

DESIGN DATA				
Traffic	Average Daily			
Current 2020	Pass: 13,230	Trucks: 3,115	Total: 16,345	
Forecast 2040	Pass: 17,865	Trucks: 4,210	Total: 22,075	
Preventive Maintenance				

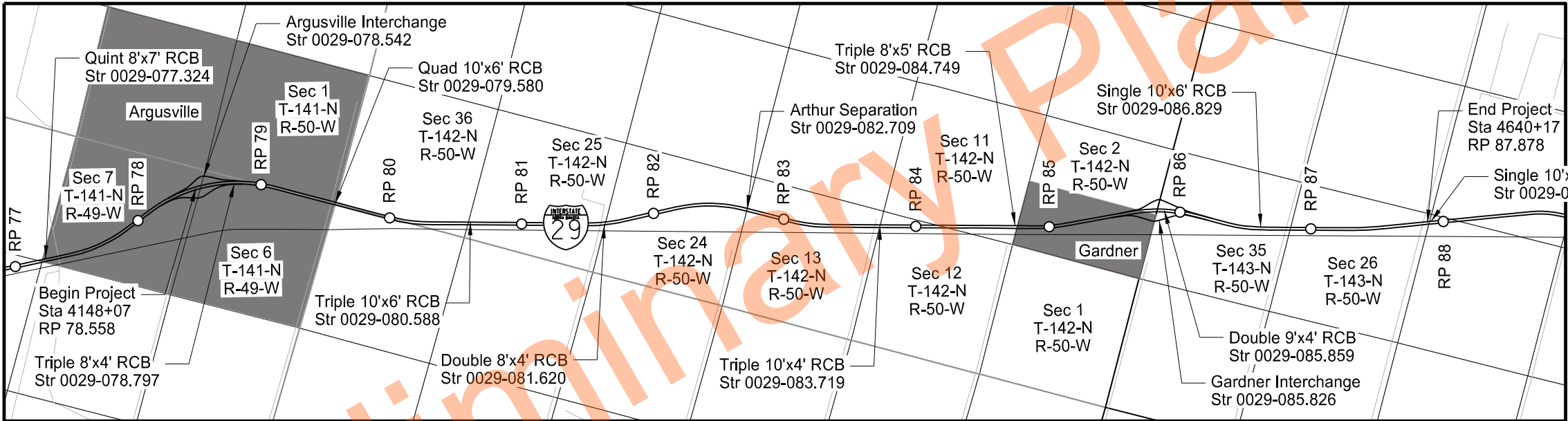
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

HEN-X-8-029(206)077

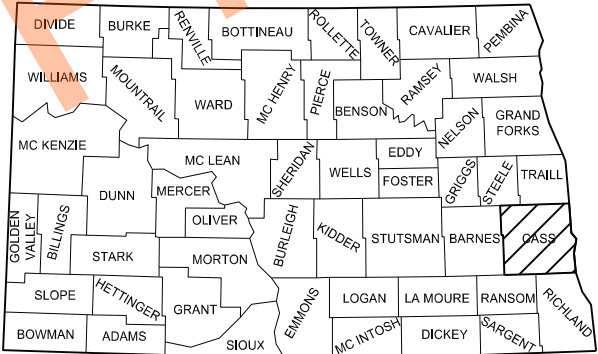
Cass County
Interstate 29 Median
Argusville Intchg to N of Gardner Intchg
High Tension Cable Median Barrier
Foreslope Flattening & Incidentals

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	23330	1	1
GOVERNING SPECIFICATIONS			Date Published and Adopted by the North Dakota Department of Transportation		
Standard Specifications			7/1/2024		
Supplemental Specifications			NONE		

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
HEN-X-8-029(206)077	9.320	9.320



DESIGNER Scott Middaugh, PE
DESIGNER Jeff Daley, PE
DESIGNER Frankie Halter, PE
DESIGNER Kyle Huffman, PE
DESIGNER Samantha Dvorak
DESIGNER Mason Heustis
DESIGNER Jonathon Backer



STATE COUNTY MAP

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

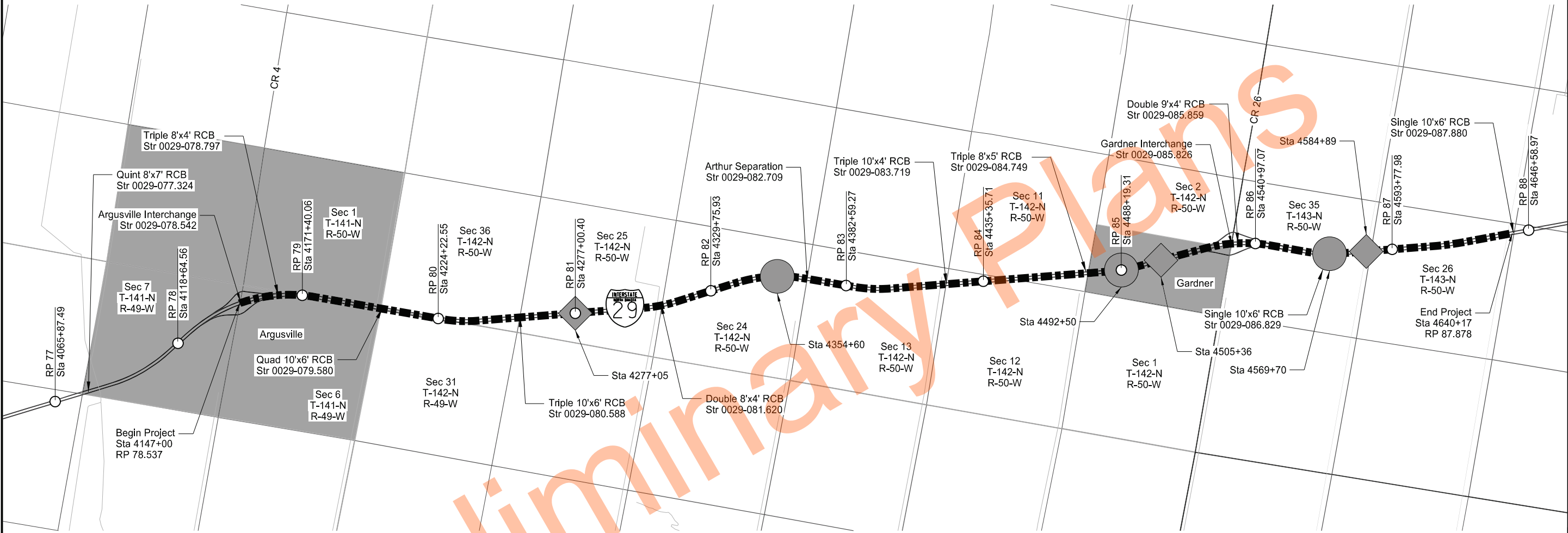
Kirk Hoff
07/23/25

KLJ

REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDAGH
PE-7499
DATE 07/23/25
NORTH DAKOTA

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4	1	Scope of Work	D-101-20, 21	Line Styles					
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SSP 1	Temporary Erosion and Sediment Best Management Practices								

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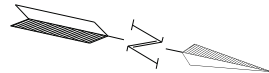
Preliminary

LEGEND

High Tension Cable Guardrail Installation

Maintenance Crossover Aggregate Removal

Maintenance Crossover Installation



REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

NORTH DAKOTA

High Tension Cable Guardrail

Scope of Work

I-29 - Argusville Intchg to N of Gardner Intchg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(200)069	6	1

NOTES

GENERAL NOTES

- 100-P01COORDINATION OF PROJECTS: Other construction projects will be under contract and taking place within the highway right of way which may be in the vicinity of this project. Coordinate all activities, schedules, and traffic control with all other contractors working within the highway right of way.
- 105-P01MEDIAN MOWING: NDDOT District forces will mow the median within the project limits one time during construction. Provide the Engineer two weeks' notice for the mowing.

The median cannot be mowed by anyone other than NDDOT staff unless approved in writing by the Engineer.
- 203-010SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.
- 203-P01EMBANKMENT: Flatten the median inslopes as shown in the plans. Use Compaction Control Type B for the embankment material (embankment, borrow, or imported topsoil) used for the median inslope flattening.

Include all costs to flatten the median inslopes in the price bid for "Borrow-Excavation", and "Topsoil-Imported".
- 203-P02ADDITIONAL DAMAGE: If additional damage is incurred to topsoil, seed and mulch areas at the Contractor's expense.

SECTION 100

- 704-P01HIGH TENSION CABLE BARRIER TRAFFIC CONTROL: Provide traffic control according to the following layouts on the Standard Drawings for traffic control:

D-704-24 Type HH, left shoulder closed: For use on left shoulder on the opposite side of median where guardrail work is being performed and for use on left shoulder adjacent to work area where no guardrail work is being performed the following day. Use tubular markers in place of portable barriers. One 2-mile shoulder closure (2-miles in one direction) was provided so that work can progress at a constant pace.

D-704-35, left lane closed: For use on lane adjacent to work area when guardrail work is being performed. One 2-mile lane closure (2-miles in one direction) was provided so that work can progress at a constant pace.

Lane closure and shoulder closure traffic control device quantities are limited to an 10,000-foot work zone. 4-mile closures (2-miles in each direction) were provided so that work can progress at a constant pace.

Change adjacent lane closure to shoulder closure at the end of the workday if no guardrail work is scheduled for the following day.

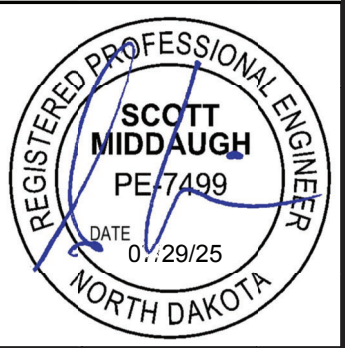
- 704-P02TRAFFIC CONTROL FOR DIRT WORK IN THE MEDIAN: Provide traffic control according to the following layouts on the Standard Drawings for traffic control:

D-704-24 Type HH, left shoulders closed: For use on adjacent shoulders of median where no dirt work is being performed the following day. Use tubular markers in place of portable barriers.

D-704-35, left lanes closed: For use on lanes adjacent to the work area when dirt work is being performed in the median.

Lane closure and shoulder closure traffic control device quantities are limited to one day's production. For estimating purposes, the traffic control device list is based on a 1-mile closure (1/2-mile closure in each direction).

Change adjacent lane closures to shoulder closures at the end of the workday if no median work is scheduled for the following day.



Estimated Quantities

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITIES	TOTAL
103	0100	CONTRACT BOND	L SUM	1	1
202	0021	REMOVE AGGREGATE BASE & SURFACING	TON	86	86
203	0109	TOPSOIL	CY	121	121
203	0119	TOPSOIL-IMPORTED	CY	1528	1528
203	0140	BORROW-EXCAVATION	CY	746	746
203	0204	FLATTEN DITCH BLOCK SLOPES	EA	2	2
251	0200	SEEDING CLASS II	ACRE	6.73	6.73
251	2000	TEMPORARY COVER CROP	ACRE	6.73	6.73
253	0101	STRAW MULCH	ACRE	13.46	13.46
255	0103	ECB TYPE 3	SY	88	88
261	0112	FIBER ROLLS 12IN	LF	840	840
261	0113	REMOVE FIBER ROLLS 12IN	LF	420	420
302	0120	AGGREGATE BASE COURSE CL 5	TON	159	159
702	0100	MOBILIZATION	L SUM	1	1
704	0100	FLAGGING	MHR	400	400
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2436	2436
704	1052	TYPE III BARRICADE	EA	2	2
704	1060	DELINEATOR DRUMS	EA	78	78
704	1067	TUBULAR MARKERS	EA	140	140
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	2	2
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	104	104
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	30	30
754	0166	DELINEATORS-TYPE E	EA	6	6
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	75	75
764	0100	HIGH TENSION CABLE GUARDRAIL	LF	47675	47675
764	0105	HIGH TENSION CABLE ANCHOR ASSEMBLY	EA	42	42

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	10	1

HEN-X-8-029(206)077						
LOCATION	TYPE OF WORK	EARTHWORK SUMMARY			TOPSOIL	
		Excavation	Embankment ①	203 0140 BORROW-EXCAVATION	203 0109 TOPSOIL	203 0119 TOPSOIL-IMPORTED
		(CY)	(CY)	(CY)	(CY)	(CY)
		A	B	D = B - A	E	E
Sta 4224+57 to Sta 4239+53 (OCL29_CASS)	Median Ditch Reshaping	-	-	-	-	78
Sta 4261+00 to Sta 4274+00 (OCL29_CASS)	Inslope Flattening	-	-	-	-	106
Sta 4277+05 (OCL29_CASS)	New Maintenance Crossover	-	321	321	45	-
Sta 4302+83 to Sta 4316+51 (OCL29_CASS)	Median Ditch Reshaping	-	-	-	-	18
Sta 4354+60 (OCL29_CASS)	Removed Maintenance	-	-	-	-	14
Sta 4385+10 to Sta 4399+83 (OCL29_CASS)	Median Ditch Reshaping	-	-	-	12	71
Sta 4463+00 to Sta 4471+00 (OCL29_CASS)	Inslope Flattening	-	-	-	-	49
Sta 4482+97 to Sta 4494+12 (OCL29_CASS)	Median Ditch Reshaping	-	-	-	-	44
Sta 4492+50 (OCL29_CASS)	Removed Maintenance	-	-	-	-	17
Sta 4505+36 (OCL29_CASS)	New Maintenance Crossover	-	334	334	44	-
Sta 4559+51 to Sta 4574+60 (OCL29_CASS)	Median Ditch Reshaping	-	-	-	-	105
Sta 4569+70 (OCL29_CASS)	Removed Maintenance	-	-	-	-	15
Sta 4579+00 to Sta 4583+97 (OCL29_CASS)	Inslope Flattening	-	-	-	-	94
Sta 4584+89 (OCL29_CASS)	New Maintenance Crossover	-	91	91	20	-
Sta 4585+81 to Sta 4613+00 (OCL29_CASS)	Inslope Flattening	-	-	-	-	526
Sta 4616+00 to Sta 4622+00 (OCL29_CASS)	Inslope Flattening	-	-	-	-	86
Sta 4624+00 to Sta 4638+50 (OCL29_CASS)	Inslope Flattening	-	-	-	-	305
Total =		-	746	746	121	1,528

Notes:

① Additional 25% volume included for shrinkage.

Guardrail Runs							
Segment	RP		Station		Location	764 0100 HIGH TENSION CABLE GUARDRAIL	764 0105 HIGH TENSION CABLE ANCHOR ASSEMBLY
	Start	Stop	Start	Stop		(LF) ②	(EA)
A	78.563	78.788	4148+37	4160+24	LT	1,192	2
B	78.806	79.566	4161+16	4201+32	LT	4,021	2
C	79.587	80.018	4202+42	4225+18	LT	2,277	2
D	80.007	80.290	4224+57	4239+53	CL	1,496	2
E	80.299	80.579	4240+00	4254+79	LT	1,479	2
F	80.598	80.983	4255+80	4276+13	LT	2,033	2
G	81.018	81.501	4277+97	4303+44	LT	2,547	2
H	81.490	81.749	4302+83	4316+51	CL	1,368	2
I	81.758	82.690	4316+98	4366+22	LT	4,935	2
J	82.727	83.059	4368+19	4385+71	LT	1,752	2
K	83.048	83.327	4385+10	4399+83	CL	1,473	2
L	83.336	83.712	4400+30	4420+18	LT	1,988	2
M	83.732	84.742	4421+19	4474+55	LT	5,336	2
N	84.760	84.913	4475+49	4483+58	LT	809	2
O	84.901	85.112	4482+97	4494+12	CL	1,115	2
P	85.121	85.308	4494+59	4504+44	LT	985	2
Q	85.343	85.809	4506+28	4530+89	LT	2,464	2
R	85.871	86.363	4534+15	4560+12	LT	2,602	2
S	86.351	86.637	4559+51	4574+60	CL	1,509	2
T	86.646	86.814	4575+07	4583+97	LT	890	2
U	86.849	87.873	4585+81	4639+87	LT	5,404	2
Total =						47,675	42

Notes:

② Guardrail quantity measured along the guardrail, not along the alignment.

Maintenance Crossovers					
County	RP	Station	Remove ③	Install	302 0120 AGGREGATE BASE COURSE CL 5 (TON)
Cass	81.001	4277+05		X	53
Cass	82.470	4354+60	X		
Cass	85.082	4492+50	X		
Cass	85.325	4505+36		X	53
Cass	86.544	4569+70	X		
Cass	86.832	4584+89		X	53
Total =					159

Notes:

③ See Section 40 for Removals

* WATER			
Material	Basis	Basis Quantity	Quantity (MGAL)
Aggregate Base Course CL 5	20 Gal/Ton	159	4
Embankment	10 Gal/CY	746	8
Total =			12

* Not a pay item. To be included in the unit bid price for "BORROW-EXCAVATION".

SPEC CODE	BID ITEM	QTY	UNIT
203 0109	TOPSOIL Topsoil	121	CY
203 0119	TOPSOIL-IMPORTED Topsoil	1,528	CY
203 0140	BORROW-EXCAVATION Earthwork Summary	746	CY
302 0120	AGGREGATE BASE COURSE CL 5 Maintenance Crossovers	159	TON
764 0100	HIGH TENSION CABLE GUARDRAIL Guardrail Runs	47,675	LF
764 0105	HIGH TENSION CABLE ANCHOR ASSEMBLY Guardrail Runs	42	EA

Base
Aggregate Base Course CL 5 @ 1.875 Ton/CY

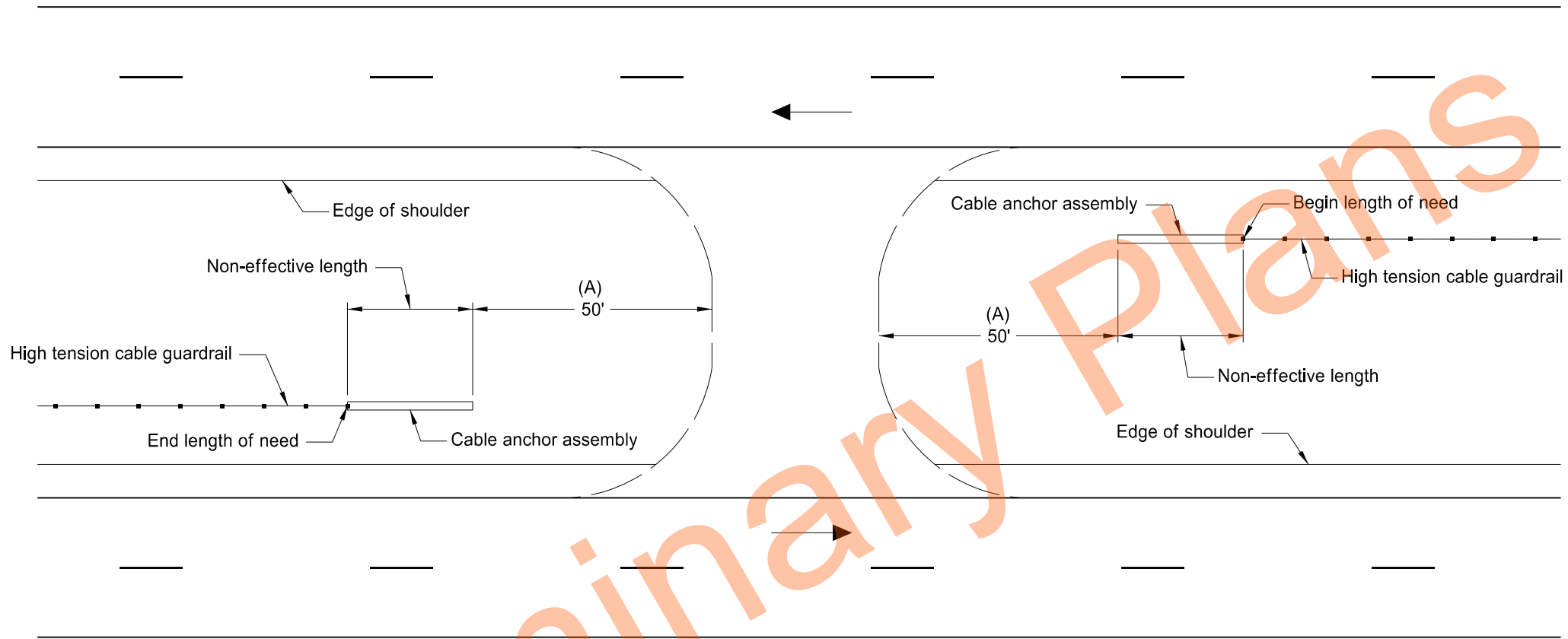


High Tension Cable Guardrail

Basis of Estimate

I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	20	1



Maintenance Crossover Detail

Sta 4277+05

Sta 4505+36

Sta 4584+89

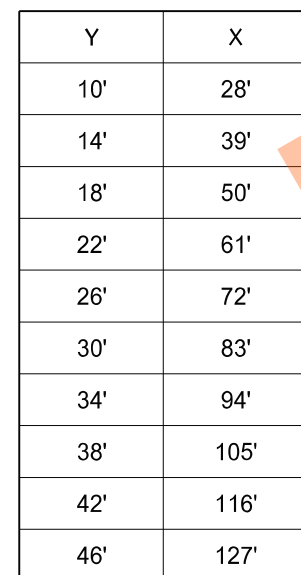
NOTE:
(A) Adjust cable anchor assembly location to avoid utilities.



High Tension Cable Guardrail

Maintenance Crossover
Guardrail Layout Detail

I-29 - Argusville Intchg to N of Gardner Intchg



REGISTERED PROFESSIONAL ENGINEER

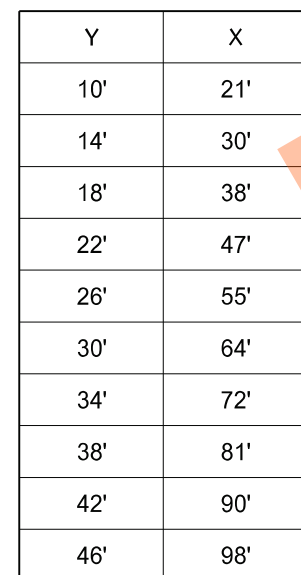
SCOTT MIDDAGH

PE 7499

DATE 07.22/25

NORTH DAKOTA

I-29 - Argusville Intchg to N of Gardner Intchg



REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

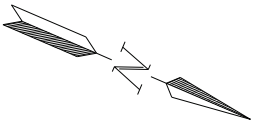
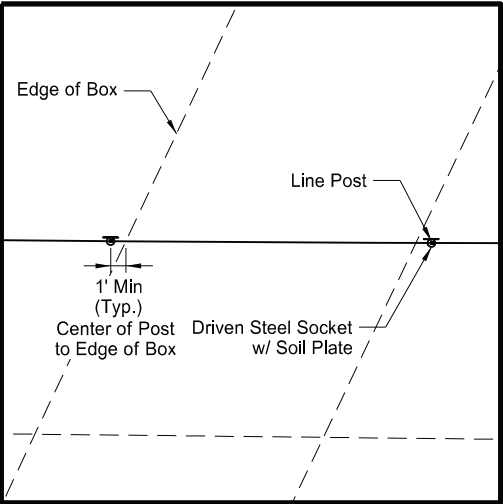
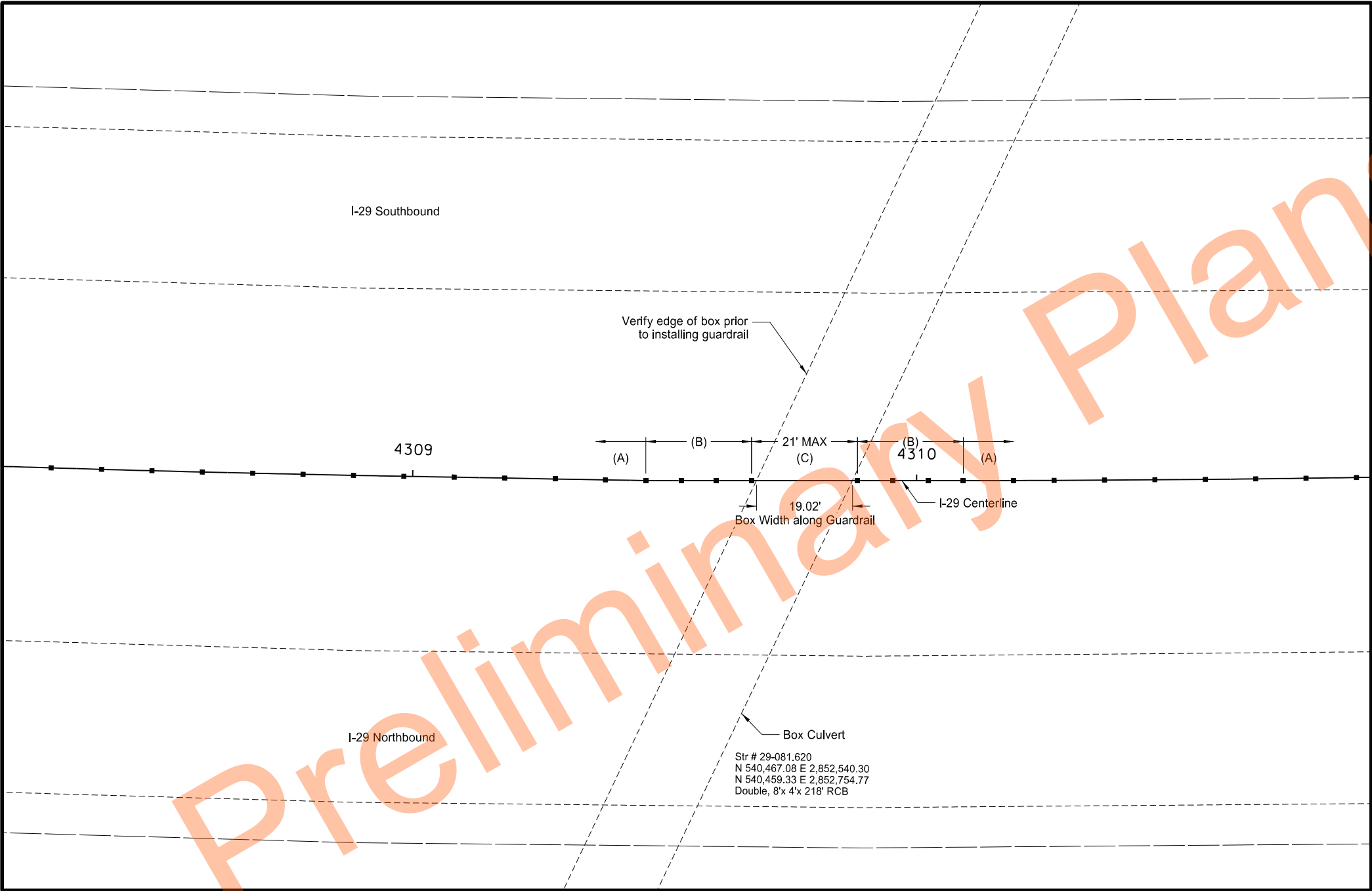
DATE 07/22/25

NORTH DAKOTA

I-29 - Argusville Intchg to N of Gardner Intchg

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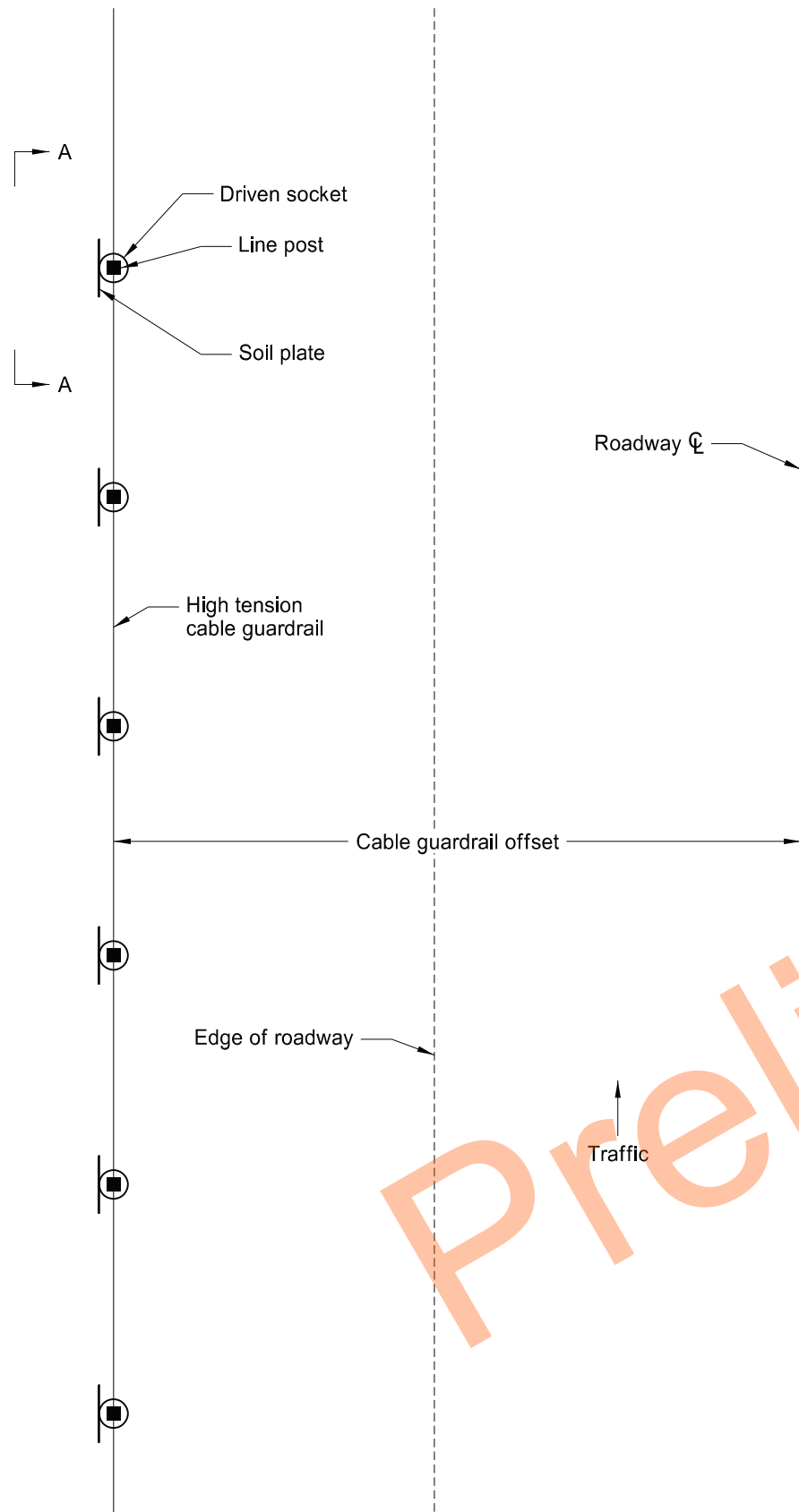
Post Spacing at Box Culverts Detail
Sta 4309+80



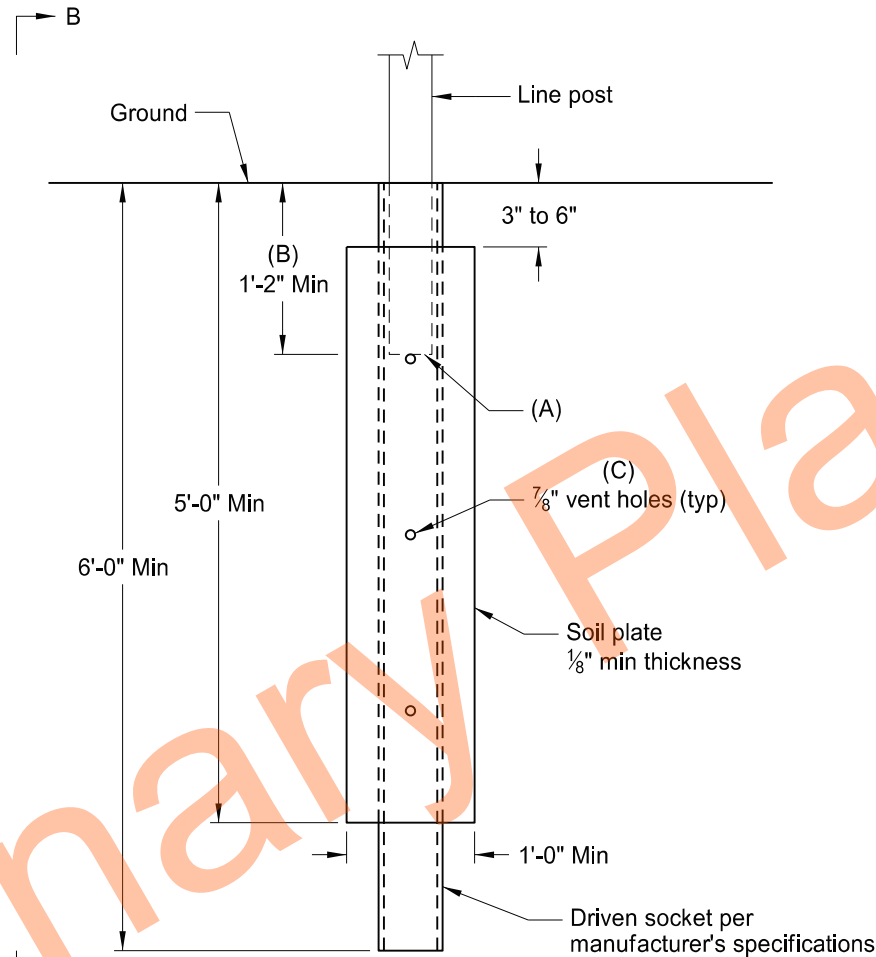
Note:
A) Manufacturer standard post spacing for 10' maximum deflection.
B) Manufacturer recommended post spacing to reduce deflection for the long span over the box culvert (Area C). Length of reduced post spacing varies based on manufacturer's recommendation.
C) Manufacturer maximum allowed post spacing for 10' maximum deflection.

High Tension Cable Guardrail
Post Spacing at Box Culverts Detail
I-29 - Argusville Intchg to N of Gardner Intchg

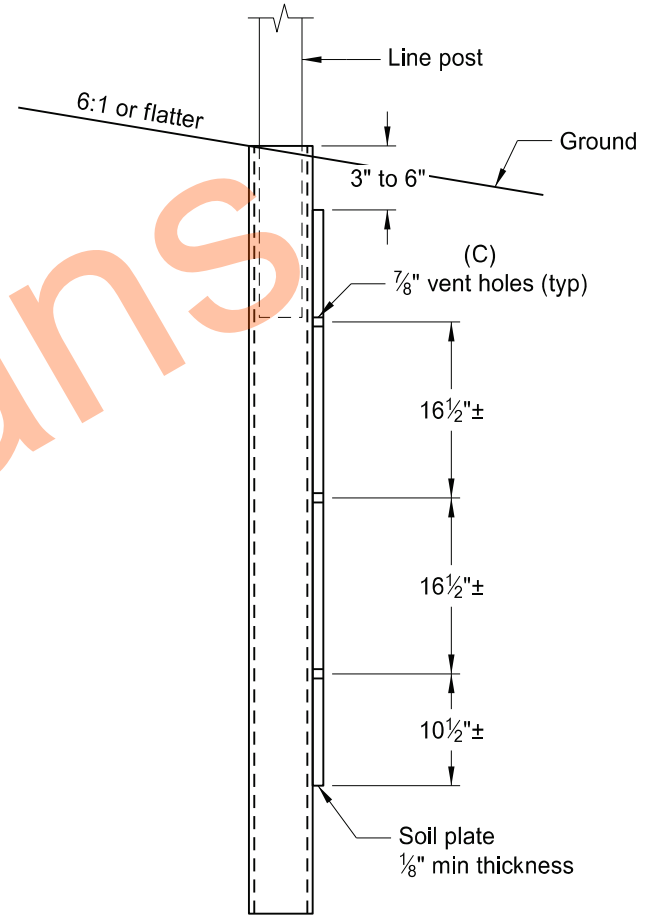
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	20	5



PLAN VIEW



SECTION A-A



SECTION B-B

DESIGN REQUIREMENTS:

1. Design socket for a maximum deflection of 1" at ground level.
2. Sockets to have a yield strength equal to or greater than that of the crash tested line posts.
3. Design socket for line posts to yield above ground.

NOTES:

- (A) Provide post stop per manufacturer's recommendation.
- (B) Line post depth as per manufacturer's specifications.
- (C) Provide three 7/8" diameter vent holes for galvanizing. Upper hole may be used for post stop. Vent holes are optional per manufacturer's recommendation.

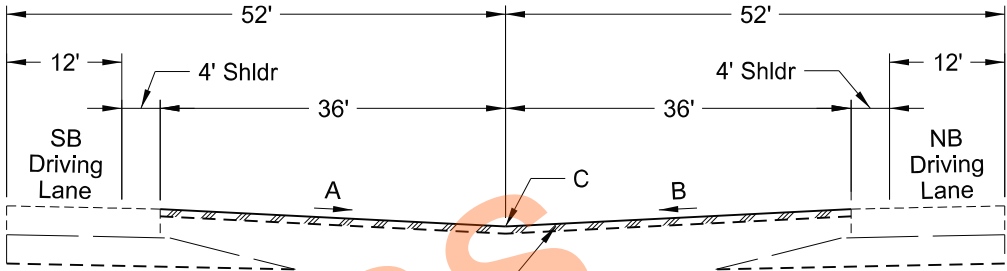


High Tension Cable Guardrail

Steel Driven Socket Detail

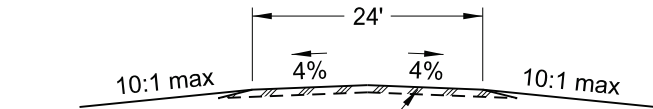
I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	20	6

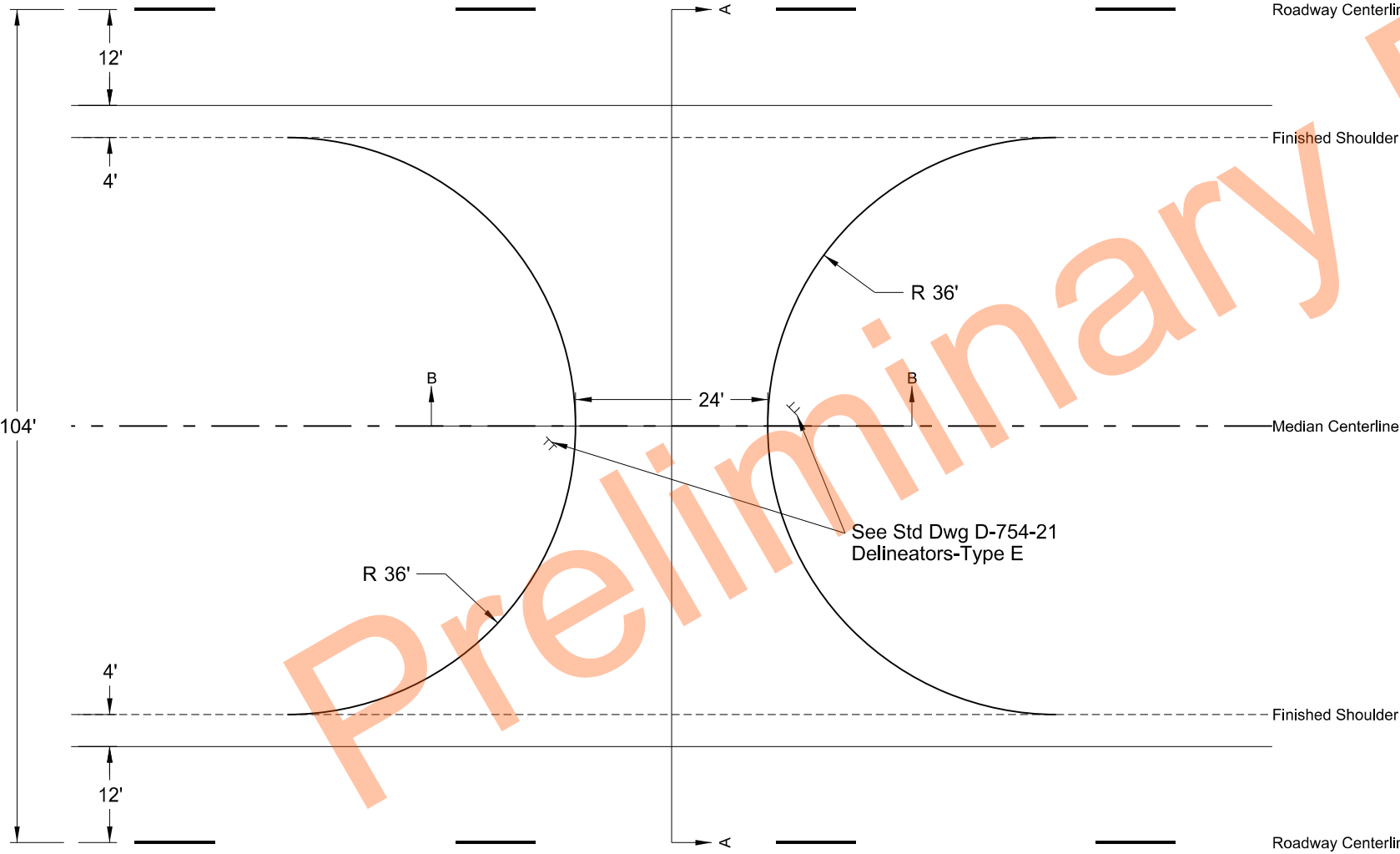


3" Aggregate Base Course CL 5
Section A-A

New Maintenance Crossovers			
Station	Slopes (%)		Elevation
	A	B	C
4277+05	0.35	0.51	888.90
4505+36	0.66	0.05	889.40
4584+89	2.47	3.00	892.10



3" Aggregate Base Course CL 5
Section B-B

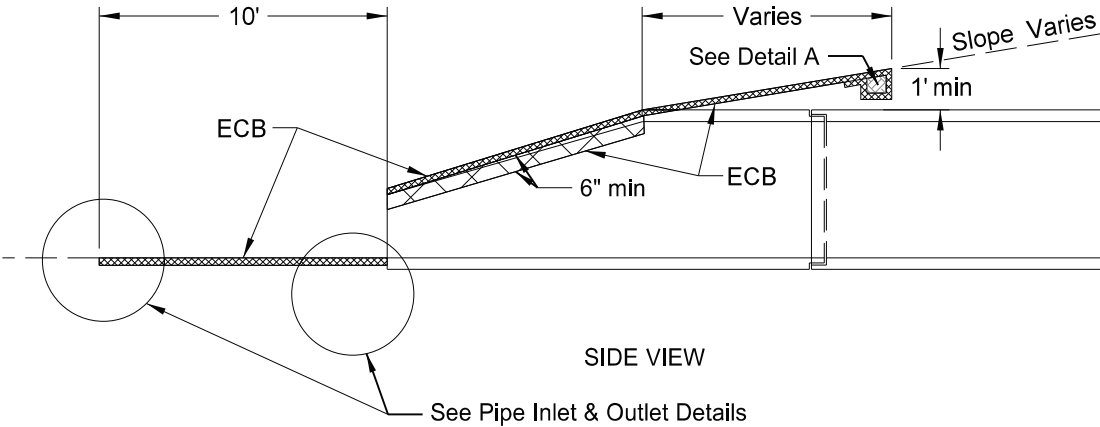
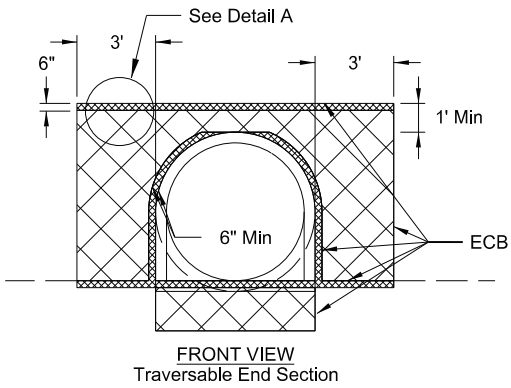


Plan View

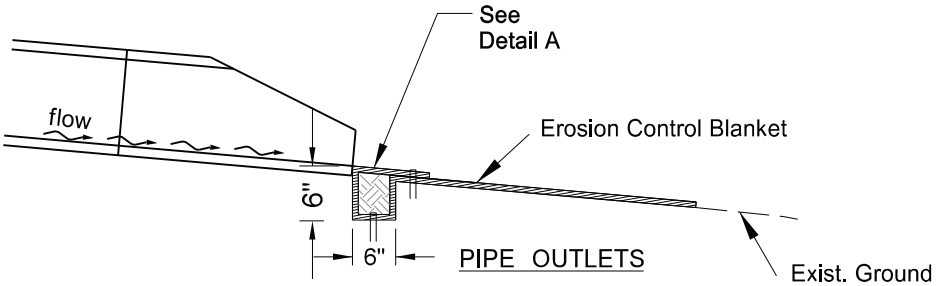
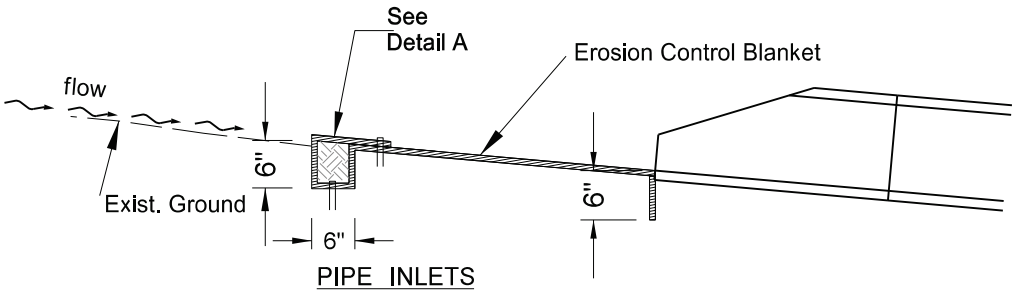
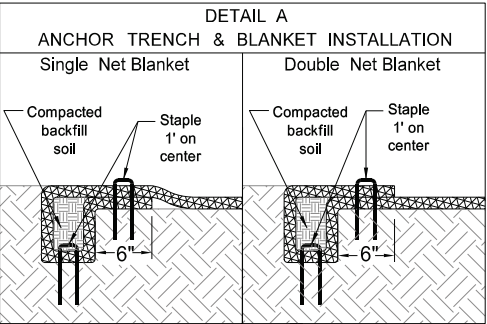
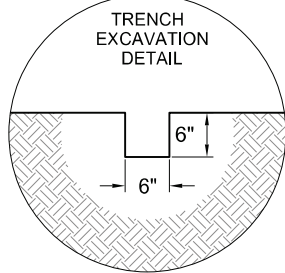
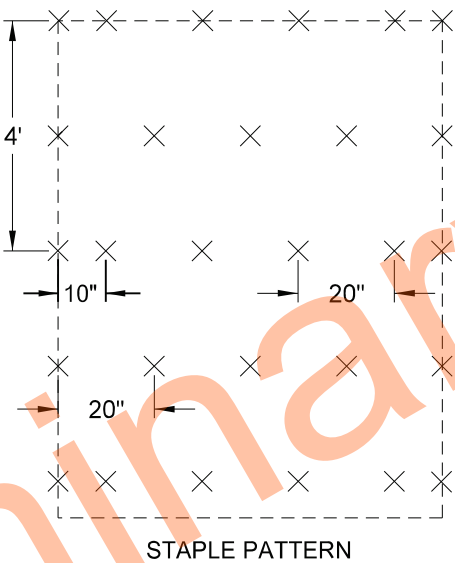
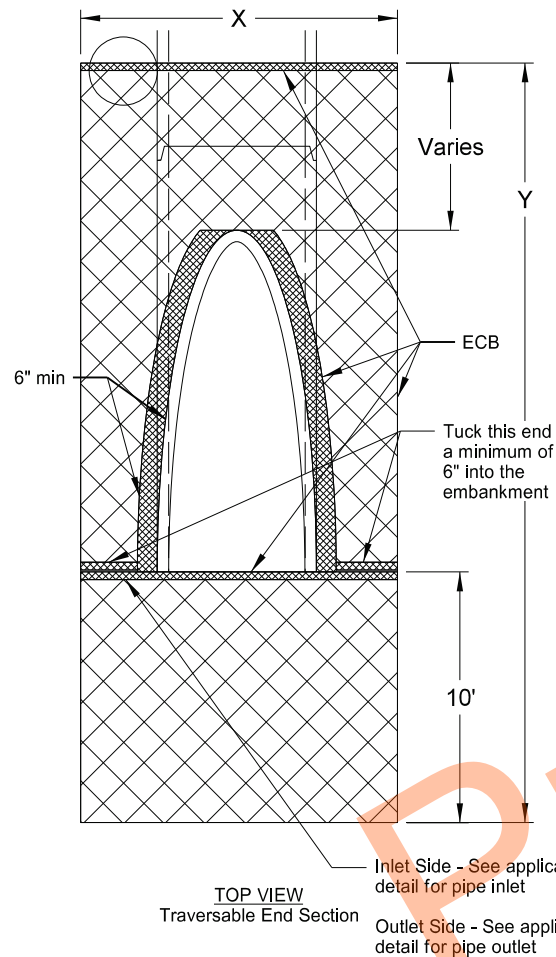


High Tension Cable Guardrail
Maintenance Crossover Detail
I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	20	7



255 0103 ECB TYPE 3						
Location of Surface Area		Pipe Diameter (IN)	No.	X (FT)	Y (FT)	Total Quantity (SY)
Station	Offset					
4277+05	Mdn	18	2	9.5	20.7	22
4505+36	Mdn	18	2	9.5	20.7	22
Total =						88



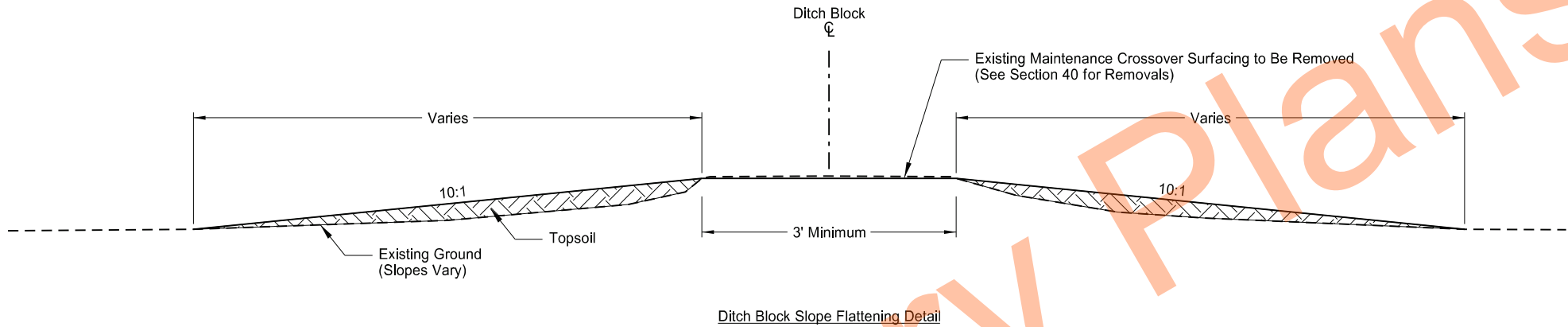
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the traversable end section) around the opening of the traversable end section.



