25.31 Rt (EX63ST) (E)			4	4													
Sta 13+25.31 to 13+83.45 Rt (EX63ST)	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	5	26
Sta 13+37.80 to 13+83.45 Lt (EX63ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 16+16.90 to 16+62.55 Rt (EX63ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 16+16.90 to 16+75.04 Lt (EX63ST)	1	23	6	6	9	7	1	1	56	1	2	1	1	5	2	5	27
Sta 16+75.04 to 16+99.95 Lt (EX63ST) (E)			4	4													
Sta 15+55.39 to 15+80.30 Rt (EX61ST) (E)			4	4													
Sta 15+80.30 to 16+63.34 Rt (EX61ST)	1	27	10	10	9	7	1	1	72	1	4	1	1	5	2	6	132
Sta 16+17.70 to 16+63.34 Lt (EX61ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 19+06.80 to 19+52.45 Rt (EX61ST)	1	20	3	3	9	7	1	1	40	1	2		1	5	2	4	
Sta 19+06.80 to 19+89.85 Lt (EX61ST)	1	27	10	10	9	7	1	1	72	1	4	1	1	5	2	6	10
Sta 19+89.85 to 20+14.76 Lt (EX61ST) (E)			4	4													
TOTAL	12	266	86	86	108	84	12	12	608	12	28	6	12	60	24	56	224

- (A) Include these items in the contract unit price for "W-BEAM GUARDRAIL".
(B) This table is for new components only.
(C) Install all new reflectorized plates.
(D) Embankment volumes (CY) are for informational purposes only.
(E) Install new blocks and posts for the reset w-beam guardrail.
Removed blocks and posts from Interstate 29 or Christine Interchange may be utilized in lieu of new blocks and posts if approved by engineer.
Include these items in the contract unit price for "RESET W-BEAM GUARDRAIL".

764	0145	W-BEAM GUARDRAIL END TERMINAL		
Sta 12+50.23 to 13+00.06 Rt (EX68ST)	1	EA		
Sta 12+87.47 to 13+37.46 Lt (EX68ST)	1	EA		
Sta 16+62.21 to 17+12.20 Rt (EX68ST)	1	EA		
Sta 16+99.61 to 17+49.44 Lt (EX68ST)	1	EA		
Sta 12+50.57 to 13+00.40 Rt (EX63ST)	1	EA		
Sta 12+87.81 to 13+37.80 Lt (EX63ST)	1	EA		
Sta 16+62.55 to 17+12.54 Rt (EX63ST)	1	EA		
Sta 16+99.95 to 17+49.78 Lt (EX63ST)	1	EA		
Sta 15+05.56 to 15+55.39 Rt (EX61ST)	1	EA		
Sta 15+67.71 to 16+17.70 Lt (EX61ST)	1	EA		
Sta 19+52.45 to 20+02.44 Rt (EX61ST)	1	EA		
Sta 20+14.76 to 20+64.59 Lt (EX61ST)	1	EA		

764	0151	REMOVE W-BEAM GUARDRAIL & POSTS		
Sta 13+21.94 to 13+84.44 Rt (EX68ST)	62.5	LF		
Sta 13+46.94 to 13+84.44 Lt (EX68ST)	37.5	LF		
Sta 16+15.23 to 16+52.73 Rt (EX68ST)	62.5	LF		
Sta 16+15.23 to 16+77.73 Lt (EX68ST)	37.5	LF		
Sta 13+22.28 to 13+84.78 Rt (EX63ST)	62.5	LF		
Sta 13+47.28 to 13+84.78 Lt (EX63ST)	37.5	LF		
Sta 16+15.57 to 16+53.07 Rt (EX63ST)	62.5	LF		
Sta 16+15.57 to 16+78.07 Lt (EX63ST)	37.5	LF		
Sta 16+02.18 to 16+64.68 Rt (EX61ST)	62.5	LF		
Sta 16+27.18 to 16+64.68 Lt (EX61ST)	37.5	LF		
Sta 19+05.47 to 19+42.97 Rt (EX61ST)	62.5	LF		
Sta 19+05.47 to 19+67.97 Lt (EX61ST)	37.5	LF		

764	1050	RESET W-BEAM GUARDRAIL		
Sta 13+00.06 to 13+24.97 Rt (EX68ST)	25.0	LF		
Sta 16+74.69 to 16+99.61 Lt (EX68ST)	25.0	LF		
Sta 13+00.40 to 13+25.31 Rt (EX63ST)	25.0	LF		
Sta 16+75.04 to 16+99.95 Lt (EX63ST)	25.0	LF		
Sta 15+55.39 to 15+80.30 Rt (EX61ST)	25.0	LF		
Sta 19+89.85 to 20+14.76 Lt (EX61ST)	25.0	LF		

764	2081	REMOVE END TREATMENT & TRANSITION		
Sta 12+84.44 to 13+21.94 Rt (EX68ST)	1	EA		
Sta 13+09.44 to 13+46.94 Lt (EX68ST)	1	EA		
Sta 16+52.73 to 16+90.23 Rt (EX68ST)	1	EA		
Sta 16+77.73 to 17+15.23 Lt (EX68ST)	1	EA		
Sta 12+84.78 to 13+22.28 Rt (EX63ST)	1	EA		
Sta 13+09.78 to 13+47.28 Lt (EX63ST)	1	EA		
Sta 16+53.07 to 16+90.57 Rt (EX63ST)	1	EA		
Sta 16+78.07 to 17+15.57 Lt (EX63ST)	1	EA		
Sta 15+64.68 to 16+02.18 Rt (EX61ST)	1	EA		
Sta 15+89.68 to 16+27.18 Lt (EX61ST)	1	EA		
Sta 19+42.97 to 19+80.47 Rt (EX61ST)	1	EA		
Sta 19+67.97 to 20+05.47 Lt (EX61ST)	1	EA		

SPEC CODE BID ITEM QTY UNIT

203	0218	GUARDRAIL EMBANKMENT		
Sta 12+00.85 to 13+82.33 Rt (EX68ST)	1	EA		
Sta 16+17.33 to 17+98.81 Lt (EX68ST)	1	EA		
Sta 12+01.20 to 13+82.67 Rt (EX63ST)	1	EA		
Sta 16+17.67 to 17+99.15 Lt (EX63ST)	1	EA		
Sta 14+47.66 to 16+62.57 Rt (EX61ST)	1	EA		
Sta 19+07.57 to 21+22.27 Lt (EX61ST)	1	EA		

722	3485	CASTING MOUNTABLE CURB-TYPE A		
Sta 13+46.44 Lt (EX68ST)	1	EA		
Sta 13+46.44 Rt (EX68ST)	1	EA		
Sta 16+53.23 Lt (EX68ST)	1	EA		
Sta 16+53.23 Rt (EX68ST)	1	EA		
Sta 13+46.78 Lt (EX63ST)	1	EA		
Sta 13+46.78 Rt (EX63ST)	1	EA		
Sta 16+53.57 Lt (EX63ST)	1	EA		
Sta 16+53.57 Rt (EX63ST)	1	EA		
Sta 16+26.68 Lt (EX61ST)	1	EA		
Sta 16+26.68 Rt (EX61ST)	1	EA		
Sta 19+43.47 Lt (EX61ST)	1	EA		
Sta 19+43.47 Rt (EX61ST)	1	EA		

748	0150	MOUNTABLE CURB & GUTTER-TYPE 1 SEC A		
Sta 13+42.33 to 13+82.33 Lt (EX68ST)	40	LF		
Sta 13+42.33 to 13+82.33 Rt (EX68ST)	40	LF		
Sta 16+17.33 to 16+57.33 Lt (EX68ST)	40	LF		
Sta 16+17.33 to 16+57.33 Rt (EX68ST)	40	LF		
Sta 13+42.67 to 13+82.67 Lt (EX63ST)	40	LF		
Sta 13+42.67 to 13+82.67 Rt (EX63ST)	40	LF		
Sta 16+17.67 to 16+57.67 Lt (EX63ST)	40	LF		
Sta 16+17.67 to 16+57.67 Rt (EX63ST)	40	LF		
Sta 16+22.57 to 16+62.57 Lt (EX61ST)	40	LF		
Sta 16+22.57 to 16+62.57 Rt (EX61ST)	40	LF		
Sta 19+07.57 to 19+47.57 Lt (EX61ST)	40	LF		
Sta 19+07.57 to 19+47.57 Rt (EX61ST)	40	LF		

764	0131	W-BEAM GUARDRAIL		
Sta 13+24.97 to 13+83.10 Rt (EX68ST)	58.2	LF		
Sta 13+37.46 to 13+83.10 Lt (EX68ST)	45.7	LF		
Sta 16+16.56 to 16+62.21 Rt (EX68ST)	45.7	LF		
Sta 16+16.56 to 16+74.69 Lt (EX68ST)	58.2	LF		
Sta 13+25.31 to 13+83.45 Rt (EX63ST)	58.2	LF		
Sta 13+37.80 to 13+83.45 Lt (EX63ST)	45.7	LF		
Sta 16+16.90 to 16+62.55 Rt (EX63ST)	45.7	LF		
Sta 16+16.90 to 16+75.04 Lt (EX63ST)	58.2	LF		
Sta 15+80.30 to 16+63.34 Rt (EX61ST)	83.2	LF		
Sta 16+17.70 to 16+63.34 Lt (EX61ST)	45.7	LF		
Sta 19+06.80 to 19+52.45 Rt (EX61ST)	45.7	LF		
Sta 19+06.80 to 19+89.85 Lt (EX61ST)	83.2	LF		

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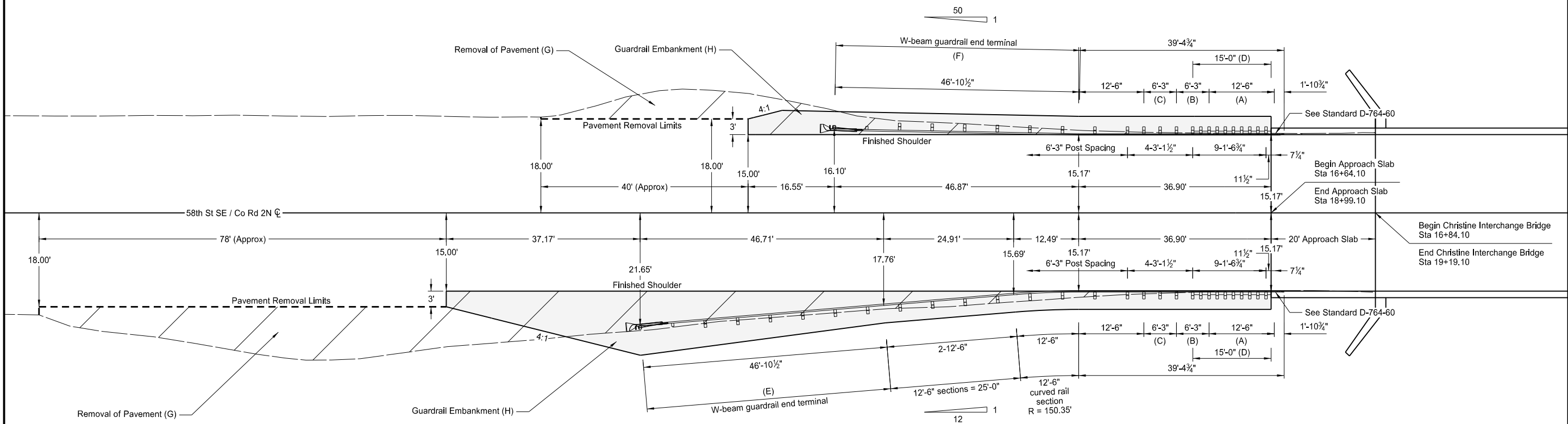
I-29 - N of Galchutt Exit to Christine Exit

Thrie/W-Beam Guardrail Quantities

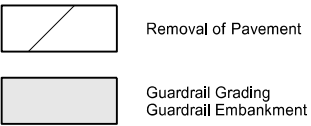
Pitcairn Separation Crossroad (Str 0029-034.040)
Colfax Separation Crossroad (Str 0029-039.047)
Mile 41 Separation Crossroad (Str 0029-041.053)

23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	130	8



- (A) Thrie beam double rail section (12 Gauge).
- (B) Thrie beam (12 Gauge).
- (C) Non-Symmetrical transition to W-Beam (10 Gauge).
- (D) Install curb and gutter in accordance with Standard D-748-01. Transition the last 2 feet of curb and gutter nearest the bridge approach slab to match the shape of the single slope barrier. Transition the first 3 feet of curb and gutter furthest from the bridge approach slab from a 6" curb height to a 0" curb height as shown on Standard D-764-60.
- (E) Install a MGS FLEAT end terminal at this location (Standard D-764-38).
- (F) Install either a MGS SoftStop or MGS Sequential Kinging Terminal (SKT) end terminal at this location (Standard D-764-50 or D-764-51).
Use a 50:1 taper for this end terminal.
- (G) Existing area of 10:1 or flatter embankment. Remove existing 2" asphalt pavement and 6" aggregate base. See Section 40 for removal quantities.
- (H) Surface this area with 2" HMA and 6" aggregate base course. See Section 10 for paving quantities. See Standard D-764-48 for additional grading details.



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I-29 - N of Galchutt Exit to Christine Exit
MGS Thrie/W-Beam Guardrail Layout
At Both Ends of Bridge
Christine Interchange Crossroad (Str 0029-044.126)

23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	130	9

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES (B)																
MGS THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS																
LOCATION	(A) 2'-6" THRIE BEAM TERMINAL CONNECTOR	(A) SINGLE SLOPE TO THRIE BEAM CONNECTOR PLATE	(A) 5/8" Ø x 18" LONG GUARDRAIL BOLT	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 6" x 8" x 7'-0" TIMBER POST	(A) 6" x 8" x 19" WOOD TIMBER BLOCK	(A) 6" x 8" x 14" WOOD TIMBER BLOCK	(A) 5/8" Ø x 1 1/4" LONG GUARDRAIL BOLT	(A) 12'-6" DOUBLE THRIE BEAM SECTION	(A) 6'-3" THRIE BEAM SECTION	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) 6'-3" NON- W-THRIE BEAM TRANSITION SECTION	(A) 7/8" Ø x 15" LONG HEX HEAD BOLT	(A) (C) REFLECT- ORIZED PLATES	(D) EMBANK- MENT
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY
Sta 15+89.80 to 16+66.60 Rt (EX58ST)	1	1	32	15	6	12	9	76	1	1	3	1	1	5	5	49
Sta 16+27.20 to 16+66.60 Lt (EX58ST)	1	1	26	9	6	12	3	52	1	1	1		1	5	4	119
Sta 19+36.60 to 19+76.00 Rt (EX58ST)	1	1	26	9	6	12	3	52	1	1	1		1	5	4	77
Sta 19+36.60 to 20+13.40 Lt (EX58ST)	1	1	32	15	6	12	9	76	1	1	3	1	1	5	5	41
TOTAL	4	4	116	48	24	48	24	256	4	4	8	2	4	20	18	286

- (A) Include these items in the contract unit price for "W-BEAM GUARDRAIL".
(B) This table is for new components only.
(C) Install all new reflectorized plates.
(D) Embankment volumes (CY) are for informational purposes only.

SPEC CODE BID ITEM QTY UNIT

203 0218 GUARDRAIL EMBANKMENT
Sta 15+05.92 to 16+64.10 Rt (EX58ST) 1 EA
Sta 15+63.79 to 16+64.10 Lt (EX58ST) 1 EA
Sta 19+39.10 to 20+39.97 Rt (EX58ST) 1 EA
Sta 19+39.10 to 20+98.14 Lt (EX58ST) 1 EA

748 0141 CURB & GUTTER-TYPE 1 SPECIAL
Sta 16+49.10 to 16+64.10 Lt (EX58ST) 15 LF
Sta 16+49.10 to 16+64.10 Rt (EX58ST) 15 LF
Sta 19+39.10 to 19+54.10 Lt (EX58ST) 15 LF
Sta 19+39.10 to 19+54.10 Rt (EX58ST) 15 LF

764 0131 W-BEAM GUARDRAIL
Sta 15+89.80 to 16+66.60 Rt (EX58ST) 76.9 LF
Sta 16+27.20 to 16+66.60 Lt (EX58ST) 39.4 LF
Sta 19+36.60 to 19+76.00 Rt (EX58ST) 39.4 LF
Sta 19+36.60 to 20+13.40 Lt (EX58ST) 76.9 LF

764 0145 W-BEAM GUARDRAIL END TERMINAL
Sta 15+43.09 to 15+89.80 Rt (EX58ST) 1 EA
Sta 15+80.34 to 16+27.20 Lt (EX58ST) 1 EA
Sta 19+76.00 to 20+22.88 Rt (EX58ST) 1 EA
Sta 20+13.40 to 20+60.11 Lt (EX58ST) 1 EA

764 0151 REMOVE W-BEAM GUARDRAIL & POSTS
Sta 15+37.95 to 16+75.45 Rt (EX58ST) 137.5 LF
Sta 16+37.95 to 16+75.45 Lt (EX58ST) 37.5 LF
Sta 19+27.75 to 19+65.25 Rt (EX58ST) 37.5 LF
Sta 19+27.75 to 20+40.25 Lt (EX58ST) 112.5 LF

764 1990 REMOVE CONCRETE SAFETY SHAPE TRANSITION
Sta 16+70.52 to 16+84.10 Lt (EX58ST) 1 EA
Sta 16+70.52 to 16+84.10 Rt (EX58ST) 1 EA
Sta 19+19.10 to 19+32.68 Lt (EX58ST) 1 EA
Sta 19+19.10 to 19+32.68 Rt (EX58ST) 1 EA

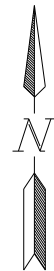
764 2081 REMOVE END TREATMENT & TRANSITION
Sta 14+87.95 to 15+37.95 Rt (EX58ST) 1 EA
Sta 15+87.95 to 16+37.95 Lt (EX58ST) 1 EA
Sta 19+65.25 to 20+15.25 Rt (EX58ST) 1 EA
Sta 20+40.25 to 20+90.25 Lt (EX58ST) 1 EA

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I-29 - N of Galchutt Exit to Christine Exit

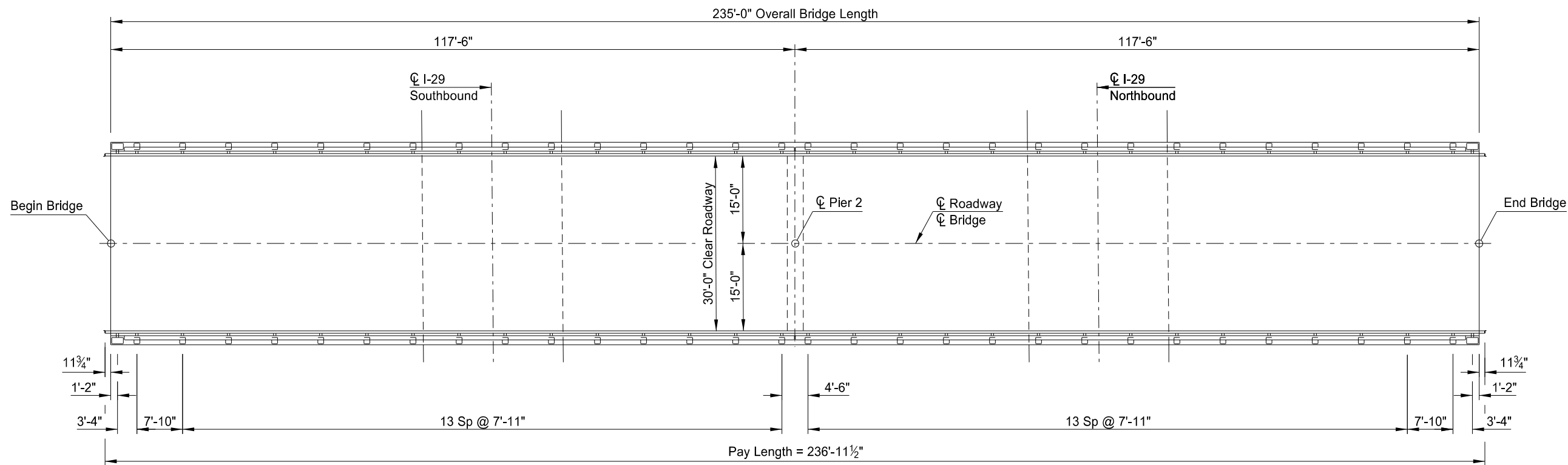
MGS Thrie/W-Beam Guardrail Quantities

Christine Interchange Crossroad (Str 0029-044.126)



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

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	1



PLAN

NOTE:

100 SCOPE OF WORK: Work at this site consists of installing a double box beam E-Rail retrofit.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
624	3002	DOUBLE BOX BEAM RAIL RETROFIT - E-RAIL	LF	473.9

