North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

April 1, 2016

ADDENDUM 1 – JOB 19

TO: All prospective bidders on project CPU-SNH-3-052(042)198 & SHE-3-281(116)125, Job No. 19 scheduled for the April 8, 2016 bid opening.

The following plan and request for proposal revision shall be made:

Plan Revisions:
See attached summary from Eric Molbert, PE; Sambatek, Inc., dated March 31, 2016 for an explanation.

Request for Proposal Revisions:
Remove pages 7 to 14 of 16 of the Proposal pages located at the beginning of the Request for Proposal, with the enclosed pages revised 4/1/2016.

Page 7 of 16:

Item 202 0132 REMOVAL OF BITUMINOUS SURFACING quantity has been added, quantity 12,064 SY.
Item 202 0137 REMOVAL OF PAVEMENT quantity decreased from 11,257 to 810 SY.
Item 202 0174 REMOVAL OF PIPE ALL TYPES AND SIZES quantity decreased from 2,027 to 1,965 LF.
Item 203 0109 TOPSOIL quantity decreased from 144,950 to 144,796 CY.
Item 203 0140 BORROW-EXCAVATION quantity decreased from 322,794 to 322,281 CY.

Page 8 of 16:

Items have shifted due to added bid item.
Item 302 0120 AGGREGATE BASE COURSE CL 5 quantity has decreased from 245,937.25 to 245,836.43 TON.
Item 401 0050 TACK COAT quantity decreased from 87,584 to 87,572 GAL.
Item 401 0060 PRIME COAT quantity decreased from 49,652 to 49,545 GAL.

Page 9 of 16:

Items have shifted due to added bid item.
Item 430 0045 SUPERPAVE FAA 45 quantity decreased from 143,459.71 to 143,429.27 TON.
Item 430 6428 PG 64-28 ASPHALT CEMENT quantity increased from 8,530.43 to 8,528.60 TON.
Item 550 0305 9IN REINF CONCRETE PVMT CL AE-DOWELED quantity increased from 8,123.2 to 8,481.2 SY.

Page 10 of 16:

Items have shifted due to added bid item.
Item 704 1000 TRAFFIC CONTROL SIGNS quantity decreased from 8,713 to 7,467 UNIT.
Item 704 1052 TYPE III BARRICADE quantity decreased from 54 to 18 EA.

Page 11 of 16:

Items have shifted due to added bid item.
Item 714 4101 PIPE CONDUIT 18IN-STORM DRAIN quantity increased from 283 to 313 LF.
Item 714 4106 PIPE CONDUIT 24IN-APPROACH quantity decreased from 731 to 656 LF.

Page 12 of 16:

Items have shifted due to added bid item.
Item 722 3510 INLET-TYPE 2 quantity decreased from 9 to 6 EA.
Item 722 3520 INLET-TYPE 2 DOUBLE has been added, quantity 3 EA.
Item 724 0427 WATERMAIN 6IN PVC has been added, quantity 131 LF.
Item 748 0140 CURB & GUTTER-TYPE I quantity decreased from 3,265 to 2,813 LF.
Item 754 0112 FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING quantity decreased from 1,353 to 1,292 SF.
Item 754 0206 STEEL GALV POSTS-TELESCOPING PERFORATED TUBE quantity decreased from 3,489 to 3,383 LF.

Page 13 of 16:

Items have shifted due to added bid item.
Item 762 1305 PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED quantity increased from 818 to 1,333 LF.

Page 14 of 16:

Items have shifted due to added bid item.
Item 764 0131 W-BEAM GUARDRAIL quantity decreased from 490 to 475 LF.
Item 764 0151 REMOVE W-BEAM GUARDRAIL & POSTS quantity increased from 822 to 898 LF.
Item 764 1050 RESET W-BEAM GUARDRAIL quantity increased from 400 to 415 LF.

This addendum is to be incorporated into the bidder's proposal for this project.

Expedite bid files should be updated by downloading the addendum file from the Bid Express on-line bidding exchange at http://www.bidx.com/ or the Department's web page (http://www.dot.nd.gov) and load it into the Expedite program.

For CAL J. GENDREAU – CONSTRUCTION SERVICES ENGINEER
80:dch
Enclosure

March 31, 2016

ADDENDUM 1 – JOB 19

TO: All prospective bidders on Project CPU-SNH-3-052(042)198, PCN 18878 and SHE-3-281(116)125, PCN 20289, Job 19, scheduled for the April 8, 2016 bid opening

The following plan revisions shall be made:

Plan Revisions CPU-SNH-3-052(042)198, PCN 18878:

Remove and replace, insert, or delete the following sheets with the revised sheets dated 3/21/2016, 3/24/16, 3/29/16, or 3/31/2016:

Sect 2 Sheet 1:	Revised the number of plan pages. Increased the number of Sect 20 General Detail sheets by 1. Decreased the number of Sect 60 Plan & Profile sheets by 1.
Sect 6 Sheet 19:	Finalized the jurisdictional determination for Other Waters OW1.
Sect 8 Sheet 1:	Revised the following quantities:

- Item 202 0137 REMOVAL OF PAVEMENT replaced by Item 202 0132 REMOVAL OF BITUMINOUS SURFACING. Removal quantity revised from 10,447 to 12,064 SY.
- Item 202 0174 REMOVAL OF PIPE ALL TYPES AND SIZES quantity revised from 2,027 to 1,965 LF.
- Item 203 0109 TOPSOIL quantity was revised from 144,133 to 143,979 CY.
- Item 203 0140 BORROW-EXCAVATION quantity revised from 321,533 to 321,020 CY.
- Item 302 0120 AGGREGATE BASE COURSE CL 5 quantity revised from 244,007.25 to 243,906.43 tons.
- Item 401 0050 TACK COAT quantity revised from 87,584 to 87,572 GAL.
- Item 401 0060 PRIME COAT quantity revised from 49,652 to 49,545 GAL.
- Item 430 0045 SUPERPAVE FAA 45 quantity revised from 143,459.71 to 143,429.27 tons.
- Item 430 6428 PG 64-28 ASPHALT CEMENT quantity revised from 8,530.43 to 8,528.60 tons.

- Item 550 305 9IN NON-REINF CONCRETE PVMT CL AE-DOWELED revised from 8,123.2 to 8,481.2 SY.
- Item 704 1000 TRAFFIC CONTROL SIGNS quantity revised from 7,891 to 6,645 units.
- Item 704 1052 TYPE III BARRICADE quantity revised from 54 to 18 each.
- Item 714 4101 PIPE CONDUIT 18IN-STORM DRAIN quantity revised from 283 to 313 LF.
- Item 714 4106 PIPE CONDUIT 24IN-APPROACH quantity revised from 731 to 656 LF.
- Item 722 3510 INLET-TYPE 2 quantity revised from 9 to 6 each.
- Added Item 722 3520 INLET-TYPE 2 DOUBLE. Plan quantity is 3 each.
- Added Item 724 0810 WATERMAIN 6IN PVC. Plan quantity is 131 LF.
- Item 748 0140 CURB & GUTTER-TYPE I quantity revised from 3,265 to 2,813 LF.
- Item 754 0112 FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING quantity revised from 1,306 SF to 1,245 SF.
- Item 754 0206 STEEL GALV POSTS-TELESCOPING PERFORATED TUBE quantity revised from 3,399 LF to 3,293 LF.
- Item 762 1305 PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED quantity revised from 818 LF to 1,333 LF.
- Item 764 0131 W-BEAM GUARDRAIL quantity was revised from 490.0 to 475.0 LF.
- Item 764 0151 REMOVE W-BEAM GUARDRAIL AND POSTS quantity was revised from 822.0 to 898.0 LF.
- Item 764 1050 RESET W-BEAM GUARDRAIL quantity was revised from 400.0 to 415.0 LF.

Sect 10 Sheets 2-4:	Revised asphalt pavement, aggregate base and earthwork summaries to remove the private drive reconstruction at Sta. 10645+98 Rt and adjust inslope at roundabout for new curb limits.
Sect 11 Sheet 2:	Revised mass balance diagram to remove the private drive reconstruction and adjust inslope at roundabout for new curb limits.
Sect 11 Sheets 4-20:	Revised earthwork tables to remove the private drive reconstruction and adjust inslope at roundabout for new curb limits.
Sect 20 Sheet 10:	Revised flared intersection detail at Jct 5th Avenue to new curb limits.
Sect 20 Sheet 13:	Revised plan view of roundabout to new curb limits.
Sect 20 Sheet 15:	Added PCC Pavement Detail sheet with dowel bar size requirements for roundabout pavement.

Sect 30 Sheet 8: Revised the depth of topsoil in the center of the roundabout.

Sect 30 Sheet 9: Revised the roundabout exit roadway typical to remove the curb and gutter on the north, west, and east exit roadways after the end of the truck blister.

Sect 40 Sheet 1: Revised the pavement removal bid item.

Sect 50 Sheet 2: Revised roundabout inlet summary to eliminate inlets on west and east exit roadways, add inlets on the south entrance and exit roadways, and to add water service conduit (WATERMAIN 6IN PVC) for future landscaping needs.

Sect 51 Sheet 1: Revised Allowable Pipe Materials List to eliminate approach conduit at private drive Sta. 10645+98 Rt.

Sect 51 Sheet 5: Revised Allowable Pipe Materials List to eliminate storm drain conduit on the west and east exit roadways, and to add storm drain conduit on the south exit and entrance roadways.

Sect 60 Sheet 8-9: Removed the private drive reconstruction and temporary easement at Sta.10645+98 Rt.

Sect 60 Sheets 64-81: Revised roundabout plan and profile drawings for the following changes:

- Removed curb and gutter and revised the pavement width on the north, west and east exit roadways.
- Removed inlets and storm drain on the west and east exit roadways.
- Added inlets and storm drain to the south roundabout leg.
- Added water service conduit from NE quadrant to roundabout center for future landscaping needs.

Sect 60 Sheets 82-88: Deleted original sheet 82 and revised plan and profile sheets numbers following this deleted sheet through the end of Section 60. Revised the pavement removal bid item where applicable.

Sect 82 Sheets 8-17: Revised survey data layout to the new curb and gutter limits on the roundabout's north, west and east exit roadways.

Sect 82 Sheets 24: Revised survey data layout to the new curb and gutter limits on the roundabout's north, west and east exit roadways.

Sect 90 Sheets 1-5: Revised roundabout paving layouts to remove curb and gutter on north, west, and east roadways, improve longitudinal joint layout for slipform

paving, and to add doweled transverse joints to the truck apron and truck blister pavement.

Sect 100 Sheet 1: Revised the quantity of traffic controls signs and Type III Barriers.

Sect 100 Sheet 3: Added Road Work Ahead sign at W Jct ND 200. Fixed the mileage/direction issue for the north facing Road Work signs.

Sect 100 Sheet 4-6: Fixed the mileage/direction issue for north facing Road Work signs.

Sect 100 Sheet 7: Added construction signs at north leg of 5th Avenue. Fixed the mileage/direction issue for north facing Road Work signs.

Sect 110 Sheets 1-6: Modified quantities as listed in Section 8.

Sect 110 Sheet 34: Removed Rest Area Ahead (D5-1) sign.

Sect 110 Sheet 35: Removed reference to standard drawings on the truck inspection signs. Winch and pulley systems are not required.

Sect 110 Sheet 36: Removed Rest Area (D5-5) signs.

Sect 110 Sheet 38: Removed reference to standard drawings on the truck inspection signs. Winch and pulley systems are not required.

Sect 110 Sheet 39: Removed Rest Area Ahead (D5-1) sign.

Sect 110 Sheets 67-68, 71-72: Updated chevron sign layout within roundabout center.

Sect 120 Sheet 1: Updated quantities as listed in Section 8.

Sect 120 Sheet 7: Added 4IN edge line along shoulder where curb and gutter was removed.

Sect 130 Sheet 3: Updated quantities as listed in Section 8.

Sect 130 Sheet 6: Updated quantities as listed in Section 8.

Sect 200 Sheets 253-264: Revised the roundabout cross sections for the change in curb limits and storm drain revisions.

Plan Revisions SHE-3-281(116)125, PCN 20289

Insert the following sheets dated 1/14/2016.

Sect 110 Sheet 1-3: Sheets inserted.

Eric Molbert, P.E.
Project Manager
Sambatek, Inc.

BID ITEMS

Projects: SHE-3-281(116)125 (PCN-20289) and CPU-SNH-3-052(042)198 (PCN-18878)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	103	0200	ESCROW OF BID DOCUMENTATION	L SUM	1.				
003	107	0103	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1.				
004	107	0104	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1.				
005	202	0130	REMOVAL OF CURB & GUTTER	LF	389.				
006	202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	12,064.				
007	202	0137	REMOVAL OF PAVEMENT	SY	810.				
008	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1,965.				
009	202	0230	REMOVAL OF INLETS	EA	2.				
010	202	0295	REMOVAL OF OBSTRUCTIONS	L SUM	1.				
011	202	0350	REMOVAL OF TEMPORARY BYPASS	EA	1.				
012	203	0101	COMMON EXCAVATION-TYPE A	CY	4,710.				
013	203	0108	TOPSOIL-BORROW AREA	CY	30,144.				
014	203	0109	TOPSOIL	CY	144,796.				
015	203	0140	BORROW-EXCAVATION	CY	322,281.				
016	216	0100	WATER	M GAL	247.600				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
017	251	0200	SEEDING CLASS II	ACRE	270.600				
018	251	2000	TEMPORARY COVER CROP	ACRE	270.600				
019	253	0101	STRAW MULCH	ACRE	541.300				
020	255	0101	ECB TYPE 1	SY	19.				
021	255	0202	TRM TYPE 2	SY	1,644.				
022	260	0100	SILT FENCE UNSUPPORTED	LF	48,781.				
023	260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	48,781.				
024	261	0112	FIBER ROLLS 12IN	LF	135,043.				
025	261	0113	REMOVE FIBER ROLLS 12IN	LF	40,679.				
026	265	0100	STABILIZED CONSTRUCTION ACCESS	EA	2.				
027	265	0101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2.				
028	302	0120	AGGREGATE BASE COURSE CL 5	TON	245,836.430				
029	306	0510	FULL DEPTH RECLAMATION	SY	243,796.				
030	401	0050	TACK COAT	GAL	87,572.				
031	401	0060	PRIME COAT	GAL	49,545.				
032	411	0105	MILLING PAVEMENT SURFACE	SY	5,372.600				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
033	430	0042	SUPERPAVE FAA 42	TON	440.				
034	430	0045	SUPERPAVE FAA 45	TON	143,429.270				
035	430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	1,679.				
036	430	1000	CORED SAMPLE	EA	532.				
037	430	6428	PG 64-28 ASPHALT CEMENT	TON	8,528.600				
038	430	7028	PG 70-28 ASPHALT CEMENT	TON	77.520				
039	550	0129	9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	SY	2,576.200				
040	550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	8,481.200				
041	550	3005	CONCRETE MEDIAN PAVEMENT	SY	1,356.900				
042	602	0130	CLASS AAE-3 CONCRETE	CY	.600				
043	602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	189.				
044	650	0704	OVERLAY CONCRETE	CY	17.800				
045	650	0720	CLASS 1 REMOVAL	SY	355.600				
046	650	0721	CLASS 2 REMOVAL	SY	71.100				
047	650	0722	CLASS 2-A REMOVAL	LF	128.				
048	650	0723	CLASS 3 REMOVAL	SY	17.800				

BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
049	650	0724	CLASS 4 REMOVAL	SY	3.600				
050	702	0100	MOBILIZATION	L SUM	1.				
051	704	0100	FLAGGING	MHR	6,300.				
052	704	1000	TRAFFIC CONTROL SIGNS	UNIT	7,467.				
053	704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	2.				
054	704	1039	ATTENUATION DEVICE-TYPE B-45	EA	2.				
055	704	1043	ATTENUATION DEVICE-TYPE B-65	EA	2.				
056	704	1052	TYPE III BARRICADE	EA	18.				
057	704	1060	DELINEATOR DRUMS	EA	29.				
058	704	1067	TUBULAR MARKERS	EA	937.				
059	704	1185	PILOT CAR	HR	2,000.				
060	704	1500	OBLITERATION OF PAVEMENT MARKING	SF	1,570.				
061	704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	97.				
062	706	0400	FIELD OFFICE	EA	1.				
063	706	0500	AGGREGATE LABORATORY	EA	1.				
064	706	0550	BITUMINOUS LABORATORY	EA	1.				

Projects: SHE-3-281(116)125 (PCN-20289) and CPU-SNH-3-052(042)198 (PCN-18878)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
065	706	0600	CONTRACTOR'S LABORATORY	EA	1.				
066	709	0162	GEOSYNTHETIC MATERIAL TYPE S2	SY	10,699.400				
067	714	0615	PIPE CONC REINF 24IN CL III	LF	436.				
068	714	0820	PIPE CONC REINF 30IN CL III	LF	74.				
069	714	0905	PIPE CONC REINF 36IN CL III	LF	154.				
070	714	1210	PIPE CONC REINF 54IN CL III	LF	86.				
071	714	4096	PIPE CONDUIT 15IN-APPROACH	LF	51.				
072	714	4099	PIPE CONDUIT 18IN-APPROACH	LF	938.				
073	714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	313.				
074	714	4106	PIPE CONDUIT 24IN-APPROACH	LF	656.				
075	714	4113	PIPE CONDUIT 30IN-APPROACH	LF	256.				
076	714	4116	PIPE CONDUIT 36IN-APPROACH	LF	221.				
077	714	4125	PIPE CONDUIT 48IN	LF	318.				
078	714	4132	PIPE CONDUIT 54IN-APPROACH	LF	74.				
079	714	9659	REMOVE & RELAY PIPE-ALL TYPES & SIZES	LF	152.				
080	714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	87.				

Projects: SHE-3-281(116)125 (PCN-20289) and CPU-SNH-3-052(042)198 (PCN-18878)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
081	720	0110	RIGHT OF WAY MARKERS	EA	140.				
082	720	0125	ALIGNMENT MONUMENTS	EA	77.				
083	720	0130	IRON PIN R/W MONUMENTS	EA	81.				
084	720	0135	IRON PIN REFERENCE MONUMENTS	EA	57.				
085	722	3510	INLET-TYPE 2	EA	6.				
086	722	3520	INLET-TYPE 2 DOUBLE	EA	3.				
087	722	6240	ADJUST UTILITY APPURTENANCE	EA	2.				
088	724	0427	ADJUST HYDRANT	EA	1.				
089	724	0810	WATERMAIN 6IN PVC	LF	131.				
090	748	0120	CURB & GUTTER MOUNTABLE-TYPE I	LF	1,782.				
091	748	0140	CURB & GUTTER-TYPE I	LF	2,813.				
092	748	0141	CURB & GUTTER-TYPE 1 SPECIAL	LF	80.				
093	752	0911	TEMPORARY SAFETY FENCE	LF	200.				
094	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	214.				
095	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	1,292.				
096	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	3,383.				

Projects: SHE-3-281(116)125 (PCN-20289) and CPU-SNH-3-052(042)198 (PCN-18878)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price $$$$$	Unit Price 000	Amount $$$$$	Amount 00
097	754	0563	REFERENCE MARKER-TYPE C	EA	24.				
098	754	0592	RESET SIGN PANEL	EA	58.				
099	754	0805	OBJECT MARKERS - CULVERTS	EA	87.				
100	760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	45.520				
101	760	0007	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	22.760				
102	760	0009	RUMBLE STRIPS - INTERSECTION	EA	1.				
103	762	0103	PVMT MK PAINTED-MESSAGE	SF	649.				
104	762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	142.				
105	762	0420	SHORT TERM 4IN LINE-TYPE R	LF	7,320.				
106	762	0426	SHORT TERM 24IN LINE-TYPE R	LF	96.				
107	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	128,823.				
108	762	0442	SHORT TERM MESSAGE-TYPE NR	SF	601.				
109	762	1104	PVMT MK PAINTED 4IN LINE	LF	306,893.				
110	762	1108	PVMT MK PAINTED 8IN LINE	LF	3,385.				
111	762	1124	PVMT MK PAINTED 24IN LINE	LF	264.				
112	762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	1,333.				

BID ITEMS

Projects: SHE-3-281(116)125 (PCN-20289) and CPU-SNH-3-052(042)198 (PCN-18878)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
113	762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	398.				
114	764	0131	W-BEAM GUARDRAIL	LF	475.				
115	764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	8.				
116	764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	898.				
117	764	1050	RESET W-BEAM GUARDRAIL	LF	415.				
118	764	1990	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	4.				
119	764	2081	REMOVE END TREATMENT & TRANSITION	EA	8.				
120	766	0100	MAILBOX-ALL TYPES	EA	15.				
121	770	0001	LIGHTING SYSTEM	EA	1.				
122	770	0007	DESTINATION LIGHTING	EA	2.				
123	770	4525	REVISE LIGHTING SYSTEM	EA	2.				
124	772	2110	FLASHING BEACON-POST MOUNTED	EA	2.				
125	772	3150	REMOVE FLASHING BEACON SYSTEM	EA	2.				
			TOTAL SUM BID						

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SPECIAL PROVISIONS

Number	Description
SP 0003(14)	Temporary Erosion and Sediment Best Management Practices
SP 0004(14)	Federal Migratory Bird Treaty Act
SP 0266(14)	Flexible Pavement Surface Tolerance
SP 5091(14)	Permits and Environmental Considerations

ENVIRONMENTAL COMMITMENTS

Other Waters Impact Table

Other Waters											Other Water Mitigation				
Number	Location	Type	Size		Feature	USACE Jurisdictional[1]	Impacts to Other Waters				Mitigation Required			Mitigation Location; ratio	Method
			Acres	Linear Feet			Acres Temp	Acres Perm	Linear Feet Temp	Linear Feet Perm	EO 11990	USACE	USFWS		
OW6f	Sec. 23, T146N, R70W	Pipestem Creek	0.09	183	Stream	Yes	0.00	0.00	0	0	N	N	N		
OW6cc	Sec. 18-19, T146N, R67W	Pipestem Creek	0.20	202	Reservoir	Yes	0.00	0.00	0	0	N	N	N		
OW1	Sec. 17-18, T146N, R66W	Kelly Creek	0.02	153	Artificial Stream	Yes	0.01	0.00	32	0	N	N	N		
		Totals	**0.31**	**538**			**0.01**	**0.00**	**32**	**0**					

[1] A wetland Jurisdictional Determination was issued by the USACE on 05/27/2015; NWO-2015-0671-BIS.

Summary Impact Table

Total Permanent Impact Summary		Temporary Impacts and Additional Information	
Wetland Type	**Total (Acres)**	**Wetland Type**	**Total (Acres/Lf)**
Natural JD	0.11	**Temporary JD**	4.62
Natural Non-JD	0.82	**Non-JD Temporary**	6.84
Artificial JD	0.11	**Permanent JD > 0.10**	0.00
Artificial Non-JD	2.47	**Permanent OW**	0.00 ac 0 ft
Total	**3.51**	**Temporary OW**	0.01 ac 32 ft

EC- 2: No construction or demolition activities will take place during the spawning season in the Pipestem Creek from April 15 to June 1.

EC- 3: The contractor shall provide, place, maintain, and remove safety fence as directed by North Dakota Department of Transportation representatives.

ACTION REQUIRED /TAKEN: During construction, the right of way line at the avoidance area site (32WEx123 – Farm house) will be fenced to insure there are no unanticipated impacts to the site. The contractor shall provide, place, maintain, and remove safety fence as directed by North Dakota Department of Transportation representatives. See plan note 107-P06 Avoidance Areas.

EC- 4: The contractor shall provide the required notice of proposed construction with the Federal Aviation Administration and Carrington Municipal Airport prior to beginning any construction that impacts the airport.

ACTION REQUIRED /TAKEN: Prior to any construction of widening and pavement overlay from Sta. 11650+00 to Sta. 11658+00, the contractor will provide the required advanced notice of construction in accordance with the FAA 7460-1 requirements.

Revised	3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	CPU-SNH-3-052(042)198	8	1

Spec	Code	Description	Units	Quantity
103	100	CONTRACT BOND	L SUM	1
103	200	ESCROW OF BID DOCUMENTATION	L SUM	1
107	103	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1
107	104	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1
202	130	REMOVAL OF CURB & GUTTER	LF	389
202	132	REMOVAL OF BITUMINOUS SURFACING	SY	12,064
202	174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1,965
202	230	REMOVAL OF INLETS	EA	2
202	295	REMOVAL OF OBSTRUCTIONS	L SUM	1
202	350	REMOVAL OF TEMPORARY BYPASS	EA	1
203	101	COMMON EXCAVATION-TYPE A	CY	4,346
203	108	TOPSOIL-BORROW AREA	CY	30,144
203	109	TOPSOIL	CY	143,979
203	140	BORROW-EXCAVATION	CY	321,020
216	100	WATER	M GAL	247.6
251	200	SEEDING CLASS II	ACRE	269.6
251	2000	TEMPORARY COVER CROP	ACRE	269.6
253	101	STRAW MULCH	ACRE	539.3
255	202	TRM TYPE II	SY	1,644
260	100	SILT FENCE UNSUPPORTED	LF	48,781
260	101	REMOVE SILT FENCE UNSUPPORTED	LF	48,781
261	112	FIBER ROLLS 12IN	LF	135,008
261	113	REMOVE FIBER ROLLS 12IN	LF	40,644
265	100	STABILIZED CONSTRUCTION ACCESS	EA	2
265	101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2
302	120	AGGREGATE BASE COURSE CL 5	TON	243,906.43
306	510	FULL DEPTH RECLAMATION	SY	243,796.0
401	50	TACK COAT	GAL	87,572
401	60	PRIME COAT	GAL	49,545
411	105	MILLING PAVEMENT SURFACE	SY	5,372.6
430	45	SUPERPAVE FAA 45	TON	143,429.27
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	1,679
430	1000	CORED SAMPLE	EA	528
430	6428	PG 64-28 ASPHALT CEMENT	TON	8,528.60
430	7028	PG 70-28 ASPHALT CEMENT	TON	77.52
550	129	9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	SY	2,576.2
550	305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	8,481.2
550	3005	CONCRETE MEDIAN PAVEMENT	SY	1,356.9
602	130	CLASS AAE-3 CONCRETE	CY	0.6
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	189.0
650	704	OVERLAY CONCRETE	CY	17.8
650	720	CLASS 1 REMOVAL	SY	355.6
650	721	CLASS 2 REMOVAL	SY	71.1
650	722	CLASS 2-A REMOVAL	LF	128
650	723	CLASS 3 REMOVAL	SY	17.8
650	724	CLASS 4 REMOVAL	SY	3.6
702	100	MOBILIZATION	L SUM	1.0
704	100	FLAGGING	MHR	6,200.0
704	1000	TRAFFIC CONTROL SIGNS	UNIT	6,645.0
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	2
704	1039	ATTENUATION DEVICE-TYPE B-45	EA	2
704	1043	ATTENUATION DEVICE-TYPE B-65	EA	2
704	1052	TYPE III BARRICADE	EA	18
704	1060	DELINEATOR DRUMS	EA	20
704	1067	TUBULAR MARKERS	EA	918
704	1185	PILOT CAR	HR	2,000
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	1,570
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	97
706	400	FIELD OFFICE	EA	1
706	500	AGGREGATE LABORATORY	EA	1
706	550	BITUMINOUS LABORATORY	EA	1

Spec	Code	Description	Units	Quantity
706	600	CONTRACTOR'S LABORATORY	EA	1
709	162	GEOSYNTHETIC MATERIAL TYPE S2	SY	10,699.4
714	615	PIPE CONC REINF 24IN CL III	LF	416
714	820	PIPE CONC REINF 30IN CL III	LF	74
714	905	PIPE CONC REINF 36IN CL III	LF	154
714	1210	PIPE CONC REINF 54IN CL III	LF	86
714	4096	PIPE CONDUIT 15IN-APPROACH	LF	51
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	938
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	313
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	656
714	4113	PIPE CONDUIT 30IN-APPROACH	LF	256
714	4116	PIPE CONDUIT 36IN-APPROACH	LF	221
714	4125	PIPE CONDUIT 48IN	LF	318
714	4132	PIPE CONDUIT 54IN-APPROACH	LF	74
714	9659	REMOVE & RELAY PIPE-ALL TYPES & SIZES	LF	152
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	86
720	110	RIGHT OF WAY MARKERS	EA	140
720	125	ALIGNMENT MONUMENTS	EA	77
720	130	IRON PIN R/W MONUMENTS	EA	81
720	135	IRON PIN REFERENCE MONUMENTS	EA	57
722	3510	INLET-TYPE 2	EA	6
722	3520	INLET-TYPE 2 DOUBLE	EA	3
722	6240	ADJUST UTILITY APPURTENANCE	EA	2
724	427	ADJUST HYDRANT	EA	1
724	810	WATERMAIN 6IN PVC	LF	131
748	120	CURB & GUTTER MOUNTABLE-TYPE I	LF	1,782
748	140	CURB & GUTTER-TYPE I	LF	2,813
748	141	CURB & GUTTER-TYPE 1 SPECIAL	LF	80
752	911	TEMPORARY SAFETY FENCE	LF	200
754	110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	214
754	112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	1,245
754	206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	3,293
754	563	REFERENCE MARKER-TYPE C	EA	24
754	592	RESET SIGN PANEL	EA	58
754	805	OBJECT MARKERS - CULVERTS	EA	87
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	45.520
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	22.760
760	9	RUMBLE STRIPS - INTERSECTION	EA	1
762	103	PVMT MK PAINTED-MESSAGE	SF	601
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	142
762	420	SHORT TERM 4IN LINE-TYPE R	LF	7,320
762	426	SHORT TERM 24IN LINE-TYPE R	LF	96
762	430	SHORT TERM 4IN LINE-TYPE NR	LF	128,823
762	442	SHORT TERM MESSAGE-TYPE NR	SF	601
762	1104	PVMT MK PAINTED 4IN LINE	LF	305,906
762	1108	PVMT MK PAINTED 8IN LINE	LF	2,802
762	1124	PVMT MK PAINTED 24IN LINE	LF	264
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	1,333
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	398
764	131	W-BEAM GUARDRAIL	LF	475.0
764	145	W-BEAM GUARDRAIL END TERMINAL	EA	8
764	151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	898.0
764	1050	RESET W-BEAM GUARDRAIL	LF	415.0
764	1990	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	4
764	2081	REMOVE END TREATMENT & TRANSITION	EA	8
766	100	MAILBOX-ALL TYPES	EA	15
770	1	LIGHTING SYSTEM	EA	1
770	7	DESTINATION LIGHTING	EA	2
770	4525	REVISE LIGHTING SYSTEM	EA	2
772	2110	FLASHING BEACON-POST MOUNTED	EA	2
772	3150	REMOVE FLASHING BEACON SYSTEM	EA	2

Quantities

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	10	2

Asphalt Pavement Summary

Item	Begin Station	End Station	Length (FT)	Average Width (FT)	Superpave Average End Area (SF)	Superpave @ 2.0 Tons/CY (Ton)	Asphalt Cement @ 6.0% (Ton)	Tack Coat @ 0.05 Gal/SY and 2 lifts (Gal)
Overlay								
US 52 W. Jct 200 Right Turn Lane	10492+26	10498+58	632	48.0	22.9	1,072.06	64.32	338
US 52 W. Jct 200 Right Turn Lane Taper	10498+58	10499+78	120	44.0	18.5	164.44	9.87	58
US 52 Mainline	10499+78	11021+43	52,165	40.0	14.0	54,097.04	3,245.82	23,184
US 52 ND 30 Right Turn Lane	11021+43	11026+73	530	48.0	16.6	651.70	39.10	282
US 52 ND 30 Right Turn Lane Taper	11026+73	11027+93	120	44.0	15.3	136.00	8.16	58
US 52 Mainline	11027+93	11056+85	2,892	40.0	14.0	2,999.11	179.95	1,286
US 52 Hughes Ave Right Turn Lane	11056+85	11062+27	542	48.0	16.6	666.46	39.99	290
US 52 Hughes Ave Right Turn Lane Taper	11062+27	11063+47	120	44.0	15.3	136.00	8.16	58
US 52 Mainline (1)	11063+47	11698+63	63,436	40.0	14.0	65,785.48	3,947.13	28,194
US 52 19th Ave Turn Lane Taper	11698+63	11703+76	513	48.0	16.7	632.70	37.96	274
US 52 19th Ave Turn Lanes	11703+76	11708+93	517	56.0	19.3	739.12	44.35	322
US 52 19th Ave Turn Lane Taper	11708+93	11714+70	577	48.6	16.7	711.63	42.70	312
US 52 Mainline	11714+70	11729+70	1,500	40.0	14.0	1,555.56	93.33	666
US 52 11th Ave Right Turn Lane Taper	11729+70	11730+66	96	44.0	15.3	108.80	6.53	46
US 52 11th Ave Right Turn Lane	11730+66	11732+60	194	48.0	16.6	238.84	14.33	104
US 52 Mainline (1)	11732+60	11754+37	1,881	40.0	14.0	1,950.67	117.04	836
Overlay Subtotal			**125,835**			**131,645.61**	**7,898.74**	**56,308**
(1) Length adjusted for Bridges								
Leveling and Superelevation Correction								
Superelevation C128	11063+44	11073+29	985	27.0	5.9	430.48	25.83	148
Superelevation C402	11234+53	11243+50	897	27.0	4.0	265.78	15.95	135
Superelevation C407	11663+81	11683+82	2,001	27.0	1.6	237.16	14.23	300
Superelevation C199	11743+11	11751+16	805	27.0	4.6	274.30	16.46	121
Leveling Course @ 100 Tons/Lane Mile				27.0		4,766.48	285.99	28,154
Leveling and Superelevation Correction Subtotal			**4,688**			**5,974.20**	**358.46**	**28,858**
Miscellaneous Items								
West Jct ND 200 Intersection						711.33	42.68	24
ND 30 Intersection						362.00	21.72	162
Hughes Avenue Intersection						190.59	11.44	86
19th Avenue Intersection						219.85	13.19	98
11th Avenue Intersection						180.20	10.81	82
Carrington roundabout tie-ins						106.67	6.40	4
Standard section lines approachs and private drives						3,552.77	213.51	1,788
Special approach details						341.05	20.47	162
Guardrail surfacing						145.00	8.70	0
Miscellaneous Items Subtotal						**5,809.46**	**348.92**	**2,406**
Grand Total						**143,429.27**	**8,606.12**	**87,572.00**

PG Asphalt Cement

Item	SY	Asphalt Cement (Tons)
PG 70-28		
US 52 North of W Jct ND 200	2,134	42.68
WB right turn lane - W Jct ND 200	1,113	22.27
W Jct ND 200 Intersection	943	12.57
PG 70-24 Total		**77.52**
PG 64-28		
Balance of Project		**8,528.60**

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Asphalt Pavement

Item	Left	Right	FDR Pay Width Left (FT)	FDR Pay Width Right (FT)	FDR Total (SY)	CL 5 Aggregate for Blending (SF)	CL 5 Aggregate for Blending (Tons)	Prime Coat @ 0.20 Gal/SY (Gal)
Mainline Widening	120,945	118,607	8.8	8.8	234,229	13.4	222,916.44	46,846
Turn Lane Construction								
W. Jct 200 Right Turn Lane		632		16.8	1,180	20.0	877.78	236
W. Jct 200 Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
ND 30 Right Turn Lane		530		16.8	989	20.0	736.11	198
ND 30 Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
Hughes Ave Right Turn Lane		542		16.8	1,012	20.0	752.78	202
Hughes Ave Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
19th Ave Turn Lane Taper West	513	513	12.8	12.8	1,459	19.0	1,351.61	292
19th Ave Turn Lanes West	258.5	258.5	16.8	22.8	1,137	33.0	1,183.00	227
19th Ave Turn Lanes East	258.5	258.5	22.8	16.8	1,137	33.0	1,183.00	227
19th Ave Turn Lane Taper East	577	577	12.8	12.8	1,641	19.0	1,520.23	328
11th Ave Turn Lane Taper		96		12.8	137	16.8	112.00	27
11th Ave Right Turn Lane		194		16.8	362	20.0	269.44	72
Net Widening Length	**122,552**	**122,568**			**243,796**		**231,322.39**	**48,757**
Approaches and Intersections excluded from Full Depth Reclamation	3,283	3,267						
Bridge Exceptions	376	376						
Gross Widening Length Sta. 10492+26 to Sta. 11754+37	**126,211**	**126,211**						

Aggregate Base Course CL 5 and Prime Coat Summary

Item	Aggregate Base CL 5 (Tons)	Prime Coat Area (SY)	Prime Coat @ 0.20 Gal/SY (Gal)
CL 5 Aggregate for Blending	231,322.39		48,757
Carrington roundabout base course	7,207.50		
Carrington roundabout tie-ins	200.00	320	64
Standard section lines approachs and private drives	3,894.42	0	0
Special approach details	875.12	2,317	464
Guardrail surfacing	407.00	1,302	260
Grand Total	**243,906.43**		**49,545**

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Full Depth Reclamation and Aggregate Base

Earthwork Summary

Item	Common Excavation (CY)	Embankment (CY)	Adjusted Embankment at 25% Shrinkage (CY)	Borrow (CY)	Topsoil (CY)
	A	B	C = B × (1.25)	D = C - A	E
ND Highway 52 - Mainline widening					
Sta 10492+25.76 to 11755+00.00	**0**	**254,241**	**317,801**	**317,801**	**137,757**
ND Highway 52 -Approach Reconstruction					
Sta 11049+02 Lt (Gravel Private Drive)	0	31	39	39	61
Sta 11408+87 Rt (Paved Private Drive)	290	187	234	-56	215
Sta 11579+55 Lt (Paved Private Drive)	0	32	40	40	24
Sta 11579+60 Rt (Gravel Private Drive)	0	212	265	265	37
Sta 11599+75 Lt (Gravel Section Line)	0	104	130	130	53
5th Avenue (Paved Street Approach)	251	150	188	-63	160
Subtotal - Approach Reconstruction	**541**	**716**	**896**	**355**	**550**
ND Highway 52 - Approach Side Slope Flattening					
Sta 10935+26 Rt (Field Drive)	0	102	128	128	76
Sta 11177+74 Rt (Gravel Section Line)	0	149	186	186	99
Sta 11428+24 Rt (Gravel Private Drive)	0	216	270	270	74
Sta 11546+98 Rt (Gravel Section Line)	0	151	189	189	108
Sta 11555+83 Lt (Gravel Private Drive)	0	111	139	139	83
Subtotal - Approach Flattening	**0**	**729**	**912**	**912**	**440**
ND Highway 52 - E. JCT 200 Roundabout					
US 52 - Sta 11755+00 to 11762+00	2,089	2,079	2,599	510	2872
ND 200 - Sta 15496+50 to 15500+00	301	2,286	2,858	2,557	414
US 281 - Sta 5943+30 to 5947+00	1,415	240	300	-1,115	1946
Subtotal - Roundabout	**3,805**	**4,605**	**5,757**	**1,952**	**5,232**
Project Total	**4,346**	**260,291**	**325,366**	**321,020**	**143,979**

Borrow Topsoil Basis of Estimate for Option Areas

Item	Quantity	Units
Borrow Need	321,020	CY
Borrow Striping based on 8' cut average	120,383	SY
Borrow Area Topsoil based on 9" strip depth	**30,144**	**CY**