High Tension Cable Guardrail
Erosion Control at Culvert Traversable End Sections
I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	20	8

SPEC CODE	BID ITEM	QTY	UNIT
203 0204	FLATTEN DITCH BLOCK SLOPES		
	Flatten Ditch Block Slopes	2	EA



203 0204 FLATTEN DITCH BLOCK SLOPES					
Location				Quantity	
County	RP	Station	Offset	BK	AHD
Cass	82.470	4354+60	Mdn	-	1
Cass	85.082	4492+50	Mdn	-	-
Cass	86.544	4569+70	Mdn	1	-
Total =				2	



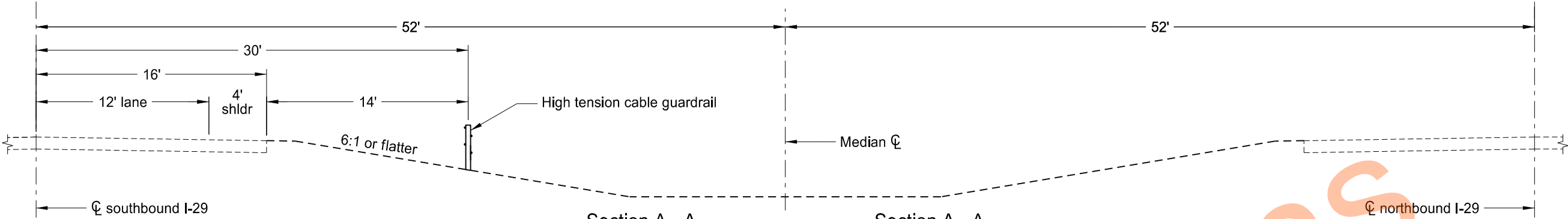
Notes:
1. Include all costs of the labor, equipment, and materials to flatten ditch block slopes in the price bid for "FLATTEN DITCH BLOCK SLOPES".

High Tension Cable Guardrail

Ditch Block Slope Flattening Detail

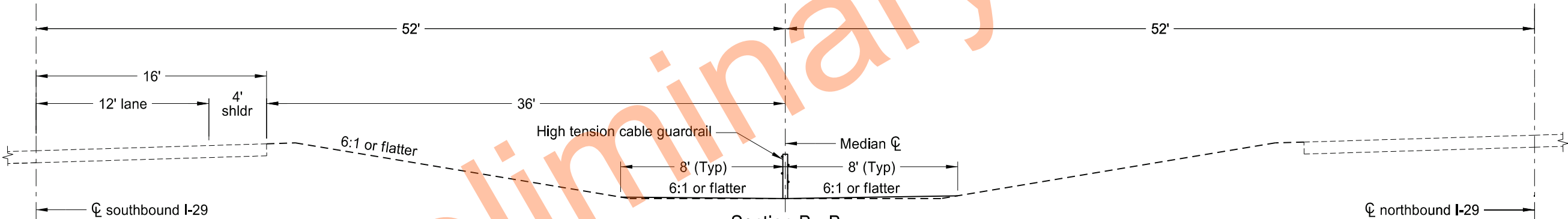
I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	30	1



Section A - A
Sta 4148+37 to 4160+24
Sta 4161+16 to 4201+32
Sta 4202+42 to 4225+18
Sta 4240+00 to 4254+79
Sta 4255+80 to 4261+00
Sta 4274+00 to 4276+13
Sta 4277+97 to 4303+44
Sta 4316+98 to 4366+22
Sta 4368+19 to 4385+71
Sta 4400+30 to 4420+18

Section A - A
Sta 4421+19 to 4463+00
Sta 4471+00 to 4474+55
Sta 4475+49 to 4483+58
Sta 4494+59 to 4504+44
Sta 4506+28 to 4530+89
Sta 4534+15 to 4560+12
Sta 4575+07 to 4579+00
Sta 4613+00 to 4616+00
Sta 4622+00 to 4624+00
Sta 4638+50 to 4639+87

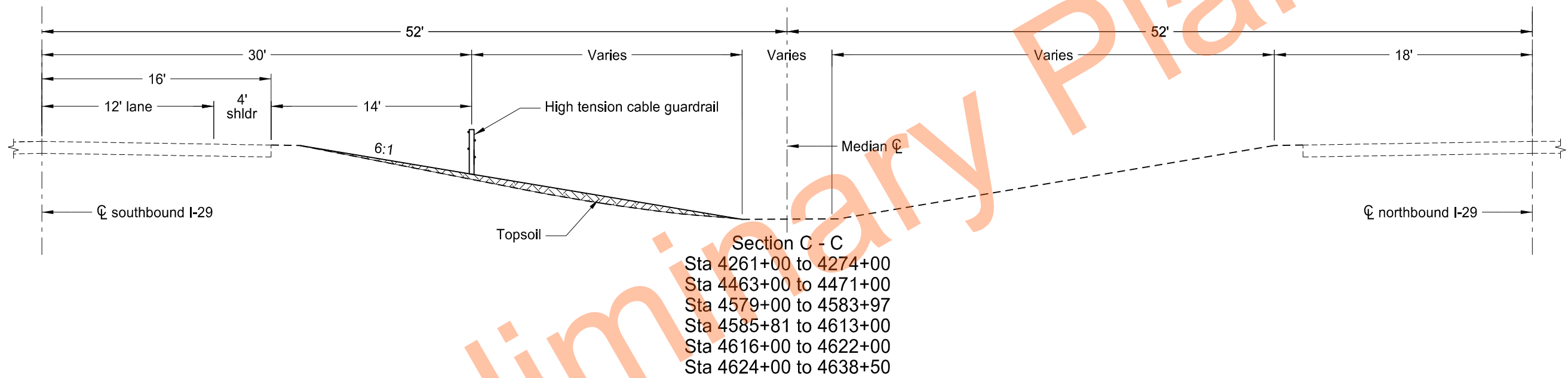


Section B - B
Sta 4224+57 to 4239+53
Sta 4302+83 to 4316+51
Sta 4385+10 to 4399+83
Sta 4482+97 to 4494+12
Sta 4559+51 to 4574+60

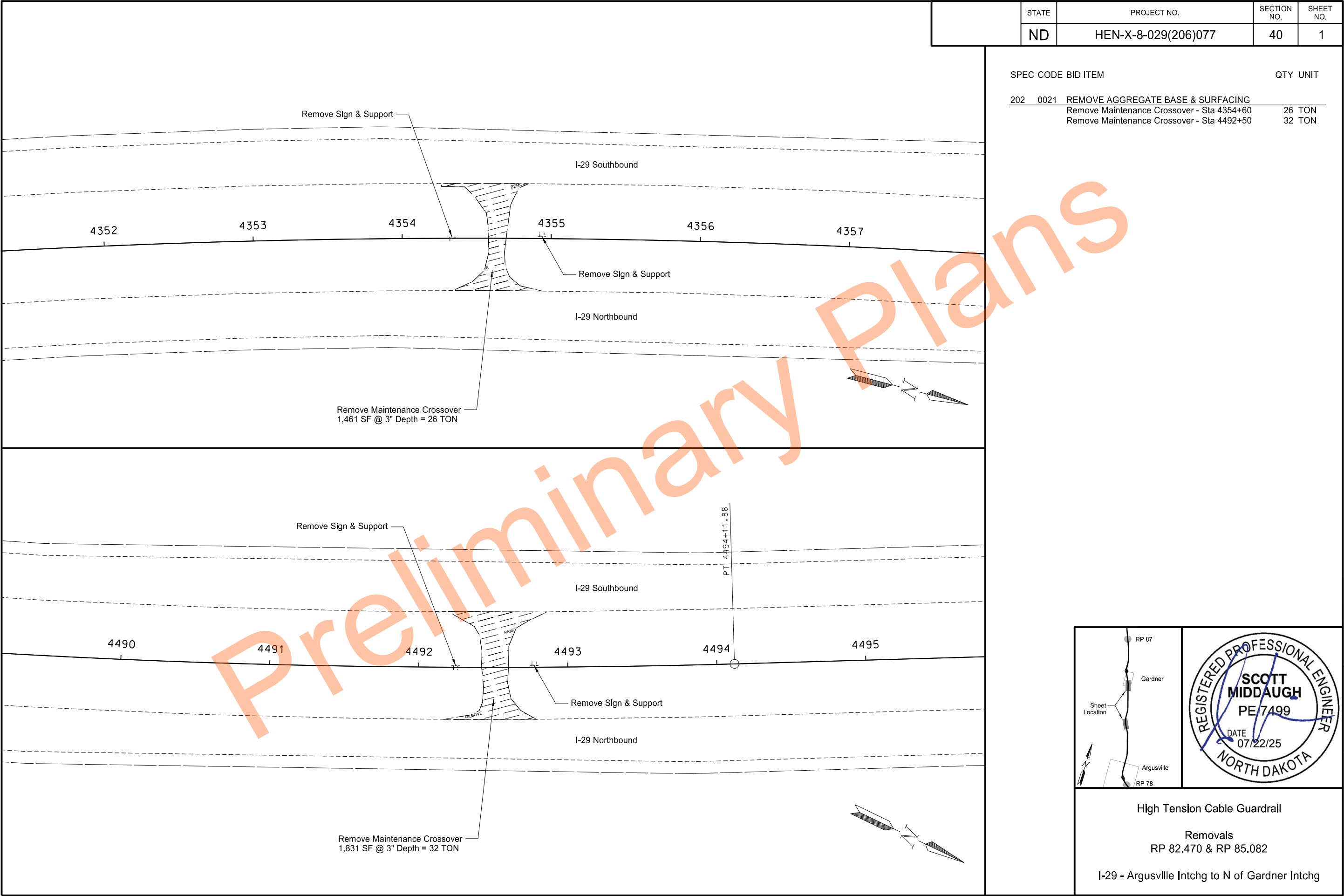


High Tension Cable Guardrail
Proposed Typical Sections
I-29 - Argusville Intchg to N of Gardner Intchg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	30	2



High Tension Cable Guardrail
Proposed Typical Sections
I-29 - Argusville Intchg to N of Gardner Intchg



Remove Sign & Support

Remove Sign & Support

Remove Maintenance Crossover
1,461 SF @ 3" Depth = 26 TON

Remove Sign & Support

Remove Sign & Support

Remove Maintenance Crossover
1,831 SF @ 3" Depth = 32 TON

PT 4494+11.88

RP 87

Gardner

Sheet Location

Argusville

RP 78

REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

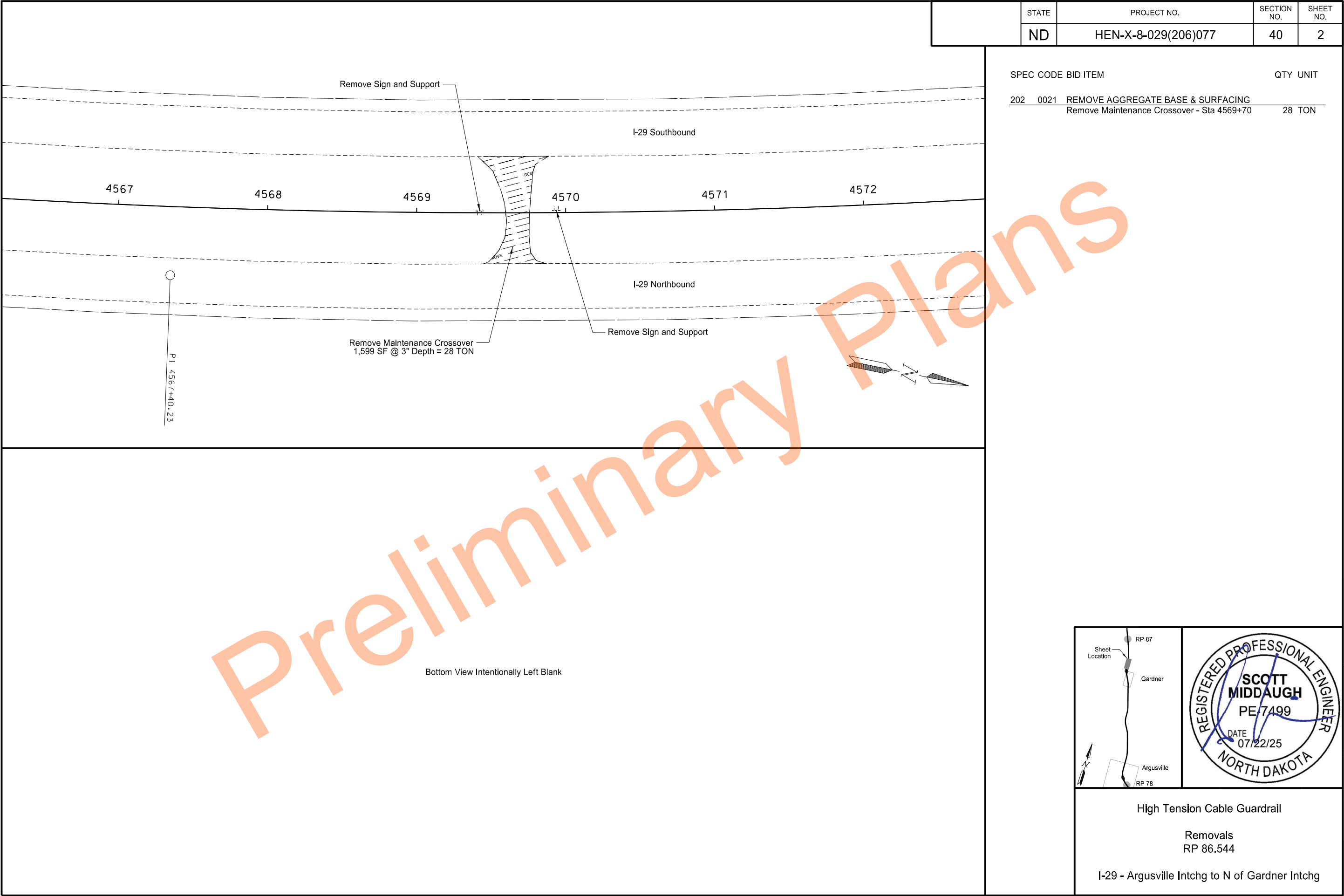
NORTH DAKOTA

High Tension Cable Guardrail

Removals

RP 82.470 & RP 85.082

I-29 - Argusville Intchg to N of Gardner Intchg



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	51	1

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosynthetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF							Begin EA	End EA	
4276+79	0'	4277+31	0'	18	Pipe Conduit - Approach	52'	Reinforced Concrete Pipe - Class III (barrel length = 50 LF)	18	-	-	-	-	TES	TES	Specification 714.04 A
4505+10	0'	4505+62	0'	18	Pipe Conduit - Approach	52'	Reinforced Concrete Pipe - Class III (barrel length = 50 LF)	18	-	-	-	-	TES	TES	Specification 714.04 A

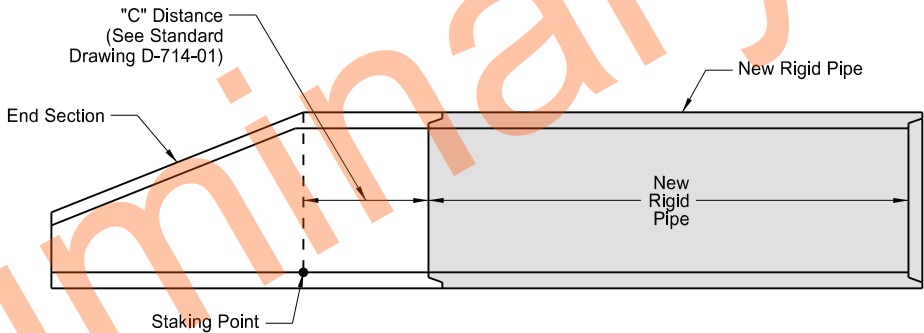
Note: See Section 130 for pipe locations and invert elevations.

Corrugations: 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

Coatings: Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

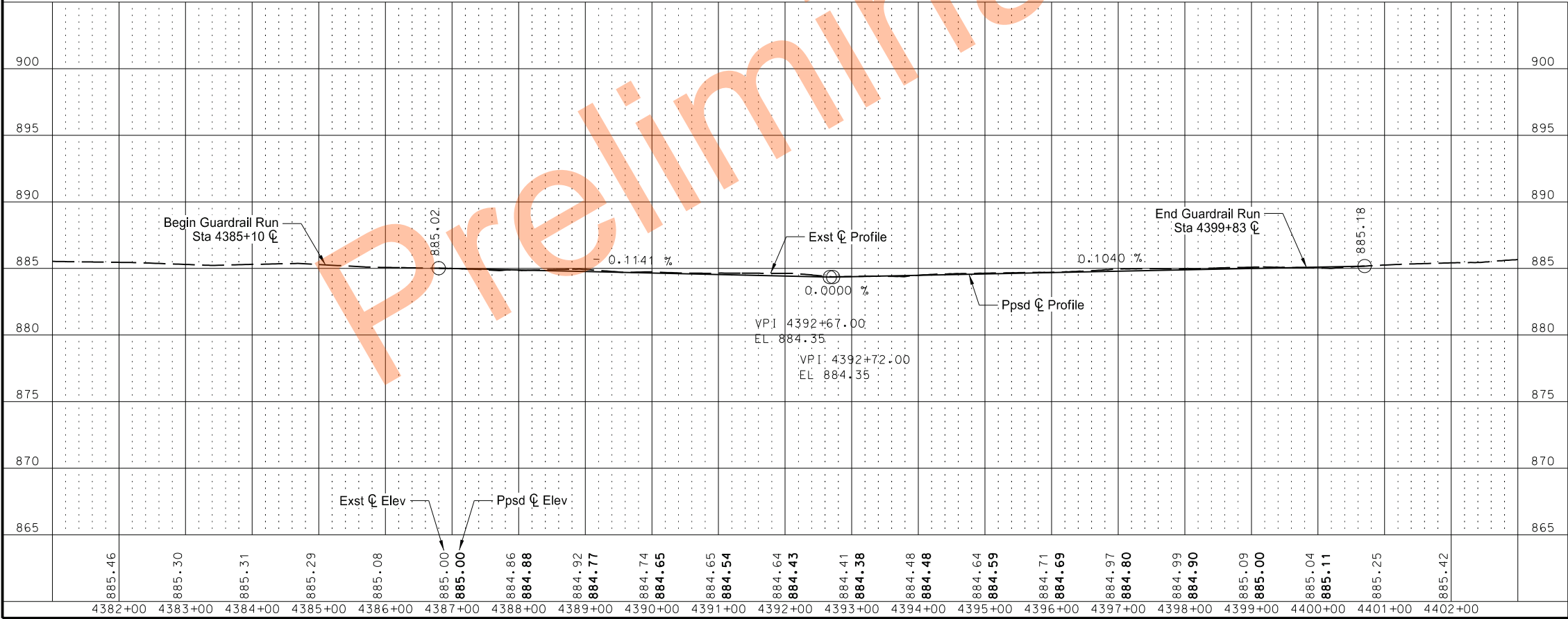
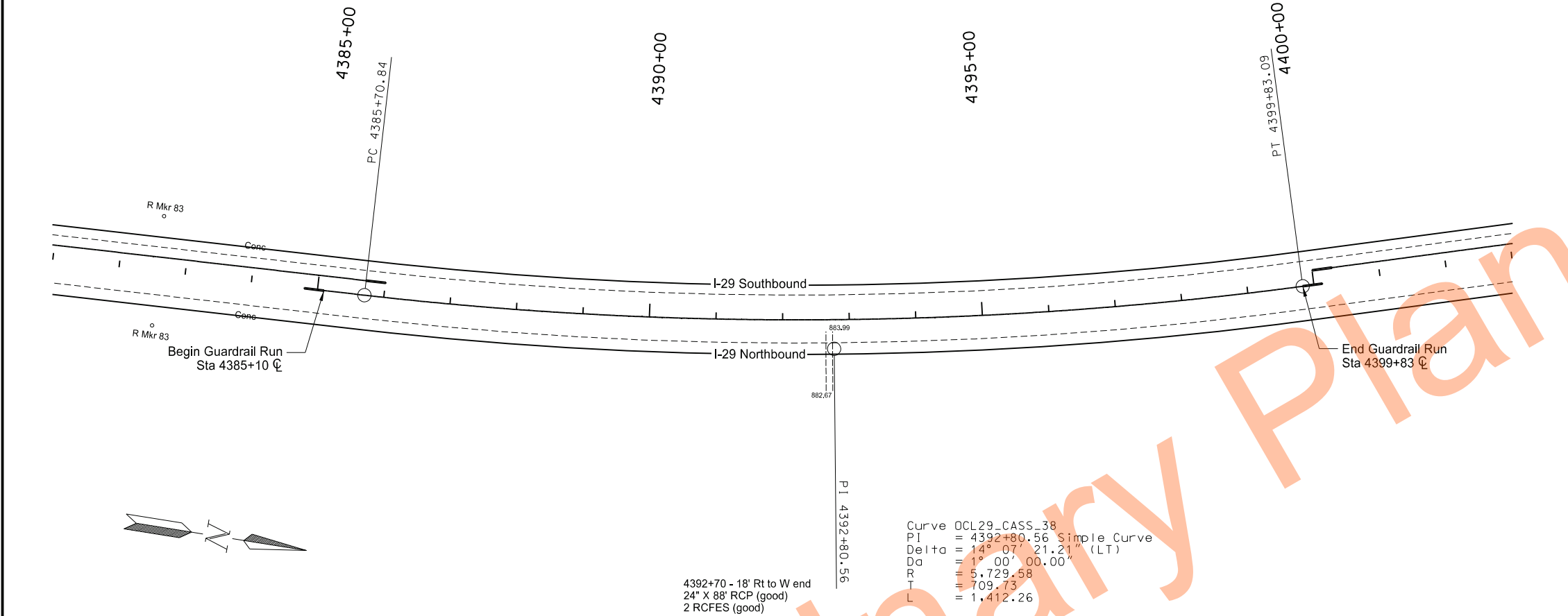


Culvert Staking Detail
New Conduit
(Rigid Pipe)



High Tension Cable Guardrail
Allowable Pipe List
I-29 - Argusville Intchg to N of Gardner Intchg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	60	1



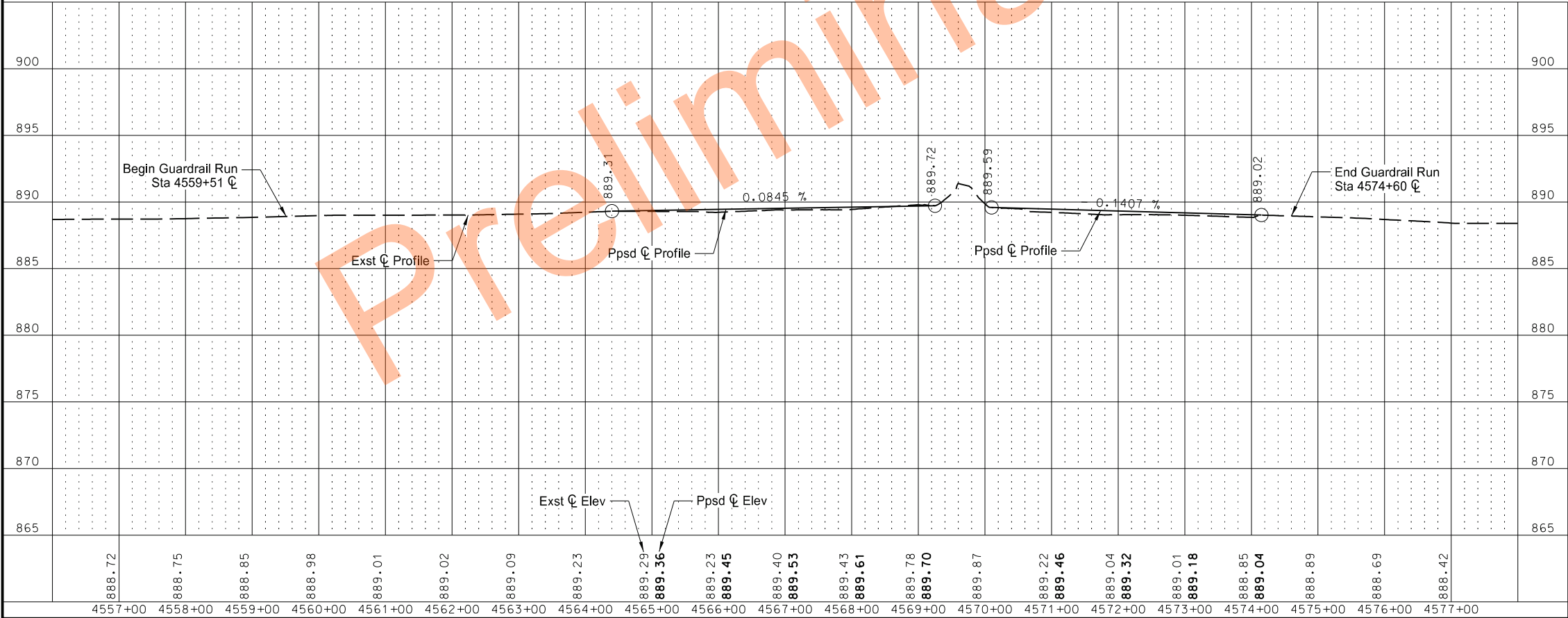
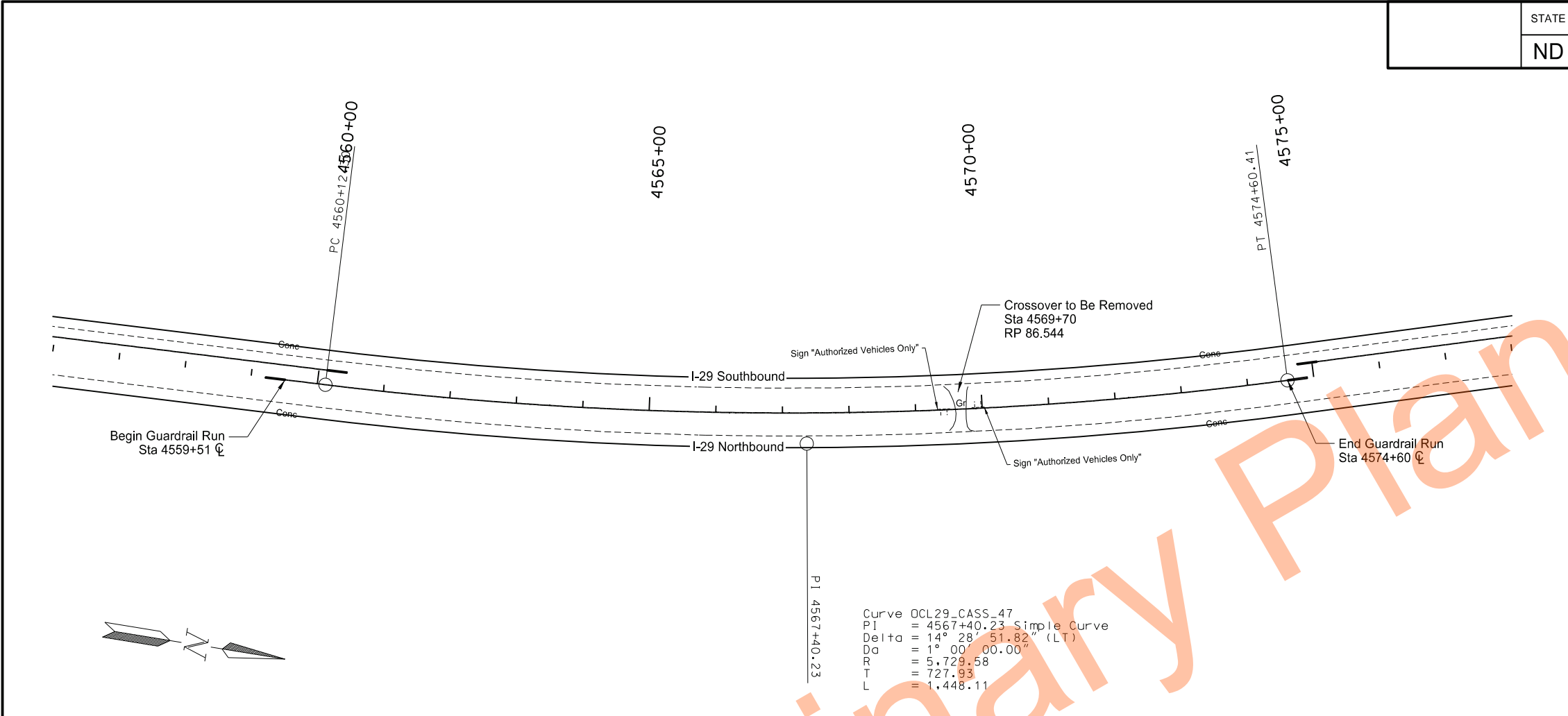
High Tension Cable Guardrail

Plan & Profile

Sta 4382+00 to Sta 4402+00 (OCL29_CASS)

I-29 - Argusville Interchange to N of Gardner Intchg

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	60	2



RP 87

Sheet Location

Gardner

Argusville

RP 78

REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

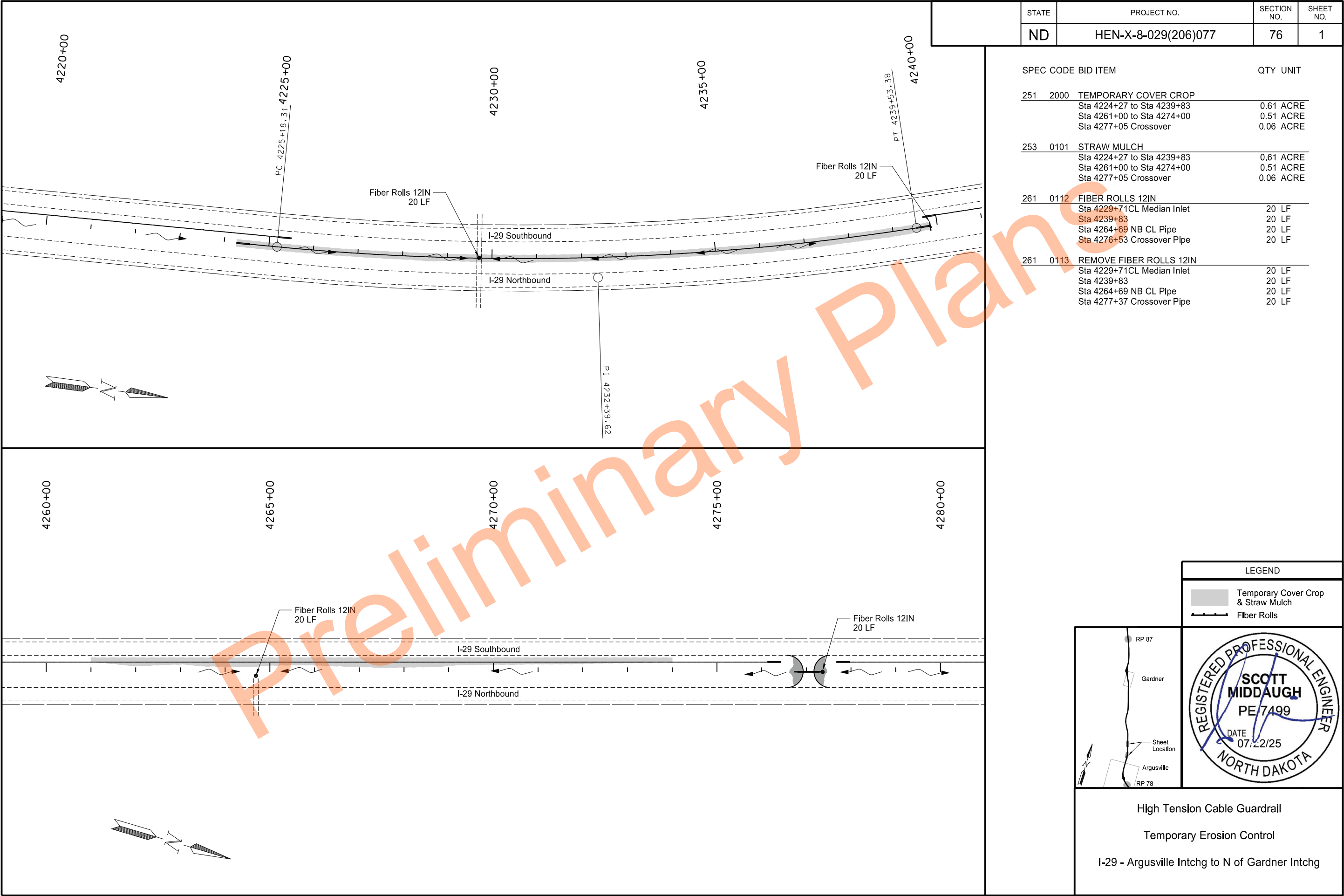
NORTH DAKOTA

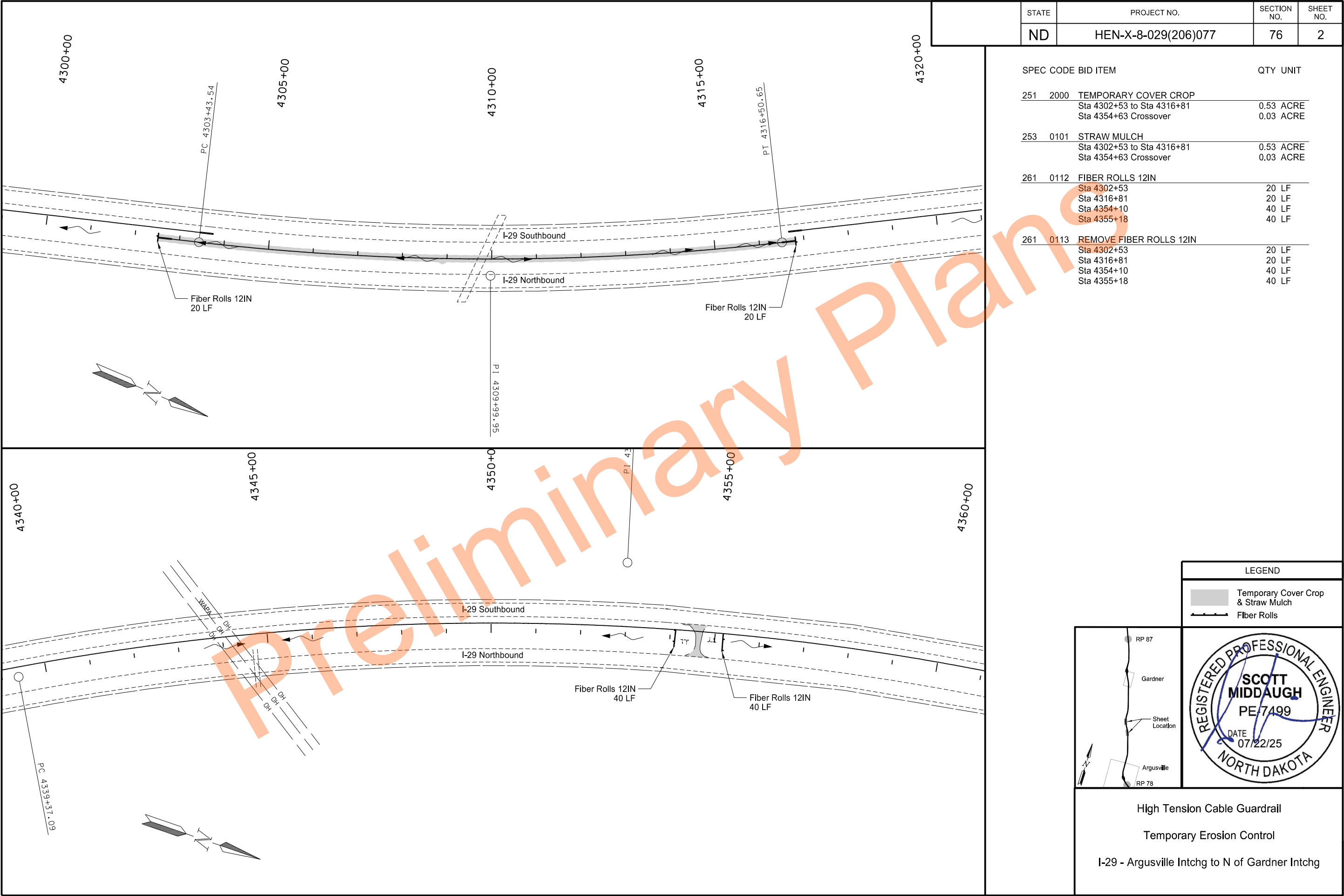
High Tension Cable Guardrail

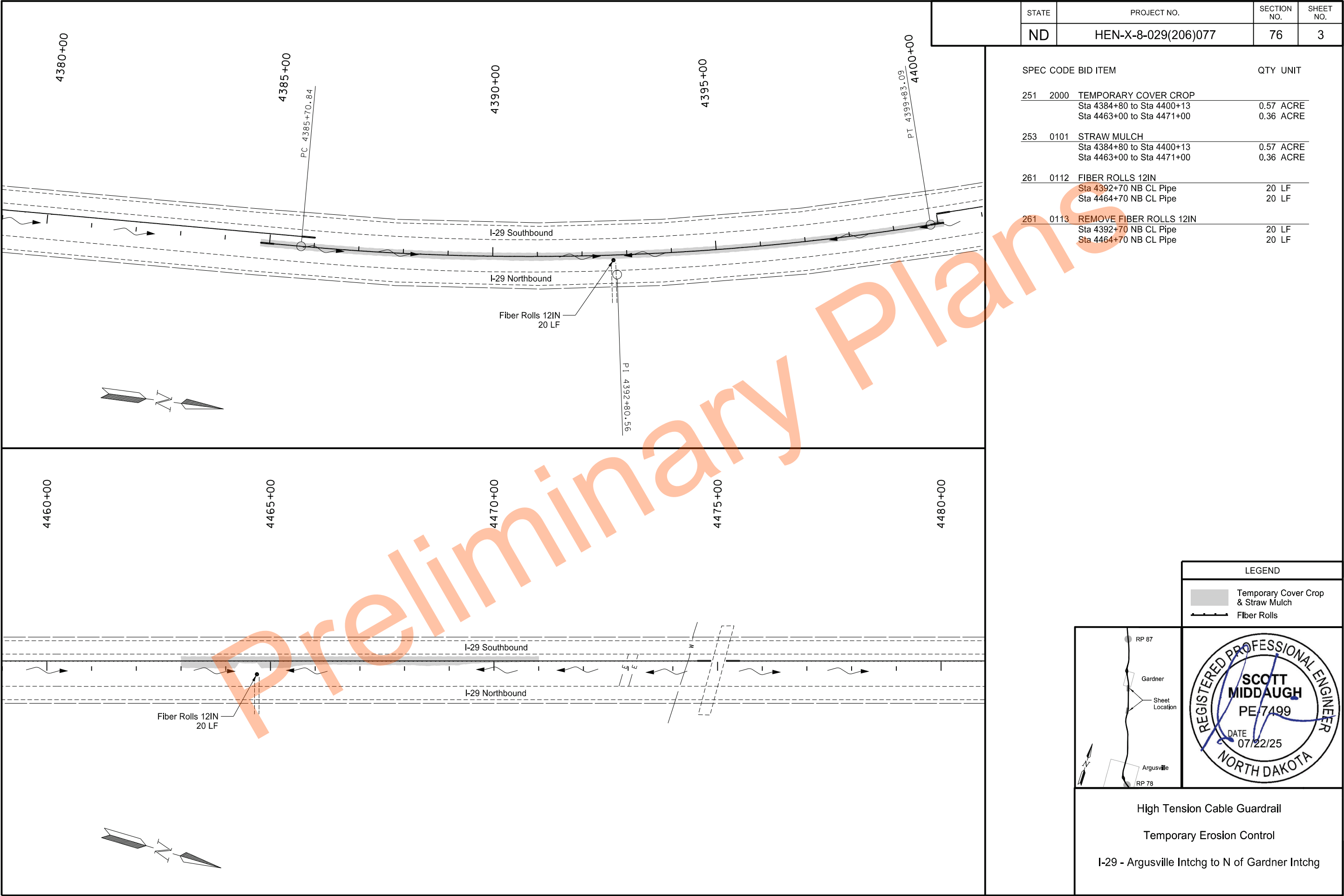
Plan & Profile

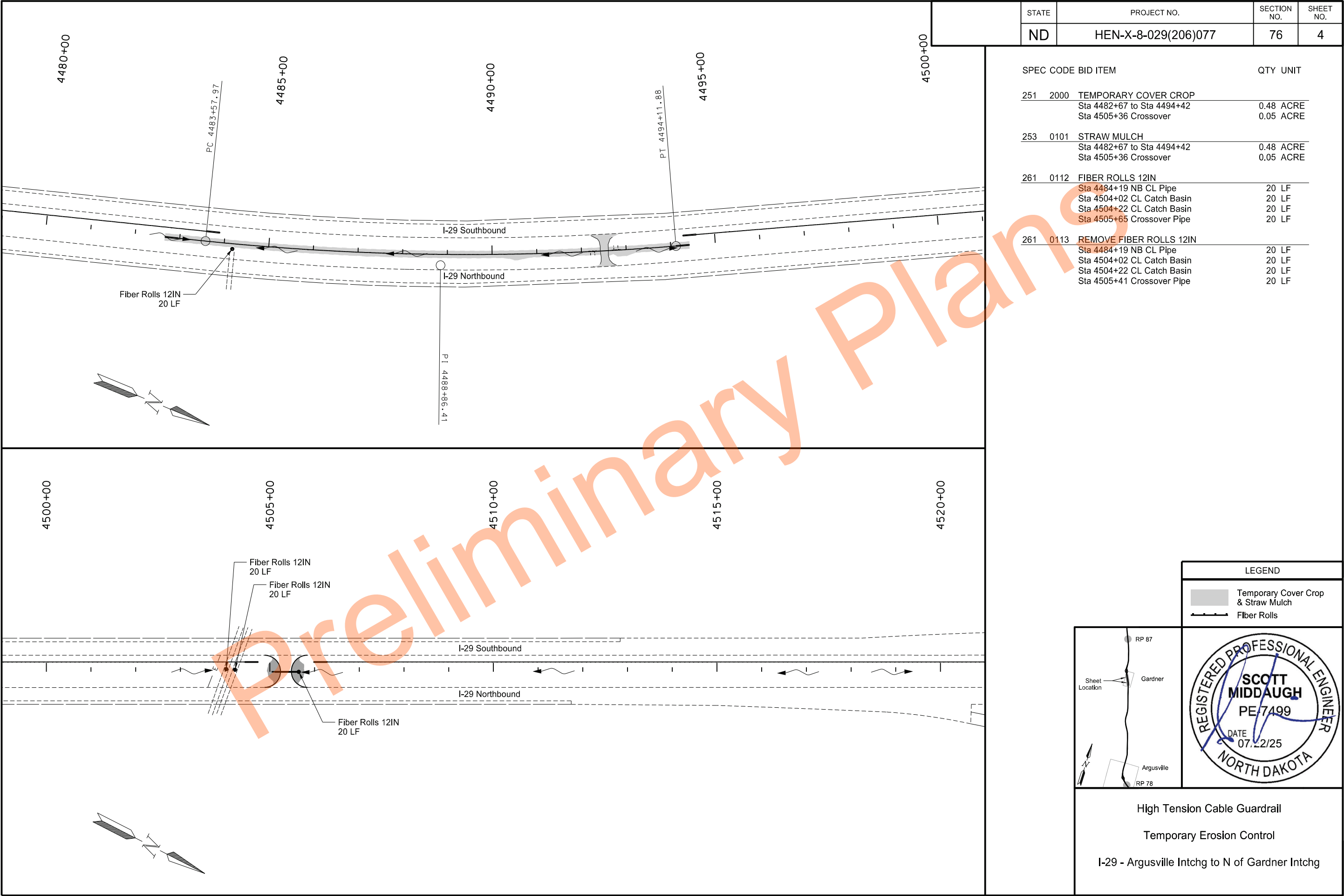
Sta 4557+00 to Sta 4577+00 (OCL29_CASS)