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PITCAIRN SEPARATION

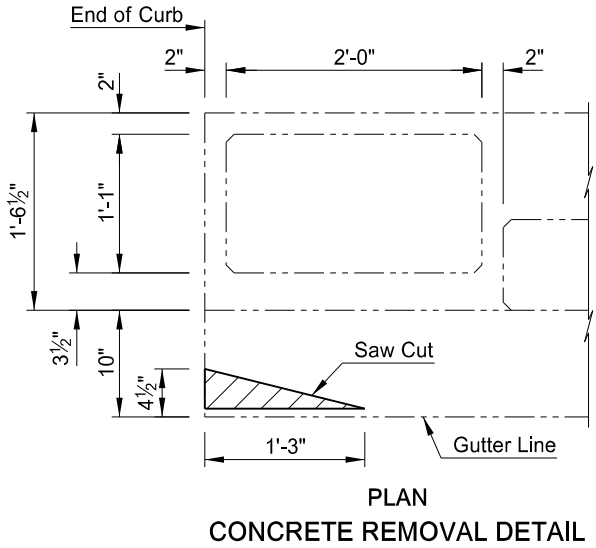
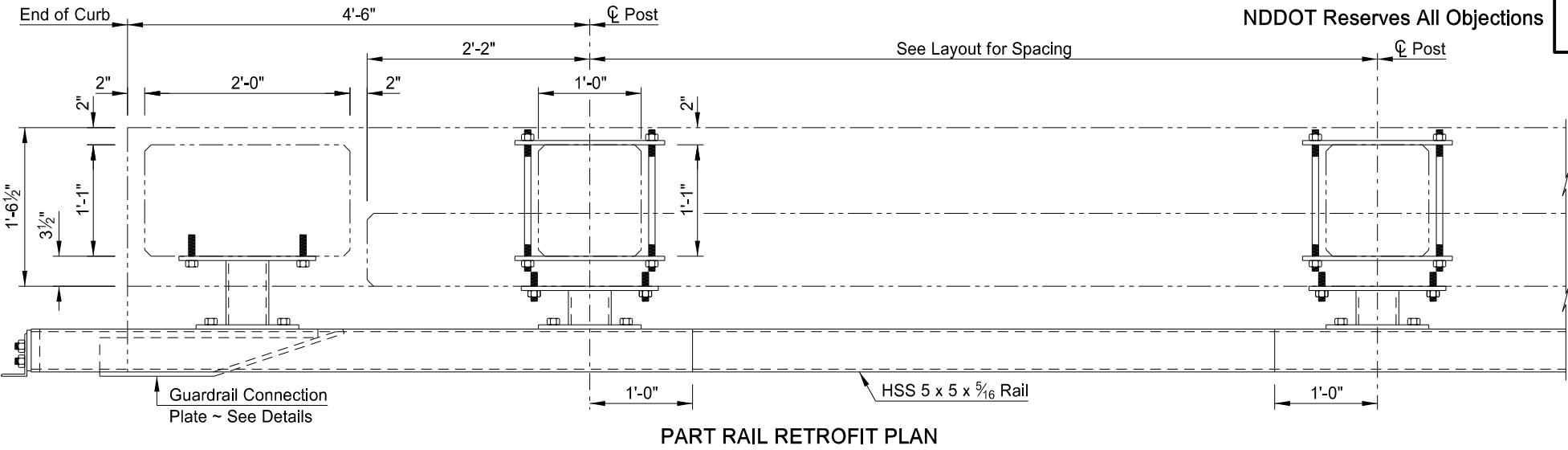
BRIDGE LAYOUT

PROJECT: IM-8-029(170)033

RICHLAND COUNTY

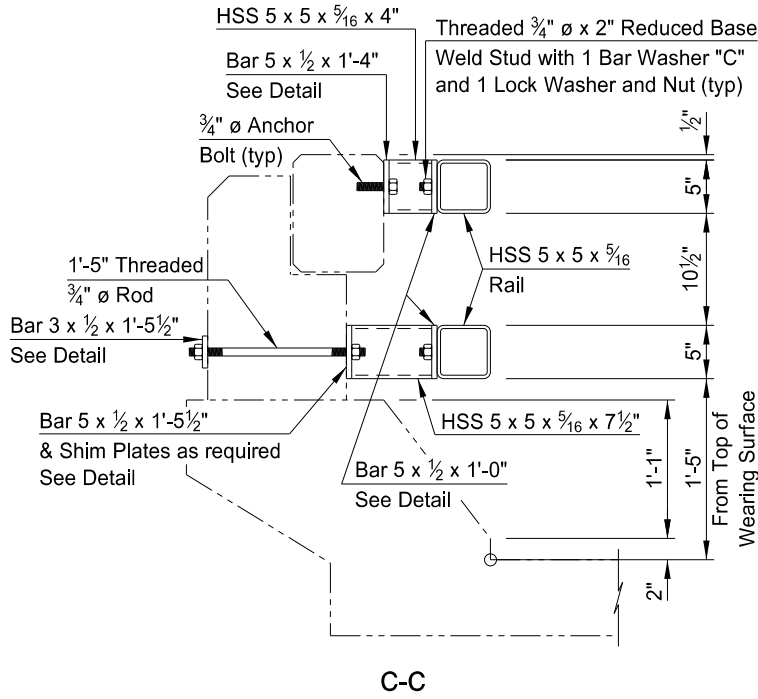
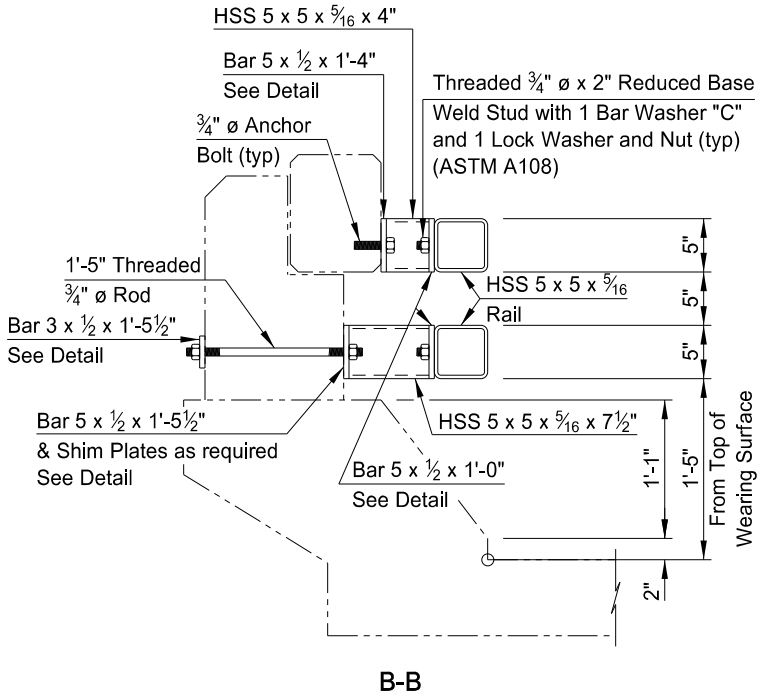
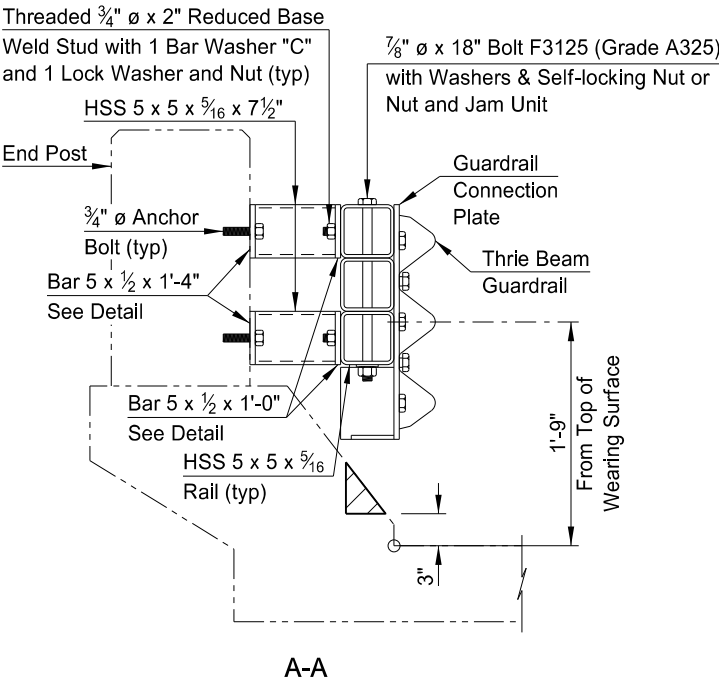
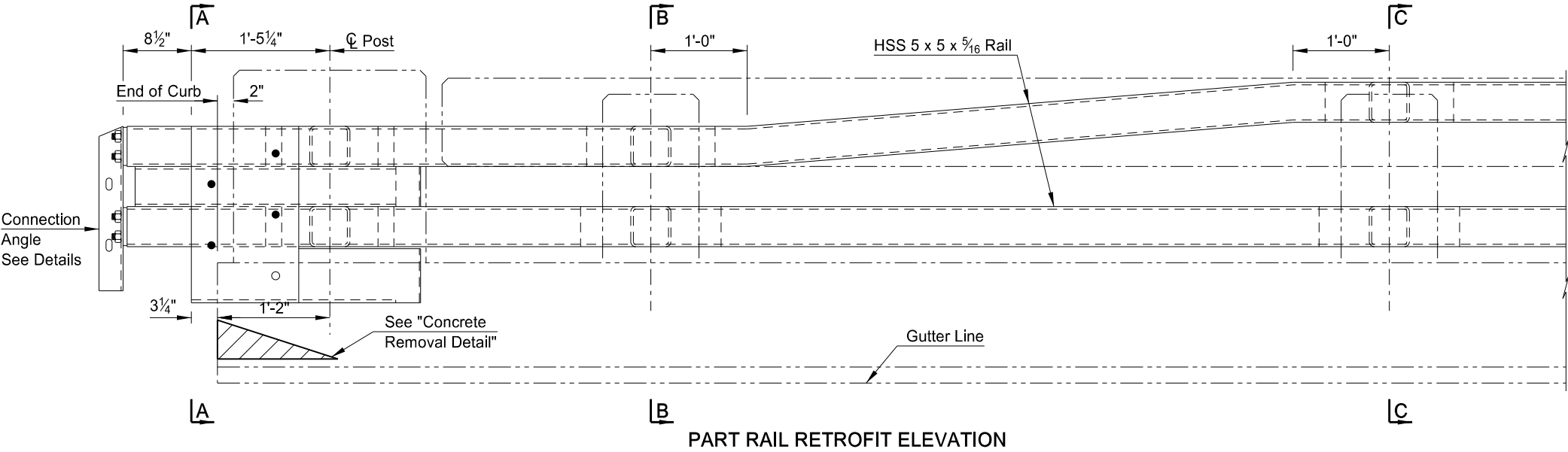
DATE: 08/10/2017
BRIDGE ENGINEER: Jon Ketterling

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	2



Indicates Concrete Removal

NOTE:
See Dwg 29-034.040-3 for notes and details not shown on this drawing.

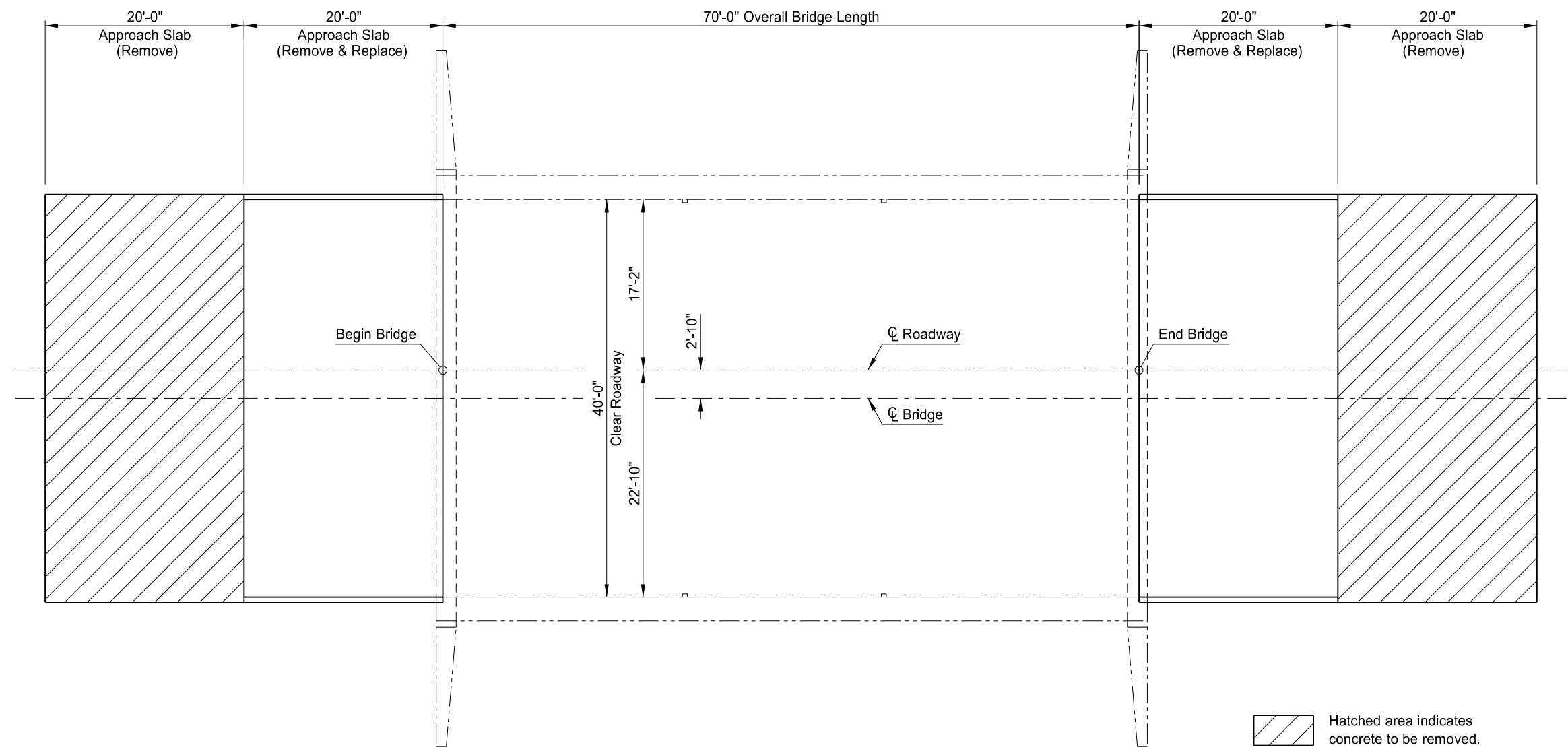


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QUANTITIES
SEE DWG 29-034.040-3
PITCAIRN SEPARATION
DOUBLE BOX BEAM E-RAIL RETROFIT DETAILS



	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	4



NOTES:

- 100 SCOPE OF WORK: Work at this site consists of removing the outside 20' approach slab and removing and replacing the inside 20' approach slab on both ends of the bridge.
- 202 REMOVAL OF CONCRETE: Remove the concrete approach slabs in a manner that prevents any damage to parts of the structure to remain. All materials removed become property of the Contractor. Include all material, labor, and equipment required to remove the outside concrete approach slabs in the price bid of "Removal of Concrete."
- 602 BRIDGE APPROACH SLAB-REMOVE & REPLACE: Remove and replace the inside approach slabs at each end of the bridge. Do not damage the parts of the structure to remain in place.

Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing process.

Include all labor, metrial, and equipment to remove and replace the approach slabs and curb in the price bid for "Bridge Approach Slab- Remove and Replace."

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BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0113	REMOVE OF CONCRETE	CY	70.9
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	182.2

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PITCAIRN CREEK

BRIDGE LAYOUT

PROJECT: IM-8-029(170)033

RICHLAND COUNTY

08/10/2017 Jon Ketterling
DATE BRIDGE ENGINEER

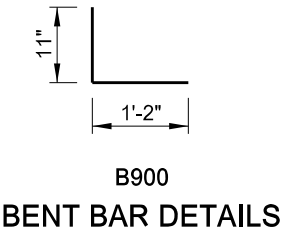
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	5

NOTES:
The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, rebar couplers, 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.

SKEW ANGLE = 0°			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
7	A900	162	19'-8"
5	A901	42	40'-8"
5	A902	41	4'-0"
4	A903	2	16'-8"
4	B900	36	2'-1"

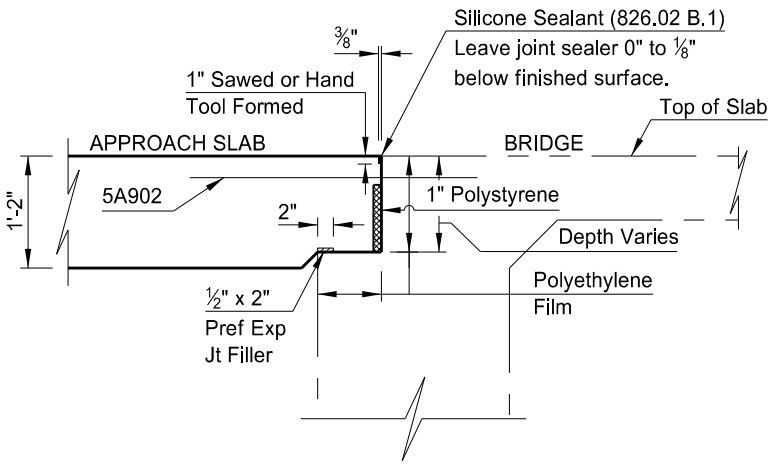
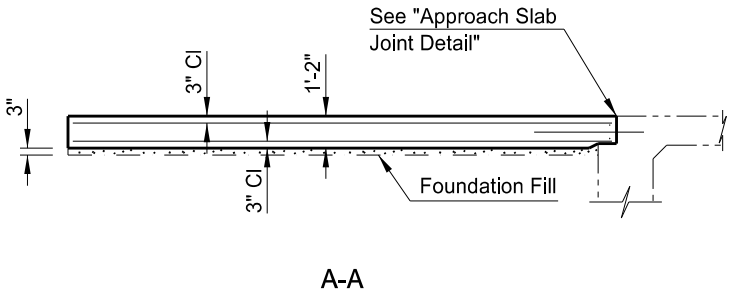
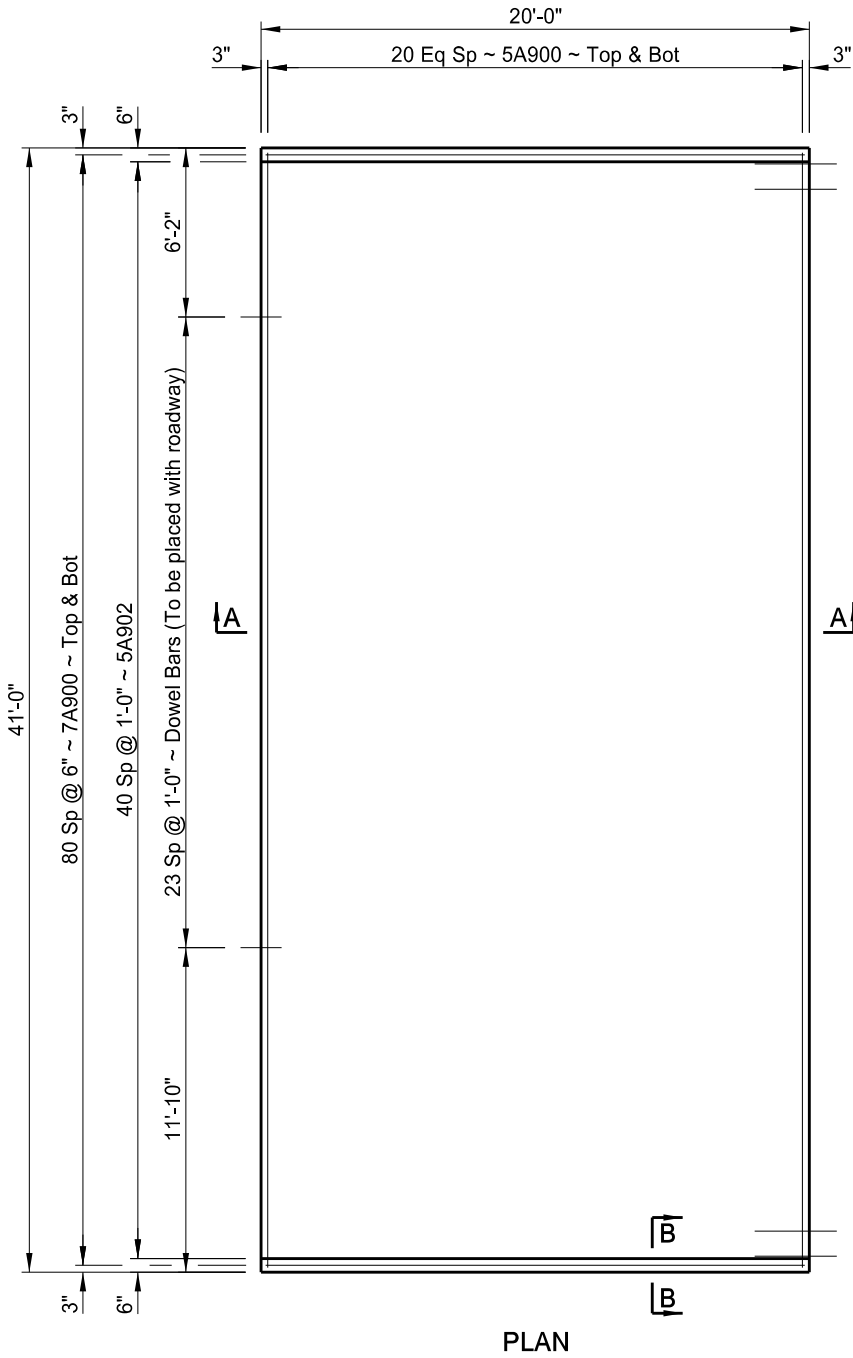
ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
8,537	35.6

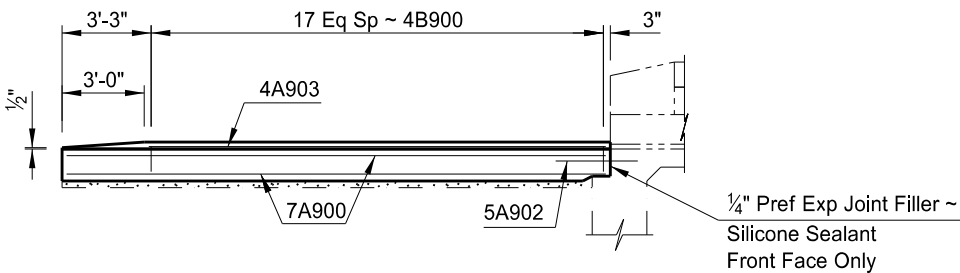


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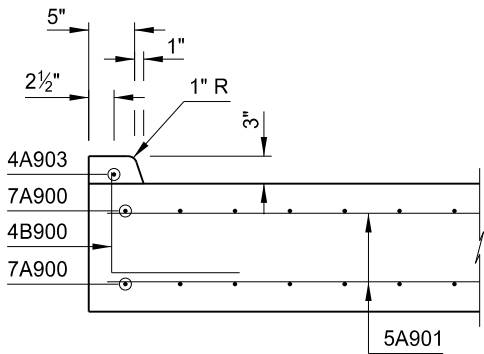
QUANTITIES	(ONE SLAB)
APPROACH SLAB	91.1 SY
PITCAIRN CREEK	
APPROACH SLAB DETAILS	



APPROACH SLAB JOINT DETAIL



ELEVATION



B-B

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	6

NOTE:
Provide a 1'-0" minimum depth of foundation fill under the floor. Remove and replace all unsound material under the box extension with foundation fill. The Engineer will determine the depth required.