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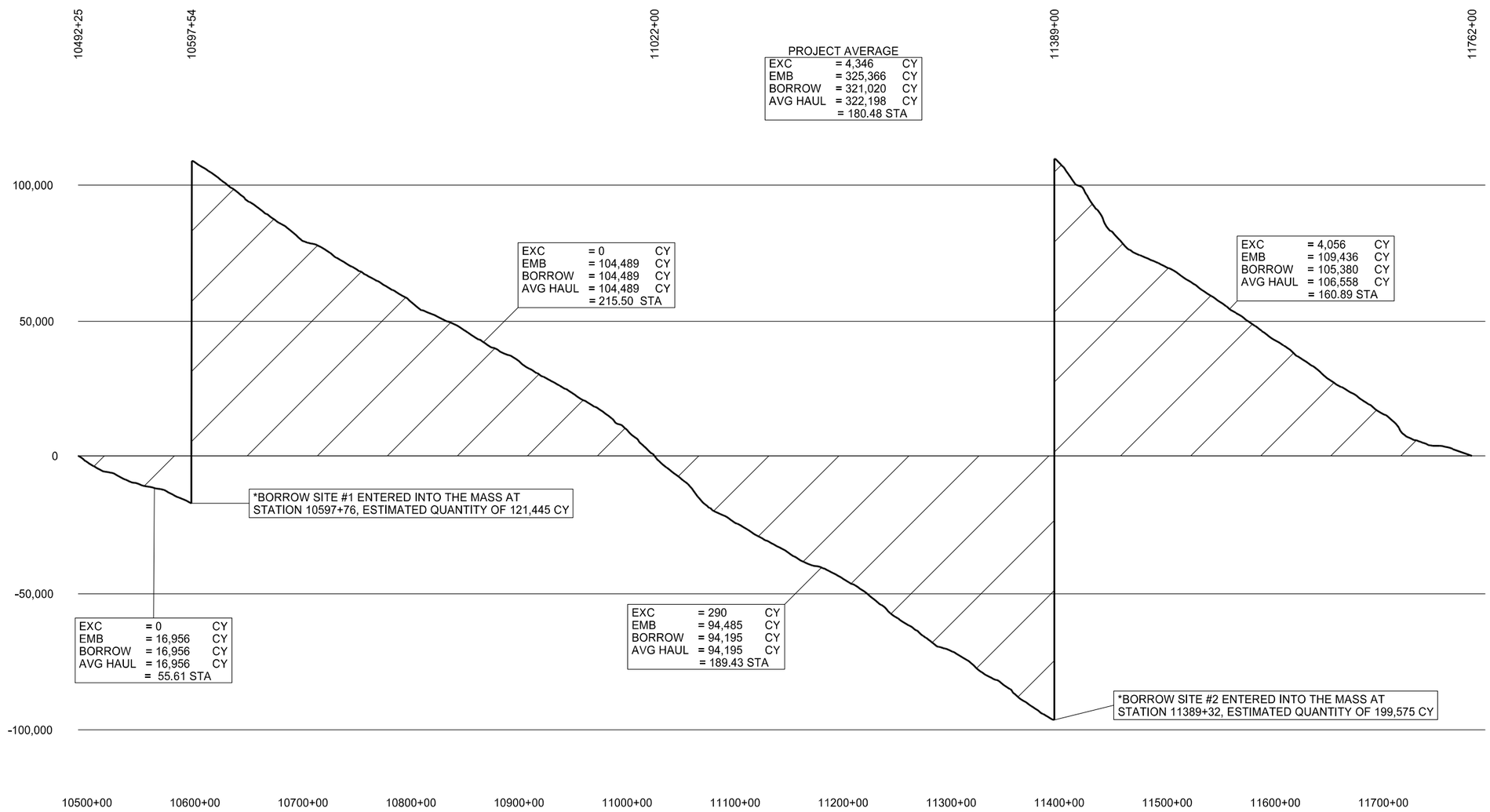
Earthwork Summary

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	2



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Mass Balance Diagram

US 52

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	4

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10566+00.00	0	0	0	10.1	45	56	0	-11,699	-11,699
10567+00.00	0	0	0	6.3	30	38	0	-11,736	-11,736
10568+00.00	0	0	0	17.4	44	55	0	-11,791	-11,791
10568+49.20	0	0	0	17	31	39	0	-11,830	-11,830
10569+00.00	0	0	0	11.2	27	34	0	-11,864	-11,864
10570+00.00	0	0	0	31.6	79	99	0	-11,963	-11,963
10571+00.00	0	0	0	10.8	79	99	0	-12,061	-12,061
10571+10.03	0	0	0	0.9	2	3	0	-12,064	-12,064
10571+48.82	0	0	0	2.3	2	3	0	-12,066	-12,066
10572+00.00	0	0	0	51	51	64	0	-12,130	-12,130
10573+00.00	0	0	0	37.8	164	205	0	-12,335	-12,335
10574+00.00	0	0	0	57.3	176	220	0	-12,555	-12,555
10575+00.00	0	0	0	49.7	198	248	0	-12,803	-12,803
10576+00.00	0	0	0	51.1	187	234	0	-13,036	-13,036
10577+00.00	0	0	0	39	167	209	0	-13,245	-13,245
10578+00.00	0	0	0	32.1	132	165	0	-13,410	-13,410
10579+00.00	0	0	0	40.9	135	169	0	-13,579	-13,579
10580+00.00	0	0	0	37.9	146	183	0	-13,761	-13,761
10580+53.35	0	0	0	77.7	114	143	0	-13,904	-13,904
10581+00.00	0	0	0	51.3	111	139	0	-14,043	-14,043
10582+00.00	0	0	0	40.7	170	213	0	-14,255	-14,255
10583+00.00	0	0	0	41.3	152	190	0	-14,445	-14,445
10584+00.00	0	0	0	37.4	146	183	0	-14,628	-14,628
10585+00.00	0	0	0	29.1	123	154	0	-14,781	-14,781
10585+21.03	0	0	0	19.1	19	24	0	-14,805	-14,805
10585+58.78	0	0	0	20.7	28	35	0	-14,840	-14,840
10586+00.00	0	0	0	38.9	45	56	0	-14,896	-14,896
10587+00.00	0	0	0	36.7	140	175	0	-15,071	-15,071
10588+00.00	0	0	0	36	135	169	0	-15,240	-15,240
10589+00.00	0	0	0	34.9	131	164	0	-15,404	-15,404
10590+00.00	0	0	0	30.4	121	151	0	-15,555	-15,555
10591+00.00	0	0	0	34	119	149	0	-15,704	-15,704
10592+00.00	0	0	0	33.8	126	158	0	-15,861	-15,861
10593+00.00	0	0	0	43.8	144	180	0	-16,041	-16,041
10594+00.00	0	0	0	52.1	178	223	0	-16,264	-16,264
10595+00.00	0	0	0	48.7	187	234	0	-16,498	-16,498
10596+00.00	0	0	0	44.2	172	215	0	-16,713	-16,713
10597+00.00	0	0	0	39.7	155	194	0	-16,906	-16,906
10597+53.95	0	121,445	121,445	0	40	50	0	-16,956	104,489
10599+00.00	0	0	121,445	64.2	117	146	0	-17,103	104,343
10600+00.00	0	0	121,445	59.8	230	288	0	-17,390	104,055

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10601+00.00	0	0	121,445	53.55	210	263	0	-17,653	103,793
10602+00.00	0	0	121,445	62.3	215	269	0	-17,921	103,524
10603+00.00	0	0	121,445	61.1	229	286	0	-18,208	103,238
10604+00.00	0	0	121,445	55.1	215	269	0	-18,476	102,969
10604+24.26	0	0	121,445	50	47	59	0	-18,535	102,910
10605+00.00	0	0	121,445	42.3	129	161	0	-18,696	102,749
10606+00.00	0	0	121,445	50.5	172	215	0	-18,911	102,534
10607+00.00	0	0	121,445	44.5	176	220	0	-19,131	102,314
10608+00.00	0	0	121,445	48	171	214	0	-19,345	102,100
10609+00.00	0	0	121,445	44.7	172	215	0	-19,560	101,885
10610+00.00	0	0	121,445	51.9	179	224	0	-19,784	101,661
10611+00.00	0	0	121,445	60.2	208	260	0	-20,044	101,401
10612+00.00	0	0	121,445	81.8	263	329	0	-20,373	101,073
10612+52.38	0	0	121,445	41.5	120	150	0	-20,523	100,923
10612+91.75	0	0	121,445	40.2	60	75	0	-20,598	100,848
10614+00.00	0	0	121,445	70	221	276	0	-20,874	100,571
10614+45.20	0	0	121,445	35.2	88	110	0	-20,984	100,461
10614+84.57	0	0	121,445	35.3	51	64	0	-21,048	100,398
10615+00.00	0	0	121,445	35.5	20	25	0	-21,073	100,373
10616+00.00	0	0	121,445	69.3	194	243	0	-21,315	100,130
10617+00.00	0	0	121,445	67.2	253	316	0	-21,631	99,814
10618+00.00	0	0	121,445	52.4	221	276	0	-21,908	99,538
10619+00.00	0	0	121,445	64.4	216	270	0	-22,178	99,268
10620+00.00	0	0	121,445	60	230	288	0	-22,465	98,980
10621+00.00	0	0	121,445	63.1	228	285	0	-22,750	98,695
10622+00.00	0	0	121,445	69	245	306	0	-23,056	98,389
10623+00.00	0	0	121,445	76.3	269	336	0	-23,393	98,053
10624+00.00	0	0	121,445	69.5	270	338	0	-23,730	97,715
10624+19.43	0	0	121,445	43.5	41	51	0	-23,781	97,664
10624+58.80	0	0	121,445	42.2	62	78	0	-23,859	97,586
10625+00.00	0	0	121,445	66.5	83	104	0	-23,963	97,483
10625+28.58	0	0	121,445	89.6	83	104	0	-24,066	97,379
10626+00.00	0	0	121,445	78.7	223	279	0	-24,345	97,100
10626+88.20	0	0	121,445	32.9	182	228	0	-24,573	96,873
10627+25.95	0	0	121,445	32.5	46	58	0	-24,630	96,815
10628+00.00	0	0	121,445	78.2	152	190	0	-24,820	96,625
10629+00.00	0	0	121,445	70.6	276	345	0	-25,165	96,280
10630+00.00	0	0	121,445	66.5	254	318	0	-25,483	95,963
10631+00.00	0	0	121,445	70.2	253	316	0	-25,799	95,646
10632+00.00	0	0	121,445	69.1	258	323	0	-26,121	95,324
10633+00.00	0	0	121,445	61	241	301	0	-26,423	95,023

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	5

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10634+07.23	0	0	121,445	29.8	180	225	0	-26,648	94,798
10634+44.98	0	0	121,445	30.1	42	53	0	-26,700	94,745
10635+00.00	0	0	121,445	55.6	87	109	0	-26,809	94,636
10636+00.00	0	0	121,445	66.6	226	283	0	-27,091	94,354
10637+00.00	0	0	121,445	60.8	236	295	0	-27,386	94,059
10638+00.00	0	0	121,445	59.1	222	278	0	-27,664	93,781
10639+00.00	0	0	121,445	65.8	231	289	0	-27,953	93,493
10640+00.00	0	0	121,445	80.3	271	339	0	-28,291	93,154
10641+00.00	0	0	121,445	73.4	285	356	0	-28,648	92,798
10642+00.00	0	0	121,445	76.3	277	346	0	-28,994	92,451
10643+04.38	0	0	121,445	43.8	232	290	0	-29,284	92,161
10643+42.13	0	0	121,445	41.5	60	75	0	-29,359	92,086
10644+00.00	0	0	121,445	71.7	121	151	0	-29,510	91,935
10645+00.00	0	0	121,445	76.4	274	343	0	-29,853	91,593
10645+66.37	0	0	121,445	34.3	136	170	0	-30,023	91,423
10646+04.13	0	0	121,445	29.9	45	56	0	-30,079	91,366
10647+00.00	0	0	121,445	66.2	171	214	0	-30,293	91,153
10648+00.00	0	0	121,445	62.6	239	299	0	-30,591	90,854
10649+00.00	0	0	121,445	64.8	236	295	0	-30,886	90,559
10649+58.27	0	0	121,445	57.4	132	165	0	-31,051	90,394
10650+00.00	0	0	121,445	41.2	76	95	0	-31,146	90,299
10650+39.96	0	0	121,445	2.5	32	40	0	-31,186	90,259
10650+93.63	0	0	121,445	6.9	9	11	0	-31,198	90,248
10651+43.74	0	0	121,445	63.6	65	81	0	-31,279	90,166
10652+00.00	0	0	121,445	63	132	165	0	-31,444	90,001
10653+00.00	0	0	121,445	51.1	211	264	0	-31,708	89,738
10654+00.00	0	0	121,445	61.7	209	261	0	-31,969	89,476
10655+00.00	0	0	121,445	56.6	219	274	0	-32,243	89,203
10656+00.00	0	0	121,445	66.9	229	286	0	-32,529	88,916
10657+00.00	0	0	121,445	62.4	239	299	0	-32,828	88,618
10658+00.00	0	0	121,445	57.8	223	279	0	-33,106	88,339
10659+00.00	0	0	121,445	63	224	280	0	-33,386	88,059
10660+00.00	0	0	121,445	64.5	236	295	0	-33,681	87,764
10661+00.00	0	0	121,445	61.6	234	293	0	-33,974	87,471
10662+00.00	0	0	121,445	69.3	242	303	0	-34,276	87,169
10663+00.00	0	0	121,445	70.7	259	324	0	-34,600	86,845
10664+00.00	0	0	121,445	74.8	269	336	0	-34,936	86,509
10665+00.00	0	0	121,445	75.2	278	348	0	-35,284	86,161
10665+50.67	0	0	121,445	4.4	75	94	0	-35,378	86,068
10665+89.11	0	0	121,445	0.1	3	4	0	-35,381	86,064
10666+00.00	0	0	121,445	2.6	1	1	0	-35,383	86,063

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10667+00.00	0	0	121,445	64	123	154	0	-35,536	85,909
10668+00.00	0	0	121,445	78.8	264	330	0	-35,866	85,579
10669+00.00	0	0	121,445	69.6	275	344	0	-36,210	85,235
10670+00.00	0	0	121,445	64.2	248	310	0	-36,520	84,925
10671+00.00	0	0	121,445	61.9	234	293	0	-36,813	84,633
10672+00.00	0	0	121,445	47.6	203	254	0	-37,066	84,379
10673+00.00	0	0	121,445	61.5	202	253	0	-37,319	84,126
10674+00.00	0	0	121,445	60.3	226	283	0	-37,601	83,844
10674+78.21	0	0	121,445	73.9	194	243	0	-37,844	83,601
10675+00.00	0	0	121,445	69.6	58	73	0	-37,916	83,529
10676+00.00	0	0	121,445	67.9	255	319	0	-38,235	83,210
10676+95.75	0	0	121,445	31.3	176	220	0	-38,455	82,990
10677+33.51	0	0	121,445	31.8	44	55	0	-38,510	82,935
10678+00.00	0	0	121,445	61.4	115	144	0	-38,654	82,791
10679+00.00	0	0	121,445	41.3	190	238	0	-38,891	82,554
10680+00.00	0	0	121,445	38.9	149	186	0	-39,078	82,368
10681+00.00	0	0	121,445	46.3	158	198	0	-39,275	82,170
10682+00.00	0	0	121,445	31.6	144	180	0	-39,455	81,990
10683+00.00	0	0	121,445	69.6	187	234	0	-39,689	81,756
10684+00.00	0	0	121,445	66.1	251	314	0	-40,003	81,443
10685+00.00	0	0	121,445	72.2	256	320	0	-40,323	81,123
10686+00.00	0	0	121,445	67.4	259	324	0	-40,646	80,799
10687+00.00	0	0	121,445	69.8	254	318	0	-40,964	80,481
10688+00.00	0	0	121,445	77.5	273	341	0	-41,305	80,140
10689+00.00	0	0	121,445	45.3	227	284	0	-41,589	79,856
10690+00.00	0	0	121,445	88.7	248	310	0	-41,899	79,546
10690+13.72	0	0	121,445	104.1	49	61	0	-41,960	79,485
10691+00.00	0	0	121,445	38.5	228	285	0	-42,245	79,200
10692+00.00	0	0	121,445	71.5	204	255	0	-42,500	78,945
10693+00.00	0	0	121,445	79.9	280	350	0	-42,850	78,595
10694+00.00	0	0	121,445	81	298	373	0	-43,223	78,223
10695+00.00	0	0	121,445	88.7	314	393	0	-43,615	77,830
10696+00.00	0	0	121,445	84.5	321	401	0	-44,016	77,429
10697+00.00	0	0	121,445	42.6	235	294	0	-44,310	77,135
10698+00.00	0	0	121,445	101.4	267	334	0	-44,644	76,801
10698+09.47	0	0	121,445	94.8	34	43	0	-44,686	76,759
10699+00.00	0	0	121,445	41.1	228	285	0	-44,971	76,474
10700+00.00	0	0	121,445	21.7	116	145	0	-45,116	76,329
10701+00.00	0	0	121,445	27.2	91	114	0	-45,230	76,215
10701+27.17	0	0	121,445	26.5	27	34	0	-45,264	76,181
10702+00.00	0	0	121,445	39.8	89	111	0	-45,375	76,070

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	6

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10703+02.82	0	0	121,445	49.2	169	211	0	-45,586	75,859
10703+35.66	0	0	121,445	2.4	31	39	0	-45,625	75,820
10703+97.62	0	0	121,445	6.1	10	13	0	-45,638	75,808
10704+30.36	0	0	121,445	20.6	16	20	0	-45,658	75,788
10705+00.00	0	0	121,445	33.7	70	88	0	-45,745	75,700
10706+04.75	0	0	121,445	15.9	96	120	0	-45,865	75,580
10707+00.00	0	0	121,445	13.4	52	65	0	-45,930	75,515
10708+00.00	0	0	121,445	13.4	50	63	0	-45,993	75,453
10709+00.00	0	0	121,445	15.7	54	68	0	-46,060	75,385
10709+14.98	0	0	121,445	26	12	15	0	-46,075	75,370
10710+00.00	0	0	121,445	17.6	69	86	0	-46,161	75,284
10711+00.00	0	0	121,445	16.8	64	80	0	-46,241	75,204
10712+00.00	0	0	121,445	52.4	128	160	0	-46,401	75,044
10713+00.00	0	0	121,445	41.3	174	218	0	-46,619	74,826
10714+00.00	0	0	121,445	38.5	148	185	0	-46,804	74,641
10715+00.00	0	0	121,445	37.8	141	176	0	-46,980	74,465
10716+00.00	0	0	121,445	50.7	164	205	0	-47,185	74,260
10717+00.00	0	0	121,445	51.7	190	238	0	-47,423	74,023
10718+00.00	0	0	121,445	44	177	221	0	-47,644	73,801
10719+00.00	0	0	121,445	53.8	181	226	0	-47,870	73,575
10720+00.00	0	0	121,445	62.4	215	269	0	-48,139	73,306
10721+00.00	0	0	121,445	46.9	202	253	0	-48,391	73,054
10722+00.00	0	0	121,445	50.8	181	226	0	-48,618	72,828
10723+00.00	0	0	121,445	69.3	222	278	0	-48,895	72,550
10724+00.00	0	0	121,445	37.5	198	248	0	-49,143	72,303
10724+08.09	0	0	121,445	32.5	10	13	0	-49,155	72,290
10724+45.84	0	0	121,445	31.9	45	56	0	-49,211	72,234
10725+00.00	0	0	121,445	73.2	105	131	0	-49,343	72,103
10726+00.00	0	0	121,445	86.2	295	369	0	-49,711	71,734
10727+00.00	0	0	121,445	77.9	304	380	0	-50,091	71,354
10728+00.00	0	0	121,445	66.9	268	335	0	-50,426	71,019
10729+00.00	0	0	121,445	65.2	245	306	0	-50,733	70,713
10729+84.19	0	0	121,445	26.9	144	180	0	-50,913	70,533
10730+21.94	0	0	121,445	25	36	45	0	-50,958	70,488
10731+00.00	0	0	121,445	49.8	108	135	0	-51,093	70,353
10732+00.00	0	0	121,445	52.5	189	236	0	-51,329	70,116
10733+00.00	0	0	121,445	47.4	185	231	0	-51,560	69,885
10734+00.00	0	0	121,445	53	186	233	0	-51,793	69,653
10734+11.08	0	0	121,445	66.5	25	31	0	-51,824	69,621
10735+00.00	0	0	121,445	41.5	178	223	0	-52,046	69,399
10736+00.00	0	0	121,445	45.5	161	201	0	-52,248	69,198

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10737+00.00	0	0	121,445	49.1	175	219	0	-52,466	68,979
10738+00.00	0	0	121,445	58.5	199	249	0	-52,715	68,730
10739+00.00	0	0	121,445	55.2	211	264	0	-52,979	68,466
10740+00.00	0	0	121,445	50.5	196	245	0	-53,224	68,221
10741+00.00	0	0	121,445	52.8	191	239	0	-53,463	67,983
10742+00.00	0	0	121,445	47.6	186	233	0	-53,695	67,750
10743+00.00	0	0	121,445	46.4	174	218	0	-53,913	67,533
10744+00.00	0	0	121,445	35.7	152	190	0	-54,103	67,343
10744+20.31	0	0	121,445	25.1	23	29	0	-54,131	67,314
10744+58.06	0	0	121,445	25.9	36	45	0	-54,176	67,269
10745+00.00	0	0	121,445	40.5	52	65	0	-54,241	67,204
10746+00.00	0	0	121,445	45.4	159	199	0	-54,440	67,005
10747+00.00	0	0	121,445	58.2	192	240	0	-54,680	66,765
10748+00.00	0	0	121,445	50.1	201	251	0	-54,931	66,514
10749+00.00	0	0	121,445	64.3	212	265	0	-55,196	66,249
10750+00.00	0	0	121,445	52.3	216	270	0	-55,466	65,979
10751+00.00	0	0	121,445	63.4	214	268	0	-55,734	65,711
10751+46.75	0	0	121,445	2.5	57	71	0	-55,805	65,640
10751+86.14	0	0	121,445	0	2	3	0	-55,808	65,638
10752+00.00	0	0	121,445	4	1	1	0	-55,809	65,636
10753+00.00	0	0	121,445	58.9	116	145	0	-55,954	65,491
10754+00.00	0	0	121,445	60.6	221	276	0	-56,230	65,215
10755+00.00	0	0	121,445	72.3	246	308	0	-56,538	64,908
10756+00.00	0	0	121,445	72.7	269	336	0	-56,874	64,571
10756+06.22	0	0	121,445	85.6	18	23	0	-56,896	64,549
10756+21.89	0	0	121,445	23	32	40	0	-56,936	64,509
10756+78.06	0	0	121,445	3.5	28	35	0	-56,971	64,474
10757+00.00	0	0	121,445	34.3	15	19	0	-56,990	64,455
10758+00.00	0	0	121,445	53.9	163	204	0	-57,194	64,251
10759+00.00	0	0	121,445	55.8	203	254	0	-57,448	63,998
10760+00.00	0	0	121,445	44.1	185	231	0	-57,679	63,766
10761+00.00	0	0	121,445	37.8	152	190	0	-57,869	63,576
10762+00.00	0	0	121,445	41.6	147	184	0	-58,053	63,393
10763+00.00	0	0	121,445	51	171	214	0	-58,266	63,179
10764+00.00	0	0	121,445	44.4	177	221	0	-58,488	62,958
10764+25.52	0	0	121,445	55.9	47	59	0	-58,546	62,899
10765+00.00	0	0	121,445	33	123	154	0	-58,700	62,745
10766+00.00	0	0	121,445	57.2	167	209	0	-58,909	62,536
10767+00.00	0	0	121,445	60.8	219	274	0	-59,183	62,263
10767+84.09	0	0	121,445	2.1	98	123	0	-59,305	62,140
10768+23.12	0	0	121,445	0.9	2	3	0	-59,308	62,138

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	7

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10769+00.00	0	0	121,445	60.5	87	109	0	-59,416	62,029
10770+00.00	0	0	121,445	54.6	213	266	0	-59,683	61,763
10771+00.00	0	0	121,445	56.7	206	258	0	-59,940	61,505
10772+00.00	0	0	121,445	61	218	273	0	-60,213	61,233
10773+00.00	0	0	121,445	59.4	223	279	0	-60,491	60,954
10774+00.00	0	0	121,445	50	203	254	0	-60,745	60,700
10775+00.00	0	0	121,445	42.6	171	214	0	-60,959	60,486
10776+00.00	0	0	121,445	46	164	205	0	-61,164	60,281
10777+00.00	0	0	121,445	48.1	174	218	0	-61,381	60,064
10778+00.00	0	0	121,445	51.2	184	230	0	-61,611	59,834
10779+00.00	0	0	121,445	52.5	192	240	0	-61,851	59,594
10780+00.00	0	0	121,445	53.8	197	246	0	-62,098	59,348
10781+00.00	0	0	121,445	70.2	230	288	0	-62,385	59,060
10781+89.28	0	0	121,445	4.7	124	155	0	-62,540	58,905
10782+28.19	0	0	121,445	1.3	4	5	0	-62,545	58,900
10783+00.00	0	0	121,445	57.1	78	98	0	-62,643	58,803
10784+00.00	0	0	121,445	52.3	203	254	0	-62,896	58,549
10785+00.00	0	0	121,445	57.8	204	255	0	-63,151	58,294
10786+00.00	0	0	121,445	55	209	261	0	-63,413	58,033
10787+00.00	0	0	121,445	53	200	250	0	-63,663	57,783
10788+00.00	0	0	121,445	50.6	192	240	0	-63,903	57,543
10789+00.00	0	0	121,445	47.7	182	228	0	-64,130	57,315
10790+00.00	0	0	121,445	43.7	169	211	0	-64,341	57,104
10791+00.00	0	0	121,445	46.8	168	210	0	-64,551	56,894
10792+00.00	0	0	121,445	49.9	179	224	0	-64,775	56,670
10793+00.00	0	0	121,445	36.9	161	201	0	-64,976	56,469
10794+00.00	0	0	121,445	35.8	135	169	0	-65,145	56,300
10795+00.00	0	0	121,445	49.4	158	198	0	-65,343	56,103
10796+00.00	0	0	121,445	89.2	257	321	0	-65,664	55,781
10796+18.79	0	0	121,445	131.9	77	96	0	-65,760	55,685
10797+00.00	0	0	121,445	73.4	309	386	0	-66,146	55,299
10798+00.00	0	0	121,445	61.7	250	313	0	-66,459	54,986
10799+00.00	0	0	121,445	64.4	234	293	0	-66,751	54,694
10800+00.00	0	0	121,445	77.4	263	329	0	-67,080	54,365
10801+00.00	0	0	121,445	71.1	275	344	0	-67,424	54,021
10802+00.00	0	0	121,445	69.1	260	325	0	-67,749	53,696
10803+00.00	0	0	121,445	70.3	258	323	0	-68,071	53,374
10804+00.00	0	0	121,445	73.6	266	333	0	-68,404	53,041
10805+00.00	0	0	121,445	67.3	261	326	0	-68,730	52,715
10806+00.00	0	0	121,445	56.3	229	286	0	-69,016	52,429
10807+00.00	0	0	121,445	75.2	244	305	0	-69,321	52,124

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10808+00.00	0	0	121,445	57.2	245	306	0	-69,628	51,818
10808+34.48	0	0	121,445	0	37	46	0	-69,674	51,771
10809+00.00	0	0	121,445	5.7	2	3	0	-69,676	51,769
10810+00.00	0	0	121,445	36.7	79	99	0	-69,775	51,670
10811+00.00	0	0	121,445	33	129	161	0	-69,936	51,509
10812+00.00	0	0	121,445	41.7	138	173	0	-70,109	51,336
10813+00.00	0	0	121,445	30	133	166	0	-70,275	51,170
10814+00.00	0	0	121,445	38.3	126	158	0	-70,433	51,013
10815+00.00	0	0	121,445	36.8	139	174	0	-70,606	50,839
10816+00.00	0	0	121,445	36.8	136	170	0	-70,776	50,669
10817+00.00	0	0	121,445	29.8	123	154	0	-70,930	50,515
10818+00.00	0	0	121,445	32.2	115	144	0	-71,074	50,371
10819+00.00	0	0	121,445	25.5	107	134	0	-71,208	50,238
10820+00.00	0	0	121,445	39.4	120	150	0	-71,358	50,088
10821+00.00	0	0	121,445	41.5	150	188	0	-71,545	49,900
10822+00.00	0	0	121,445	44.8	160	200	0	-71,745	49,700
10823+00.00	0	0	121,445	45.1	166	208	0	-71,953	49,493
10824+00.00	0	0	121,445	41.5	160	200	0	-72,153	49,293
10825+00.00	0	0	121,445	37.7	147	184	0	-72,336	49,109
10826+00.00	0	0	121,445	44.1	151	189	0	-72,525	48,920
10827+00.00	0	0	121,445	47.5	170	213	0	-72,738	48,708
10828+00.00	0	0	121,445	38.7	160	200	0	-72,938	48,508
10829+00.00	0	0	121,445	43.4	152	190	0	-73,128	48,318
10830+00.00	0	0	121,445	38.3	151	189	0	-73,316	48,129
10831+00.00	0	0	121,445	35.4	136	170	0	-73,486	47,959
10832+00.00	0	0	121,445	44.3	148	185	0	-73,671	47,774
10832+51.21	0	0	121,445	0.7	43	54	0	-73,725	47,720
10832+90.64	0	0	121,445	0	1	1	0	-73,726	47,719
10833+00.00	0	0	121,445	1.5	0	0	0	-73,726	47,719
10834+00.00	0	0	121,445	40.8	78	98	0	-73,824	47,621
10835+00.00	0	0	121,445	44.8	159	199	0	-74,023	47,423
10835+16.74	0	0	121,445	54.8	31	39	0	-74,061	47,384
10836+00.00	0	0	121,445	34.2	137	171	0	-74,233	47,213
10837+00.00	0	0	121,445	39.1	136	170	0	-74,403	47,043
10838+00.00	0	0	121,445	42	150	188	0	-74,590	46,855
10839+00.00	0	0	121,445	37	146	183	0	-74,773	46,673
10840+00.00	0	0	121,445	38.5	140	175	0	-74,948	46,498
10841+00.00	0	0	121,445	37.4	141	176	0	-75,124	46,321
10842+00.00	0	0	121,445	44.8	152	190	0	-75,314	46,131
10843+00.00	0	0	121,445	55.3	185	231	0	-75,545	45,900
10844+00.00	0	0	121,445	64.7	222	278	0	-75,823	45,623

This document was originally issued and sealed by Eric R. Molbert, Registration Number PE- 4222, on 03/24/16 and the original document is stored at the North Dakota Department of Transportation

Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	8

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10845+00.00	0	0	121,445	53.1	218	273	0	-76,095	45,350
10846+00.00	0	0	121,445	53.3	197	246	0	-76,341	45,104
10847+00.00	0	0	121,445	59.9	210	263	0	-76,604	44,841
10848+00.00	0	0	121,445	51.8	207	259	0	-76,863	44,583
10849+00.00	0	0	121,445	54.7	197	246	0	-77,109	44,336
10850+00.00	0	0	121,445	54.8	203	254	0	-77,363	44,083
10850+86.13	0	0	121,445	68.7	197	246	0	-77,609	43,836
10851+00.00	0	0	121,445	44.4	29	36	0	-77,645	43,800
10852+00.00	0	0	121,445	57.6	189	236	0	-77,881	43,564
10853+00.00	0	0	121,445	58.2	214	268	0	-78,149	43,296
10854+00.00	0	0	121,445	70.6	239	299	0	-78,448	42,998
10855+00.00	0	0	121,445	44.9	214	268	0	-78,715	42,730
10856+00.00	0	0	121,445	48.8	174	218	0	-78,933	42,513
10857+00.00	0	0	121,445	56.4	195	244	0	-79,176	42,269
10858+00.00	0	0	121,445	56.7	209	261	0	-79,438	42,008
10859+00.00	0	0	121,445	46.8	192	240	0	-79,678	41,768
10860+00.00	0	0	121,445	57.8	194	243	0	-79,920	41,525
10861+00.00	0	0	121,445	37.5	176	220	0	-80,140	41,305
10861+50.34	0	0	121,445	0	35	44	0	-80,184	41,261
10861+88.42	0	0	121,445	3.4	2	3	0	-80,186	41,259
10862+00.00	0	0	121,445	6.9	2	3	0	-80,189	41,256
10863+00.00	0	0	121,445	63.5	130	163	0	-80,351	41,094
10864+00.00	0	0	121,445	70.1	247	309	0	-80,660	40,785
10865+00.00	0	0	121,445	62.5	246	308	0	-80,968	40,478
10866+00.00	0	0	121,445	44.1	197	246	0	-81,214	40,231
10867+00.00	0	0	121,445	60.4	194	243	0	-81,456	39,989
10868+00.00	0	0	121,445	63.1	229	286	0	-81,743	39,703
10869+00.00	0	0	121,445	59.1	226	283	0	-82,025	39,420
10870+00.00	0	0	121,445	61.1	223	279	0	-82,304	39,141
10871+00.00	0	0	121,445	55.5	216	270	0	-82,574	38,871
10872+00.00	0	0	121,445	36.8	171	214	0	-82,788	38,658
10873+00.00	0	0	121,445	40.6	143	179	0	-82,966	38,479
10873+60.49	0	0	121,445	1.9	48	60	0	-83,026	38,419
10874+01.10	0	0	121,445	0.8	2	3	0	-83,029	38,416
10875+00.00	0	0	121,445	36.9	69	86	0	-83,115	38,330
10876+00.00	0	0	121,445	37.5	138	173	0	-83,288	38,158
10877+00.00	0	0	121,445	37.9	140	175	0	-83,463	37,983
10878+00.00	0	0	121,445	39.9	144	180	0	-83,643	37,803
10879+00.00	0	0	121,445	68.1	200	250	0	-83,893	37,553
10879+37.46	0	0	121,445	89	109	136	0	-84,029	37,416
10880+00.00	0	0	121,445	64.1	177	221	0	-84,250	37,195

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10881+00.00	0	0	121,445	44.1	200	250	0	-84,500	36,945
10882+00.00	0	0	121,445	40.4	156	195	0	-84,695	36,750
10883+00.00	0	0	121,445	37.9	145	181	0	-84,876	36,569
10884+00.00	0	0	121,445	34.4	134	168	0	-85,044	36,401
10885+00.00	0	0	121,445	29.8	119	149	0	-85,193	36,253
10886+00.00	0	0	121,445	30.5	112	140	0	-85,333	36,113
10887+00.00	0	0	121,445	37.1	125	156	0	-85,489	35,956
10888+00.00	0	0	121,445	32.6	129	161	0	-85,650	35,795
10888+96.04	0	0	121,445	3.9	65	81	0	-85,731	35,714
10889+54.23	0	0	121,445	1.2	5	6	0	-85,738	35,708
10890+00.00	0	0	121,445	45.7	40	50	0	-85,788	35,658
10891+00.00	0	0	121,445	45.5	169	211	0	-85,999	35,446
10892+00.00	0	0	121,445	63.2	201	251	0	-86,250	35,195
10893+00.00	0	0	121,445	51.9	213	266	0	-86,516	34,929
10894+00.00	0	0	121,445	46.1	181	226	0	-86,743	34,703
10895+00.00	0	0	121,445	50.6	179	224	0	-86,966	34,479
10896+00.00	0	0	121,445	57.9	201	251	0	-87,218	34,228
10897+00.00	0	0	121,445	67.7	233	291	0	-87,509	33,936
10898+00.00	0	0	121,445	71	257	321	0	-87,830	33,615
10899+00.00	0	0	121,445	78.9	278	348	0	-88,178	33,268
10900+00.00	0	0	121,445	81.5	297	371	0	-88,549	32,896
10901+00.00	0	0	121,445	68.1	277	346	0	-88,895	32,550
10902+00.00	0	0	121,445	62.3	241	301	0	-89,196	32,249
10903+00.00	0	0	121,445	60	226	283	0	-89,479	31,966
10904+00.00	0	0	121,445	48.2	200	250	0	-89,729	31,716
10905+00.00	0	0	121,445	52.9	187	234	0	-89,963	31,483
10906+00.00	0	0	121,445	49.8	190	238	0	-90,200	31,245
10907+00.00	0	0	121,445	36.7	160	200	0	-90,400	31,045
10907+40.97	0	0	121,445	49.2	65	81	0	-90,481	30,964
10908+00.00	0	0	121,445	33	90	113	0	-90,594	30,851
10909+00.00	0	0	121,445	43	141	176	0	-90,770	30,675
10910+00.00	0	0	121,445	45.1	163	204	0	-90,974	30,471
10911+00.00	0	0	121,445	59.2	193	241	0	-91,215	30,230
10912+00.00	0	0	121,445	59.3	219	274	0	-91,489	29,956
10913+00.00	0	0	121,445	67.1	234	293	0	-91,781	29,664
10914+00.00	0	0	121,445	42.5	203	254	0	-92,035	29,410
10914+35.53	0	0	121,445	0	28	35	0	-92,070	29,375
10914+74.14	0	0	121,445	0.4	0	0	0	-92,070	29,375
10915+00.00	0	0	121,445	33.5	16	20	0	-92,090	29,355
10916+00.00	0	0	121,445	71.1	194	243	0	-92,333	29,113
10917+00.00	0	0	121,445	71	263	329	0	-92,661	28,784

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	9

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10918+00.00	0	0	121,445	63.1	248	310	0	-92,971	28,474
10919+00.00	0	0	121,445	48.8	207	259	0	-93,230	28,215
10920+07.61	0	0	121,445	2	101	126	0	-93,356	28,089
10920+49.42	0	0	121,445	3.3	4	5	0	-93,361	28,084
10921+00.00	0	0	121,445	52.1	52	65	0	-93,426	28,019
10922+00.00	0	0	121,445	47.3	184	230	0	-93,656	27,789
10923+00.00	0	0	121,445	43.6	168	210	0	-93,866	27,579
10924+00.00	0	0	121,445	50.8	175	219	0	-94,085	27,360
10925+00.00	0	0	121,445	44.7	177	221	0	-94,306	27,139
10926+00.00	0	0	121,445	44.5	165	206	0	-94,513	26,933
10927+00.00	0	0	121,445	49.4	174	218	0	-94,730	26,715
10928+00.00	0	0	121,445	46.8	178	223	0	-94,953	26,493
10929+00.00	0	0	121,445	32.8	147	184	0	-95,136	26,309
10929+16.79	0	0	121,445	51.4	26	33	0	-95,169	26,276
10930+00.00	0	0	121,445	43.5	146	183	0	-95,351	26,094
10931+00.00	0	0	121,445	50.2	174	218	0	-95,569	25,876
10932+00.00	0	0	121,445	48.8	183	229	0	-95,798	25,648
10933+00.00	0	0	121,445	49	181	226	0	-96,024	25,421
10934+00.00	0	0	121,445	54.6	192	240	0	-96,264	25,181
10935+00.00	0	0	121,445	3.5	108	135	0	-96,399	25,046
10935+07.60	0	0	121,445	0.8	1	1	0	-96,400	25,045
10935+48.52	0	0	121,445	0.5	1	1	-128	-96,529	24,916
10936+00.00	0	0	121,445	56.2	54	68	0	-96,597	24,848
10937+00.00	0	0	121,445	52.6	201	251	0	-96,848	24,597
10938+00.00	0	0	121,445	51.2	192	240	0	-97,088	24,357
10939+00.00	0	0	121,445	52	191	239	0	-97,327	24,118
10940+00.00	0	0	121,445	51.9	192	240	0	-97,567	23,878
10940+75.97	0	0	121,445	0.5	74	93	0	-97,659	23,786
10941+21.56	0	0	121,445	3.2	3	4	0	-97,663	23,782
10942+00.00	0	0	121,445	68.5	104	130	0	-97,793	23,652
10943+00.00	0	0	121,445	58.8	236	295	0	-98,088	23,357
10944+00.00	0	0	121,445	63.6	227	284	0	-98,372	23,073
10945+00.00	0	0	121,445	38.3	189	236	0	-98,608	22,837
10946+00.00	0	0	121,445	58.9	180	225	0	-98,833	22,612
10947+00.00	0	0	121,445	61.4	223	279	0	-99,112	22,333
10948+00.00	0	0	121,445	51.8	210	263	0	-99,374	22,071
10949+00.00	0	0	121,445	63.7	214	268	0	-99,642	21,803
10950+00.00	0	0	121,445	53.5	217	271	0	-99,913	21,532
10951+00.00	0	0	121,445	67.4	224	280	0	-100,193	21,252
10952+00.00	0	0	121,445	61.1	238	298	0	-100,491	20,955
10953+00.00	0	0	121,445	56.9	219	274	0	-100,764	20,681