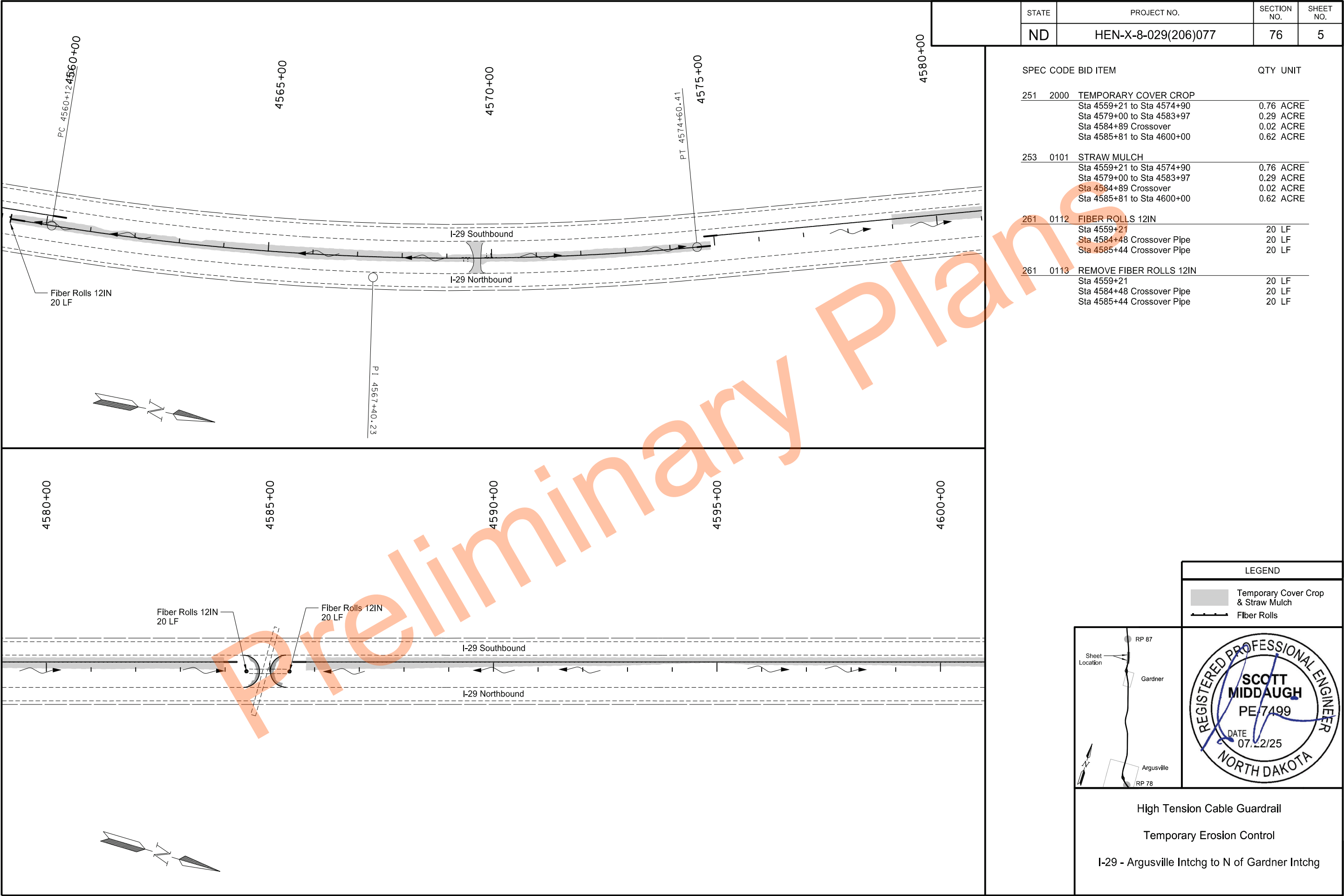
I-29 - Argusville Interchange to N of Gardner Intchg

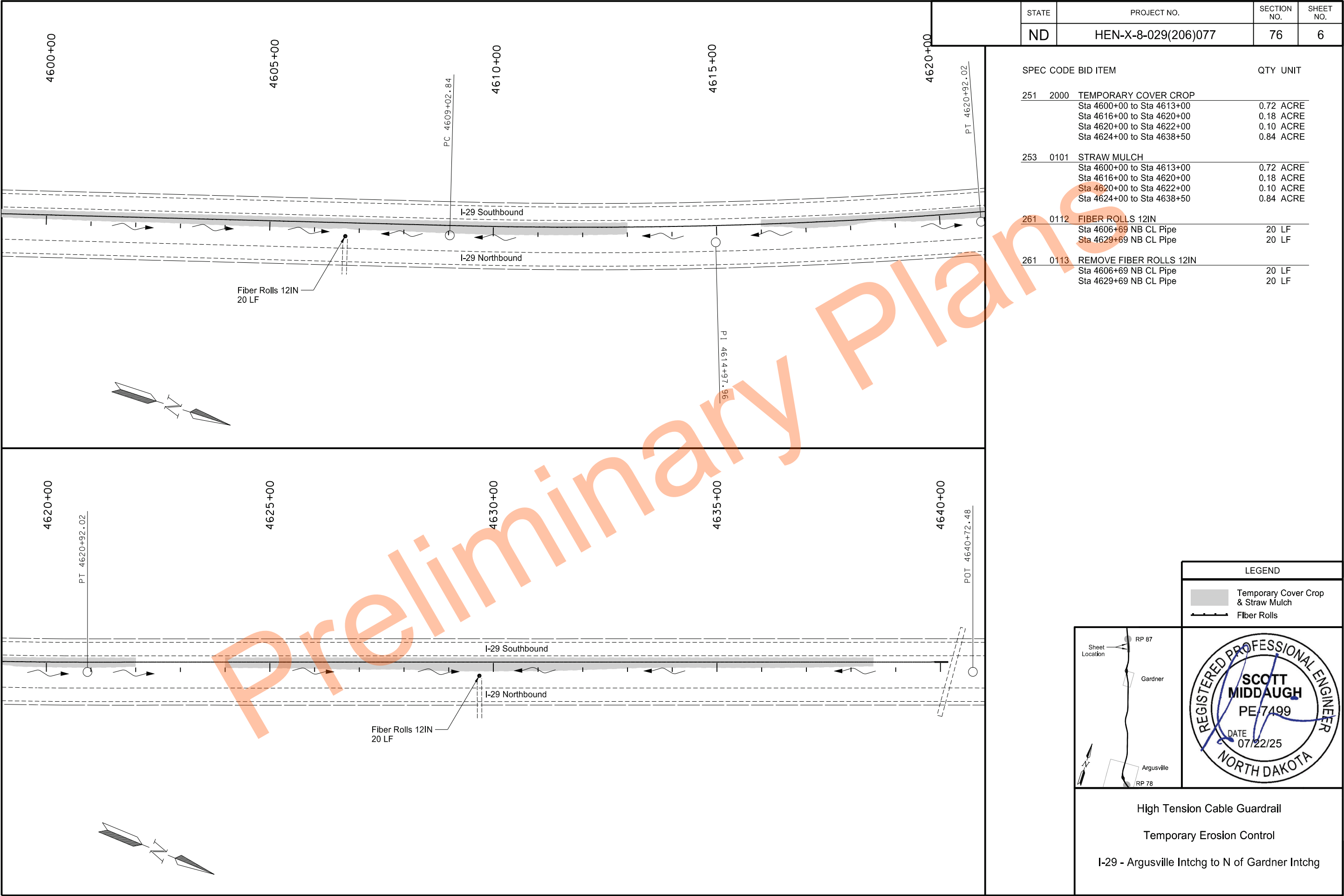


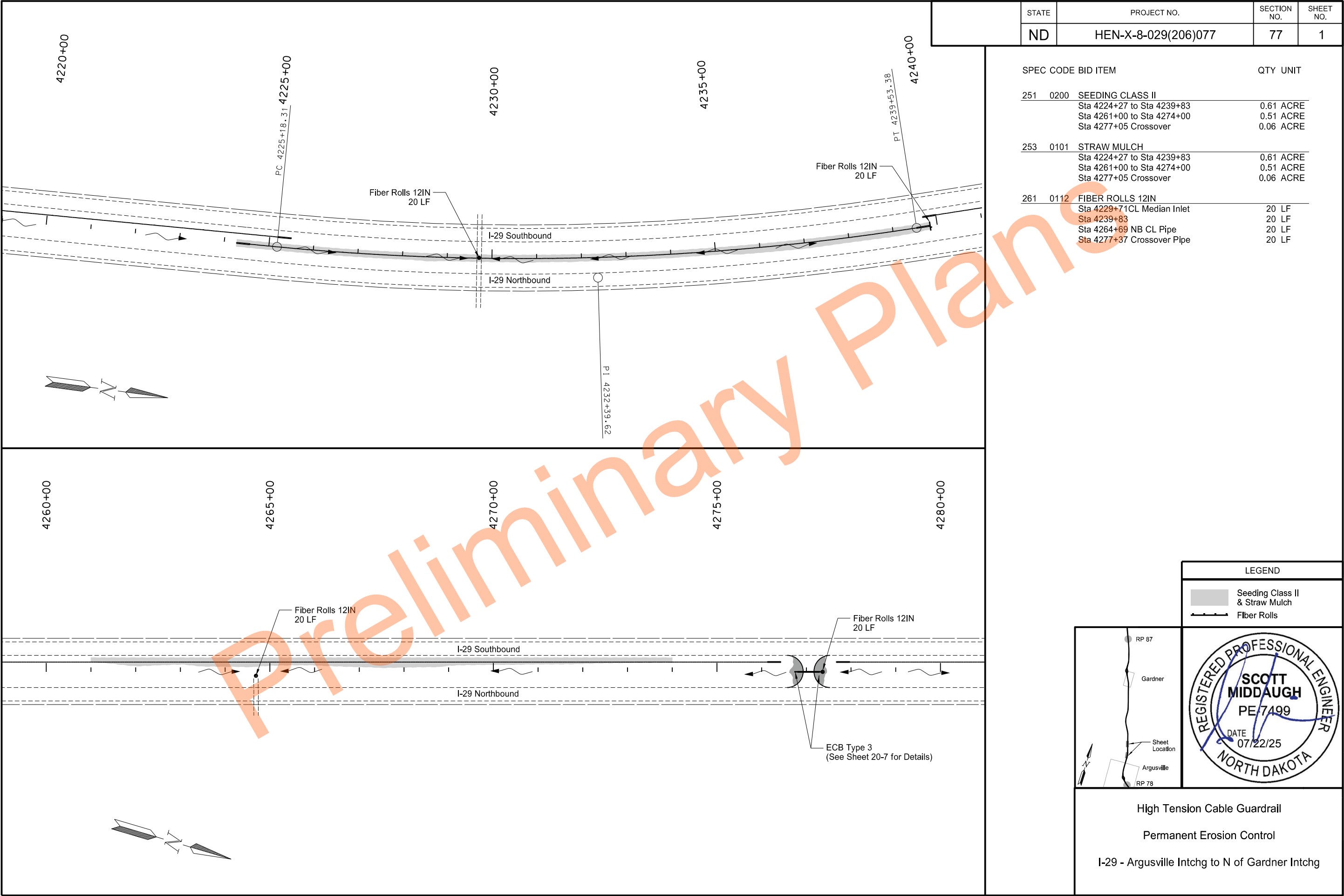


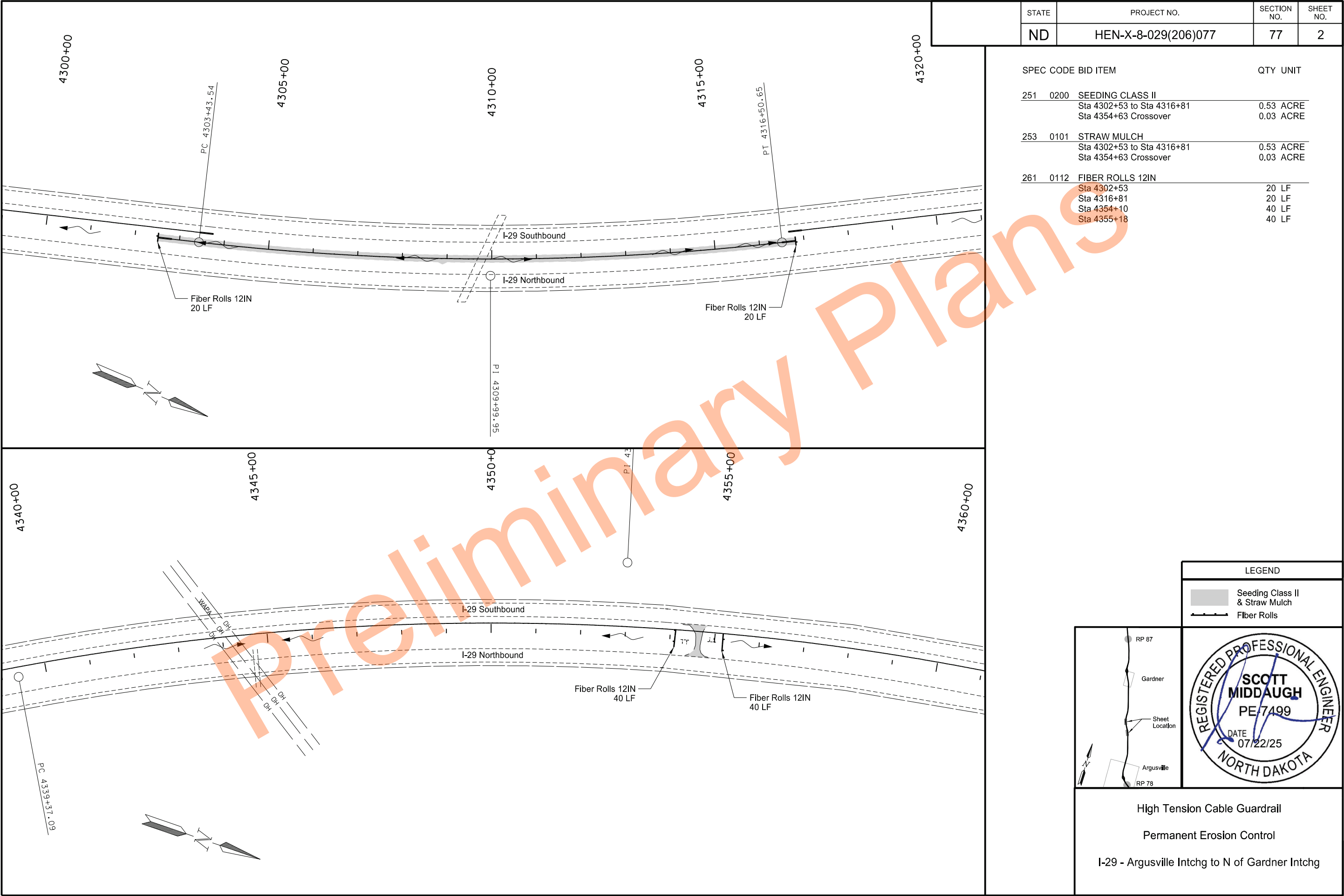


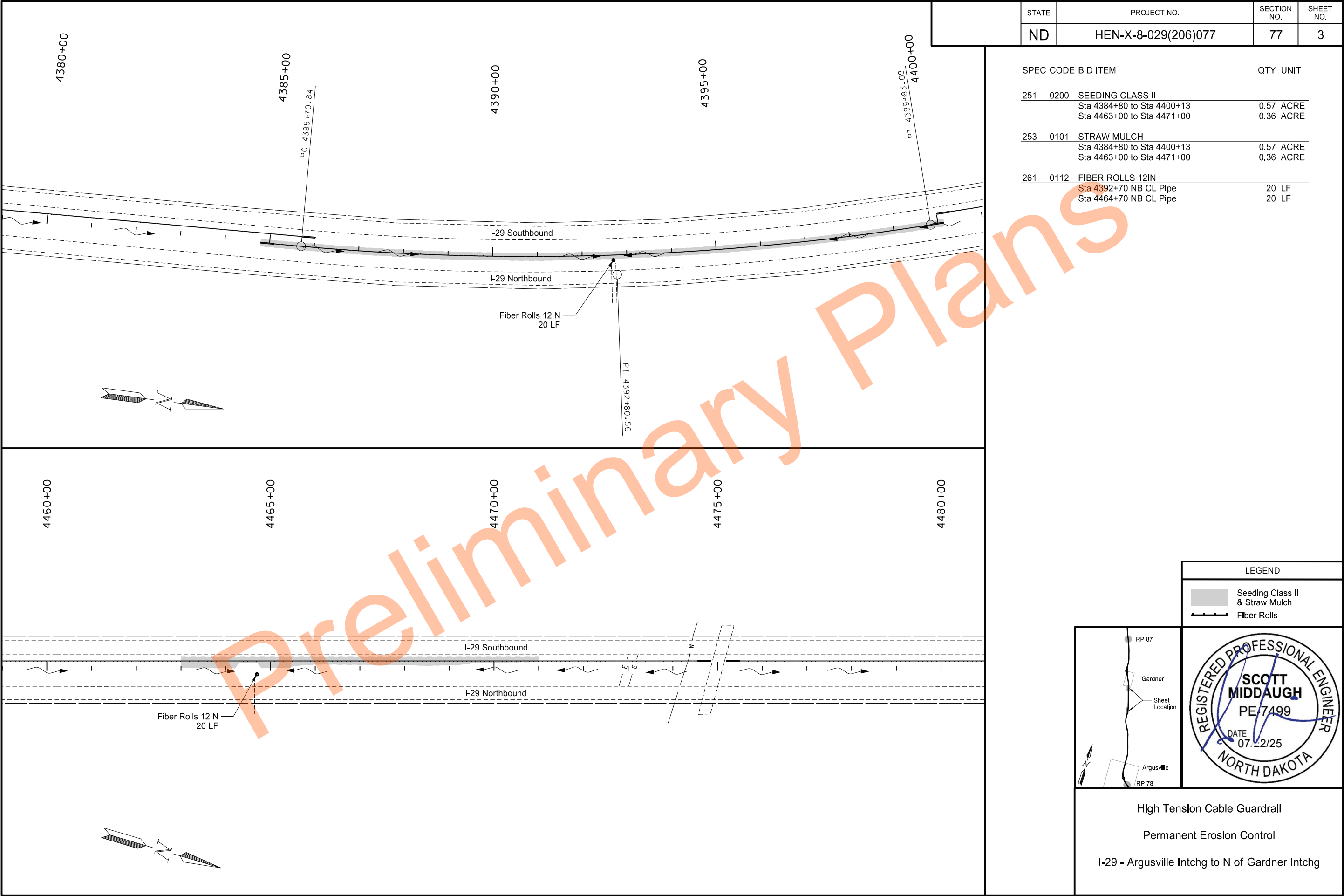


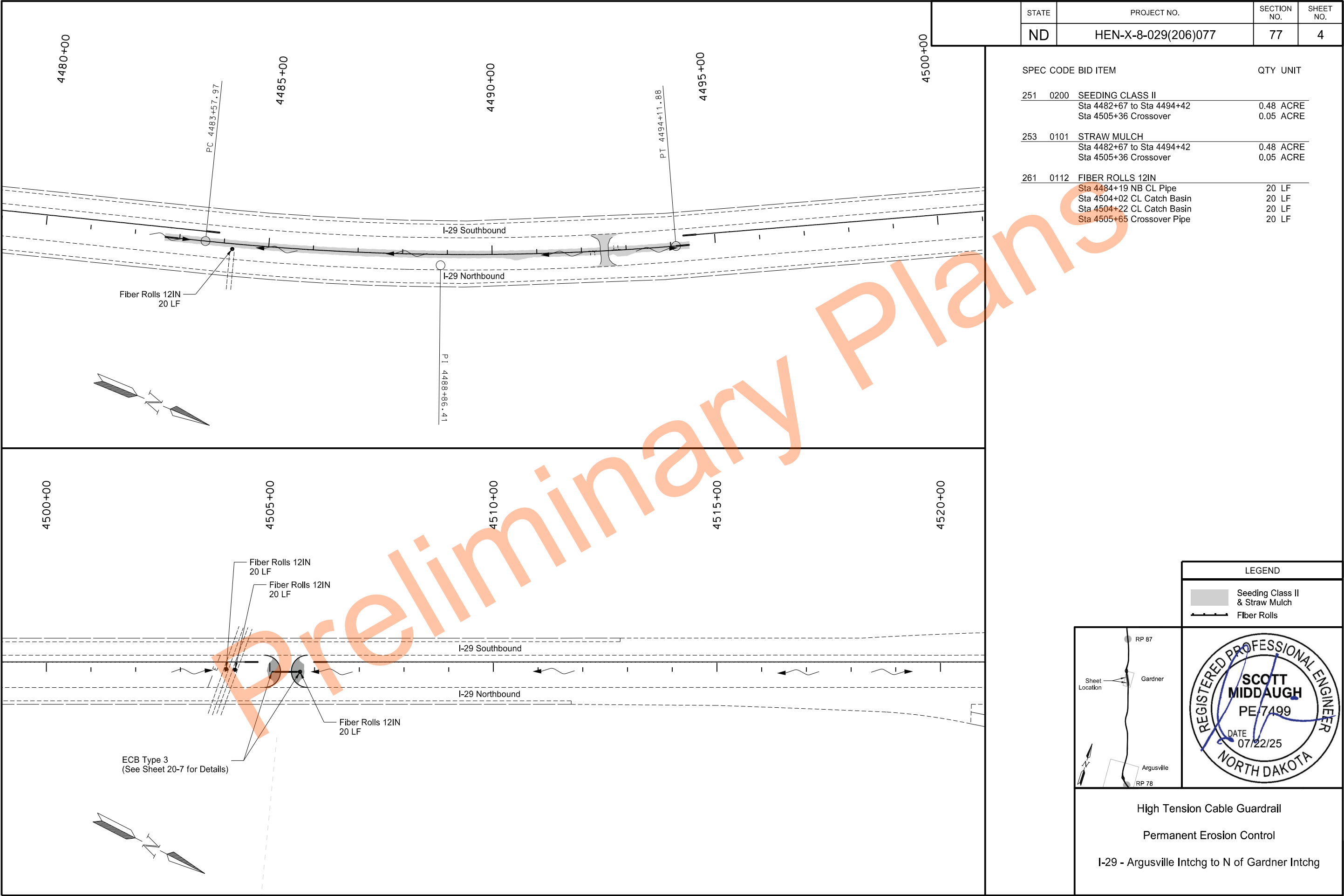


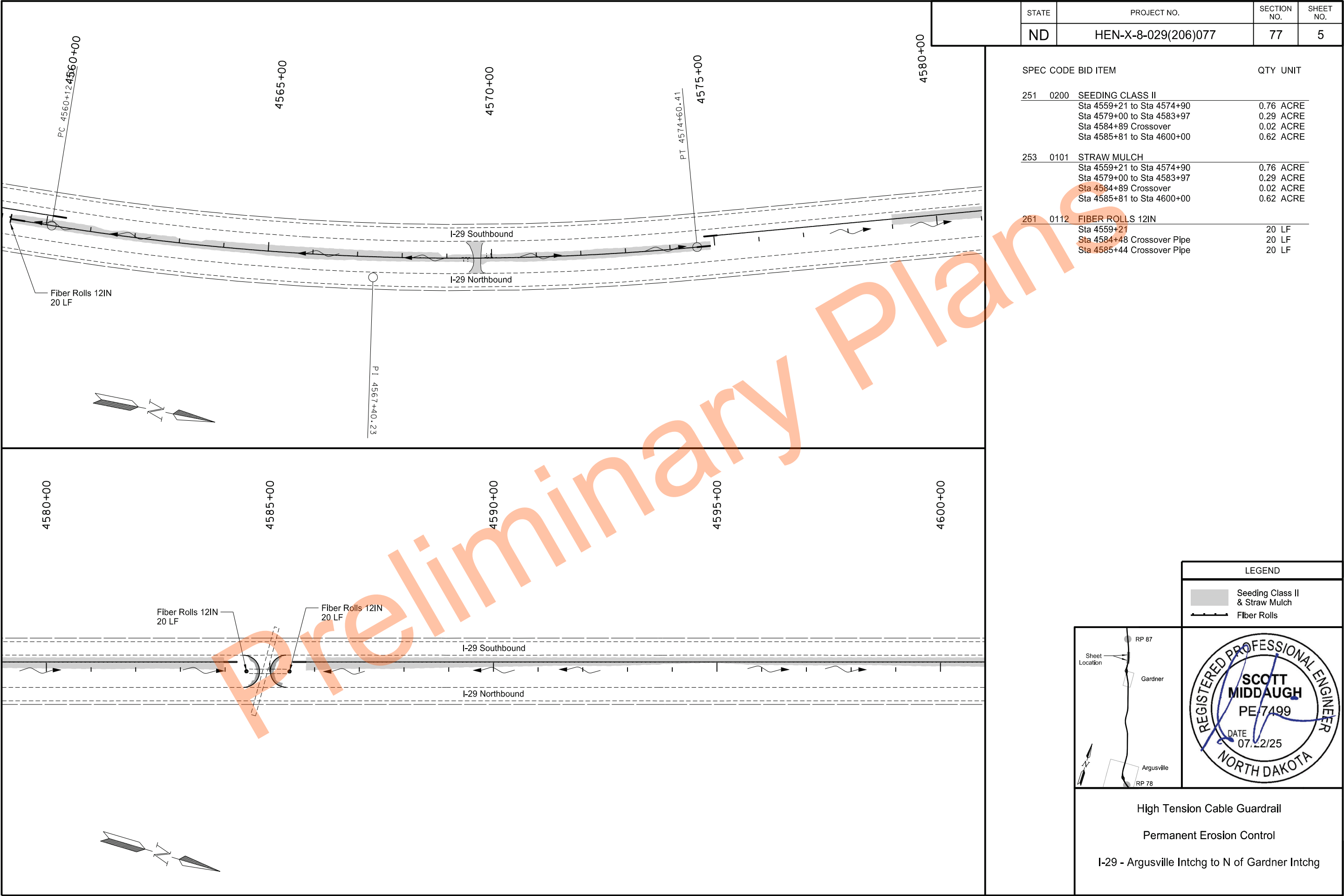


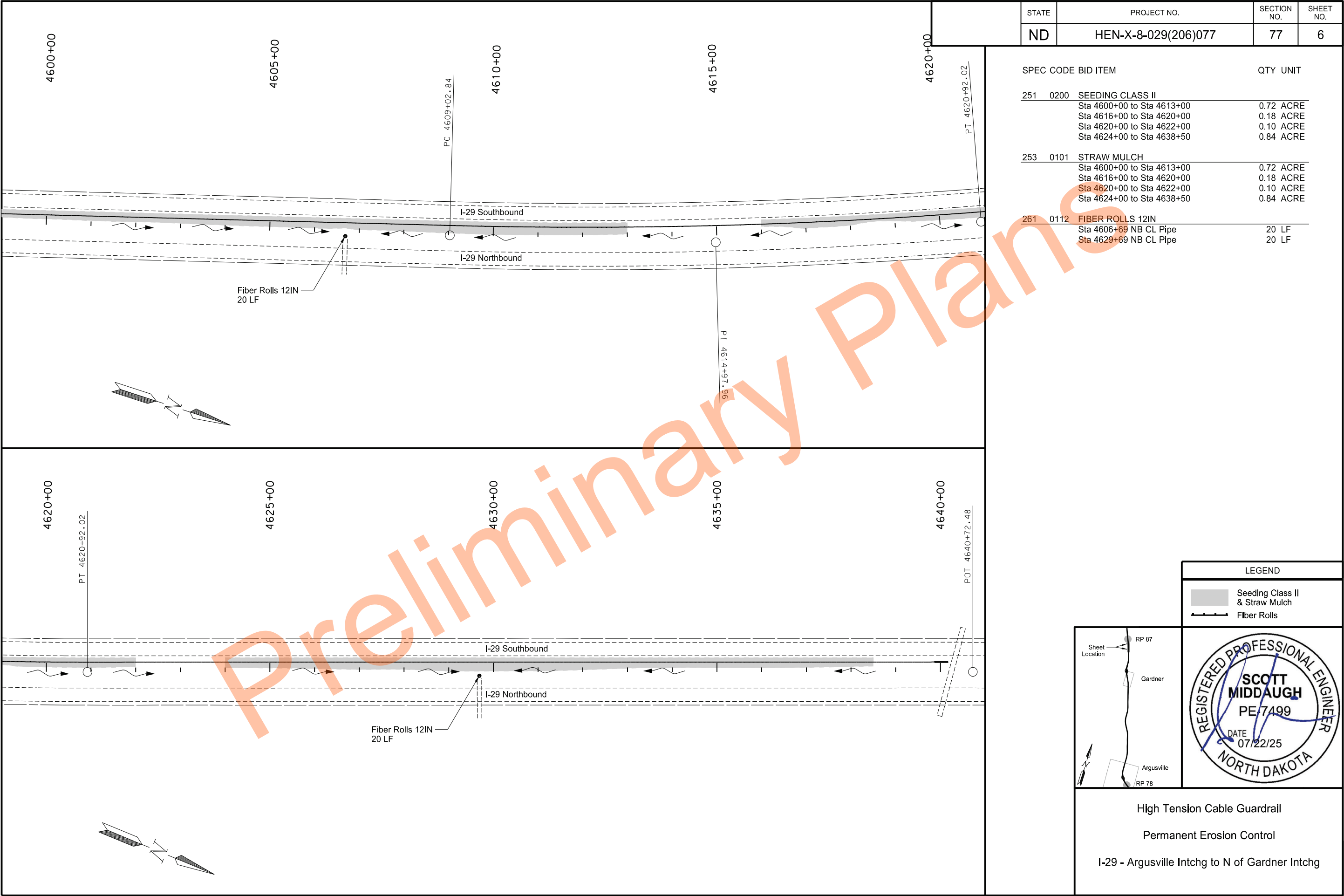












STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	77	6

SPEC CODE	BID ITEM	QTY	UNIT
251 0200	SEEDING CLASS II		
	Sta 4600+00 to Sta 4613+00	0.72	ACRE
	Sta 4616+00 to Sta 4620+00	0.18	ACRE
	Sta 4620+00 to Sta 4622+00	0.10	ACRE
	Sta 4624+00 to Sta 4638+50	0.84	ACRE
253 0101	STRAW MULCH		
	Sta 4600+00 to Sta 4613+00	0.72	ACRE
	Sta 4616+00 to Sta 4620+00	0.18	ACRE
	Sta 4620+00 to Sta 4622+00	0.10	ACRE
	Sta 4624+00 to Sta 4638+50	0.84	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta 4606+69 NB CL Pipe	20	LF
	Sta 4629+69 NB CL Pipe	20	LF

LEGEND

Seeding Class II & Straw Mulch

Fiber Rolls

Sheet Location

RP 87

Gardner

Argusville

RP 78

REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDLEAUGH

PE/7499

DATE 07/22/25

NORTH DAKOTA

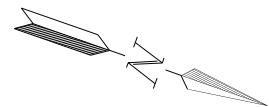
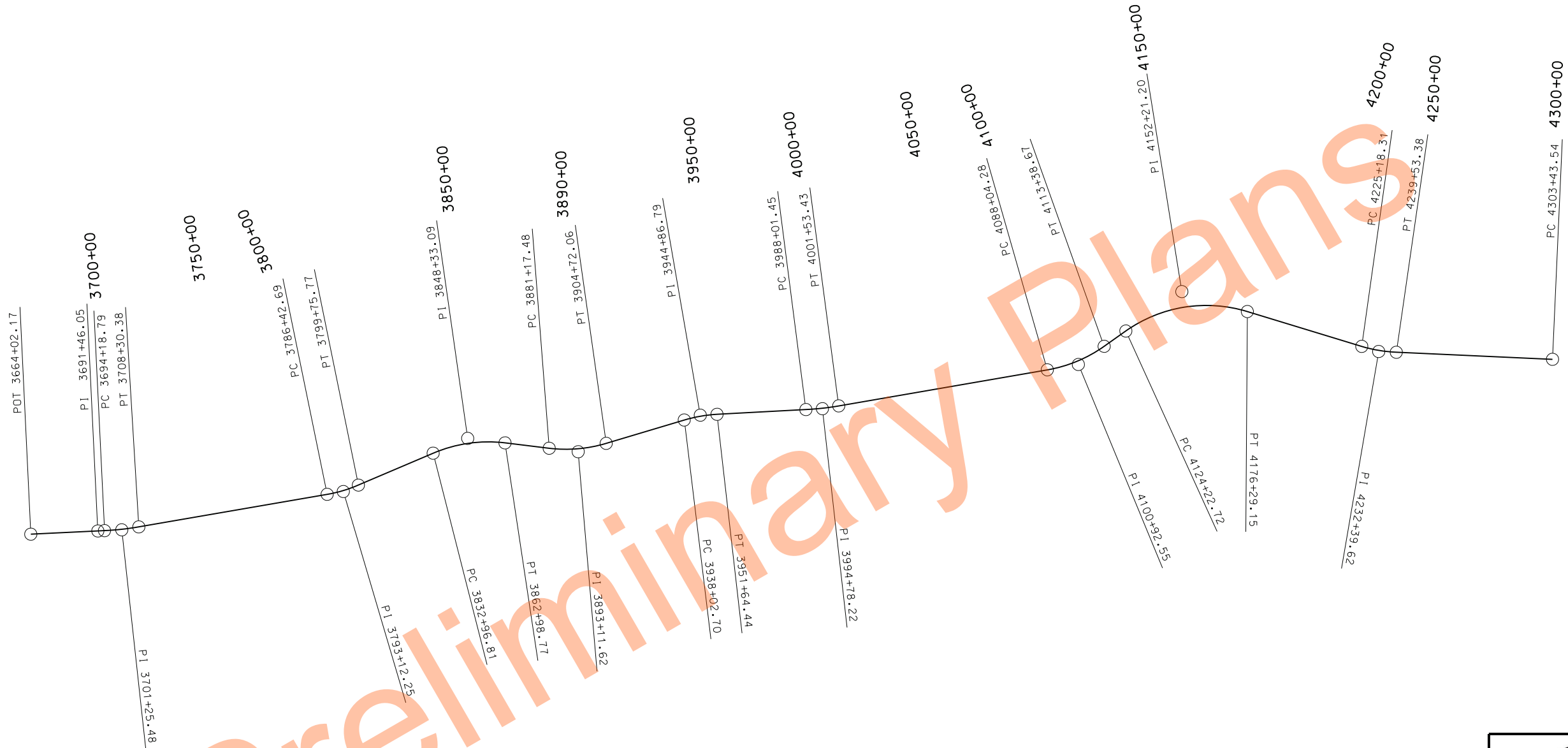
High Tension Cable Guardrail

Permanent Erosion Control

I-29 - Argusville Intchg to N of Gardner Intchg

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - I-29 - MILE 69.4 TO CASS/TRAILL COUNTY LINE										STATE	PROJECT NO.			SECTION NO.	SHEET NO.	
										ND	HEN-X-8-029(206)077			81	1	
HORIZONTAL ALIGNMENT				CURVE DATA		REFERENCE MARKERS					SURVEY CONTROL POINTS					
PNT	STATION	NORTHING	EASTING	ARC DEFINITION		R MKR #	NORTHING	EASTING	STATION	OFFSET	PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
						I-29 (CHAIN OCL29_CASS)					MONUMENT DESCRIPTION					
						70	486,492.51	2,878,863.42	3696+36	74' Lt						
						70	486,552.95	2,878,999.84	3696+38	75' Rt	Secondary Control (Station/Offset from Chain OCL29_CASS)					
						71	491,115.67	2,876,352.43	3749+07	83' Lt	RTK 1	503,968.89	2,869,673.45	888.51	3896+34	400' Rt
						71	491,197.58	2,876,495.82	3749+09	82' Rt	NGS Brass Disk in Concrete Stamped Harwood NW Base 1954					
						72	495,599.55	2,873,627.48	3801+87	84' Lt	RTK 2	524,646.62	2,856,389.78	896.14	4144+47	319' Rt
						72	495,711.39	2,873,749.51	3801+87	82' Rt	#5 Rebar w/ Red Plastic Cap					
						73	499,758.04	2,870,365.50	3854+72	102' Lt	RTK 3	561,282.50	2,846,092.43	900.39	4530+14	371' Rt
						73	499,812.04	2,870,554.50	3854+55	94' Rt	#5 Rebar w/ Red Plastic Cap					
						74	504,644.67	2,868,625.02	3907+41	117' Lt						
						74	504,761.85	2,868,785.69	3907+42	81' Rt						
						75	509,152.07	2,865,844.80	3960+38	92' Lt						
						75	509,205.36	2,866,010.26	3960+24	82' Rt						
						76	513,924.66	2,863,662.58	4013+03	83' Lt						
						76	514,004.09	2,863,806.48	4013+02	81' Rt						
						77	518,540.82	2,861,094.53	4065+85	83' Lt						
						77	518,623.12	2,861,237.55	4065+87	82' Rt						
						78	522,632.29	2,857,939.93	4118+62	84' Lt						
						78	522,768.22	2,858,034.19	4118+65	82' Rt						
						79	526,952.64	2,855,099.06	4171+40	84' Lt						
						79	526,973.56	2,855,263.01	4171+40	82' Rt						
						80	532,244.02	2,854,859.48	4224+30	83' Lt						
						80	532,243.10	2,855,023.86	4224+23	81' Rt						
						81	537,311.73	2,853,544.05	4277+01	84' Lt						
						81	537,359.00	2,853,701.90	4277+00	81' Rt						
						82	542,176.13	2,851,617.18	4329+78	83' Lt						
						82	542,255.73	2,851,760.71	4329+76	81' Rt						
						83	547,233.55	2,850,305.75	4382+59	84' Lt						
						83	547,241.71	2,850,470.57	4382+59	81' Rt						
						84	552,315.32	2,849,037.35	4435+35	83' Lt	All coordinates and measurements on this document derived from the International Foot definition.					
						84	552,363.72	2,849,194.45	4435+36	81' Rt						
						☐ Assumed Coordinates					INITIALIZING BENCH MARK Trimble Now (MIDSTATES) VRS					
						☒ All coordinates on this sheet are Cass County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9998875					☒ NAVD-88 ☐ _____					
											☐ GEOID12B ☐ _____ ☒ GEOID18					
NOTES: Sheet 1 of 2 Primary control from Trimble Now VRS. Static sessions performed with OPUS solutions used for a check on VRS control.				Date Survey Completed 10/02/2020							REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR CARL P. OLSON PE-4687 LS-4687 DATE 07/29/25 NORTH DAKOTA					

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	82	1

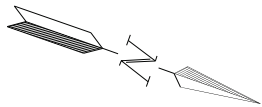
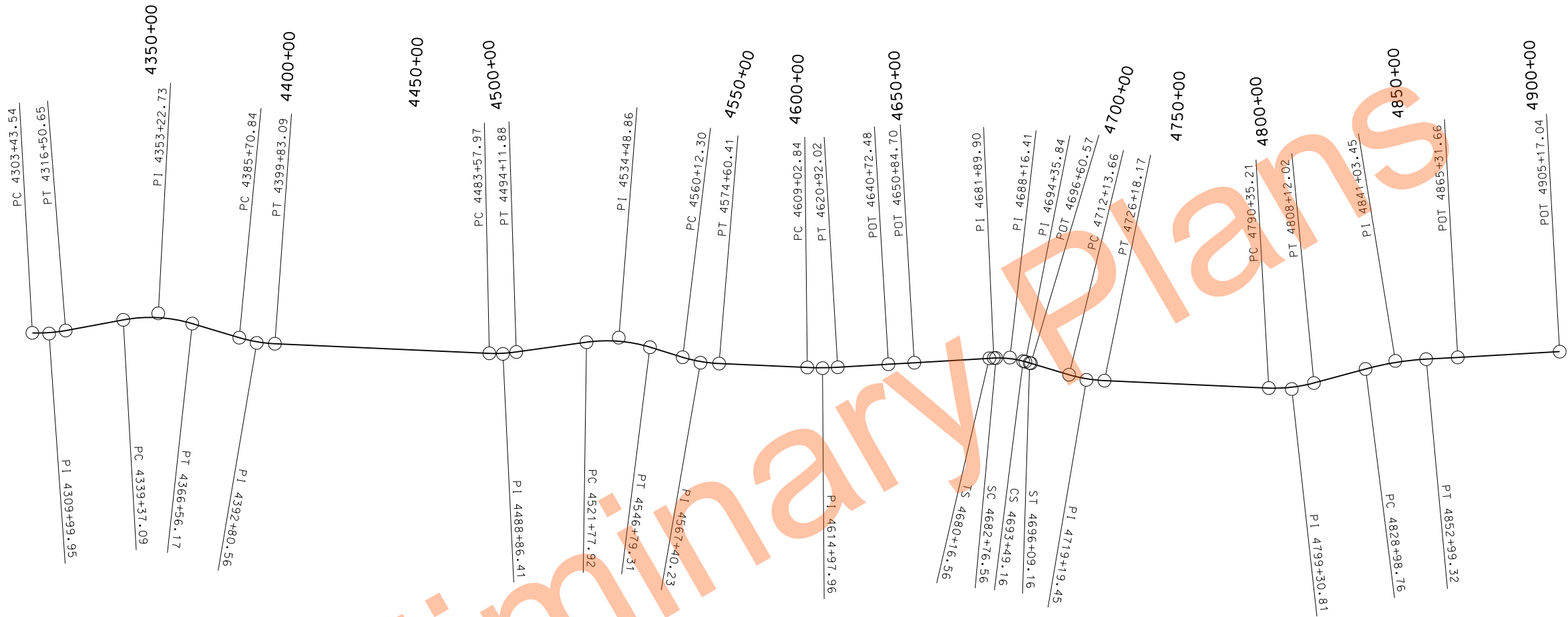


High Tension Cable Guardrail

Survey Data Layouts
Chain OCL29_CASS

I-29 - Argusville Intchg to N of Gardner Intchg

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	HEN-X-8-029(206)077	82	2



High Tension Cable Guardrail

Survey Data Layouts
Chain OCL29_CASS

I-29 - Argusville Intchg to N of Gardner Intchg

Beginning chain OCL29 CASS description
Feature: Alignment 1 L

Point 279 N 483,524.3640 E 2,880,146.8740 Sta 3664+02.17

Course from 279 to 280 N 22° 01' 42.26" W Dist 2,743.8783

Point 280 N 486,067.9337 E 2,879,117.7379 Sta 3691+46.05

Course from 280 to PC OCL29 CASS 5 N 22° 01' 41.90" W Dist 272.7355

Curve Data

Curve OCL29 CASS 5
P.I. Station 3701+25.48 N 486,975.8611 E 2,878,750.3896
Delta = 7° 03' 28.63" (LT)
Degree = 0° 29' 59.99"
Tangent = 706.6913
Length = 1,411.5948
Radius = 11,459.1900
External = 21.7702
Long Chord = 1,410.7025
Mid. Ord. = 21.7290
P.C. Station 3694+18.79 N 486,320.7592 E 2,879,015.4445
P.T. Station 3708+30.38 N 487,593.4307 E 2,878,406.8487
C.C. N 482,022.8228 E 2,868,392.7904
Back = N 22° 01' 41.90" W
Ahead = N 29° 05' 10.53" W
Chord Bear = N 25° 33' 26.21" W

Course from PT OCL29 CASS 5 to PC OCL29 CASS 8 N 29° 05' 10.53" W Dist 7,812.3110

Curve Data

Curve OCL29 CASS 8
P.I. Station 3793+12.25 N 495,005.6438 E 2,874,283.5920
Delta = 13° 19' 50.68" (LT)
Degree = 1° 00' 00.00"
Tangent = 669.5607
Length = 1,333.0751
Radius = 5,729.5800
External = 38.9899
Long Chord = 1,330.0703
Mid. Ord. = 38.7264
P.C. Station 3786+42.69 N 494,420.5221 E 2,874,609.0828
P.T. Station 3799+75.77 N 495,499.9504 E 2,873,831.9589
C.C. N 491,635.2255 E 2,869,602.0667
Back = N 29° 05' 10.53" W
Ahead = N 42° 25' 01.21" W
Chord Bear = N 35° 45' 05.87" W

Course from PT OCL29 CASS 8 to PC OCL29 CASS 11 N 42° 25' 01.21" W Dist 3,321.0385

Curve Data

Curve OCL29 CASS 11
P.I. Station 3848+33.09 N 499,085.8969 E 2,870,555.5877
Delta = 30° 01' 10.64" (RT)
Degree = 1° 00' 00.00"
Tangent = 1,536.2880
Length = 3,001.9634
Radius = 5,729.5800
External = 202.3900
Long Chord = 2,967.7443
Mid. Ord. = 195.4847
P.C. Station 3832+96.81 N 497,951.7244 E 2,871,591.8470
P.T. Station 3862+98.77 N 500,586.3619 E 2,870,225.7610
C.C. N 501,816.4493 E 2,875,821.7392
Back = N 42° 25' 01.21" W
Ahead = N 12° 23' 50.57" W
Chord Bear = N 27° 24' 25.89" W

Course from PT OCL29 CASS 11 to PC OCL29 CASS 14 N 12° 23' 50.57" W Dist 1,818.7086

Curve Data

Curve OCL29 CASS 14
P.I. Station 3893+11.62 N 503,528.9608 E 2,869,578.9297
Delta = 23° 32' 44.89" (LT)
Degree = 1° 00' 00.00"
Tangent = 1,194.1437
Length = 2,354.5810
Radius = 5,729.5800
External = 123.1173
Long Chord = 2,338.0474
Mid. Ord. = 120.5274
P.C. Station 3881+17.48 N 502,362.6620 E 2,869,835.3012
P.T. Station 3904+72.06 N 504,495.7389 E 2,868,877.9880
C.C. N 501,132.5746 E 2,864,239.3230
Back = N 12° 23' 50.57" W
Ahead = N 35° 56' 35.46" W
Chord Bear = N 24° 10' 13.01" W

Course from PT OCL29 CASS 14 to PC OCL29 CASS 17 N 35° 56' 35.46" W Dist 3,330.6372

Curve Data

Curve OCL29 CASS 17
P.I. Station 3944+86.79 N 507,746.0658 E 2,866,521.4084
Delta = 13° 37' 02.91" (RT)
Degree = 1° 00' 00.00"
Tangent = 684.0973
Length = 1,361.7481
Radius = 5,729.5800
External = 40.6952
Long Chord = 1,358.5453
Mid. Ord. = 40.4082
P.C. Station 3938+02.70 N 507,192.2210 E 2,866,922.9616
P.T. Station 3951+64.44 N 508,378.8828 E 2,866,261.5395
C.C. N 510,555.3853 E 2,871,561.6266
Back = N 35° 56' 35.46" W
Ahead = N 22° 19' 32.54" W
Chord Bear = N 29° 08' 04.00" W

Course from PT OCL29 CASS 17 to PC OCL29 CASS 20 N 22° 19' 32.54" W Dist 3,637.0045