DESIGN STRENGTHS:
 f'_c = 3,000 psi ~ Class AE-3 Concrete
 f_y = 60,000 psi ~ Reinforcing Steel

Load & Resistance Factor Design

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SPECIAL PROVISIONS

SP 4(14)	MIGRATORY BIRD TREATY ACT
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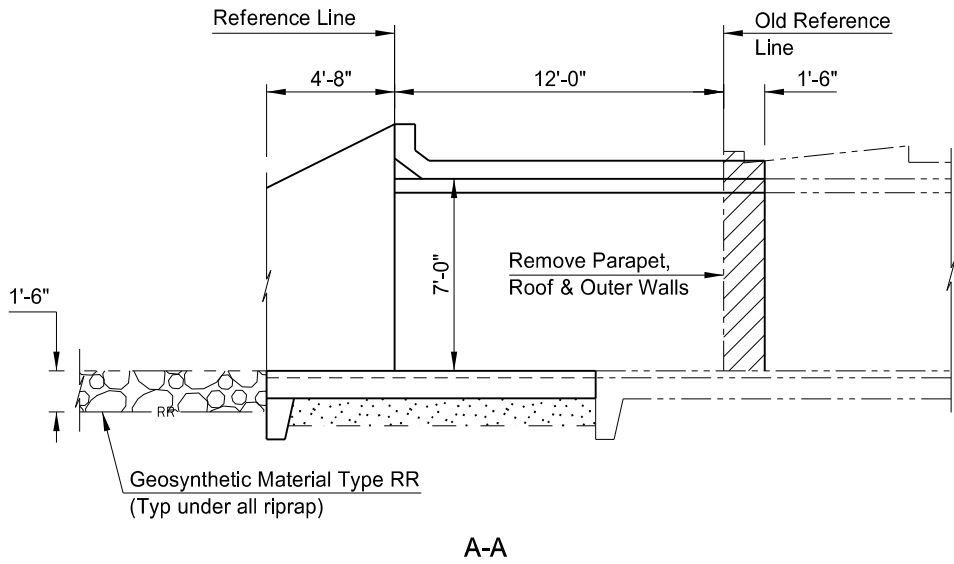
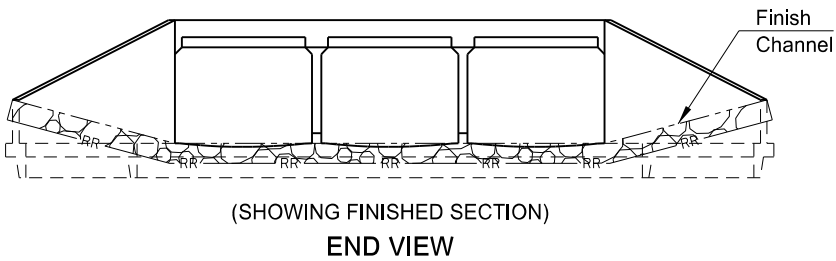
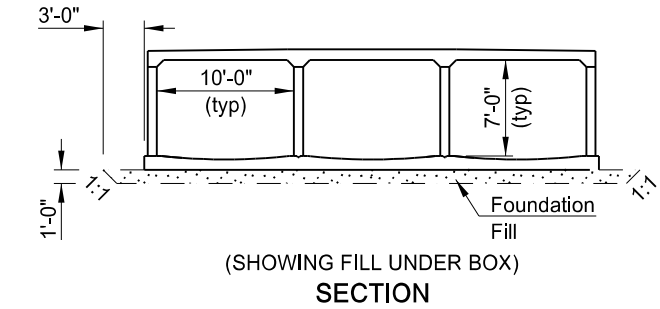
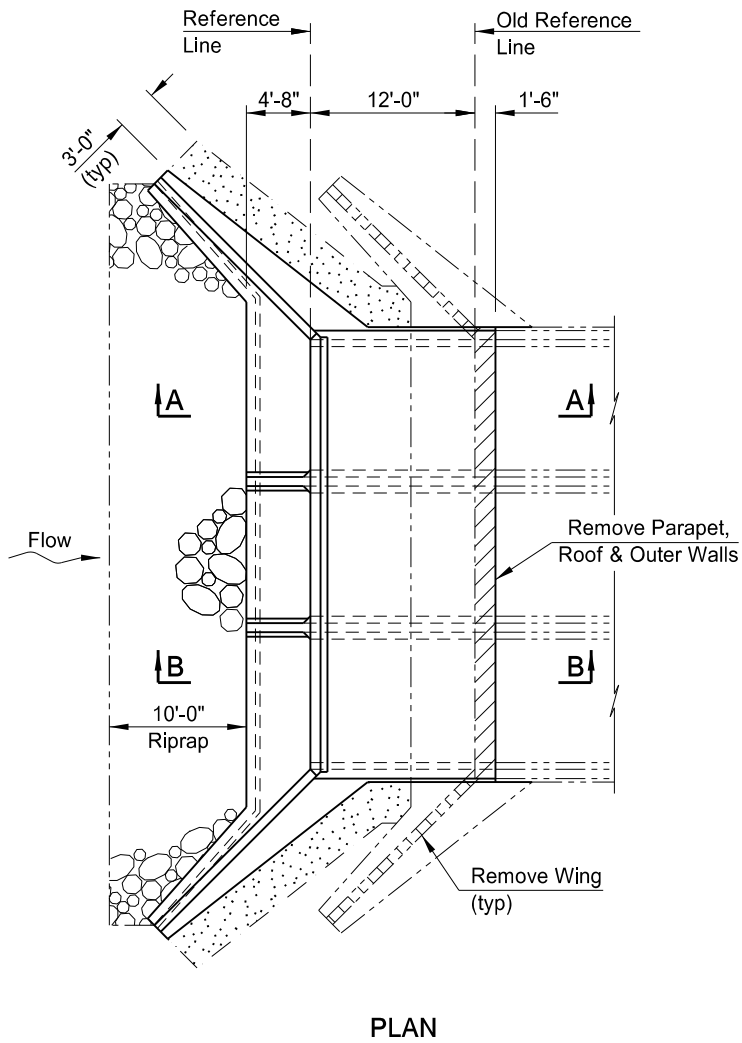
HL-93 DESIGN LOADING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
COUNTY DRAIN 2
10 SOUTH OF ND 46

**REINFORCED CONCRETE
TRIPLE BOX CULVERT LAYOUT**
CLEAR SPAN 3 x 10' CLEAR HEIGHT 7'
MAXIMUM FILL 4'

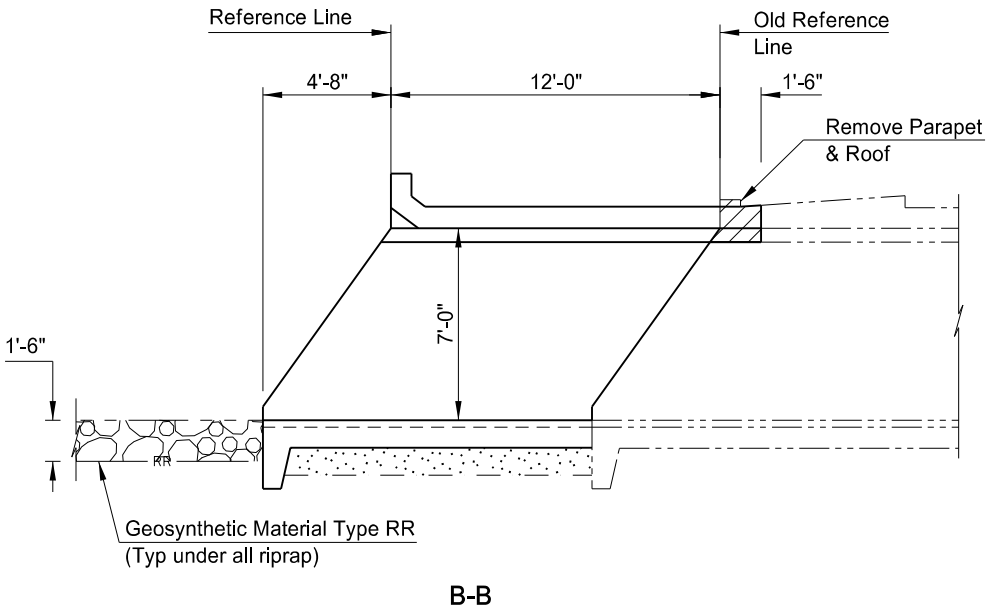
PROJECT: IM-8-029(169)033
STATION: 2007+77.92
RICHLAND COUNTY

08/10/2017 Jon Ketterling
DATE BRIDGE ENGINEER



BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0101	REMOVAL OF CONCRETE	EA	1
210	0051	BOX CULVERT EXCAVATION - SITE 1	EA	1
210	0210	FOUNDATION FILL	CY	30
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	30
602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	CY	46.0
612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	LBS	8,788
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	60



		23 U.S.C. 409 NDDOT Reserves All Objections		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
				ND	IM-8-029(170)033	170	7

NOTES

100

SCOPE OF WORK: Work at this site consists of extending a triple 10' x 7' reinforced concrete box culvert 12'-0" on the west end.

202

REMOVAL OF CONCRETE: Remove portions of the existing culvert end where extension is to be attached. Remove 1'-6" of existing concrete to expose the existing reinforcing steel at the parapet, roof, and outside walls at the vertical junction with the wing. Remove existing wing walls in entirety. Cut rebar protruding from the floor under the wing walls flush with the top surface of the floor. Leave existing floor and cutoff walls in place.

602

CONCRETE: Cast the following elements of each section in one continuous run:

1. Floor slab and wing footings

2. Each intermediate wall up to the bottom of fillets

3. Each sidewall up to the bottom of fillets with its adjacent wings complete to the top

4. Roof slab and parapet

Allow the concrete in the walls to set at least two hours before the roof slab is poured.

If the existing wall and roof thickness are different that the new thicknesses, align the inner surfaces and taper the exterior surfaces in the first 1'-6" of the barrel.

602

CURING CONCRETE: Wet cure all concrete surfaces not covered by forms. Cover the concrete with a double thickness of burlap. Maintain surface moisture between the final finish and placement of burlap by periodic applications of a light fog spray of water. Keep the burlap continuously moist until the end of the curing period.

612

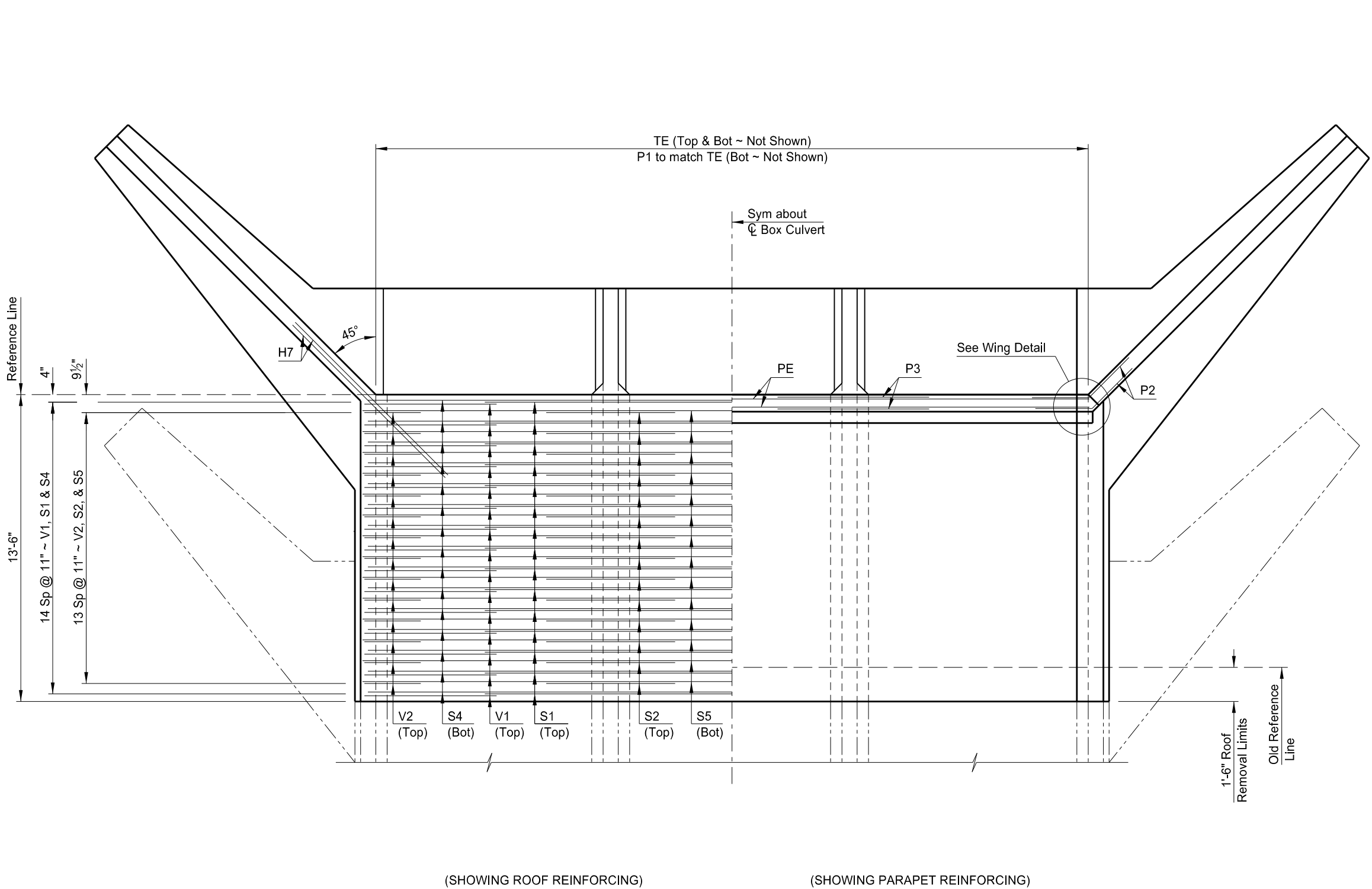
REINFORCING STEEL: When the distance between end bars is not evenly divisible by bar spacing, adjust the odd distance by a few irregular spaces near the center, not at the ends of the culvert.

Place bolsters and bar supports for the roof steel at a maximum of 4 foot spacing.

Dimensions of bent bars are given out to out.

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	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	11



(SHOWING ROOF REINFORCING)

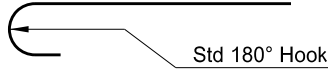
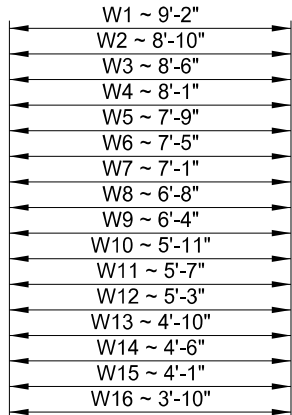
(SHOWING PARAPET REINFORCING)

ROOF PLAN

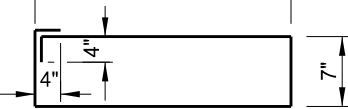
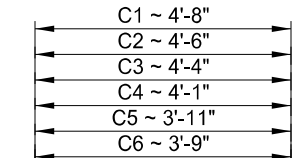
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Dakota Department of
Transportation

COUNTY DRAIN 2
10 SOUTH OF ND 46

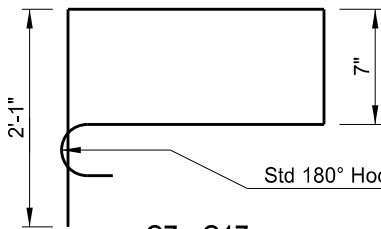
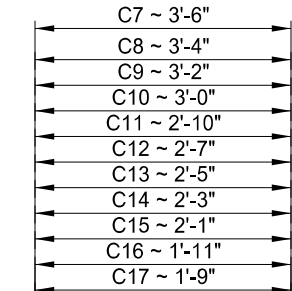
ROOF DETAIL



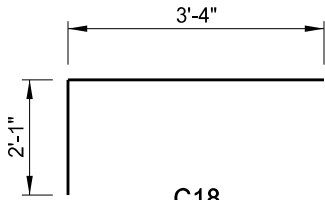
W1 - W18



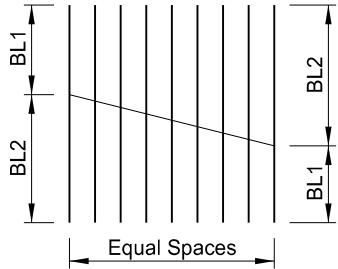
C1 - C6



C7 - C17



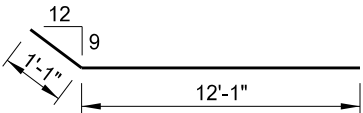
C18



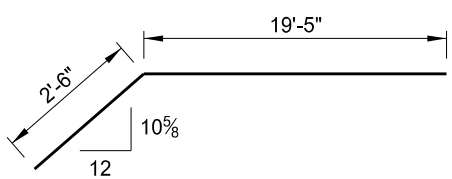
2 SETS SHOWN

MARK	LENGTH 1 SET	BL1	BL2	SPACES
O1-O11	63'-8"	3'-1"	8'-6"	10

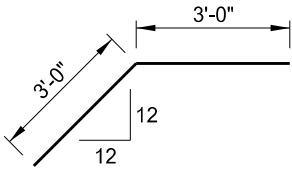
BAR CUTTING DETAILS



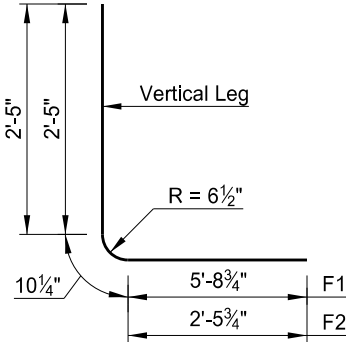
TE



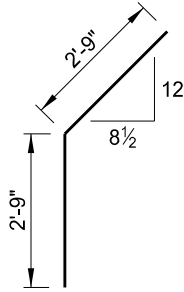
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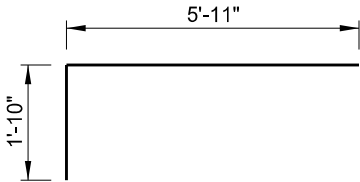
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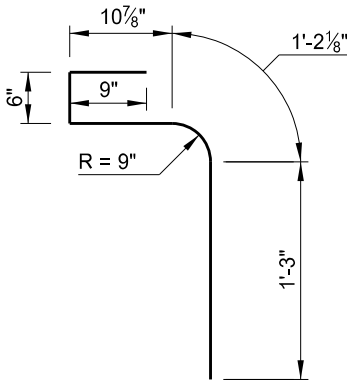
F1 & F2



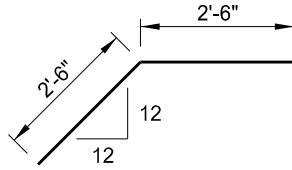
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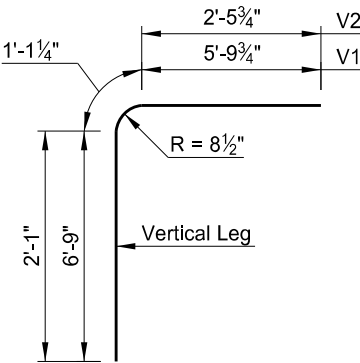
F12



P1



P2

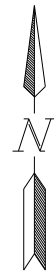


V1 & V2

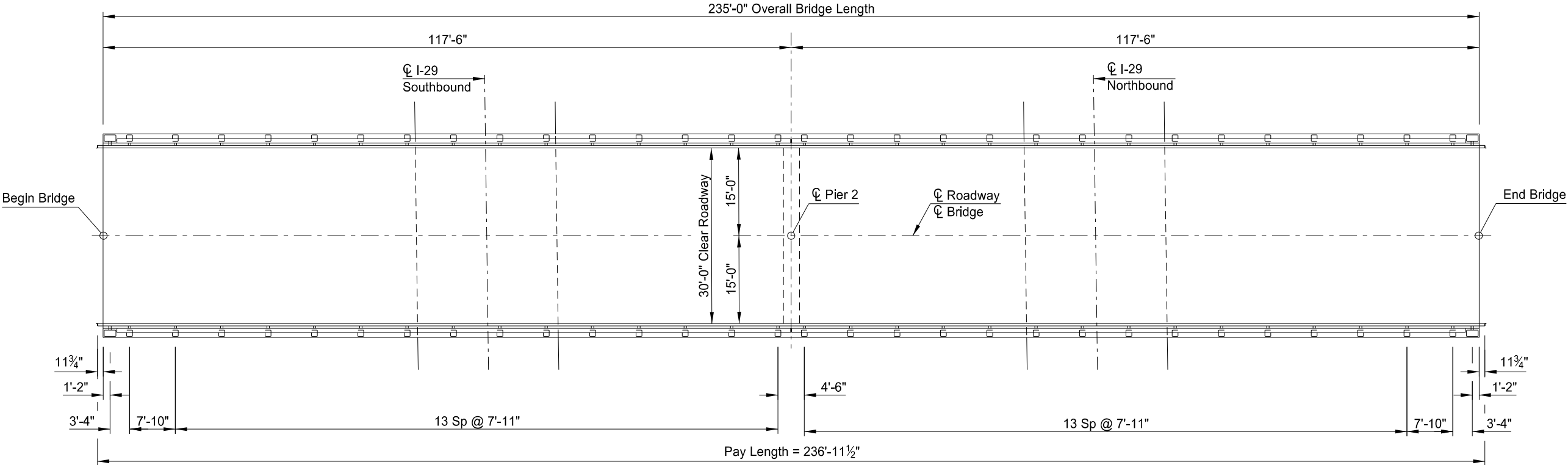
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COUNTY DRAIN 2
10 SOUTH OF ND 46