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10954+00.00	0	0	121,445	54.6	206	258	0	-101,022	20,423
10955+00.00	0	0	121,445	48.4	191	239	0	-101,261	20,185
10956+00.00	0	0	121,445	44.2	171	214	0	-101,474	19,971
10957+00.00	0	0	121,445	50.9	176	220	0	-101,694	19,751
10957+80.39	0	0	121,445	0.6	77	96	0	-101,791	19,655
10958+20.96	0	0	121,445	0.7	1	1	0	-101,792	19,653
10959+00.00	0	0	121,445	68.4	101	126	0	-101,918	19,527
10960+00.00	0	0	121,445	55.4	229	286	0	-102,204	19,241
10961+00.00	0	0	121,445	52.7	200	250	0	-102,454	18,991
10962+00.00	0	0	121,445	44.8	181	226	0	-102,681	18,765
10963+00.00	0	0	121,445	64.8	203	254	0	-102,934	18,511
10964+00.00	0	0	121,445	41.7	197	246	0	-103,181	18,265
10965+00.00	0	0	121,445	53.8	177	221	0	-103,402	18,043
10965+01.41	0	0	121,445	54.6	3	4	0	-103,406	18,040
10966+00.00	0	0	121,445	55.4	201	251	0	-103,657	17,788
10967+00.00	0	0	121,445	67.2	227	284	0	-103,941	17,505
10967+48.77	0	0	121,445	0	61	76	0	-104,017	17,428
10969+00.00	0	0	121,445	54.2	100	125	0	-104,142	17,303
10970+00.00	0	0	121,445	58.3	208	260	0	-104,402	17,043
10971+00.00	0	0	121,445	61.3	221	276	0	-104,678	16,767
10972+00.00	0	0	121,445	54.2	214	268	0	-104,946	16,500
10973+00.00	0	0	121,445	48.9	191	239	0	-105,184	16,261
10974+00.00	0	0	121,445	55.9	194	243	0	-105,427	16,018
10975+00.00	0	0	121,445	64.3	223	279	0	-105,706	15,740
10976+00.00	0	0	121,445	70.8	250	313	0	-106,018	15,427
10977+00.00	0	0	121,445	61.9	246	308	0	-106,326	15,120
10978+00.00	0	0	121,445	55.3	217	271	0	-106,597	14,848
10979+00.00	0	0	121,445	62.3	218	273	0	-106,869	14,576
10980+00.00	0	0	121,445	61.3	229	286	0	-107,156	14,290
10981+00.00	0	0	121,445	53.7	213	266	0	-107,422	14,023
10982+00.00	0	0	121,445	92.9	271	339	0	-107,761	13,685
10983+00.00	0	0	121,445	53.3	271	339	0	-108,099	13,346
10983+17.55	0	0	121,445	36.4	29	36	0	-108,136	13,310
10983+55.31	0	0	121,445	32.4	48	60	0	-108,196	13,250
10984+00.00	0	0	121,445	85.5	98	123	0	-108,318	13,127
10985+00.00	0	0	121,445	107.2	357	446	0	-108,764	12,681
10986+00.00	0	0	121,445	136.7	452	565	0	-109,329	12,116
10987+00.00	0	0	121,445	62	368	460	0	-109,789	11,656
10988+00.00	0	0	121,445	41	191	239	0	-110,028	11,417
10988+98.59	0	0	121,445	19.8	111	139	0	-110,167	11,278
10989+00.00	0	0	121,445	20	1	1	0	-110,168	11,277

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	10

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10990+00.00	0	0	121,445	53.6	136	170	0	-110,338	11,107
10991+00.00	0	0	121,445	48.6	189	236	0	-110,574	10,871
10992+00.00	0	0	121,445	62.4	206	258	0	-110,832	10,613
10993+00.00	0	0	121,445	64.7	235	294	0	-111,126	10,320
10994+00.00	0	0	121,445	85.4	278	348	0	-111,473	9,972
10995+00.00	0	0	121,445	79.9	306	383	0	-111,856	9,590
10995+54.78	0	0	121,445	60.8	143	179	0	-112,034	9,411
10995+92.53	0	0	121,445	52.9	79	99	0	-112,133	9,312
10996+00.00	0	0	121,445	61.7	16	20	0	-112,153	9,292
10997+00.00	0	0	121,445	78.6	260	325	0	-112,478	8,967
10998+00.00	0	0	121,445	104.6	339	424	0	-112,902	8,543
10999+00.00	0	0	121,445	99.3	378	473	0	-113,374	8,071
11000+00.00	0	0	121,445	85.6	342	428	0	-113,802	7,643
11001+00.00	0	0	121,445	75.8	299	374	0	-114,176	7,270
11002+00.00	0	0	121,445	60.5	252	315	0	-114,491	6,955
11003+00.00	0	0	121,445	63	229	286	0	-114,777	6,668
11004+00.00	0	0	121,445	65.1	237	296	0	-115,073	6,372
11005+00.00	0	0	121,445	58.9	230	288	0	-115,361	6,085
11006+00.00	0	0	121,445	44.4	191	239	0	-115,599	5,846
11007+00.00	0	0	121,445	79.2	229	286	0	-115,886	5,560
11007+96.54	0	0	121,445	183.5	470	588	0	-116,473	4,972
11008+00.00	0	0	121,445	156.6	22	28	0	-116,501	4,945
11009+00.00	0	0	121,445	89.8	456	570	0	-117,071	4,375
11010+00.00	0	0	121,445	65.3	287	359	0	-117,429	4,016
11010+07.73	0	0	121,445	55.8	17	21	0	-117,451	3,995
11010+45.49	0	0	121,445	49.4	74	93	0	-117,543	3,902
11011+00.00	0	0	121,445	86.1	137	171	0	-117,714	3,731
11012+00.00	0	0	121,445	84.8	316	395	0	-118,109	3,336
11013+00.00	0	0	121,445	73.3	293	366	0	-118,476	2,970
11014+00.00	0	0	121,445	70.9	267	334	0	-118,809	2,636
11015+00.00	0	0	121,445	87.7	294	368	0	-119,177	2,268
11016+00.00	0	0	121,445	88.5	326	408	0	-119,584	1,861
11017+00.00	0	0	121,445	78.2	309	386	0	-119,971	1,475
11018+00.00	0	0	121,445	74.2	282	353	0	-120,323	1,122
11019+00.00	0	0	121,445	100.5	324	405	0	-120,728	717
11020+00.50	0	0	121,445	22.7	229	286	0	-121,014	431
11020+41.60	0	0	121,445	0	17	21	0	-121,036	410
11020+93.01	0	0	121,445	55.2	53	66	0	-121,102	343
11021+21.70	0	0	121,445	98.8	82	103	0	-121,204	241
11022+00.00	0	0	121,445	116	306	383	0	-121,587	-142
11023+00.00	0	0	121,445	102.3	404	505	0	-122,092	-647

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11024+00.00	0	0	121,445	98.8	372	465	0	-122,557	-1,112
11025+00.00	0	0	121,445	122	409	511	0	-123,068	-1,623
11025+50.06	0	0	121,445	44.1	159	199	0	-123,267	-1,822
11026+00.00	0	0	121,445	44.1	87	109	0	-123,376	-1,931
11026+72.97	0	0	121,445	98.1	184	230	0	-123,606	-2,161
11027+00.00	0	0	121,445	95.1	91	114	0	-123,719	-2,274
11027+92.71	0	0	121,445	68.8	286	358	0	-124,077	-2,632
11028+10.13	0	0	121,445	75.5	47	59	0	-124,136	-2,691
11029+00.00	0	0	121,445	81.8	257	321	0	-124,457	-3,012
11030+00.00	0	0	121,445	62	266	333	0	-124,789	-3,344
11031+00.00	0	0	121,445	73.2	250	313	0	-125,102	-3,657
11032+00.00	0	0	121,445	70.3	266	333	0	-125,434	-3,989
11033+00.00	0	0	121,445	74.3	268	335	0	-125,769	-4,324
11033+51.83	0	0	121,445	35	108	135	0	-125,904	-4,459
11033+90.02	0	0	121,445	38.3	52	65	0	-125,969	-4,524
11034+00.00	0	0	121,445	38.6	12	15	0	-125,984	-4,539
11035+00.00	0	0	121,445	72	205	256	0	-126,241	-4,796
11036+00.00	0	0	121,445	72.2	267	334	0	-126,574	-5,129
11037+00.00	0	0	121,445	66.3	256	320	0	-126,894	-5,449
11038+00.00	0	0	121,445	68.7	250	313	0	-127,207	-5,762
11039+00.00	0	0	121,445	65.1	248	310	0	-127,517	-6,072
11040+00.00	0	0	121,445	57.3	227	284	0	-127,801	-6,356
11041+00.00	0	0	121,445	69	234	293	0	-128,093	-6,648
11042+00.00	0	0	121,445	62	243	304	0	-128,397	-6,952
11043+00.00	0	0	121,445	56.7	220	275	0	-128,672	-7,227
11044+00.00	0	0	121,445	54.5	206	258	0	-128,929	-7,484
11045+00.00	0	0	121,445	68.5	228	285	0	-129,214	-7,769
11046+00.00	0	0	121,445	64.6	246	308	0	-129,522	-8,077
11047+00.00	0	0	121,445	79	266	333	0	-129,854	-8,409
11048+00.00	0	0	121,445	83.5	301	376	0	-130,231	-8,786
11048+83.41	0	0	121,445	39.1	193	241	0	-130,472	-9,027
11049+21.16	0	0	121,445	39.7	55	69	-39	-130,580	-9,135
11050+00.00	0	0	121,445	93.8	191	239	0	-130,818	-9,373
11050+59.71	0	0	121,445	39	151	189	0	-131,007	-9,562
11051+18.90	0	0	121,445	45.8	93	116	0	-131,123	-9,678
11052+00.00	0	0	121,445	85	193	241	0	-131,365	-9,920
11053+00.00	0	0	121,445	60.8	270	338	0	-131,702	-10,257
11053+16.90	0	0	121,445	98.8	54	68	0	-131,770	-10,325
11053+35.24	0	0	121,445	78.9	60	75	0	-131,845	-10,400
11054+00.00	0	0	121,445	90.6	199	249	0	-132,093	-10,648
11055+00.00	0	0	121,445	118.5	387	484	0	-132,577	-11,132

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	11

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11055+06.72	0	0	121,445	118.8	36	45	0	-132,622	-11,177
11055+54.67	0	0	121,445	85.7	182	228	0	-132,850	-11,405
11056+34.74	0	0	121,445	53	206	258	0	-133,107	-11,662
11057+00.00	0	0	121,445	130.1	216	270	0	-133,377	-11,932
11057+08.20	0	0	121,445	133	47	59	0	-133,436	-11,991
11058+00.00	0	0	121,445	127.7	436	545	0	-133,981	-12,536
11059+00.00	0	0	121,445	115	449	561	0	-134,542	-13,097
11060+00.00	0	0	121,445	113.1	422	528	0	-135,070	-13,625
11061+00.00	0	0	121,445	114.9	422	528	0	-135,597	-14,152
11062+00.00	0	0	121,445	107.9	413	516	0	-136,113	-14,668
11062+26.62	0	0	121,445	110.7	114	143	0	-136,256	-14,811
11063+00.00	0	0	121,445	92.2	270	338	0	-136,593	-15,148
11063+45.58	0	0	121,445	81.6	151	189	0	-136,782	-15,337
11064+00.00	0	0	121,445	87	165	206	0	-136,988	-15,543
11065+00.00	0	0	121,445	111.8	368	460	0	-137,448	-16,003
11066+00.00	0	0	121,445	107.4	406	508	0	-137,956	-16,511
11067+00.00	0	0	121,445	68	325	406	0	-138,362	-16,917
11068+00.00	0	0	121,445	77.5	269	336	0	-138,698	-17,253
11068+81.23	0	0	121,445	59.1	209	261	0	-138,960	-17,515
11069+19.06	0	0	121,445	54.4	80	100	0	-139,060	-17,615
11070+00.00	0	0	121,445	66.8	178	223	0	-139,282	-17,837
11071+00.00	0	0	121,445	77.4	267	334	0	-139,616	-18,171
11072+00.00	0	0	121,445	97.7	324	405	0	-140,021	-18,576
11072+61.51	0	0	121,445	68.9	194	243	0	-140,263	-18,818
11072+93.70	0	0	121,445	3.2	43	54	0	-140,317	-18,872
11073+57.25	0	0	121,445	2.1	6	8	0	-140,325	-18,880
11073+88.84	0	0	121,445	76.2	46	58	0	-140,382	-18,937
11075+00.00	0	0	121,445	84.9	327	409	0	-140,791	-19,346
11075+58.41	0	0	121,445	95.1	200	250	0	-141,041	-19,596
11076+00.00	0	0	121,445	80.2	130	163	0	-141,203	-19,758
11076+69.50	0	0	121,445	28.3	143	179	0	-141,382	-19,937
11077+07.25	0	0	121,445	23.3	36	45	0	-141,427	-19,982
11078+00.00	0	0	121,445	43.6	113	141	0	-141,568	-20,123
11079+00.00	0	0	121,445	41.7	158	198	0	-141,766	-20,321
11080+00.00	0	0	121,445	35.1	142	178	0	-141,943	-20,498
11081+00.00	0	0	121,445	29.2	119	149	0	-142,092	-20,647
11081+12.61	0	0	121,445	33.4	16	20	0	-142,112	-20,667
11082+00.00	0	0	121,445	46.1	126	158	0	-142,270	-20,825
11083+00.00	0	0	121,445	46.2	171	214	0	-142,483	-21,038
11084+00.00	0	0	121,445	31.7	144	180	0	-142,663	-21,218
11085+00.00	0	0	121,445	48.3	148	185	0	-142,848	-21,403

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11085+72.17	0	0	121,445	19.1	92	115	0	-142,963	-21,518
11086+09.92	0	0	121,445	17	25	31	0	-142,995	-21,550
11087+00.00	0	0	121,445	43.7	100	125	0	-143,120	-21,675
11088+00.00	0	0	121,445	45.1	164	205	0	-143,325	-21,880
11089+00.00	0	0	121,445	53.5	183	229	0	-143,553	-22,108
11090+00.00	0	0	121,445	49.6	191	239	0	-143,792	-22,347
11091+00.00	0	0	121,445	61.6	206	258	0	-144,050	-22,605
11092+00.00	0	0	121,445	66.9	238	298	0	-144,347	-22,902
11093+00.00	0	0	121,445	58.9	233	291	0	-144,638	-23,193
11094+00.00	0	0	121,445	63.5	227	284	0	-144,922	-23,477
11095+00.00	0	0	121,445	54.7	219	274	0	-145,196	-23,751
11096+00.00	0	0	121,445	57	207	259	0	-145,455	-24,010
11097+00.00	0	0	121,445	52	202	253	0	-145,707	-24,262
11098+00.00	0	0	121,445	22.9	139	174	0	-145,881	-24,436
11098+12.77	0	0	121,445	2.3	7	9	0	-145,890	-24,445
11098+57.85	0	0	121,445	3.2	5	6	0	-145,896	-24,451
11099+00.00	0	0	121,445	45.3	37	46	0	-145,942	-24,497
11100+00.00	0	0	121,445	47.1	171	214	0	-146,156	-24,711
11101+00.00	0	0	121,445	46.7	174	218	0	-146,373	-24,928
11102+00.00	0	0	121,445	51.2	181	226	0	-146,600	-25,155
11103+00.00	0	0	121,445	56.9	200	250	0	-146,850	-25,405
11104+00.00	0	0	121,445	50.6	199	249	0	-147,098	-25,653
11105+00.00	0	0	121,445	46.9	181	226	0	-147,325	-25,880
11106+00.00	0	0	121,445	50.8	181	226	0	-147,551	-26,106
11107+00.00	0	0	121,445	40.3	169	211	0	-147,762	-26,317
11108+00.00	0	0	121,445	49.3	166	208	0	-147,970	-26,525
11108+26.16	0	0	121,445	58.2	55	69	0	-148,038	-26,593
11109+00.00	0	0	121,445	48.9	143	179	0	-148,217	-26,772
11110+00.00	0	0	121,445	64.1	209	261	0	-148,478	-27,033
11111+00.00	0	0	121,445	59	228	285	0	-148,763	-27,318
11112+00.00	0	0	121,445	12.3	132	165	0	-148,928	-27,483
11113+00.00	0	0	121,445	63.8	141	176	0	-149,105	-27,660
11114+00.00	0	0	121,445	52.9	216	270	0	-149,375	-27,930
11115+00.00	0	0	121,445	50.6	192	240	0	-149,615	-28,170
11116+00.00	0	0	121,445	43.5	174	218	0	-149,832	-28,387
11117+00.00	0	0	121,445	41.7	158	198	0	-150,030	-28,585
11118+00.00	0	0	121,445	40	151	189	0	-150,218	-28,773
11119+00.00	0	0	121,445	43.7	155	194	0	-150,412	-28,967
11120+00.00	0	0	121,445	49.5	173	216	0	-150,628	-29,183
11120+65.34	0	0	121,445	44.6	116	145	0	-150,773	-29,328
11121+00.00	0	0	121,445	37.1	50	63	0	-150,836	-29,391

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	12

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11122+00.00	0	0	121,445	50.3	162	203	0	-151,038	-29,593
11123+00.00	0	0	121,445	57.6	200	250	0	-151,288	-29,843
11124+00.00	0	0	121,445	78.8	253	316	0	-151,605	-30,160
11124+51.89	0	0	121,445	0	78	98	0	-151,702	-30,257
11125+03.62	0	0	121,445	0.4	0	0	0	-151,702	-30,257
11126+00.00	0	0	121,445	43.6	77	96	0	-151,798	-30,353
11127+00.00	0	0	121,445	45.9	166	208	0	-152,006	-30,561
11128+00.00	0	0	121,445	52.3	182	228	0	-152,233	-30,788
11129+00.00	0	0	121,445	50.3	190	238	0	-152,471	-31,026
11130+00.00	0	0	121,445	34.6	157	196	0	-152,667	-31,222
11131+00.00	0	0	121,445	49.7	156	195	0	-152,862	-31,417
11132+00.00	0	0	121,445	37.5	161	201	0	-153,063	-31,618
11132+16.51	0	0	121,445	56.7	31	39	0	-153,102	-31,657
11133+00.00	0	0	121,445	35.9	141	176	0	-153,278	-31,833
11134+00.00	0	0	121,445	61	179	224	0	-153,502	-32,057
11135+00.00	0	0	121,445	46.3	199	249	0	-153,751	-32,306
11136+00.00	0	0	121,445	38.8	158	198	0	-153,948	-32,503
11137+00.00	0	0	121,445	33	133	166	0	-154,115	-32,670
11138+00.00	0	0	121,445	50.2	154	193	0	-154,307	-32,862
11139+00.00	0	0	121,445	38.9	165	206	0	-154,513	-33,068
11140+00.00	0	0	121,445	41.3	149	186	0	-154,700	-33,255
11141+00.00	0	0	121,445	46.5	163	204	0	-154,903	-33,458
11142+00.00	0	0	121,445	46.8	173	216	0	-155,120	-33,675
11143+00.00	0	0	121,445	52	183	229	0	-155,348	-33,903
11144+00.00	0	0	121,445	62.9	213	266	0	-155,615	-34,170
11145+00.00	0	0	121,445	57.9	224	280	0	-155,895	-34,450
11146+00.00	0	0	121,445	62	222	278	0	-156,172	-34,727
11147+00.00	0	0	121,445	61.7	229	286	0	-156,458	-35,013
11148+00.00	0	0	121,445	53.1	213	266	0	-156,725	-35,280
11149+00.00	0	0	121,445	63.1	215	269	0	-156,993	-35,548
11150+00.00	0	0	121,445	61.2	230	288	0	-157,281	-35,836
11150+68.19	0	0	121,445	2.4	82	103	0	-157,383	-35,938
11151+06.14	0	0	121,445	0.6	2	3	0	-157,386	-35,941
11152+00.00	0	0	121,445	73.7	127	159	0	-157,545	-36,100
11153+00.00	0	0	121,445	49.3	228	285	0	-157,830	-36,385
11154+00.00	0	0	121,445	58.3	199	249	0	-158,078	-36,633
11155+00.00	0	0	121,445	58.1	216	270	0	-158,348	-36,903
11156+00.00	0	0	121,445	54.6	209	261	0	-158,610	-37,165
11157+00.00	0	0	121,445	43.5	182	228	0	-158,837	-37,392
11158+00.00	0	0	121,445	43	160	200	0	-159,037	-37,592
11159+00.00	0	0	121,445	44	161	201	0	-159,238	-37,793

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11159+65.50	0	0	121,445	28	89	111	0	-159,350	-37,905
11160+04.25	0	0	121,445	26.4	39	49	0	-159,398	-37,953
11161+00.00	0	0	121,445	53.3	139	174	0	-159,572	-38,127
11162+00.00	0	0	121,445	33.1	160	200	0	-159,772	-38,327
11163+00.00	0	0	121,445	36	128	160	0	-159,932	-38,487
11164+00.00	0	0	121,445	34.4	130	163	0	-160,095	-38,650
11165+00.00	0	0	121,445	30.9	121	151	0	-160,246	-38,801
11166+00.00	0	0	121,445	28.9	111	139	0	-160,385	-38,940
11167+00.00	0	0	121,445	20.7	92	115	0	-160,500	-39,055
11167+77.03	0	0	121,445	36.7	83	104	0	-160,603	-39,158
11168+00.00	0	0	121,445	24.6	24	30	0	-160,633	-39,188
11169+00.00	0	0	121,445	13.1	70	88	0	-160,721	-39,276
11170+00.00	0	0	121,445	15.1	52	65	0	-160,786	-39,341
11171+00.00	0	0	121,445	10.2	47	59	0	-160,845	-39,400
11172+00.00	0	0	121,445	6.3	31	39	0	-160,883	-39,438
11173+00.00	0	0	121,445	19.2	47	59	0	-160,942	-39,497
11174+00.00	0	0	121,445	25.8	83	104	0	-161,046	-39,601
11175+00.00	0	0	121,445	31	105	131	0	-161,177	-39,732
11176+00.00	0	0	121,445	41	133	166	0	-161,343	-39,898
11177+00.00	0	0	121,445	56.2	180	225	0	-161,568	-40,123
11177+46.85	0	0	121,445	0	50	63	0	-161,631	-40,186
11177+96.07	0	0	121,445	2.2	2	3	-186	-161,819	-40,374
11179+00.00	0	0	121,445	44.3	88	110	0	-161,929	-40,484
11180+00.00	0	0	121,445	52	178	223	0	-162,152	-40,707
11181+00.00	0	0	121,445	46.8	183	229	0	-162,381	-40,936
11182+00.00	0	0	121,445	35.8	153	191	0	-162,572	-41,127
11183+00.00	0	0	121,445	47.1	154	193	0	-162,764	-41,319
11184+00.00	0	0	121,445	41.6	164	205	0	-162,969	-41,524
11185+00.00	0	0	121,445	52.7	175	219	0	-163,188	-41,743
11186+00.00	0	0	121,445	40.4	172	215	0	-163,403	-41,958
11187+00.00	0	0	121,445	34.4	139	174	0	-163,577	-42,132
11188+00.00	0	0	121,445	33.7	126	158	0	-163,734	-42,289
11189+00.00	0	0	121,445	49.7	154	193	0	-163,927	-42,482
11190+00.00	0	0	121,445	54.2	192	240	0	-164,167	-42,722
11191+00.00	0	0	121,445	47.7	189	236	0	-164,403	-42,958
11192+00.00	0	0	121,445	43.8	169	211	0	-164,614	-43,169
11193+00.00	0	0	121,445	47.3	169	211	0	-164,826	-43,381
11194+00.00	0	0	121,445	50.9	182	228	0	-165,053	-43,608
11195+00.00	0	0	121,445	54.8	196	245	0	-165,298	-43,853
11196+00.00	0	0	121,445	55.6	204	255	0	-165,553	-44,108
11197+00.00	0	0	121,445	53.1	201	251	0	-165,804	-44,359

This document was originally issued and sealed by Eric R. Molbert, Registration Number PE- 4222, on 03/24/16 and the original document is stored at the North Dakota Department of Transportation

Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	13

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11198+00.00	0	0	121,445	53.4	197	246	0	-166,051	-44,606
11199+00.00	0	0	121,445	52.3	196	245	0	-166,296	-44,851
11200+00.00	0	0	121,445	47.8	185	231	0	-166,527	-45,082
11201+00.00	0	0	121,445	49.5	180	225	0	-166,752	-45,307
11201+18.20	0	0	121,445	67.6	43	54	0	-166,806	-45,361
11202+00.00	0	0	121,445	45.2	168	210	0	-167,016	-45,571
11203+00.00	0	0	121,445	59	193	241	0	-167,257	-45,812
11203+85.97	0	0	121,445	1.8	98	123	0	-167,379	-45,934
11204+24.60	0	0	121,445	1.1	2	3	0	-167,382	-45,937
11205+00.00	0	0	121,445	46.4	65	81	0	-167,463	-46,018
11206+00.00	0	0	121,445	41.3	162	203	0	-167,666	-46,221
11207+00.00	0	0	121,445	41.5	153	191	0	-167,857	-46,412
11207+18.41	0	0	121,445	55.9	36	45	0	-167,902	-46,457
11208+00.00	0	0	121,445	54.9	164	205	0	-168,107	-46,662
11209+00.00	0	0	121,445	55.9	205	256	0	-168,363	-46,918
11210+00.00	0	0	121,445	73.4	239	299	0	-168,662	-47,217
11211+00.00	0	0	121,445	59.6	246	308	0	-168,969	-47,524
11212+00.00	0	0	121,445	51	205	256	0	-169,226	-47,781
11213+00.00	0	0	121,445	51.6	190	238	0	-169,463	-48,018
11214+00.00	0	0	121,445	41	171	214	0	-169,677	-48,232
11215+00.00	0	0	121,445	68.5	203	254	0	-169,931	-48,486
11216+00.00	0	0	121,445	53.3	226	283	0	-170,213	-48,768
11217+00.00	0	0	121,445	68.6	226	283	0	-170,496	-49,051
11218+00.00	0	0	121,445	76.2	268	335	0	-170,831	-49,386
11219+00.00	0	0	121,445	76.4	283	354	0	-171,184	-49,739
11220+00.00	0	0	121,445	72.6	276	345	0	-171,529	-50,084
11221+00.00	0	0	121,445	75.2	274	343	0	-171,872	-50,427
11222+00.00	0	0	121,445	61.7	254	318	0	-172,189	-50,744
11223+00.00	0	0	121,445	61.9	229	286	0	-172,476	-51,031
11224+00.00	0	0	121,445	66.3	237	296	0	-172,772	-51,327
11225+00.00	0	0	121,445	63.4	240	300	0	-173,072	-51,627
11226+00.00	0	0	121,445	73.4	253	316	0	-173,388	-51,943
11227+00.00	0	0	121,445	70.6	267	334	0	-173,722	-52,277
11228+00.00	0	0	121,445	73.1	266	333	0	-174,054	-52,609
11228+18.28	0	0	121,445	93.5	61	76	0	-174,131	-52,686
11229+00.00	0	0	121,445	58.6	226	283	0	-174,413	-52,968
11230+00.00	0	0	121,445	58.1	216	270	0	-174,683	-53,238
11230+76.76	0	0	121,445	1.8	2	3	0	-174,686	-53,241
11231+00.00	0	0	121,445	45.1	19	24	0	-174,709	-53,264
11232+00.00	0	0	121,445	56.6	188	235	0	-174,944	-53,499
11233+00.00	0	0	121,445	63.5	222	278	0	-175,222	-53,777

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11234+00.00	0	0	121,445	65.2	238	298	0	-175,519	-54,074
11235+00.00	0	0	121,445	95.2	297	371	0	-175,891	-54,446
11236+00.00	0	0	121,445	110.8	381	476	0	-176,367	-54,922
11237+00.00	0	0	121,445	102.4	395	494	0	-176,861	-55,416
11238+00.00	0	0	121,445	79.6	337	421	0	-177,282	-55,837
11239+00.00	0	0	121,445	62.1	262	328	0	-177,609	-56,164
11239+16.93	0	0	121,445	65.4	43	54	0	-177,663	-56,218
11239+54.76	0	0	121,445	61.2	89	111	0	-177,774	-56,329
11240+00.00	0	0	121,445	72.6	108	135	0	-177,909	-56,464
11241+00.00	0	0	121,445	68.1	261	326	0	-178,236	-56,791
11242+00.00	0	0	121,445	65.3	247	309	0	-178,544	-57,099
11243+00.00	0	0	121,445	49.6	213	266	0	-178,811	-57,366
11244+00.00	0	0	121,445	30	147	184	0	-178,994	-57,549
11245+00.00	0	0	121,445	64.1	174	218	0	-179,212	-57,767
11246+00.00	0	0	121,445	58.3	227	284	0	-179,496	-58,051
11246+20.27	0	0	121,445	30.4	36	45	0	-179,541	-58,096
11246+58.00	0	0	121,445	28.3	41	51	0	-179,592	-58,147
11247+00.00	0	0	121,445	79.2	81	101	0	-179,693	-58,248
11248+00.00	0	0	121,445	72.7	281	351	0	-180,044	-58,599
11249+00.00	0	0	121,445	58.9	244	305	0	-180,349	-58,904
11250+00.00	0	0	121,445	46	194	243	0	-180,592	-59,147
11251+00.00	0	0	121,445	56.5	190	238	0	-180,829	-59,384
11252+00.00	0	0	121,445	51.2	199	249	0	-181,078	-59,633
11253+00.00	0	0	121,445	45.7	179	224	0	-181,302	-59,857
11254+00.00	0	0	121,445	46.3	170	213	0	-181,514	-60,069
11255+00.00	0	0	121,445	51.4	181	226	0	-181,741	-60,296
11256+00.00	0	0	121,445	46.9	182	228	0	-181,968	-60,523
11256+18.55	0	0	121,445	55.9	38	48	0	-182,016	-60,571
11256+77.17	0	0	121,445	22.2	85	106	0	-182,122	-60,677
11257+14.92	0	0	121,445	23.7	32	40	0	-182,162	-60,717
11258+00.00	0	0	121,445	62.7	134	168	0	-182,329	-60,884
11259+00.00	0	0	121,445	57.7	223	279	0	-182,608	-61,163
11260+00.00	0	0	121,445	70.1	237	296	0	-182,904	-61,459
11261+00.00	0	0	121,445	68.9	257	321	0	-183,226	-61,781
11262+00.00	0	0	121,445	77.7	271	339	0	-183,564	-62,119
11262+99.25	0	0	121,445	11.9	167	209	0	-183,773	-62,328
11263+56.68	0	0	121,445	14.7	28	35	0	-183,808	-62,363
11264+00.00	0	0	121,445	74.6	69	86	0	-183,894	-62,449
11265+00.00	0	0	121,445	83.2	292	365	0	-184,259	-62,814
11266+00.00	0	0	121,445	92.4	325	406	0	-184,666	-63,221
11267+00.00	0	0	121,445	71.1	303	379	0	-185,044	-63,599

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	14

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11268+00.00	0	0	121,445	77	274	343	0	-185,387	-63,942
11269+00.00	0	0	121,445	40	217	271	0	-185,658	-64,213
11269+08.33	0	0	121,445	38.3	14	18	0	-185,676	-64,231
11269+46.08	0	0	121,445	35.1	51	64	0	-185,739	-64,294
11270+00.00	0	0	121,445	80.9	113	141	0	-185,881	-64,436
11271+00.00	0	0	121,445	69.4	278	348	0	-186,228	-64,783
11271+46.41	0	0	121,445	31.7	90	113	0	-186,341	-64,896
11271+84.16	0	0	121,445	31.8	44	55	0	-186,396	-64,951
11272+00.00	0	0	121,445	34	17	21	0	-186,417	-64,972
11273+00.00	0	0	121,445	70.4	193	241	0	-186,658	-65,213
11274+00.00	0	0	121,445	73.4	266	333	0	-186,991	-65,546
11275+00.00	0	0	121,445	64.5	255	319	0	-187,309	-65,864
11276+00.00	0	0	121,445	58.9	229	286	0	-187,596	-66,151
11277+00.00	0	0	121,445	72.3	243	304	0	-187,899	-66,454
11278+00.00	0	0	121,445	58.1	241	301	0	-188,201	-66,756
11279+00.00	0	0	121,445	58.6	216	270	0	-188,471	-67,026
11280+00.00	0	0	121,445	88.3	272	340	0	-188,811	-67,366
11281+00.00	0	0	121,445	58.6	272	340	0	-189,151	-67,706
11282+00.00	0	0	121,445	65	229	286	0	-189,437	-67,992
11283+00.00	0	0	121,445	13.1	145	181	0	-189,618	-68,173
11283+19.39	0	0	121,445	10.6	9	11	0	-189,629	-68,184
11283+70.26	0	0	121,445	0.1	10	13	0	-189,642	-68,197
11284+00.00	0	0	121,445	12	6	8	0	-189,649	-68,204
11285+00.00	0	0	121,445	28	74	93	0	-189,742	-68,297
11285+52.10	0	0	121,445	26.2	54	68	0	-189,809	-68,364
11286+00.00	0	0	121,445	20.2	40	50	0	-189,859	-68,414
11287+00.00	0	0	121,445	33.6	100	125	0	-189,984	-68,539
11288+00.00	0	0	121,445	24.1	107	134	0	-190,118	-68,673
11289+00.00	0	0	121,445	36.6	112	140	0	-190,258	-68,813
11289+32.66	0	0	121,445	3.4	25	31	0	-190,289	-68,844
11289+76.18	0	0	121,445	0.2	3	4	0	-190,293	-68,848
11290+00.00	0	0	121,445	22.2	9	11	0	-190,304	-68,859
11291+00.00	0	0	121,445	28.8	94	118	0	-190,422	-68,977
11292+00.00	0	0	121,445	36.9	122	153	0	-190,574	-69,129
11293+00.00	0	0	121,445	37.1	137	171	0	-190,746	-69,301
11294+00.00	0	0	121,445	40.6	144	180	0	-190,926	-69,481
11295+00.00	0	0	121,445	43.4	156	195	0	-191,121	-69,676
11296+00.00	0	0	121,445	49.6	172	215	0	-191,336	-69,891
11296+73.95	0	0	121,445	4.3	75	94	0	-191,429	-69,984
11297+18.07	0	0	121,445	3.8	7	9	0	-191,438	-69,993
11298+00.00	0	0	121,445	62.1	98	123	0	-191,561	-70,116

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11299+00.00	0	0	121,445	64.6	235	294	0	-191,854	-70,409
11300+00.00	0	0	121,445	50.7	214	268	0	-192,122	-70,677
11301+00.00	0	0	121,445	50.3	187	234	0	-192,356	-70,911
11302+00.00	0	0	121,445	47.2	181	226	0	-192,582	-71,137
11303+00.00	0	0	121,445	53.1	186	233	0	-192,814	-71,369
11304+00.00	0	0	121,445	52.9	196	245	0	-193,059	-71,614
11305+00.00	0	0	121,445	51.2	193	241	0	-193,301	-71,856
11306+00.00	0	0	121,445	55.9	198	248	0	-193,548	-72,103
11307+00.00	0	0	121,445	43.9	185	231	0	-193,779	-72,334
11308+00.00	0	0	121,445	47.1	169	211	0	-193,991	-72,546
11309+00.00	0	0	121,445	53.2	186	233	0	-194,223	-72,778
11309+84.02	0	0	121,445	29.2	130	163	0	-194,386	-72,941
11310+21.81	0	0	121,445	33.7	44	55	0	-194,441	-72,996
11311+00.00	0	0	121,445	63.8	138	173	0	-194,613	-73,168
11312+00.00	0	0	121,445	66.9	242	303	0	-194,916	-73,471
11313+00.00	0	0	121,445	80.9	274	343	0	-195,258	-73,813
11314+00.00	0	0	121,445	70.8	281	351	0	-195,609	-74,164
11315+00.00	0	0	121,445	71.1	263	329	0	-195,938	-74,493
11316+00.00	0	0	121,445	81.9	283	354	0	-196,292	-74,847
11317+00.00	0	0	121,445	90.5	319	399	0	-196,691	-75,246
11318+00.00	0	0	121,445	86.4	328	410	0	-197,101	-75,656
11319+00.00	0	0	121,445	76.1	301	376	0	-197,477	-76,032
11320+00.00	0	0	121,445	57.1	247	309	0	-197,786	-76,341
11321+00.00	0	0	121,445	73.8	242	303	0	-198,088	-76,643
11322+00.00	0	0	121,445	69.1	265	331	0	-198,419	-76,974
11322+98.04	0	0	121,445	31.9	186	233	0	-198,652	-77,207
11323+35.82	0	0	121,445	29.7	43	54	0	-198,706	-77,261
11324+00.00	0	0	121,445	67	112	140	0	-198,846	-77,401
11325+00.00	0	0	121,445	70.4	254	318	0	-199,163	-77,718
11326+00.00	0	0	121,445	55.6	233	291	0	-199,454	-78,009
11327+00.00	0	0	121,445	48.7	193	241	0	-199,696	-78,251
11328+00.00	0	0	121,445	35	155	194	0	-199,889	-78,444
11329+00.00	0	0	121,445	40.8	140	175	0	-200,064	-78,619
11330+00.00	0	0	121,445	42.8	155	194	0	-200,258	-78,813
11331+00.00	0	0	121,445	42.6	158	198	0	-200,456	-79,011
11332+00.00	0	0	121,445	45.5	163	204	0	-200,659	-79,214
11333+00.00	0	0	121,445	54.2	185	231	0	-200,891	-79,446
11334+00.00	0	0	121,445	41.4	177	221	0	-201,112	-79,667
11335+00.00	0	0	121,445	35.3	142	178	0	-201,289	-79,844
11336+03.72	0	0	121,445	21	110	138	0	-201,427	-79,982
11336+29.84	0	0	121,445	0	10	13	0	-201,439	-79,994

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	15

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11336+79.23	0	0	121,445	0.3	0	0	0	-201,439	-79,994
11337+06.41	0	0	121,445	19.5	10	13	0	-201,452	-80,007
11338+00.00	0	0	121,445	40.1	102	128	0	-201,579	-80,134
11339+00.00	0	0	121,445	61.3	188	235	0	-201,814	-80,369
11340+00.00	0	0	121,445	67.4	238	298	0	-202,112	-80,667
11341+00.00	0	0	121,445	75.8	265	331	0	-202,443	-80,998
11342+00.00	0	0	121,445	78.8	286	358	0	-202,801	-81,356
11343+00.00	0	0	121,445	61.5	260	325	0	-203,126	-81,681
11344+00.00	0	0	121,445	53.5	213	266	0	-203,392	-81,947
11345+00.00	0	0	121,445	59.3	209	261	0	-203,653	-82,208
11346+00.00	0	0	121,445	49.9	202	253	0	-203,906	-82,461
11347+00.00	0	0	121,445	60.7	205	256	0	-204,162	-82,717
11348+00.00	0	0	121,445	55.6	215	269	0	-204,431	-82,986
11349+00.00	0	0	121,445	38.7	175	219	0	-204,649	-83,204
11349+19.93	0	0	121,445	24.7	25	31	0	-204,681	-83,236
11349+57.68	0	0	121,445	29	38	48	0	-204,728	-83,283
11350+00.00	0	0	121,445	51.2	61	76	0	-204,804	-83,359
11351+00.00	0	0	121,445	143.1	360	450	0	-205,254	-83,809
11351+24.69	0	0	121,445	235.3	183	229	0	-205,483	-84,038
11352+00.00	0	0	121,445	70.4	418	523	0	-206,006	-84,561
11353+00.00	0	0	121,445	56.2	234	293	0	-206,298	-84,853
11354+00.00	0	0	121,445	68.5	231	289	0	-206,587	-85,142
11355+00.00	0	0	121,445	73.7	263	329	0	-206,916	-85,471
11356+00.00	0	0	121,445	79.1	283	354	0	-207,269	-85,824
11357+00.00	0	0	121,445	79	293	366	0	-207,636	-86,191
11358+00.00	0	0	121,445	61.6	260	325	0	-207,961	-86,516
11359+00.00	0	0	121,445	64.7	234	293	0	-208,253	-86,808
11360+00.00	0	0	121,445	51.9	216	270	0	-208,523	-87,078
11361+00.00	0	0	121,445	57.6	203	254	0	-208,777	-87,332
11362+00.00	0	0	121,445	41	183	229	0	-209,006	-87,561
11362+85.50	0	0	121,445	30.9	116	145	0	-209,151	-87,706
11363+23.26	0	0	121,445	33.5	45	56	0	-209,207	-87,762
11364+00.00	0	0	121,445	62.8	134	168	0	-209,374	-87,929
11365+00.00	0	0	121,445	64.6	236	295	0	-209,669	-88,224
11366+00.00	0	0	121,445	67.4	244	305	0	-209,974	-88,529
11367+00.00	0	0	121,445	56.2	229	286	0	-210,261	-88,816
11367+22.73	0	0	121,445	78.7	61	76	0	-210,337	-88,892
11368+00.00	0	0	121,445	72.5	212	265	0	-210,602	-89,157
11368+73.30	0	0	121,445	28.9	140	175	0	-210,777	-89,332
11369+11.09	0	0	121,445	31.4	42	53	0	-210,829	-89,384
11370+00.00	0	0	121,445	67	159	199	0	-211,028	-89,583