Curve Data

Curve OCL29 CASS 20
P.I. Station 3994+78.22 N 512,369.2981 E 2,864,622.8590
Delta = 6° 45' 35.53" (LT)
Degree = 0° 29' 59.99"
Tangent = 676.7743
Length = 1,351.9781
Radius = 11,459.1900
External = 19.9676
Long Chord = 1,351.1941
Mid. Ord. = 19.9329
P.C. Station 3988+01.45 N 511,743.2552 E 2,864,879.9461
P.T. Station 4001+53.43 N 512,960.7275 E 2,864,293.8686
C.C. N 507,390.2387 E 2,854,279.7441
Back = N 22° 19' 32.54" W
Ahead = N 29° 05' 08.08" W
Chord Bear = N 25° 42' 20.31" W

Course from PT OCL29 CASS 20 to PC OCL29 CASS 23 N 29° 05' 08.08" W Dist 8,650.8540

Curve Data

Curve OCL29 CASS 23
P.I. Station 4100+92.55 N 521,646.4750 E 2,859,462.3071
Delta = 25° 20' 38.11" (LT)
Degree = 1° 00' 00.00"
Tangent = 1,288.2705
Length = 2,534.3928
Radius = 5,729.5800
External = 143.0453
Long Chord = 2,513.7816
Mid. Ord. = 139.5610
P.C. Station 4088+04.28 N 520,520.6623 E 2,860,088.5552
P.T. Station 4113+38.67 N 522,395.8675 E 2,858,414.4275
C.C. N 517,735.4252 E 2,855,081.5061
Back = N 29° 05' 08.08" W
Ahead = N 54° 25' 46.18" W
Chord Bear = N 41° 45' 27.13" W

Course from PT OCL29 CASS 23 to PC OCL29 CASS 26 N 54° 25' 46.18" W Dist 1,084.0493

Curve Data

Curve OCL29 CASS 26
P.I. Station 4152+21.20 N 524,654.3511 E 2,855,256.3774
Delta = 52° 03' 51.22" (RT)
Degree = 1° 00' 00.00"
Tangent = 2,798.4793
Length = 5,206.4246
Radius = 5,729.5800
External = 646.9060
Long Chord = 5,029.1371
Mid. Ord. = 581.2762
P.C. Station 4124+22.72 N 523,026.4636 E 2,857,532.6614
P.T. Station 4176+29.15 N 527,450.4462 E 2,855,140.8842
C.C. N 527,686.9059 E 2,860,865.5828
Back = N 54° 25' 46.18" W
Ahead = N 2° 21' 54.96" W
Chord Bear = N 28° 23' 50.57" W

Course from PT OCL29 CASS 26 to PC OCL29 CASS 29 N 2° 21' 54.96" W Dist 4,889.1662

Curve Data

Curve OCL29 CASS 29
P.I. Station 4232+39.62 N 533,056.1383 E 2,854,909.3401
Delta = 14° 21' 02.22" (LT)
Degree = 1° 00' 00.00"
Tangent = 721.3058
Length = 1,435.0622
Radius = 5,729.5800
External = 45.2247
Long Chord = 1,431.3140
Mid. Ord. = 44.8705
P.C. Station 4225+18.31 N 532,335.4469 E 2,854,939.1084
P.T. Station 4239+53.38 N 533,746.9637 E 2,854,701.8737
C.C. N 532,098.9872 E 2,849,214.4098
Back = N 2° 21' 54.96" W
Ahead = N 16° 42' 57.18" W
Chord Bear = N 9° 32' 26.07" W

Course from PT OCL29 CASS 29 to PC OCL29 CASS 32 N 16° 42' 57.18" W Dist 6,390.1618

Curve Data

Curve OCL29 CASS 32
P.I. Station 4309+99.95 N 540,495.7644 E 2,852,675.0969
Delta = 13° 04' 16.14" (LT)
Degree = 1° 00' 00.00"
Tangent = 656.4071
Length = 1,307.1155
Radius = 5,729.5800
External = 37.4779
Long Chord = 1,304.2828
Mid. Ord. = 37.2344
P.C. Station 4303+43.54 N 539,867.0952 E 2,852,863.8967
P.T. Station 4316+50.65 N 541,065.4456 E 2,852,349.0086
C.C. N 538,219.1187 E 2,847,376.4328
Back = N 16° 42' 57.18" W
Ahead = N 29° 47' 13.33" W
Chord Bear = N 23° 15' 05.25" W

Course from PT OCL29 CASS 32 to PC OCL29 CASS 35 N 29° 47' 13.33" W Dist 2,286.4358

Curve Data

Curve OCL29 CASS 35
P.I. Station 4353+22.73 N 544,252.3603 E 2,850,524.8028
Delta = 27° 11' 26.69" (RT)
Degree = 1° 00' 00.00"
Tangent = 1,385.6415
Length = 2,719.0756
Radius = 5,729.5800
External = 165.1710
Long Chord = 2,693.6316
Mid. Ord. = 160.5429
P.C. Station 4339+37.09 N 543,049.7927 E 2,851,213.1585
P.T. Station 4366+56.17 N 545,636.5795 E 2,850,462.0357
C.C. N 545,896.1196 E 2,856,185.7343
Back = N 29° 47' 13.33" W
Ahead = N 2° 35' 46.64" W
Chord Bear = N 16° 11' 29.98" W

Course from PT OCL29 CASS 35 to PC OCL29 CASS 38 N 2° 35' 46.64" W Dist 1,914.6716

Curve Data

Curve OCL29 CASS 38
P.I. Station 4392+80.56 N 548,258.2823 E 2,850,343.1550
Delta = 14° 07' 21.21" (LT)
Degree = 1° 00' 00.00"
Tangent = 709.7251
Length = 1,412.2563
Radius = 5,729.5800
External = 43.7896
Long Chord = 1,408.6840
Mid. Ord. = 43.4575
P.C. Station 4385+70.84 N 547,549.2857 E 2,850,375.3043
P.T. Station 4399+83.09 N 548,938.0058 E 2,850,138.9844
C.C. N 547,289.7456 E 2,844,651.6057
Back = N 2° 35' 46.64" W
Ahead = N 16° 43' 07.85" W
Chord Bear = N 9° 39' 27.24" W



High Tension Cable Guardrail

Survey Data Layouts
Chain OCL29_CASS

I-29 - Argusville Intchg to N of Gardner Intchg

Course from PT OCL29 CASS 38 to PC OCL29 CASS 41 N 16° 43' 07.85" W Dist 8,374.8720

Curve Data

Curve OCL29 CASS 41
P.I. Station 4488+86.41 N 557,464.9623 E 2,847,577.7172
Delta = 10° 32' 20.78" (LT)
Degree = 1° 00' 00.00"
Tangent = 528.4464
Length = 1,053.9111
Radius = 5,729.5800
External = 24.3180
Long Chord = 1,052.4259
Mid. Ord. = 24.2153
P.C. Station 4483+57.97 N 556,958.8545 E 2,847,729.7383
P.T. Station 4494+11.88 N 557,934.7266 E 2,847,335.6902
C.C. N 555,310.5943 E 2,842,242.3596
Back = N 16° 43' 07.85" W
Ahead = N 27° 15' 28.63" W
Chord Bear = N 21° 59' 18.24" W

Course from PT OCL29 CASS 41 to PC OCL29 CASS 44 N 27° 15' 28.63" W Dist 2,766.0411

Curve Data

Curve OCL29 CASS 44
P.I. Station 4534+48.86 N 561,523.4198 E 2,845,486.7614
Delta = 25° 00' 49.94" (RT)
Degree = 1° 00' 00.00"
Tangent = 1,270.9450
Length = 2,501.3881
Radius = 5,729.5800
External = 139.2690
Long Chord = 2,481.5705
Mid. Ord. = 135.9641
P.C. Station 4521+77.92 N 560,393.6087 E 2,846,068.8508
P.T. Station 4546+79.31 N 562,793.3901 E 2,845,436.9955
C.C. N 563,017.7410 E 2,851,162.1814
Back = N 27° 15' 28.63" W
Ahead = N 2° 14' 38.69" W
Chord Bear = N 14° 45' 03.66" W

Course from PT OCL29 CASS 44 to PC OCL29 CASS 47 N 2° 14' 38.69" W Dist 1,332.9943

Curve Data

Curve OCL29 CASS 47
P.I. Station 4567+40.23 N 564,852.7363 E 2,845,356.2966
Delta = 14° 28' 51.82" (LT)
Degree = 1° 00' 00.00"
Tangent = 727.9324
Length = 1,448.1066
Radius = 5,729.5800
External = 46.0561
Long Chord = 1,444.2554
Mid. Ord. = 45.6889
P.C. Station 4560+12.30 N 564,125.3621 E 2,845,384.8000
P.T. Station 4574+60.41 N 565,549.8744 E 2,845,146.8116
C.C. N 563,901.0113 E 2,839,659.6141
Back = N 2° 14' 38.69" W
Ahead = N 16° 43' 30.51" W
Chord Bear = N 9° 29' 04.60" W

Course from PT OCL29 CASS 47 to PC OCL29 CASS 50 N 16° 43' 30.51" W Dist 3,442.4301

Curve Data

Curve OCL29 CASS 50
P.I. Station 4614+97.96 N 569,416.6282 E 2,843,984.8801
Delta = 5° 56' 45.29" (LT)
Degree = 0° 29' 59.99"
Tangent = 595.1273
Length = 1,189.1862
Radius = 11,459.1900
External = 15.4434
Long Chord = 1,188.6527
Mid. Ord. = 15.4226
P.C. Station 4609+02.84 N 568,846.6770 E 2,844,156.1463
P.T. Station 4620+92.02 N 569,965.7718 E 2,843,755.4943
C.C. N 565,548.9421 E 2,833,181.7224
Back = N 16° 43' 30.51" W
Ahead = N 22° 40' 15.80" W
Chord Bear = N 19° 41' 53.16" W

Course from PT OCL29 CASS 50 to 281 N 22° 40' 15.80" W Dist 1,980.4615

Point 281 N 571,793.2088 E 2,842,992.1453 Sta 4640+72.48

Course from 281 to 282 N 22° 40' 15.80" W Dist 1,012.2175

Point 282 N 572,727.2152 E 2,842,601.9962 Sta 4650+84.70

Course from 282 to TS OCL29 CASS 57 N 22° 40' 15.80" W Dist 2,931.8556

Spiral OCL29 CASS 57 Type 1 Spiral Element

Angle 1° 57' 00.00" (RT) P 0.7374 BK N 22° 40' 15.80" W
LS 260.0000 K 129.9950 AH N 20° 43' 15.80" W
R 3,819.7186 LT 173.3439 CB N 22° 01' 15.83" W
YS 2.9494 ST 86.6762 Defl 0° 38' 59.98"
XS 259.9699 LC 259.9866 Deg 1° 30' 00.00"

Spiral Coordinates

Point North East Station
TS 575,432.5349 2,841,471.9419 4680+16.56
PI 575,592.4850 2,841,405.1282 4681+89.90
SC 575,673.5545 2,841,374.4606 4682+76.56
CC 577,025.0420 2,844,947.0971

Curve Data

Curve OCL29 CASS 58
P.I. Station 4688+16.41 N 576,178.4871 E 2,841,183.4503
Delta = 16° 05' 20.56" (RT)
Degree = 1° 30' 00.00"
Tangent = 539.8535
Length = 1,072.6029
Radius = 3,819.7186
External = 37.9610
Long Chord = 1,069.0824
Mid. Ord. = 37.5875
P.C. Station 4682+76.56 N 575,673.5545 E 2,841,374.4606
P.T. Station 4693+49.16 N 576,716.5775 E 2,841,139.8540
C.C. N 577,025.0420 E 2,844,947.0971
Back = N 20° 43' 15.80" W
Ahead = N 4° 37' 55.24" W
Chord Bear = N 12° 40' 35.52" W

Spiral OCL29 CASS 59 Type 2 Spiral Element

Angle 1° 57' 00.00" (RT) P 0.7374 BK N 4° 37' 55.24" W
LS 260.0000 K 129.9950 AH N 2° 40' 55.24" W
R 3,819.7186 LT 173.3439 CB N 3° 19' 55.22" W
YS 2.9494 ST 86.6762 Defl 0° 38' 59.98"
XS 259.9699 LC 259.9866 Deg 1° 30' 00.00"

Spiral Coordinates

Point North East Station
CS 576,716.5775 2,841,139.8540 4693+49.16
PI 576,802.9706 2,841,132.8544 4694+35.84
ST 576,976.1246 2,841,124.7431 4696+09.16
CC 577,025.0420 2,844,947.0971

Course from ST OCL29 CASS 59 to 283 N 2° 40' 55.24" W Dist 51.4069

Point 283 N 577,027.4751 E 2,841,122.3377 Sta 4696+60.57

Course from 283 to PC OCL29 CASS 64 N 2° 40' 55.24" W Dist 1,553.0950

Curve Data

Curve OCL29 CASS 64
P.I. Station 4719+19.45 N 579,283.8865 E 2,841,016.6380
Delta = 14° 02' 41.58" (LT)
Degree = 0° 59' 59.95"
Tangent = 705.7907
Length = 1,404.5059
Radius = 5,729.6500
External = 43.3067
Long Chord = 1,400.9921
Mid. Ord. = 42.9819
P.C. Station 4712+13.66 N 578,578.8689 E 2,841,049.6639
P.T. Station 4726+18.17 N 579,959.8134 E 2,840,813.5043
C.C. N 578,310.7623 E 2,835,326.2901
Back = N 2° 40' 55.24" W
Ahead = N 16° 43' 36.82" W
Chord Bear = N 9° 42' 16.03" W

Course from PT OCL29 CASS 64 to PC OCL29 CASS 67 N 16° 43' 36.82" W Dist 6,417.0446

Curve Data

Curve OCL29 CASS 67
P.I. Station 4799+30.81 N 586,963.0358 E 2,838,708.8532
Delta = 17° 46' 04.36" (LT)
Degree = 0° 59' 59.95"
Tangent = 895.5939
Length = 1,776.8102
Radius = 5,729.6500
External = 69.5721
Long Chord = 1,769.6992
Mid. Ord. = 68.7375
P.C. Station 4790+35.21 N 586,105.3368 E 2,838,966.6141
P.T. Station 4808+12.02 N 587,701.1644 E 2,838,201.6505
C.C. N 584,456.2857 E 2,833,479.3999
Back = N 16° 43' 36.82" W
Ahead = N 34° 29' 41.18" W
Chord Bear = N 25° 36' 39.00" W

Course from PT OCL29 CASS 67 to PC OCL29 CASS 70 N 34° 29' 41.18" W Dist 2,086.7335

Curve Data

Curve OCL29 CASS 70
P.I. Station 4841+03.45 N 590,413.8850 E 2,836,337.6136
Delta = 12° 00' 10.09" (RT)
Degree = 0° 29' 59.99"
Tangent = 1,204.6927
Length = 2,400.5676
Radius = 11,459.1900
External = 63.1500
Long Chord = 2,396.1805
Mid. Ord. = 62.8039
P.C. Station 4828+98.76 N 589,421.0040 E 2,837,019.8686
P.T. Station 4852+99.32 N 591,526.9406 E 2,835,876.7536
C.C. N 595,910.6992 E 2,846,464.2791
Back = N 34° 29' 41.18" W
Ahead = N 22° 29' 31.10" W
Chord Bear = N 28° 29' 36.14" W

Course from PT OCL29 CASS 70 to 284 N 22° 29' 31.10" W Dist 1,232.3401

Point 284 N 592,665.5405 E 2,835,405.3170 Sta 4865+31.66

Course from 284 to 285 N 22° 29' 31.10" W Dist 3,985.3757

Point 285 N 596,347.7612 E 2,833,880.6957 Sta 4905+17.04

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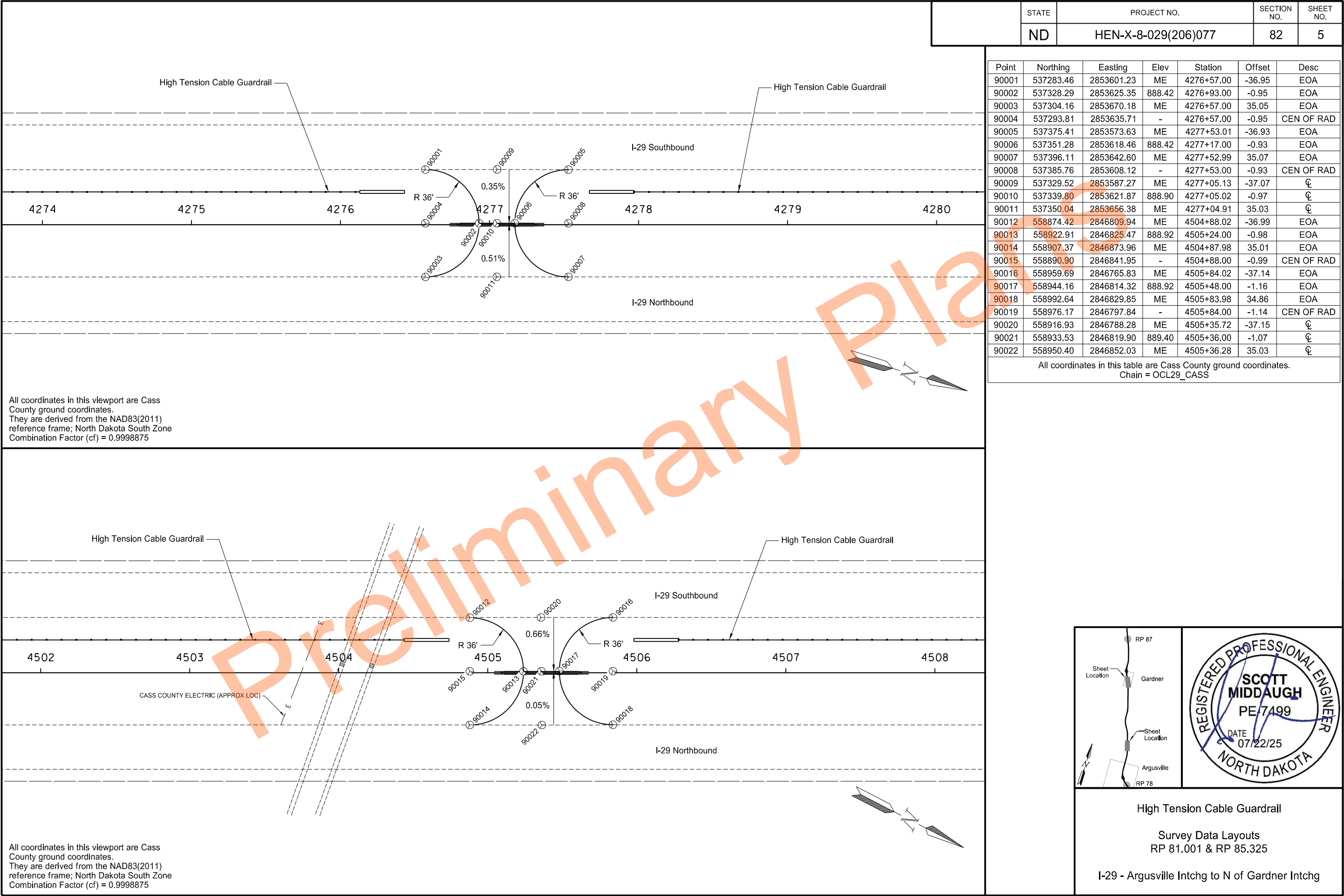
Ending chain OCL29 CASS description

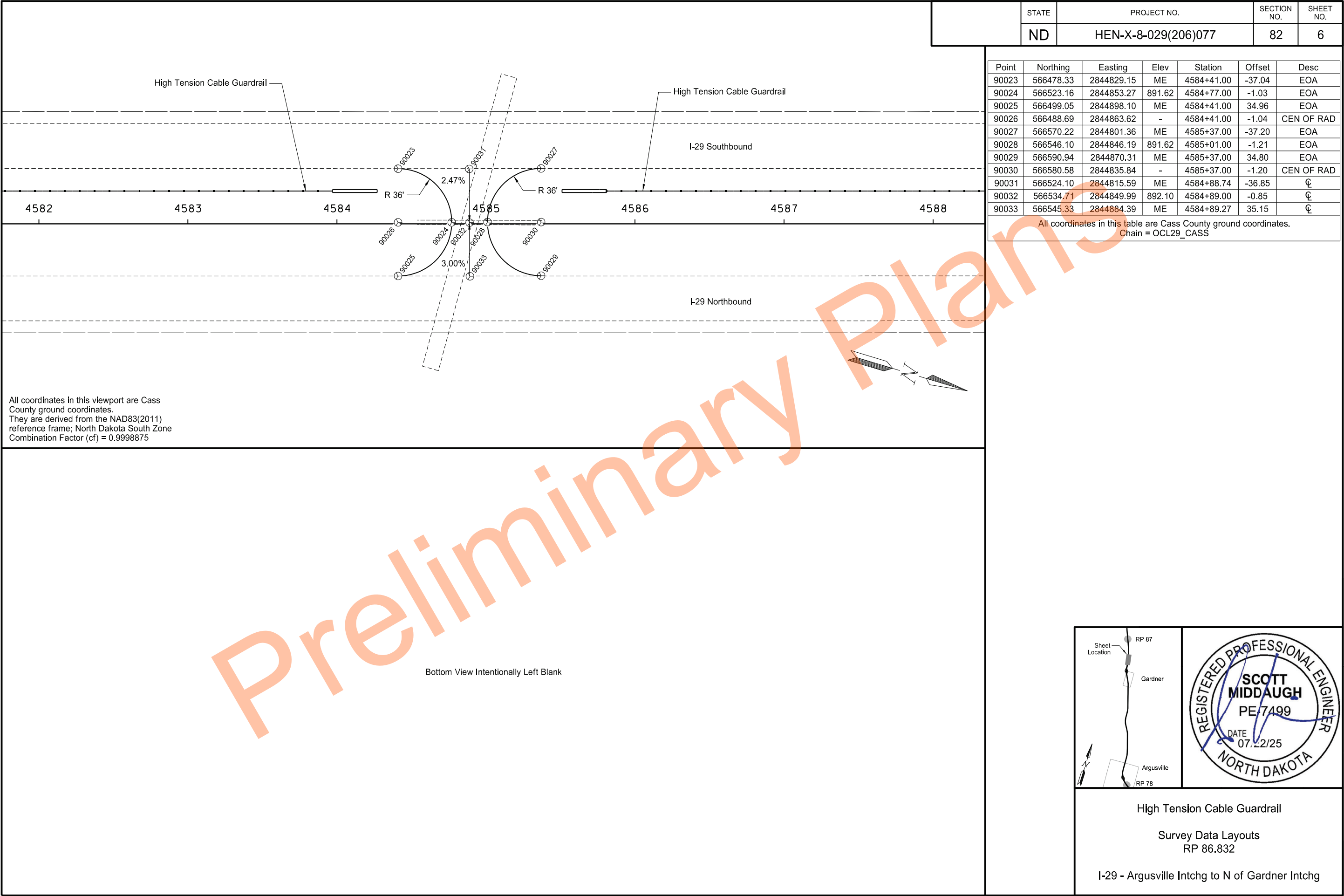


High Tension Cable Guardrail

Survey Data Layouts
Chain OCL29_CASS

I-29 - Argusville Intchg to N of Gardner Intchg





6/5/2025

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FrankieHalter

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	48"x24"	END ROAD WORK	8	26	208
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT		59	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$150 WHEN WORKERS PRESENT	4	59	236
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT (Portable only)	12	30	360
R2-1-48	48"x60"	SPEED LIMIT	8	39	312
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)		10	
R2-1aP-24	24"x18"	MINIMUM FEE \$150 (Mounted on Speed Limit post)	12	10	120
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)		12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT		35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	8	35	280
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT	4	35	140
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or FT or MILE		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or FT or MILE		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)		14	
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	48"x48"	ROAD WORK AHEAD or FT or MILE	8	35	280
W20-2-48	48"x48"	DETOUR AHEAD or FT or MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or FT or MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or FT or MILE		35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or FT or MILE	4	35	140
W20-7-48	48"x48"	FLAGGER	2	35	70
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	2	5	10
W20-52P-54	54"x12"	NEXT MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or FT or MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	

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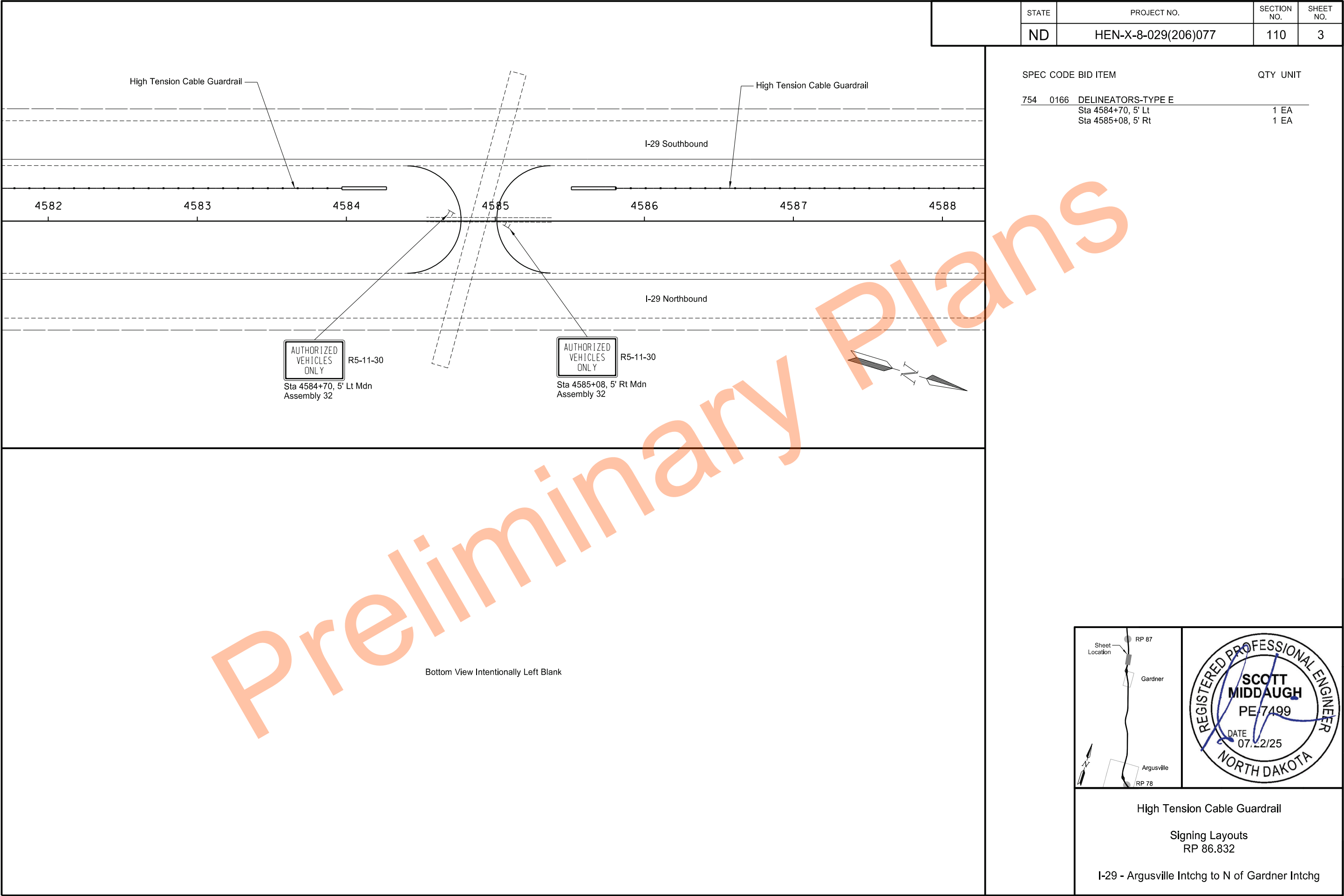
SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	2436

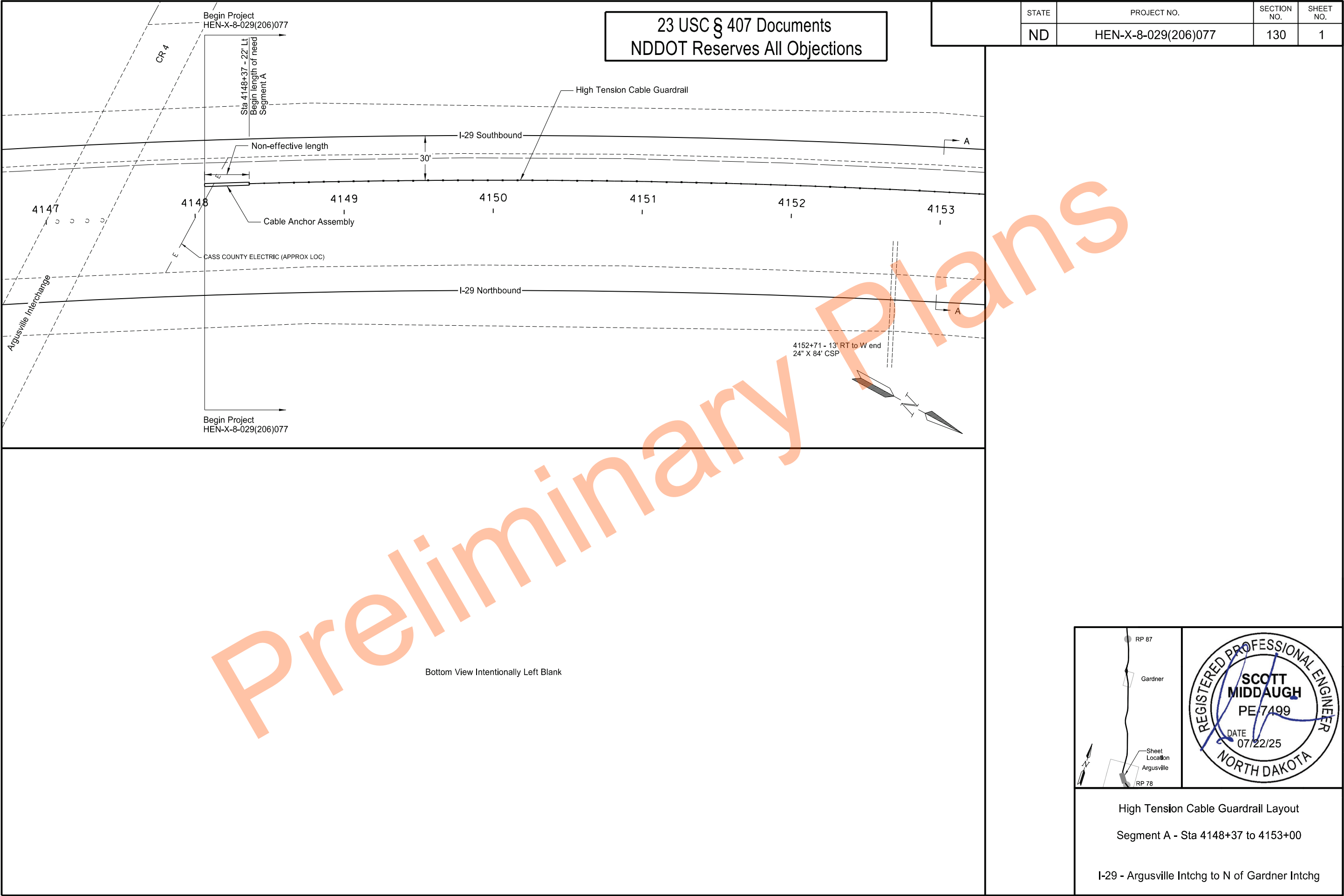
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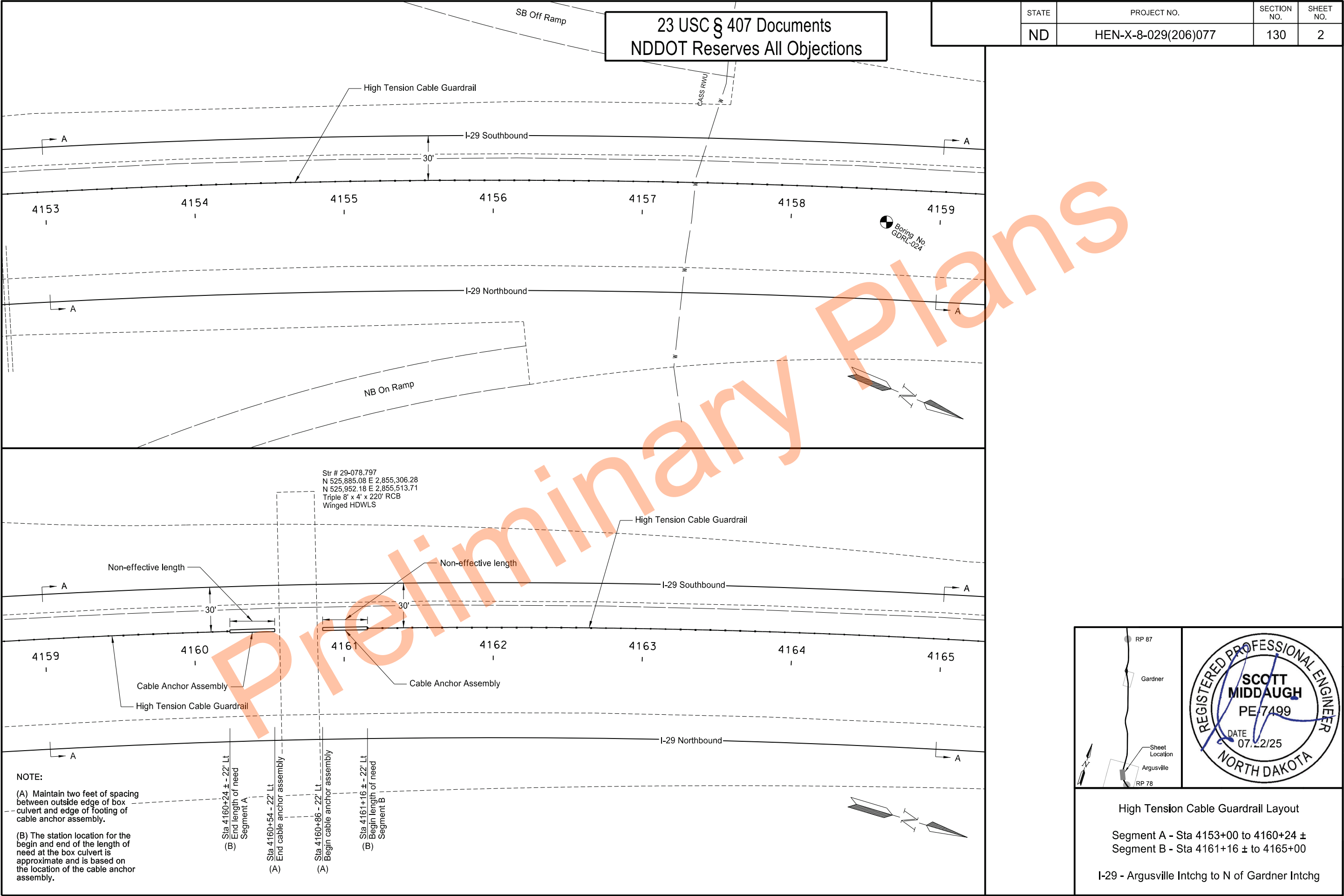
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List

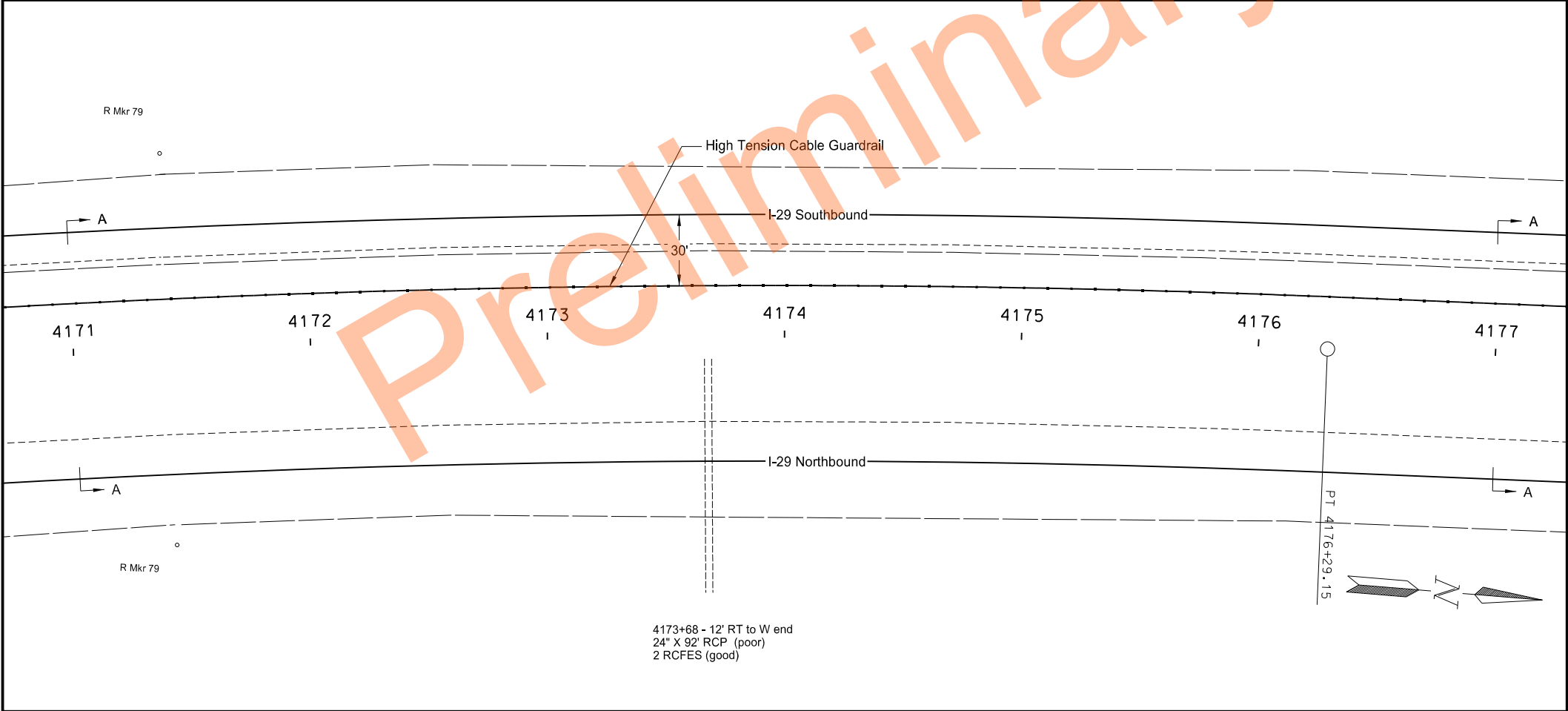
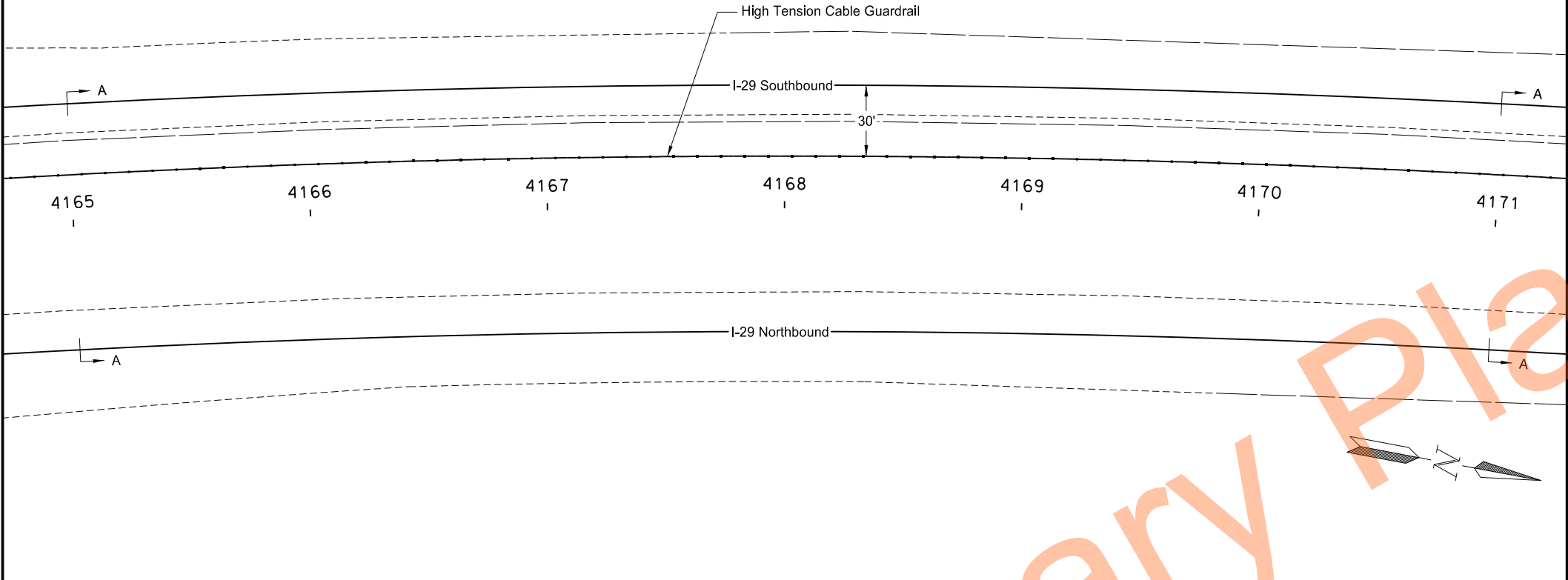






23 USC § 407 Documents
NDDOT Reserves All Objections

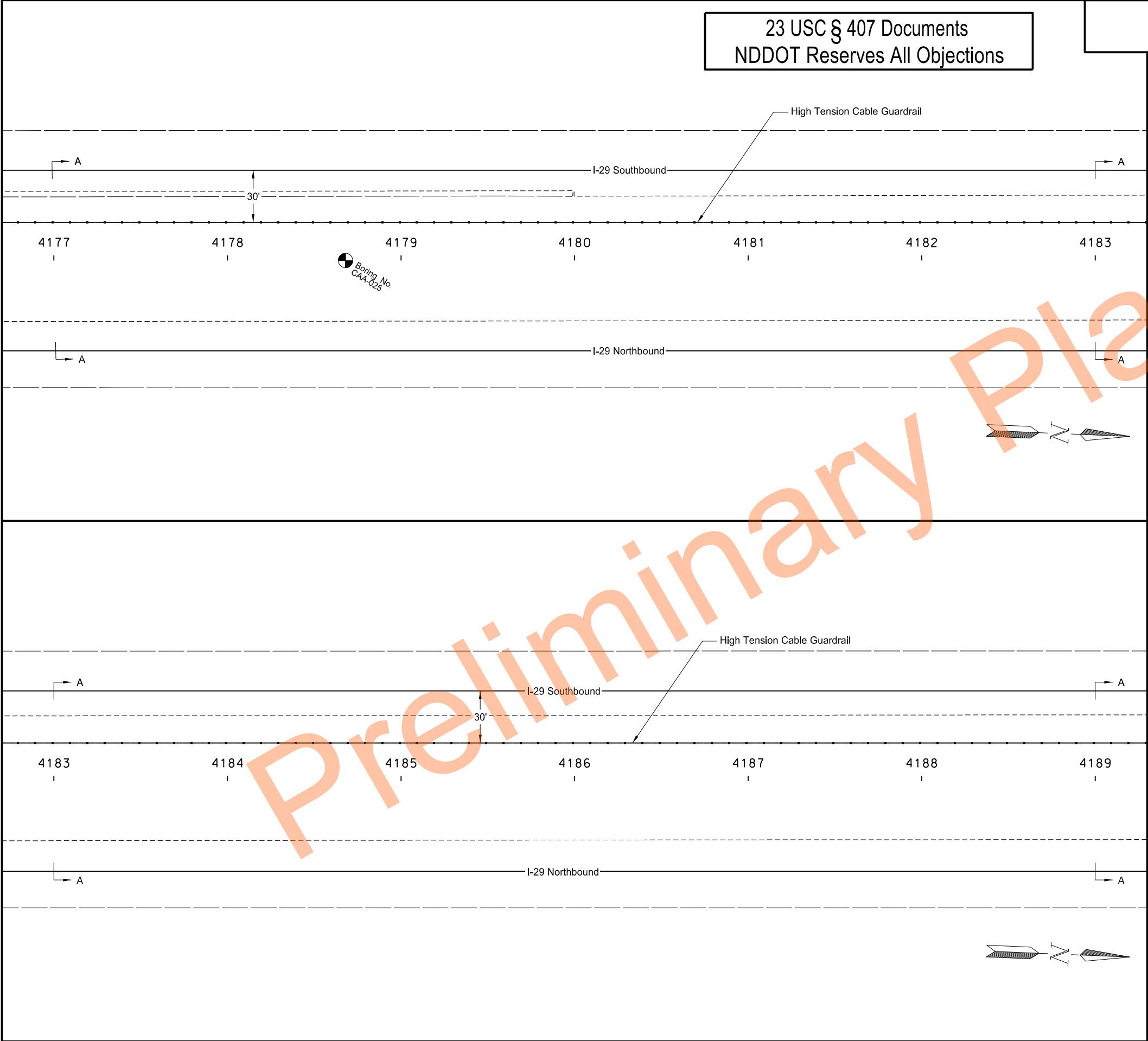
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	3



High Tension Cable Guardrail Layout
Segment B - Sta 4165+00 to 4177+00
I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	4