BAR DETAILS



	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	14



PLAN

NOTE:

100 SCOPE OF WORK: Work at this site consists of installing a double box beam E-Rail retrofit.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
624	3002	DOUBLE BOX BEAM RAIL RETROFIT - E-RAIL	LF	473.9

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
COLFAX SEPARATION

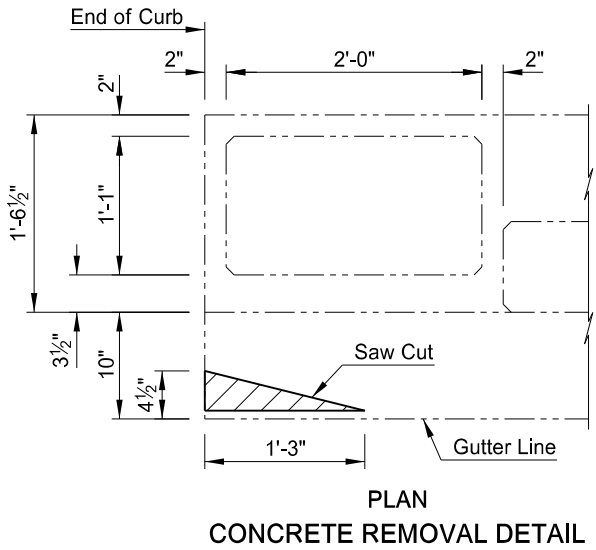
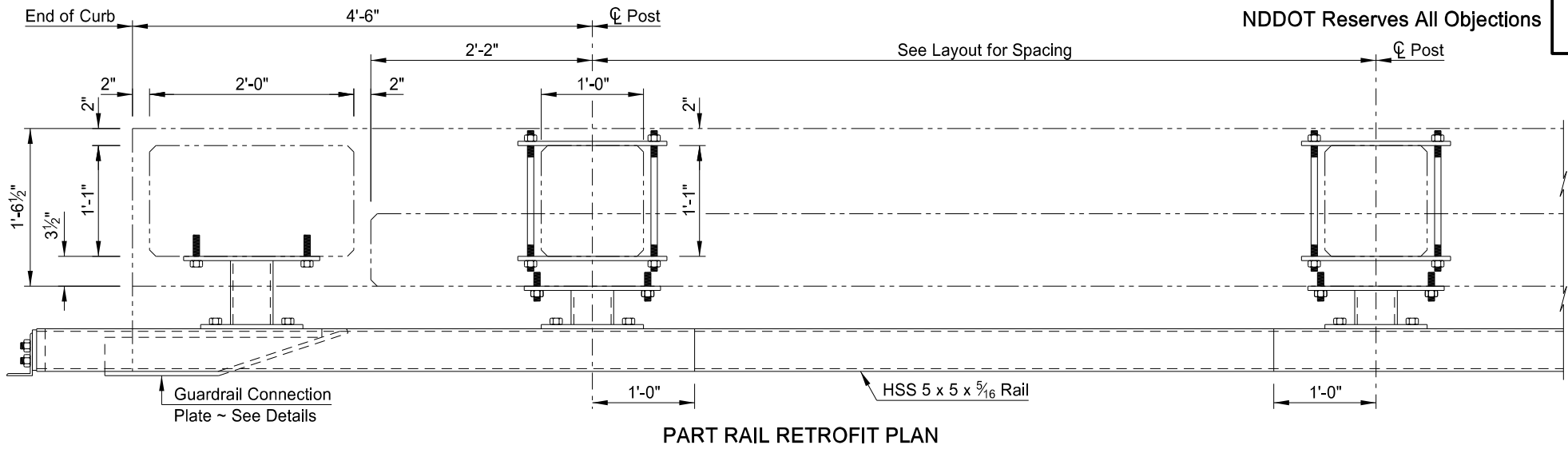
BRIDGE LAYOUT

PROJECT: IM-8-029(170)033

RICHLAND COUNTY

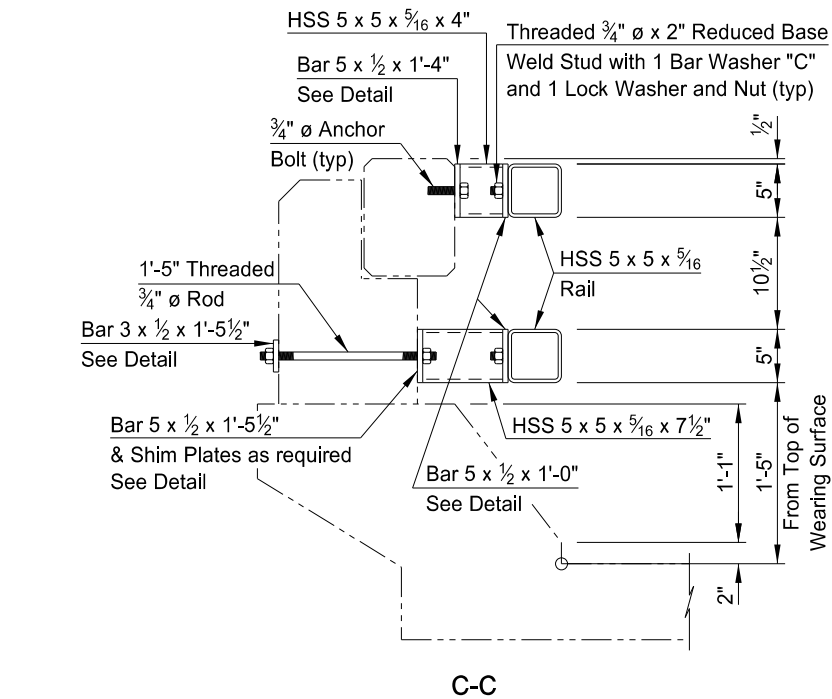
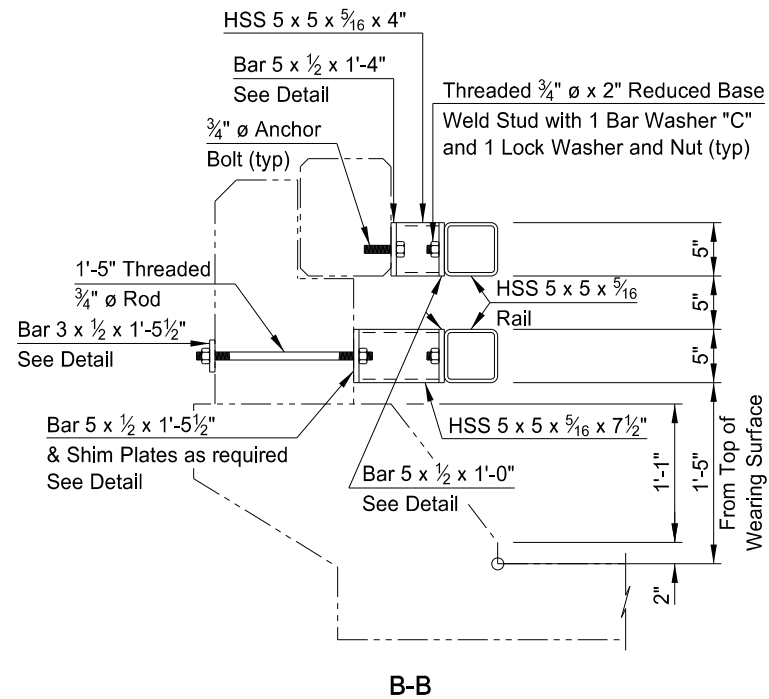
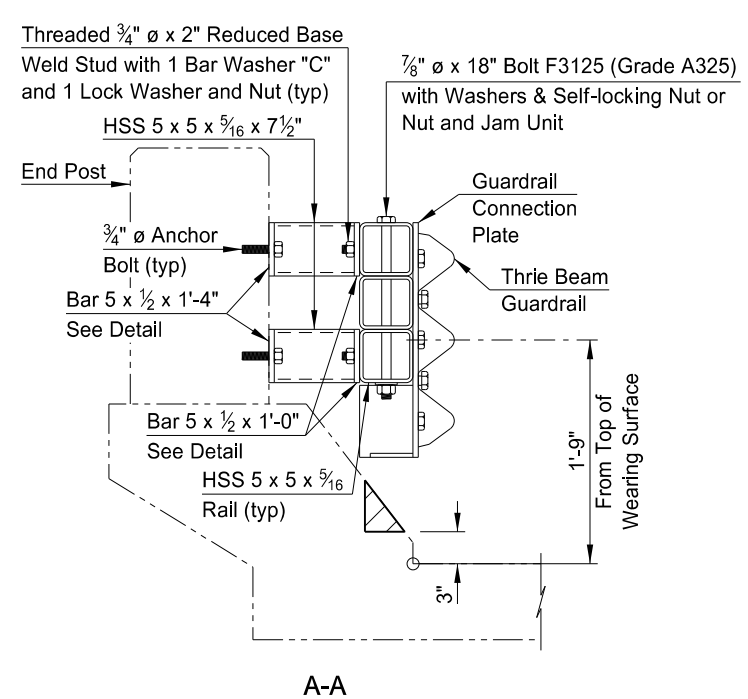
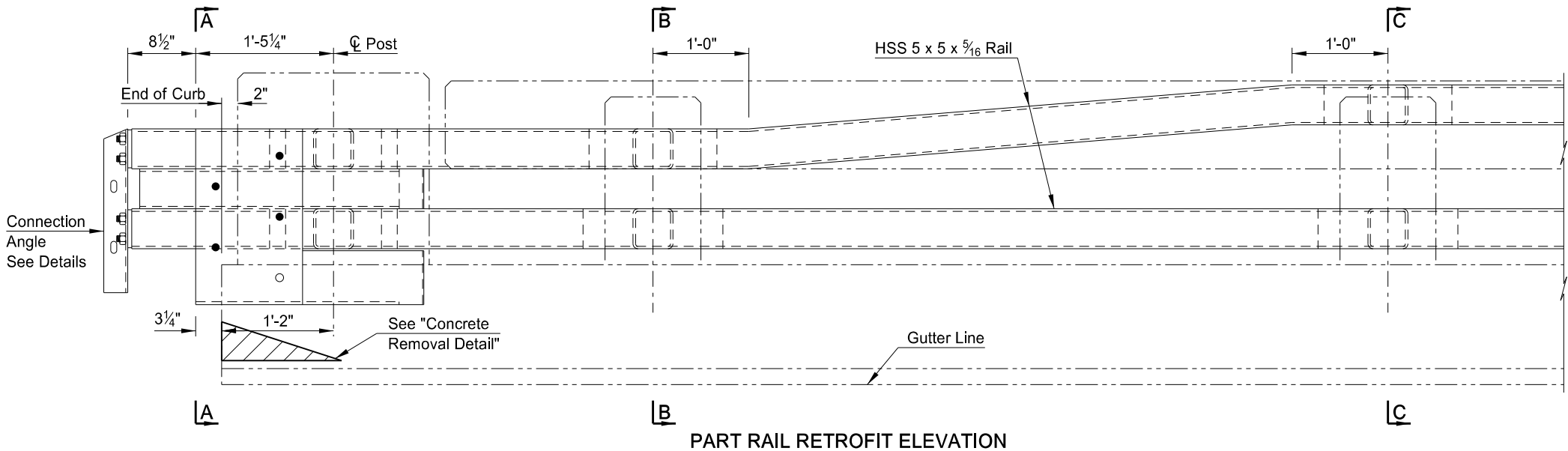
DATE: 08/10/2017 BY: Jon Ketterling
BRIDGE ENGINEER

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	15



Indicates Concrete Removal

NOTE:
See Dwg 29-039.047-3 for notes and details not shown on this drawing.

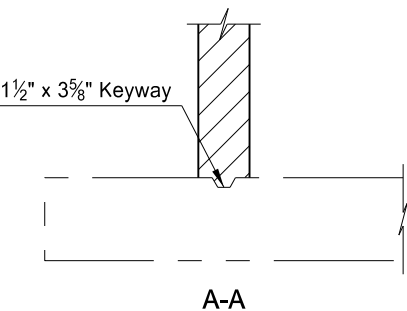
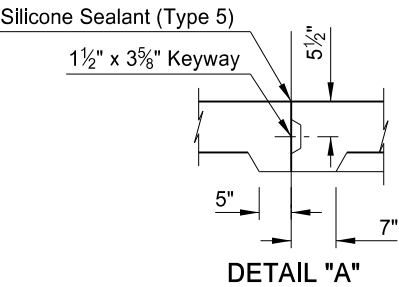


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QUANTITIES
SEE DWG 29-039.047-3
COLFAX SEPARATION
DOUBLE BOX BEAM E-RAIL RETROFIT DETAILS

DESIGN STRENGTHS:

f'c = 3,000 psi ~ Class AE-3 Concrete
fy = 60,000 psi ~ Reinforcing Steel



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HL-93 DESIGN LOADING

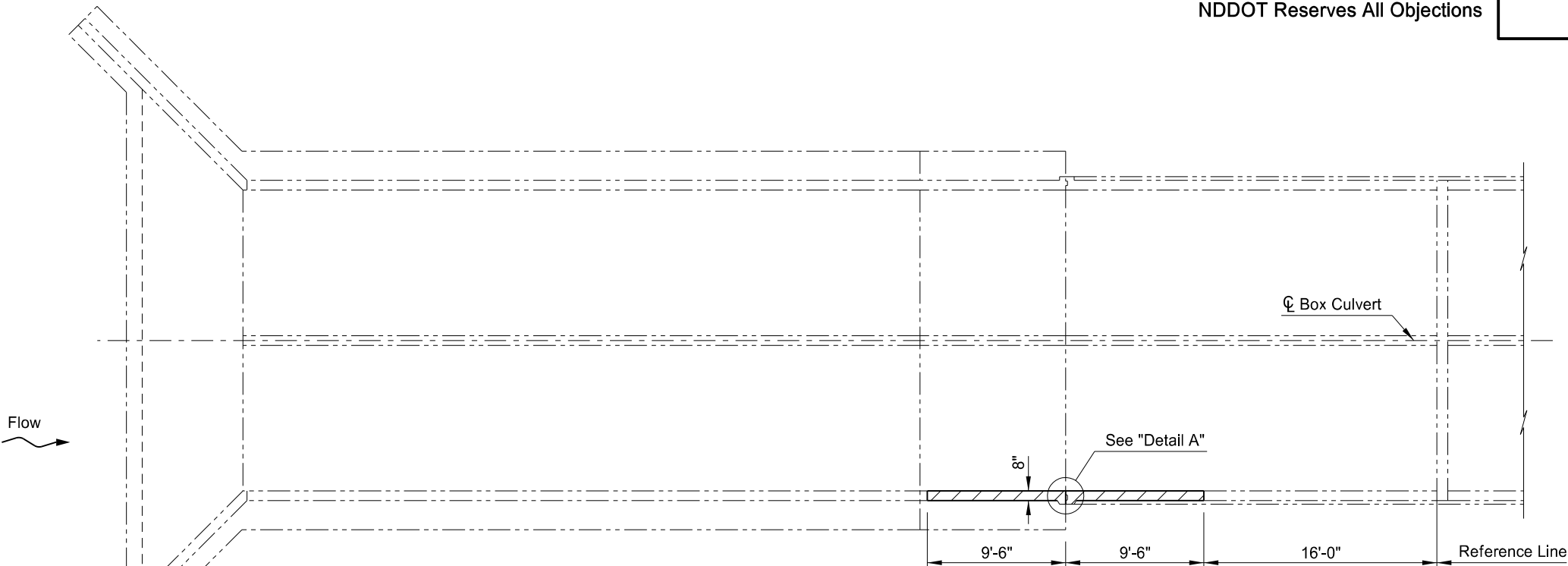
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
JUNIOR SEPARATION

REINFORCED CONCRETE
DOUBLE BOX CULVERT LAYOUT
CLEAR SPAN 2 x 10' CLEAR HEIGHT 8'

PROJECT: IM-8-029(170)033

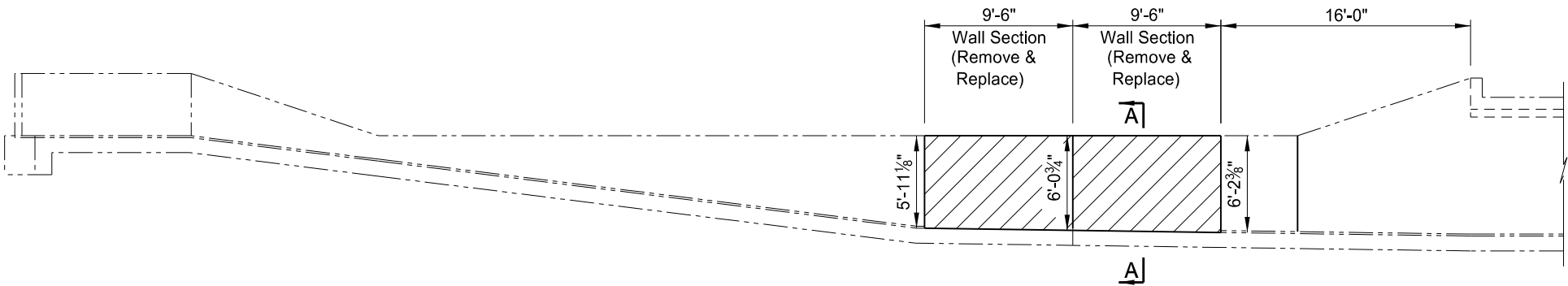
RICHLAND COUNTY

09/11/2017 Jon Ketterling
DATE BRIDGE ENGINEER



PLAN

The hatched areas indicate concrete to be removed.
Carefully remove concrete to ensure no damage is
done to the existing reinforcing steel that is to remain
in place. Sand blast clean the exposed existing
reinforcing bars from any rust scale.



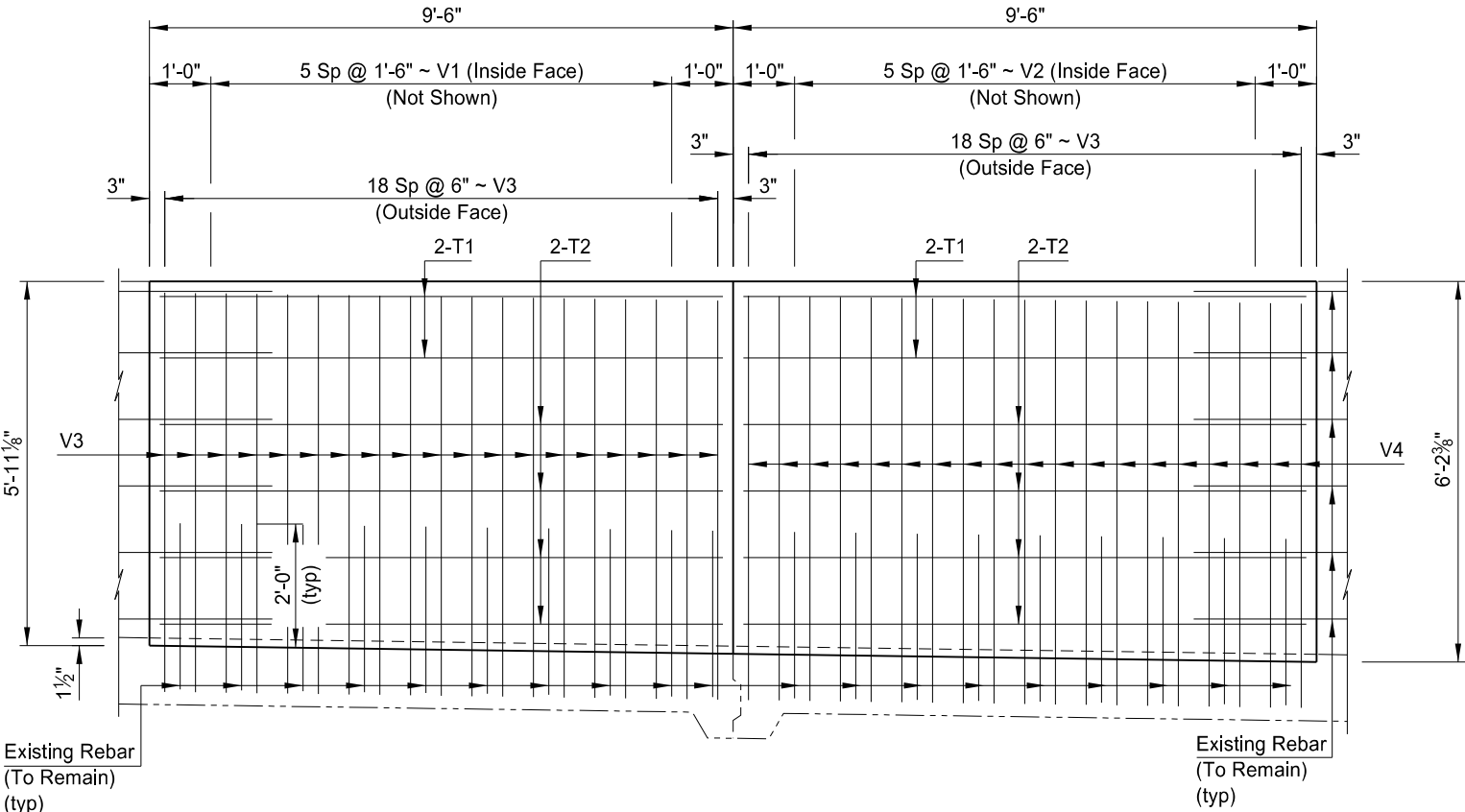
ELEVATION

NOTES:

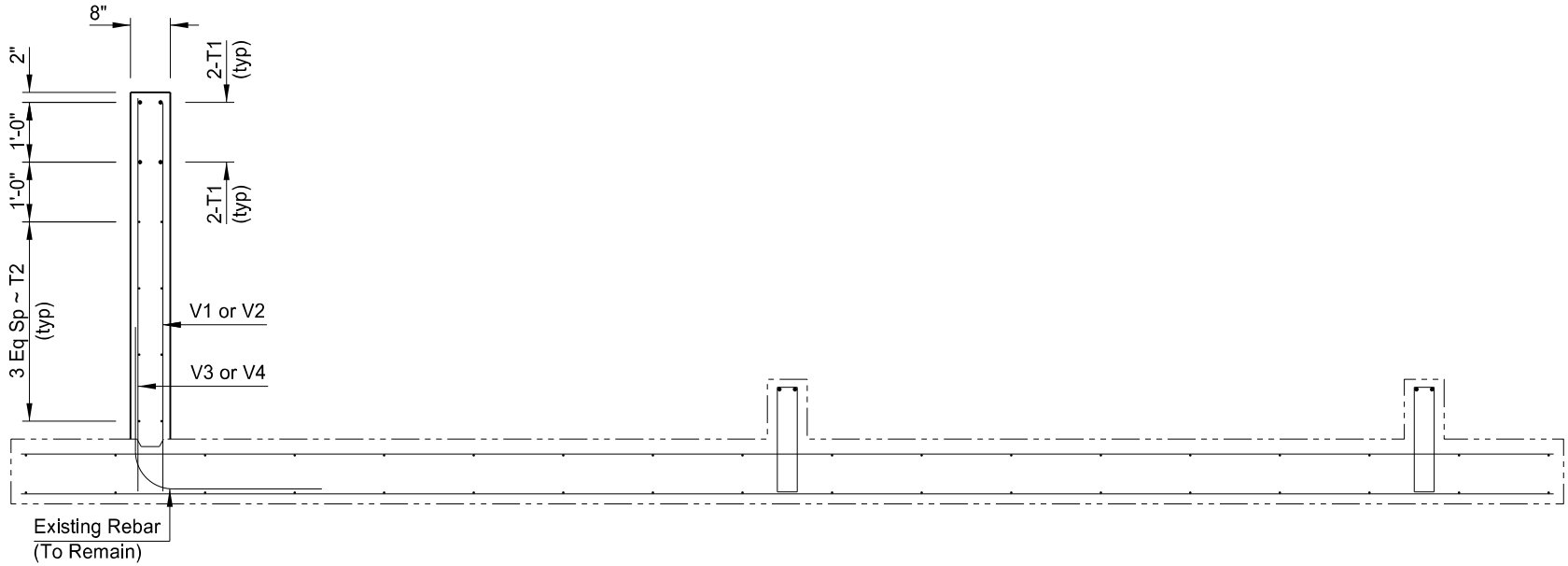
100 SCOPE OF WORK: Work at this site consists of removing and replacing 19'-0" of concrete wall. Complete any excavation and backfill required according to Section 210 of the NDDOT Standard Specifications. Include the cost for labor and material of any excavation and backfill required to remove and rebuild the concrete wall in the bid item "Box Culvert Excavation - Site 2."

BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
210	0052	BOX CULVERT EXCAVATION - SITE 2	EA	1
202	0113	REMOVAL OF CONCRETE	CY	2.9
602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	CY	2.9
612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	LBS	604



WALL ELEVATION



SECTION OF CHANNEL BOTTOM

NOTES:

Use a low modulus (Type 5) Silicone sealant at the wall joint. Include all material and labor to install the silicone sealant in the bid item, "Class AE-3 Concrete - Box Culvert."

Install the "V" bars according to manufactures recommendations, with a high strength adhesive specifically intended for concrete anchorage in accordance with Sec. 806.02 of the NDDOT Standard Specifications. Embed the bars 9" minimum into the footing. Include the cost of the high strength adhesive in the bid item "Reinforcing Steel Grade 60 - Box Culvert."

BAR LIST			
SIZE	MARK	NO.	LENGTH
6	T1	8	9'-2"
5	T2	16	9'-2"
5	V1	6	6'-6"
5	V2	6	6'-7"
5	V3	19	6'-6"
5	V4	19	6'-7"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
604	2.9

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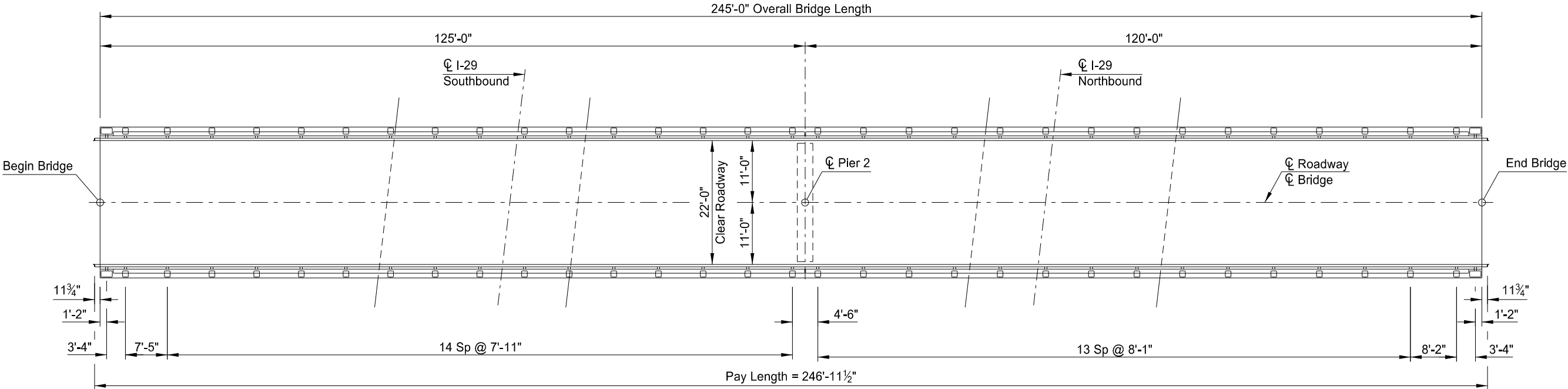
JUNIOR SEPARATION

WALL REPAIR DETAILS



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

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	19



PLAN

NOTE:

100 SCOPE OF WORK: Work at this site consists of installing a double box beam E-Rail retrofit.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
624	3002	DOUBLE BOX BEAM RAIL RETROFIT - E-RAIL	LF	493.9

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
MILE 41 SEPARATION

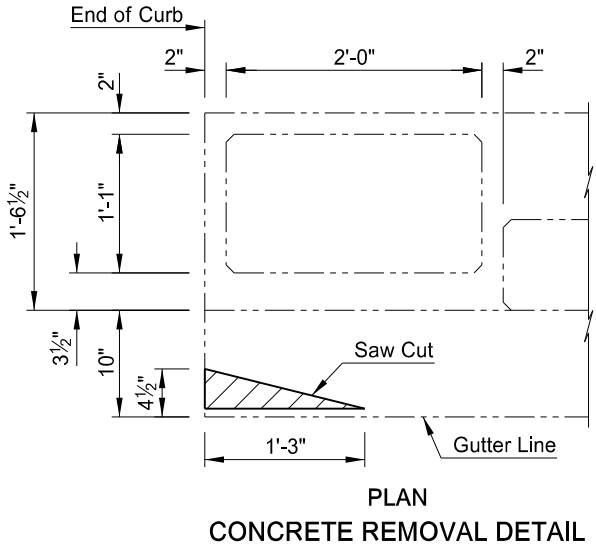
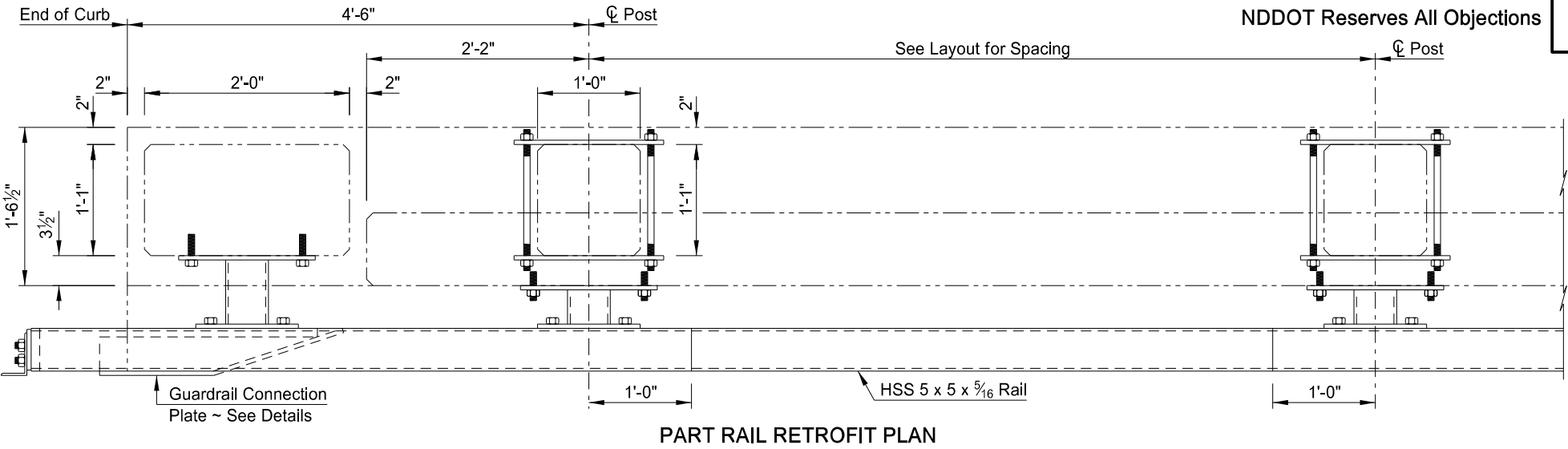
BRIDGE LAYOUT

PROJECT: IM-8-029(170)033

RICHLAND COUNTY

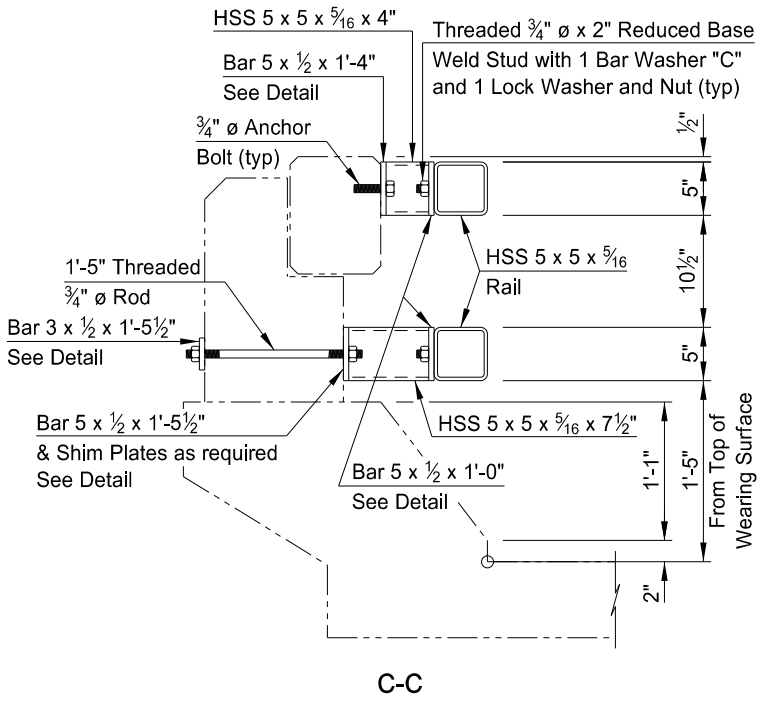
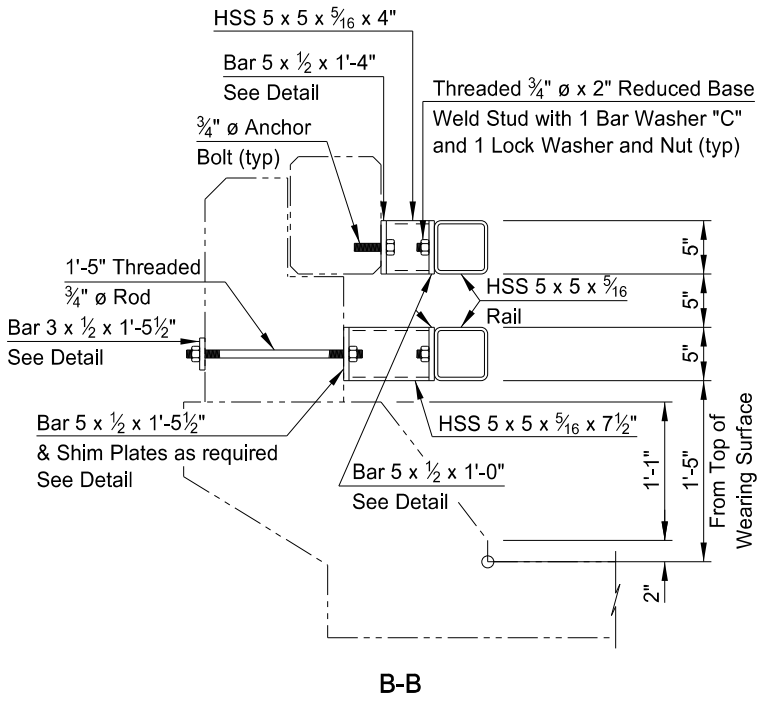
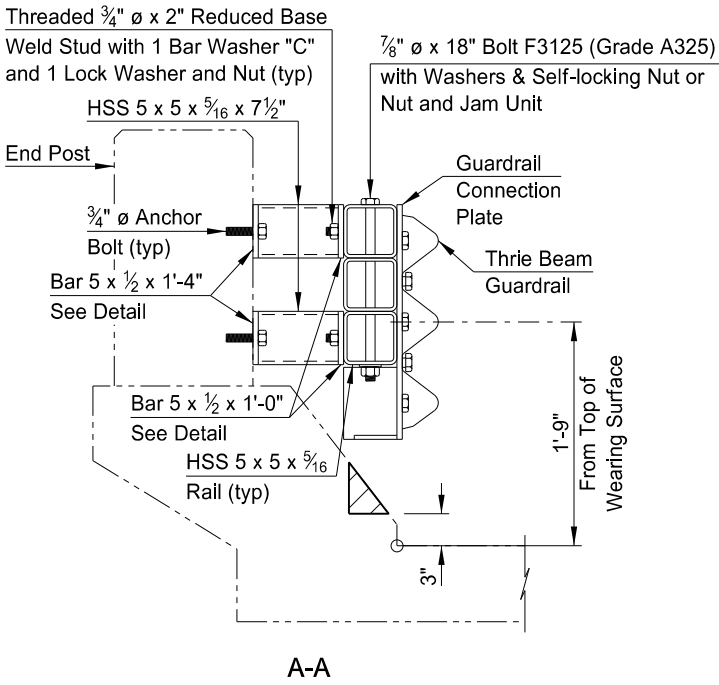
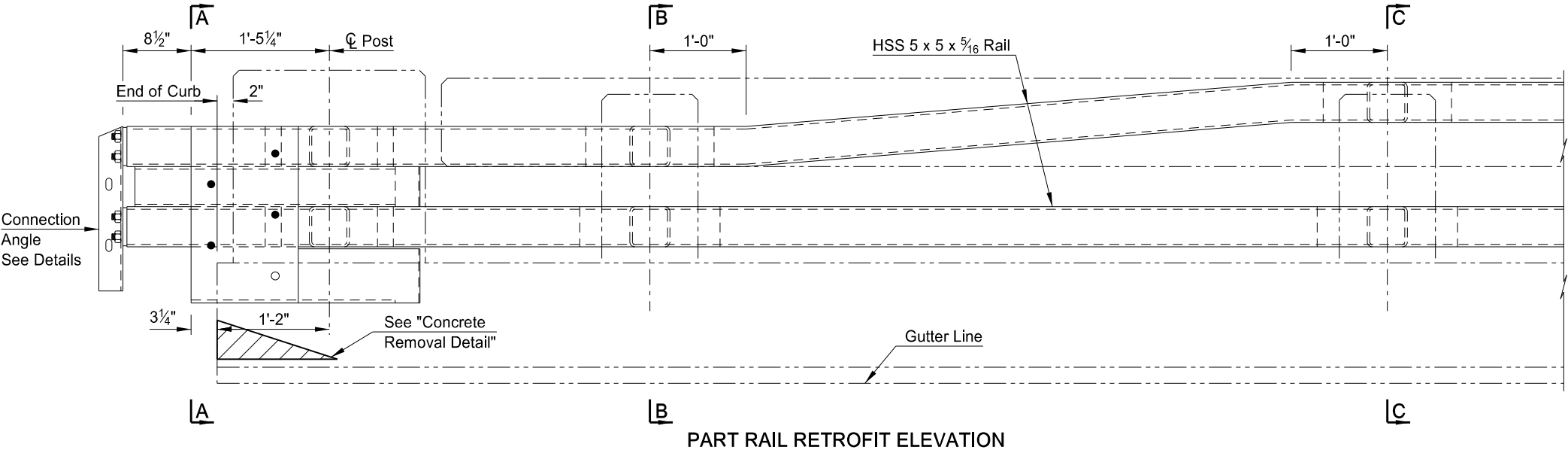
DATE: 08/10/2017
BRIDGE ENGINEER: Jon Ketterling

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	20



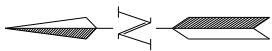
Indicates Concrete Removal

NOTE:
See Dwg 29-041.053-3 for notes and details not shown on this drawing.

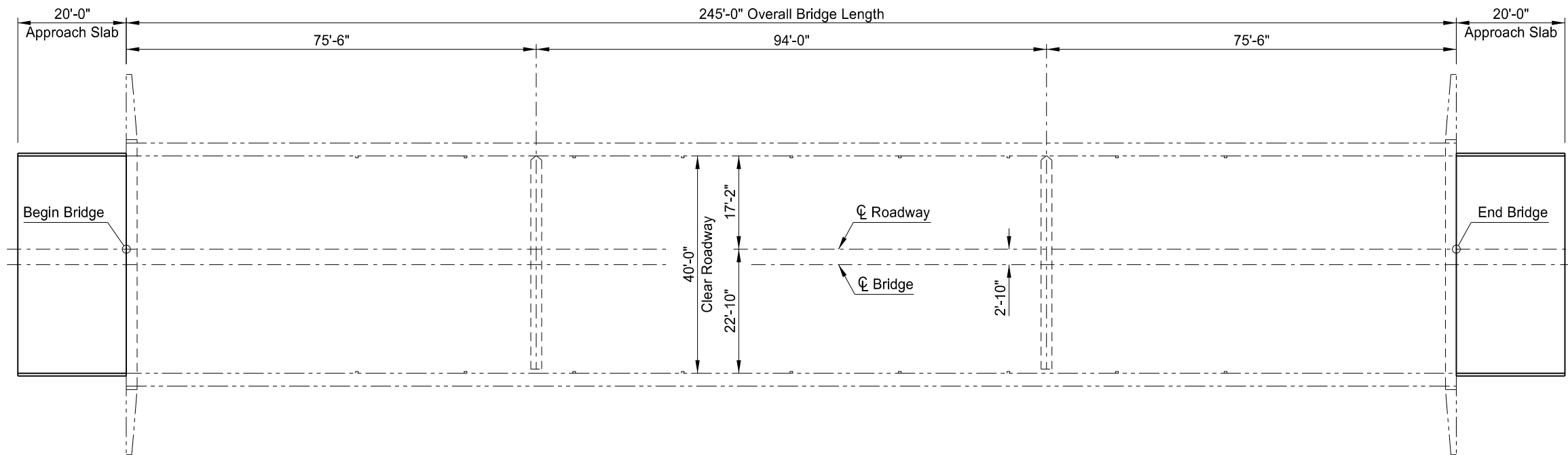


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QUANTITIES
SEE DWG 29-041.053-3
MILE 41 SEPARATION
DOUBLE BOX BEAM E-RAIL RETROFIT DETAILS



	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	22



NOTES:

- 100 SCOPE OF WORK: Work at this site consists of removing and replacing the approach slabs at each end of the bridge.
- 602 BRIDGE APPROACH SLAB-REMOVE & REPLACE: Remove and replace the approach slabs in a manner that prevents any damage to parts of the structure to remain.

Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing process.

Include all labor, material, and equipment to remove and replace the approach slabs and curb in the price bid for "Bridge Approach Slab-Remove and Replace."