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11371+00.00	0	0	121,445	49.8	216	270	0	-211,298	-89,853
11372+00.00	0	0	121,445	65.3	213	266	0	-211,564	-90,119
11373+00.00	0	0	121,445	49.8	213	266	0	-211,831	-90,386
11374+00.00	0	0	121,445	45.9	177	221	0	-212,052	-90,607
11375+00.00	0	0	121,445	59.6	195	244	0	-212,296	-90,851
11376+00.00	0	0	121,445	74.5	248	310	0	-212,606	-91,161
11376+19.06	0	0	121,445	94.3	64	80	0	-212,686	-91,241
11377+00.00	0	0	121,445	62.5	231	289	0	-212,974	-91,529
11378+00.00	0	0	121,445	61.8	230	288	0	-213,262	-91,817
11379+00.00	0	0	121,445	35.5	180	225	0	-213,487	-92,042
11379+08.93	0	0	121,445	20.7	11	14	0	-213,501	-92,056
11379+46.69	0	0	121,445	28.3	34	43	0	-213,543	-92,098
11380+00.00	0	0	121,445	50.8	76	95	0	-213,638	-92,193
11381+00.00	0	0	121,445	53.5	193	241	0	-213,879	-92,434
11382+00.00	0	0	121,445	43.4	179	224	0	-214,103	-92,658
11383+00.00	0	0	121,445	46.8	167	209	0	-214,312	-92,867
11384+00.00	0	0	121,445	52.3	184	230	0	-214,542	-93,097
11385+00.00	0	0	121,445	54.6	198	248	0	-214,789	-93,344
11386+00.00	0	0	121,445	51.9	197	246	0	-215,036	-93,591
11387+00.00	0	0	121,445	45.3	180	225	0	-215,261	-93,816
11388+00.00	0	0	121,445	56.3	188	235	0	-215,496	-94,051
11389+07.56	0	0	121,445	0.2	114	143	0	-215,638	-94,193
11389+55.17	0	199,575	321,020	2.6	2	3	0	-215,641	105,380
11390+00.00	0	0	321,020	58.9	49	61	0	-215,702	105,318
11391+00.00	0	0	321,020	95.2	290	363	0	-216,064	104,956
11392+00.00	0	0	321,020	93.9	350	438	0	-216,502	104,518
11393+00.00	0	0	321,020	78.7	320	400	0	-216,902	104,118
11394+00.00	0	0	321,020	70.4	276	345	0	-217,247	103,773
11395+00.00	0	0	321,020	98.7	313	391	0	-217,638	103,382
11396+00.00	0	0	321,020	102.7	373	466	0	-218,104	102,916
11396+92.18	0	0	321,020	59.6	277	346	0	-218,451	102,570
11397+33.82	0	0	321,020	62.4	94	118	0	-218,568	102,452
11398+00.00	0	0	321,020	124.1	229	286	0	-218,854	102,166
11399+00.00	0	0	321,020	134.4	479	599	0	-219,453	101,567
11400+00.00	0	0	321,020	123.5	478	598	0	-220,051	100,970
11401+00.00	0	0	321,020	118.7	449	561	0	-220,612	100,408
11402+00.00	0	0	321,020	118.4	439	549	0	-221,161	99,860
11403+00.00	0	0	321,020	110.9	425	531	0	-221,692	99,328
11404+00.00	0	0	321,020	129.2	445	556	0	-222,248	98,772
11405+00.00	0	0	321,020	127.2	475	594	0	-222,842	98,178
11406+00.00	0	0	321,020	125.2	467	584	0	-223,426	97,595

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	16

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11407+00.00	0	0	321,020	118.1	451	564	0	-223,989	97,031
11408+00.00	0	0	321,020	112.8	428	535	0	-224,524	96,496
11408+61.76	0	0	321,020	90.4	232	290	0	-224,814	96,206
11409+12.60	0	0	321,020	46.9	129	161	56	-224,920	96,101
11414+00.00	0	0	321,020	10.7	520	650	0	-225,570	95,451
11415+00.00	0	0	321,020	117.9	238	298	0	-225,867	95,153
11416+00.00	0	0	321,020	161.8	518	648	0	-226,515	94,506
11417+00.00	0	0	321,020	191.9	655	819	0	-227,333	93,687
11418+00.00	0	0	321,020	153.9	640	800	0	-228,133	92,887
11418+32.21	0	0	321,020	85.1	143	179	0	-228,312	92,708
11418+73.96	0	0	321,020	85.3	132	165	0	-228,477	92,543
11419+00.00	0	0	321,020	152	114	143	0	-228,620	92,401
11420+00.00	0	0	321,020	163.9	585	731	0	-229,351	91,669
11421+00.00	0	0	321,020	139.5	562	703	0	-230,053	90,967
11422+00.00	0	0	321,020	126.5	493	616	0	-230,670	90,351
11423+00.00	0	0	321,020	126.3	468	585	0	-231,255	89,766
11424+00.00	0	0	321,020	113.3	444	555	0	-231,810	89,211
11425+00.00	0	0	321,020	109.9	413	516	0	-232,326	88,694
11426+00.00	0	0	321,020	114	415	519	0	-232,845	88,176
11427+00.00	0	0	321,020	123.3	439	549	0	-233,393	87,627
11428+03.03	0	0	321,020	21.4	276	345	0	-233,738	87,282
11428+47.50	0	0	321,020	16.8	31	39	-270	-234,047	86,973
11429+00.00	0	0	321,020	127	140	175	0	-234,222	86,798
11430+00.00	0	0	321,020	126.5	469	586	0	-234,808	86,212
11431+00.00	0	0	321,020	122.5	461	576	0	-235,385	85,636
11432+00.00	0	0	321,020	116.5	443	554	0	-235,938	85,082
11433+00.00	0	0	321,020	171	532	665	0	-236,603	84,417
11434+00.00	0	0	321,020	247.6	775	969	0	-237,572	83,448
11434+30.60	0	0	321,020	304.9	313	391	0	-237,963	83,057
11435+00.00	0	0	321,020	168.5	608	760	0	-238,723	82,297
11436+00.00	0	0	321,020	150.9	591	739	0	-239,462	81,558
11437+00.00	0	0	321,020	118.1	498	623	0	-240,085	80,936
11438+00.00	0	0	321,020	101.4	406	508	0	-240,592	80,428
11439+00.00	0	0	321,020	102.3	377	471	0	-241,063	79,957
11440+00.00	0	0	321,020	85.8	348	435	0	-241,498	79,522
11440+86.10	0	0	321,020	6.2	147	184	0	-241,682	79,338
11441+30.37	0	0	321,020	0.9	6	8	0	-241,690	79,331
11442+00.00	0	0	321,020	85.8	112	140	0	-241,830	79,191
11443+00.00	0	0	321,020	93.7	332	415	0	-242,245	78,776
11443+10.55	0	0	321,020	115.7	41	51	0	-242,296	78,724
11444+00.00	0	0	321,020	105.6	367	459	0	-242,755	78,266

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11445+00.00	0	0	321,020	84.2	351	439	0	-243,193	77,827
11446+00.00	0	0	321,020	99.6	340	425	0	-243,618	77,402
11447+00.00	0	0	321,020	84.3	341	426	0	-244,045	76,976
11448+00.00	0	0	321,020	81.7	307	384	0	-244,428	76,592
11449+00.00	0	0	321,020	82	303	379	0	-244,807	76,213
11450+00.00	0	0	321,020	94.3	326	408	0	-245,215	75,806
11451+00.00	0	0	321,020	97.7	356	445	0	-245,660	75,361
11452+00.00	0	0	321,020	105.6	376	470	0	-246,130	74,891
11453+00.00	0	0	321,020	105.4	391	489	0	-246,618	74,402
11454+00.00	0	0	321,020	86.5	355	444	0	-247,062	73,958
11455+00.00	0	0	321,020	76.7	302	378	0	-247,440	73,581
11456+00.00	0	0	321,020	84.3	298	373	0	-247,812	73,208
11457+00.00	0	0	321,020	73.6	292	365	0	-248,177	72,843
11457+96.88	0	0	321,020	0.2	132	165	0	-248,342	72,678
11458+38.65	0	0	321,020	0.1	0	0	0	-248,342	72,678
11459+00.00	0	0	321,020	75.2	86	108	0	-248,450	72,571
11460+00.00	0	0	321,020	67.4	264	330	0	-248,780	72,241
11461+00.00	0	0	321,020	56.4	229	286	0	-249,066	71,954
11462+00.00	0	0	321,020	50.6	198	248	0	-249,313	71,707
11463+00.00	0	0	321,020	38.9	166	208	0	-249,521	71,499
11464+00.00	0	0	321,020	39.4	145	181	0	-249,702	71,318
11465+00.00	0	0	321,020	33.8	136	170	0	-249,872	71,148
11466+00.00	0	0	321,020	32.7	123	154	0	-250,026	70,994
11467+00.00	0	0	321,020	37.7	130	163	0	-250,188	70,832
11467+26.76	0	0	321,020	15	26	33	0	-250,221	70,799
11467+68.51	0	0	321,020	19.1	26	33	0	-250,253	70,767
11468+00.00	0	0	321,020	41.4	35	44	0	-250,297	70,723
11469+00.00	0	0	321,020	37.8	147	184	0	-250,481	70,539
11470+00.00	0	0	321,020	31.4	128	160	0	-250,641	70,379
11471+00.00	0	0	321,020	38.3	129	161	0	-250,802	70,218
11472+00.00	0	0	321,020	31.7	130	163	0	-250,965	70,056
11473+00.00	0	0	321,020	40.8	134	168	0	-251,132	69,888
11474+00.00	0	0	321,020	29.4	130	163	0	-251,295	69,726
11475+00.00	0	0	321,020	38.4	126	158	0	-251,452	69,568
11476+00.00	0	0	321,020	41.9	149	186	0	-251,638	69,382
11477+00.00	0	0	321,020	43.7	159	199	0	-251,837	69,183
11478+00.00	0	0	321,020	28.5	134	168	0	-252,005	69,016
11478+40.91	0	0	321,020	27.6	43	54	0	-252,058	68,962
11479+00.00	0	0	321,020	25.5	58	73	0	-252,131	68,889
11480+00.00	0	0	321,020	35.1	112	140	0	-252,271	68,749
11481+00.00	0	0	321,020	34.8	129	161	0	-252,432	68,588

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	17

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11482+00.00	0	0	321,020	34.2	128	160	0	-252,592	68,428
11483+00.00	0	0	321,020	43.9	145	181	0	-252,773	68,247
11484+00.00	0	0	321,020	37.4	151	189	0	-252,962	68,058
11484+18.23	0	0	321,020	3.2	14	18	0	-252,980	68,041
11484+67.28	0	0	321,020	26.2	27	34	0	-253,013	68,007
11485+00.00	0	0	321,020	66.5	56	70	0	-253,083	67,937
11486+00.00	0	0	321,020	51.3	218	273	0	-253,356	67,664
11487+00.00	0	0	321,020	39.6	168	210	0	-253,566	67,454
11488+00.00	0	0	321,020	34.8	138	173	0	-253,738	67,282
11489+00.00	0	0	321,020	40	139	174	0	-253,912	67,108
11490+00.00	0	0	321,020	42.5	153	191	0	-254,103	66,917
11491+00.00	0	0	321,020	51.5	174	218	0	-254,321	66,699
11492+00.00	0	0	321,020	43.1	175	219	0	-254,540	66,481
11493+00.00	0	0	321,020	49.4	171	214	0	-254,753	66,267
11493+84.94	0	0	321,020	2.3	81	101	0	-254,855	66,166
11494+32.49	0	0	321,020	0.1	2	3	0	-254,857	66,163
11495+00.00	0	0	321,020	50.7	64	80	0	-254,937	66,083
11496+00.00	0	0	321,020	43.8	175	219	0	-255,156	65,864
11497+00.00	0	0	321,020	41.4	158	198	0	-255,353	65,667
11498+00.00	0	0	321,020	50.7	171	214	0	-255,567	65,453
11499+00.00	0	0	321,020	53.5	193	241	0	-255,808	65,212
11500+00.00	0	0	321,020	43.6	180	225	0	-256,033	64,987
11501+00.00	0	0	321,020	61.9	195	244	0	-256,277	64,743
11502+00.00	0	0	321,020	64.2	234	293	0	-256,570	64,451
11503+00.00	0	0	321,020	63	236	295	0	-256,865	64,156
11504+00.00	0	0	321,020	59.4	227	284	0	-257,148	63,872
11505+00.00	0	0	321,020	55.3	212	265	0	-257,413	63,607
11505+42.53	0	0	321,020	70.8	99	124	0	-257,537	63,483
11506+00.00	0	0	321,020	66.6	146	183	0	-257,720	63,301
11507+00.00	0	0	321,020	56.6	228	285	0	-258,005	63,016
11508+00.00	0	0	321,020	61	218	273	0	-258,277	62,743
11509+00.00	0	0	321,020	61.4	227	284	0	-258,561	62,459
11510+00.00	0	0	321,020	46.2	199	249	0	-258,810	62,211
11511+00.00	0	0	321,020	44.8	169	211	0	-259,021	61,999
11512+00.00	0	0	321,020	38.5	154	193	0	-259,213	61,807
11513+00.00	0	0	321,020	50.1	164	205	0	-259,418	61,602
11514+00.00	0	0	321,020	53.9	193	241	0	-259,660	61,361
11515+00.00	0	0	321,020	55.6	203	254	0	-259,913	61,107
11516+00.00	0	0	321,020	57.9	210	263	0	-260,176	60,844
11517+00.00	0	0	321,020	67.8	233	291	0	-260,467	60,553
11517+71.95	0	0	321,020	29.6	130	163	0	-260,630	60,391

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11518+37.66	0	0	321,020	45.7	92	115	0	-260,745	60,276
11519+00.00	0	0	321,020	54.5	116	145	0	-260,890	60,131
11520+00.00	0	0	321,020	71.9	234	293	0	-261,182	59,838
11521+00.00	0	0	321,020	76.5	275	344	0	-261,526	59,494
11522+00.00	0	0	321,020	75.2	281	351	0	-261,877	59,143
11523+00.00	0	0	321,020	64.7	259	324	0	-262,201	58,819
11524+00.00	0	0	321,020	54	220	275	0	-262,476	58,544
11525+00.00	0	0	321,020	49.8	192	240	0	-262,716	58,304
11525+33.03	0	0	321,020	59.8	67	84	0	-262,800	58,221
11526+00.00	0	0	321,020	51	137	171	0	-262,971	58,049
11527+00.00	0	0	321,020	57.8	201	251	0	-263,222	57,798
11528+00.00	0	0	321,020	58.3	215	269	0	-263,491	57,529
11529+00.00	0	0	321,020	58.7	217	271	0	-263,762	57,258
11530+00.00	0	0	321,020	43.2	189	236	0	-263,998	57,022
11531+00.00	0	0	321,020	55.9	184	230	0	-264,228	56,792
11532+00.00	0	0	321,020	48.6	194	243	0	-264,471	56,549
11533+00.00	0	0	321,020	66.9	214	268	0	-264,738	56,282
11533+40.84	0	0	321,020	22.7	68	85	0	-264,823	56,197
11533+99.19	0	0	321,020	32.2	59	74	0	-264,897	56,123
11535+00.00	0	0	321,020	62.1	176	220	0	-265,117	55,903
11536+00.00	0	0	321,020	62.2	230	288	0	-265,405	55,616
11537+00.00	0	0	321,020	72	249	311	0	-265,716	55,304
11538+00.00	0	0	321,020	58.5	242	303	0	-266,018	55,002
11539+00.00	0	0	321,020	62.1	223	279	0	-266,297	54,723
11540+00.00	0	0	321,020	59.2	225	281	0	-266,578	54,442
11541+00.00	0	0	321,020	55.6	213	266	0	-266,845	54,176
11542+00.00	0	0	321,020	51.8	199	249	0	-267,093	53,927
11543+00.00	0	0	321,020	47.9	185	231	0	-267,325	53,696
11544+00.00	0	0	321,020	55.7	192	240	0	-267,565	53,456
11545+00.00	0	0	321,020	73.8	240	300	0	-267,865	53,156
11546+00.00	0	0	321,020	71.9	270	338	0	-268,202	52,818
11546+73.53	0	0	321,020	11.8	114	143	0	-268,345	52,676
11547+24.90	0	0	321,020	0.6	12	15	-189	-268,549	52,472
11548+00.00	0	0	321,020	91.9	129	161	0	-268,710	52,310
11549+00.00	0	0	321,020	76.7	312	390	0	-269,100	51,920
11550+00.00	0	0	321,020	70.5	273	341	0	-269,441	51,579
11551+00.00	0	0	321,020	58.2	238	298	0	-269,739	51,282
11552+00.00	0	0	321,020	46.4	194	243	0	-269,981	51,039
11553+00.00	0	0	321,020	41.4	163	204	0	-270,185	50,835
11554+00.00	0	0	321,020	45.1	160	200	0	-270,385	50,635
11555+00.00	0	0	321,020	49.5	175	219	0	-270,604	50,417

This document was originally issued and sealed by Eric R. Molbert, Registration Number PE- 4222, on 03/24/16 and the original document is stored at the North Dakota Department of Transportation

Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	18

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11555+64.10	0	0	321,020	39.6	106	133	0	-270,736	50,284
11556+02.19	0	0	321,020	47.7	62	78	-139	-270,953	50,068
11557+00.00	0	0	321,020	45.3	168	210	0	-271,163	49,858
11558+00.00	0	0	321,020	41.2	160	200	0	-271,363	49,658
11559+00.00	0	0	321,020	52.3	173	216	0	-271,579	49,441
11560+00.00	0	0	321,020	43.3	177	221	0	-271,800	49,220
11561+00.00	0	0	321,020	43.2	160	200	0	-272,000	49,020
11561+33.26	0	0	321,020	86.9	80	100	0	-272,100	48,920
11562+00.00	0	0	321,020	56.9	178	223	0	-272,323	48,698
11563+00.00	0	0	321,020	74.7	244	305	0	-272,628	48,393
11564+00.00	0	0	321,020	70.7	269	336	0	-272,964	48,056
11565+00.00	0	0	321,020	79.1	277	346	0	-273,310	47,710
11565+71.13	0	0	321,020	40.9	158	198	0	-273,508	47,513
11566+12.89	0	0	321,020	39.9	62	78	0	-273,585	47,435
11567+00.00	0	0	321,020	65.6	170	213	0	-273,798	47,223
11568+00.00	0	0	321,020	59.9	232	290	0	-274,088	46,933
11569+00.00	0	0	321,020	50.3	204	255	0	-274,343	46,678
11570+00.00	0	0	321,020	55.5	196	245	0	-274,588	46,433
11571+00.00	0	0	321,020	65.5	224	280	0	-274,868	46,153
11572+00.00	0	0	321,020	51.5	217	271	0	-275,139	45,881
11573+00.00	0	0	321,020	51.1	190	238	0	-275,376	45,644
11573+33.17	0	0	321,020	82.3	82	103	0	-275,479	45,541
11573+53.54	0	0	321,020	31.7	43	54	0	-275,533	45,488
11573+95.30	0	0	321,020	28.2	46	58	0	-275,590	45,430
11575+00.00	0	0	321,020	79.6	209	261	0	-275,851	45,169
11576+00.00	0	0	321,020	75.9	288	360	0	-276,211	44,809
11577+00.00	0	0	321,020	56.1	244	305	0	-276,516	44,504
11578+00.00	0	0	321,020	61.9	219	274	0	-276,790	44,230
11579+00.00	0	0	321,020	63.3	232	290	0	-277,080	43,940
11579+27.30	0	0	321,020	35.7	50	63	0	-277,143	43,878
11579+79.57	0	0	321,020	14.4	48	60	-305	-277,508	43,513
11580+00.00	0	0	321,020	46.4	23	29	0	-277,536	43,484
11581+00.00	0	0	321,020	46.4	172	215	0	-277,751	43,269
11582+00.00	0	0	321,020	52.4	183	229	0	-277,980	43,040
11583+00.00	0	0	321,020	68	223	279	0	-278,259	42,761
11584+00.00	0	0	321,020	66	248	310	0	-278,569	42,451
11585+00.00	0	0	321,020	67.4	247	309	0	-278,878	42,143
11586+00.00	0	0	321,020	72.4	259	324	0	-279,201	41,819
11587+00.00	0	0	321,020	61	247	309	0	-279,510	41,510
11588+00.00	0	0	321,020	55.9	216	270	0	-279,780	41,240
11589+00.00	0	0	321,020	56.8	209	261	0	-280,041	40,979

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11590+00.00	0	0	321,020	50.5	199	249	0	-280,290	40,730
11591+00.00	0	0	321,020	42.1	171	214	0	-280,504	40,516
11592+00.00	0	0	321,020	51.9	174	218	0	-280,721	40,299
11593+00.00	0	0	321,020	38	166	208	0	-280,929	40,091
11594+00.00	0	0	321,020	42.2	149	186	0	-281,115	39,905
11595+00.00	0	0	321,020	50.7	172	215	0	-281,330	39,690
11596+00.00	0	0	321,020	55.8	197	246	0	-281,576	39,444
11597+00.00	0	0	321,020	58.4	211	264	0	-281,840	39,180
11598+00.00	0	0	321,020	57.5	215	269	0	-282,109	38,911
11599+00.00	0	0	321,020	61.8	221	276	0	-282,385	38,635
11599+14.19	0	0	321,020	79.5	37	46	0	-282,431	38,589
11599+57.44	0	0	321,020	6.5	69	86	0	-282,518	38,503
11600+00.82	0	0	321,020	8.1	12	15	-130	-282,663	38,358
11601+00.00	0	0	321,020	53.2	113	141	0	-282,804	38,216
11602+00.00	0	0	321,020	66.4	221	276	0	-283,080	37,940
11603+00.00	0	0	321,020	63.8	241	301	0	-283,381	37,639
11604+00.00	0	0	321,020	45.4	202	253	0	-283,634	37,386
11605+00.00	0	0	321,020	55.7	187	234	0	-283,868	37,153
11606+00.00	0	0	321,020	81.3	254	318	0	-284,185	36,835
11607+00.00	0	0	321,020	82.8	304	380	0	-284,565	36,455
11608+00.00	0	0	321,020	71.5	286	358	0	-284,923	36,098
11609+00.00	0	0	321,020	77.4	276	345	0	-285,268	35,753
11609+22.04	0	0	321,020	108.7	76	95	0	-285,363	35,658
11610+00.00	0	0	321,020	81.6	275	344	0	-285,706	35,314
11611+00.00	0	0	321,020	85.5	309	386	0	-286,093	34,928
11611+97.20	0	0	321,020	15.1	181	226	0	-286,319	34,701
11612+38.95	0	0	321,020	5.3	16	20	0	-286,339	34,681
11613+00.00	0	0	321,020	65.9	80	100	0	-286,439	34,581
11614+00.00	0	0	321,020	60.1	233	291	0	-286,730	34,290
11615+00.00	0	0	321,020	51.2	206	258	0	-286,988	34,033
11616+00.00	0	0	321,020	61.1	208	260	0	-287,248	33,773
11617+00.00	0	0	321,020	51.5	209	261	0	-287,509	33,511
11618+00.00	0	0	321,020	54.4	196	245	0	-287,754	33,266
11619+00.00	0	0	321,020	43.5	181	226	0	-287,980	33,040
11620+00.00	0	0	321,020	56.1	184	230	0	-288,210	32,810
11621+00.00	0	0	321,020	60.5	216	270	0	-288,480	32,540
11622+00.00	0	0	321,020	66.1	234	293	0	-288,773	32,248
11623+00.00	0	0	321,020	54.5	223	279	0	-289,051	31,969
11624+00.00	0	0	321,020	60.7	213	266	0	-289,318	31,703
11625+00.00	0	0	321,020	76.3	254	318	0	-289,635	31,385
11625+96.93	0	0	321,020	12.2	159	199	0	-289,834	31,186

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	19

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11626+54.13	0	0	321,020	9	22	28	0	-289,861	31,159
11627+00.00	0	0	321,020	71.8	69	86	0	-289,948	31,073
11628+00.00	0	0	321,020	65.2	254	318	0	-290,265	30,755
11629+00.00	0	0	321,020	61.9	235	294	0	-290,559	30,461
11630+00.00	0	0	321,020	64.5	234	293	0	-290,851	30,169
11631+00.00	0	0	321,020	74.3	257	321	0	-291,173	29,848
11632+00.00	0	0	321,020	69	265	331	0	-291,504	29,516
11633+00.00	0	0	321,020	74.7	266	333	0	-291,836	29,184
11634+00.00	0	0	321,020	82.4	291	364	0	-292,200	28,820
11634+37.10	0	0	321,020	105.4	129	161	0	-292,361	28,659
11635+00.00	0	0	321,020	91.5	229	286	0	-292,648	28,373
11636+00.00	0	0	321,020	64.9	290	363	0	-293,010	28,010
11637+00.00	0	0	321,020	67.3	245	306	0	-293,316	27,704
11638+00.00	0	0	321,020	68	251	314	0	-293,630	27,390
11639+00.00	0	0	321,020	79.9	274	343	0	-293,973	27,048
11640+00.00	0	0	321,020	61.1	261	326	0	-294,299	26,721
11641+00.00	0	0	321,020	47.5	201	251	0	-294,550	26,470
11642+00.00	0	0	321,020	50.3	181	226	0	-294,776	26,244
11643+00.00	0	0	321,020	62.3	209	261	0	-295,038	25,983
11644+00.00	0	0	321,020	51.3	210	263	0	-295,300	25,720
11645+00.00	0	0	321,020	52.5	192	240	0	-295,540	25,480
11646+00.00	0	0	321,020	65.4	218	273	0	-295,813	25,208
11647+00.00	0	0	321,020	62.8	237	296	0	-296,109	24,911
11648+00.00	0	0	321,020	53.9	216	270	0	-296,379	24,641
11649+00.00	0	0	321,020	42	178	223	0	-296,601	24,419
11650+00.00	0	0	321,020	45.7	162	203	0	-296,804	24,216
11651+00.00	0	0	321,020	46.1	170	213	0	-297,016	24,004
11652+00.00	0	0	321,020	62.5	201	251	0	-297,268	23,753
11652+49.37	0	0	321,020	0.4	58	73	0	-297,340	23,680
11653+01.70	0	0	321,020	4.1	4	5	0	-297,345	23,675
11654+00.00	0	0	321,020	64.8	125	156	0	-297,501	23,519
11655+00.00	0	0	321,020	53.2	219	274	0	-297,775	23,245
11656+00.00	0	0	321,020	46.3	184	230	0	-298,005	23,015
11657+00.00	0	0	321,020	54.7	187	234	0	-298,239	22,781
11658+00.00	0	0	321,020	50.9	196	245	0	-298,484	22,536
11659+00.00	0	0	321,020	54.6	195	244	0	-298,728	22,293
11660+00.00	0	0	321,020	54	201	251	0	-298,979	22,041
11661+00.00	0	0	321,020	43.1	180	225	0	-299,204	21,816
11662+00.00	0	0	321,020	35.3	145	181	0	-299,385	21,635
11663+00.00	0	0	321,020	35.2	131	164	0	-299,549	21,471
11664+00.00	0	0	321,020	40	139	174	0	-299,723	21,298

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11665+00.00	0	0	321,020	59.8	185	231	0	-299,954	21,066
11666+00.00	0	0	321,020	55.9	214	268	0	-300,221	20,799
11667+00.00	0	0	321,020	65.2	224	280	0	-300,501	20,519
11668+00.00	0	0	321,020	85.1	278	348	0	-300,849	20,171
11669+00.00	0	0	321,020	70	287	359	0	-301,208	19,813
11670+00.00	0	0	321,020	53.8	229	286	0	-301,494	19,526
11671+00.00	0	0	321,020	55.5	202	253	0	-301,746	19,274
11672+00.00	0	0	321,020	51	197	246	0	-301,993	19,028
11673+00.00	0	0	321,020	58.6	203	254	0	-302,246	18,774
11674+00.00	0	0	321,020	49.1	199	249	0	-302,495	18,525
11675+00.00	0	0	321,020	52.9	189	236	0	-302,731	18,289
11676+00.00	0	0	321,020	57.5	204	255	0	-302,986	18,034
11677+00.00	0	0	321,020	62.2	222	278	0	-303,264	17,756
11677+41.64	0	0	321,020	78.1	108	135	0	-303,399	17,621
11678+00.00	0	0	321,020	25.4	112	140	0	-303,539	17,481
11678+48.93	0	0	321,020	14.3	36	45	0	-303,584	17,436
11678+99.50	0	0	321,020	38.5	49	61	0	-303,645	17,375
11680+00.00	0	0	321,020	66.8	196	245	0	-303,890	17,130
11681+00.00	0	0	321,020	71.6	256	320	0	-304,210	16,810
11682+00.00	0	0	321,020	75.4	272	340	0	-304,550	16,470
11683+00.00	0	0	321,020	81.5	291	364	0	-304,914	16,106
11684+00.00	0	0	321,020	73.2	286	358	0	-305,271	15,749
11685+00.00	0	0	321,020	57.4	242	303	0	-305,574	15,446
11686+00.00	0	0	321,020	53.2	205	256	0	-305,830	15,190
11687+00.00	0	0	321,020	47.6	187	234	0	-306,064	14,956
11688+00.00	0	0	321,020	50.6	182	228	0	-306,291	14,729
11689+00.00	0	0	321,020	52.7	191	239	0	-306,530	14,490
11690+00.00	0	0	321,020	39.7	171	214	0	-306,744	14,276
11691+00.00	0	0	321,020	43.7	154	193	0	-306,936	14,084
11692+00.00	0	0	321,020	44.8	164	205	0	-307,141	13,879
11693+00.36	0	0	321,020	15.6	112	140	0	-307,281	13,739
11693+74.67	0	0	321,020	28.8	61	76	0	-307,358	13,663
11694+00.00	0	0	321,020	38.2	31	39	0	-307,396	13,624
11695+00.00	0	0	321,020	74.4	209	261	0	-307,658	13,363
11696+00.00	0	0	321,020	78.3	283	354	0	-308,011	13,009
11697+00.00	0	0	321,020	79.4	292	365	0	-308,376	12,644
11698+00.00	0	0	321,020	76.9	289	361	0	-308,738	12,283
11699+00.00	0	0	321,020	81.6	294	368	0	-309,105	11,915
11700+00.00	0	0	321,020	53.9	251	314	0	-309,419	11,601
11701+00.00	0	0	321,020	78.4	245	306	0	-309,725	11,295
11702+00.00	0	0	321,020	81.5	296	370	0	-310,095	10,925

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Earthwork Data Table

Revised 03/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	11	20

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11702+80.64	0	0	321,020	82.9	246	308	0	-310,403	10,618
11703+76.56	0	0	321,020	130.1	378	473	0	-310,875	10,145
11704+00.00	0	0	321,020	90.9	96	120	0	-310,995	10,025
11705+50.61	0	0	321,020	119.7	587	734	0	-311,729	9,291
11705+90.23	0	0	321,020	234.1	260	325	0	-312,054	8,966
11706+75.52	0	0	321,020	142.6	595	744	0	-312,798	8,223
11707+22.77	0	0	321,020	102.4	214	268	0	-313,065	7,955
11708+00.00	0	0	321,020	99.8	289	361	0	-313,426	7,594
11708+93.40	0	0	321,020	90	328	410	0	-313,836	7,184
11709+89.41	0	0	321,020	44.5	239	299	0	-314,135	6,885
11711+00.00	0	0	321,020	79.4	254	318	0	-314,453	6,568
11712+00.00	0	0	321,020	73.4	283	354	0	-314,806	6,214
11713+00.00	0	0	321,020	43.3	216	270	0	-315,076	5,944
11714+00.00	0	0	321,020	24.4	125	156	0	-315,233	5,788
11715+00.00	0	0	321,020	31.1	103	129	0	-315,361	5,659
11716+00.00	0	0	321,020	40.4	132	165	0	-315,526	5,494
11717+00.00	0	0	321,020	45.2	159	199	0	-315,725	5,295
11718+00.00	0	0	321,020	44.8	167	209	0	-315,934	5,086
11719+00.00	0	0	321,020	39.4	156	195	0	-316,129	4,891
11719+33.54	0	0	321,020	16.6	35	44	0	-316,173	4,848
11720+00.00	0	0	321,020	3.5	25	31	0	-316,204	4,816
11721+00.00	0	0	321,020	1.5	9	11	0	-316,215	4,805
11722+00.00	0	0	321,020	36.2	70	88	0	-316,303	4,718
11723+00.00	0	0	321,020	32.7	128	160	0	-316,463	4,558
11724+00.00	0	0	321,020	37.7	130	163	0	-316,625	4,395
11725+03.97	0	0	321,020	20.8	113	141	0	-316,766	4,254
11725+45.72	0	0	321,020	23.6	34	43	0	-316,809	4,211
11726+00.00	0	0	321,020	35.4	59	74	0	-316,883	4,138
11727+00.00	0	0	321,020	28.7	119	149	0	-317,031	3,989
11727+32.75	0	0	321,020	26.9	34	43	0	-317,074	3,946
11728+00.00	0	0	321,020	24.4	64	80	0	-317,154	3,866
11729+00.00	0	0	321,020	27.9	97	121	0	-317,275	3,745
11729+69.58	0	0	321,020	24.3	67	84	0	-317,359	3,661
11730+65.57	0	0	321,020	47.7	128	160	0	-317,519	3,501
11731+00.00	0	0	321,020	54.7	65	81	0	-317,600	3,420
11732+00.00	0	0	321,020	47.1	189	236	0	-317,836	3,184
11732+60.35	0	0	321,020	34.1	91	114	0	-317,950	3,070
11732+98.33	0	0	321,020	19.4	38	48	0	-317,998	3,023
11733+86.20	0	0	321,020	8.9	46	58	0	-318,055	2,965
11734+22.76	0	0	321,020	6.4	10	13	0	-318,068	2,953
11735+00.00	0	0	321,020	23.5	43	54	0	-318,121	2,899

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11736+00.00	0	0	321,020	3.1	49	61	0	-318,183	2,838
11737+00.00	0	0	321,020	0	6	8	0	-318,190	2,830
11743+00.00	0	0	321,020	0	0	0	0	-318,190	2,830
11744+00.00	0	0	321,020	10	19	24	0	-318,214	2,806
11745+00.00	0	0	321,020	14.2	45	56	0	-318,270	2,750
11746+00.00	0	0	321,020	22	67	84	0	-318,354	2,666
11747+00.00	0	0	321,020	23.6	84	105	0	-318,459	2,561
11748+00.00	0	0	321,020	14.2	70	88	0	-318,546	2,474
11749+00.00	0	0	321,020	19.5	62	78	0	-318,624	2,396
11750+00.00	0	0	321,020	18.7	71	89	0	-318,713	2,308
11751+00.00	0	0	321,020	16.3	65	81	0	-318,794	2,226
11752+00.00	0	0	321,020	15.4	59	74	0	-318,868	2,153
11753+00.00	0	0	321,020	44.4	111	139	0	-319,006	2,014
11754+00.00	0	0	321,020	9.4	100	125	0	-319,131	1,889
11755+00.00	0	0	321,020	0	0	0	-1889	-321,020	0

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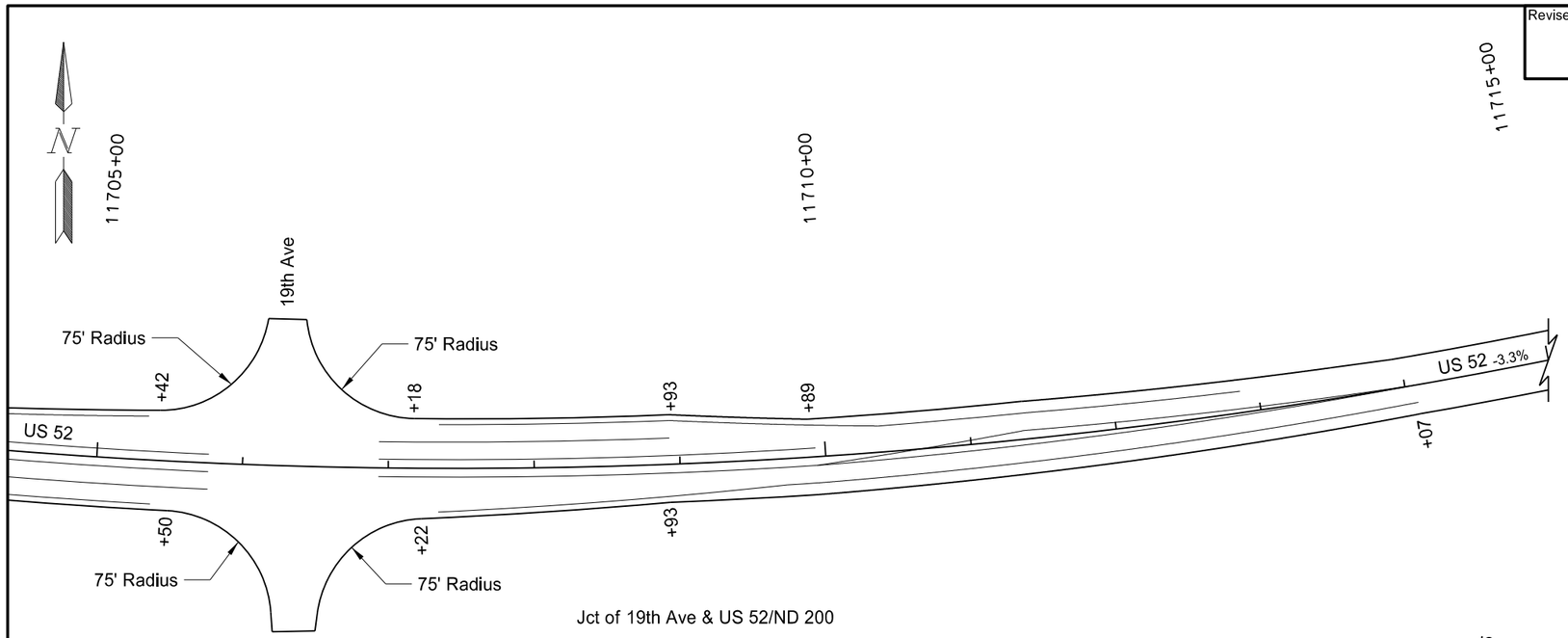
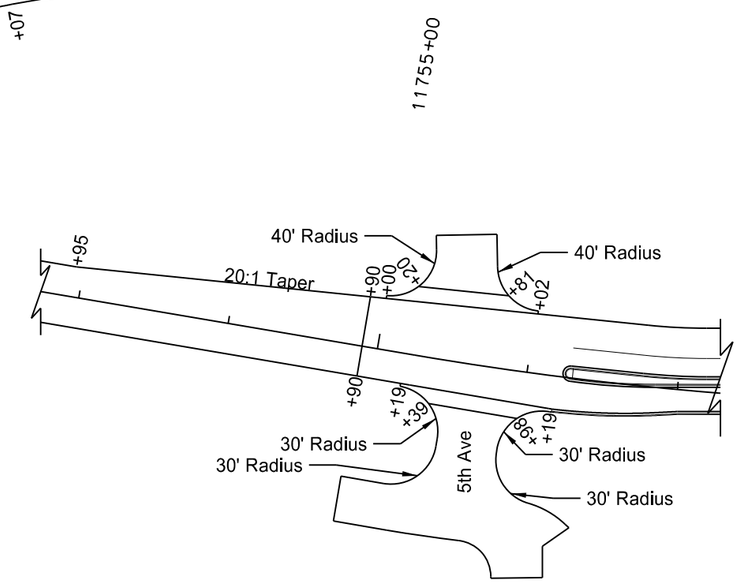
Earthwork Data Table