RP 87

Gardner

Sheet Location

Argusville

RP 78

REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

NORTH DAKOTA

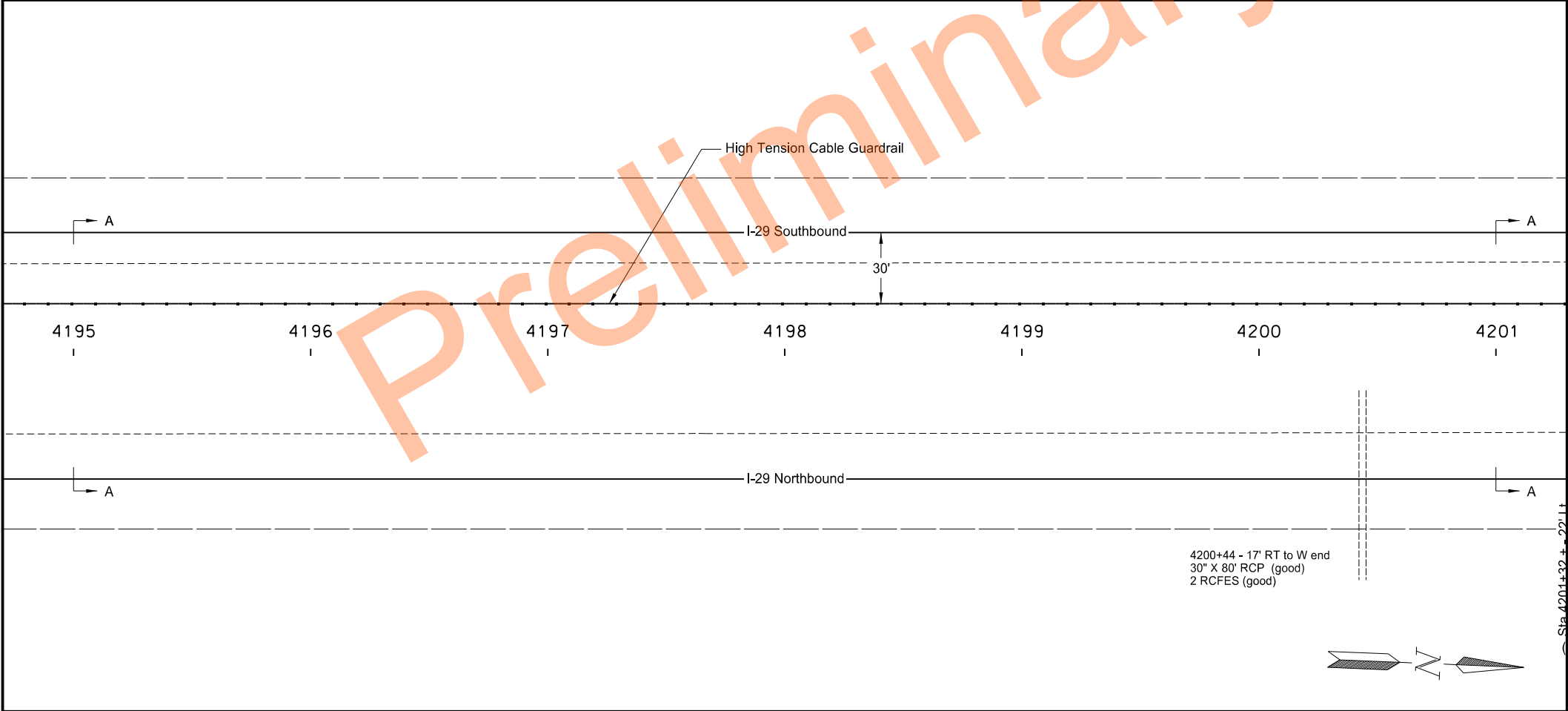
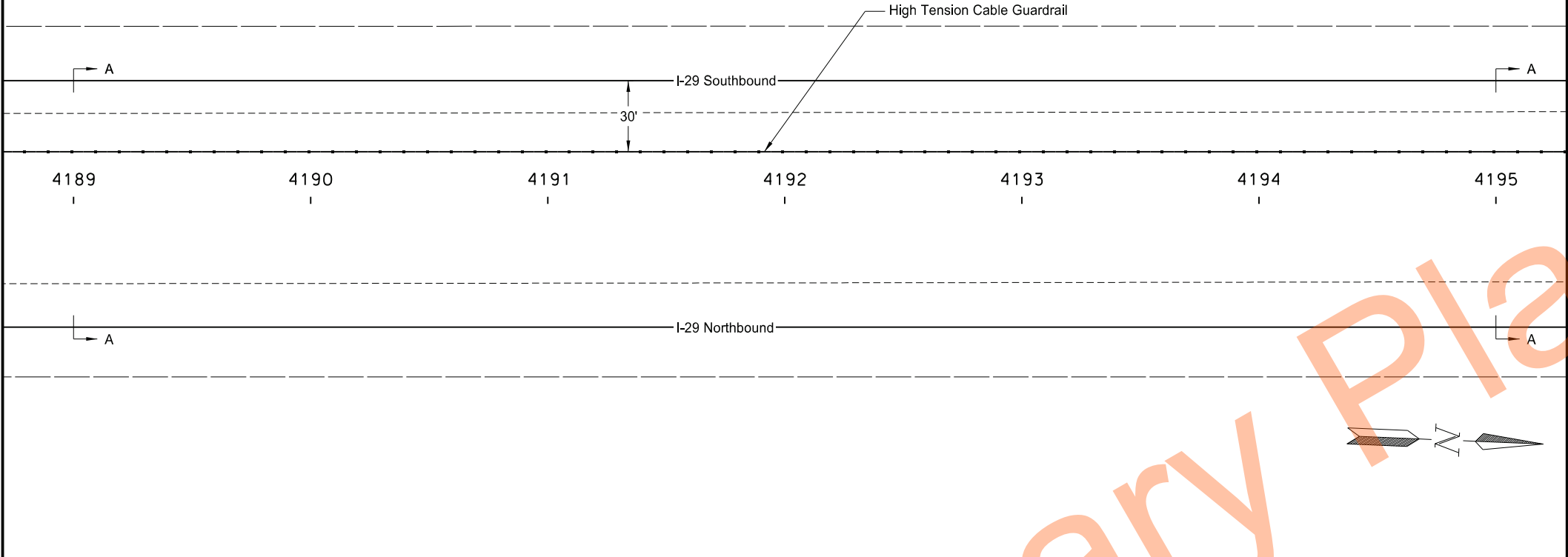
High Tension Cable Guardrail Layout

Segment B - Sta 4177+00 to 4189+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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Gardner
Sheet Location
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REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDLEAUGH

PE 7499

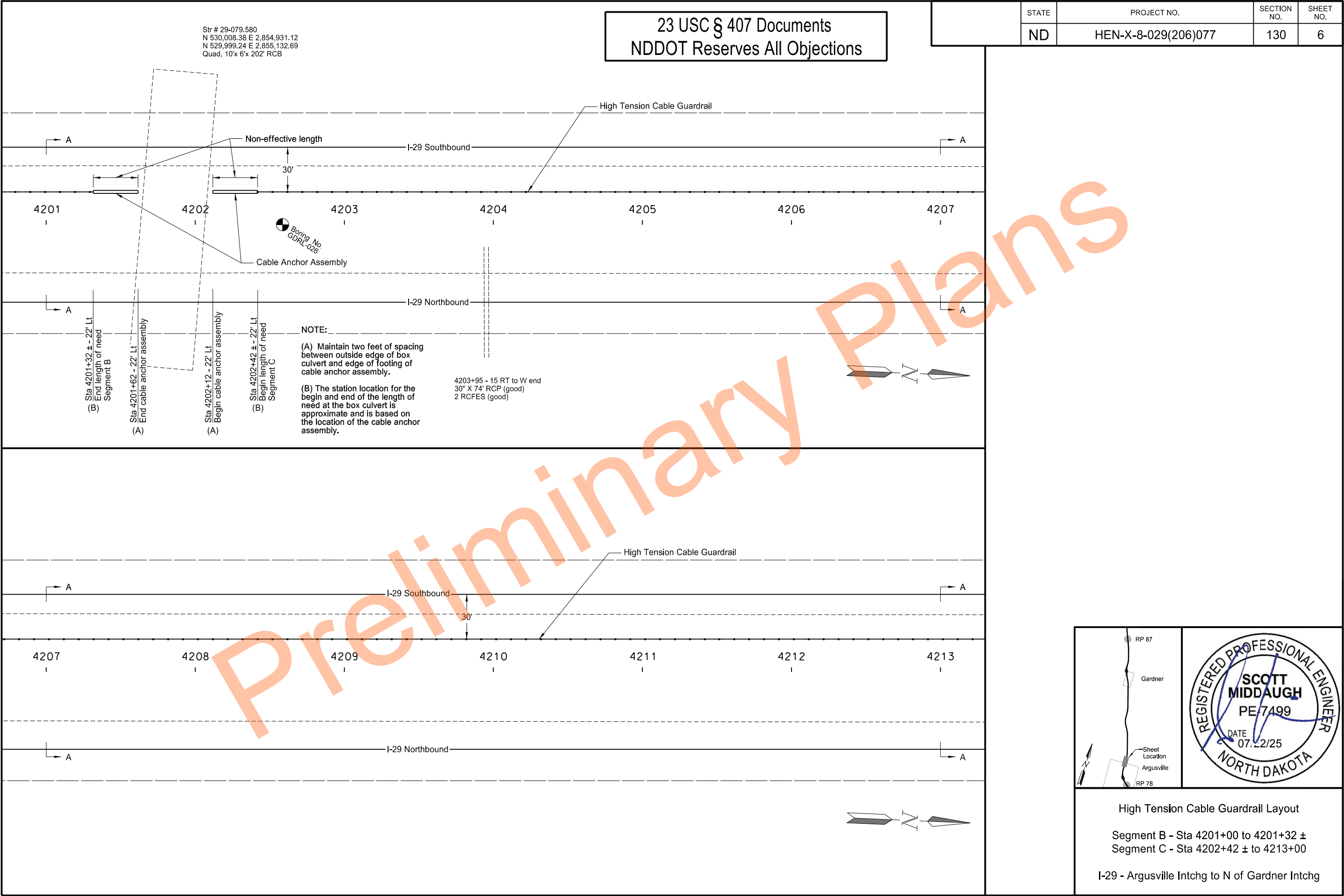
DATE 07/22/25

NORTH DAKOTA

High Tension Cable Guardrail Layout

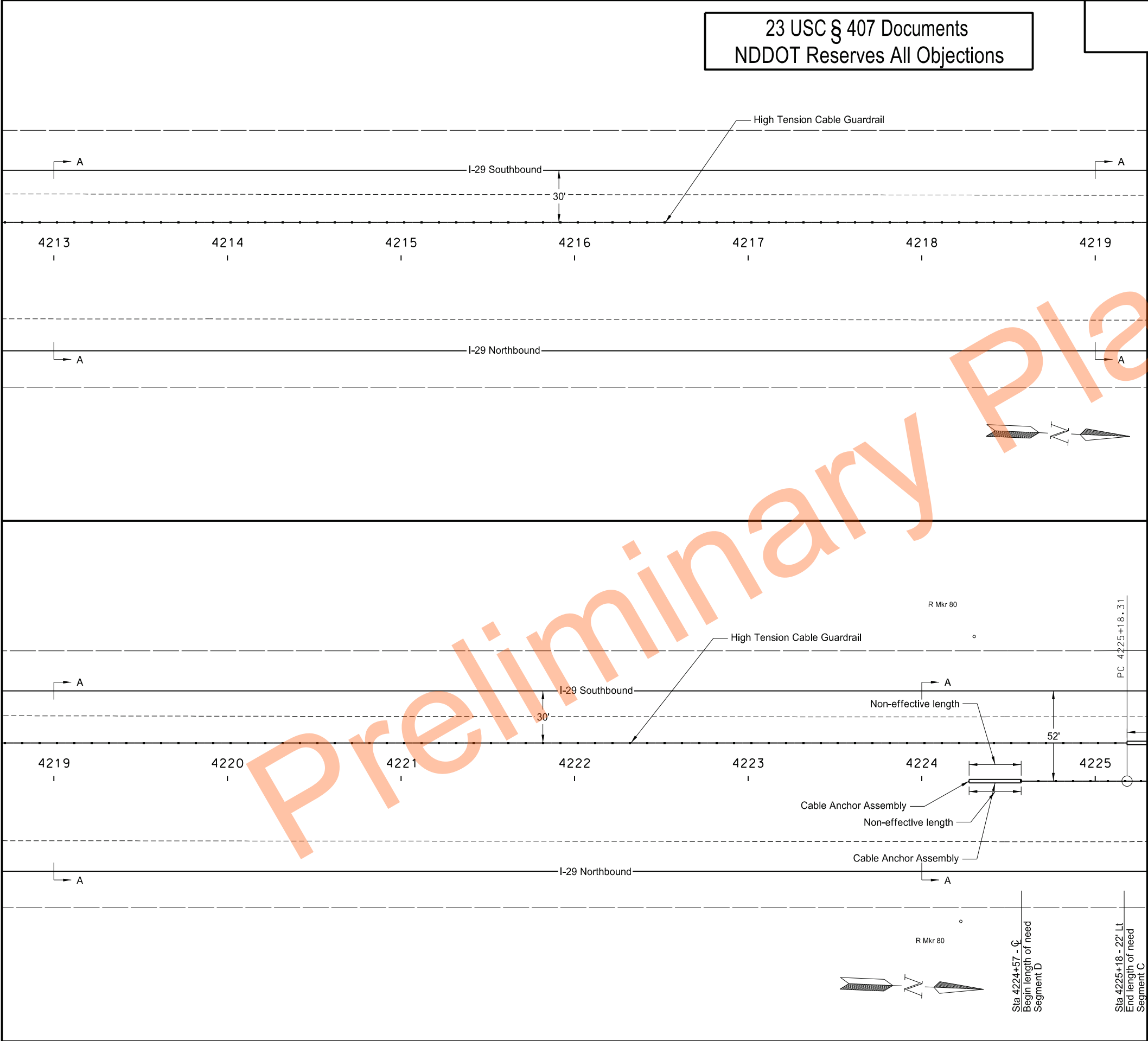
Segment B - Sta 4189+00 to 4201+00

I-29 - Argusville Intchg to N of Gardner Intchg



23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

NORTH DAKOTA

High Tension Cable Guardrail Layout

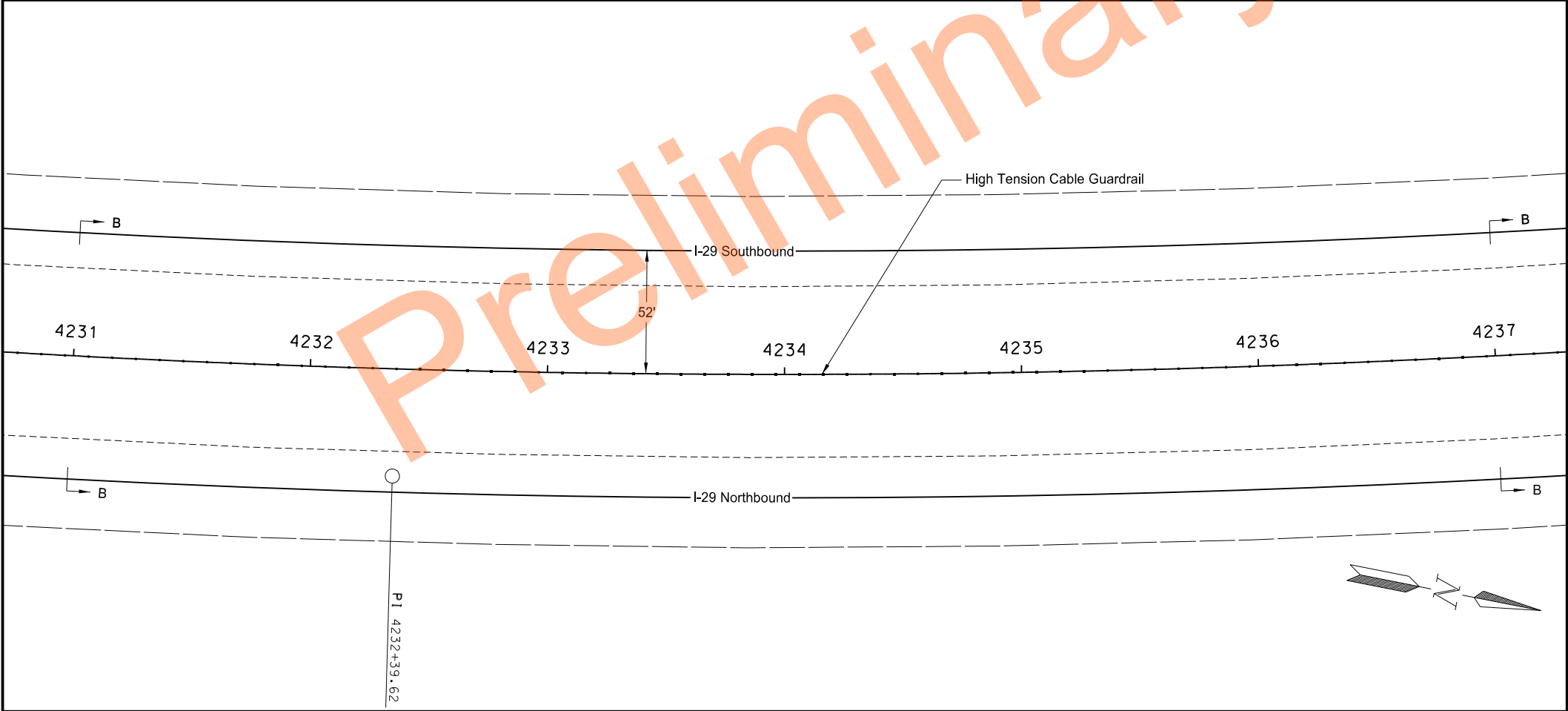
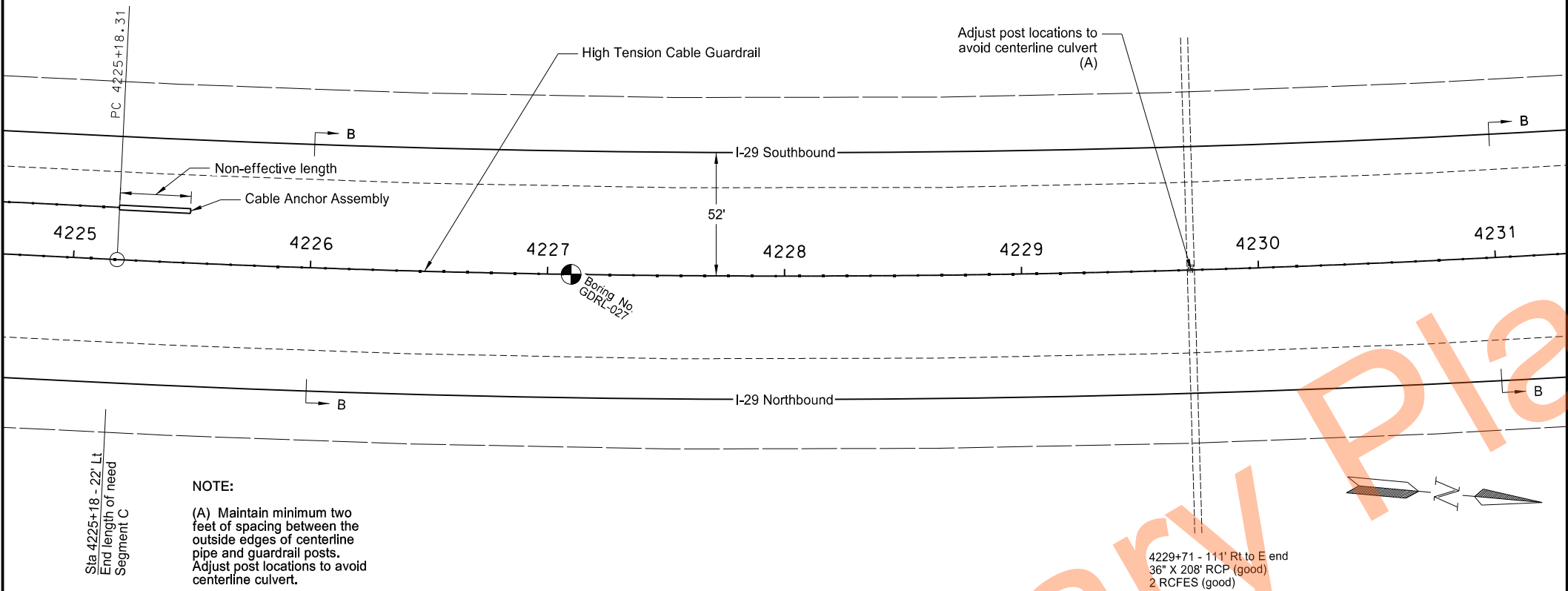
Segment C - Sta 4213+00 to 4225+00

Segment D - Sta 4224+57 to 4225+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAUGH

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NORTH DAKOTA

High Tension Cable Guardrail Layout

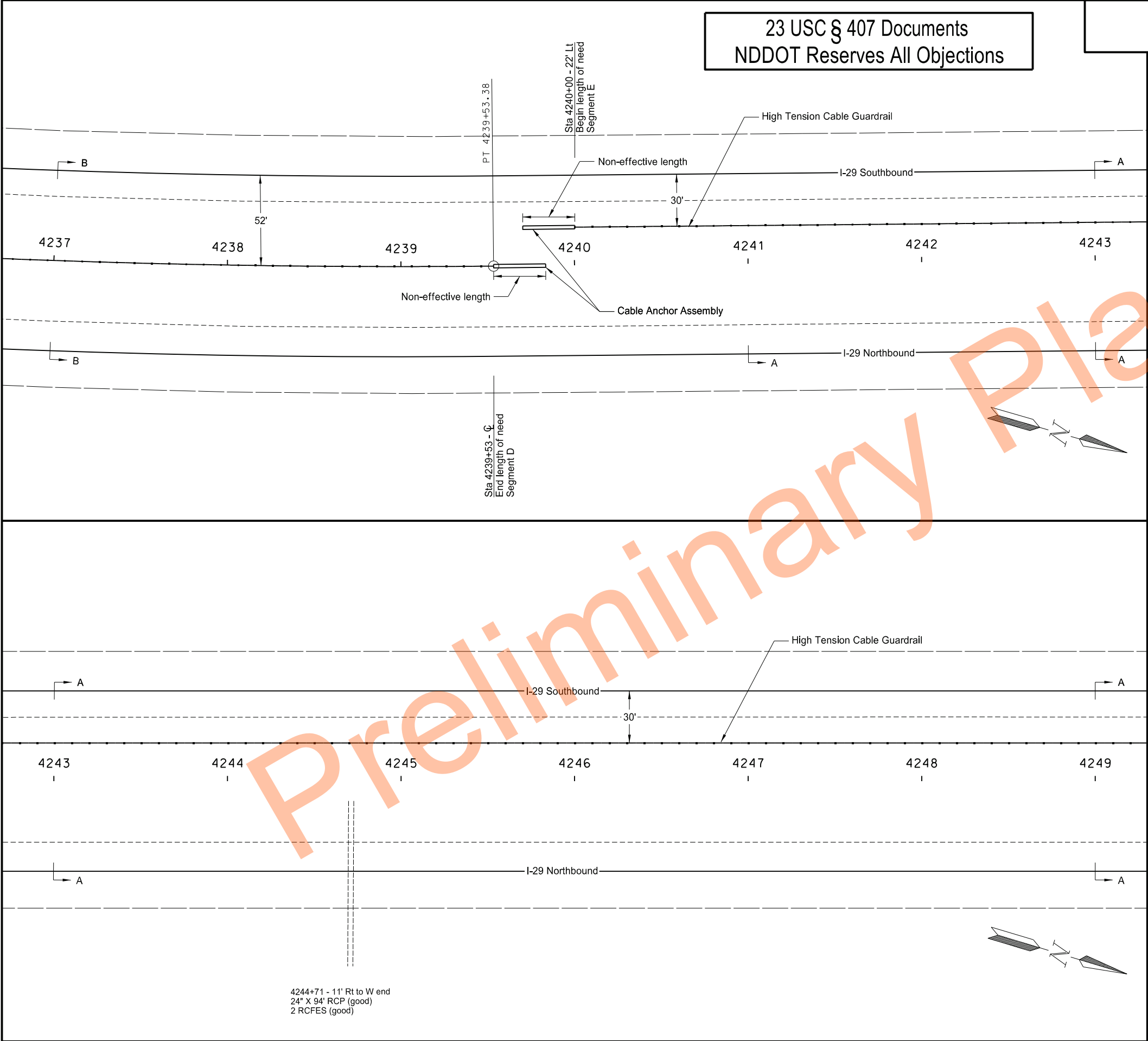
Segment C - Sta 4225+00 to 4225+18

Segment D - Sta 4225+00 to 4237+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	9



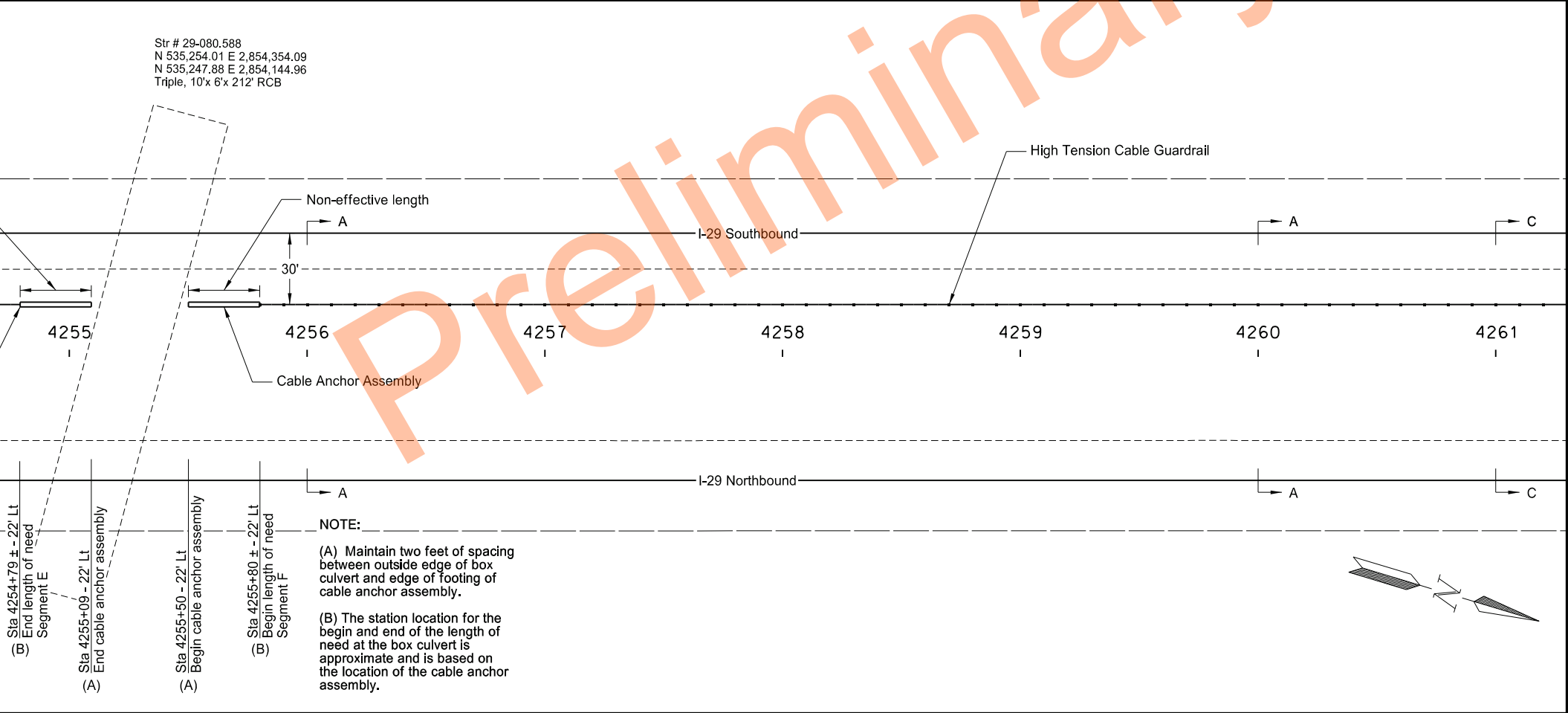
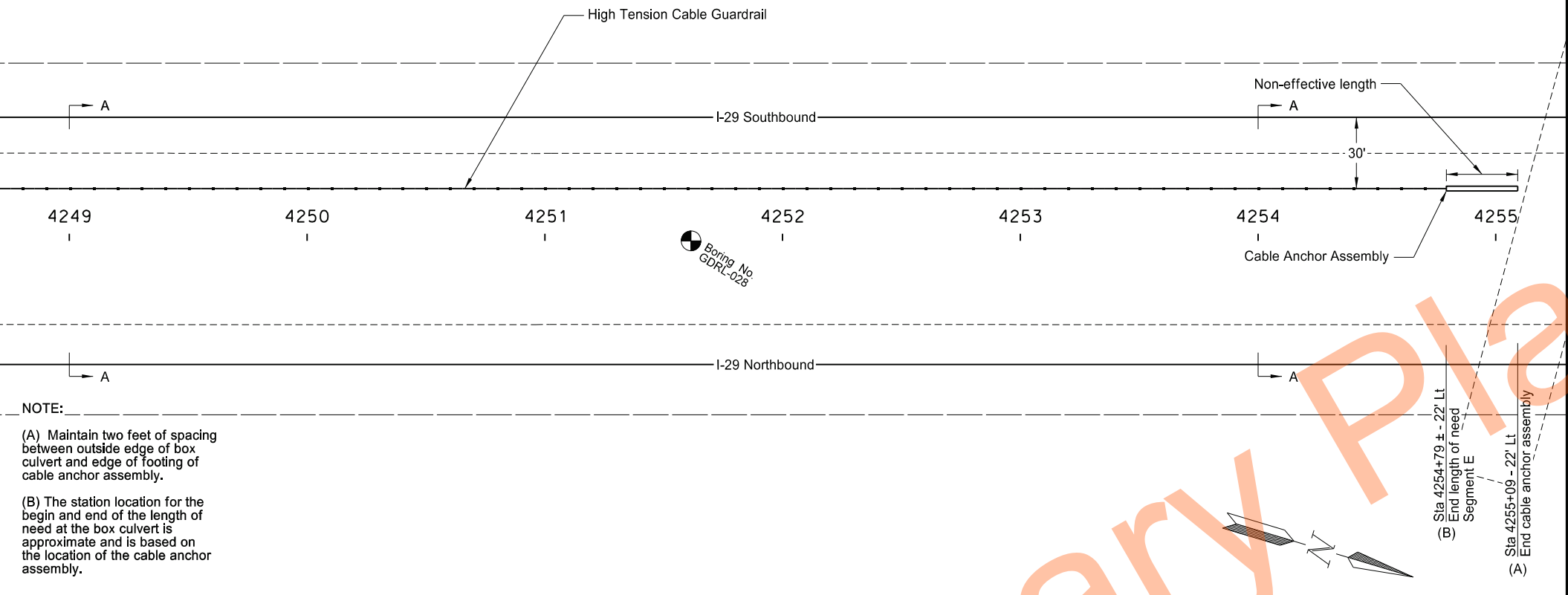
High Tension Cable Guardrail Layout

Segment D - Sta 4237+00 to 4239+53
Segment E - Sta 4240+00 to 4249+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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SCOTT MIDDLEAUGH

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High Tension Cable Guardrail Layout

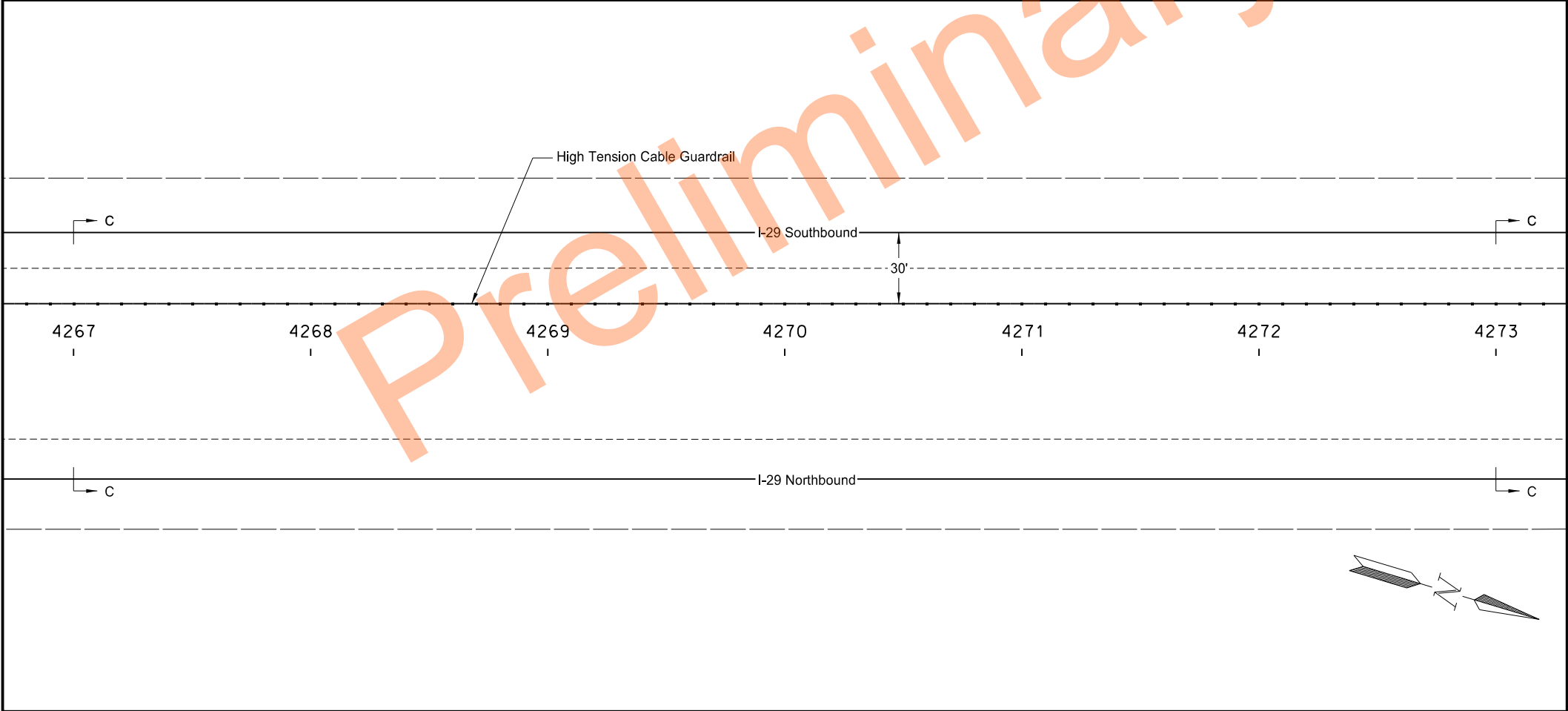
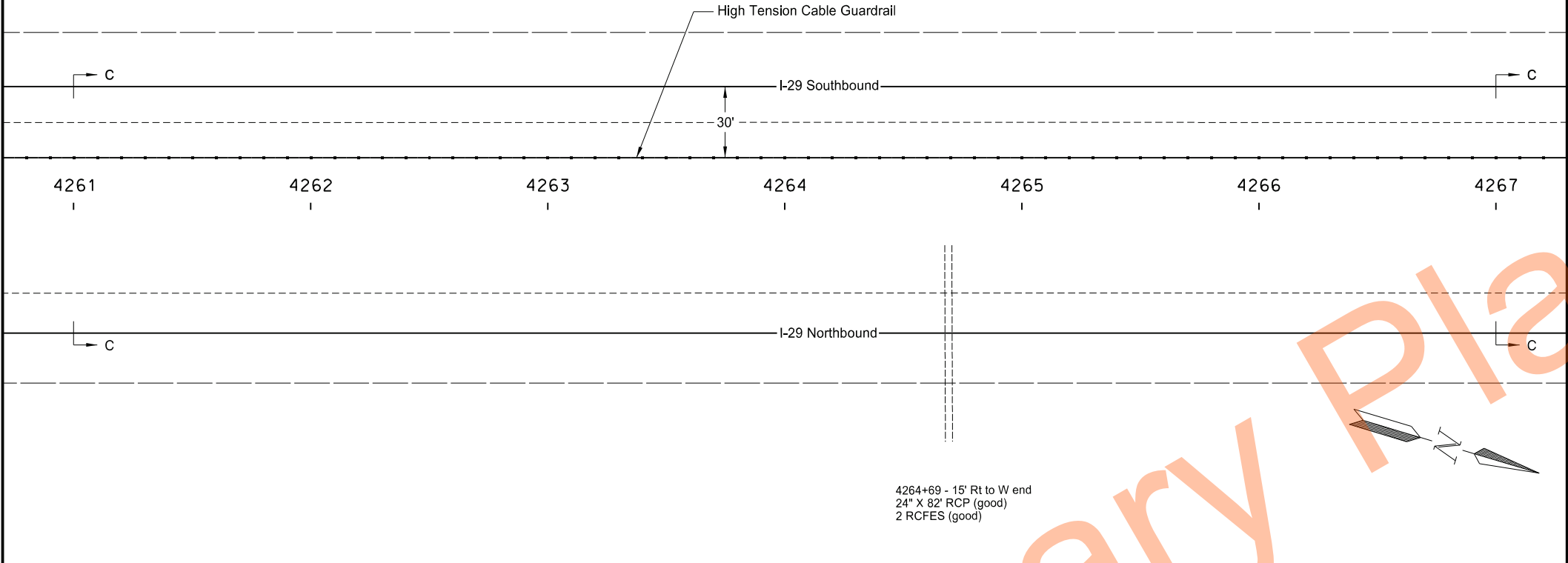
Segment E - Sta 4249+00 to 4254+79 ±

Segment F - Sta 4255+80 ± to 4261+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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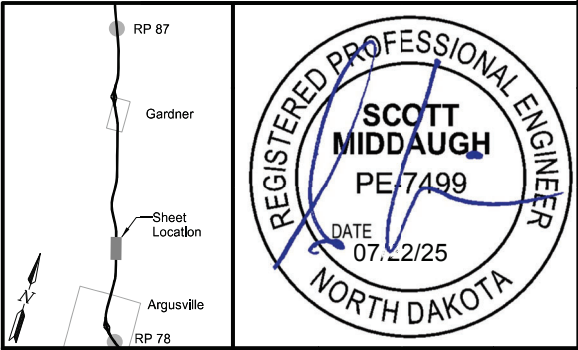
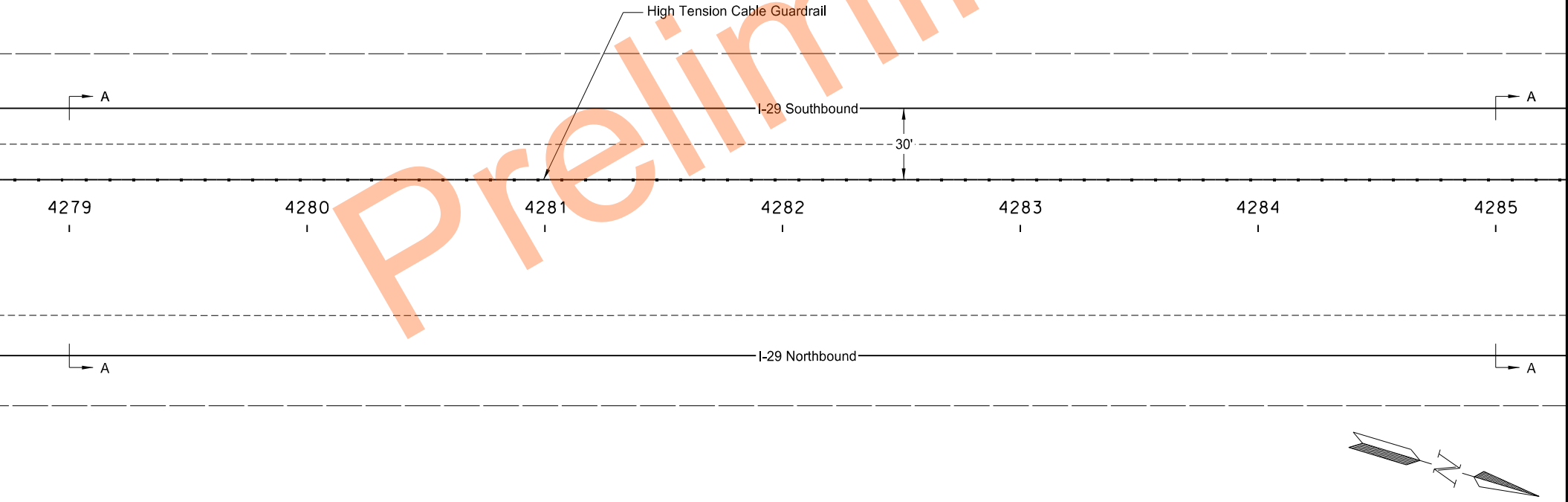
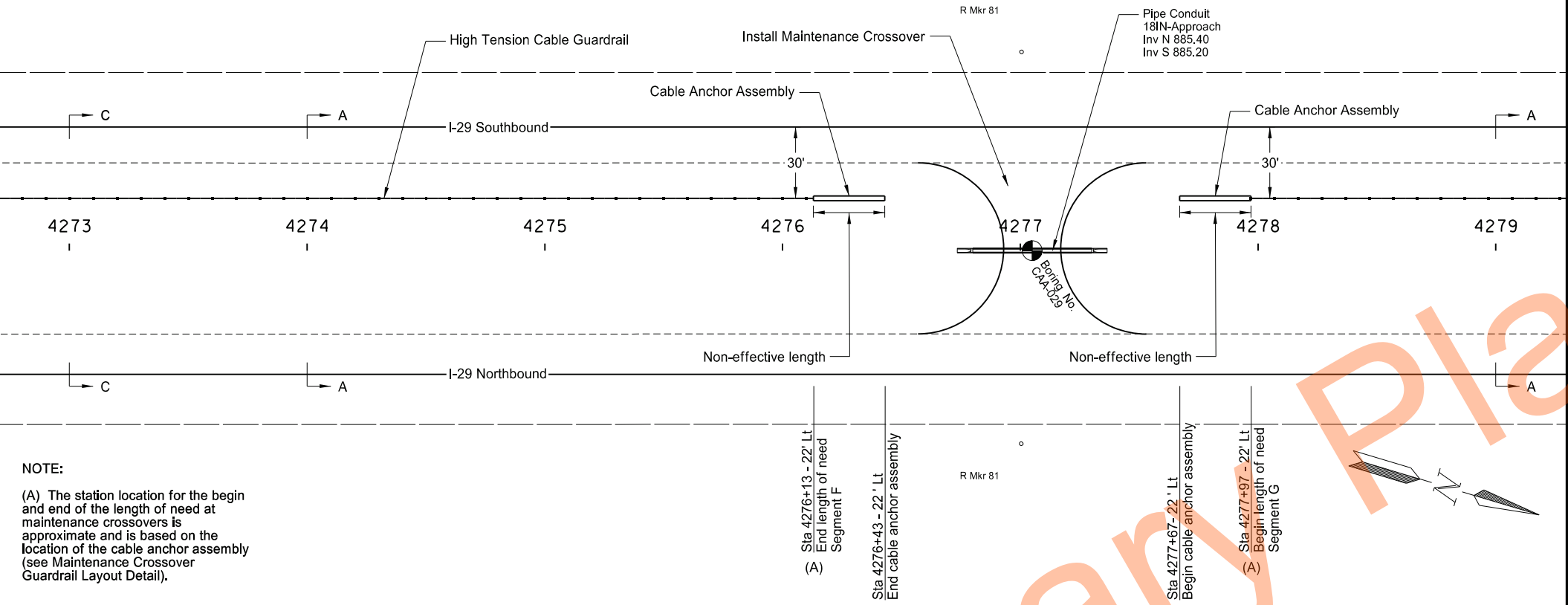
REGISTERED PROFESSIONAL ENGINEER
SCOTT MIDDLEAUGH
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DATE 07/22/25
NORTH DAKOTA

High Tension Cable Guardrail Layout
Segment F - Sta 4261+00 to 4273+00
I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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SPEC CODE	BID ITEM	QTY	UNIT
714 4099	PIPE CONDUIT 18IN-APPROACH Sta 4276+79 to Sta 4277+31 CL	52	LF



High Tension Cable Guardrail Layout

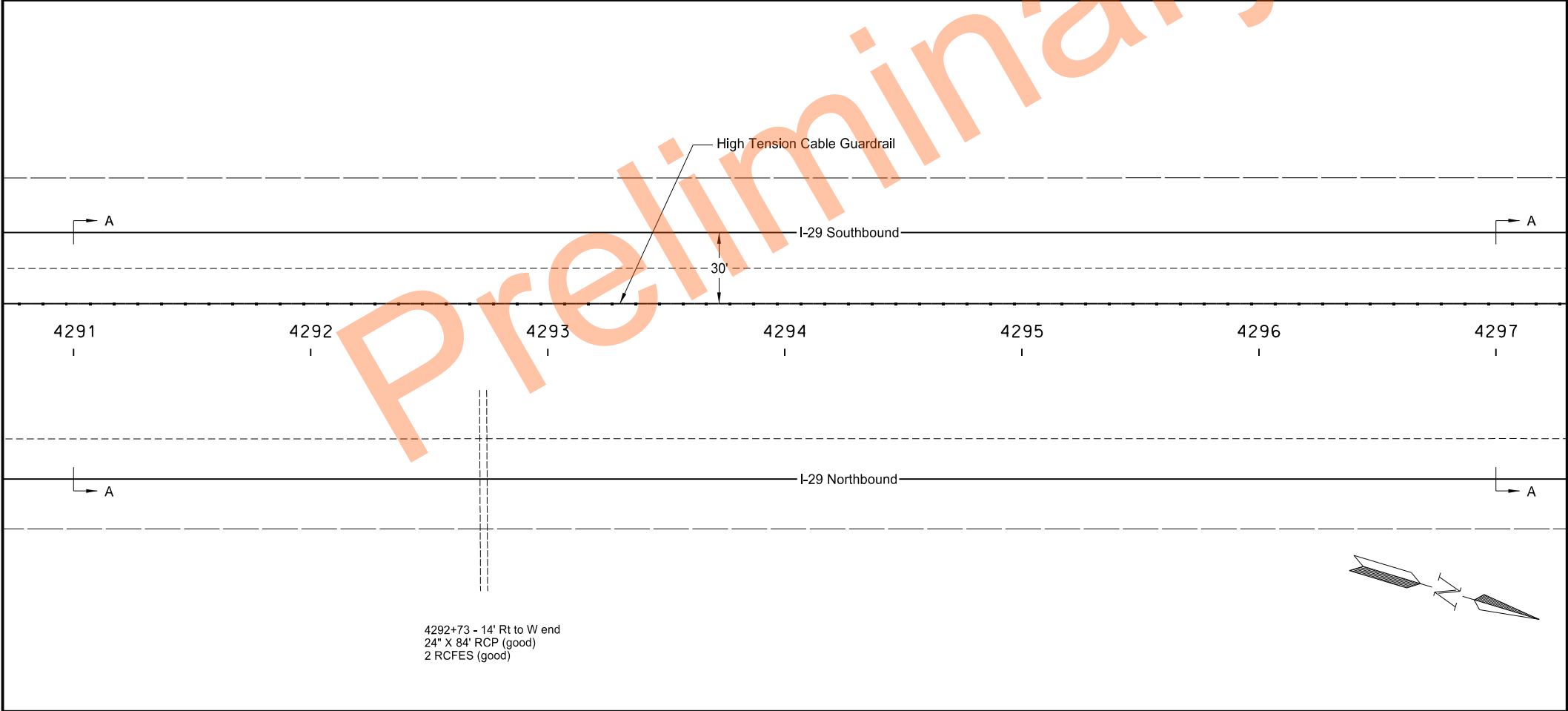
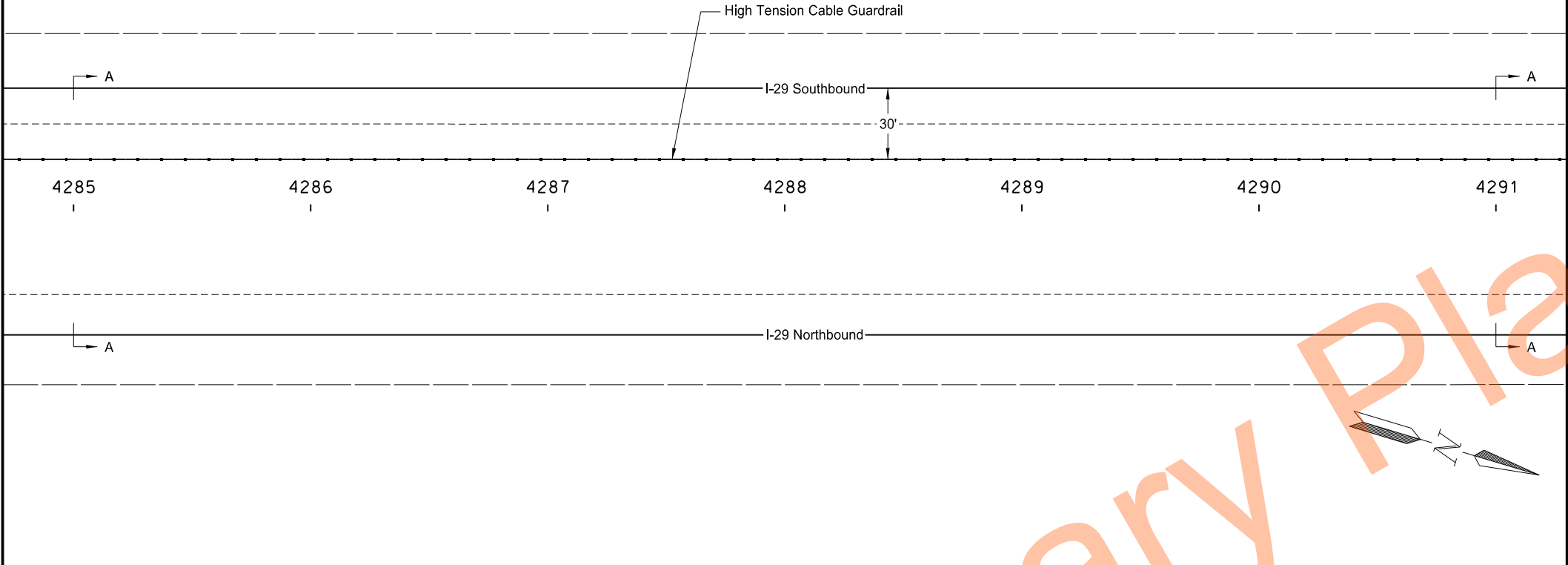
Segment F - Sta 4273+00 to 4276+13 ±