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	182.2

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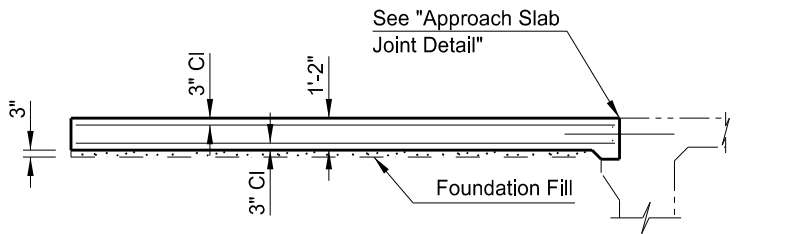
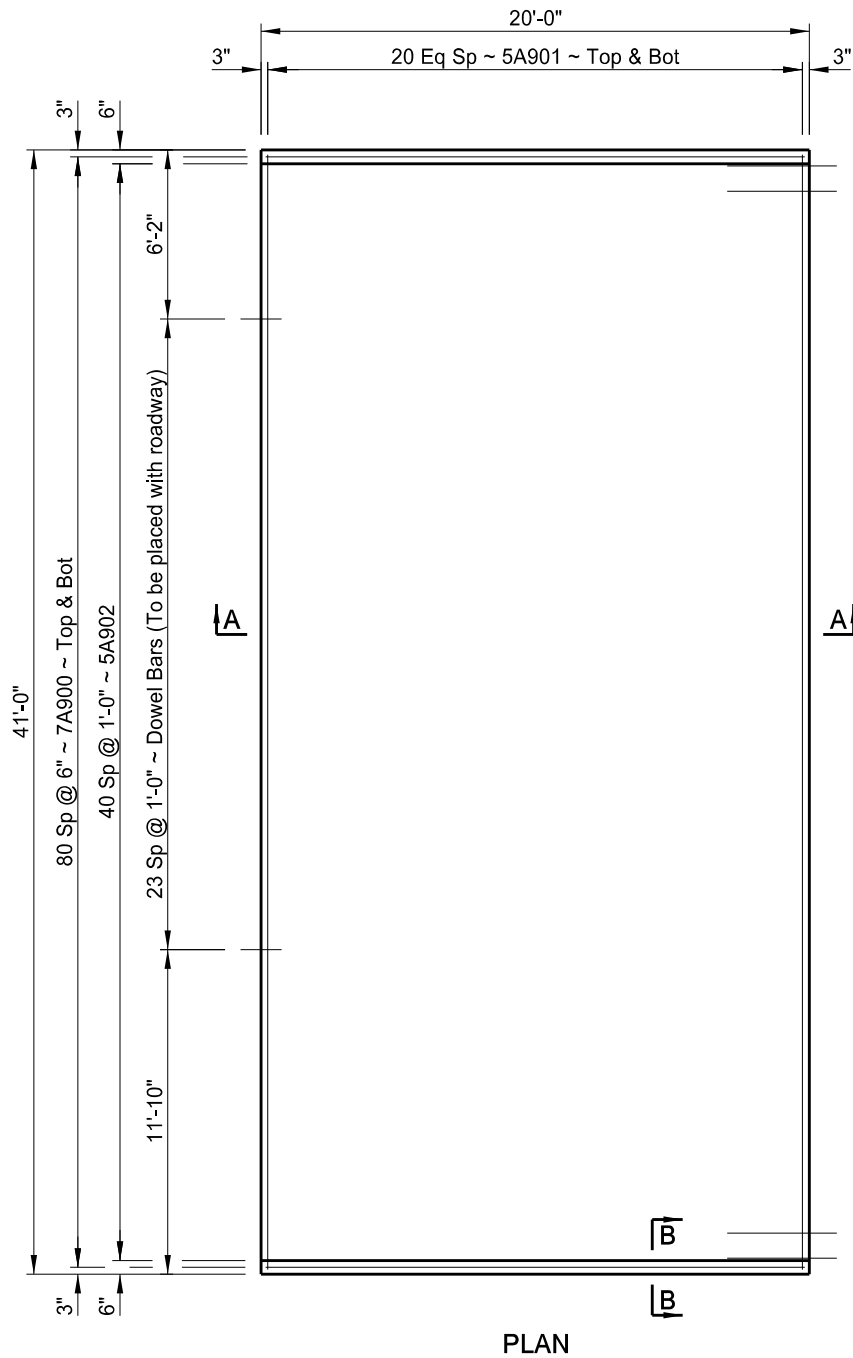
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
WILD RICE RIVER
I-29 SOUTHBOUND

BRIDGE LAYOUT

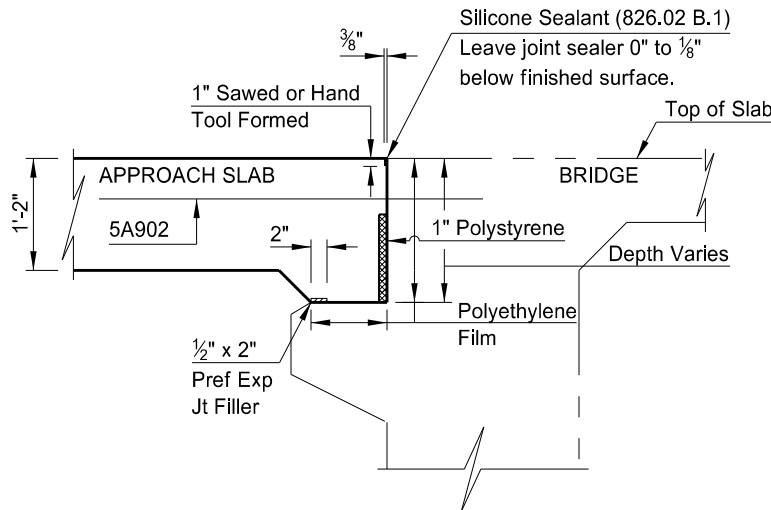
PROJECT: IM-8-029(170)033

RICHLAND COUNTY

DATE: 08/10/2017
BRIDGE ENGINEER: Jon Ketterling



A-A



APPROACH SLAB JOINT DETAIL

NOTES:

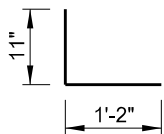
The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, rebar couplers, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, and labor required to build the approach slabs and barriers in the pay item "Bridge 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.

Install 5A902 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 Specifications. Embed the bars 1'-0" minimum into the abutment.

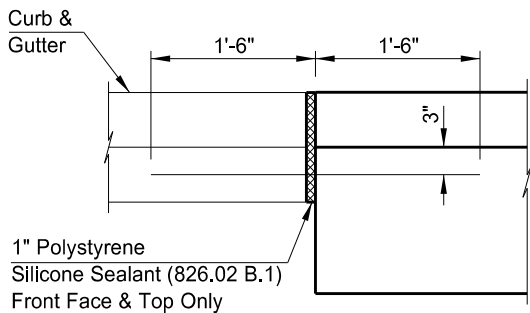
SKEW ANGLE = 0°			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
7	A900	162	19'-8"
5	A901	42	40'-8"
5	A902	41	4'-0"
4	A903	2	16'-8"
4	B900	36	2'-1"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
8,537	35.6

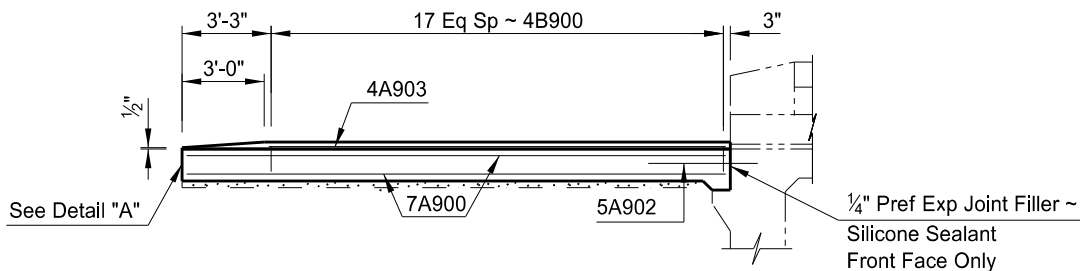


B900
BENT BAR DETAILS

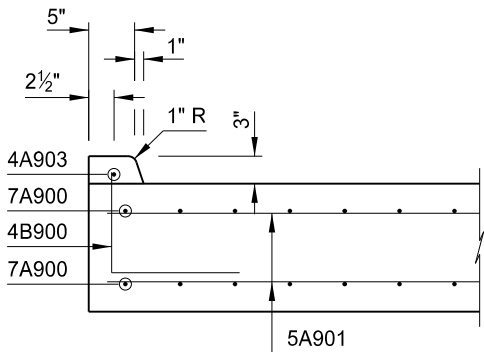


DETAILS "A"

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ELEVATION

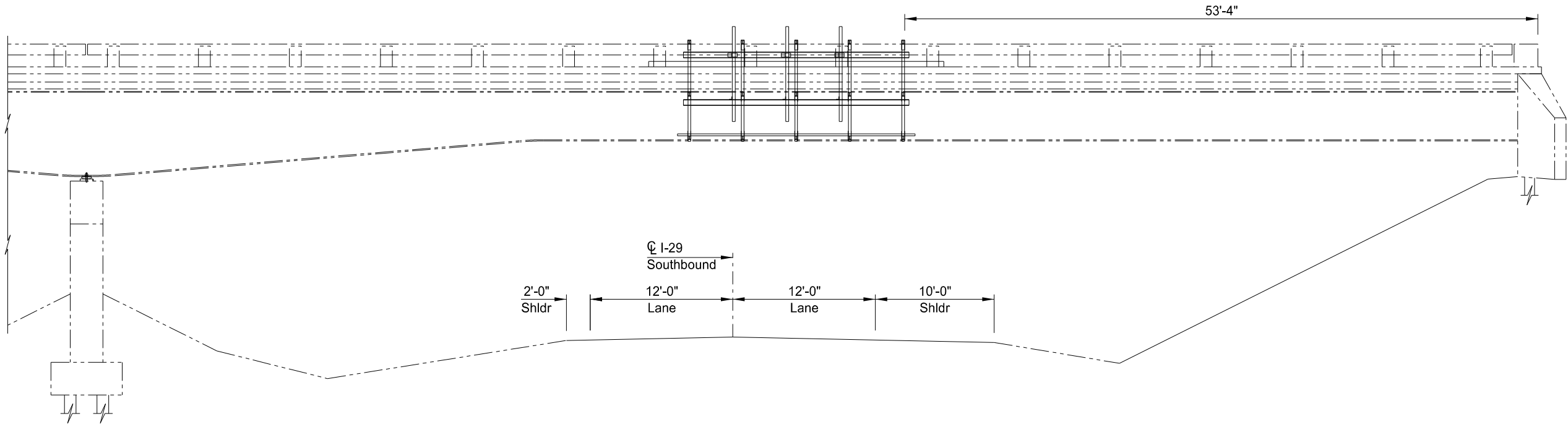


B-B

QUANTITIES	(ONE SLAB)
APPROACH SLAB	91.1 SY

WILD RICE RIVER

APPROACH SLAB DETAILS



NOTE:

100 SCOPE OF WORK: Work at this site consists of removing a overhead sign structure mounted to a steel girder bridge. The signs have been removed previously.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
754	1220	REMOVE OVERHEAD SIGN STR BRIDGE MOUNTED	EA	1

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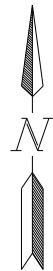
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
WALCOTT INTERCHANGE

BRIDGE LAYOUT

PROJECT: IM-8-029(170)033

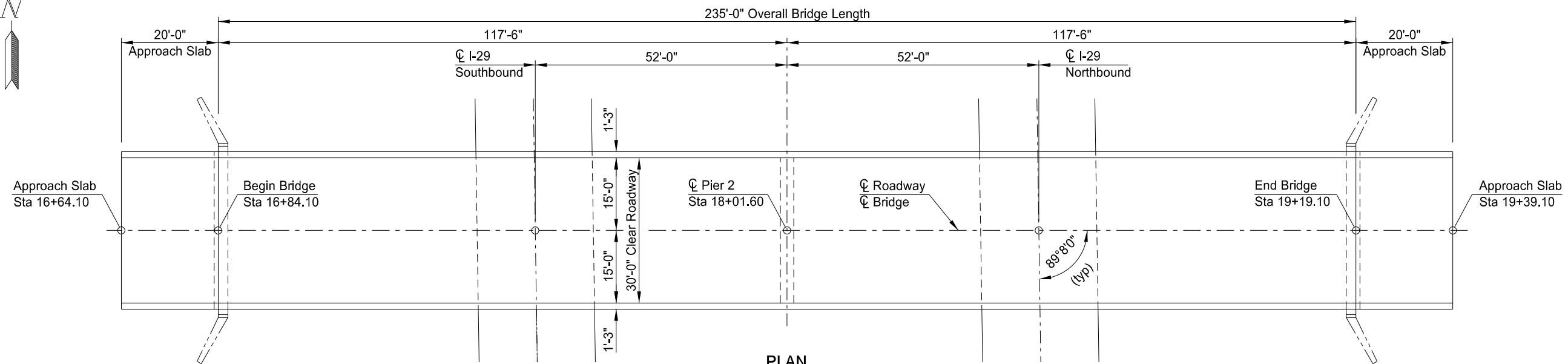
RICHLAND COUNTY

DATE: 08/10/2017
BRIDGE ENGINEER: Jon Ketterling

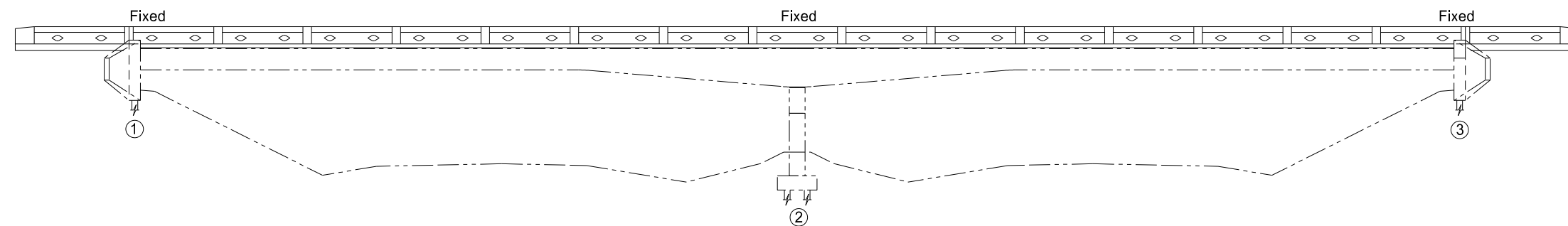


23 U.S.C. 409
NDDOT Reserves All Objections

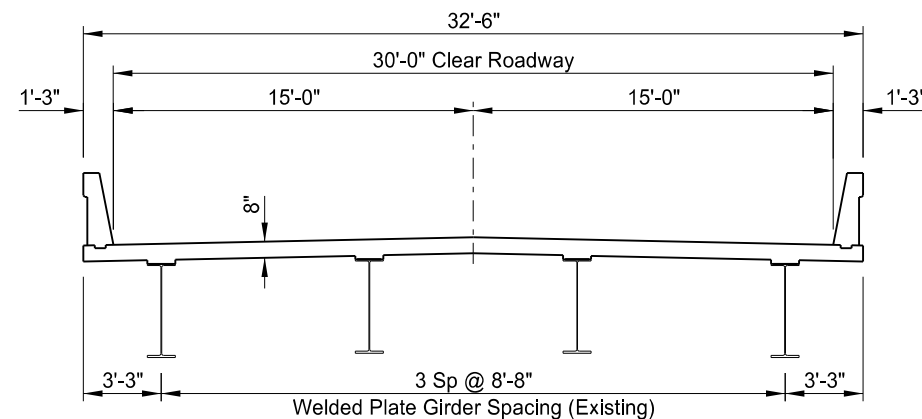
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	25



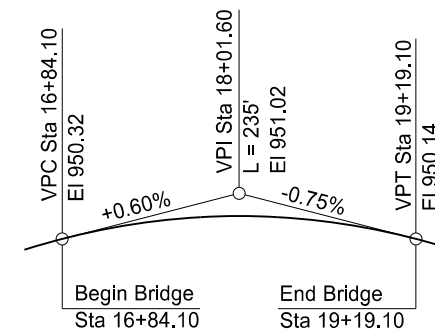
PLAN



ELEVATION



TYPICAL SECTION



VERTICAL CURVE DATA

DESIGN STRENGTHS:

f'c = 4,000 psi ~ Class AAE-3 Concrete
fy = 60,000 psi ~ Reinforcing Steel

Load Factor Design

SPECIAL PROVISIONS	
SP 4(14)	MIGRATORY BIRD TREATY ACT
STANDARD DRAWINGS	
D-900-1	
F.W.S. 15 PSF	
HS-25 DESIGN LOADING	
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
CHRISTINE INTERCHANGE	
BRIDGE LAYOUT	
PROJECT: IM-8-029(170)033 STATION: 18+01.60 RICHLAND COUNTY	
08/15/2017	Jon Ketterling
DATE	BRIDGE ENGINEER

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BENCHMARKS		
NO.	LOCATION	ELEVATION
1	Sta 11+00 ~ 120' L	924.47

NOTES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	26

- 100 SCOPE OF WORK: This project consists of removing and replacing the concrete deck on a 3-span steel welded plate girder bridge with an overall length of 235'-0" and building new approach slabs at each end of the bridge. The clear roadway width will remain 30'-0".
- 100 GENERAL: Include the cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, silicone sealant, waterproof membrane, and other miscellaneous items in the price bid for Class AE-3 and AAE-3 concrete.
- 107 HAZARDOUS MATERIAL: The existing structural steel is painted with lead-based paint. Remove and dispose of any loose and peeling paint found on the existing structural steel according to the North Dakota Department of Health's management of lead-based paint debris.
- 202 REMOVAL OF CONCRETE: Remove the concrete in a manner that prevents damage to the remaining structure.
- 602 FALSEWORK: Brace exterior steel beams at a maximum of 10'-0" spacing to prevent rotation. Design the strength of the bracing to be dependent on the forces induced by the weight of the concrete, forms, equipment, and workers. Assume that the diaphragms will not carry any of the load in the design. Submit a bracing plan and design, stamped by a Professional Engineer, to the Engineer for review.
- 602 ENDWALLS: Place endwall concrete to the construction joint as shown before the deck cantilever is formed.
- 602 BRIDGE DECK AND APPROACH SLAB CURING: Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing period.
- 602 DECK PLACEMENT: Place the deck concrete at a minimum of 50 CY per hour. Set the screed rail for the entire bridge before placing any deck concrete. See Dwg 29-044.126-3 for the deck pour sequence. A minimum of 72 hours is required between pours.
- 602 SURFACE TOLERANCE: The Engineer will process a contract price adjustment for deck concrete based on the surface tolerance measurements determined in Section 602.04 E, "Surface Tolerances." The amount of the contract price adjustment will be determined by multiplying the contract unit price for "Class AAE-3 Concrete" by the area, measured in square yards, that is out of tolerance and the appropriate Contract Price Reduction Factor in the table.

DEVIATION	CONTRACT PRICE REDUCTION FACTOR
> 1/8 inch and ≤ 1/4 inch	2.5%
> 1/4 inch and ≤ 1/2 inch	7.5%

- 602 SURFACE FINISH "D": Apply Surface Finish "D" to the outside edges of the deck, the exposed endwall areas outside of the exterior beams, and on all bridge and approach slab barrier surfaces. Use brown surface finish, color number 30475 meeting Federal

Standard 595B for the back face of the barriers, including the diamond surfaces but excluding the recessed areas, and the outside edges of the deck. Use white surface finish, color number 27925 meeting Federal Standard 595B for all other surfaces.

Submit to the Engineer a 3" x 5" color chip card for color number 30475 with a declaration of conformity along with a 1' x 1' sample of the surface finish.

602 LONGITUDINAL GROOVING: Do not run a metal tine transversely across the deck or approach slab surfaces immediately following the artificial grass drag as per 602.04 D. After the curing of the deck and approach slabs is complete and before the penetrating water repellent is applied, cut in longitudinal grooves into the deck and approach slabs using a mechanical cutting device. Perform any required surface correction grinding to the deck and approach slabs prior to grooving it. Cut grooves that are 1/8 inch in width (±1/64 inch) and 1/8 inch in depth (±1/64 inch). Space grooves at 3/4 inch center to center. Stop the grooving 2 feet from the face of the barrier/curb and 6 inches from the beginning and end of the deck and approach slabs. Include the price for grooving in the bid item "Class AAE-3 Concrete."

900 ELEVATION CHECK POINTS: Place eight bolts on the top of the barrier to serve as elevation check points. Include the cost for this item in the unit price bid for Class AAE-3 Concrete.

602 DECK FORMS: Remove all deck forms within 14 days from the end of the curing period.

930 ROADWAY CANOPY: A canopy is required to be constructed above the traveled roadways under the new structure to protect traffic from falling material. The canopy is an added safeguard and does not relieve the Contractor from any responsibility for the safety of the public.