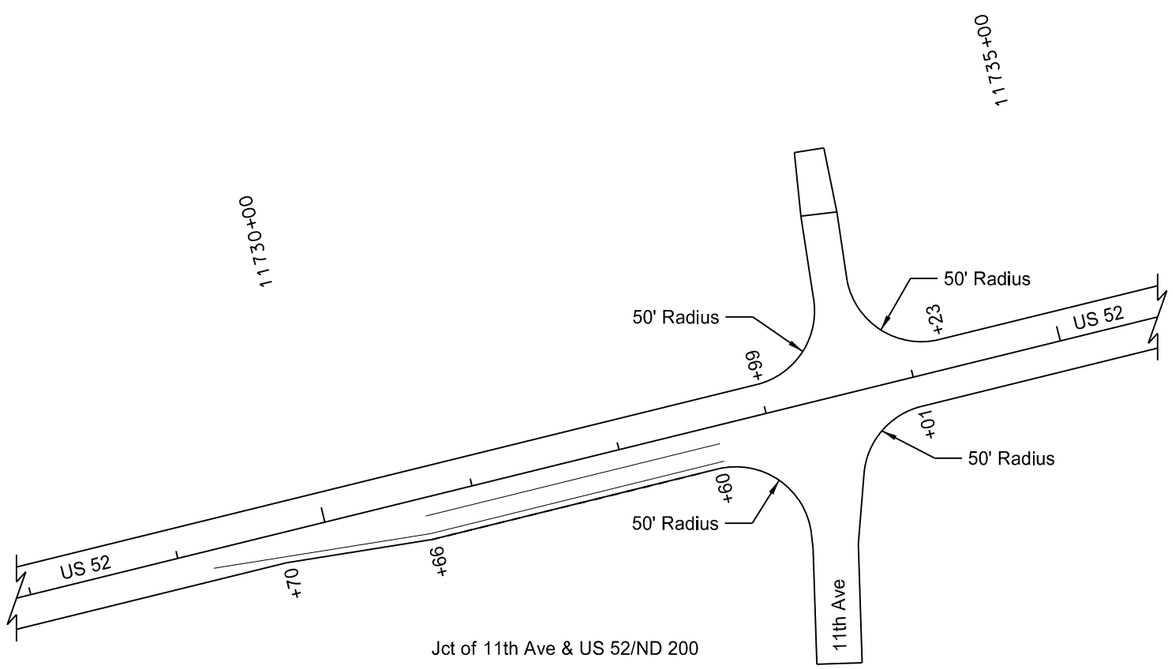
Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	20	10



Jct of 19th Ave & US 52/ND 200



Jct of 5th Ave & US 52/ND 200



Jct of 11th Ave & US 52/ND 200

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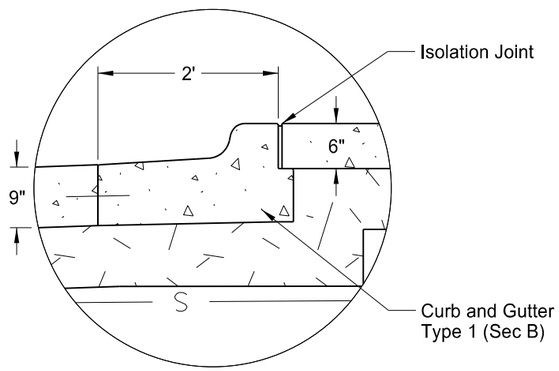
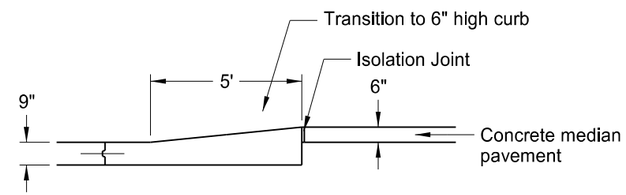
Jct of 19th Ave & US 52/ND 200
Jct of 11th Ave & US 52/ND 200
Jct of 5th Ave & US 52/ND 200

Revision 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	20	13

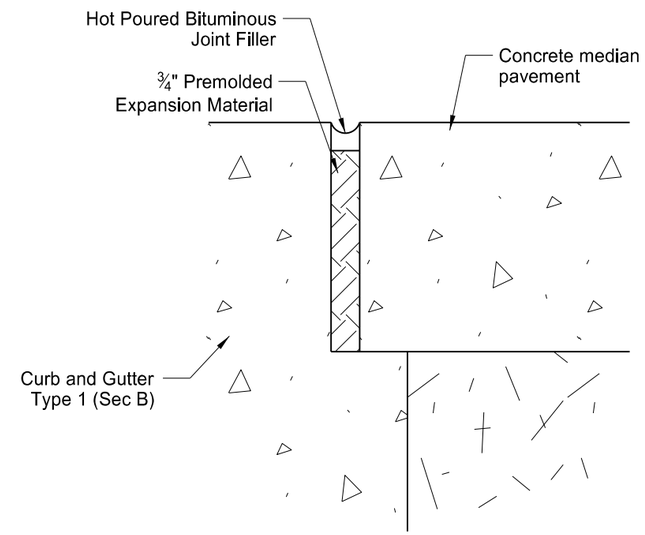
MEDIAN NOSE DETAIL



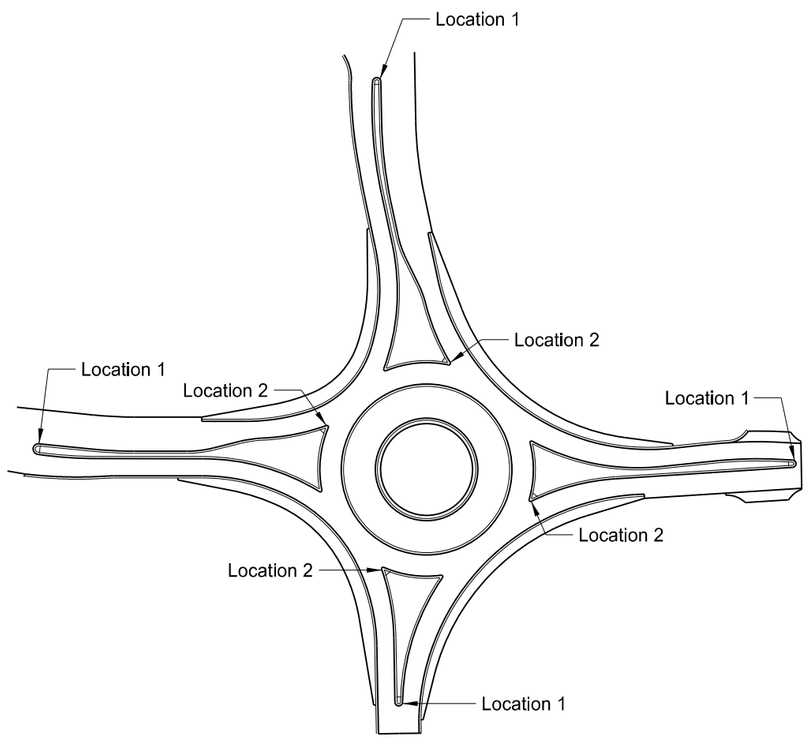
Section B-B

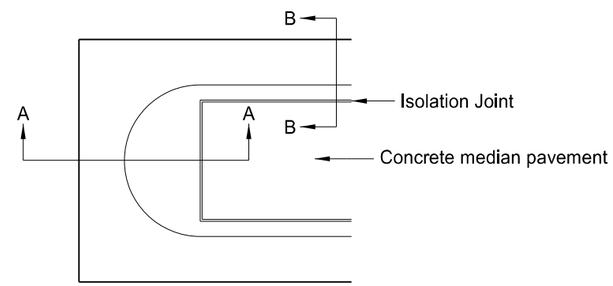


Section A-A

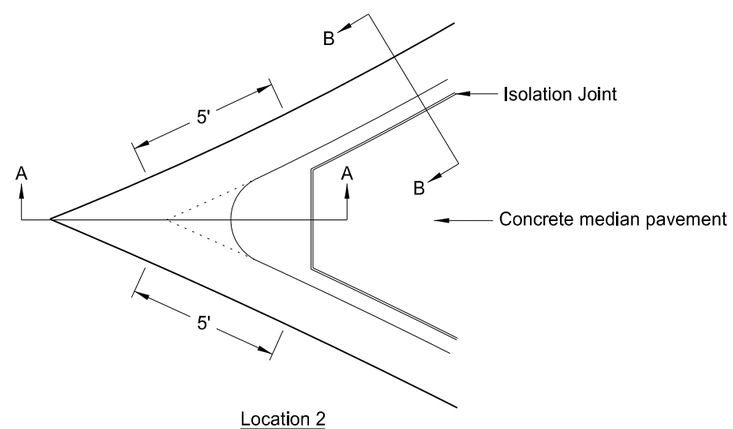


Isolation Joint





Location 1



Location 2

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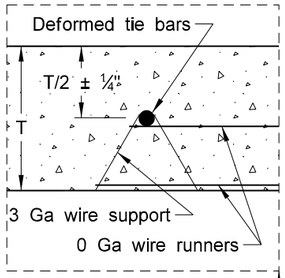
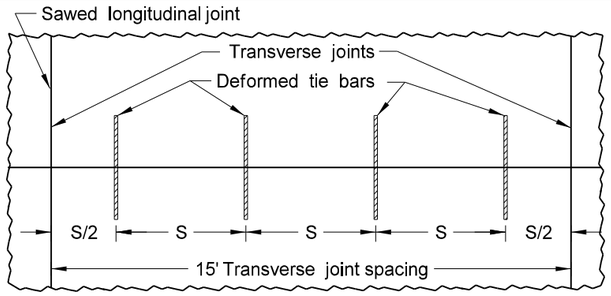
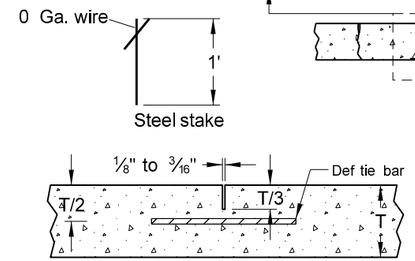
Median Nose Detail

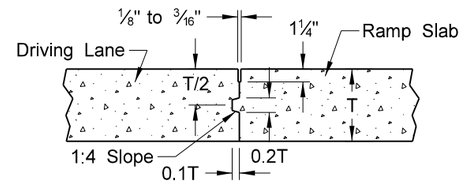
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	20	15



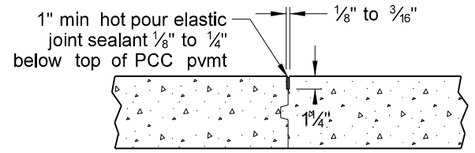




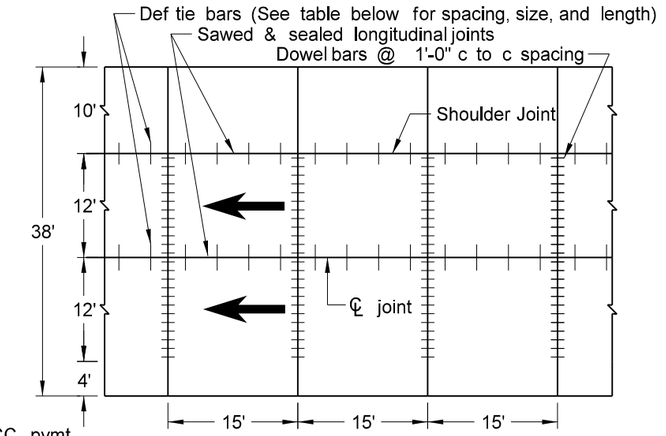
Longitudinal Tie Bar Assembly
(One unit shown)



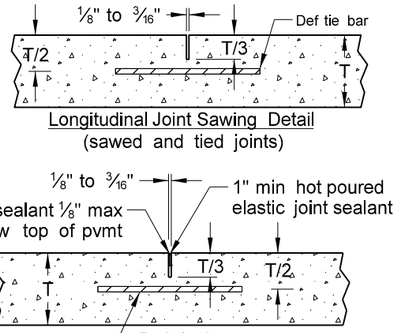
Longitudinal Joint Sawing Detail
(at ramps - non-tied keyed joints)



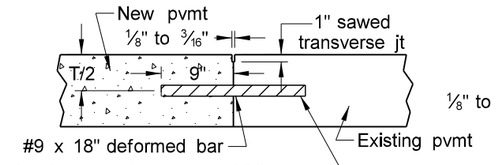
Longitudinal Joint Sealing Detail
(non-tied keyed joints)



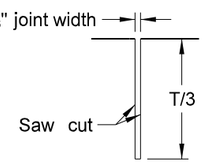
Mainline Joints
15' joint spacing



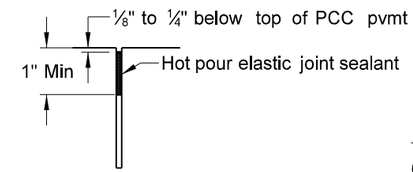
Longitudinal Joint Sawing Detail
(sawed and tied joints)



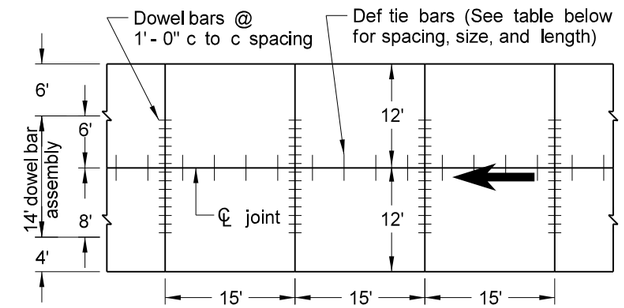
Deformed Bar Installation (2'-0" c to c)
(Transverse Joints)



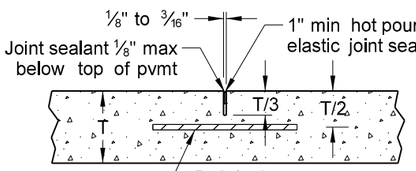
Transverse Joint Sawing



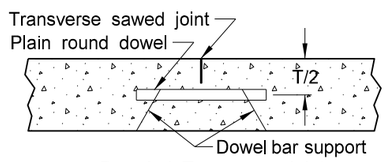
Transverse Joint Sealing



Ramp Joints



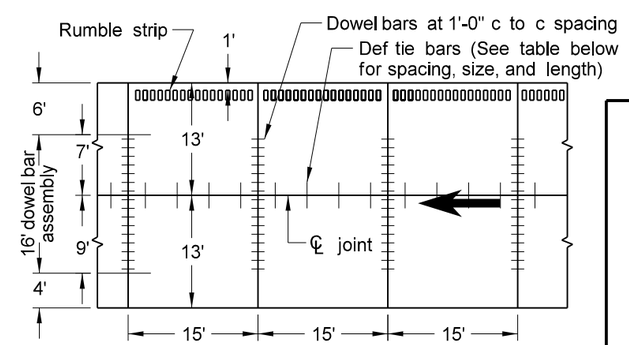
Longitudinal Joint Sealing Detail
(sawed and tied joints)



Doweled Transverse Joint

Notes:

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



Loop Joints

Grade 40 Longitudinal Joint Tie Bars															
PCC Depth	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"
Mainline Centerline															
Bar Size x Length (S=30")	#5 x 30"							#6 x 36"							
Bar Size x Length (S=45")	#6 x 36"									Grade 60 Required					
Ramp/Loop Centerline															
Bar Size x Length (S=30")	#4 x 24"		#5 x 30"										#6 x 36"		
Bar Size x Length (S=45")	#5 x 30"			#6 x 36"									Grade 60 Required		
10' Shoulder Joint															
Bar Size x Length (S=30")	#4 x 24"							#5 x 30"							
Bar Size x Length (S=45")	#5 x 30"									#6 x 36"					

Grade 60 Longitudinal Joint Tie Bars															
PCC Depth	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"
Mainline Centerline															
Bar Size x Length (S=30")	#4 x 36"							#5 x 42"							
Bar Size x Length (S=45")	#5 x 42"								#6 x 48"						
Ramp/Loop Centerline															
Bar Size x Length (S=30")	#4 x 36"												#5 x 42"		
Bar Size x Length (S=45")	#4 x 36"		#5 x 42"												
10' Shoulder Joint															
Bar Size x Length (S=30")	#3 x 30"			#4 x 36"											
Bar Size x Length (S=45")	#4 x 36"									#5 x 42"					

Transverse Joint Dowel Bars

Joint Location	Dia x Length
Roundabout	1.25" x 18"

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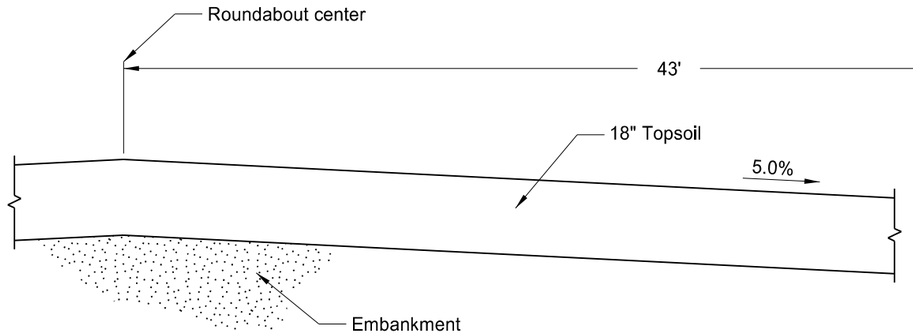
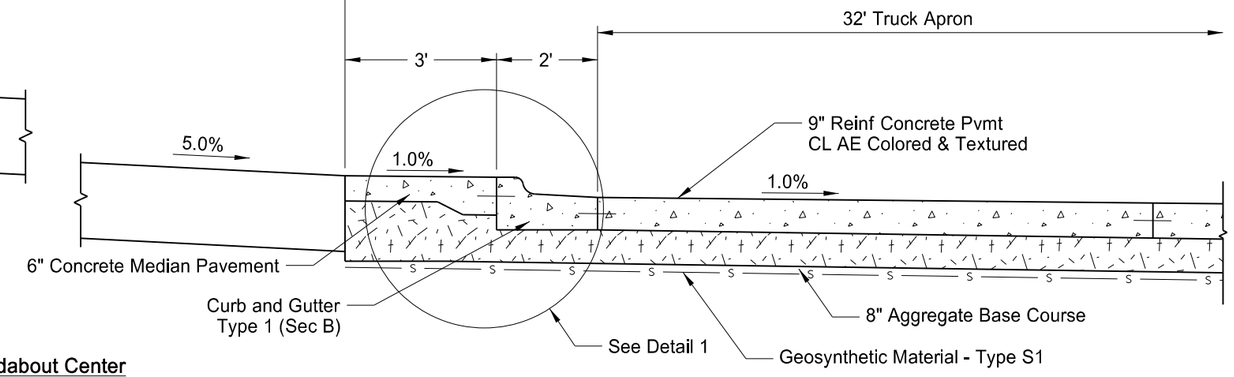
PCC Pavement - Perpendicular Joints@15' Spacing and 10' Wide Full Depth PCC Outside Shoulder

PCC Pavement Reconstruction

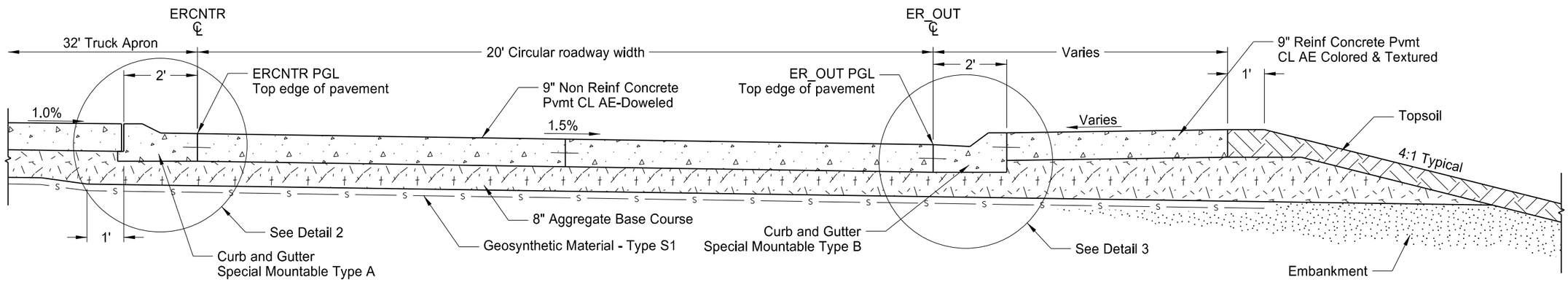
US52 East Roundabout

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	30	8

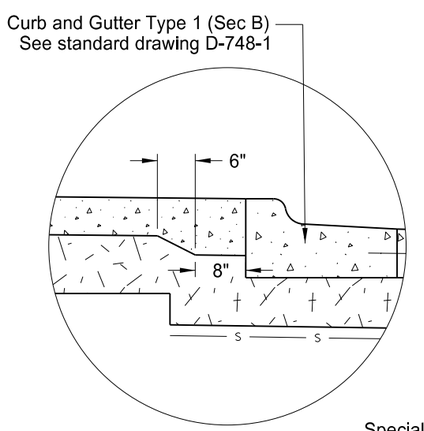




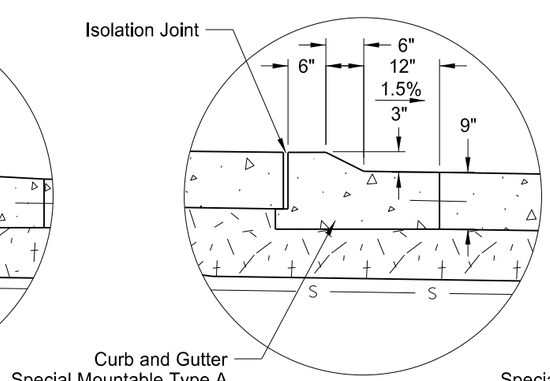
Truck Apron and Roundabout Center



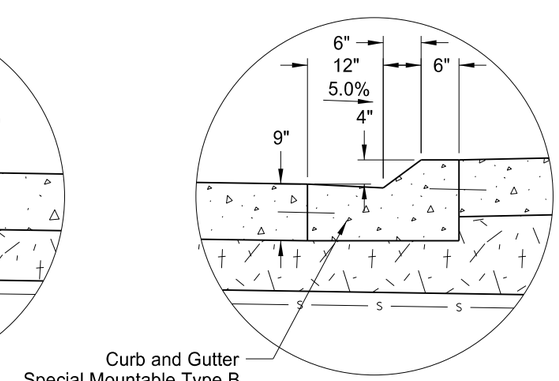
Circular Roadway - 503' circumference
along alignment ERCNTR
With paved blister (See plan view for locations)



Detail 1



Detail 2



Detail 3

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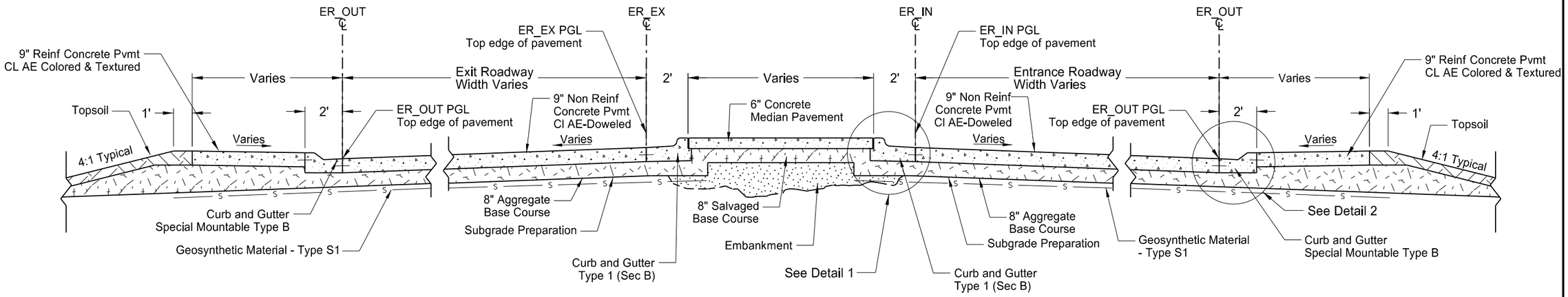
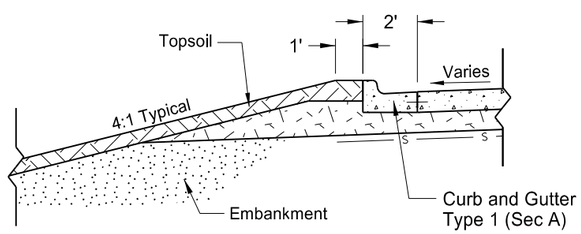
Proposed Typical Section

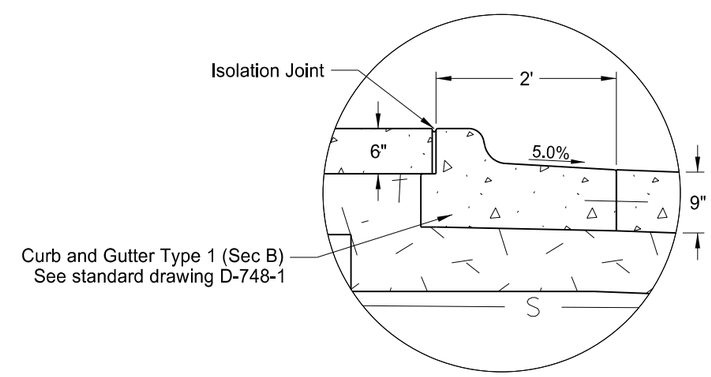
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	30	9



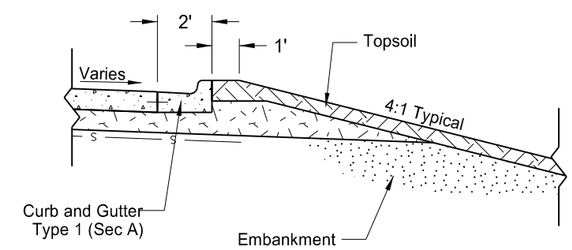
Roundabout Entance and Exit Roadways
with paved Truck Blister (see plan view for locations)



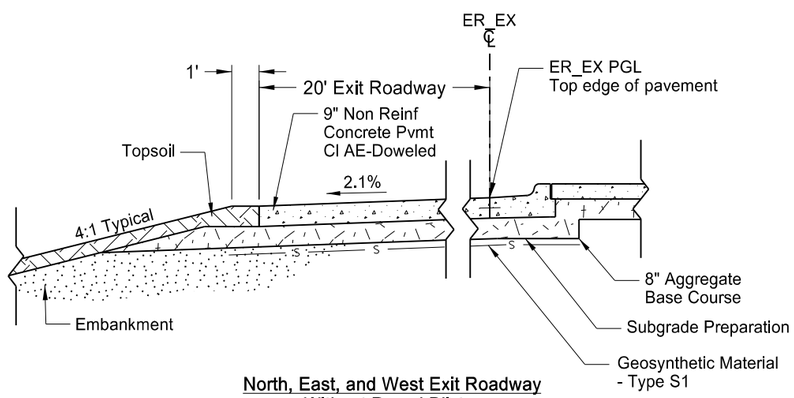
South Exit Roadway
Without Paved Blister



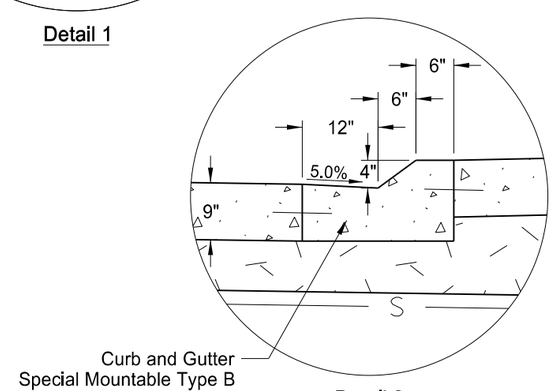
Detail 1



Entrance Roadway
Without Paved Blister



North, East, and West Exit Roadway
Without Paved Blister



Detail 2

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Proposed Typical Sections

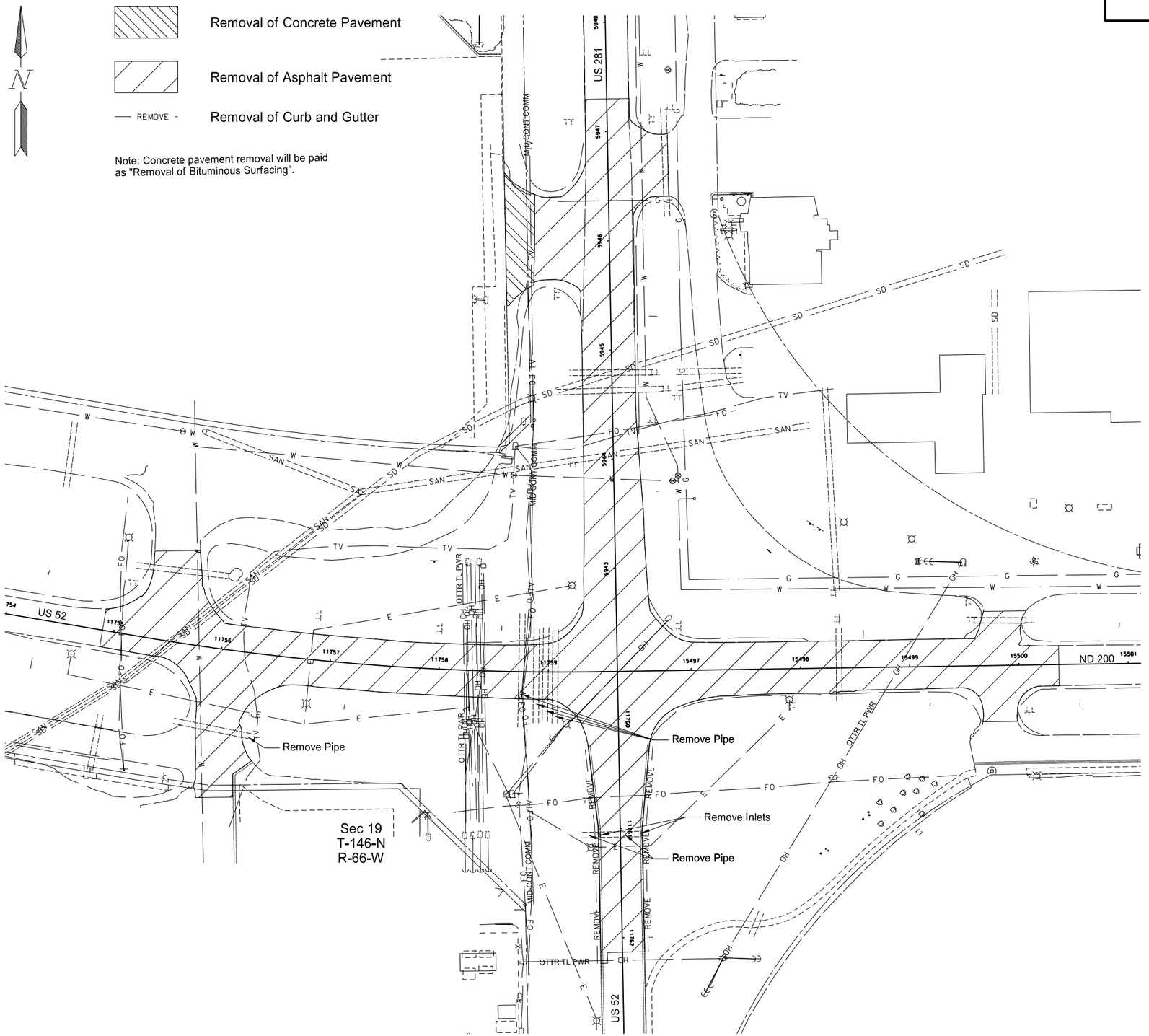
Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	40	1

Removal of Concrete Pavement

Removal of Asphalt Pavement

— REMOVE - Removal of Curb and Gutter

Note: Concrete pavement removal will be paid as "Removal of Bituminous Surfacing".



REMOVAL OF CURB & GUTTER	Qty
Sta 11760+24 RT - Sta 11761+99 RT	200 LF
Sta 11760+24 LT - Sta 11761+99 LT	189 LF

REMOVAL OF BITUMINOUS SURFACING	Qty
Sta 11754+90 - Sta 11762+13 Sta 15496+32 - Sta 15500+37 Sta 5942+06 - Sta 5947+30	10,814 SY

REMOVAL OF INLETS	Qty
Sta 11761+06 - 18' Rt	1
Sta 11761+06 - 18' Lt	1

REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11756+01 - 73' Rt	72 LF
Sta 11758+76 - ℄	102 LF
Sta 11758+89 - ℄	86 LF
Sta 11758+98 - ℄	86 LF
Sta 11759+06 - ℄	86 LF
Sta 11761+06 - ℄	38 LF
Sta 11761+06 - 18' Rt	16 LF

REMOVE FLASHING BEACON SYSTEM	Qty
Sta 11759+56	1 EA

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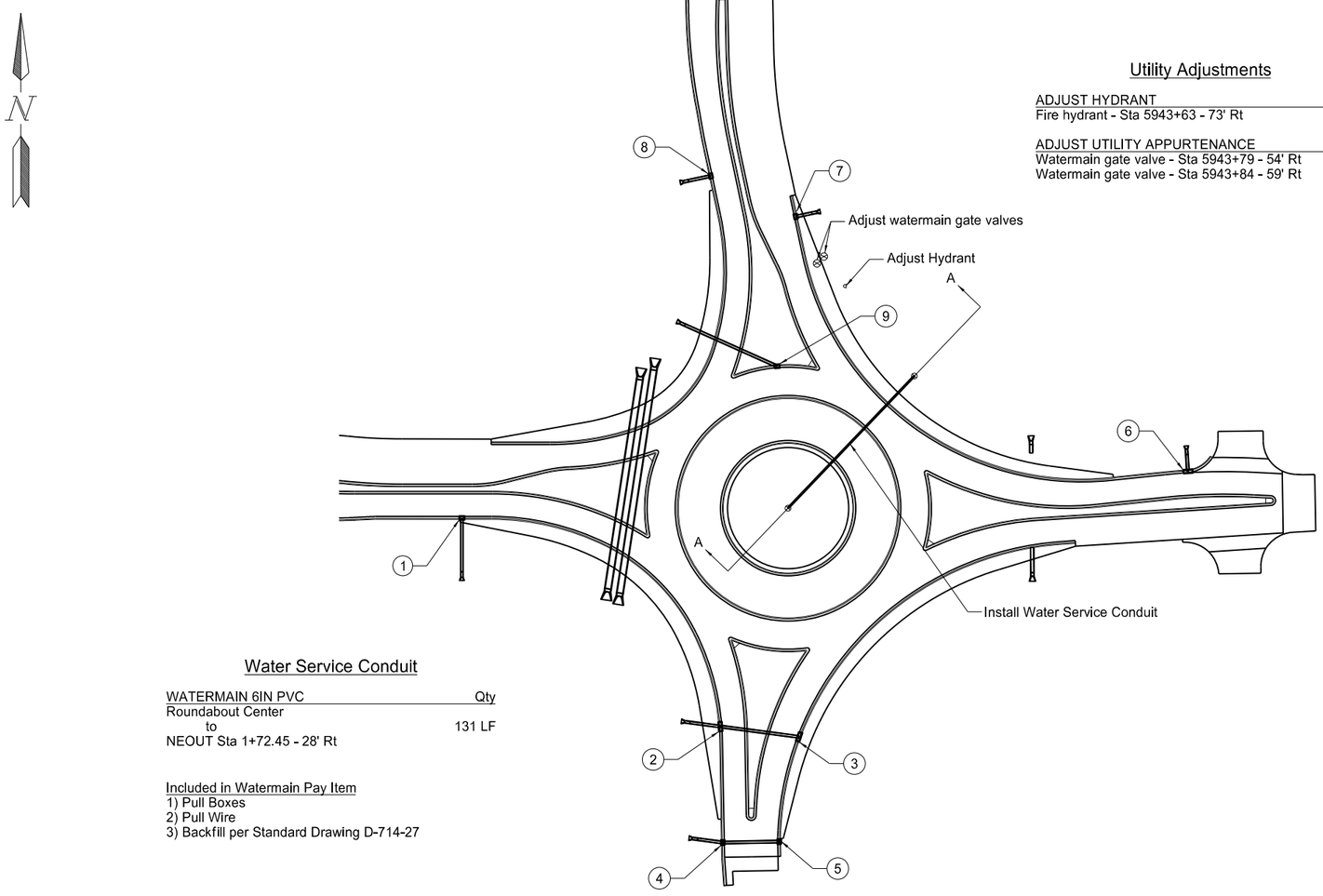
Removals

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	50	2



Utility Adjustments

ADJUST HYDRANT	Qty
Fire hydrant - Sta 5943+63 - 73' Rt	1

ADJUST UTILITY APPURTENANCE	Qty
Watermain gate valve - Sta 5943+79 - 54' Rt	1
Watermain gate valve - Sta 5943+84 - 59' Rt	1

Water Service Conduit

WATERMAIN 6IN PVC	Qty
Roundabout Center to NEOUT Sta 1+72.45 - 28' Rt	131 LF

Included in Watermain Pay Item
1) Pull Boxes
2) Pull Wire
3) Backfill per Standard Drawing D-714-27

Inlet No.	1
Type	Inlet - Type 2
Grate Style	D
Station	2+36.68 - 17.00' Rt
Grate Elev.	1578.28
Base Elev.	1573.78
Invert Elev.	1574.14
'H' Distance	4.00 Ft

Inlet No.	2
Type	Inlet - Type 2 Double
Grate Style	V
Station	2+43.82 - 1.00' Rt
Grate Elev.	1579.35
Base Elev.	1574.85
Invert Elev.	1575.55
'H' Distance	4.00 Ft

Inlet No.	3
Type	Inlet - Type 2 Double
Grate Style	V
Station	0+86.83 - 1.00' Rt
Grate Elev.	1579.32
Base Elev.	1574.82
Invert Elev.	1576.15
'H' Distance	4.00 Ft

Inlet No.	4
Type	Inlet - Type 2
Grate Style	V
Station	2+27.50 - 1.00' Rt
Grate Elev.	1580.11
Base Elev.	1575.61
Invert Elev.	1576.50
'H' Distance	4.00 Ft

Inlet No.	5
Type	Inlet - Type 2
Grate Style	V
Station	0+10.44 - 1.00' Rt
Grate Elev.	1580.11
Base Elev.	1575.61
Invert Elev.	1576.90
'H' Distance	4.00 Ft

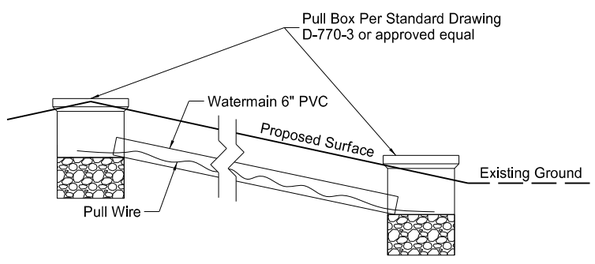
Inlet No.	6
Type	Inlet - Type 2 Double
Grate Style	D
Station	0+57.60 - 17.00' Rt
Grate Elev.	1576.98
Base Elev.	1572.48
Invert Elev.	1573.86
'H' Distance	4.00 Ft

Inlet No.	7
Type	Inlet - Type 2
Grate Style	D
Station	3+38.25 - 17.00' Rt
Grate Elev.	1577.38
Base Elev.	1572.88
Invert Elev.	1573.94
'H' Distance	4.00 Ft