Segment G - Sta 4277+97 ± to 4285+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	13



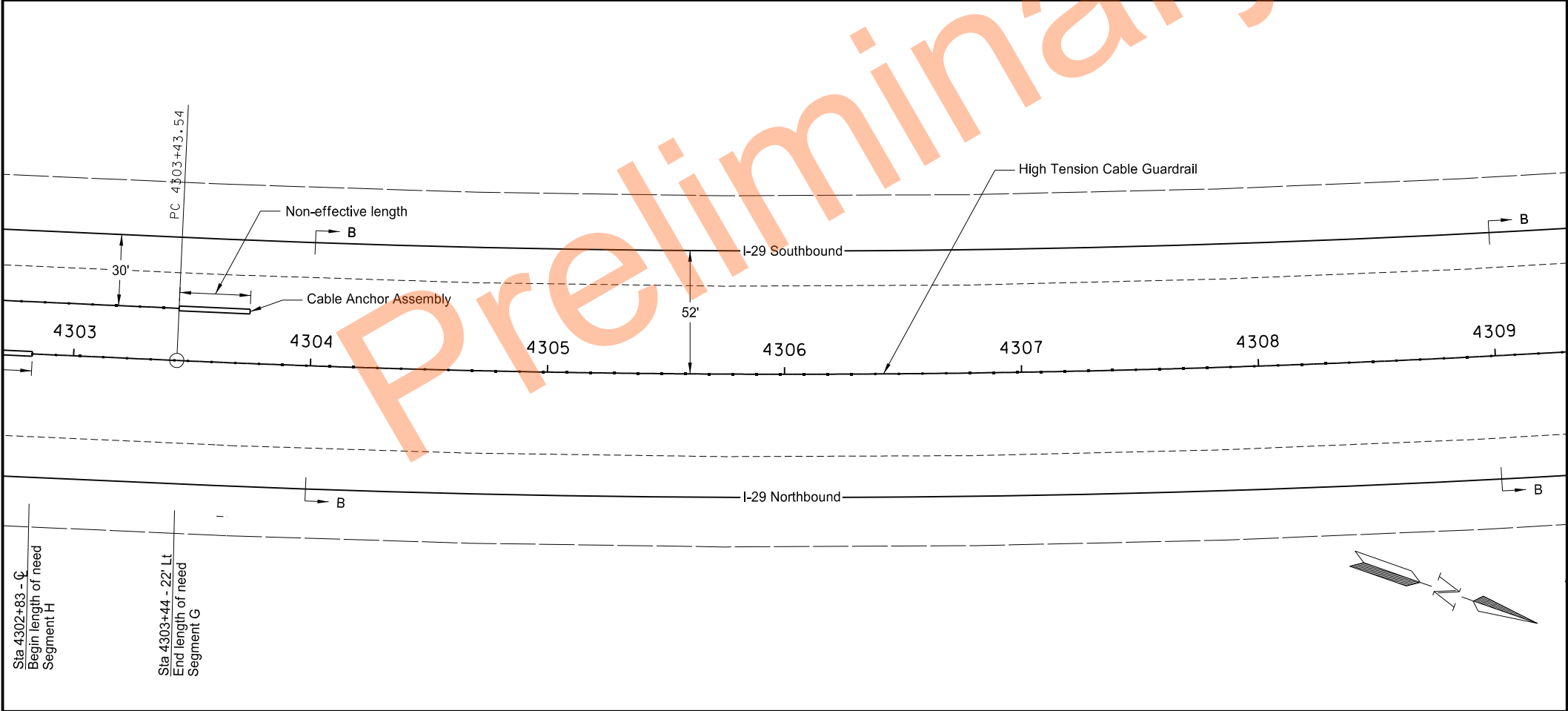
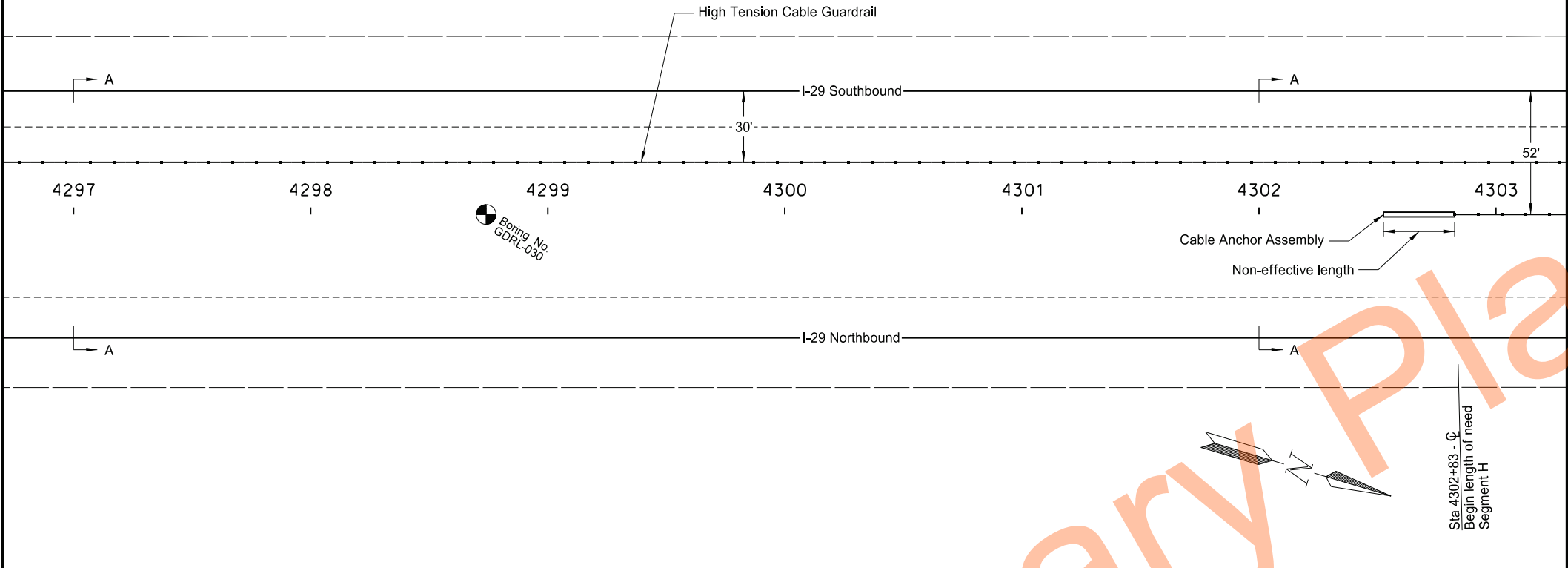
High Tension Cable Guardrail Layout

Segment G - Sta 4285+00 to 4297+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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High Tension Cable Guardrail Layout

Segment G - Sta 4297+00 to 4303+44

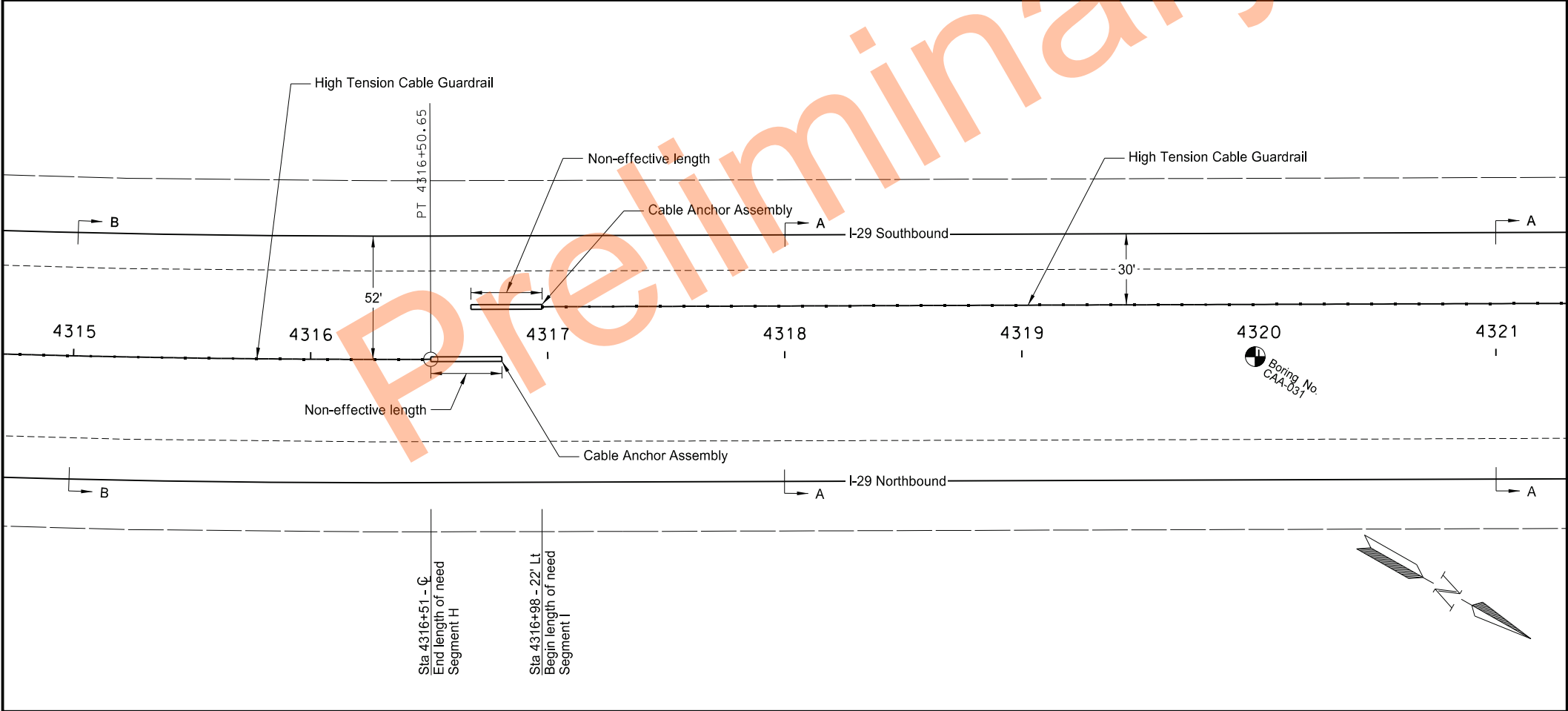
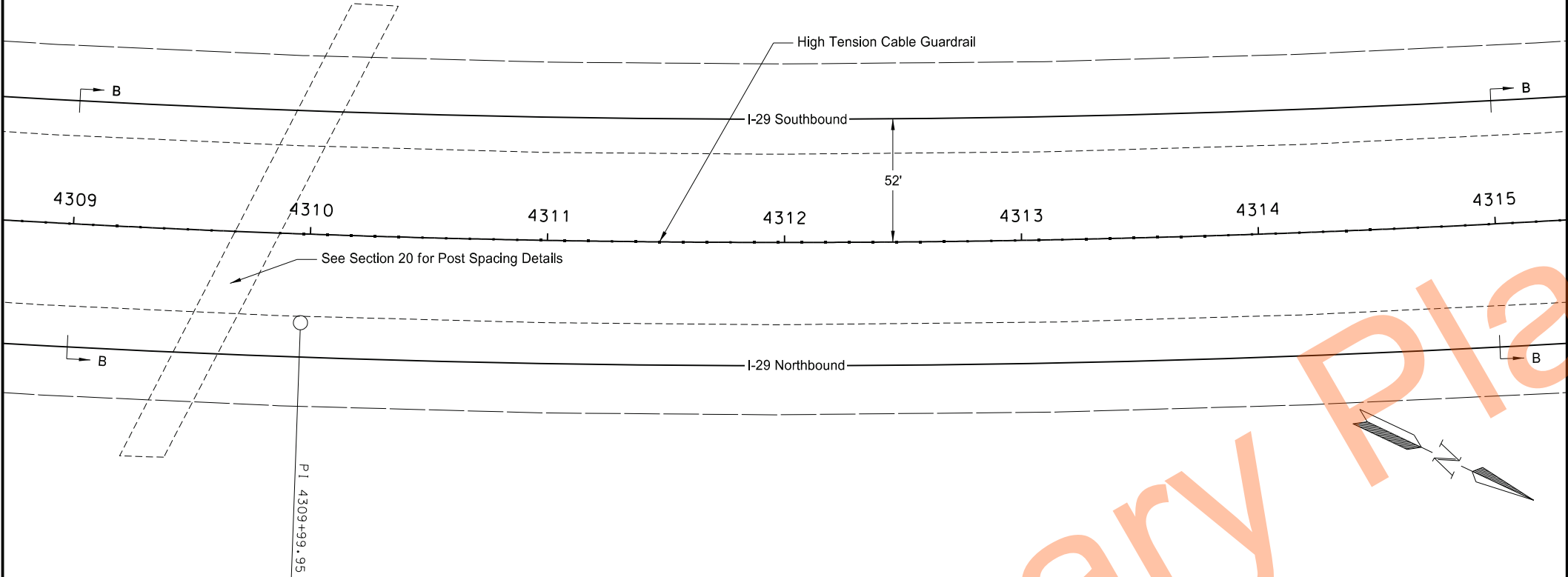
Segment H - Sta 4302+83 to 4309+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	15

Str # 29-081.620
N 540,467.08 E 2,852,540.30
N 540,459.33 E 2,852,754.77
Double, 8'x 4'x 218' RCB



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SCOTT MIDDAGH

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High Tension Cable Guardrail Layout

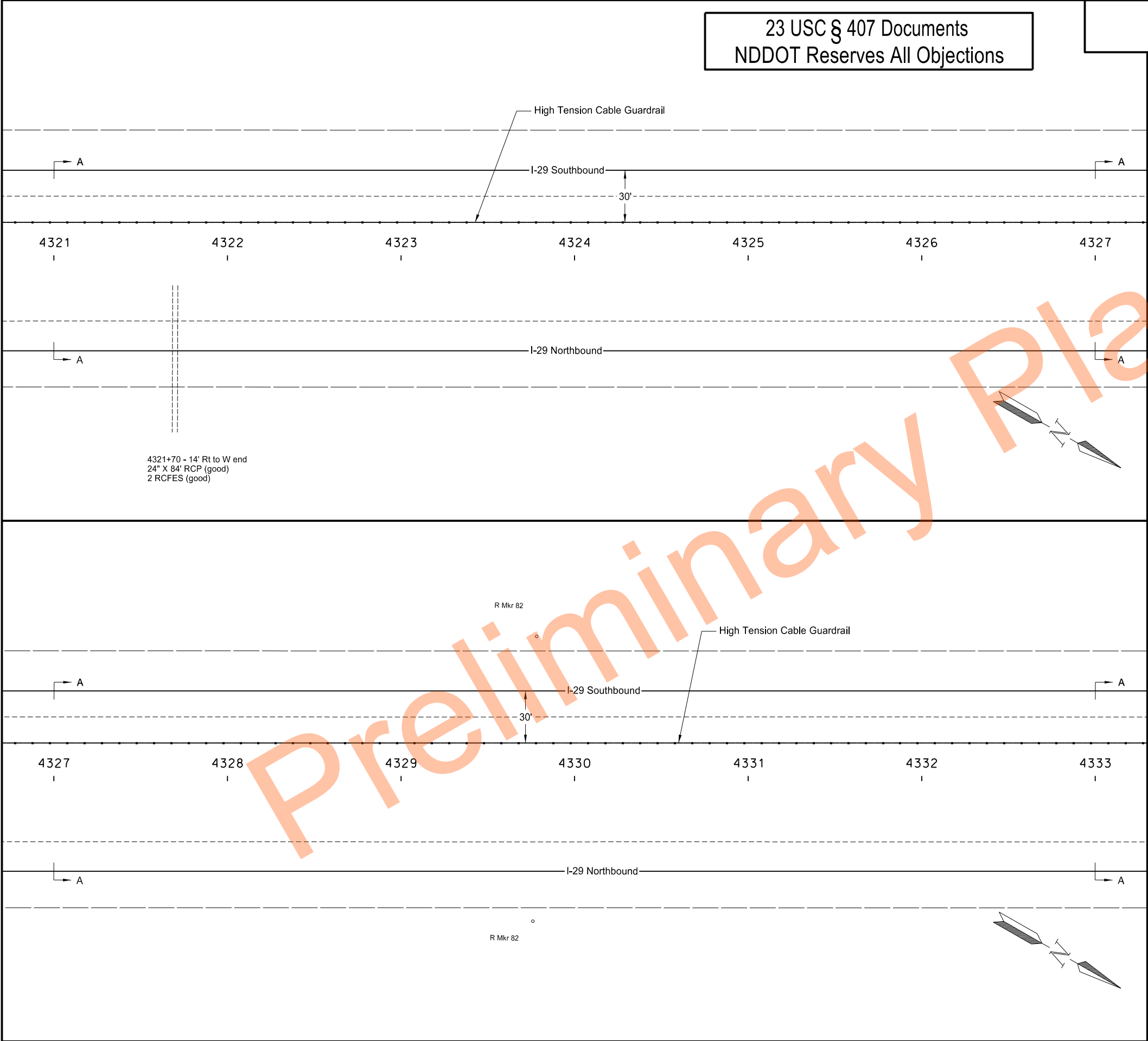
Segment H - Sta 4309+00 to 4316+51

Segment I - Sta 4316+98 to 4321+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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SCOTT MIDDAGH
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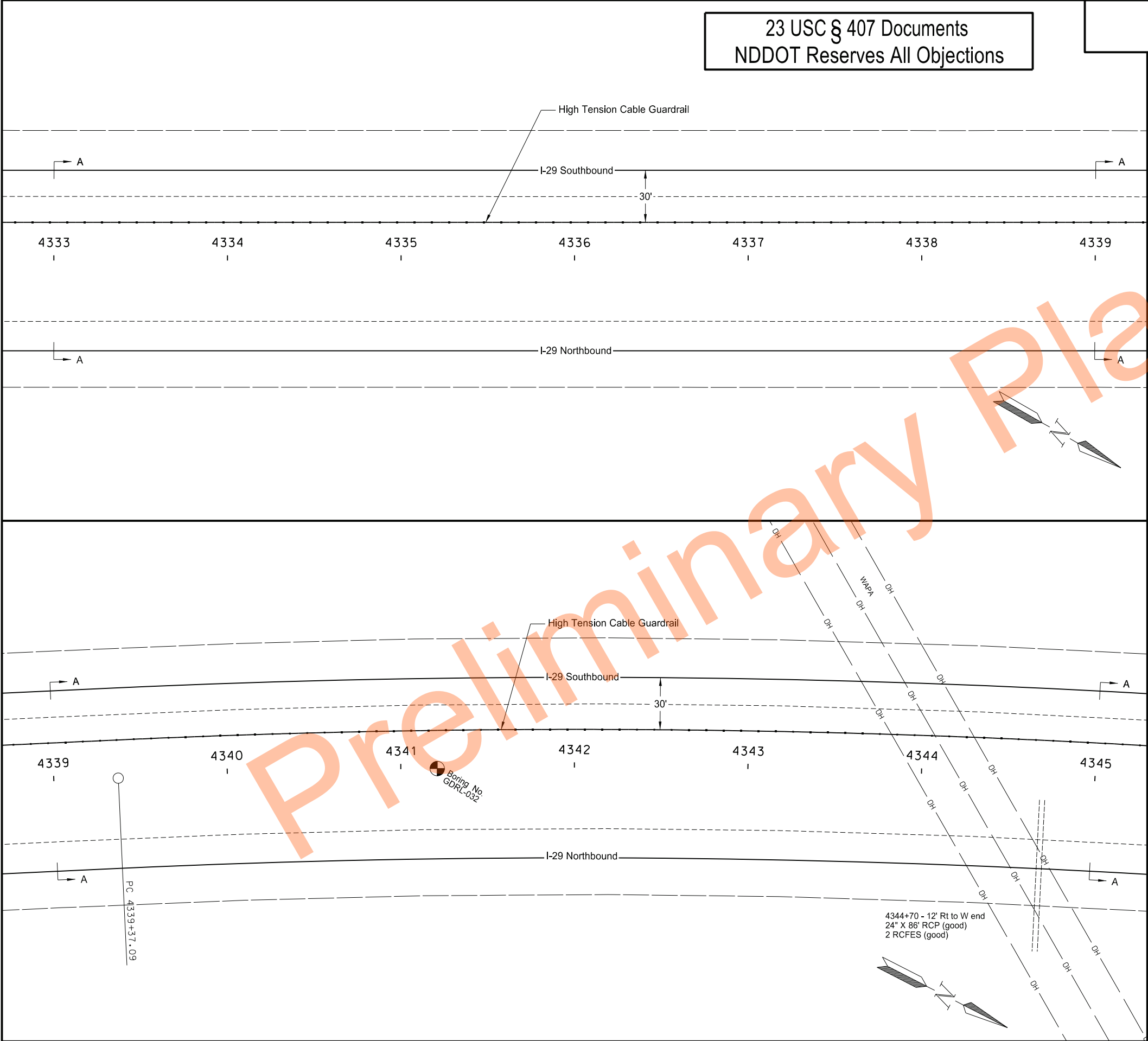
High Tension Cable Guardrail Layout

Segment I - Sta 4321+00 to 4333+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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NORTH DAKOTA

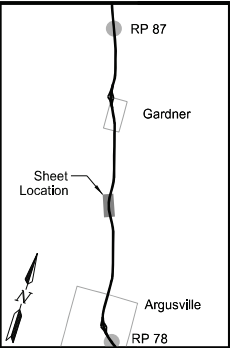
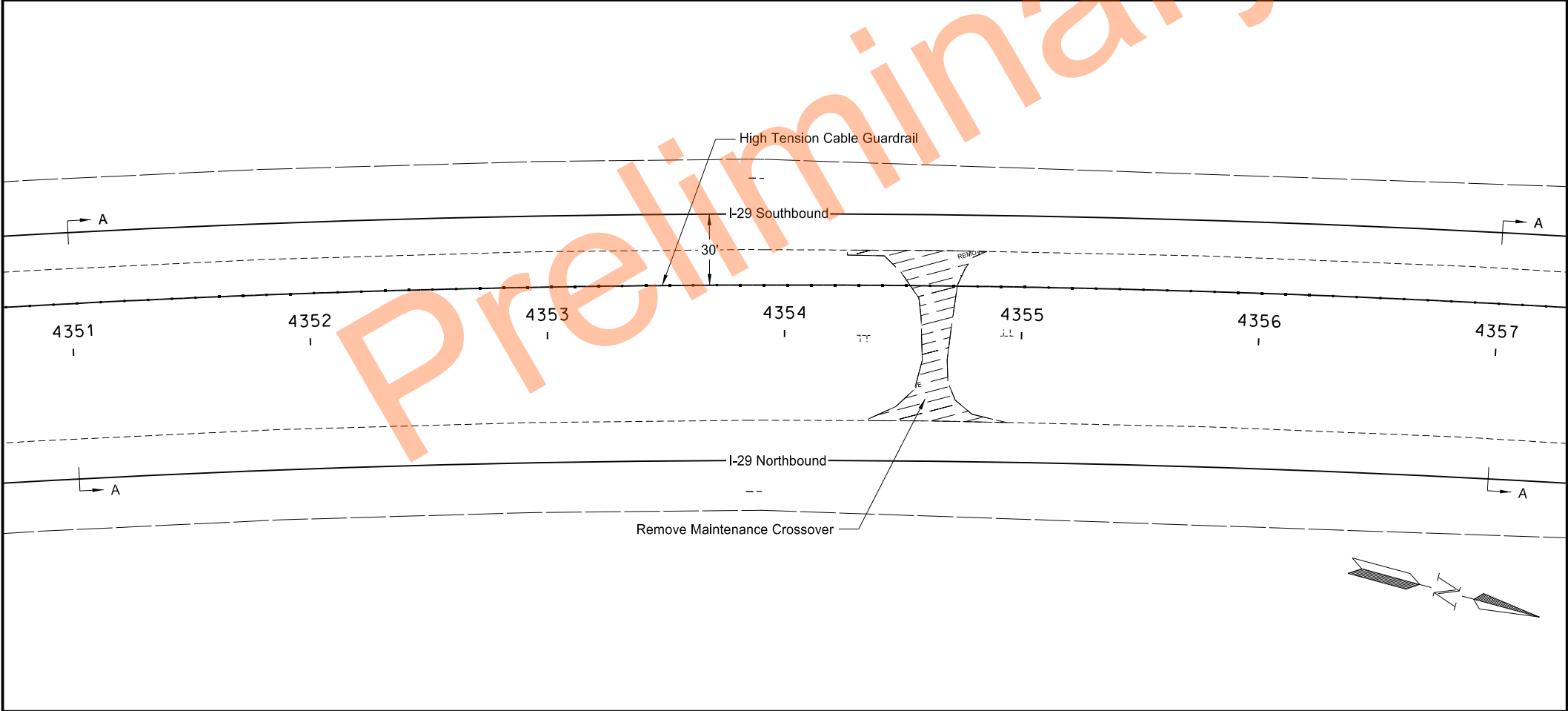
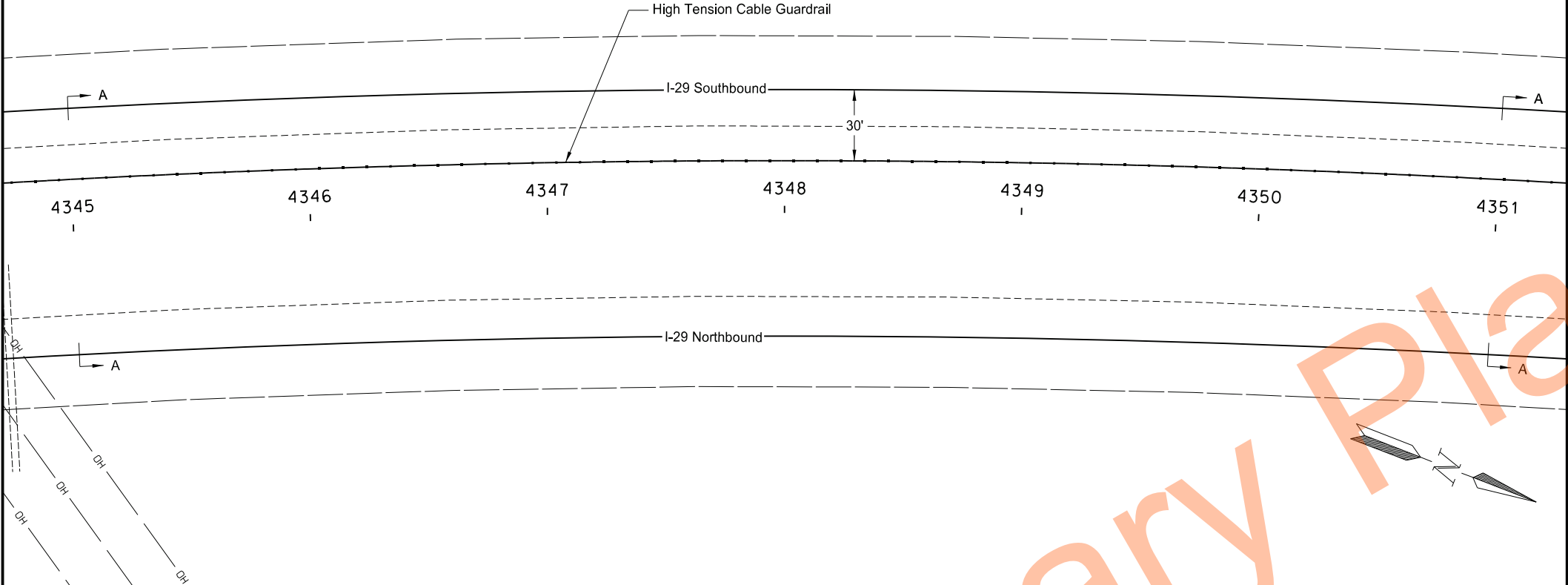
High Tension Cable Guardrail Layout

Segment I - Sta 4333+00 to 4345+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	18



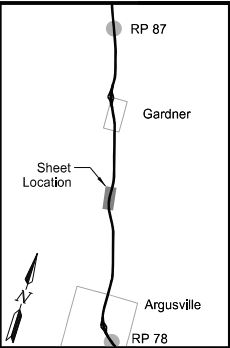
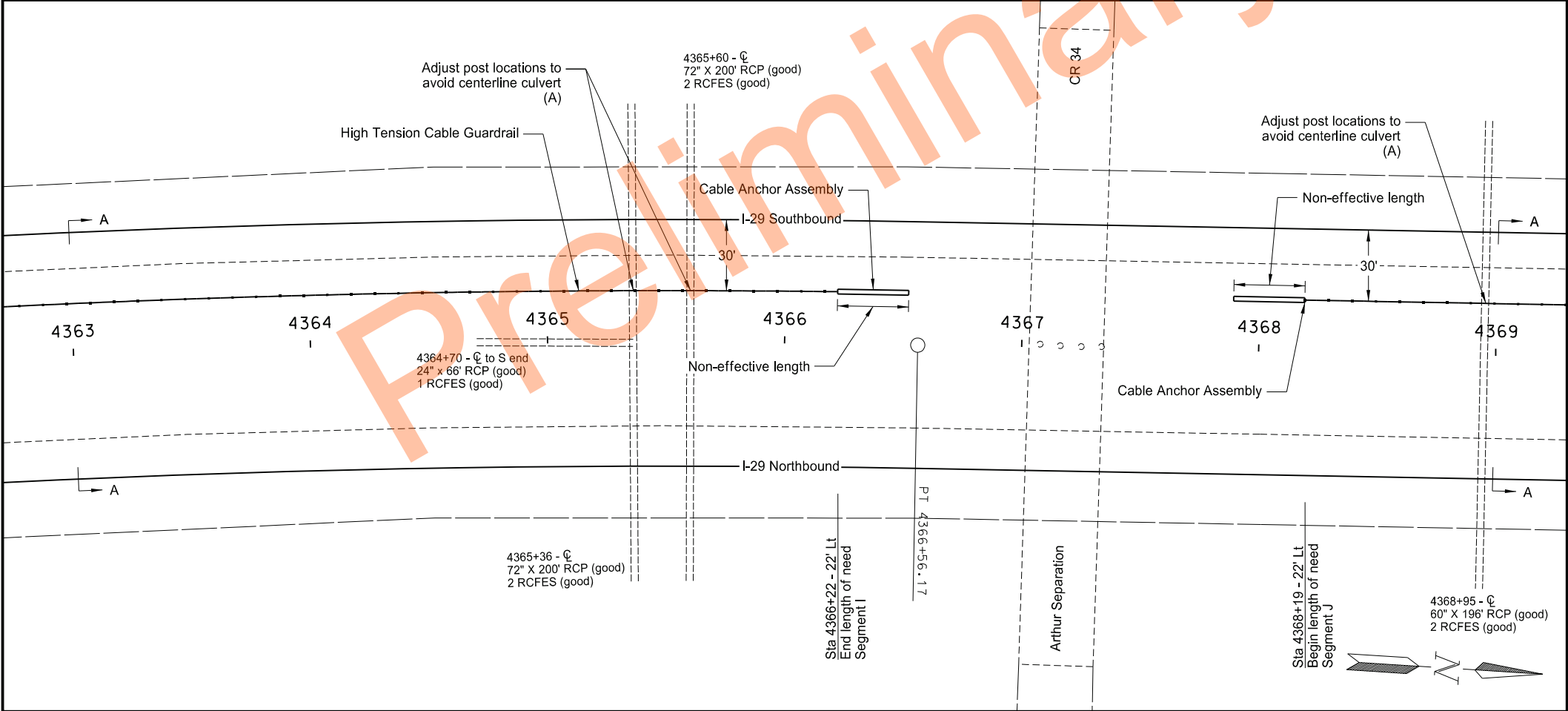
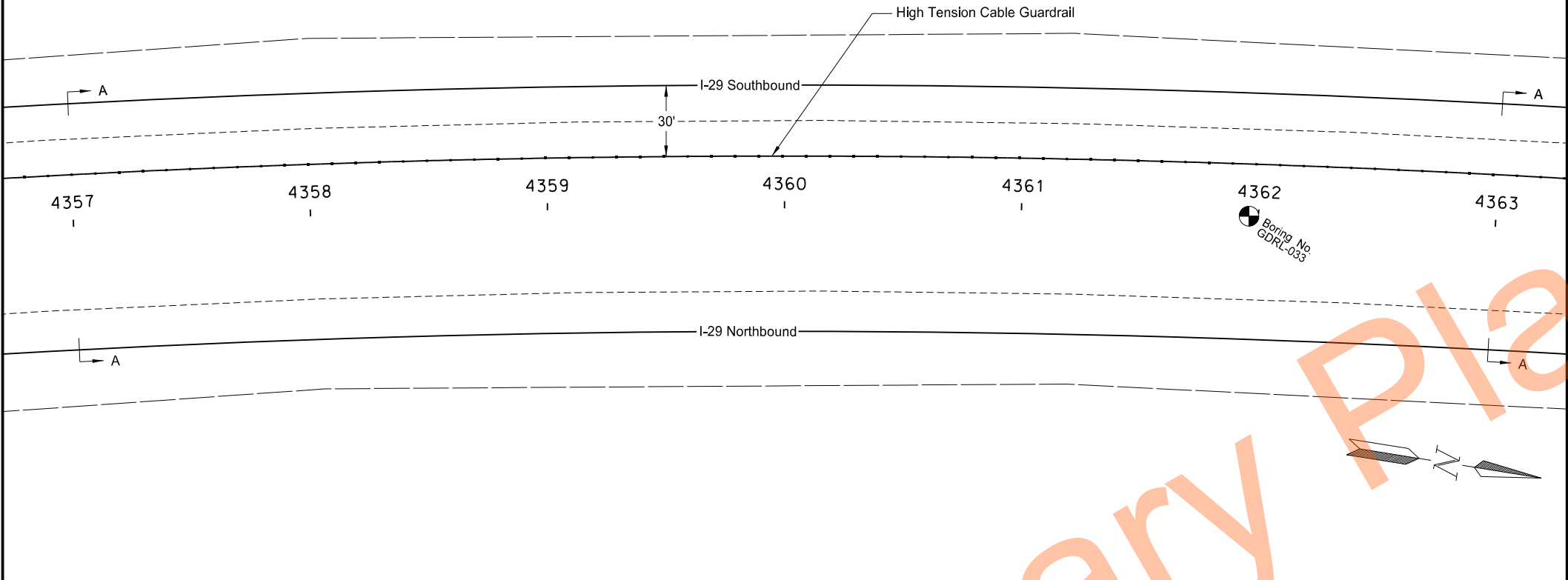
High Tension Cable Guardrail Layout

Segment I - Sta 4345+00 to 4357+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

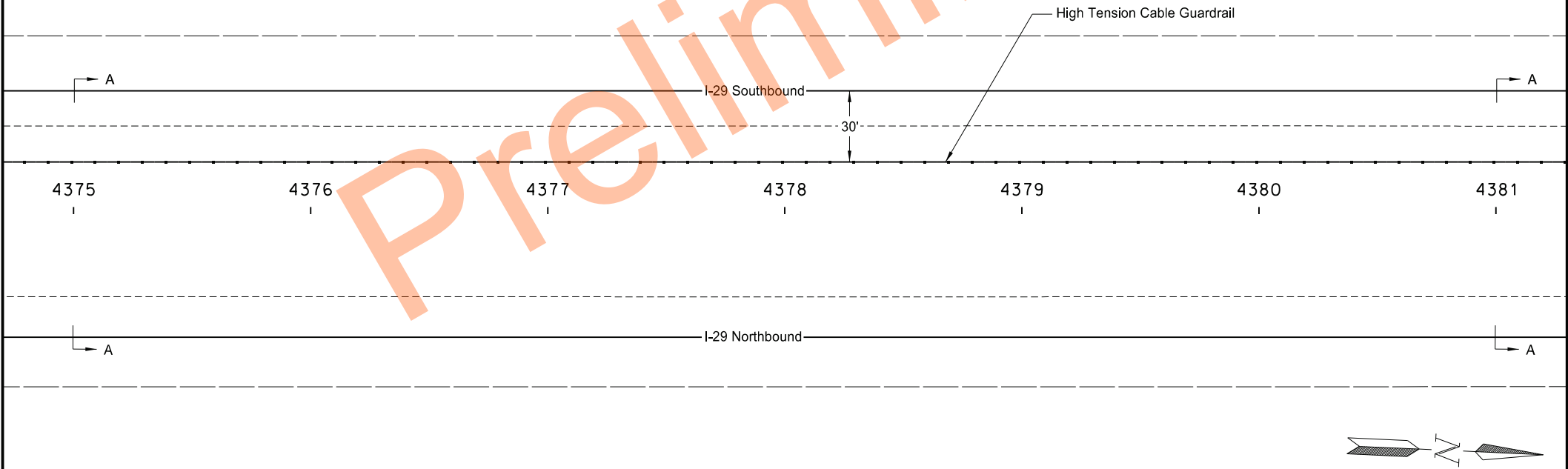
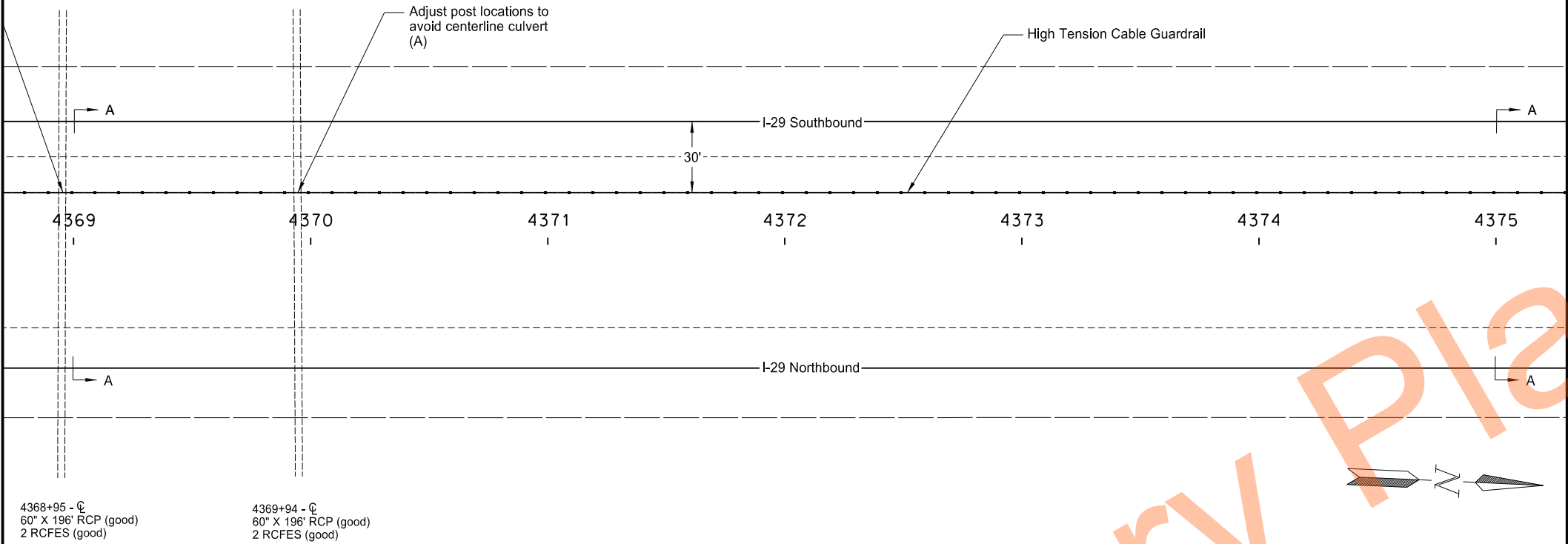
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	19



High Tension Cable Guardrail Layout
Segment I - Sta 4357+00 to 4366+22
Segment J - Sta 4368+19 to 4369+00
I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAUGH

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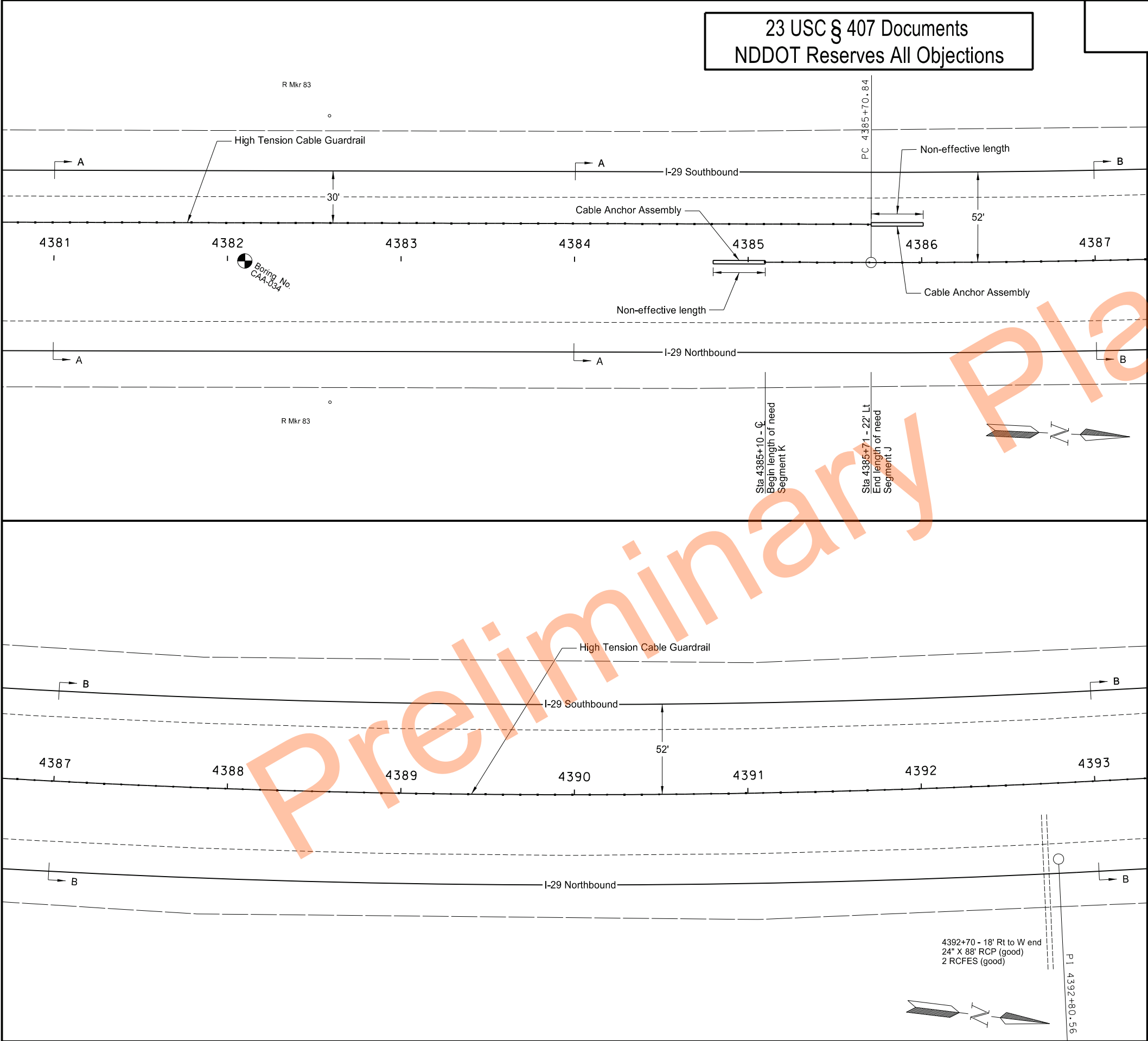
High Tension Cable Guardrail Layout

Segment J - Sta 4369+00 to 4381+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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High Tension Cable Guardrail Layout