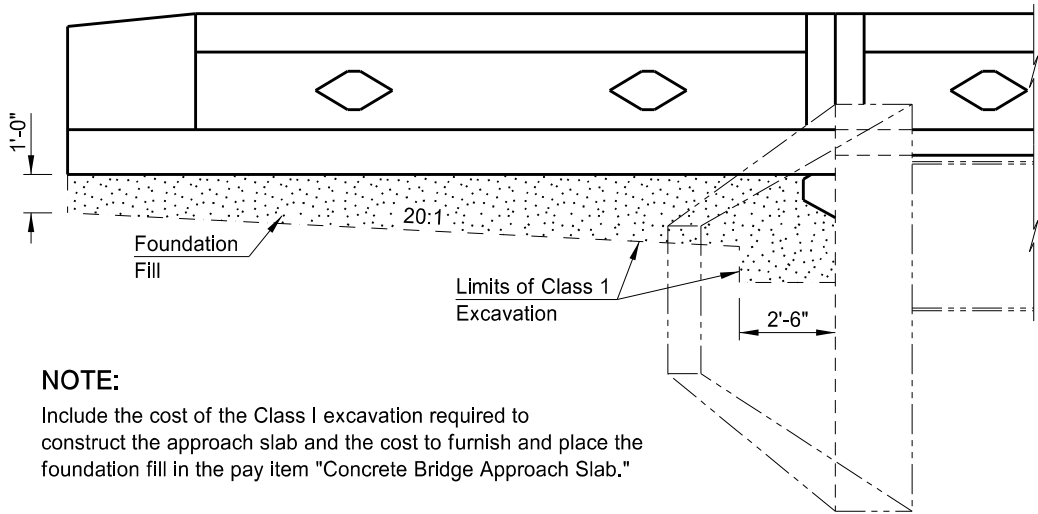
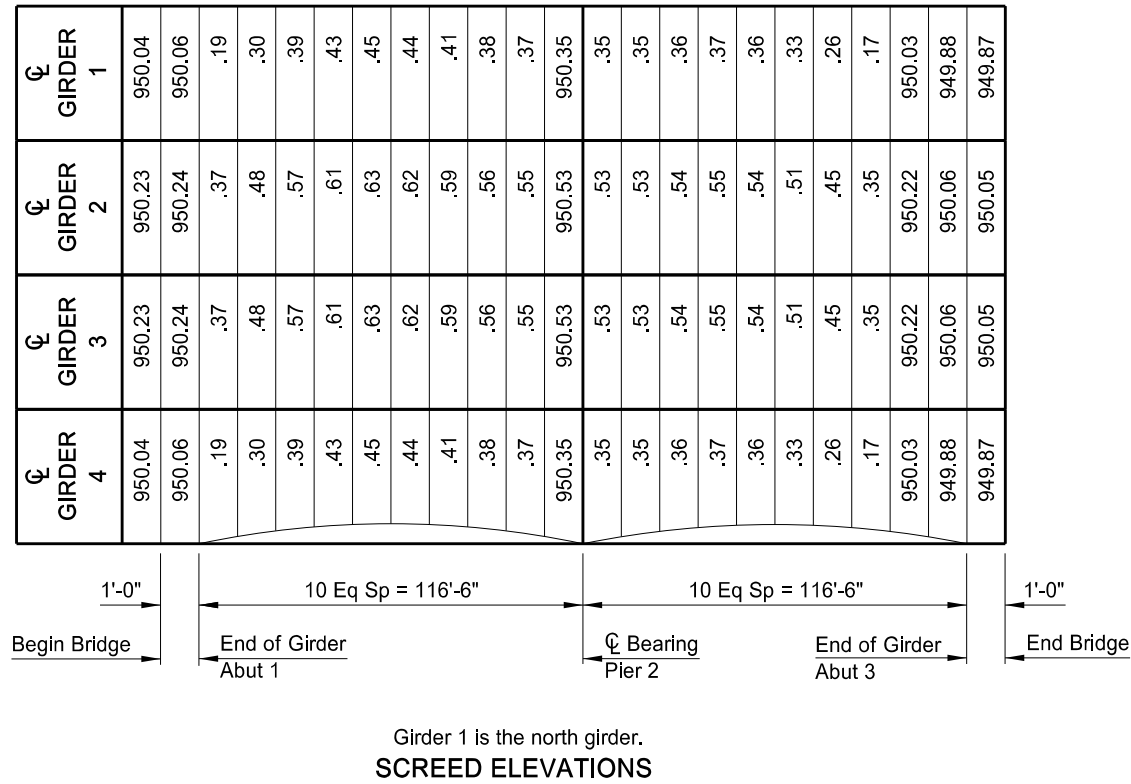
Submit the canopy details, including materials that will be used, to the Engineer for review. The canopy will provide a minimum vertical clearance of 17'-0" above the traveled roadway. The canopy will be extended a minimum distance of 5'-0" beyond the outside edge of deck of the structure and a minimum distance of 5'-0" beyond the edge of the driving lanes beneath the structure.

Construct the canopy before installing forming for the new deck. The canopy will also remain in place until after the new superstructure is complete. The canopy may be supported from the ground or suspended from the beams. Complete the installation of the canopy in a minimum amount of time and with the least inconvenience to the public.

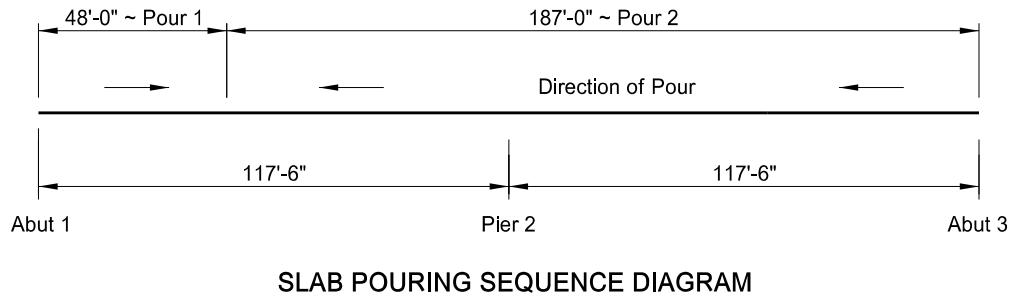
Once the bridge superstructure is completed, remove the canopy. Roadway canopy will be paid for at the contract unit price for "Roadway Canopy." Payment for "Roadway Canopy" includes the construction, maintenance, and removal of the canopy system.

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	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	27



DETAIL AT ABUTMENT



BRIDGE BID ITEMS

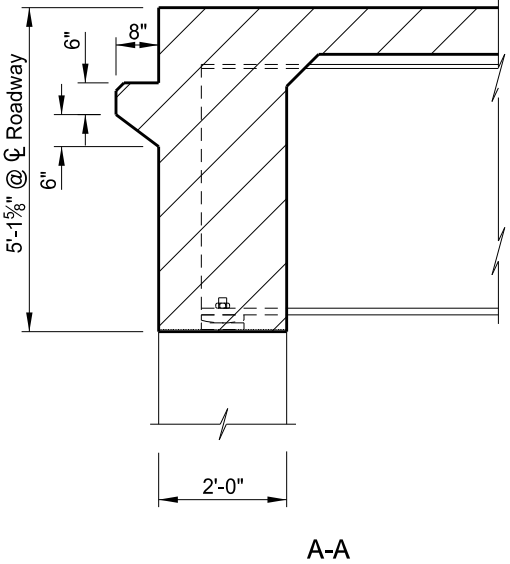
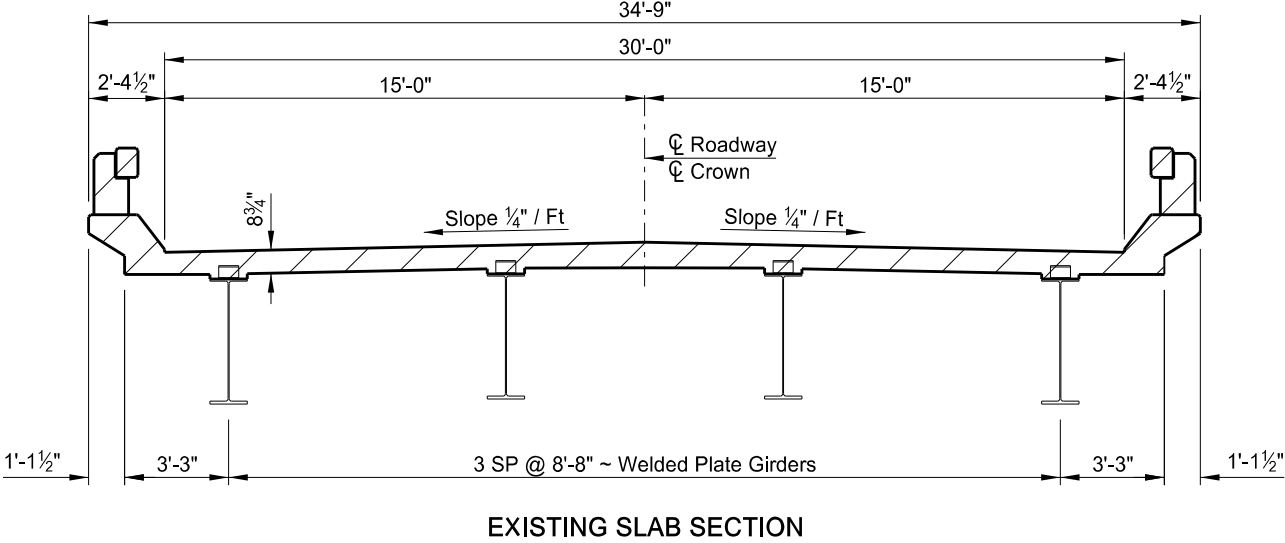
SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0111	REMOVAL OF CONCRETE	L SUM	1
602	0130	CLASS AAE-3 CONCRETE	CY	269.6
602	1133	CONCRETE BRIDGE APPROACH SLAB	SY	144.4
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	783
612	0115	REINFORCING STEEL-GRADE 60	LBS	1,204
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	68,764

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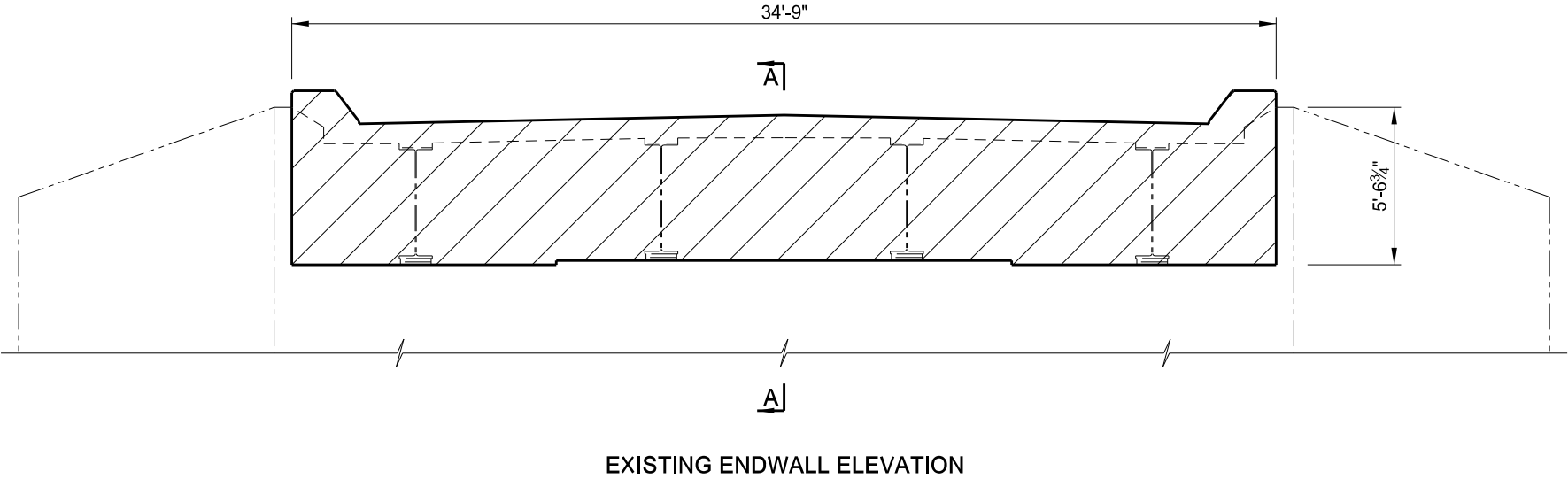
CHRISTINE INTERCHANGE

DEAD LOAD DEFLECTIONS, DETAIL AT ABUTMENT & BID ITEM QUANTITIES

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	28

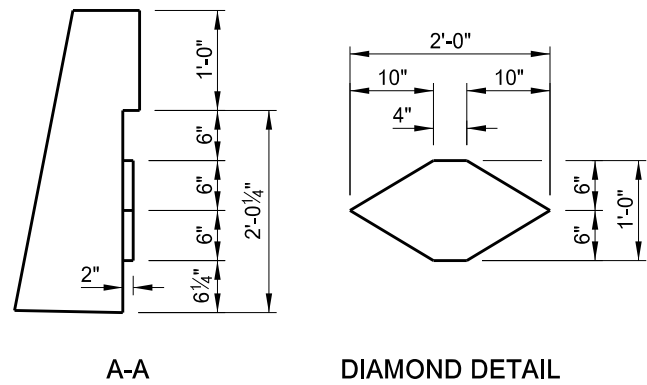
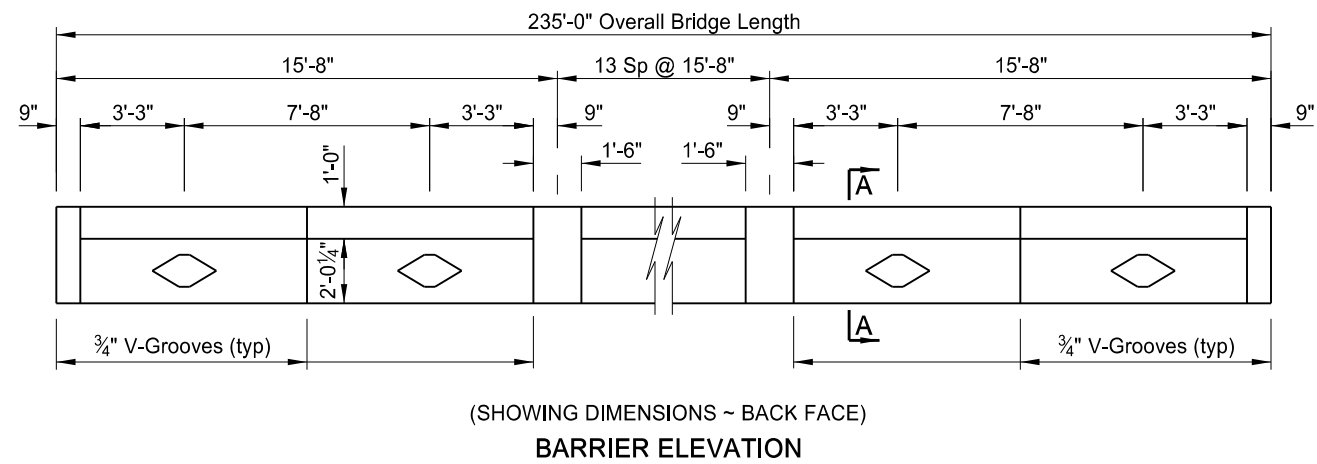
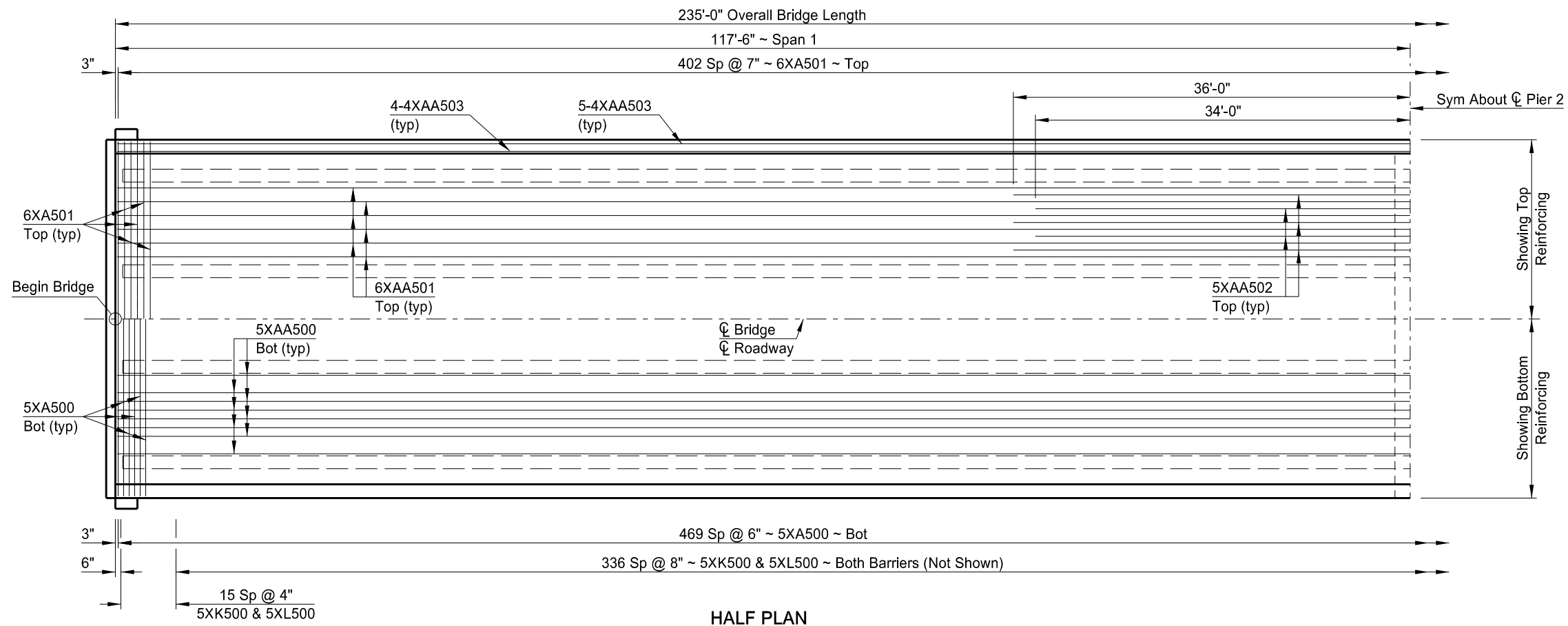


The hatched areas indicate concrete to be removed. Carefully remove concrete to ensure no damage is done to the existing reinforcing steel and stud shear connectors on top of beams that are to remain in place. Sand blast clean the exposed existing reinforcing bars from any rust scale.



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CHRISTINE INTERCHANGE
CONCRETE REMOVAL DETAILS



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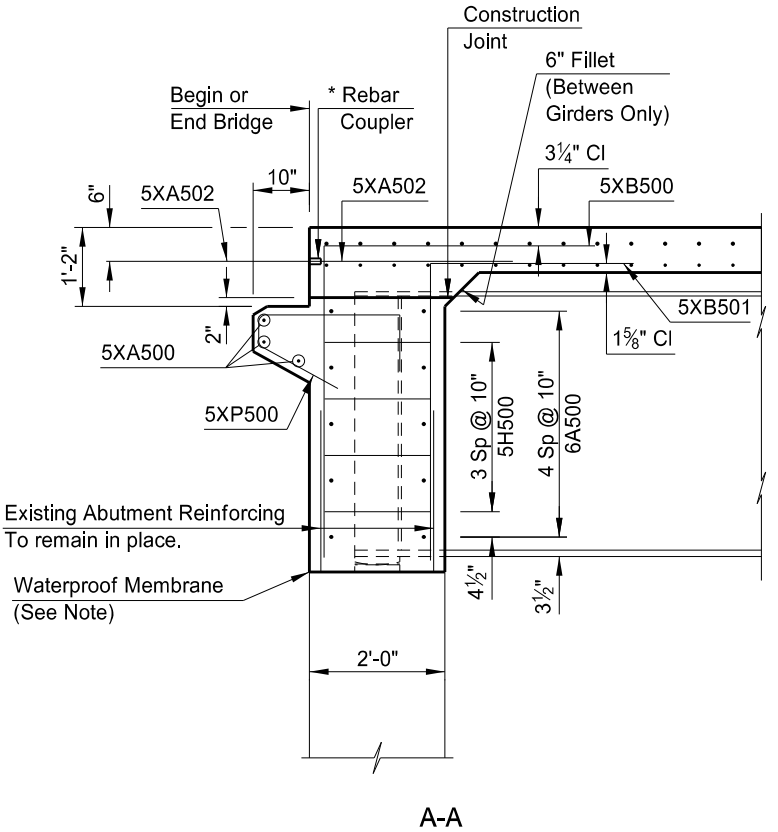
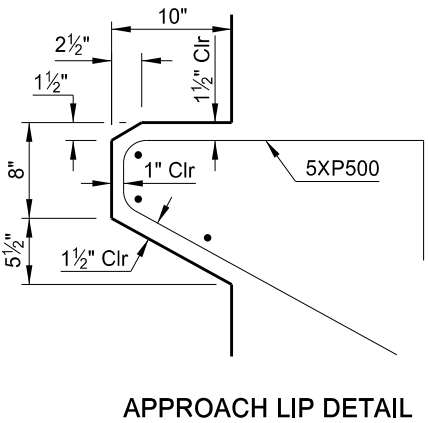
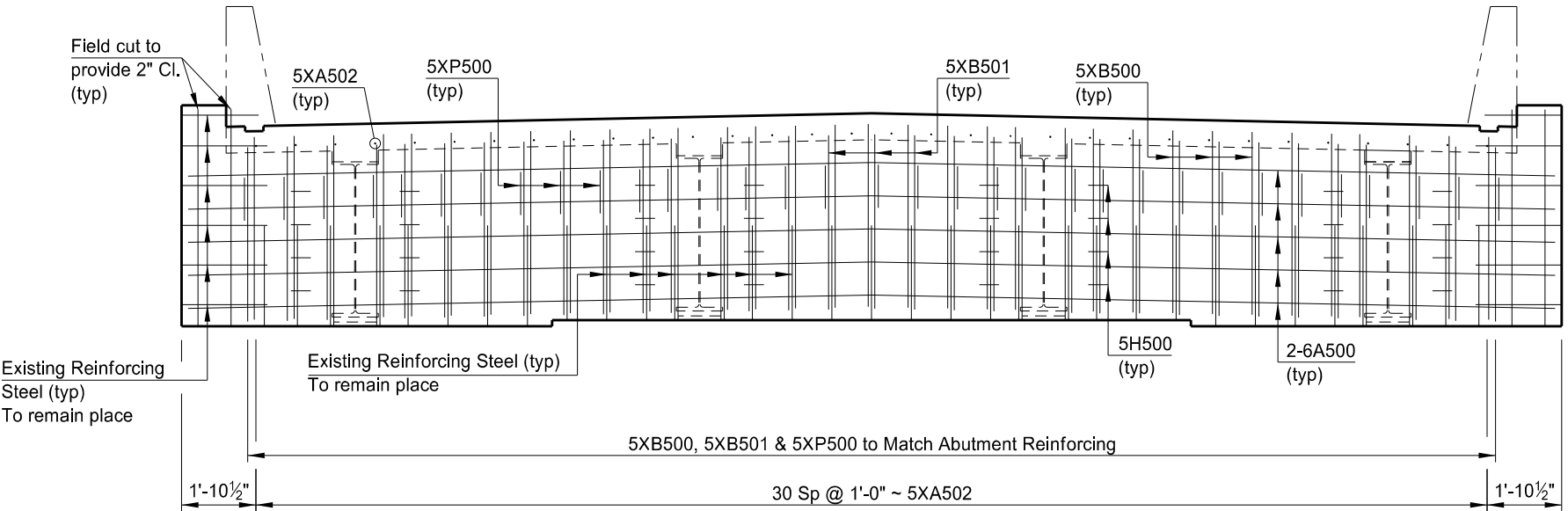
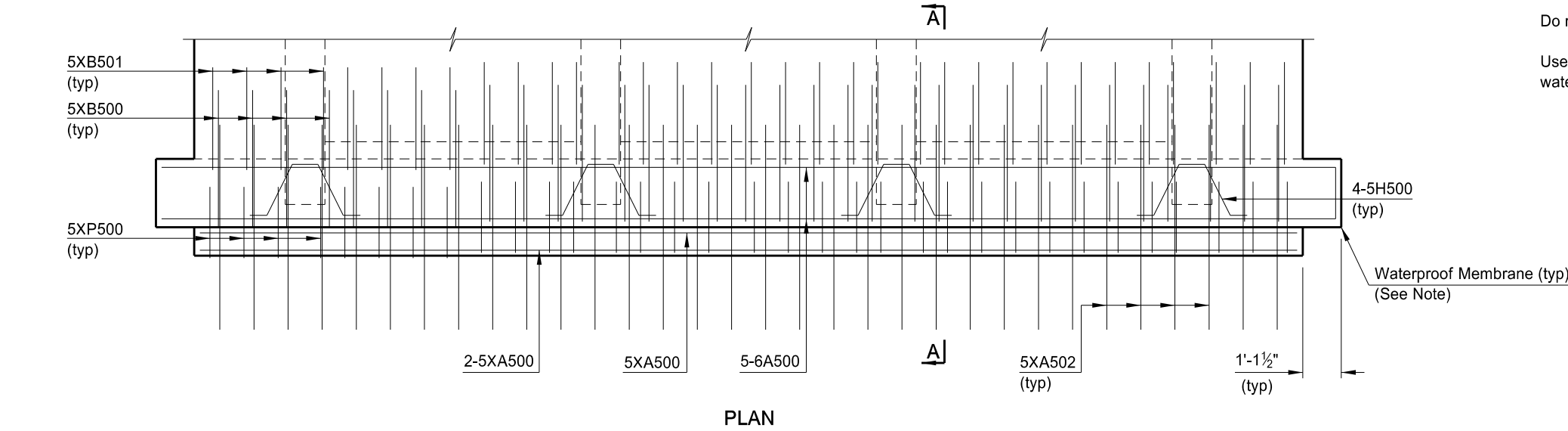
QUANTITIES
SEE DWG 29-044.126-7
CHRISTINE INTERCHANGE
HALF SLAB LAYOUT

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	30

NOTES:

Do not install the 5XA502 bars into the approach slab until all of the foundation fill is in place.