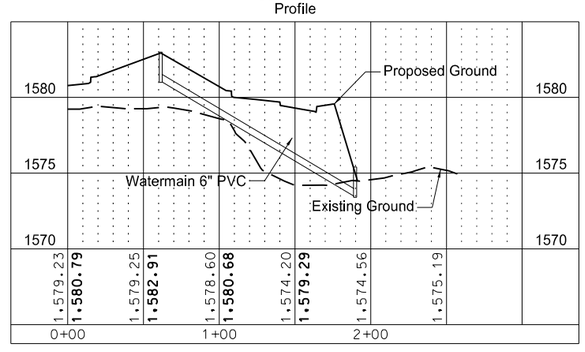
Inlet No.	8
Type	Inlet - Type 2
Grate Style	D
Station	3+31.53 - 17.00' Rt
Grate Elev.	1577.64
Base Elev.	1573.14
Invert Elev.	1573.65
'H' Distance	4.00 Ft

Inlet No.	9
Type	Inlet - Type 2
Grate Style	D
Station	1+33.25 - 21.00' Rt
Grate Elev.	1578.73
Base Elev.	1574.23
Invert Elev.	1574.59
'H' Distance	4.00 Ft

Section A-A
Detail (not drawn to scale)



Section A-A
Profile



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Inlet Summary, Water Service Layout, and Utility Adjustments

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	51	1

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
10516+27	83' Rt	10516+73	83' Rt	24	PIPE CONDUIT 24IN- APPROACH	46	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10556+43	50' Lt	10556+43	54' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10580+53	43' Lt	10580+53	51' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10580+54	43' Rt	10580+54	51' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10585+18	73' Lt	10585+59	75'Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10612+43	80' Lt	10612+97	79' Lt	18	PIPE CONDUIT 18IN- APPROACH	54	Reinforced Concrete Pipe - Class III **(barrel length = 46 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10624+19	70' Rt	10624+64	71' Rt	24	PIPE CONDUIT 24IN- APPROACH	44	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10625+29	41' Lt	10625+29	53' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10625+28	45' Rt	10625+28	51' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10643+04	72' Lt	10643+47	72' Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10665+39	69' Lt	10666+08	69' Lt	18	PIPE CONDUIT 18IN- APPROACH	68	Reinforced Concrete Pipe - Class III **(barrel length = 60 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10674+78	58' Lt	10674+78	66' Lt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10690+14	50' Lt	10690+14	62' Lt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10690+14	56' Rt	10690+14	62' Rt	36	PIPE CONC REINF 36IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	36						Remove & Relay	Sect 20 Sheet 15
10697+98	43' Lt	10697+98	47' Lt	54	PIPE CONC REINF 54IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	54					Remove & Relay		Sect 20 Sheet 15
10698+20	44' Lt	10698+20	48' Lt	54	PIPE CONC REINF 54IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	54					Remove & Relay		Sect 20 Sheet 15
10734+13	42' Lt	10734+13	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10734+10	44' Rt	10734+10	50' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10756+07	43' Lt	10756+07	51' Lt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10756+06	43' Rt	10756+06	51' Rt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30						Remove & Relay	Sect 20 Sheet 15
10764+25	43' Lt	10764+25	47' Lt	30	PIPE CONC REINF 30IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10764+26	43' Rt	10764+26	47' Rt	30	PIPE CONC REINF 30IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	30						Remove & Relay	Sect 20 Sheet 15
10796+09	44' Lt	10796+09	54' Lt	36	PIPE CONC REINF 36IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10796+12	43' Rt	10796+12	55' Rt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36						Remove & Relay	Sect 20 Sheet 15
10796+25	44' Lt	10796+25	54' Lt	36	PIPE CONC REINF 36IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10796+27	42' Rt	10796+27	54' Rt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36						Remove & Relay	Sect 20 Sheet 15

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
FES = Flared End Section
TES = Traversable End Section

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Allowable Pipe Materials List

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	51	5

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
11599+15	43' Lt	11599+15	49' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11599+13	43' Rt	11599+13	49' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11609+24	53' Lt	11609+24	59' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11609+18	41' Rt	11609+18	57' Rt	24	PIPE CONC REINF 24IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11634+38	45' Lt	11634+38	57' Lt	24	PIPE CONC REINF 24IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11634+36	46' Rt	11634+36	58' Rt	24	PIPE CONC REINF 24IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11652+29	70' Rt	11653+11	67' Rt	30	PIPE CONDUIT 30IN- APPROACH	80	Reinforced Concrete Pipe - Class III **(barrel length = 75 LF)**	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	36	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
11677+45	42' Rt	11677+45	48' Rt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30						Remove & Relay	Sect 20 Sheet 15
11705+73	86' Lt	11705+92	42' Lt	36	PIPE CONC REINF 36IN CL III	44	Reinforced Concrete Pipe - Class III **(barrel length = 48 LF)**	36					Remove & Relay		Sect 20 Sheet 15
11705+78	80' Rt	11705+92	48' Rt	36	PIPE CONC REINF 36IN CL III	32	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	36						Remove & Relay	Sect 20 Sheet 15
11719+34	42' Lt	11719+34	46' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11719+33	44' Rt	11719+33	48' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11755+34	70' Rt	11756+06	75' Rt	54	PIPE CONDUIT 54IN- APPROACH	74	Reinforced Concrete Pipe - Class III **(barrel length = 68 LF)**	54					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	54	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	54							
Inlet 1 2+36 WEIN	17' Rt	2+36 WEIN	59' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	42	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
11758+87	94' Lt	11758+66	59' Rt	48	PIPE CONDUIT 48IN	154	Reinforced Concrete Pipe - Class III **(barrel length = 150 LF)**	48				Incidental to Pipe	FES	FES	Standard D-714-26M
							Corrugated Steel Pipe	48	Z	2, 3, 5	0.168				
							Corrugated Steel Pipe	48	A	2, 3, 5	0.138				
							Corrugated Steel Pipe	48	P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	P	3/4, 1	0.064				
11758+97	101' Lt	11758+74	62' Rt	48	PIPE CONDUIT 48IN	164	Reinforced Concrete Pipe - Class III **(barrel length = 160 LF)**	48				Incidental to Pipe	FES	FES	Standard D-714-26M
							Corrugated Steel Pipe	48	Z	2, 3, 5	0.168				
							Corrugated Steel Pipe	48	A	2, 3, 5	0.138				
							Corrugated Steel Pipe	48	P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	P	3/4, 1	0.064				
Inlet 2 2+44 SWOUT	1' Rt	2+39 SWOUT	26' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	26	Reinforced Concrete Pipe - Class III **(barrel length = 22 LF)**	18						FES	Standard D-714-27
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 3 0+87 SEOUT	1' Rt	Inlet 2 2+45 SWOUT	1' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	56	Reinforced Concrete Pipe - Class III **(barrel length = 56 LF)**	18				Incidental to Pipe			Standard D-714-26
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 4 3+28 SWOUT	1' Rt	3+24 SWOUT	23' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	22	Reinforced Concrete Pipe - Class III **(barrel length = 18 LF)**	18						FES	Standard D-714-27
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 5 0+10 SEOUT	1' Rt	Inlet 4 3+28 SWOUT	1' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	40	Reinforced Concrete Pipe - Class III **(barrel length = 40 LF)**	18				Incidental to Pipe			Standard D-714-26
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 6 0+58 EAIN	17' Rt	0+58 EAIN	33' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	16	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 7 3+38 NOEX	17' Lt	3+38 NOEX	33' Lt	15	PIPE CONDUIT 18IN - STORM DRAIN	15	Reinforced Concrete Pipe - Class III **(barrel length = 11 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 8 3+32 NOIN	17' Rt	3+32 NOIN	37' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	20	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 9 1+33 CNTR	21' Rt	0+84 NWOUT	29' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	76	Reinforced Concrete Pipe - Class III **(barrel length = 72 LF)**	15				Incidental to Pipe		FES	Standard D-714-26
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
15498+35	30' Rt	15498+35	51' Rt	24	PIPE CONC REINF 24IN CL III	18	Reinforced Concrete Pipe - Class III **(barrel length = 18 LF)**	24						Remove & Relay	Sect 20 Sheet 15
15498+36	36' Lt	15498+36	47' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15

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P = Polymeric (over Zinc or Aluminum)

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
FES = Flared End Section
TES = Traversable End Section

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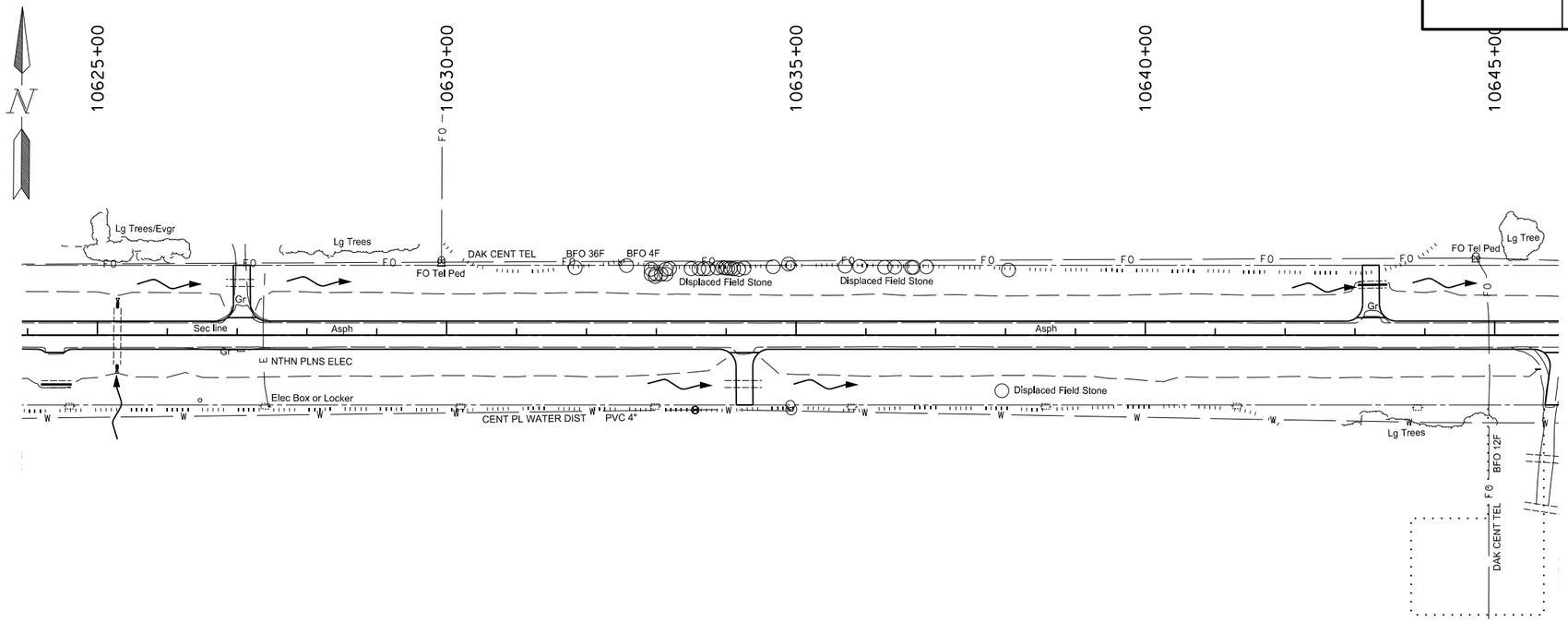
Allowable Pipe Materials List

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	8



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10643+25 Lt	40 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 10643+25 Lt	42 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 10625+29 Lt	8 LF
Sta 10625+28 Rt	6 LF

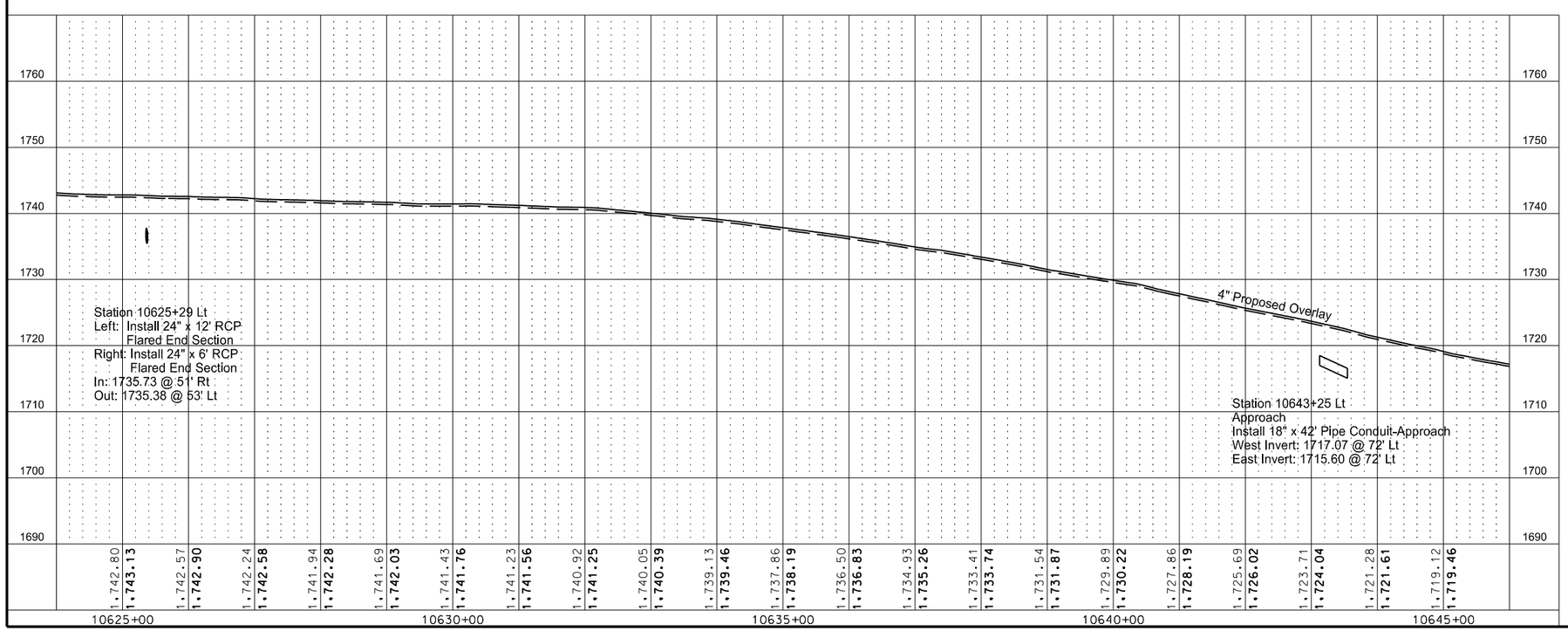
REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10625+29 Lt	1 EA
Sta 10625+28 Rt	1 EA

10625+29 - ℄
24" X 80' RCP (Good)
2 RCES (Fair)

10627+04 - 74' Lt
18" X 40' CSP (Good)
2 CSES (Good)

10634+25 - 70' Rt
18" X 52' CSP (Good)
2 CSES (Good)

10643+25 - 72' Lt
18" X 40' CSP (Good)
2 CSES (Poor)



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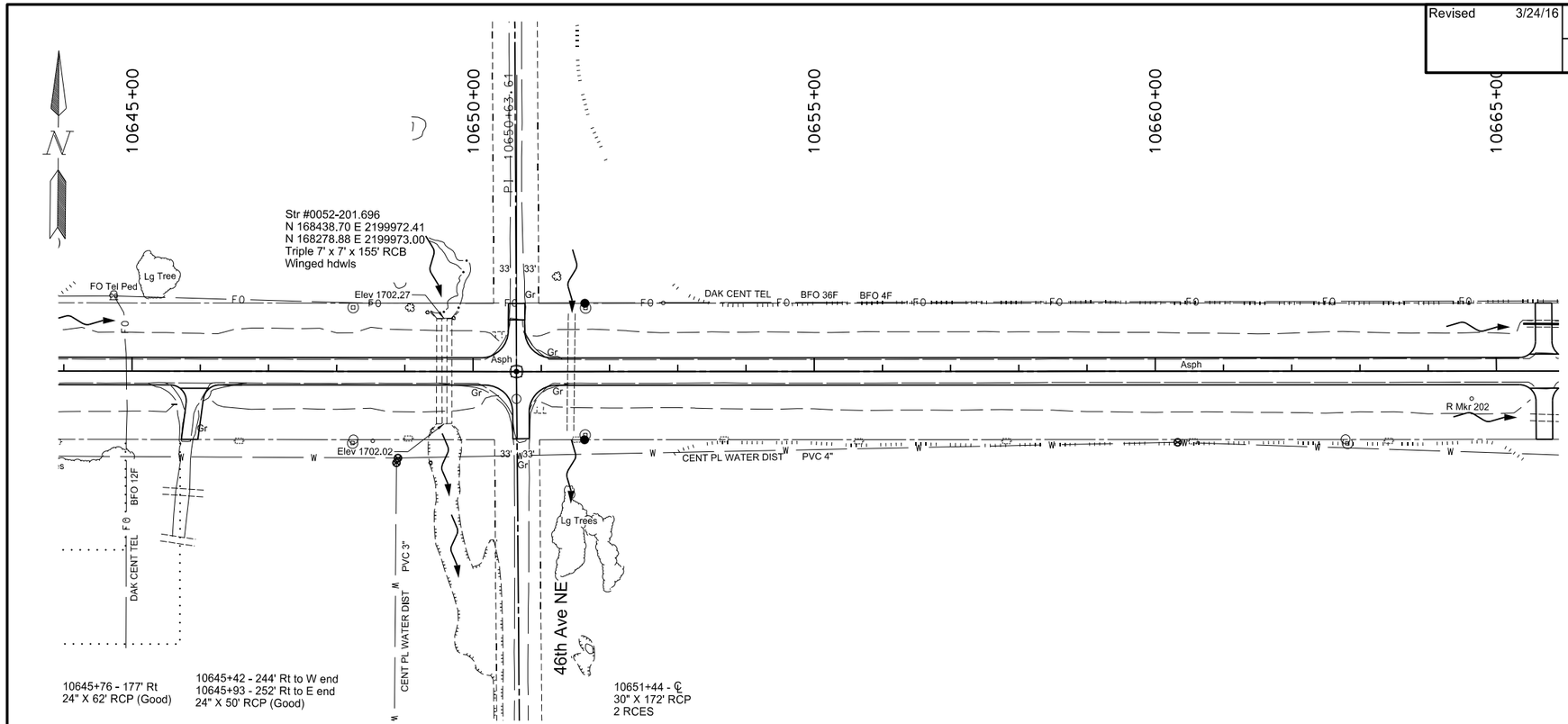
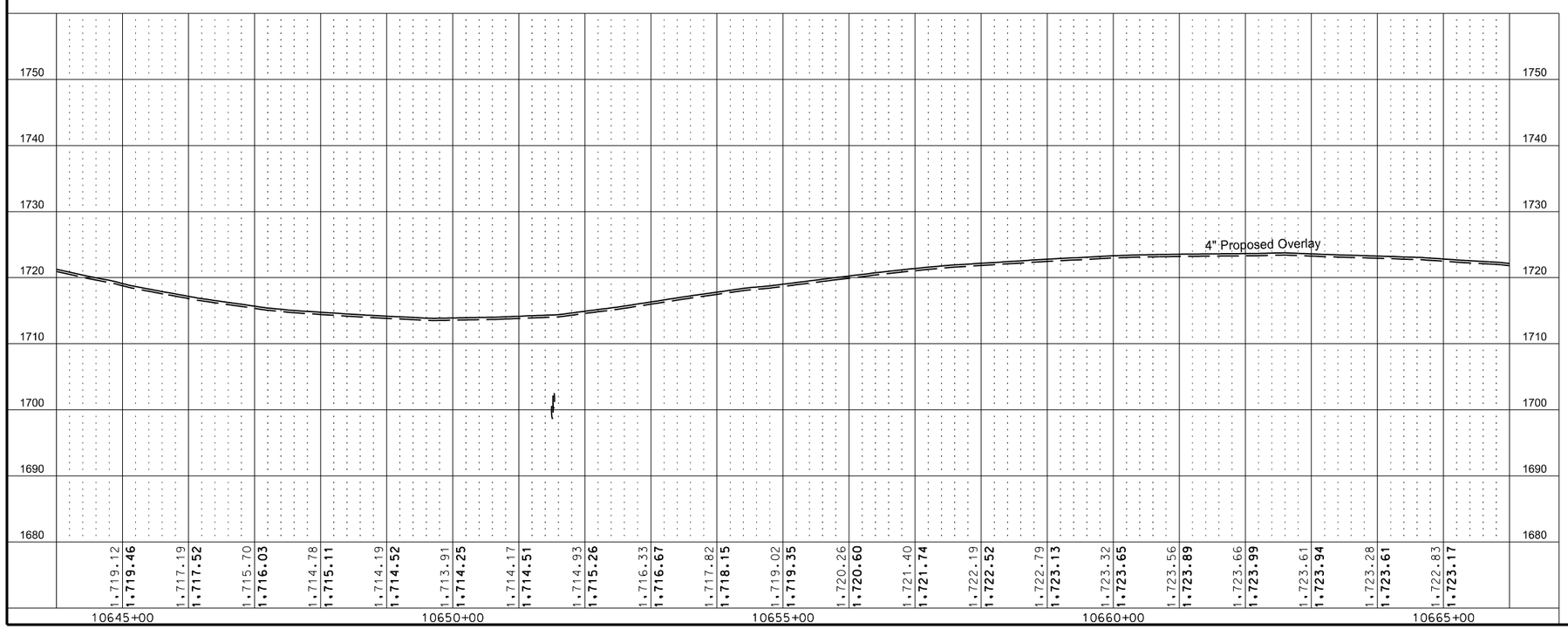
Plan & Profile
Sta 10625+00 to Sta 10645+00

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	9





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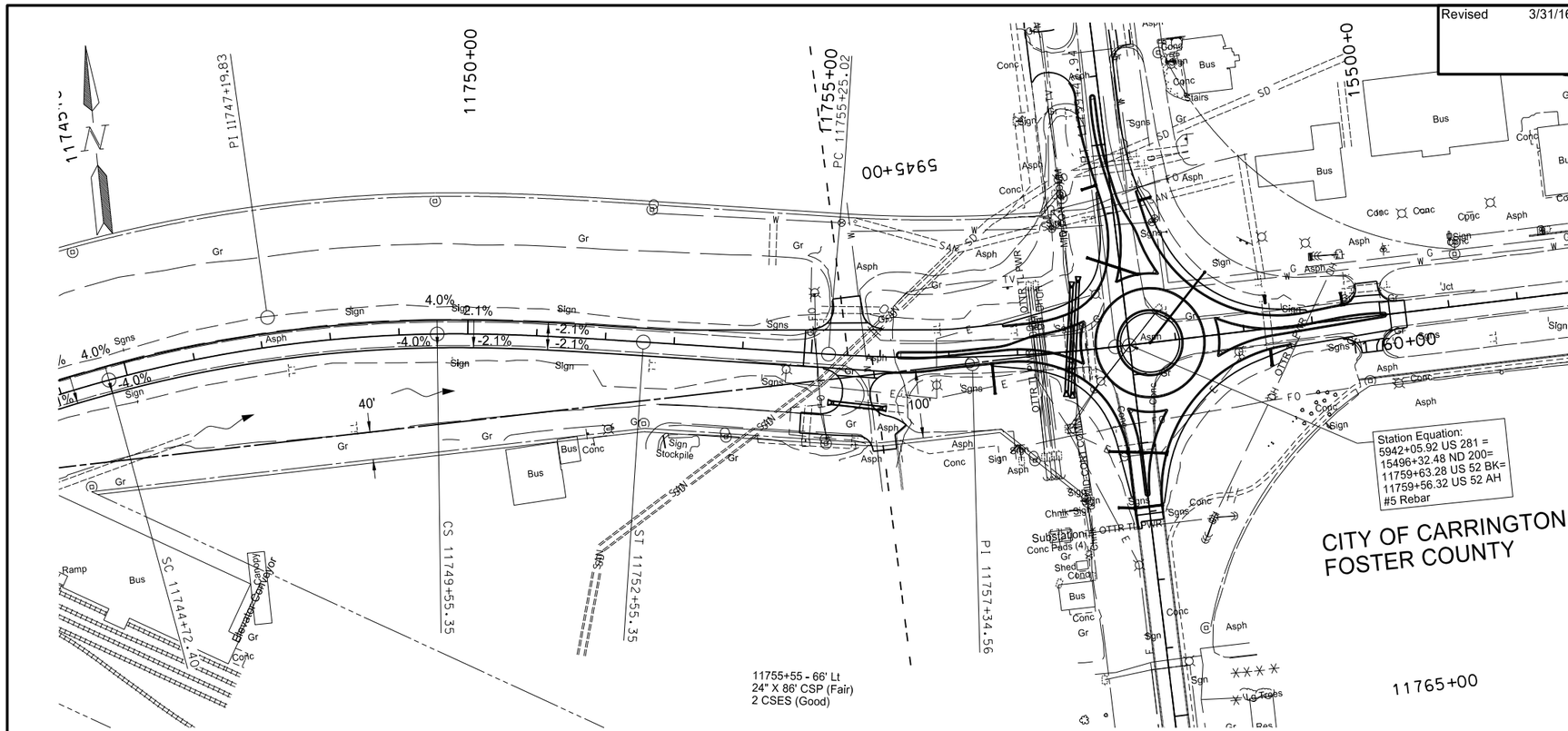
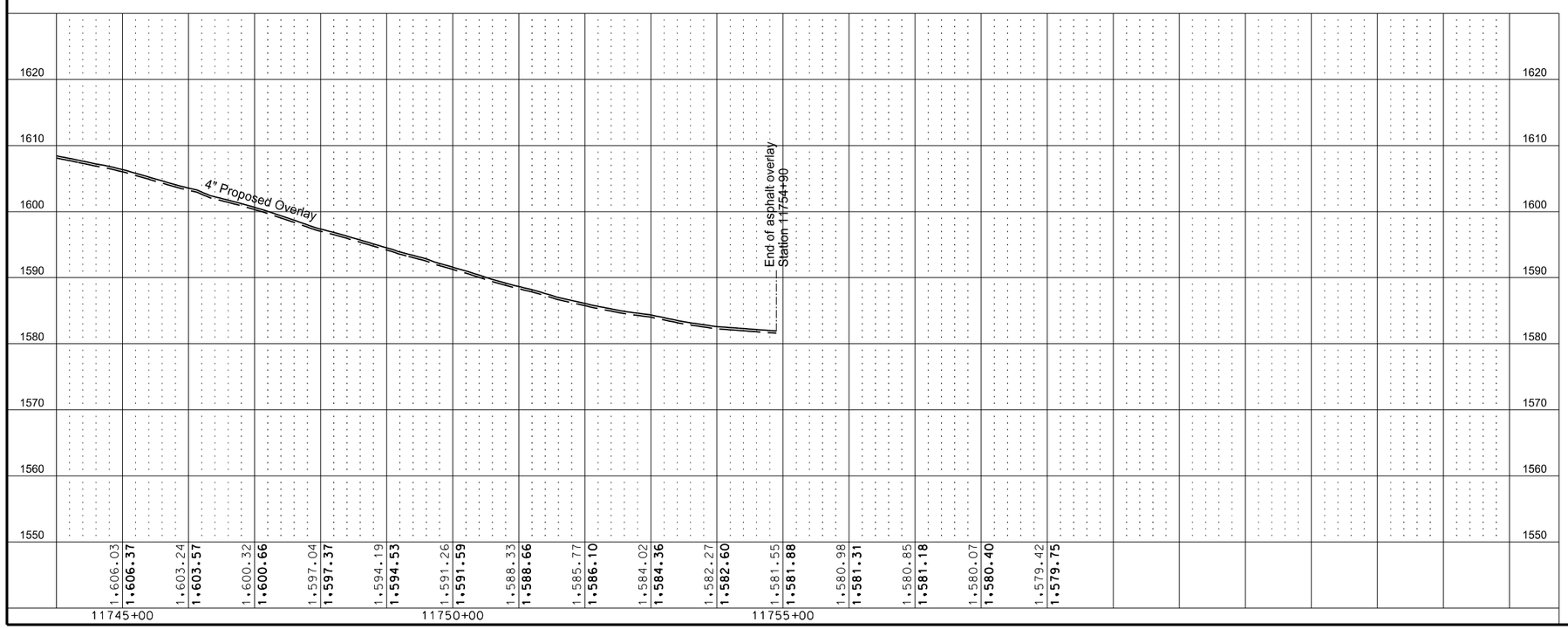
Plan & Profile
Sta 10645+00 to Sta 10665+00

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	64





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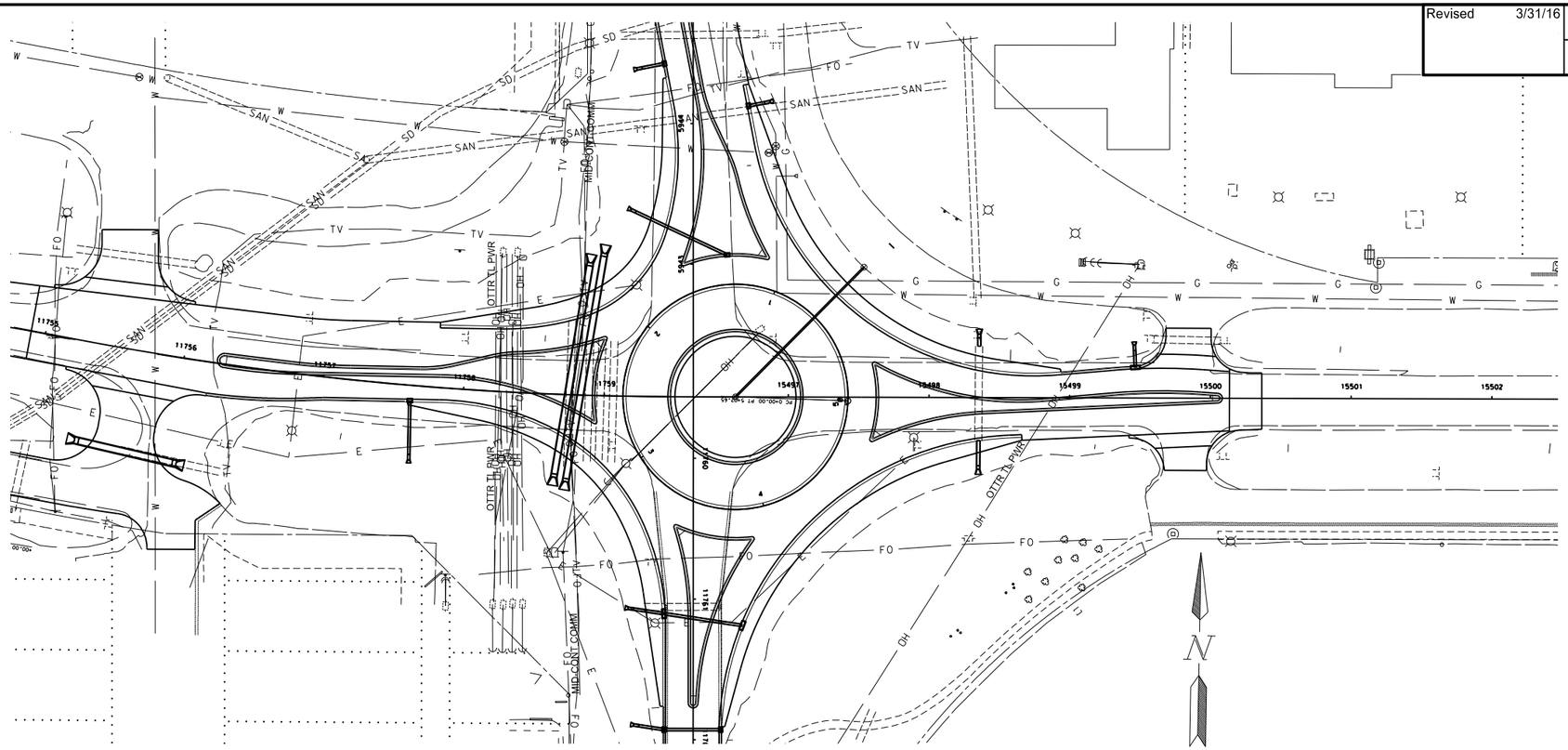
Plan & Profile
Sta 11745+00 to Sta 11754+90

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	65



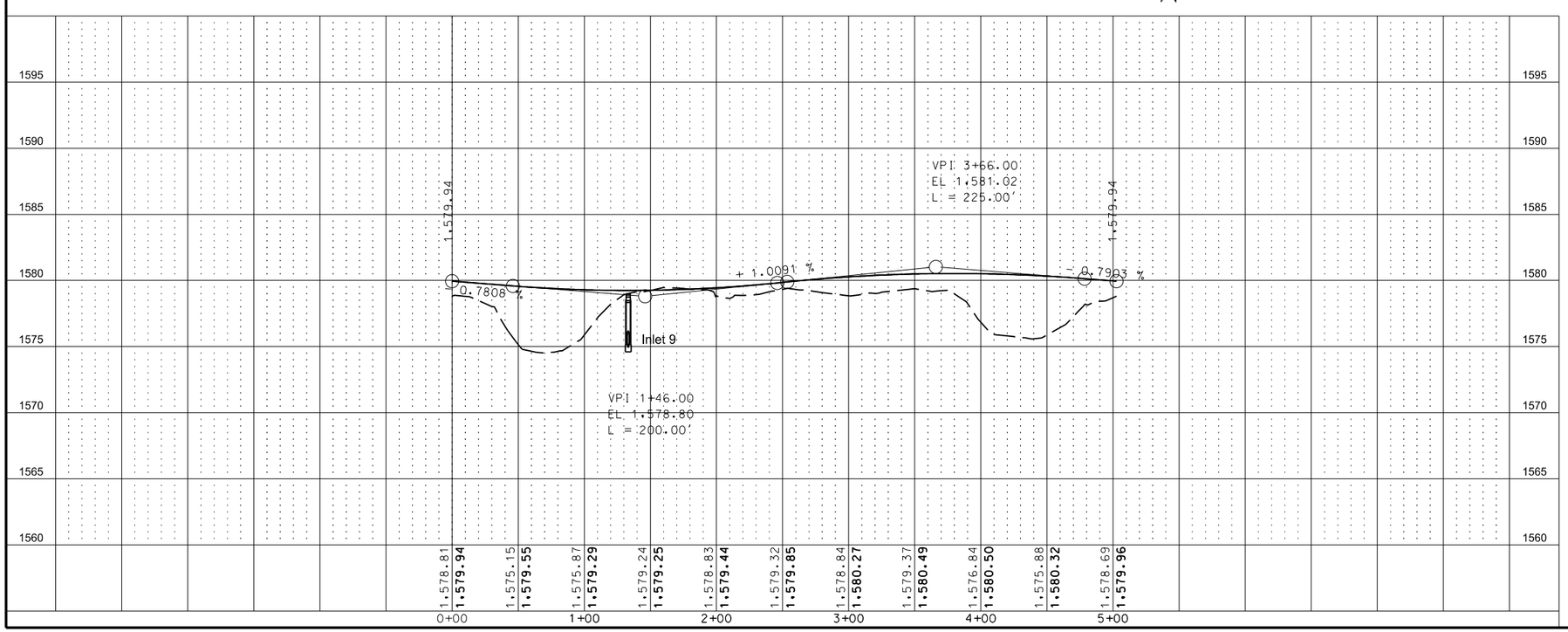
PIPE CONDUIT 48IN	Qty
Sta 11758+66 - 59' Rt to Sta 11758+87 - 94' Lt	154.0 LF
Sta 11758+74 - 62' Rt to Sta 11758+97 - 101' Lt	164.0 LF

INLET TYPE 2	Qty
1+33 - 21' Rt ERCNTR	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
1+33 - 21' Rt ERCNTR to 0+84 29' Rt ERNWOUT	76.0 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 15498+35 Rt	18.0 LF
Sta 15498+35 Lt	6.0 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 15498+35	2 EA



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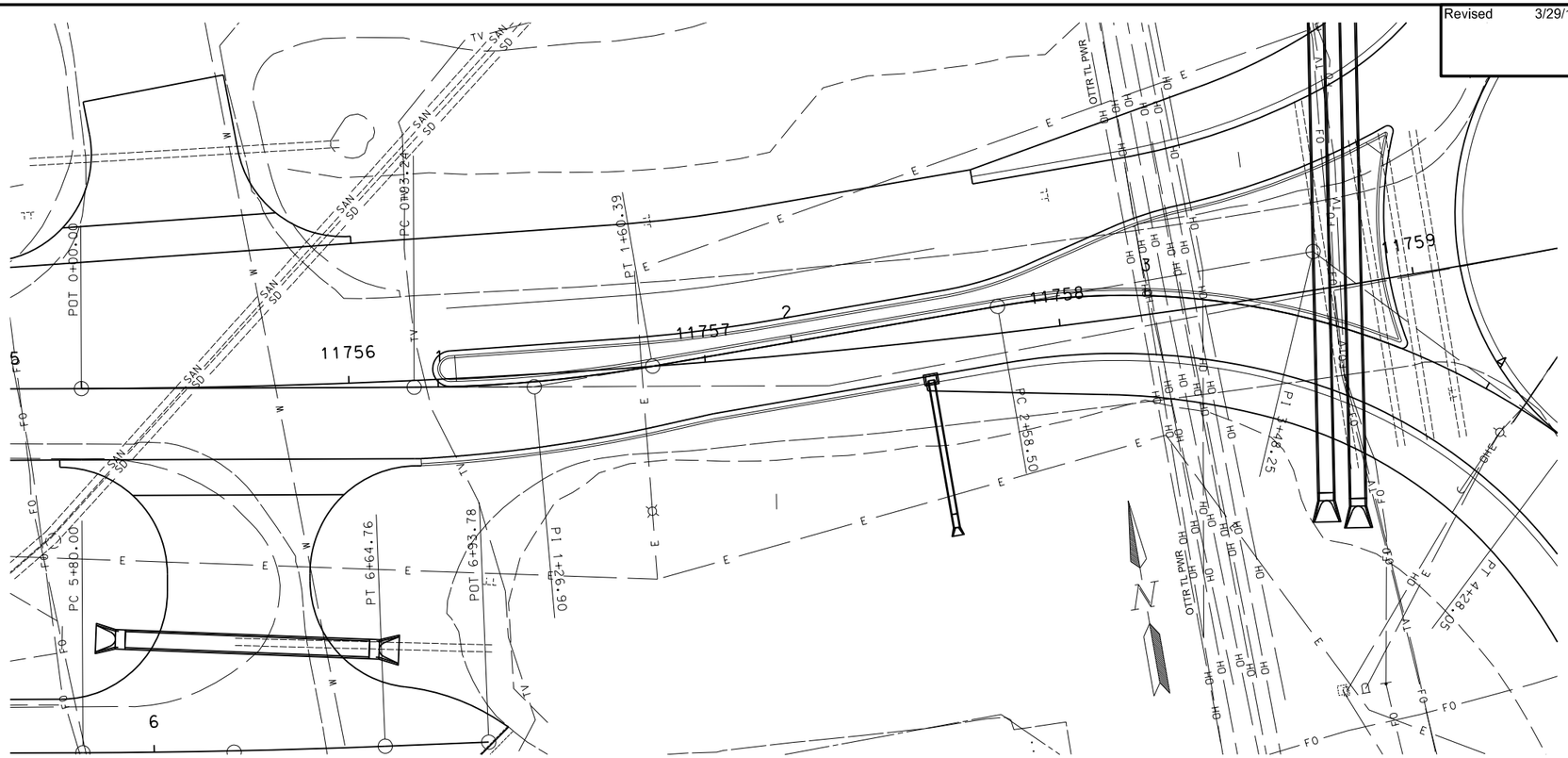
Roundabout Center