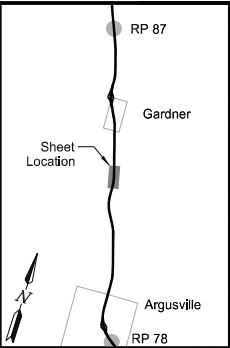
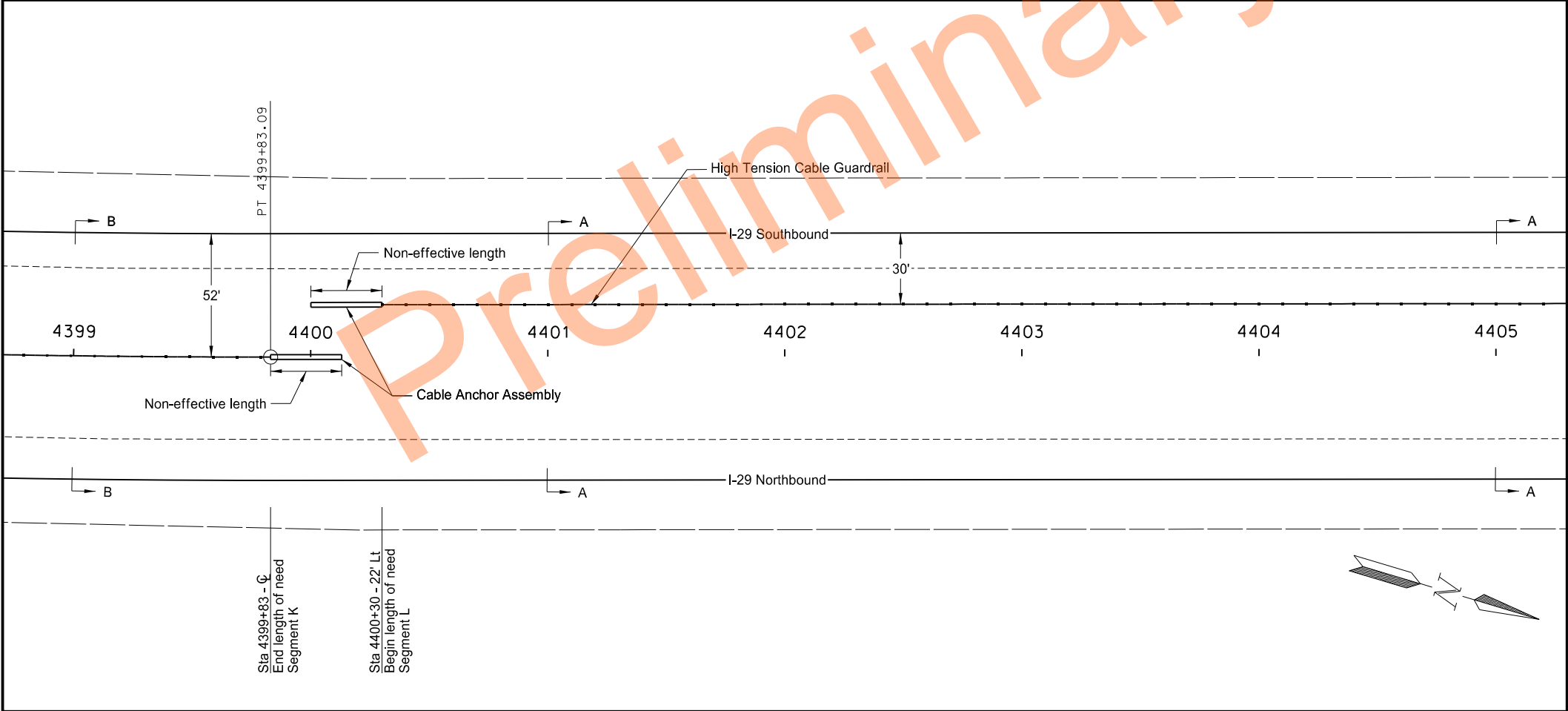
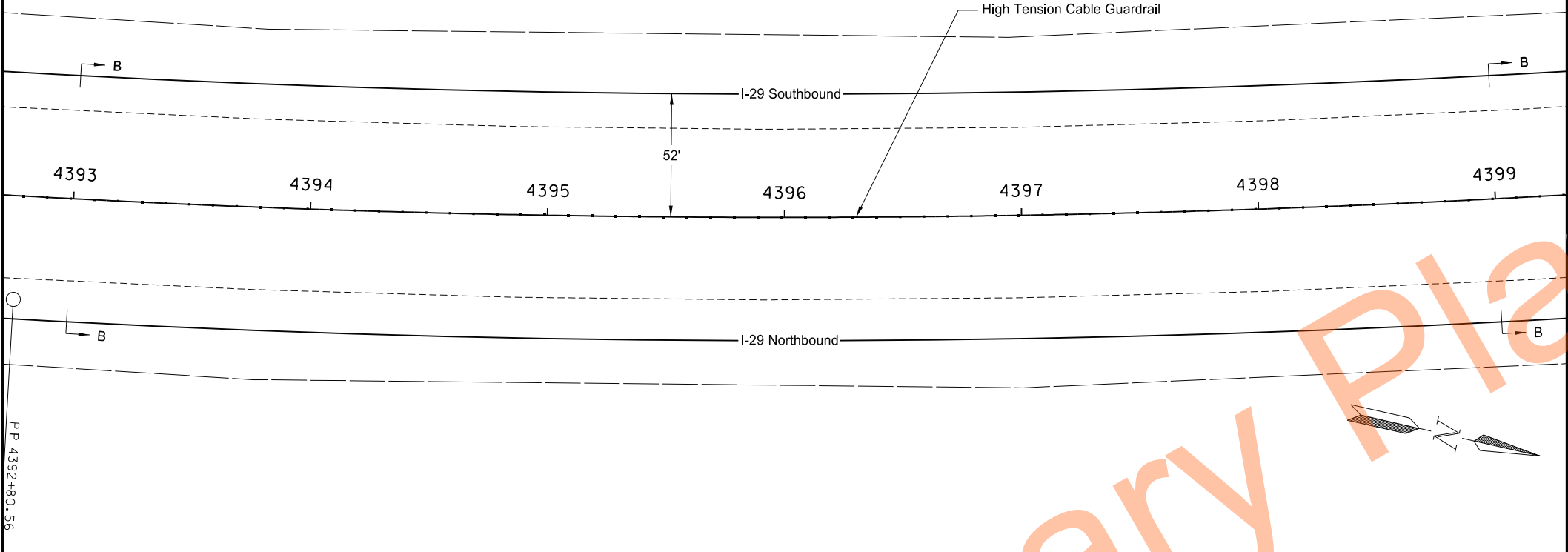
Segment J - Sta 4381+00 to 4385+71

Segment K - Sta 4385+10 to 4393+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	22



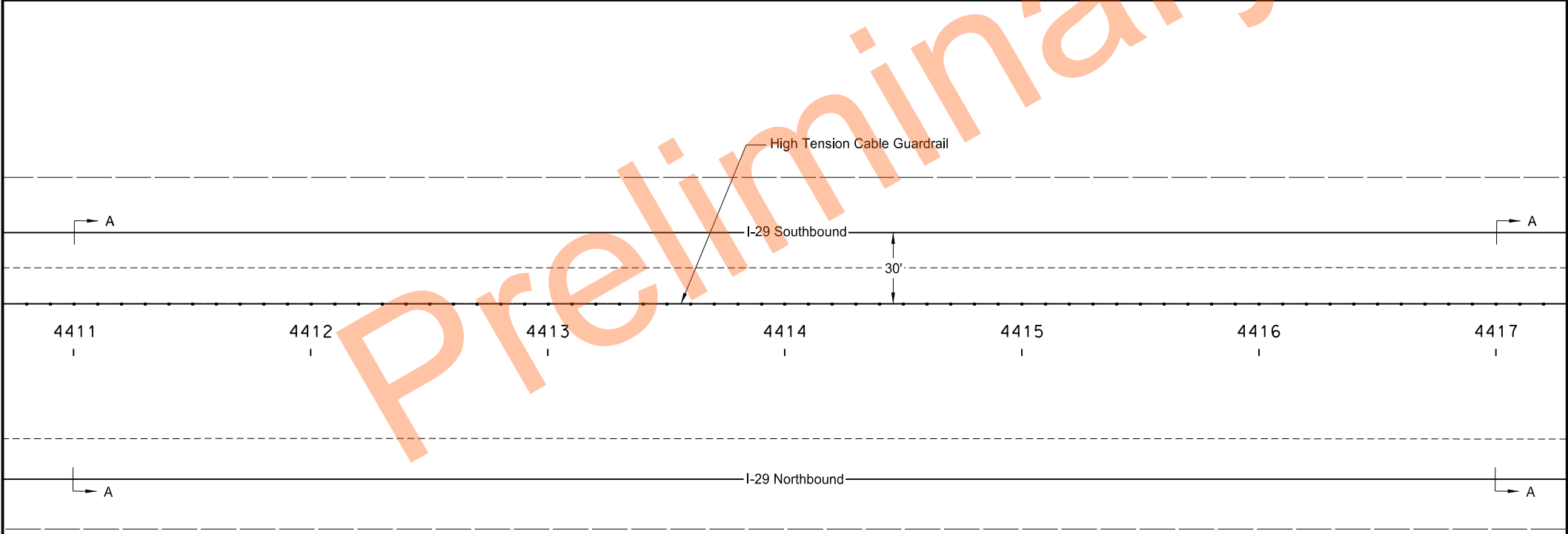
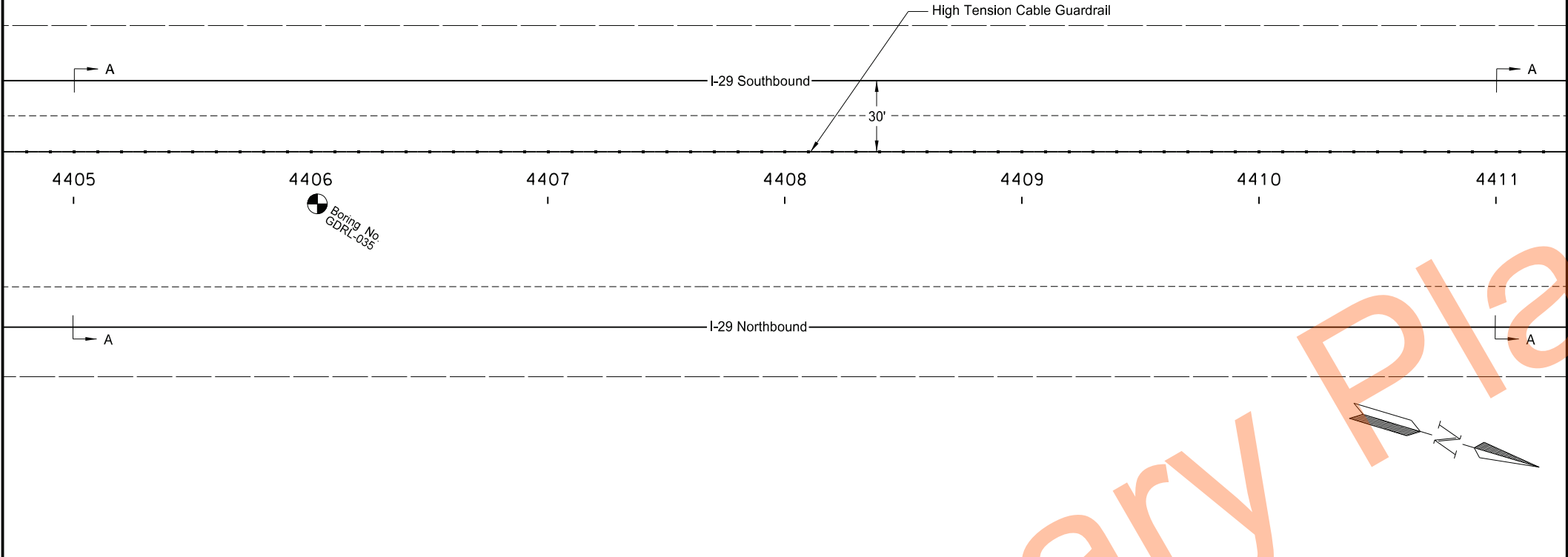
High Tension Cable Guardrail Layout

Segment K - Sta 4393+00 to 4399+83
Segment L - Sta 4400+30 to 4405+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
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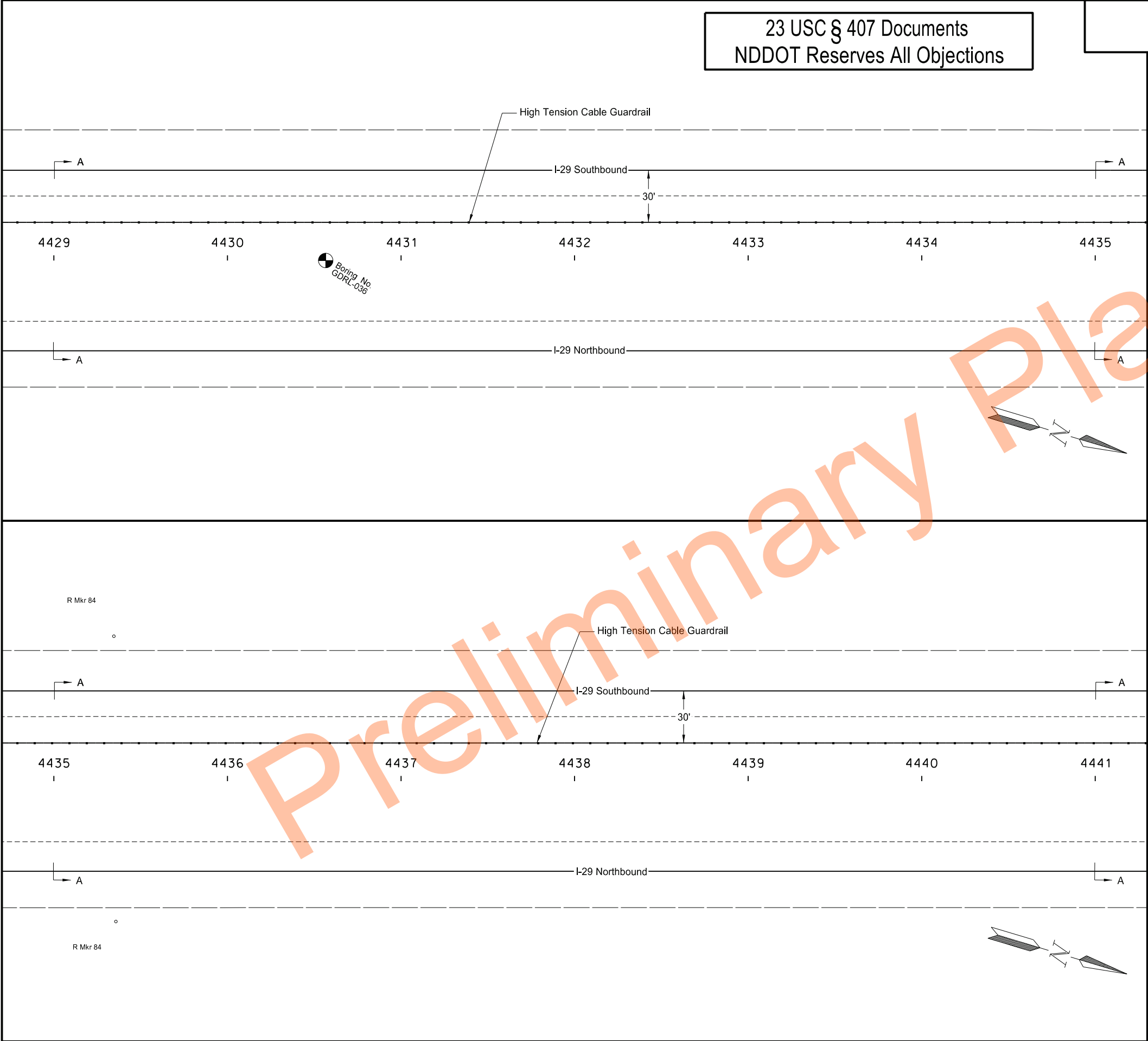
High Tension Cable Guardrail Layout

Segment L - Sta 4405+00 to 4417+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
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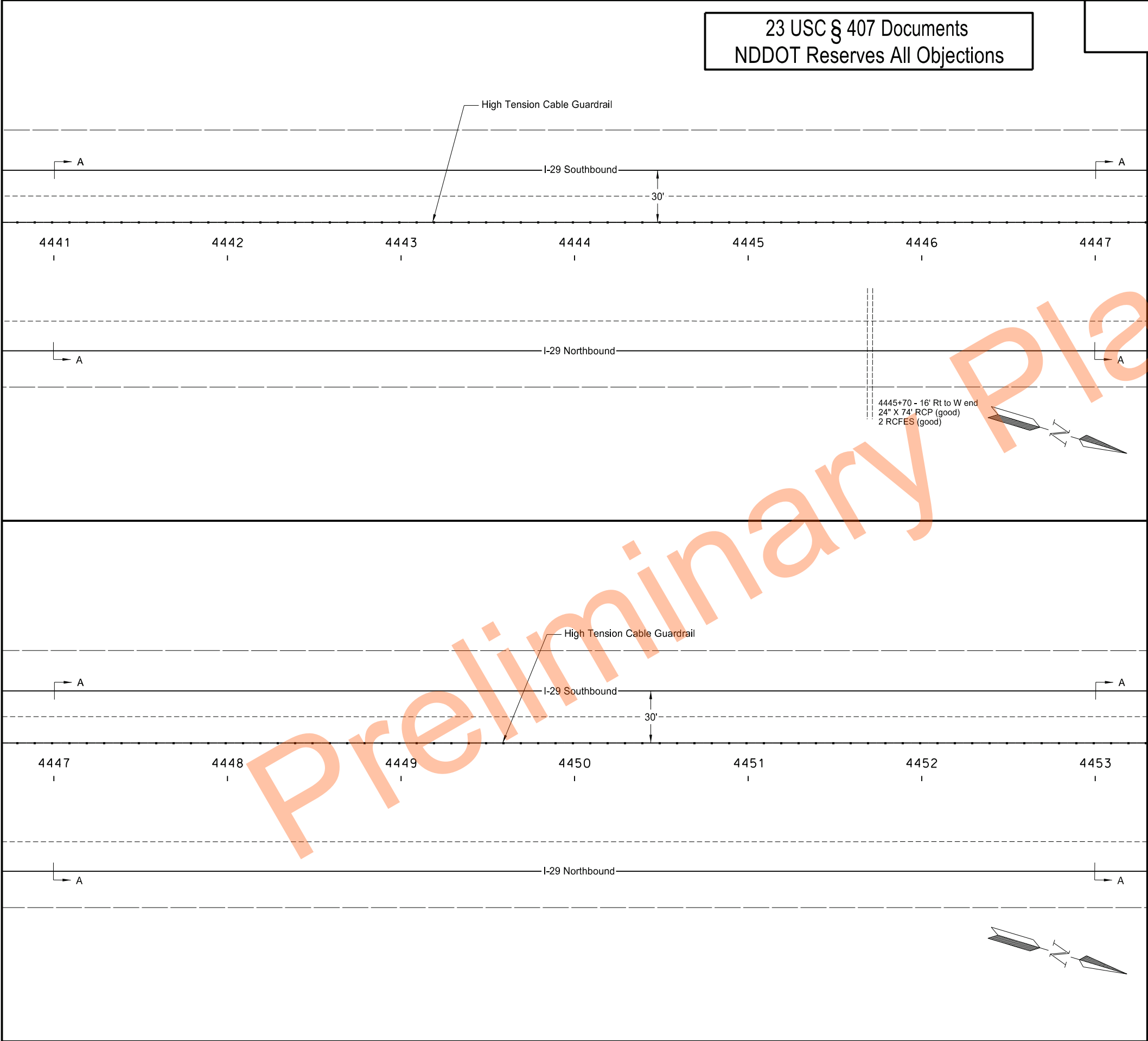
High Tension Cable Guardrail Layout

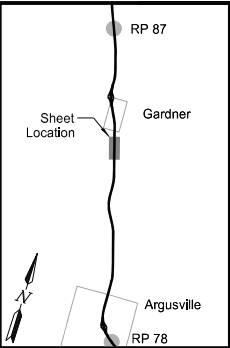
Segment M - Sta 4429+00 to 4441+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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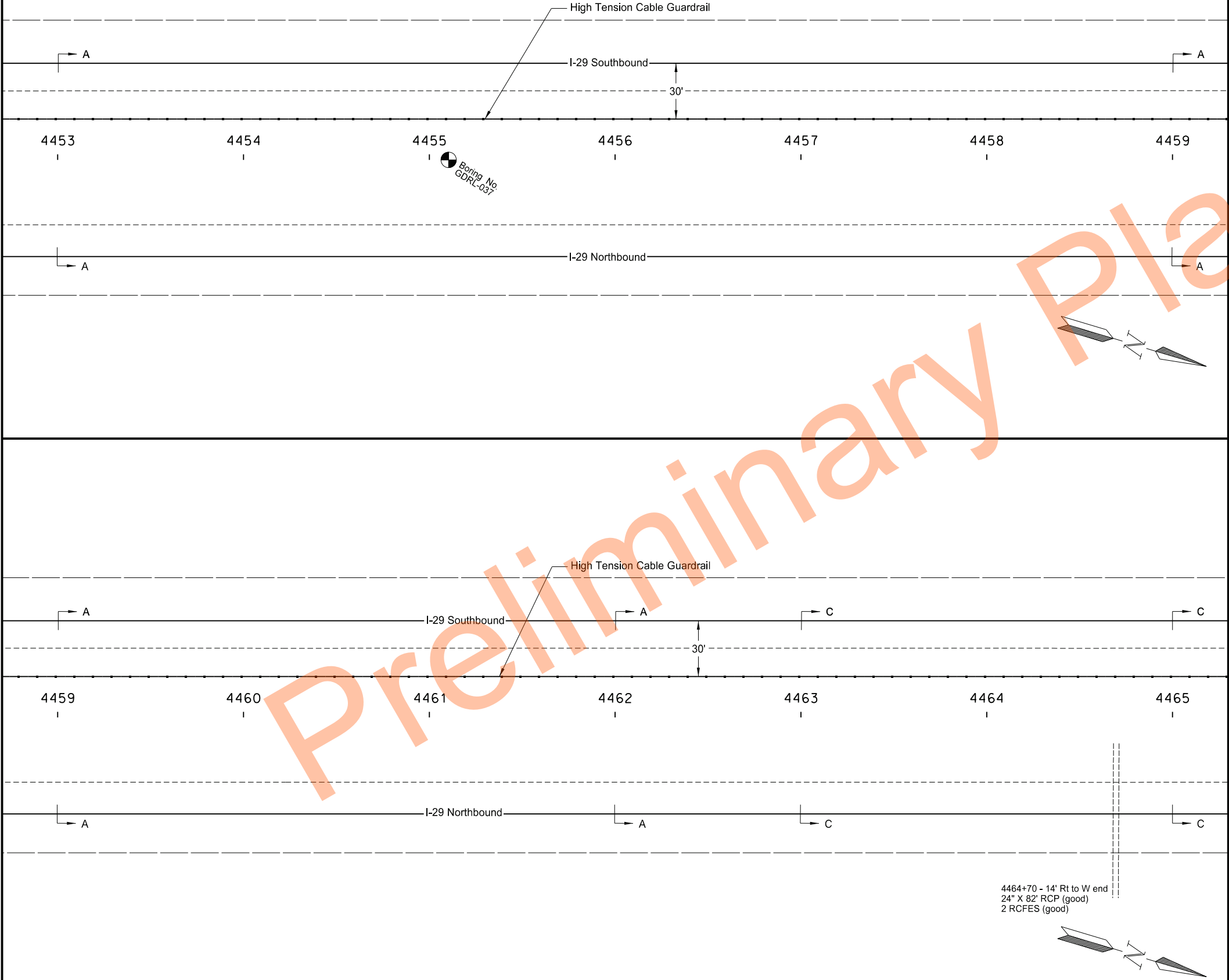
High Tension Cable Guardrail Layout

Segment M - Sta 4441+00 to 4453+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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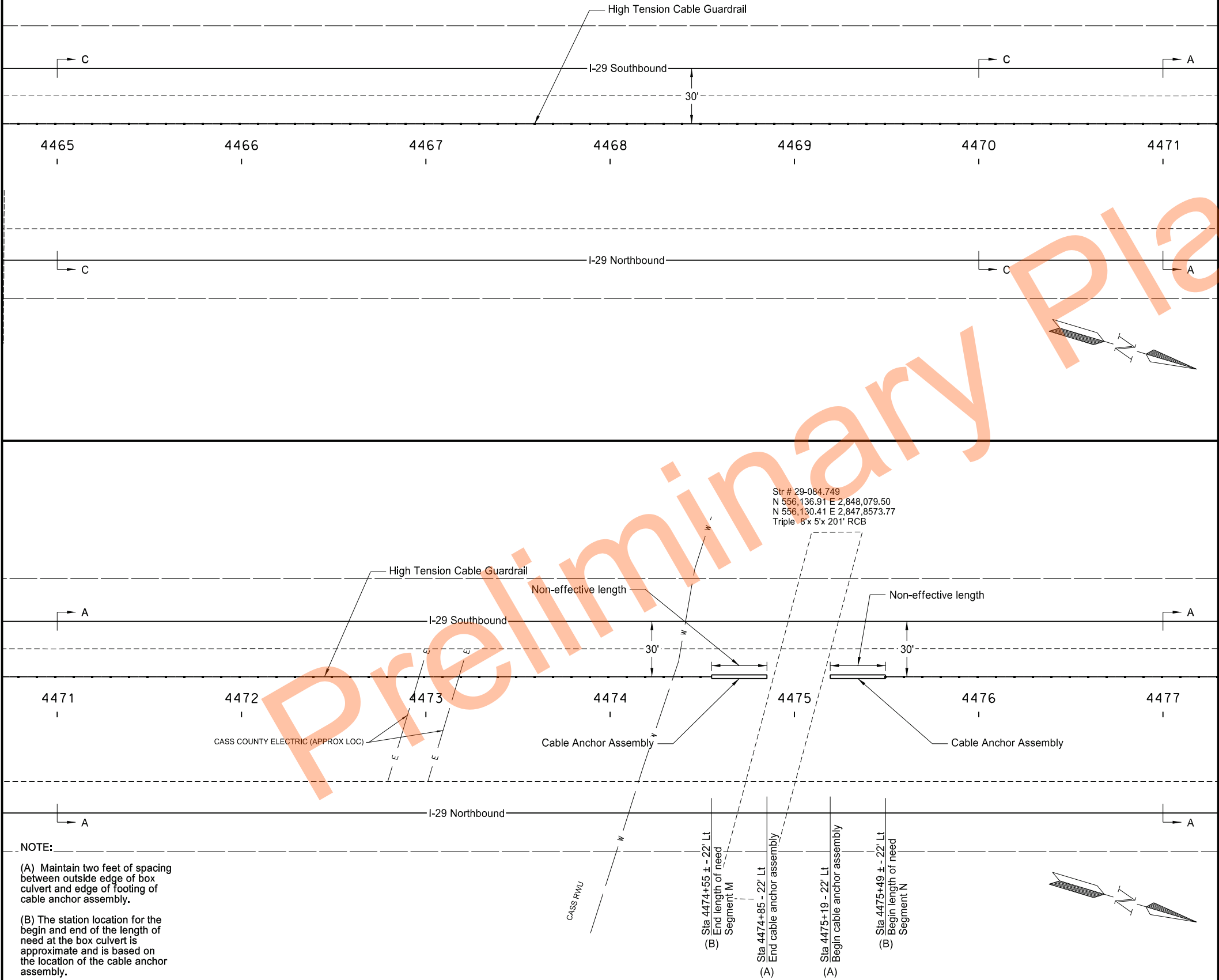
High Tension Cable Guardrail Layout

Segment M - Sta 4453+00 to 4465+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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High Tension Cable Guardrail Layout

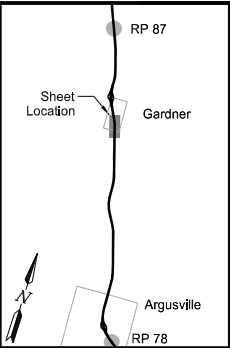
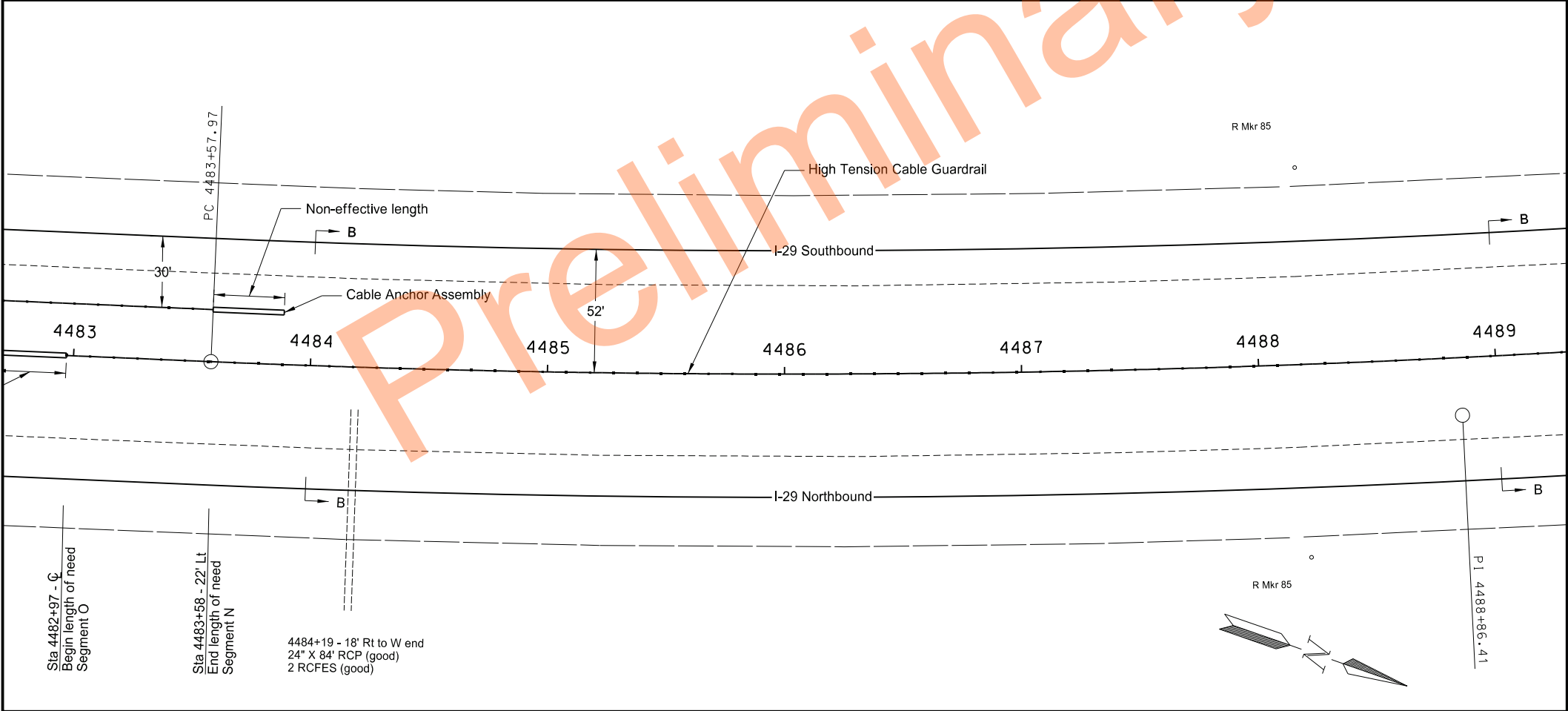
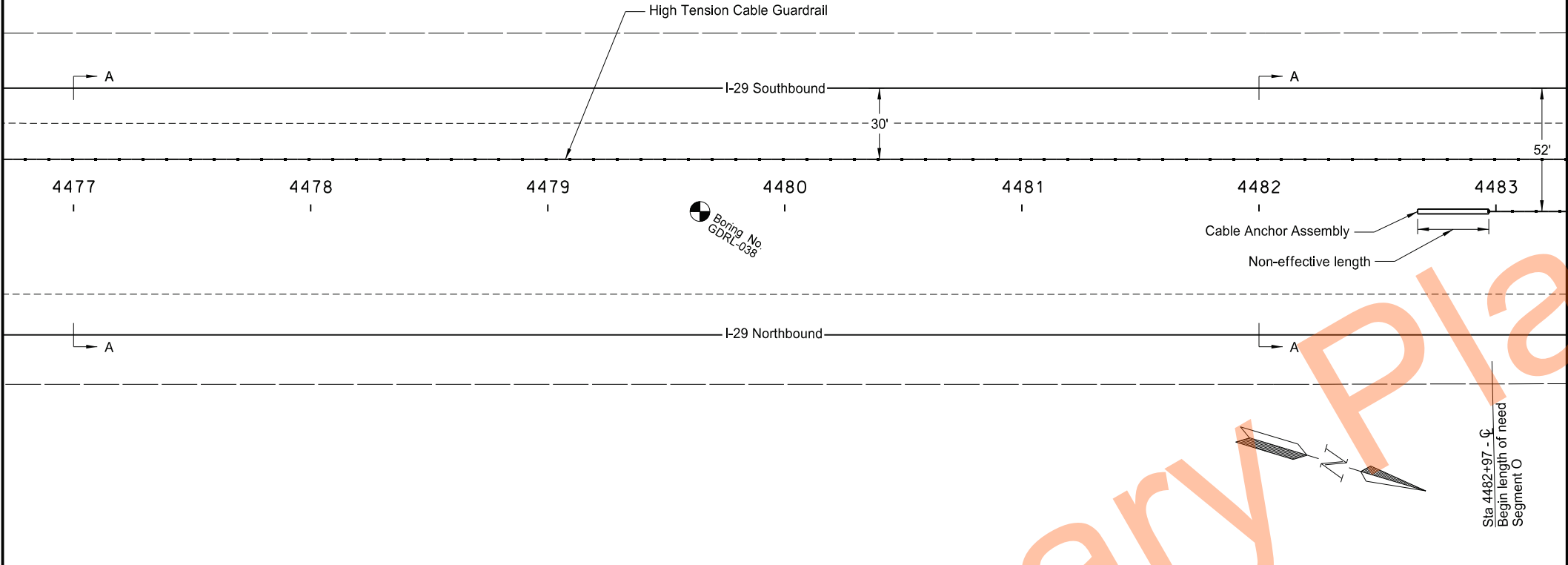
Segment M - Sta 4465+00 to 4474+55 ±

Segment N - Sta 4475+49 ± to 4477+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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ND	HEN-X-8-029(206)077	130	29



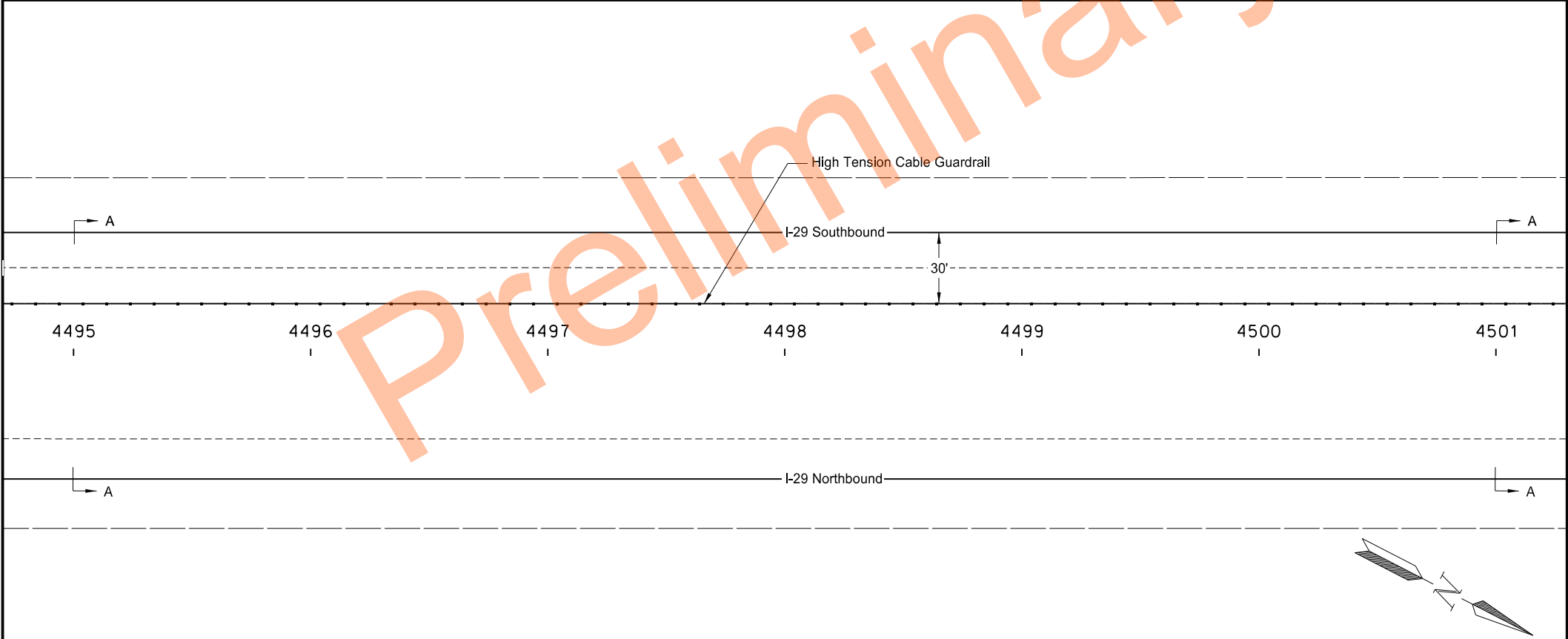
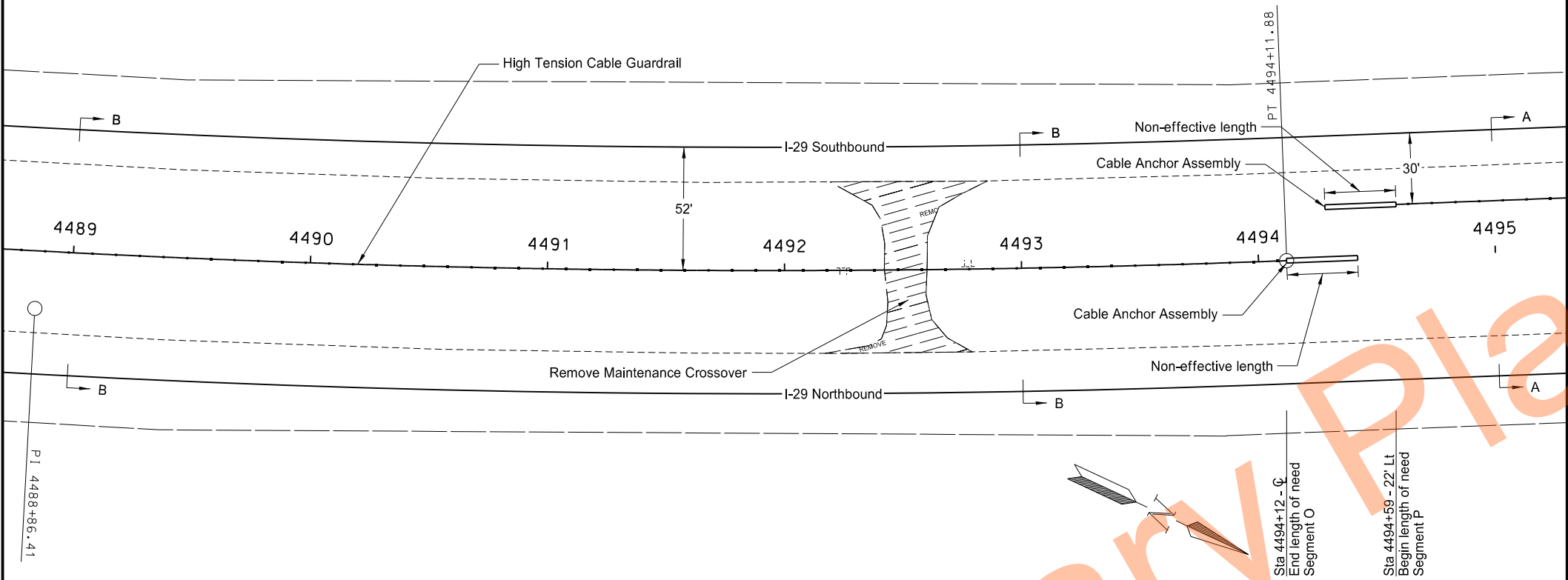
High Tension Cable Guardrail Layout

Segment N - Sta 4477+00 to 4483+58
Segment O - Sta 4482+97 to 4489+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
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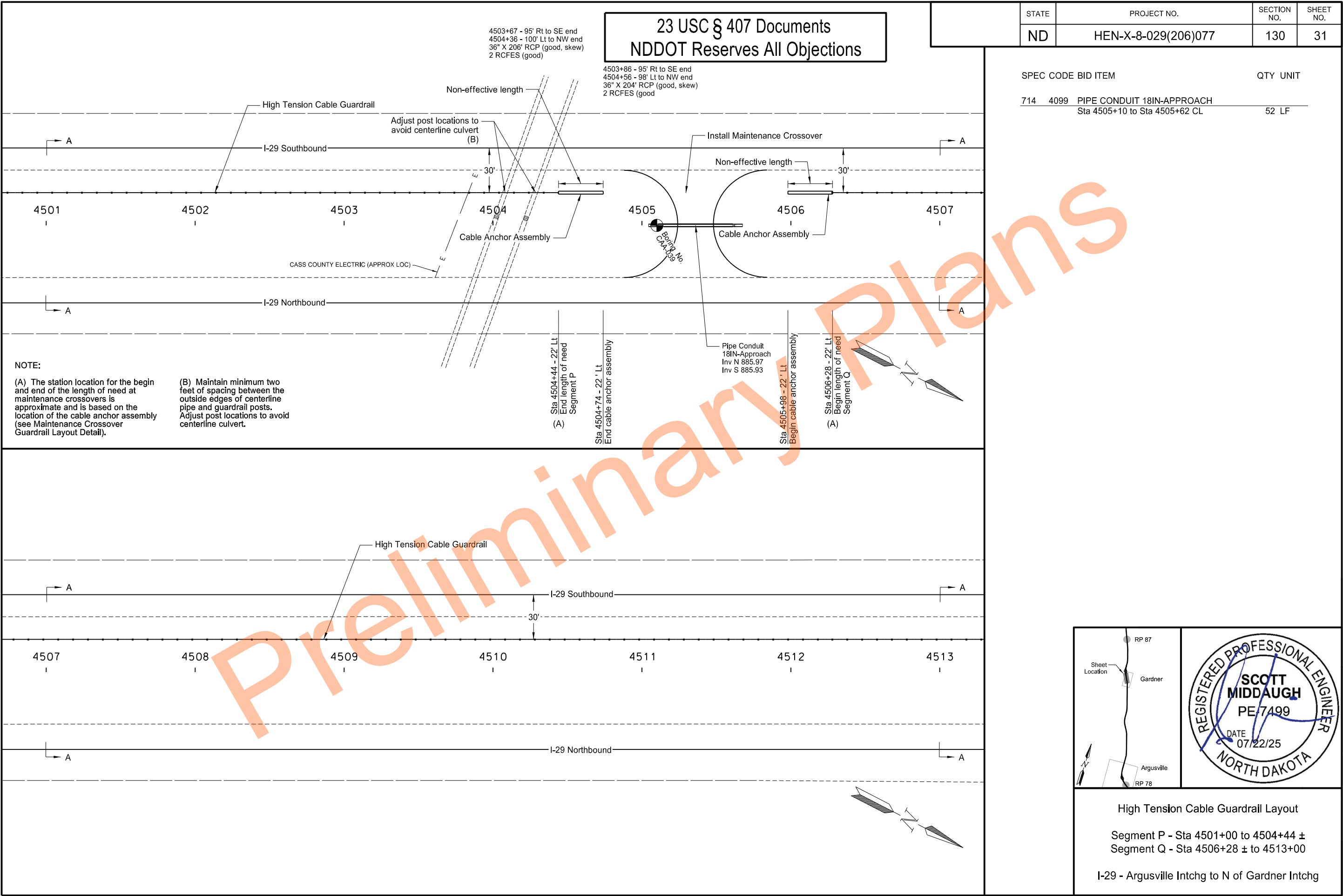
NORTH DAKOTA

High Tension Cable Guardrail Layout

Segment O - Sta 4489+00 to 4494+12

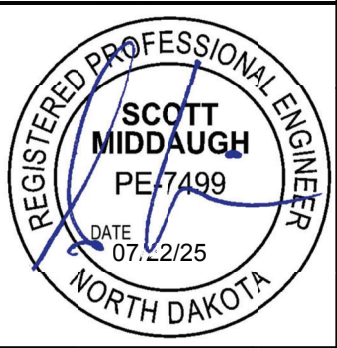
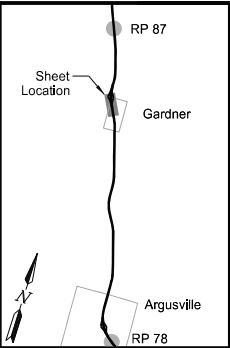
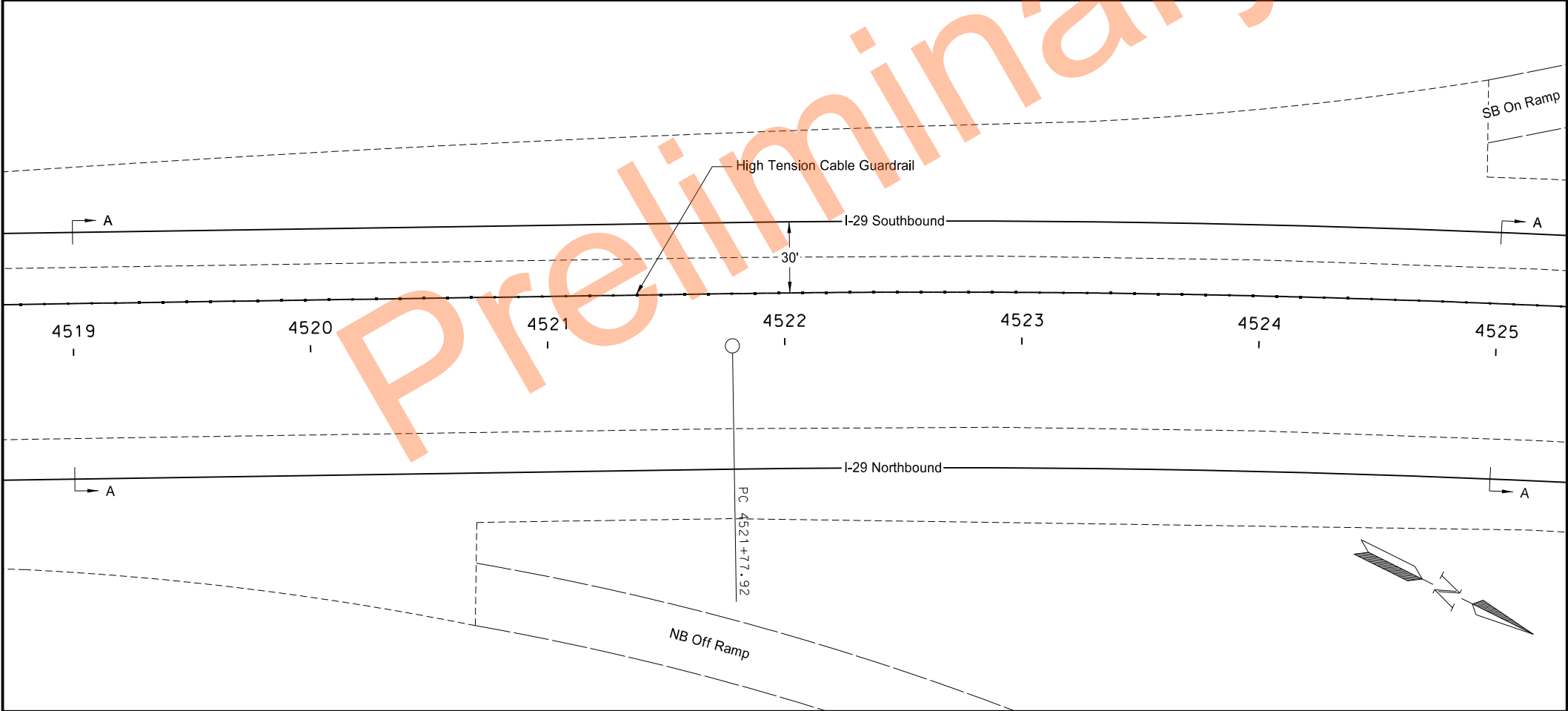
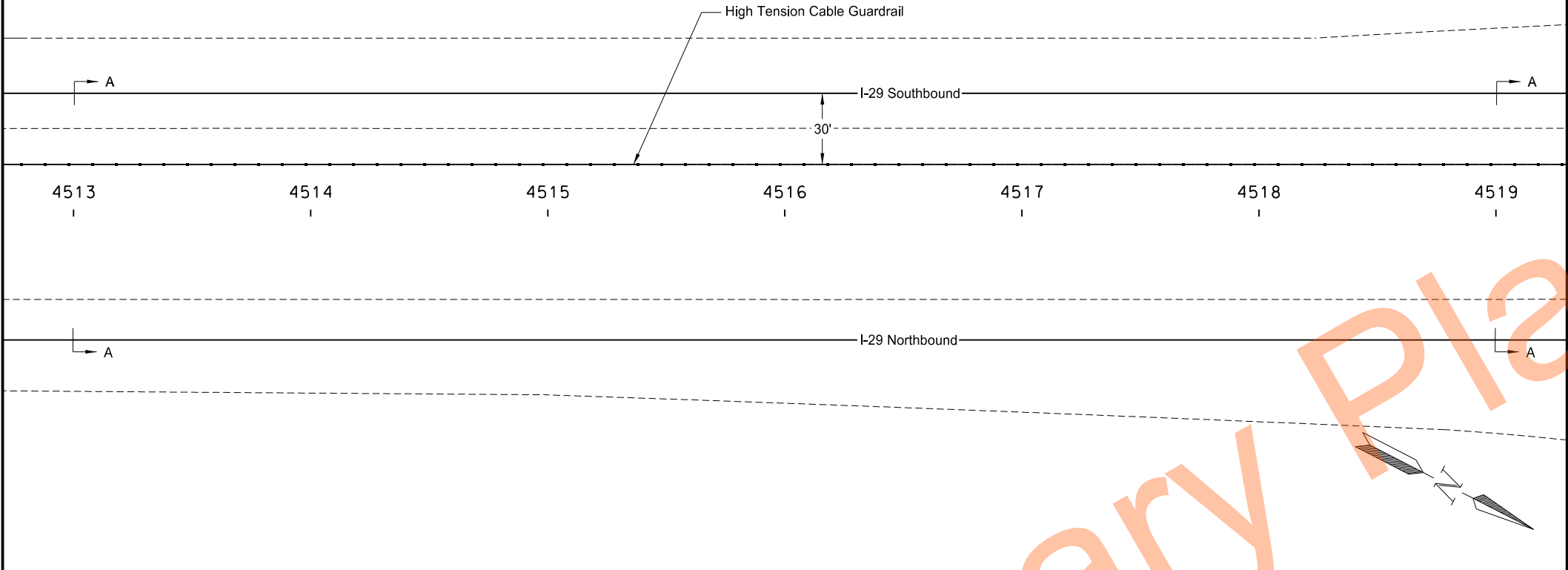
Segment P - Sta 4494+59 to 4501+00

I-29 - Argusville Intchg to N of Gardner Intchg



23 USC § 407 Documents
NDDOT Reserves All Objections

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High Tension Cable Guardrail Layout
Segment Q - Sta 4513+00 to 4525+00
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SB On Ramp

High Tension Cable Guardrail

Adjust post locations to avoid centerline culvert (A)

I-29 Southbound

I-29 Northbound

4525

4526

4527

4528

4529

4530

4531

Boring No.
GDRL-040

4529+78 - C to S end
24" x 40" RCP

NOTE:

(A) Maintain minimum two feet of spacing between the outside edges of centerline pipe and guardrail posts. Adjust post locations to avoid centerline culvert.