Use a Waterproof Membrane that meets the requirements of Section 602.03B. Center the waterproof membrane (1'-0" minimum width) on the joint.

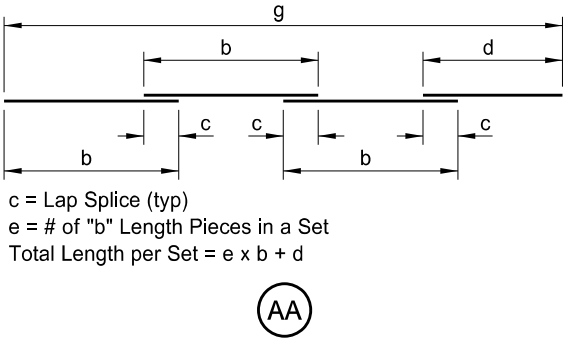
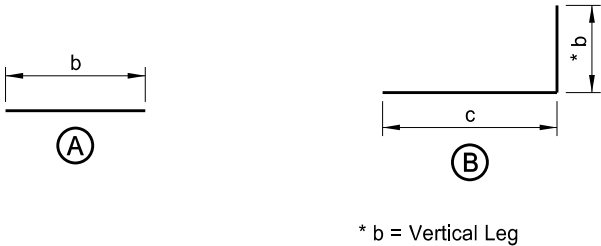
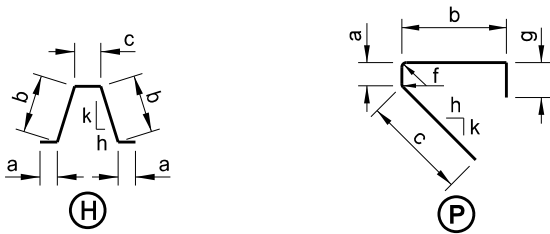
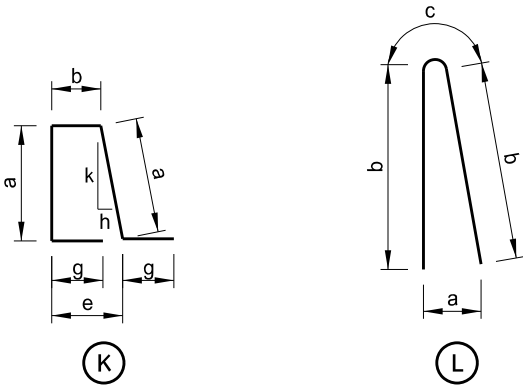


* Use approved mechanical connector for the couplers capable of developing 125% of the reinforcing steel specified yield strength. Provide epoxy coated couplers according to Section 836.02 A and repair any damaged epoxy coating according to Section 612.04 E.

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QUANTITIES
SEE DWG 29-044.126-7
CHRISTINE INTERCHANGE
ENDWALL DETAILS

BILL OF REINFORCING STEEL, GRADE 60													
LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS													
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS								
					a	b	c	d	e	f	g	h	k
SUPERSTRUCTURE	REGULAR	6	A500	20	34'-5"		34'-5"						
		5	H500	32	5'-1"	6"	1'-8"	9"				6	12
	EPOXY	5	XA500	476	32'-2"		32'-2"						
		6	XA501	403	32'-2"		32'-2"						
		5	XA502	124	3'-0"		3'-0"						
		5	XB500	66	8'-7"		4'-7"	4'-0"					
		5	XB501	66	7'-4"		4'-4"	3'-0"					
		5	XK500	736	4'-11"	1'-6"	7"		10"		8"	2.3	12
		5	XL500	736	5'-7"	9"	2'-7"	5"				2.3	12
		5	XP500	66	5'-6"	5"	2'-1"	2'-2"		1.25"	10"	12	6.5
		5	XAA500	32	243'-8"		50'-0"	2'-3"	44'-0"	4	234'-8"		
		6	XAA501	28	243'-8"		50'-0"	2'-3"	44'-0"	4	234'-8"		
		5	XAA502	28	72'-3"		60'-0"	2'-3"	12'-3"	1	70'-0"		
		4	XAA503	18	240'-8"		50'-0"	2'-0"	41'-0"	4	234'-8"		

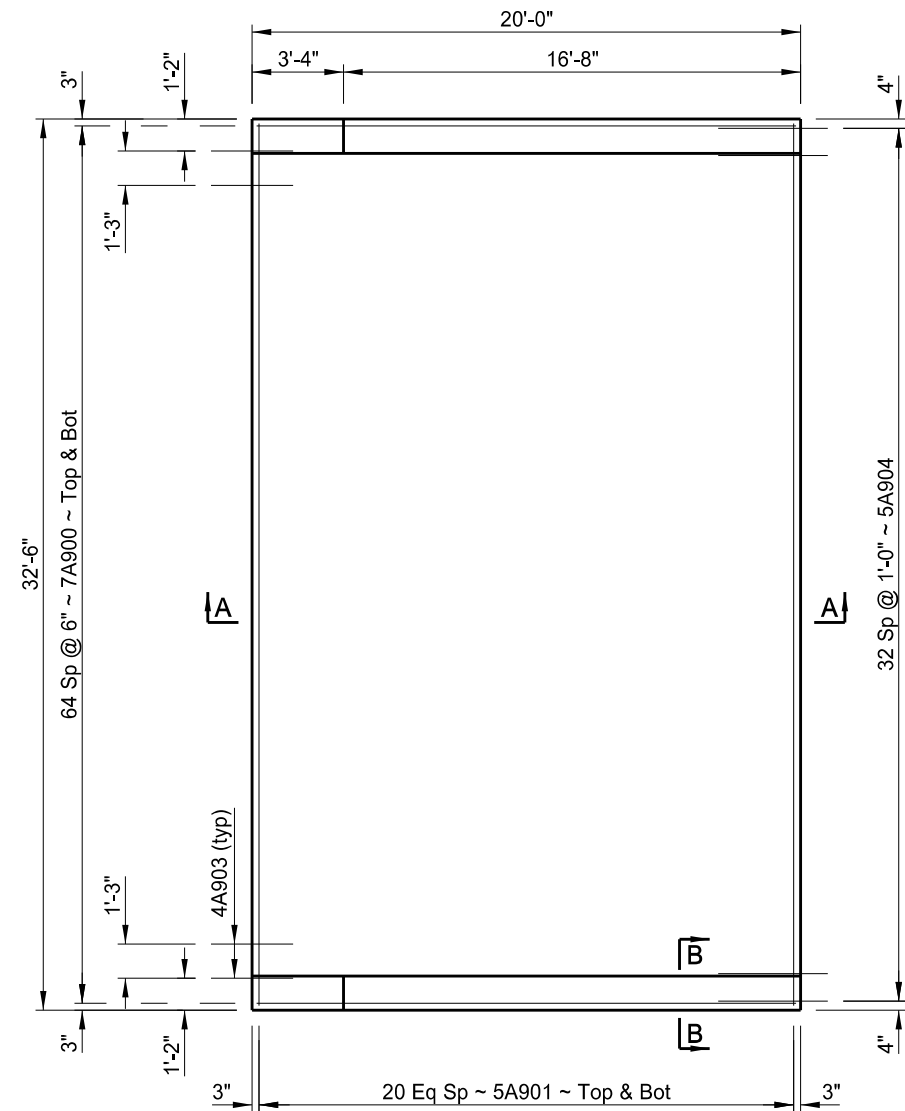


- NOTES:
- All dimensions are out to out of bars.
 - Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
 - Turn adjacent "AA" bars end for end so that the splice locations are staggered.
 - The "f" dimension indicates the inside radius unless otherwise noted.
 - An "X" preceding a bar designation indicates an epoxy coated bar.
 - Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the unit price.

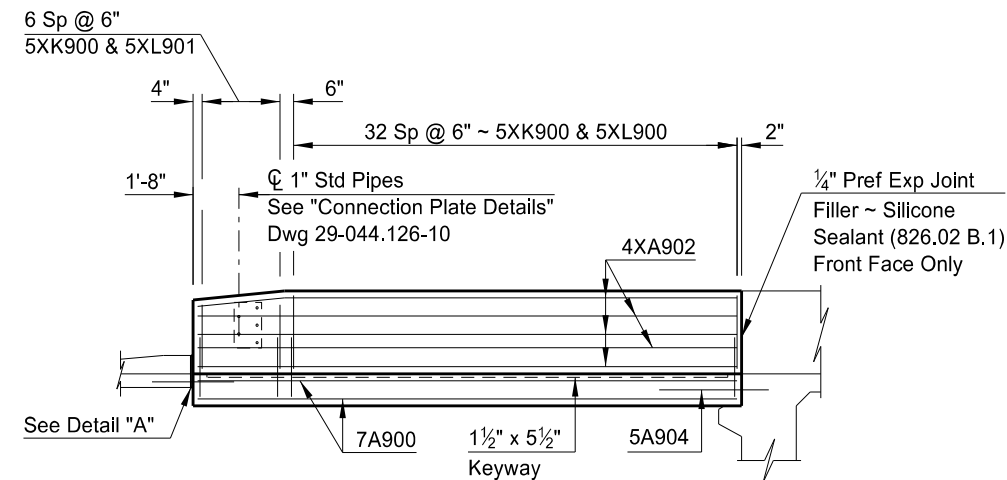
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CHRISTINE INTERCHANGE
REINFORCING BAR LIST & DETAILS

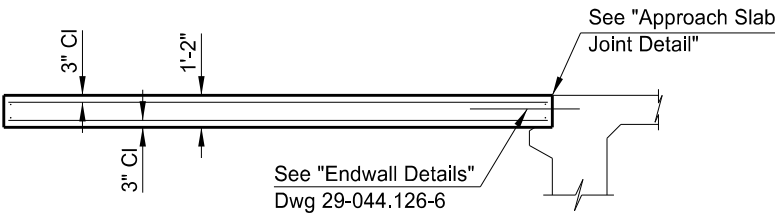
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-8-029(170)033	170	33



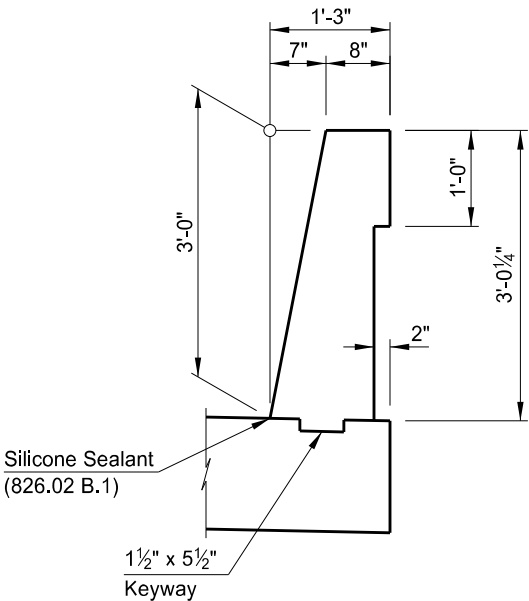
PLAN



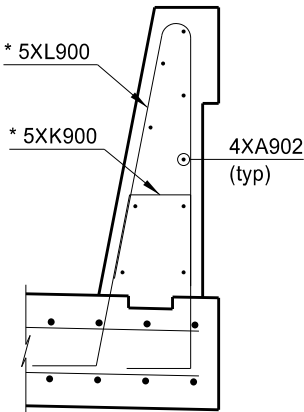
ELEVATION



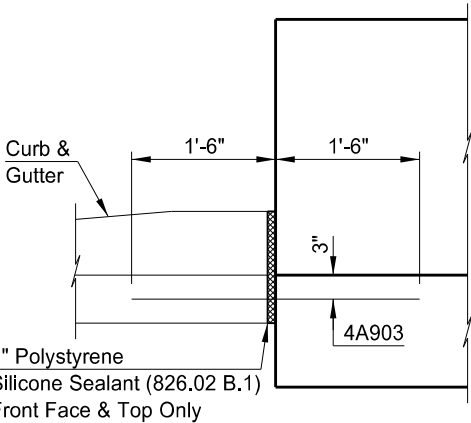
A-A



SHOWING DIMENSIONS



SHOWING REINFORCING



DETAIL "A"

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QUANTITIES
SEE DWG 29-044.126-34
CHRISTINE INTERCHANGE
APPROACH SLAB DETAILS

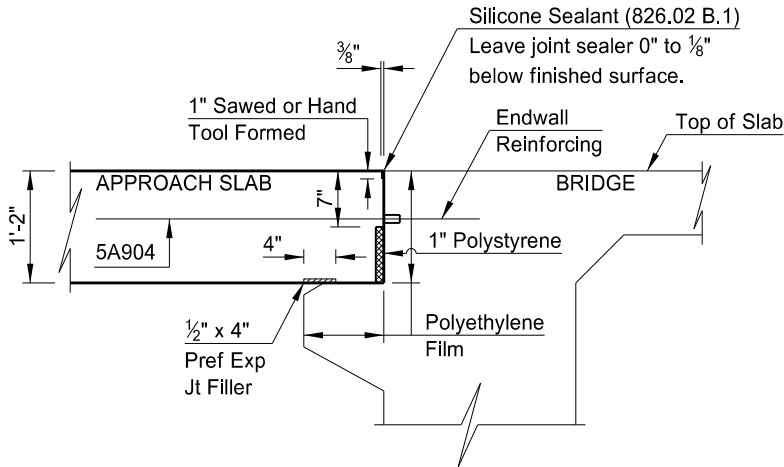
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-8-029(170)033	170	34

NOTES:

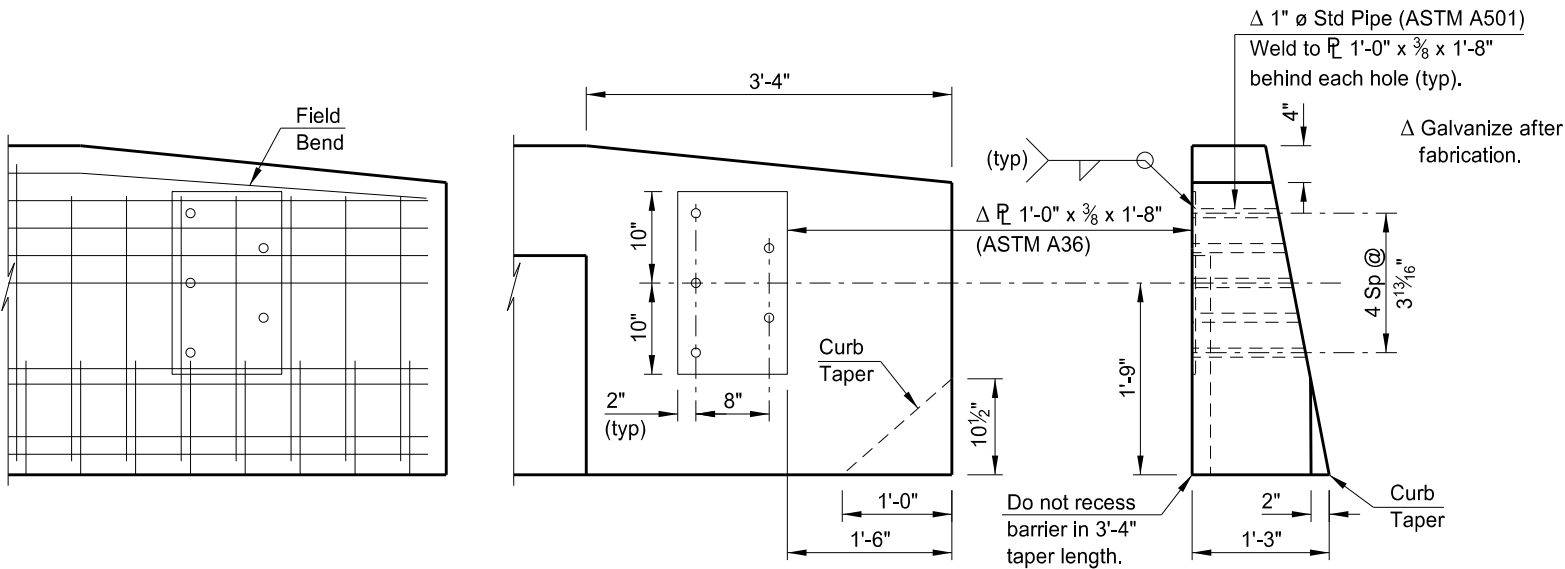
The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, connection plates and pipes, and labor required to build the approach slabs, barriers and curbs in the pay item "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. Use polyethylene film that meets the requirements of ASTM C171.

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

SKEW ANGLE = 0°			
BAR LIST			
SIZE	MARK	NO.	LENGTH
7	A900	130	19'-8"
5	A901	42	32'-2"
4	XA902	18	19'-8"
4	A903	4	3'-0"
5	A904	32	4'-0"
5	XK900	80	5'-5"
5	XL900	66	6'-1"
5	XL901	14	5'-5"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS)		CONCRETE (CY)	
7,829		32.0	



APPROACH SLAB JOINT DETAIL



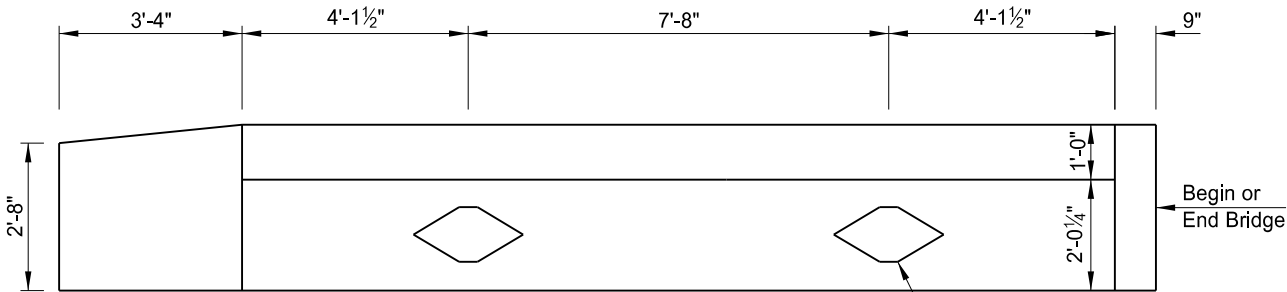
SHOWING REINFORCING

SHOWING DIMENSIONS

(SHOWING BACK FACE)
CONNECTION PLATE DETAILS

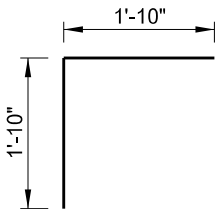
NOTES:

Detail shown is for left side at the west end of the bridge.
Mirror for opposite side of installation.

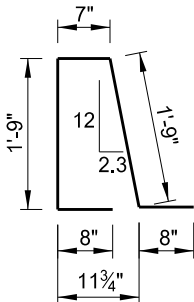


(SHOWING DIMENSIONS ~ BACK FACE)
BARRIER ELEVATION

See "Diamond Detail"
Dwg 29-044.126-5

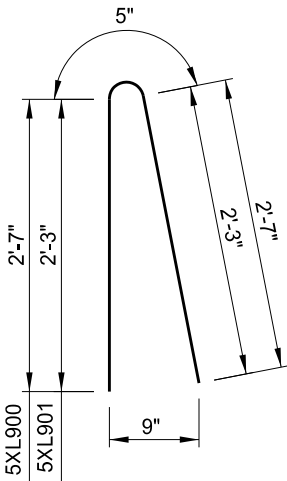


XB900



XK900

BENT BAR DETAIL



XL900 & XL901

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QUANTITIES (ONE SLAB)	
APPROACH SLAB	72.2 SY
CHRISTINE INTERCHANGE	
APPROACH SLAB DETAILS	