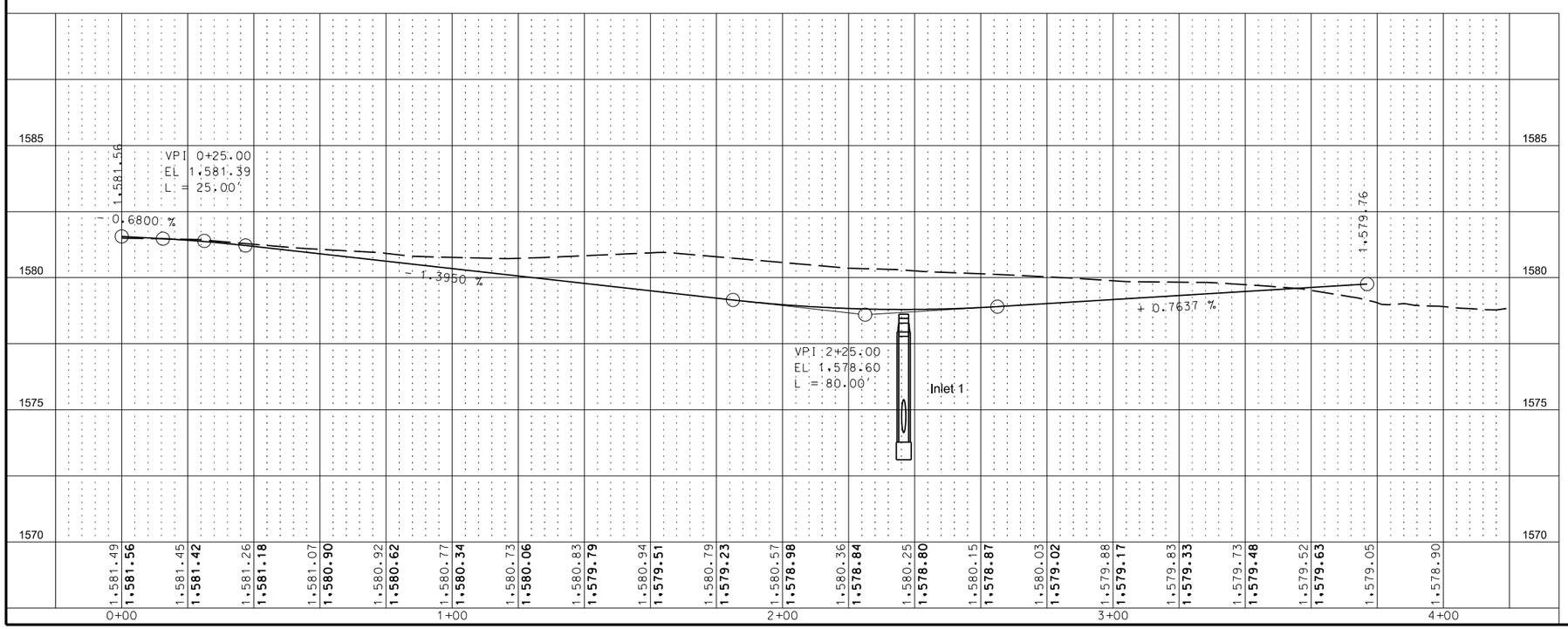
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	66



INLET-TYPE 2 — Qty
Sta 2+36 - 07' Rt WEIN — 1 EA

PIPE CONDUIT 54IN- APPROACH — Qty
Sta 11755+34 - 70' Rt
to
Sta 11756+06 - 75' Rt — 74.0 LF

PIPE CONDUIT 18IN - STORM DRAIN — Qty
Sta 2+36 - 17' Rt WEIN
to
Sta 2+36 - 59' Rt WEIN — 42.0 LF



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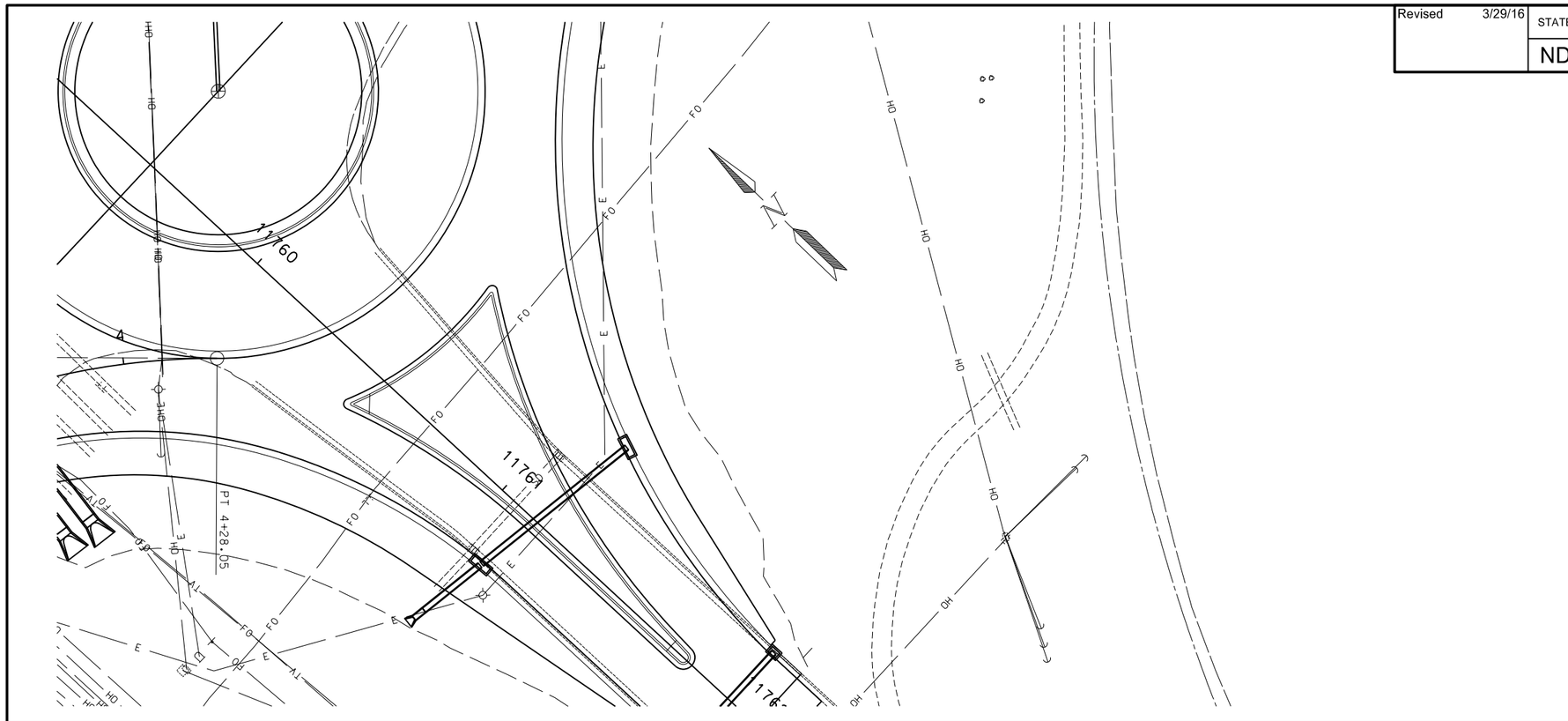
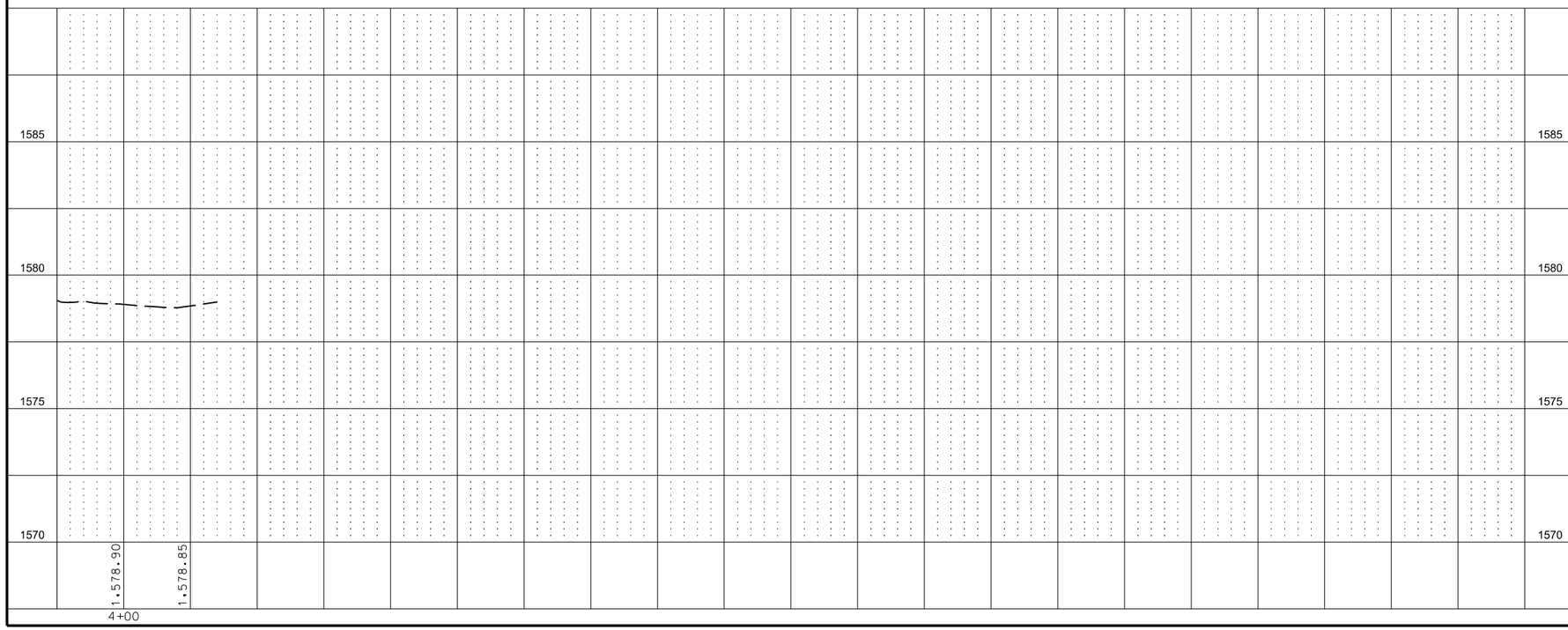
Roundabout West Entrance

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	67





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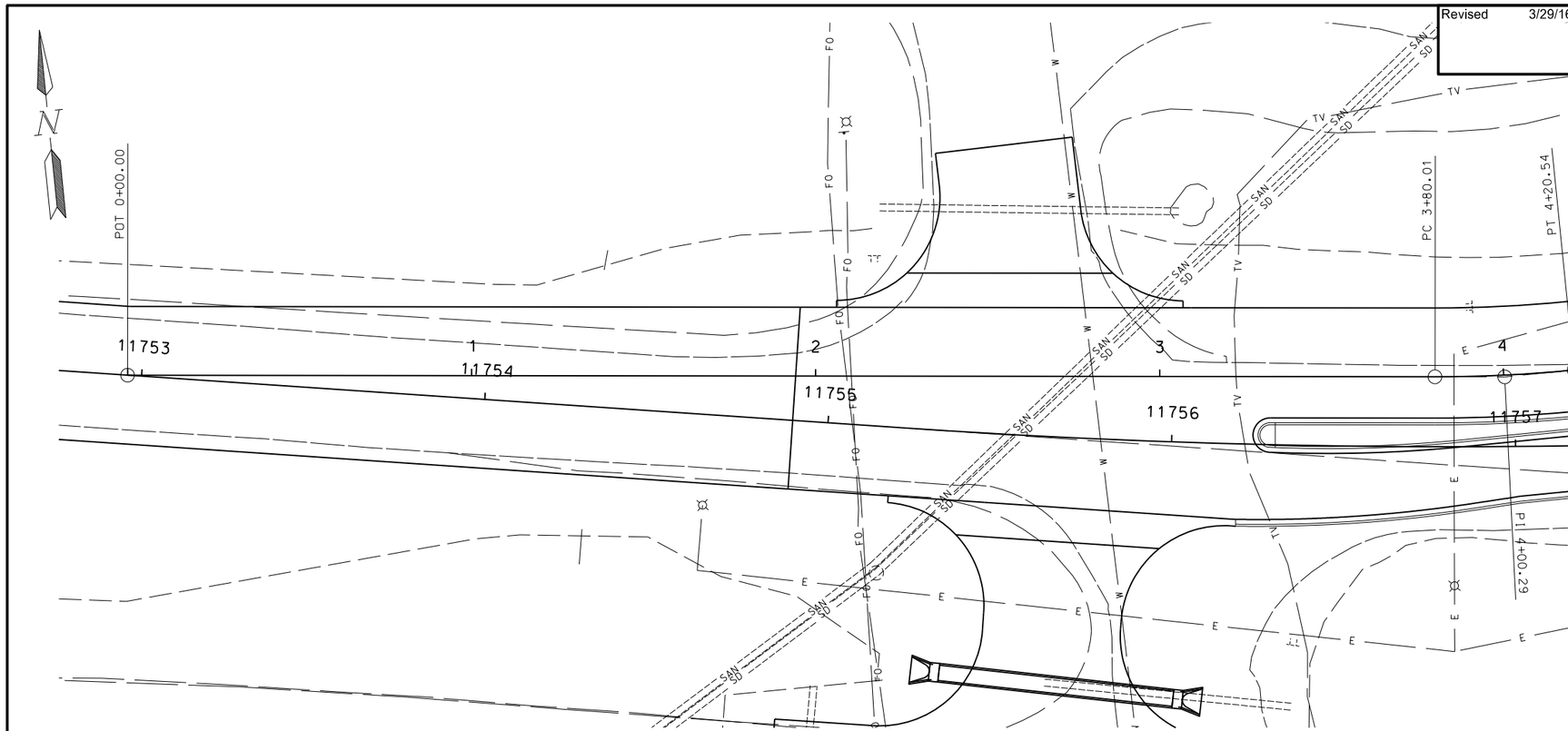
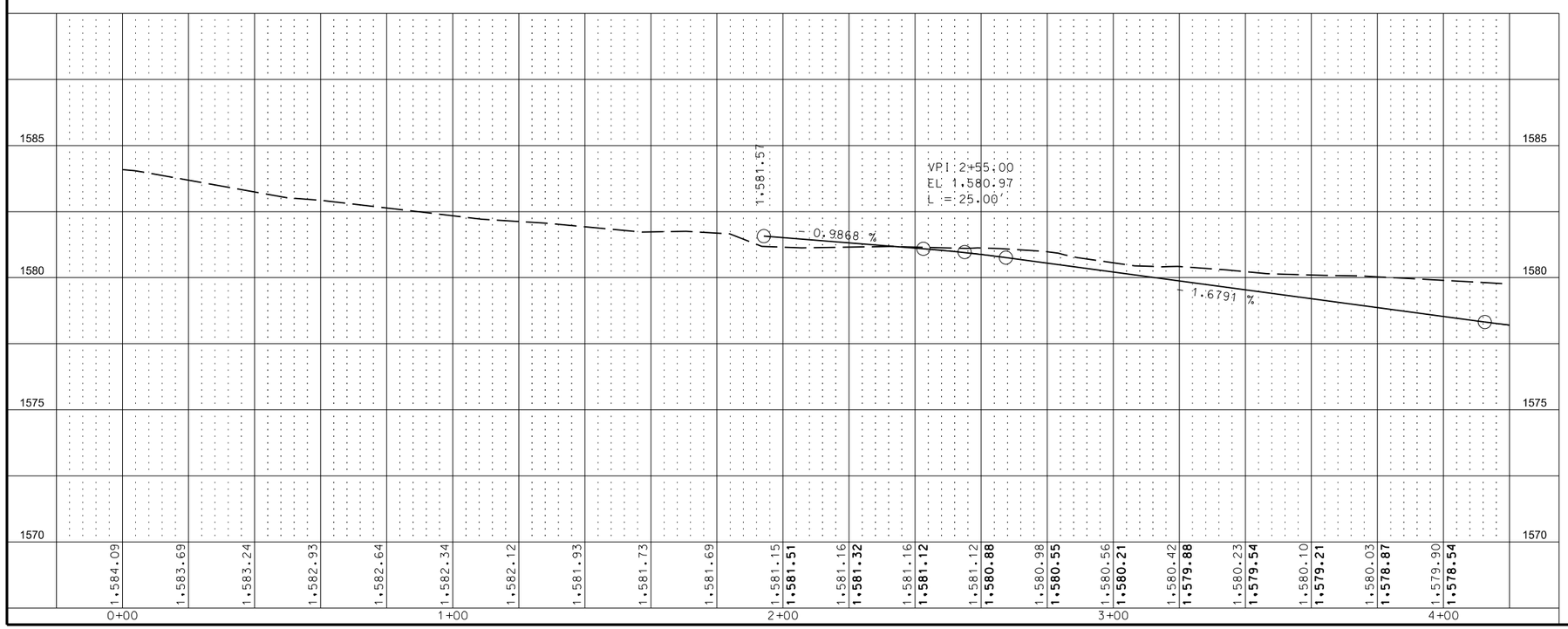
Roundabout West Entrance

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	68





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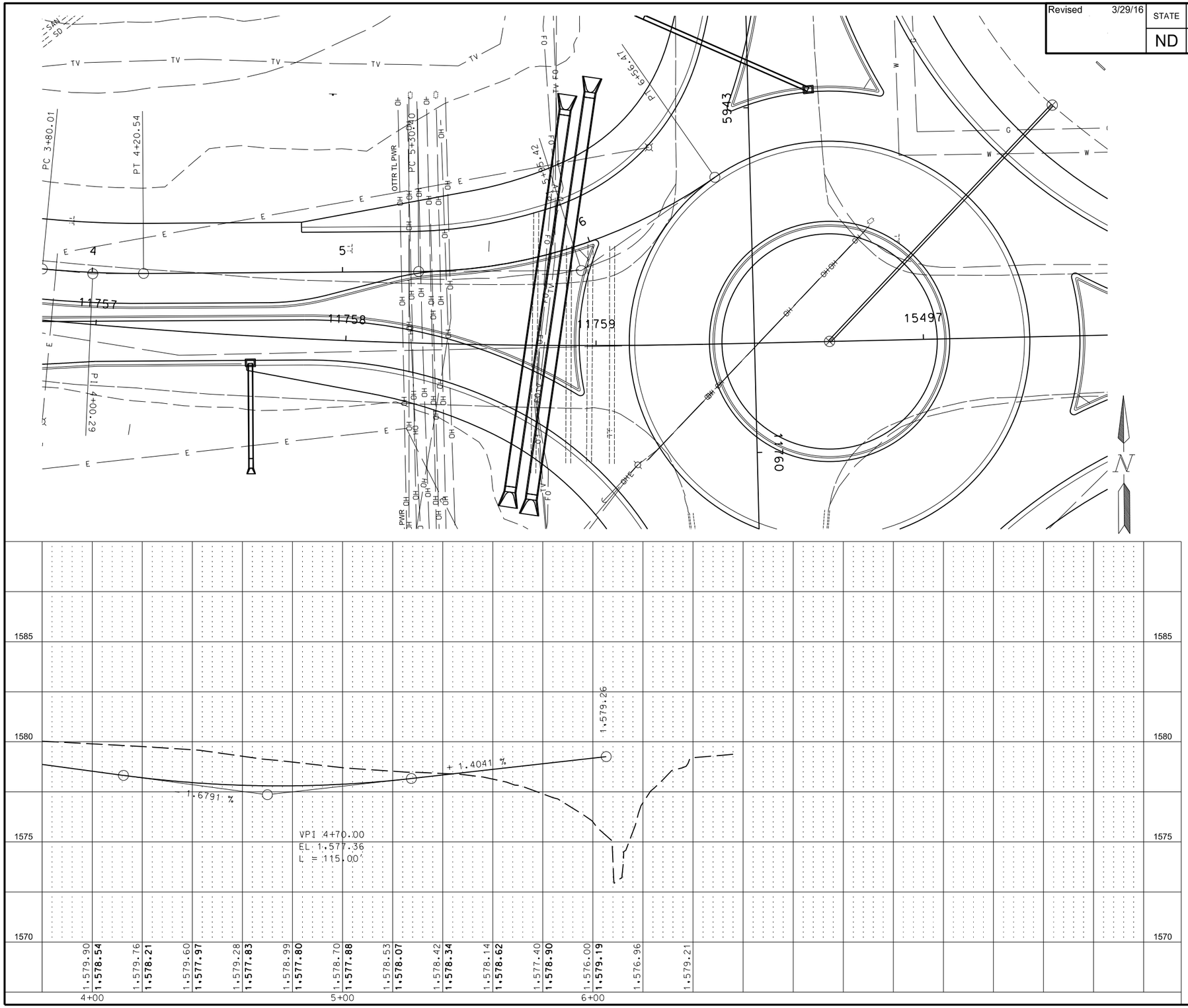
Roundabout West Exit

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	69



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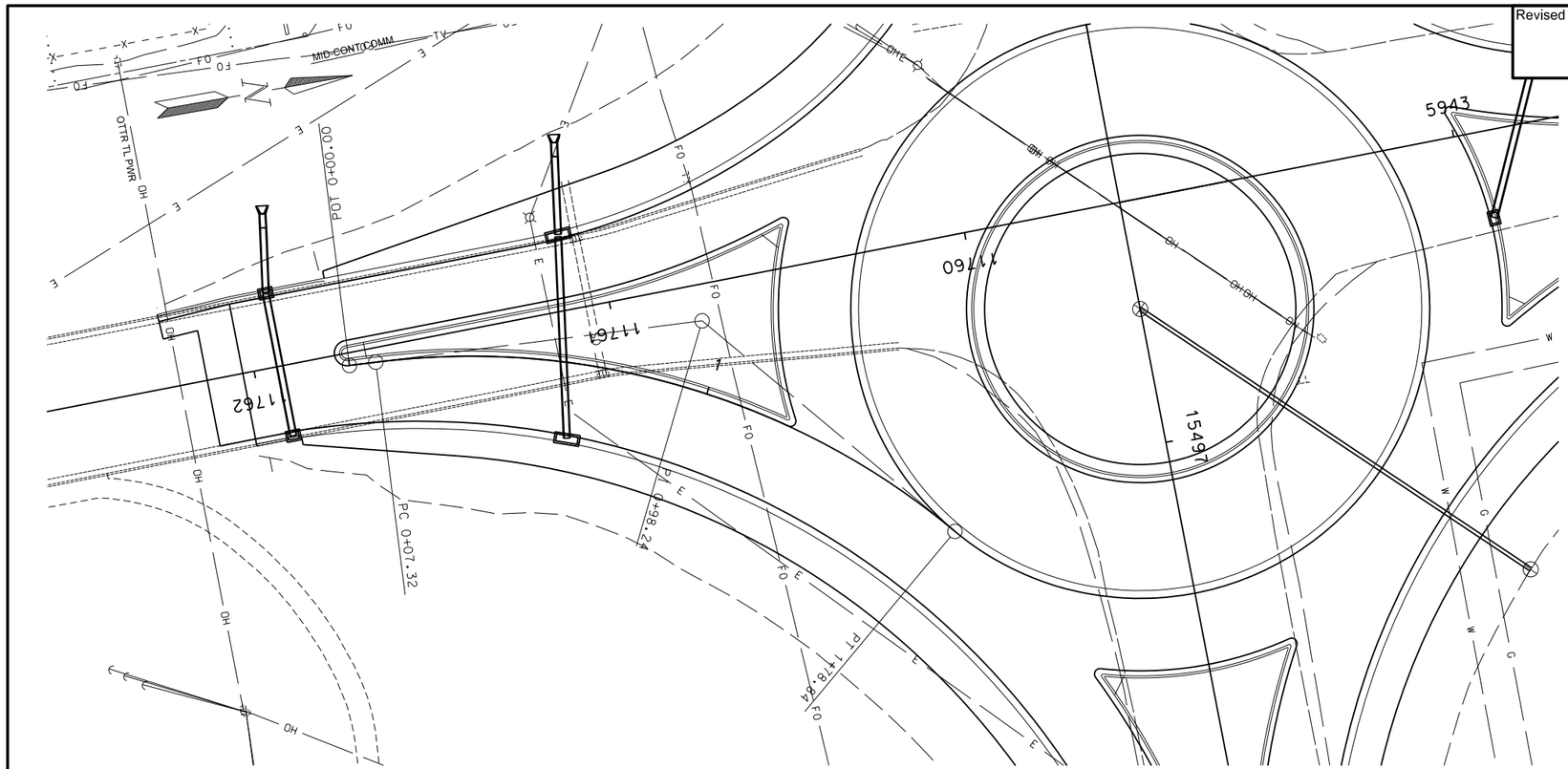
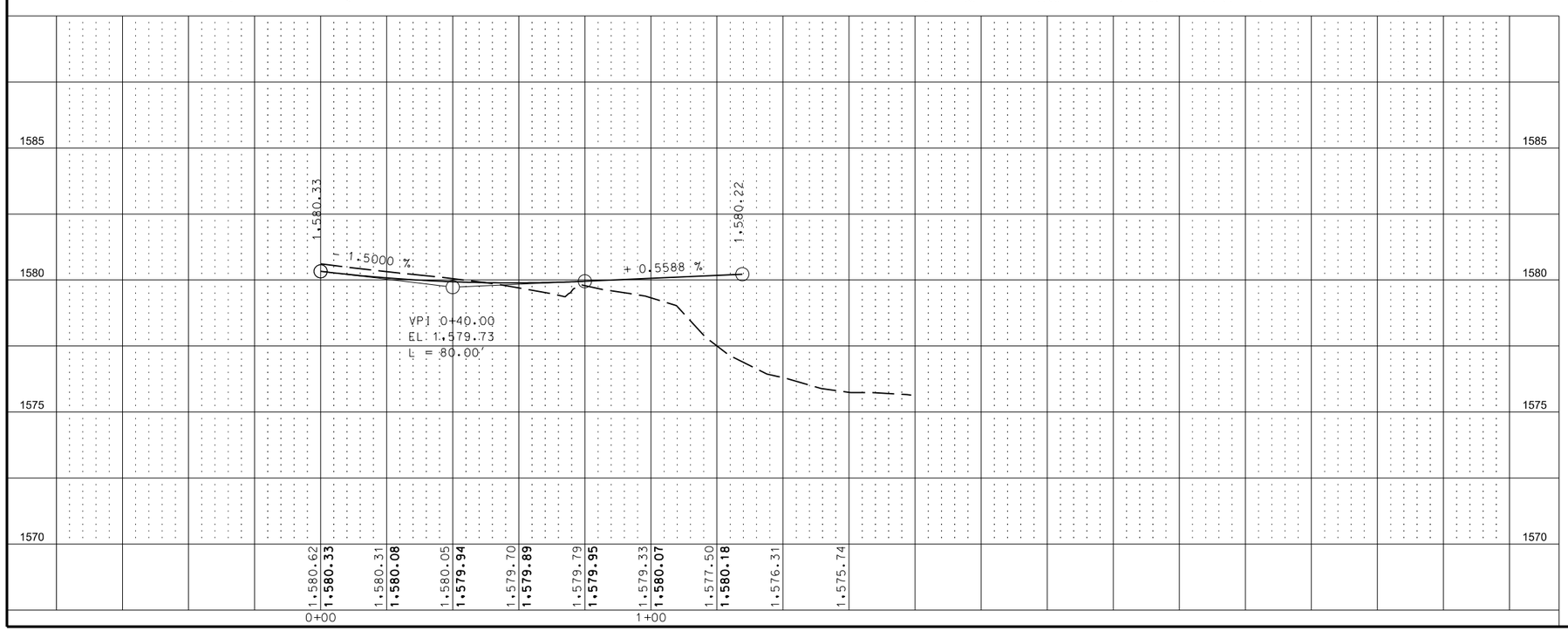
Roundabout West Exit

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	70





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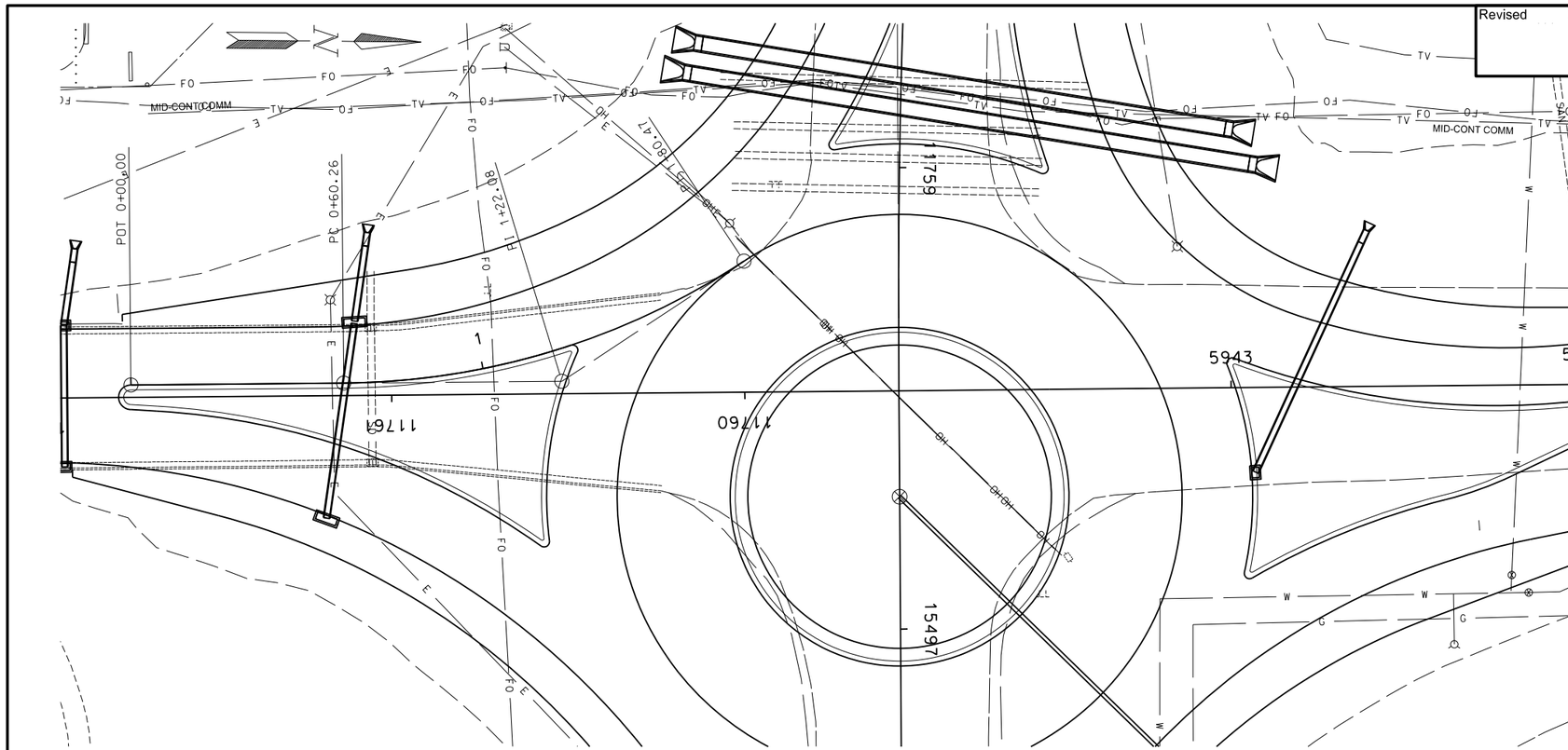
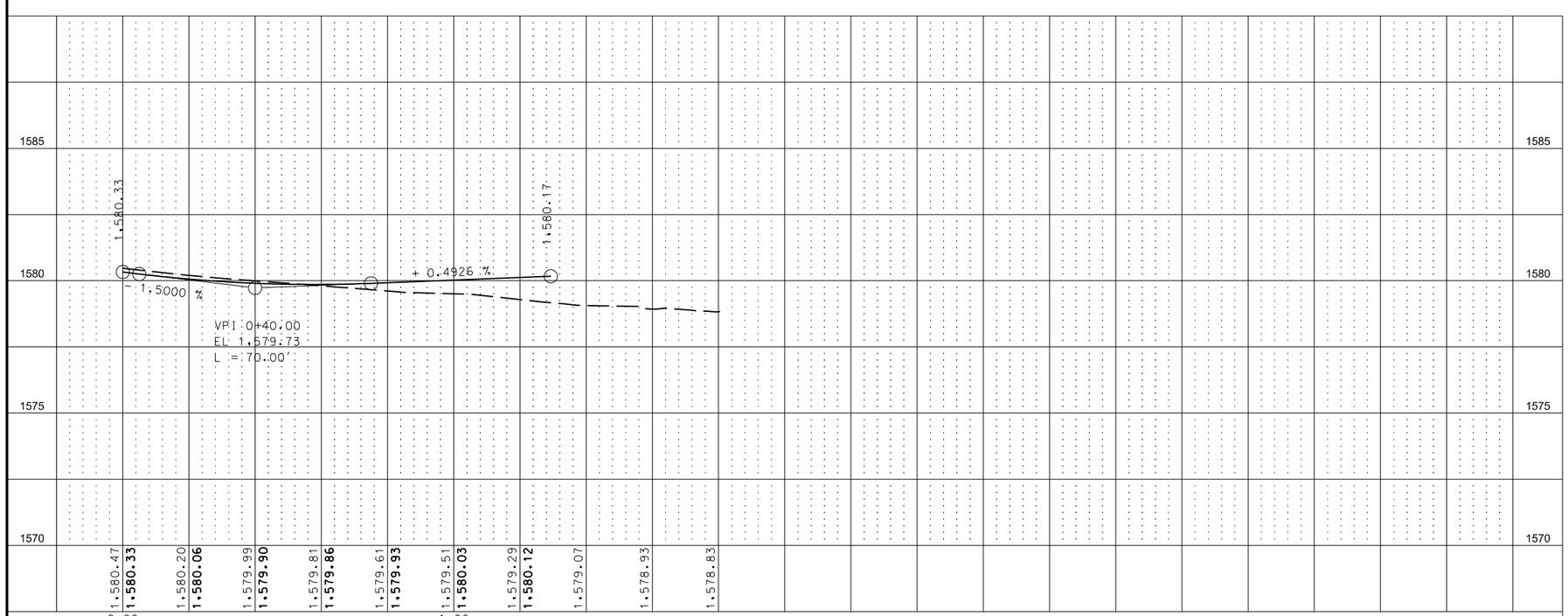
Roundabout South Entrance

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	71





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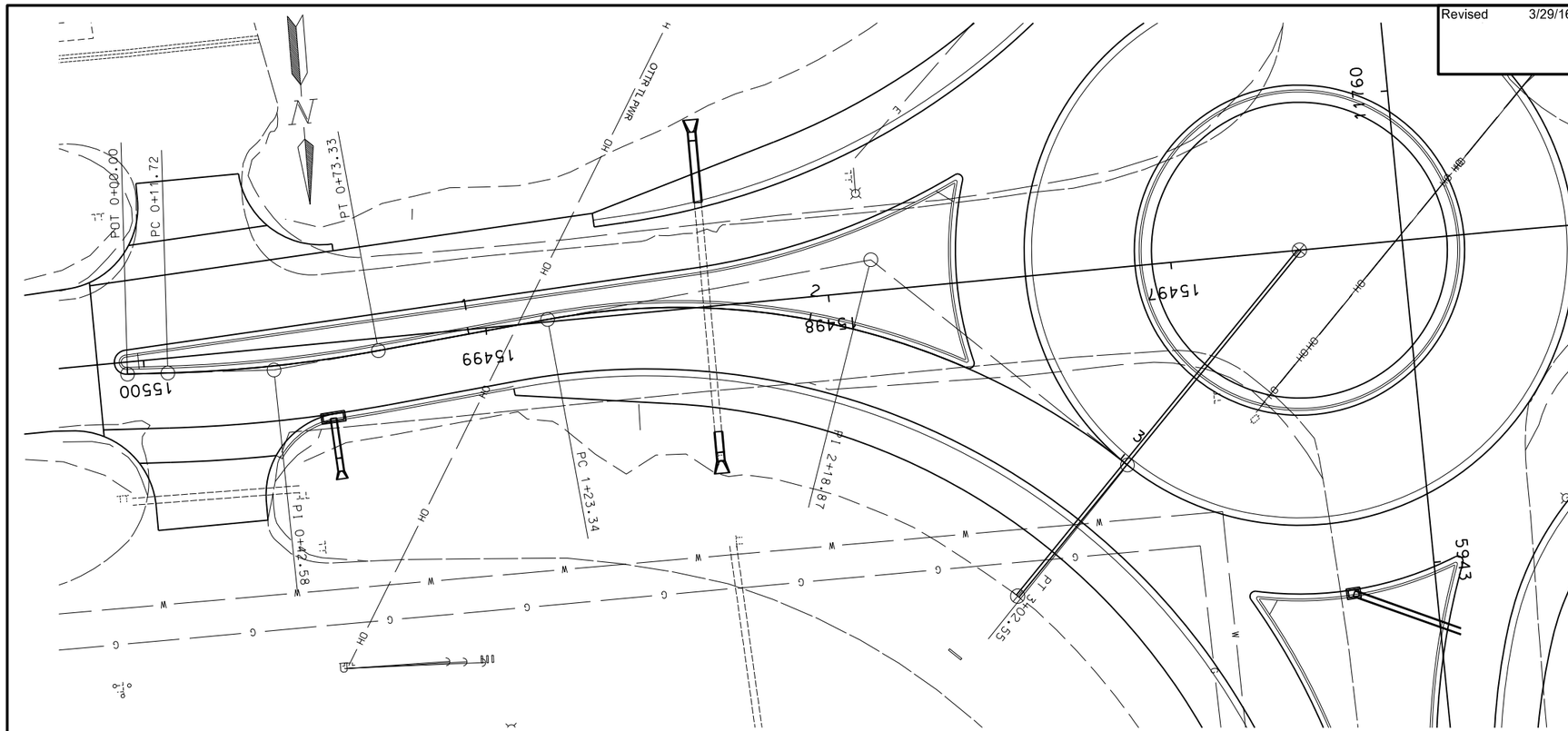
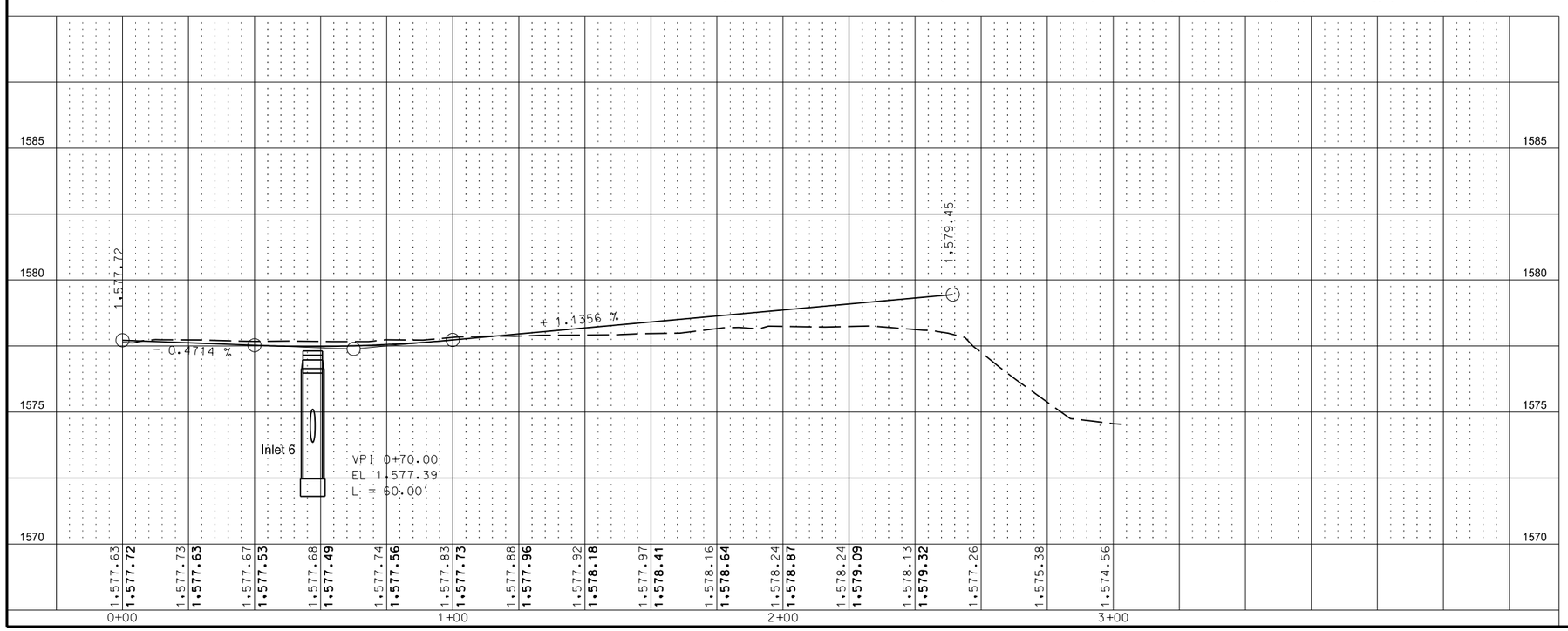
Roundabout South Exit