4529+89 - 9' 4530+09 - 97' Rt to SE end
4530+46 - 9' 4530+65 - 99' Lt to NW end
24" x 202" R 48" x 202" (good, skew)
2 RCFES (g 2 RCFES (good)

Sta 4530+89 - 22' Lt
End length of need
Segment Q

CR 26

Non-effective length

I-29 Southbound

Non-effective length

Non-effective length

Cable Anchor Assembly

4531

4532

4533

4534

4535

4536

4537

Boring No.
CAA-178

Cable Anchor Assembly

High Tension Cable Guardrail

I-29 Northbound

Gardner Interchange

NOTE:

(A) Maintain two feet of spacing between outside edge of box culvert and edge of footing of cable anchor assembly.

(B) The station location for the begin and end of the length of need at the box culvert is approximate and is based on the location of the cable anchor assembly.

Str # 29-085.859
N 561,496.51 E 2,845,534.46
N 561,497.78 E 2,845,739.62
Double, 9' x 4' x 208' RCB
Winged Hdwl

Sta 4533+85 - 22' Lt
Begin cable anchor assembly

Sta 4534+15 ± - 22' Lt
Begin length of need
Segment R

(A) 4534+04 - 11' Rt to W end
30" x 80" RCP (good)
2 RCFES (good)

Sta 4530+89 - 22' Lt
End length of need
Segment Q

Sheet Location

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Gardner

Argusville

RP 78

REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAGH

PE 7499

DATE 07/22/25

NORTH DAKOTA

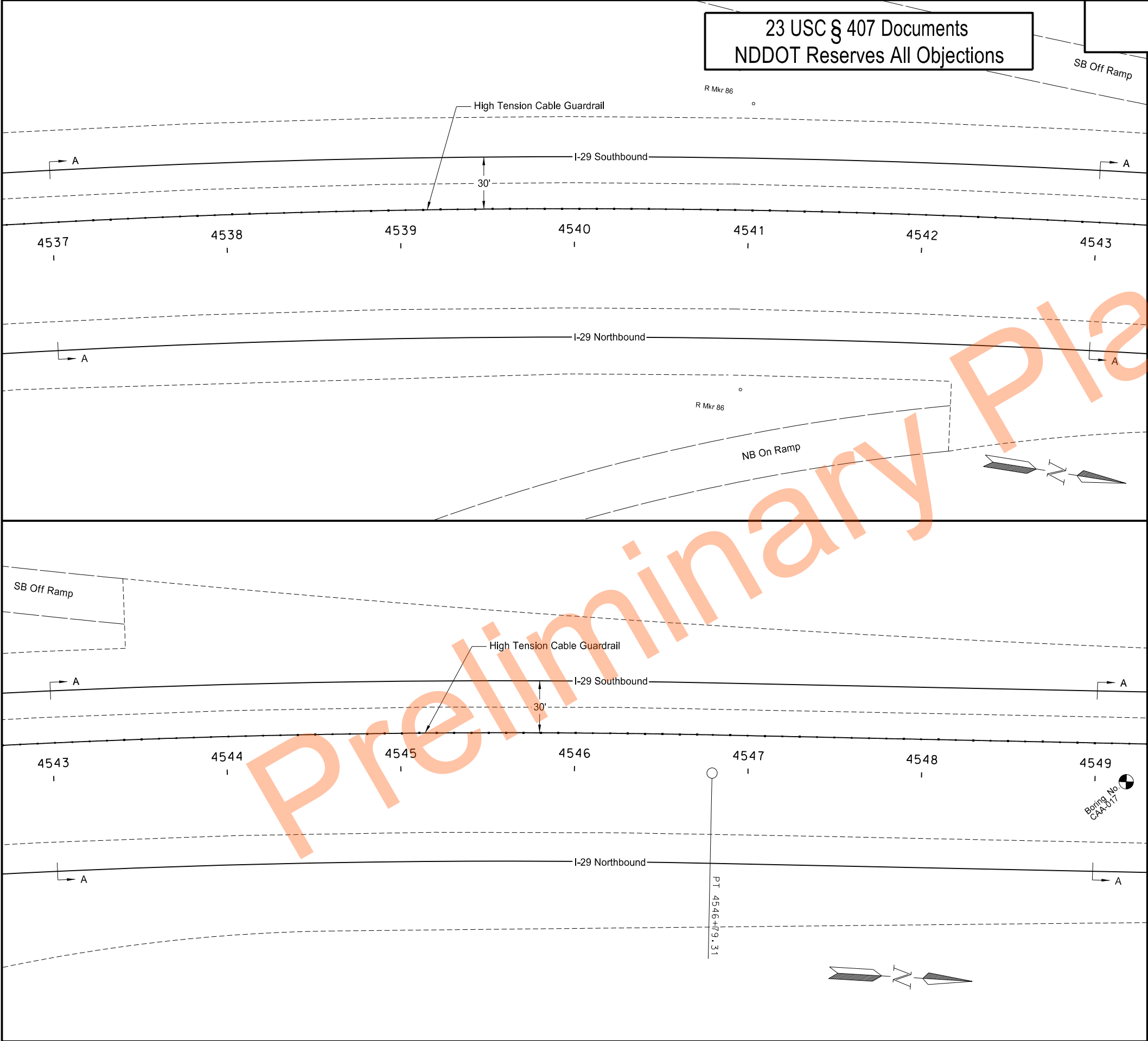
High Tension Cable Guardrail Layout

Segment Q - Sta 4525+00 to 4530+89
Segment R - Sta 4534+15 ± to 4537+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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ND	HEN-X-8-029(206)077	130	34



Sheet Location

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Gardner

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REGISTERED PROFESSIONAL ENGINEER

SCOTT MIDDAUGH

PE 7499

DATE 07/22/25

NORTH DAKOTA

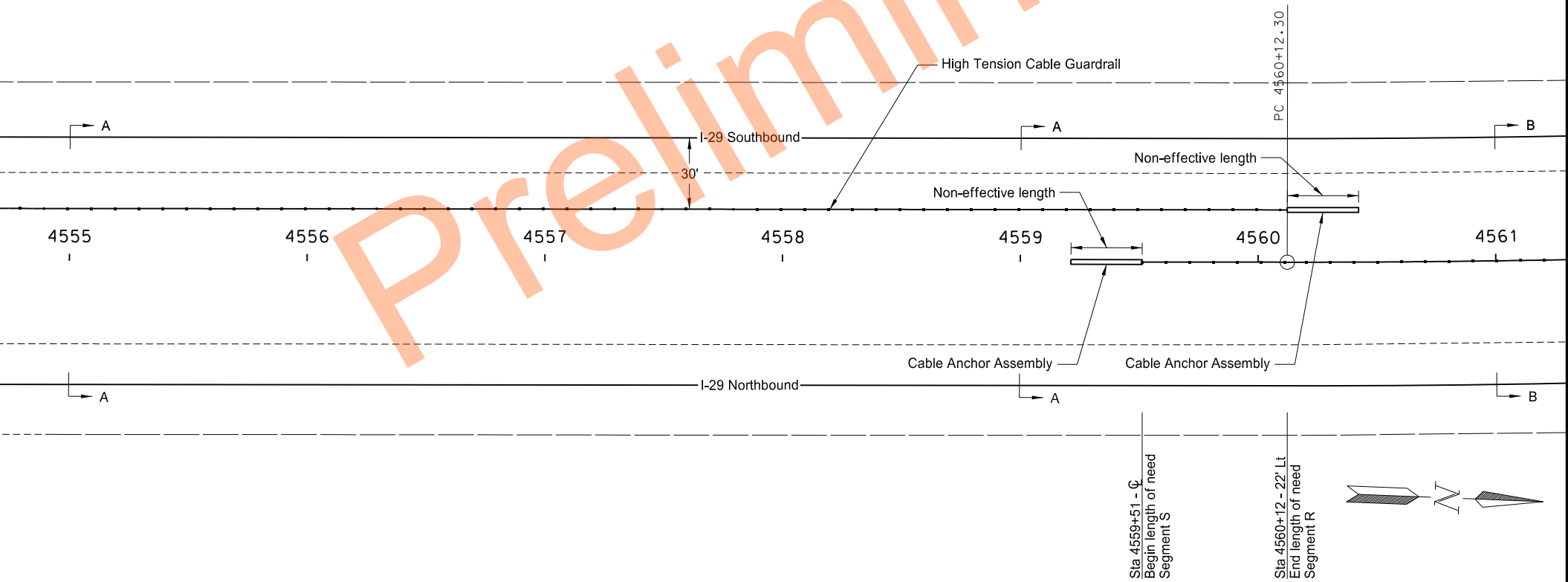
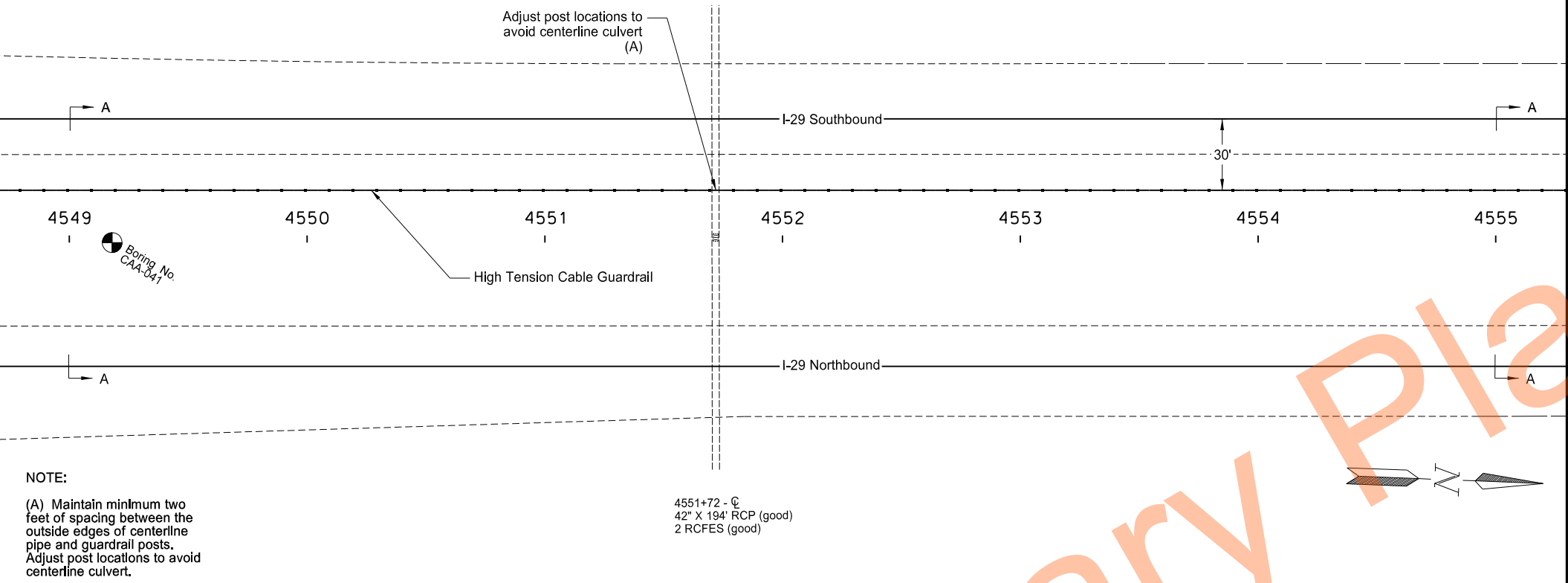
High Tension Cable Guardrail Layout

Segment R - Sta 4537+00 to 4549+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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SCOTT MIDDLEAUGH
PE 7499
DATE 07/22/25
NORTH DAKOTA

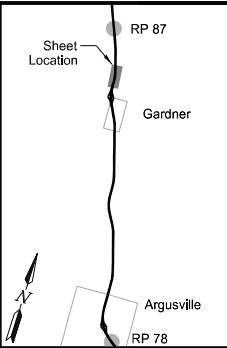
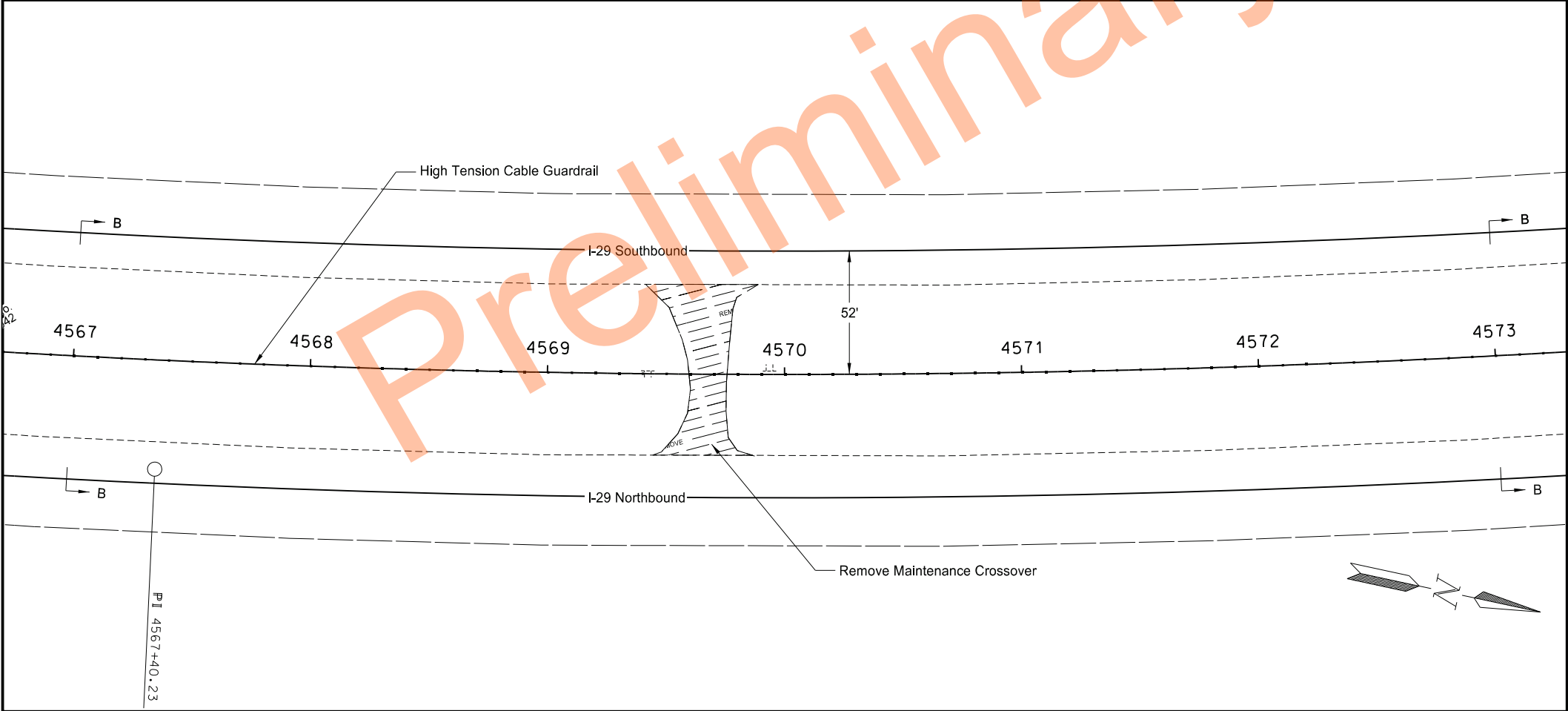
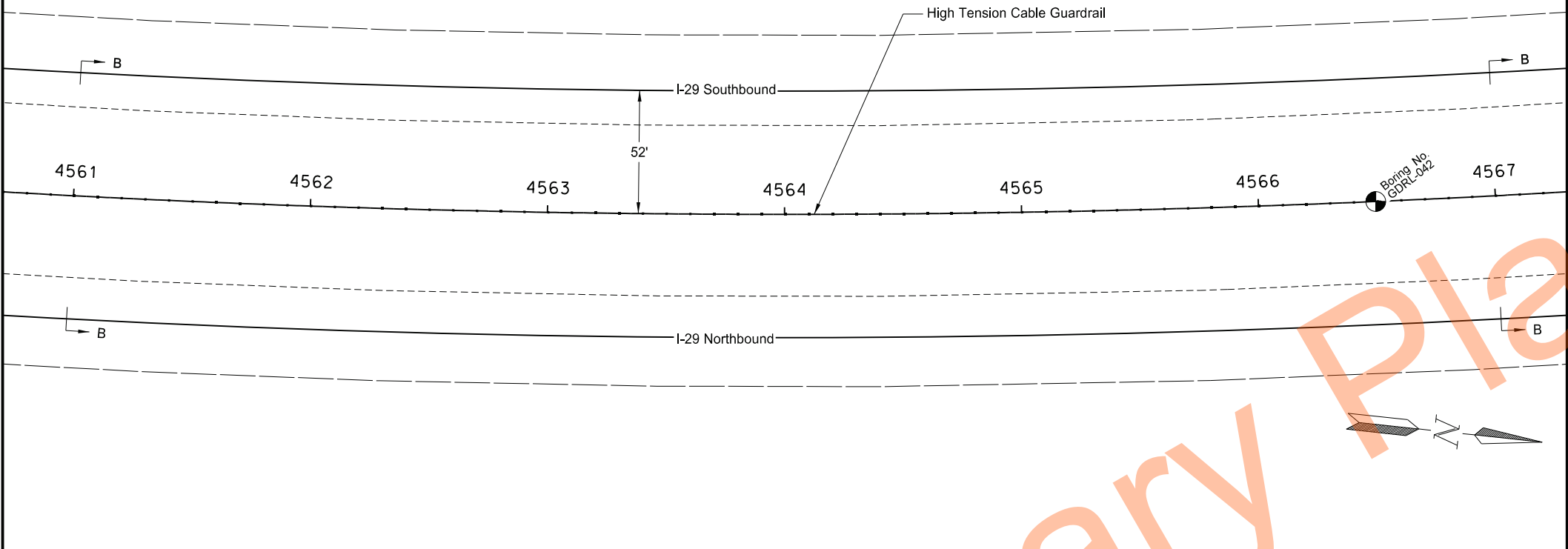
High Tension Cable Guardrail Layout

Segment R - Sta 4549+00 to 4560+12
Segment S - Sta 4559+51 to 4561+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	36



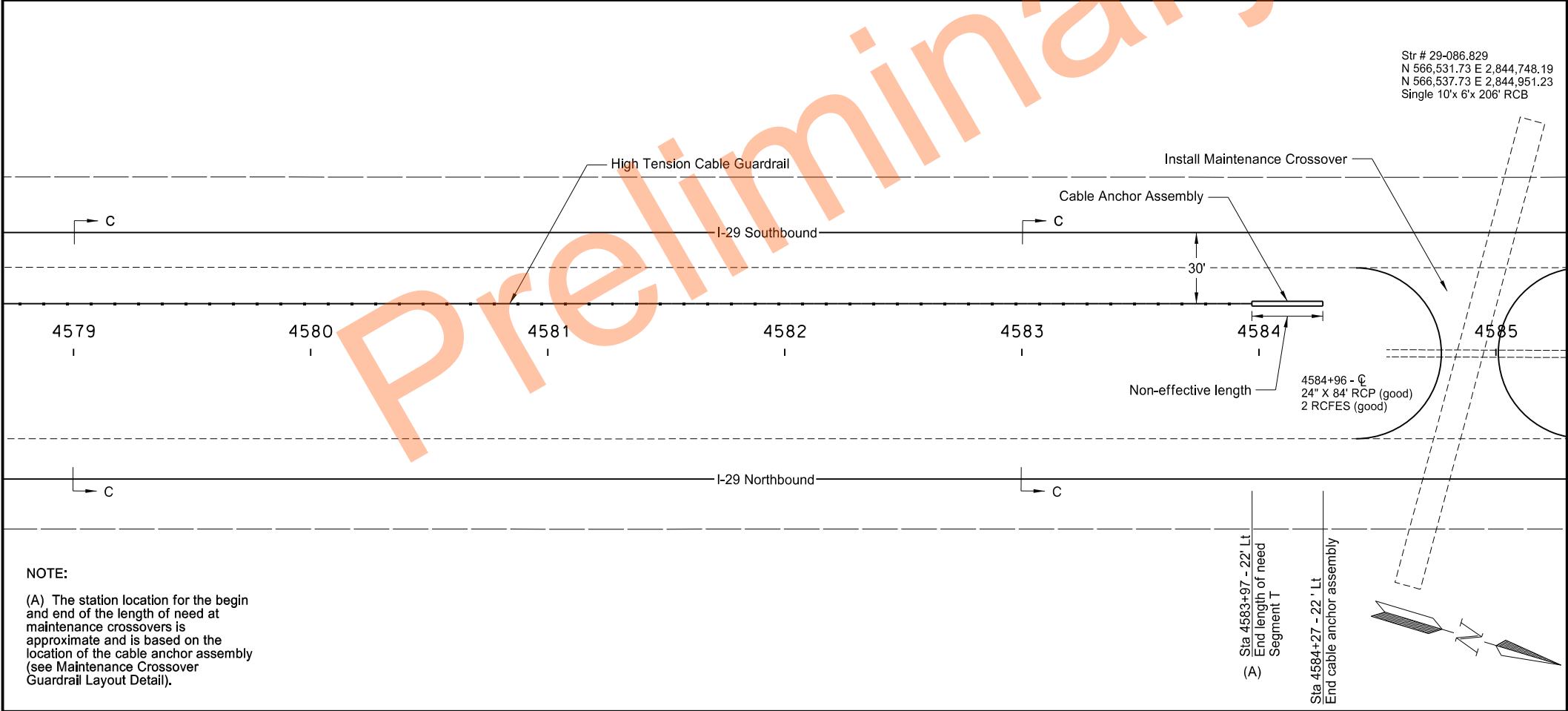
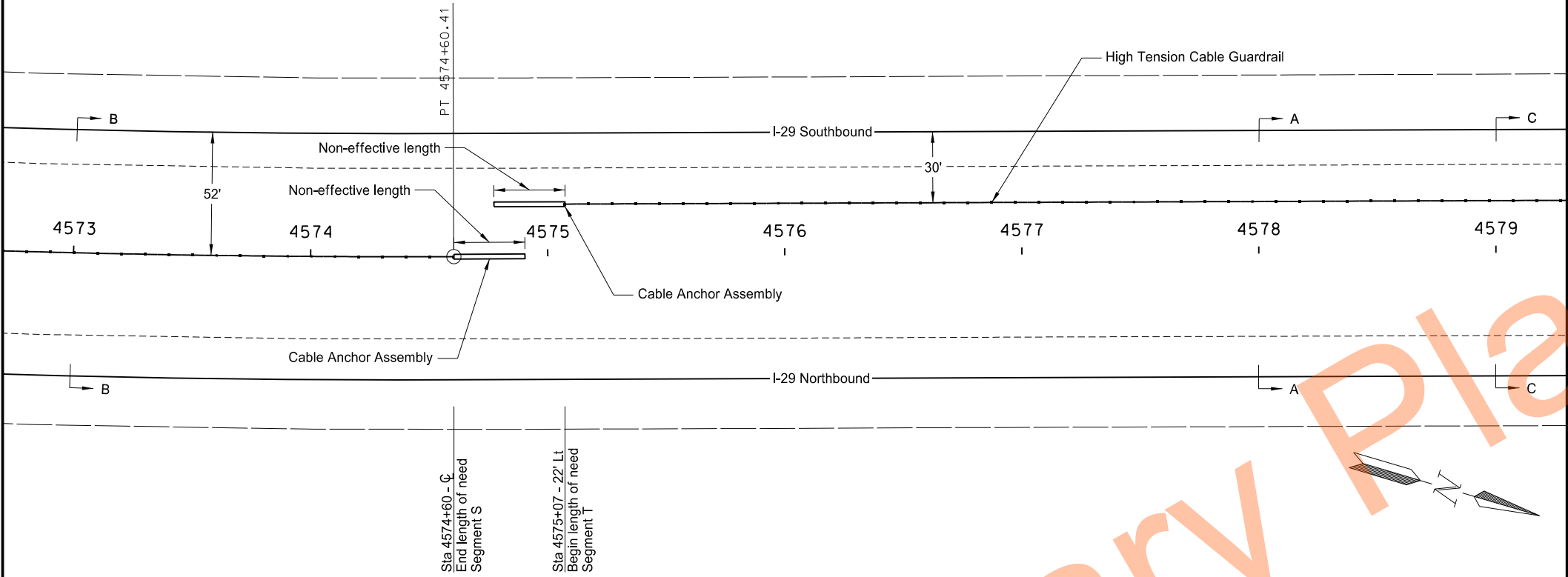
High Tension Cable Guardrail Layout

Segment S - Sta 4561+00 to 4573+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	37



Str # 29-086.829
N 566,531.73 E 2,844,748.19
N 566,537.73 E 2,844,951.23
Single 10'x 6'x 206' RCB

NOTE:
(A) The station location for the begin and end of the length of need at maintenance crossovers is approximate and is based on the location of the cable anchor assembly (see Maintenance Crossover Guardrail Layout Detail).

Sheet Location

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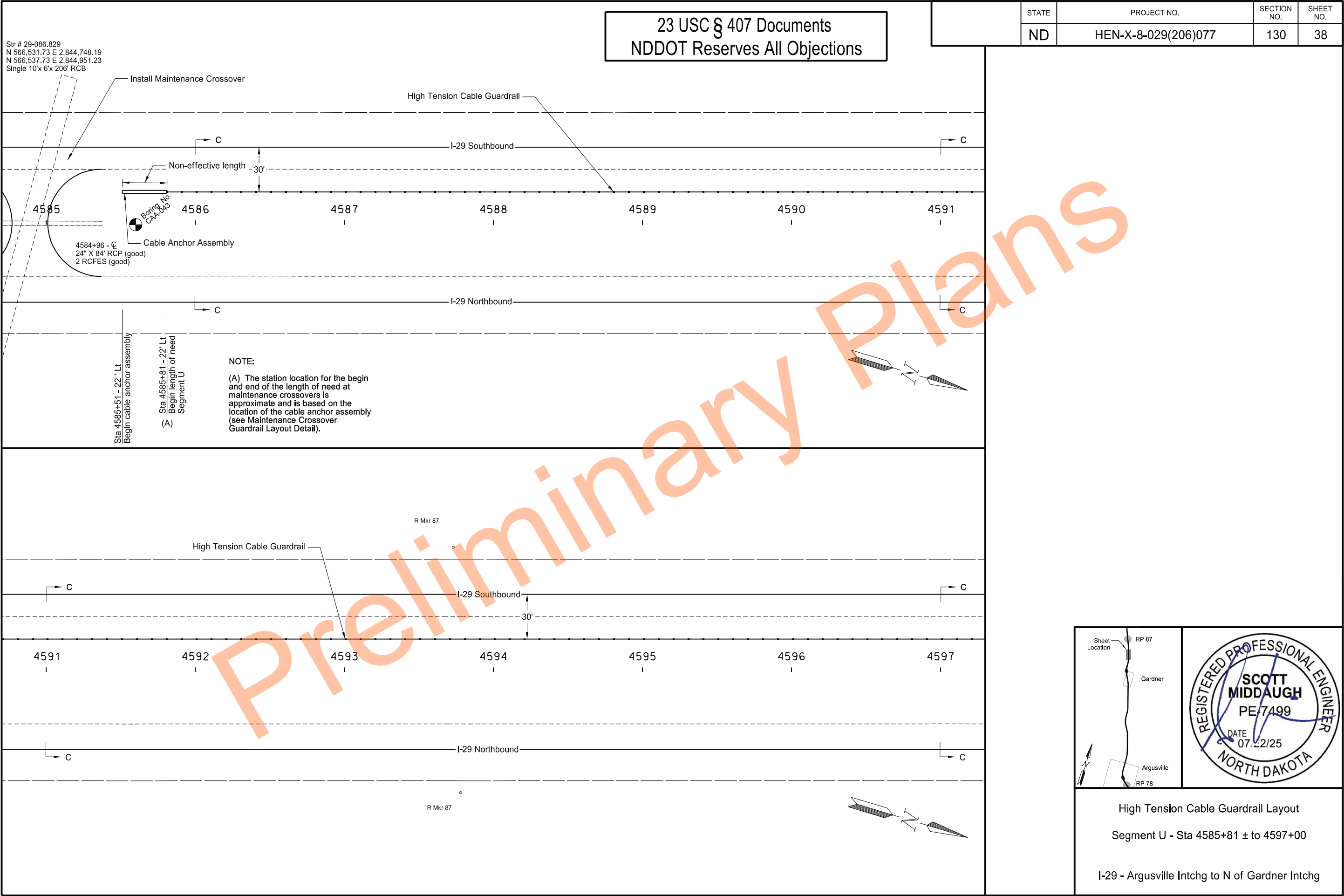
NORTH DAKOTA

High Tension Cable Guardrail Layout

Segment S - Sta 4573+00 to 4574+60

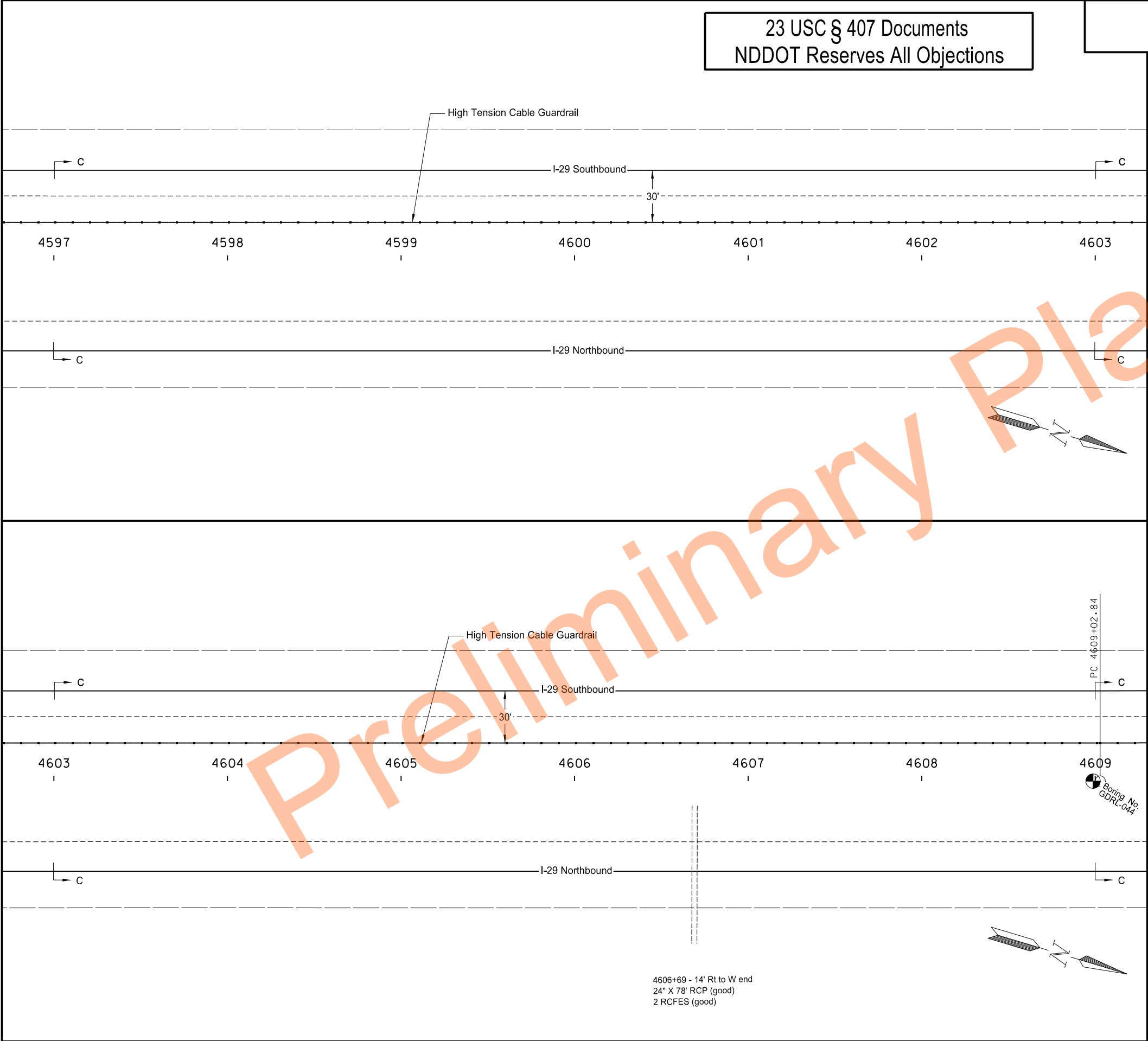
Segment T - Sta 4575+07 to 4583+97 ±

I-29 - Argusville Intchg to N of Gardner Intchg



23 USC § 407 Documents
NDDOT Reserves All Objections

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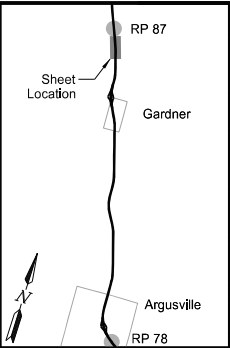
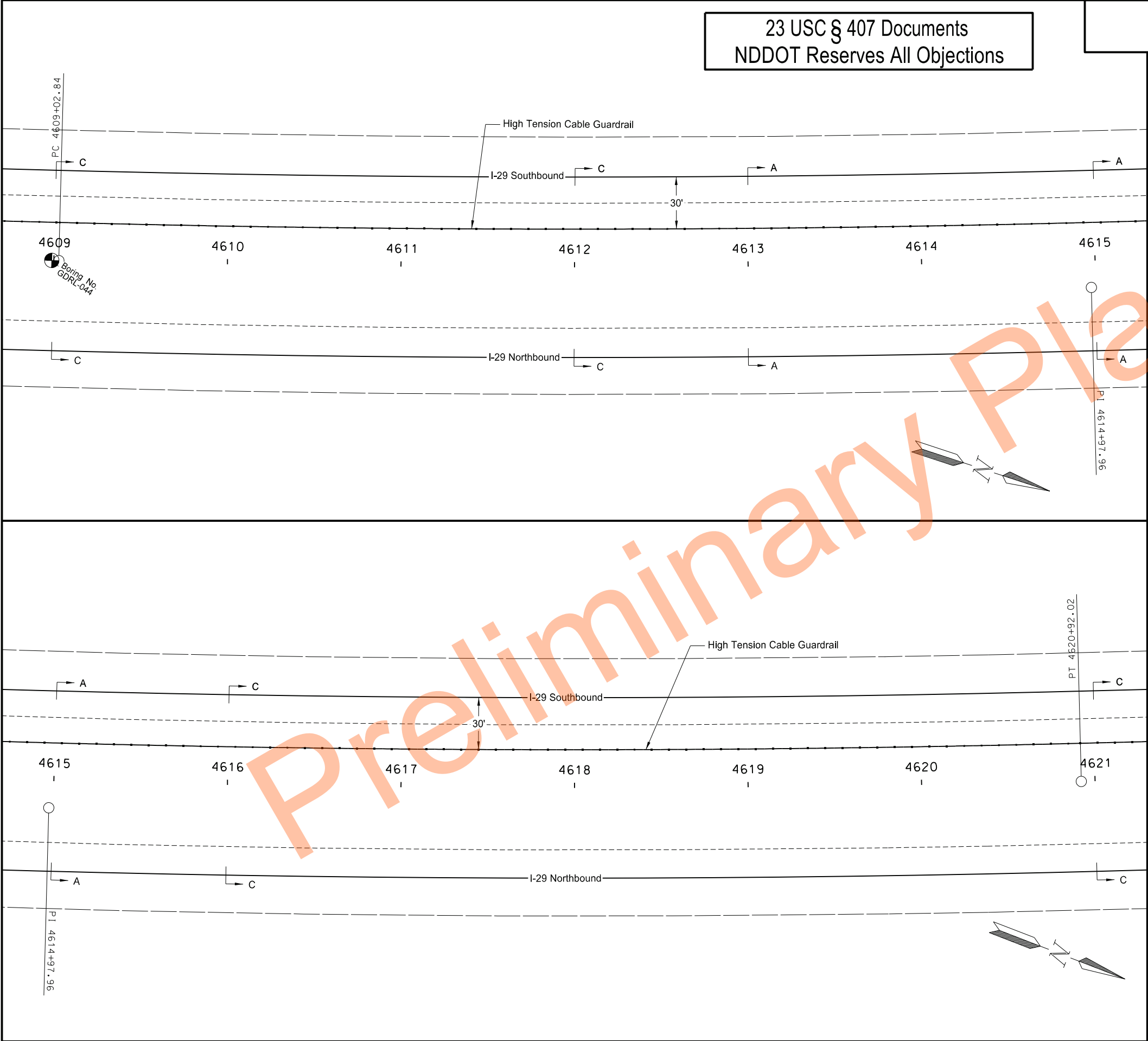
High Tension Cable Guardrail Layout

Segment U - Sta 4597+00 to 4609+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

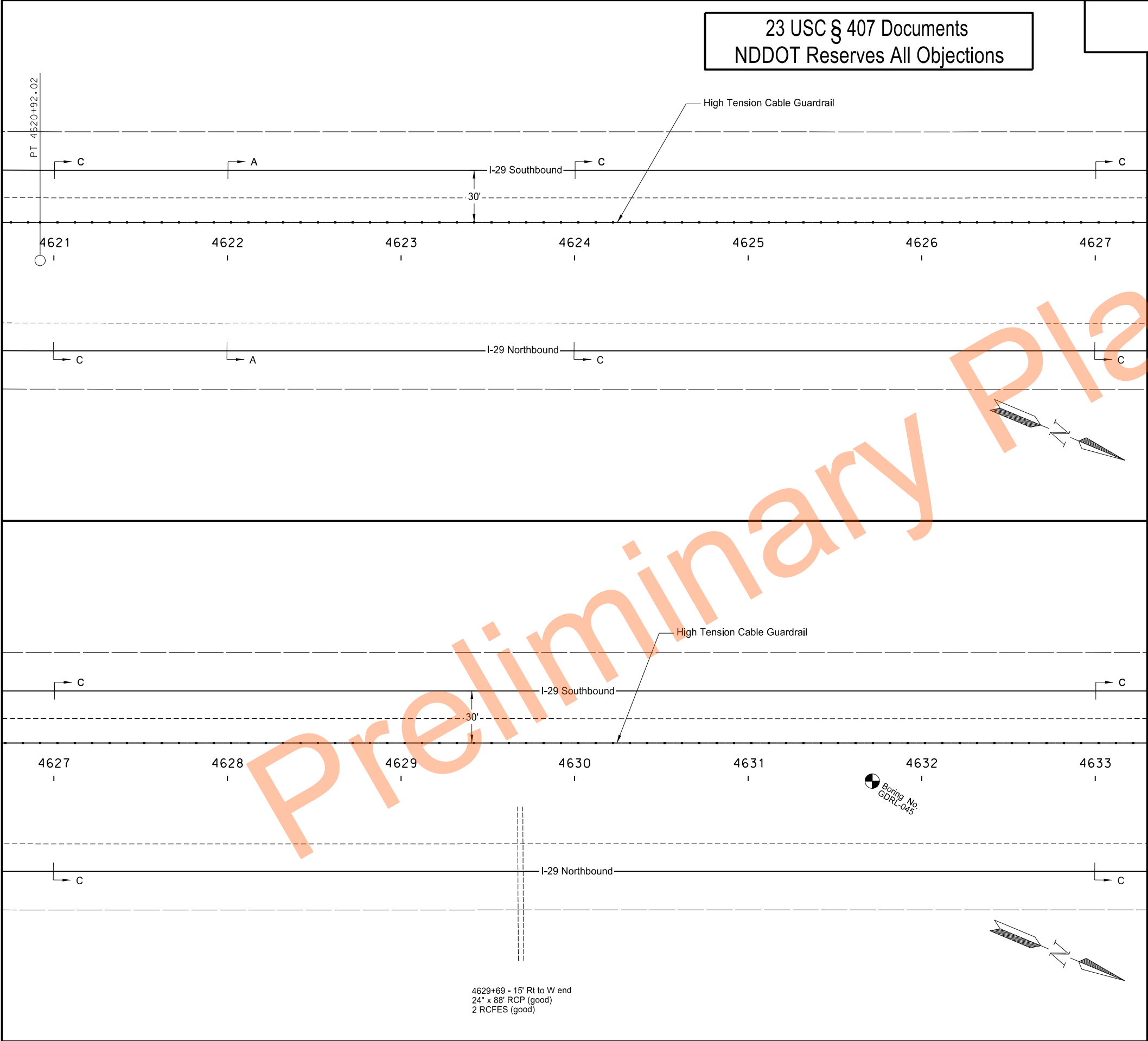
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	HEN-X-8-029(206)077	130	40



High Tension Cable Guardrail Layout
Segment U - Sta 4609+00 to 4621+00
I-29 - Argusville Intchg to N of Gardner Intchg

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SCOTT MIDDAGH

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NORTH DAKOTA

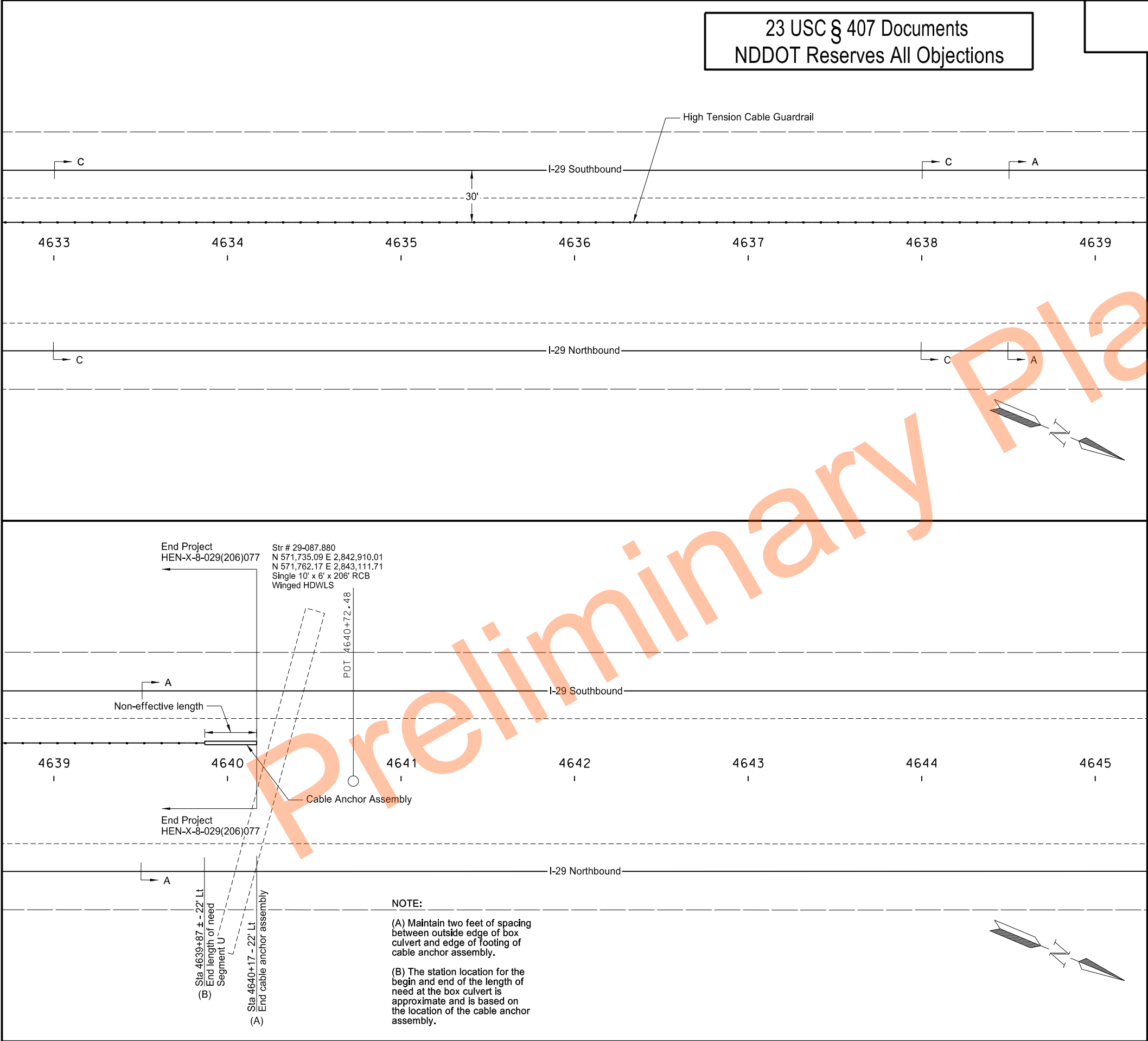
High Tension Cable Guardrail Layout

Segment U - Sta 4621+00 to 4633+00

I-29 - Argusville Intchg to N of Gardner Intchg

23 USC § 407 Documents
NDDOT Reserves All Objections

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SCOTT MIDDAGH

PE 7499

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NORTH DAKOTA

High Tension Cable Guardrail Layout

Segment U - Sta 4633+00 to 4639+87

I-29 - Argusville Intchg to N of Gardner Intchg