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	72



INLET-TYPE 2 DOUBLE	Qty
Sta 0+58 - 17" Rt EAIN	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 0+58 - 17' Rt EAIN to Sta 0+58 - 33' Rt EAIN	16.0 LF



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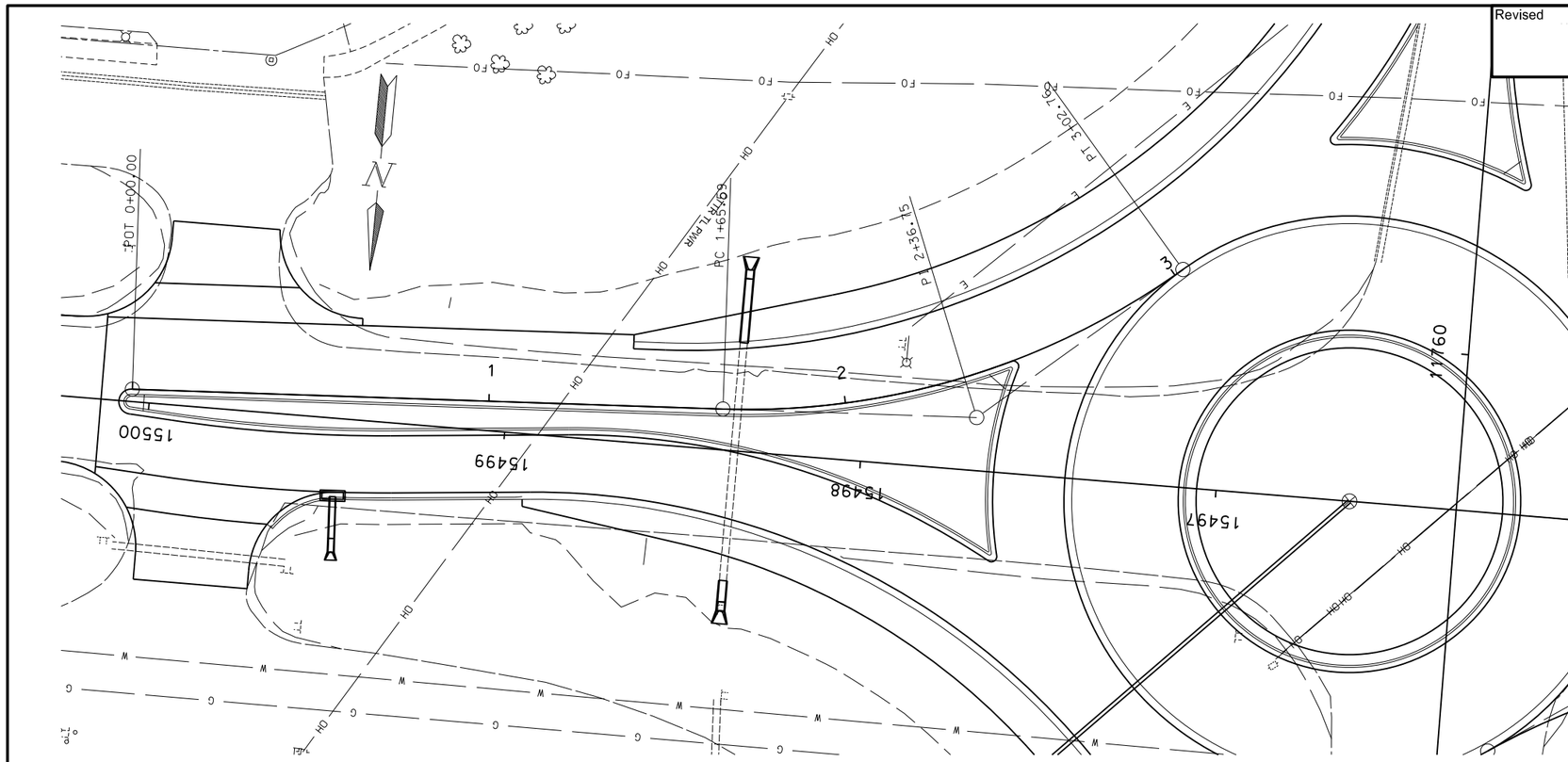
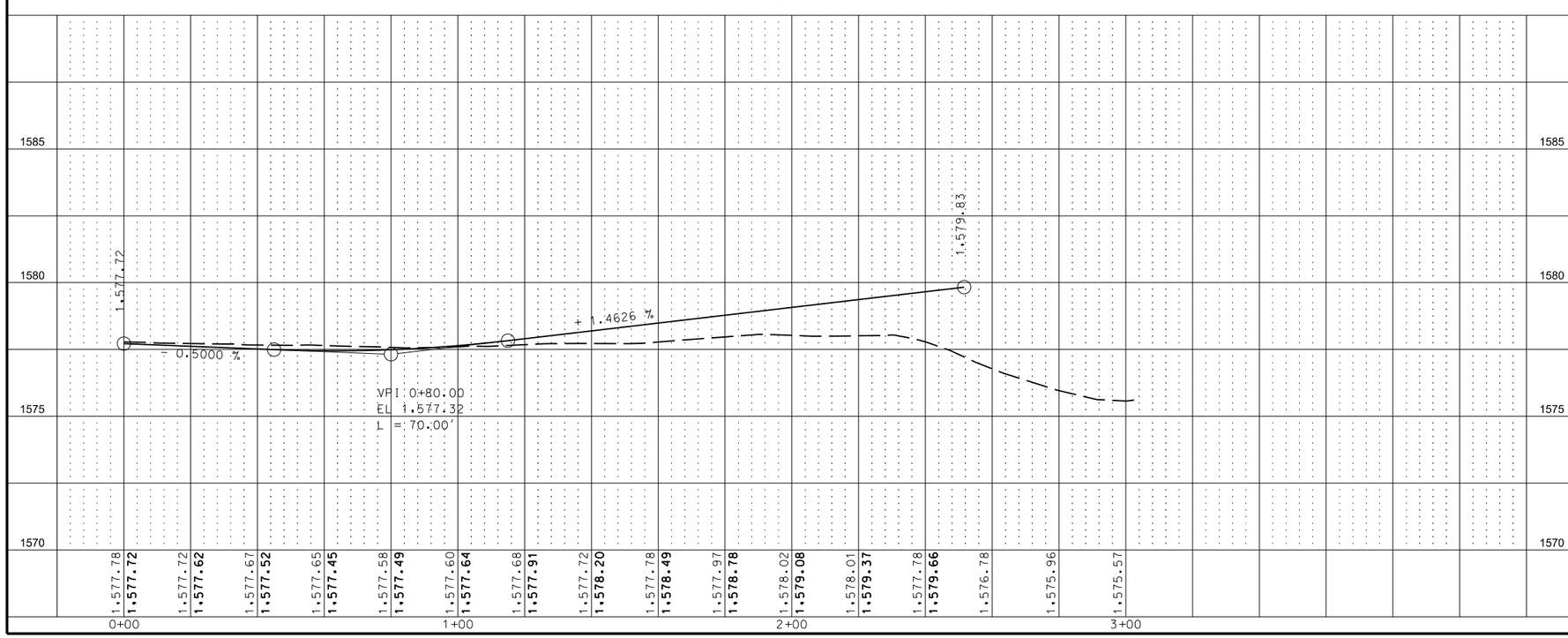
Roundabout East Entrance

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	73





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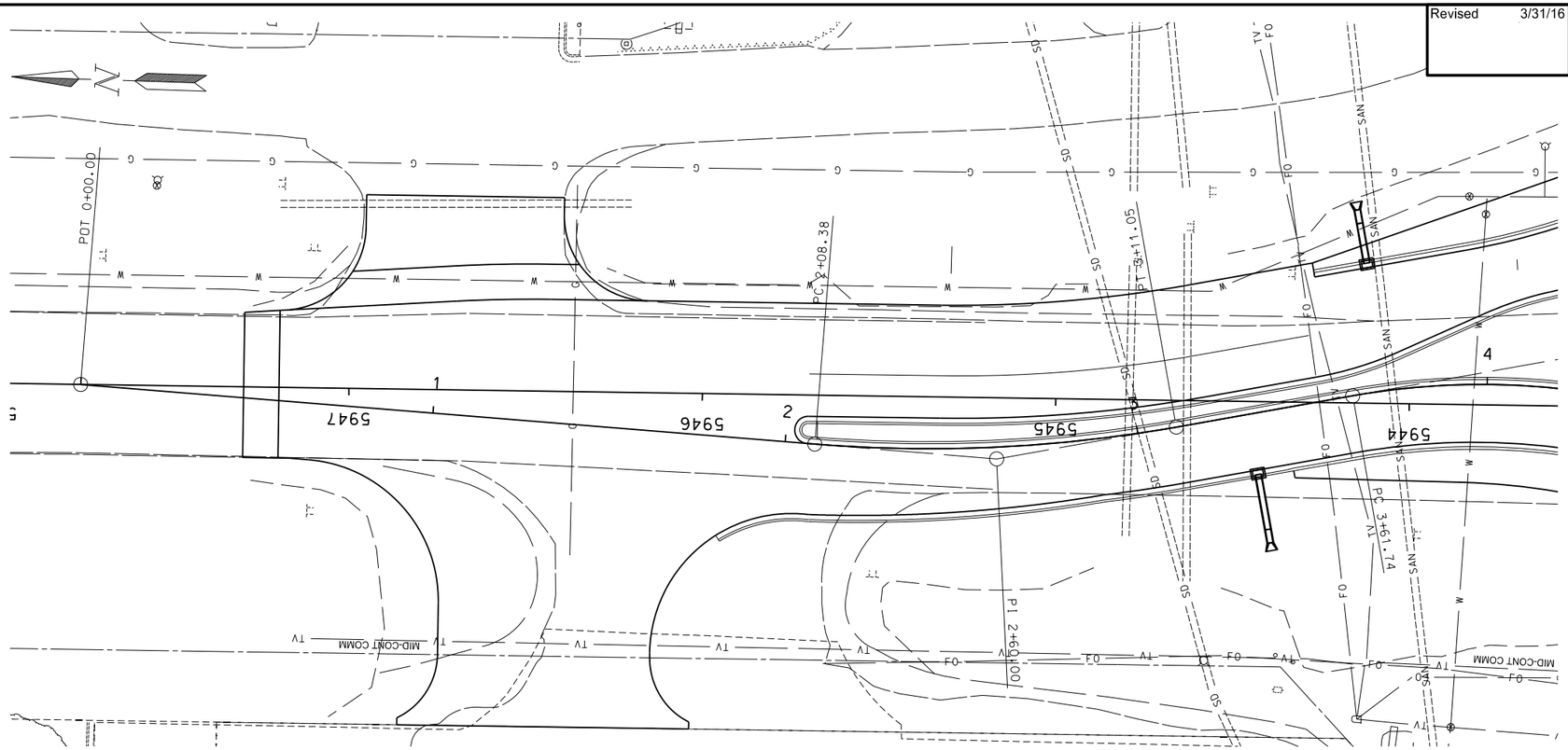
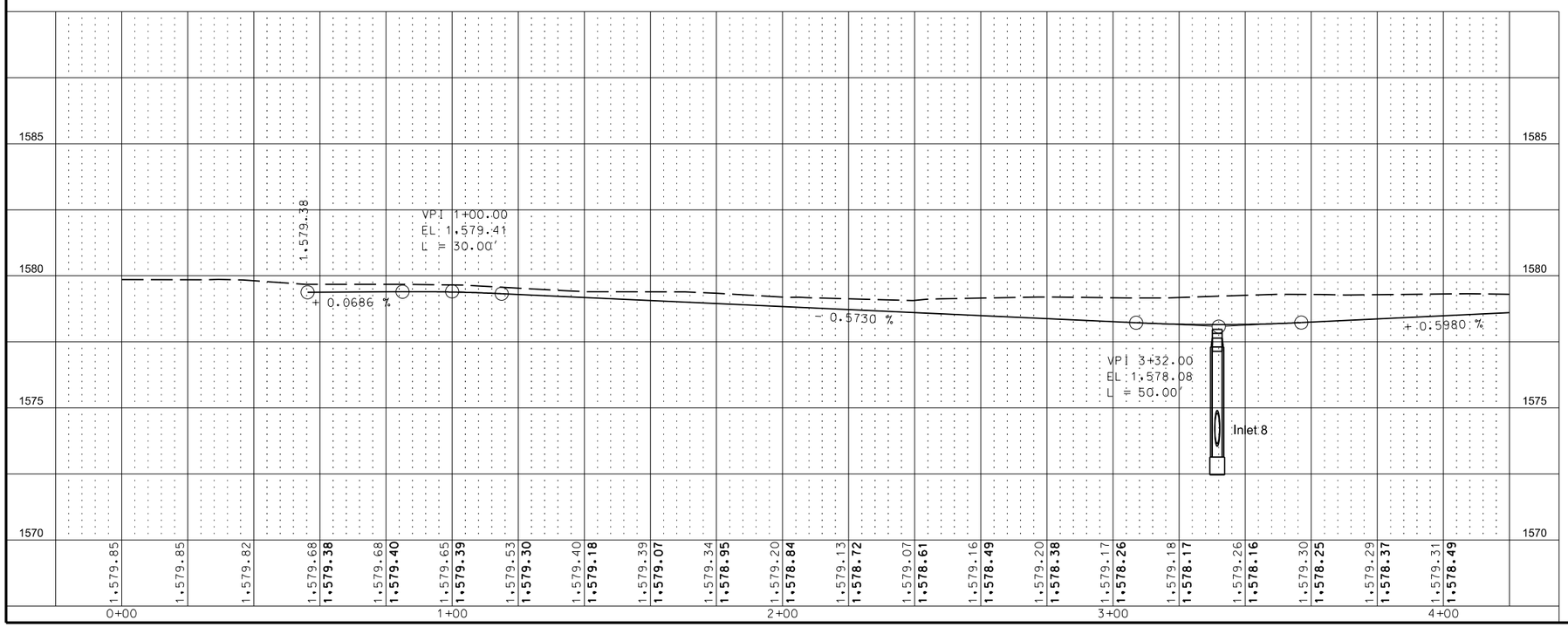
Roundabout East Exit

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	74



INLET-TYPE 2	Qty
Sta 3+32 - 17' Rt NOIN	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 3+32 - 17' Rt NOIN to Sta 3+32 - 37' Rt NOIN	20.0 LF



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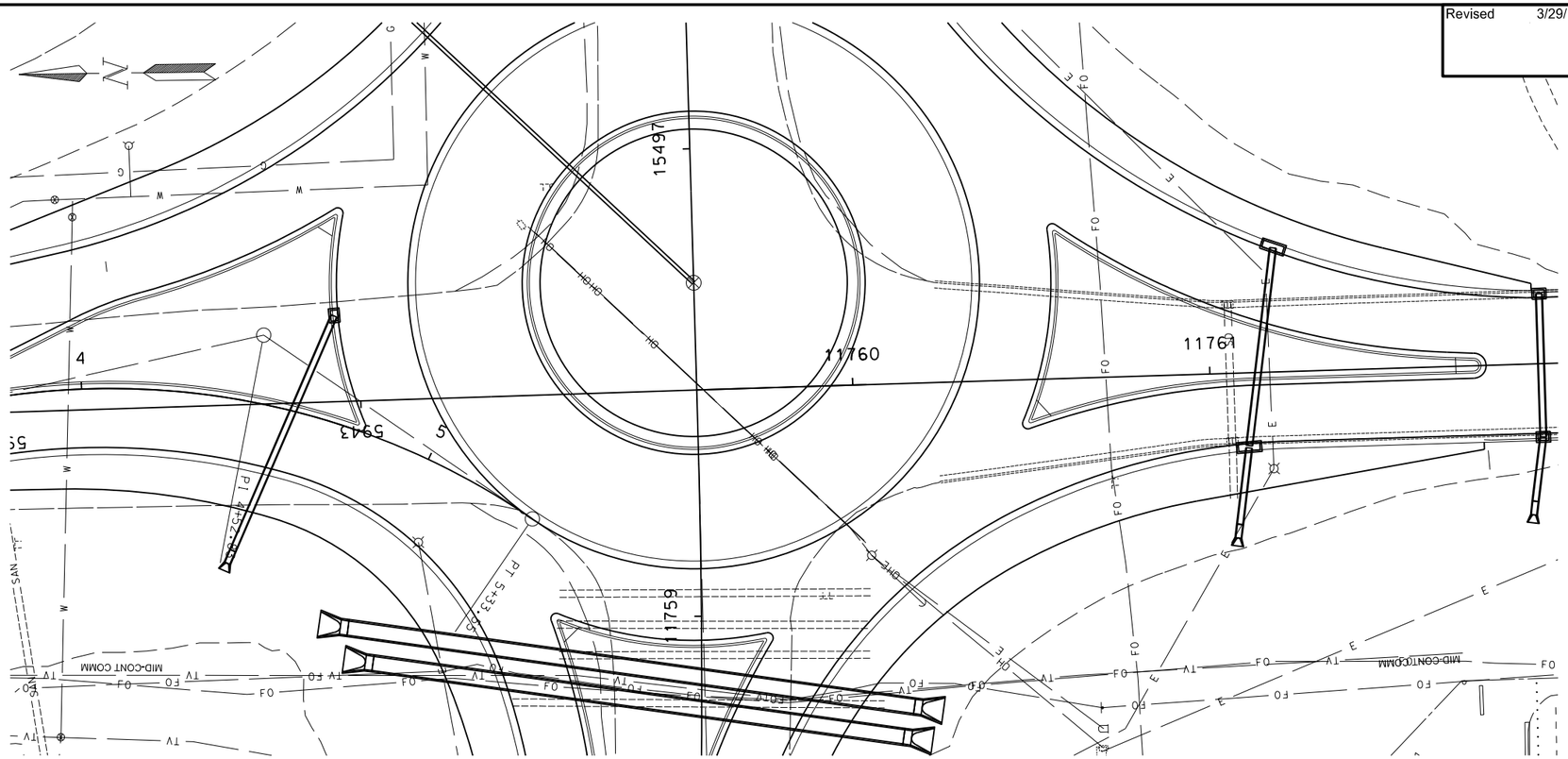
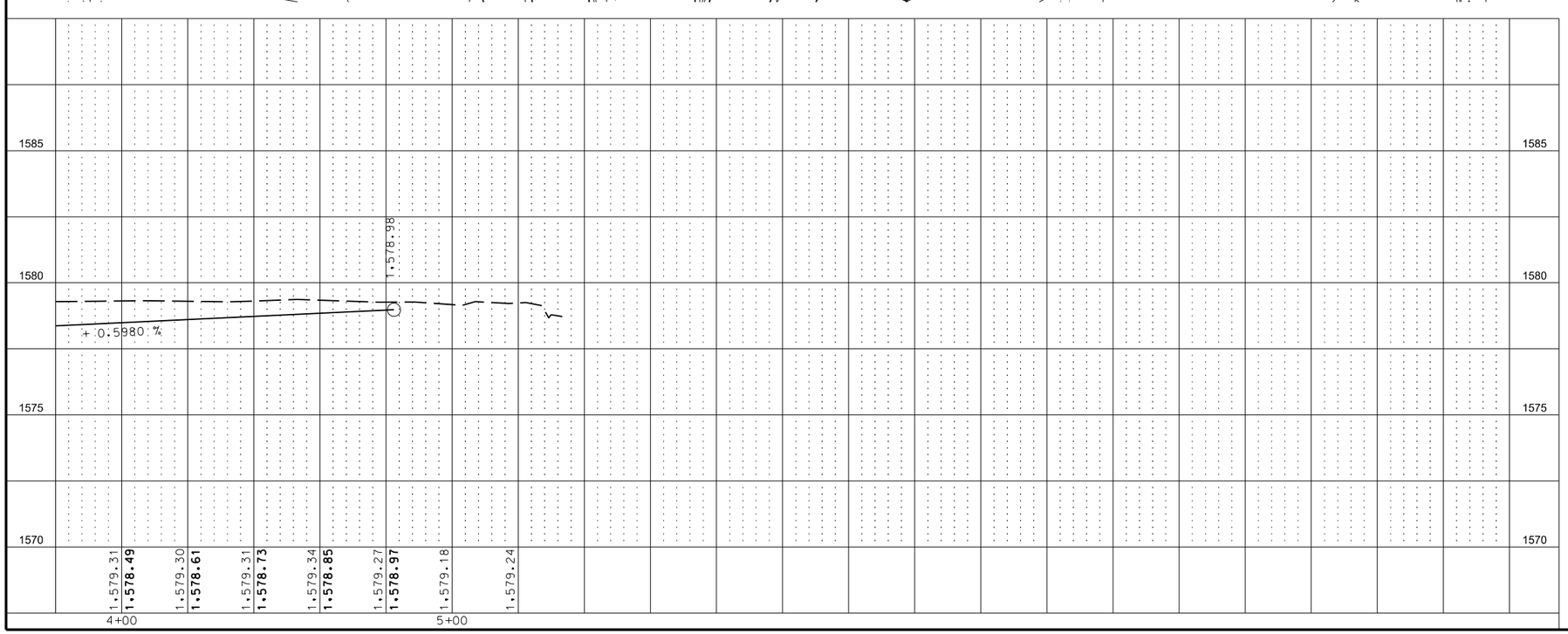
Roundabout North Entrance

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	75





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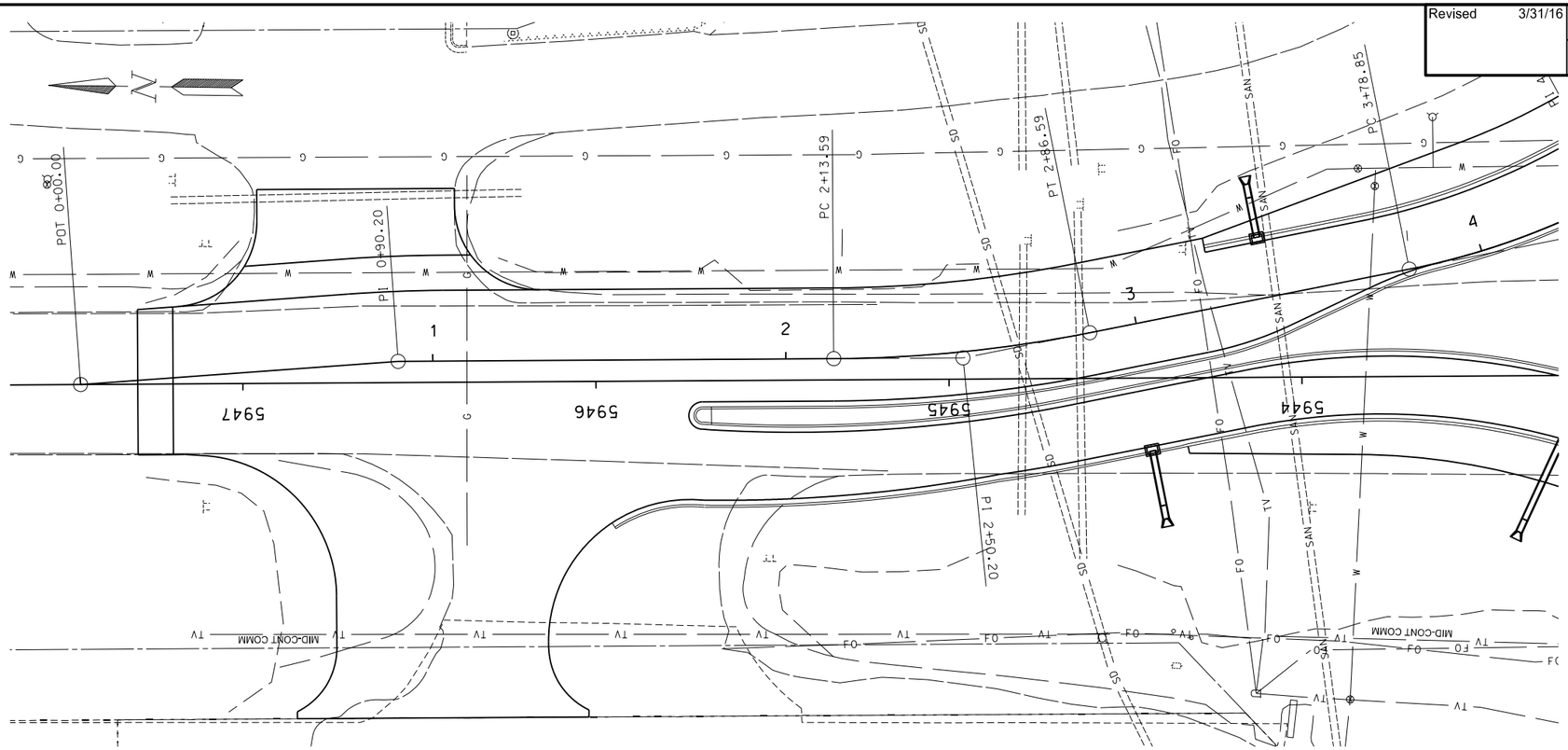
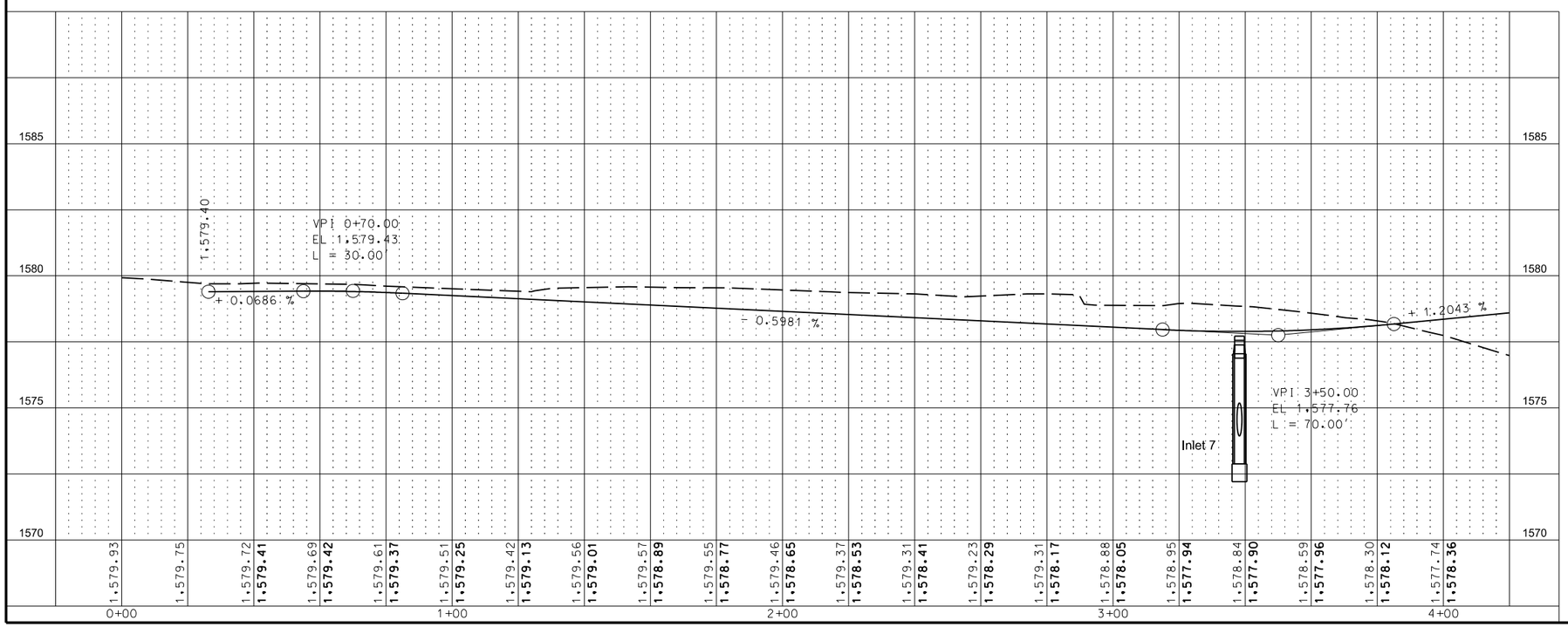
Roundabout North Entrance

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	76



INLET-TYPE 2	Qty
Sta 3+38 - 17' Lt NOEX	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 3+38 - 17' Lt NOEX to Sta 3+38 - 33' Lt NOEX	15.0 LF



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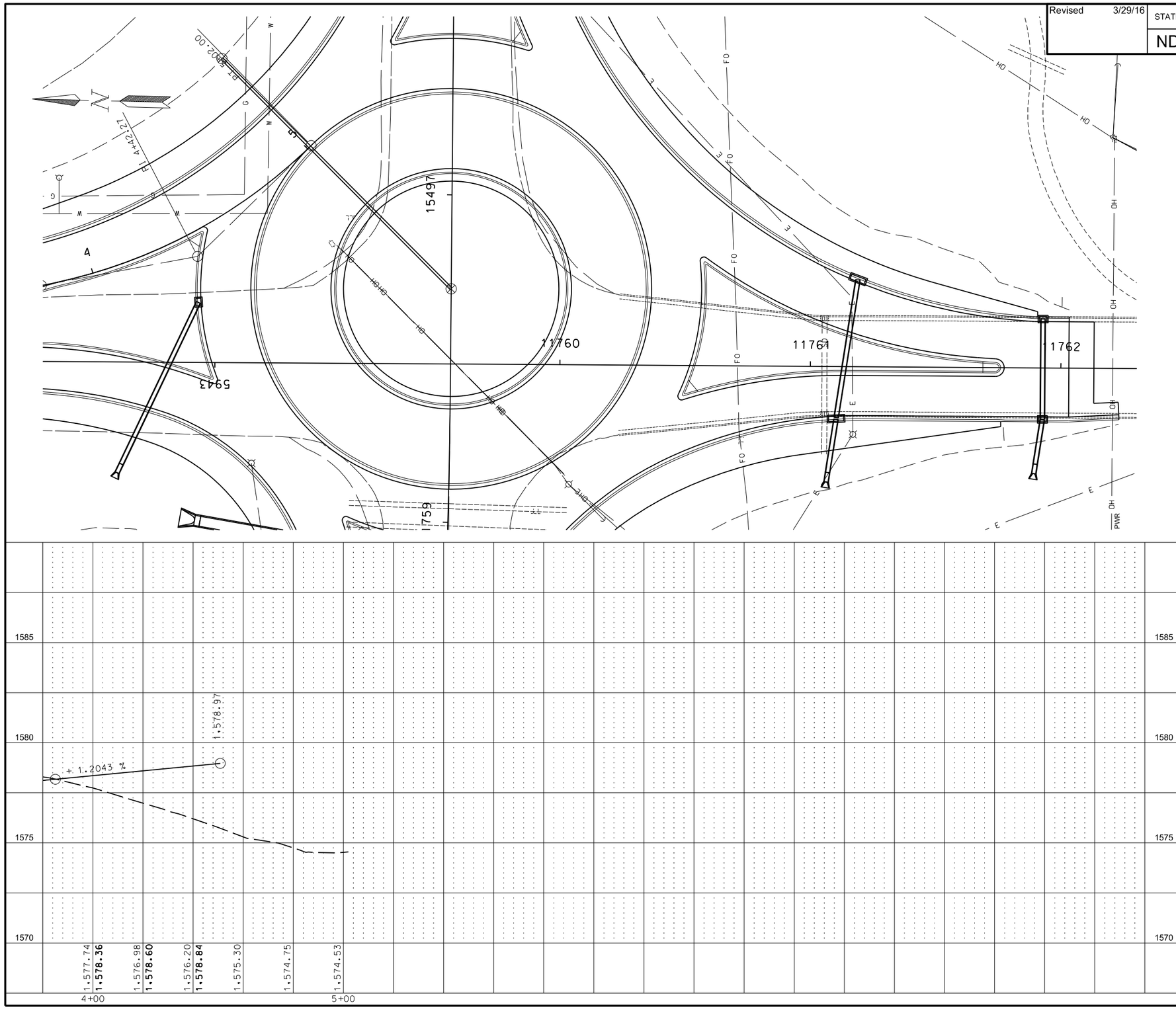
Roundabout North Exit

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	77



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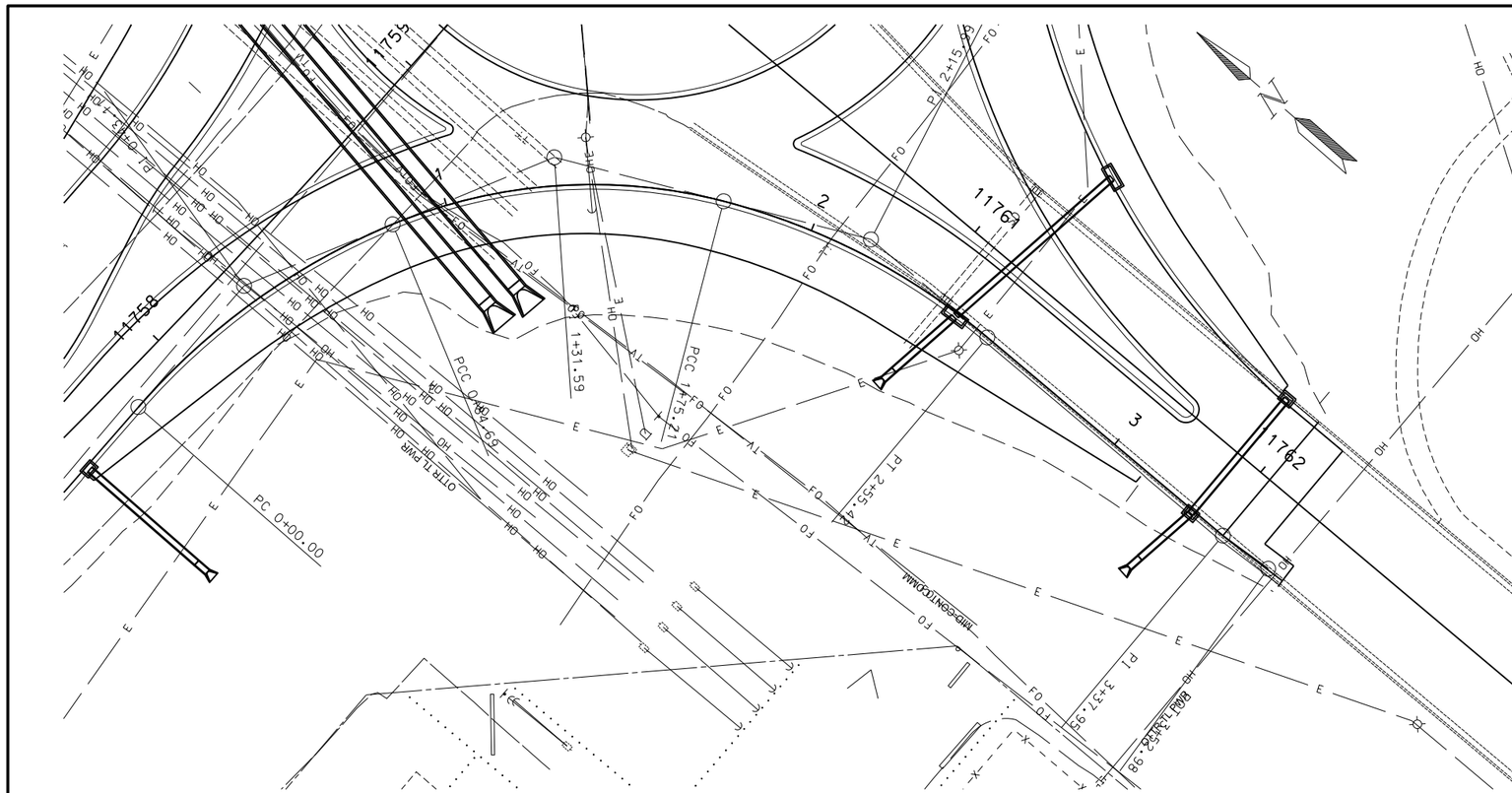
Roundabout North Exit

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	78

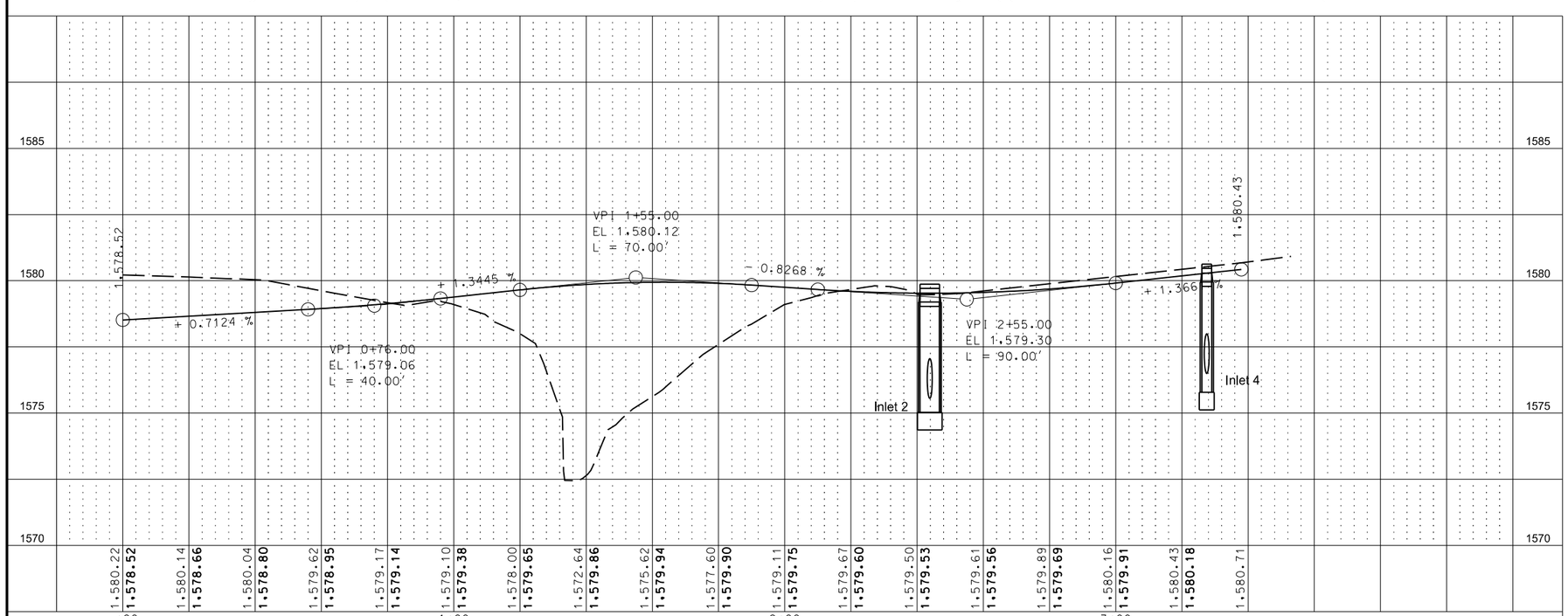


INLET-TYPE 2 — Qty
Sta 3+28 - 1' RT SWOUT — 1 EA

INLET-TYPE 2 DOUBLE — Qty
Sta 2+45 - 1' RT SWOUT — 1 EA

PIPE CONDUIT 18IN - STORM DRAIN — Qty
Sta 2+44 - 1' RT SWOUT
to
Sta 2+39 - 26' RT SWOUT — 26.0 LF

Sta 3+28 - 1' RT SWOUT
to
Sta 3+24 - 23' RT SWOUT — 22.0 LF



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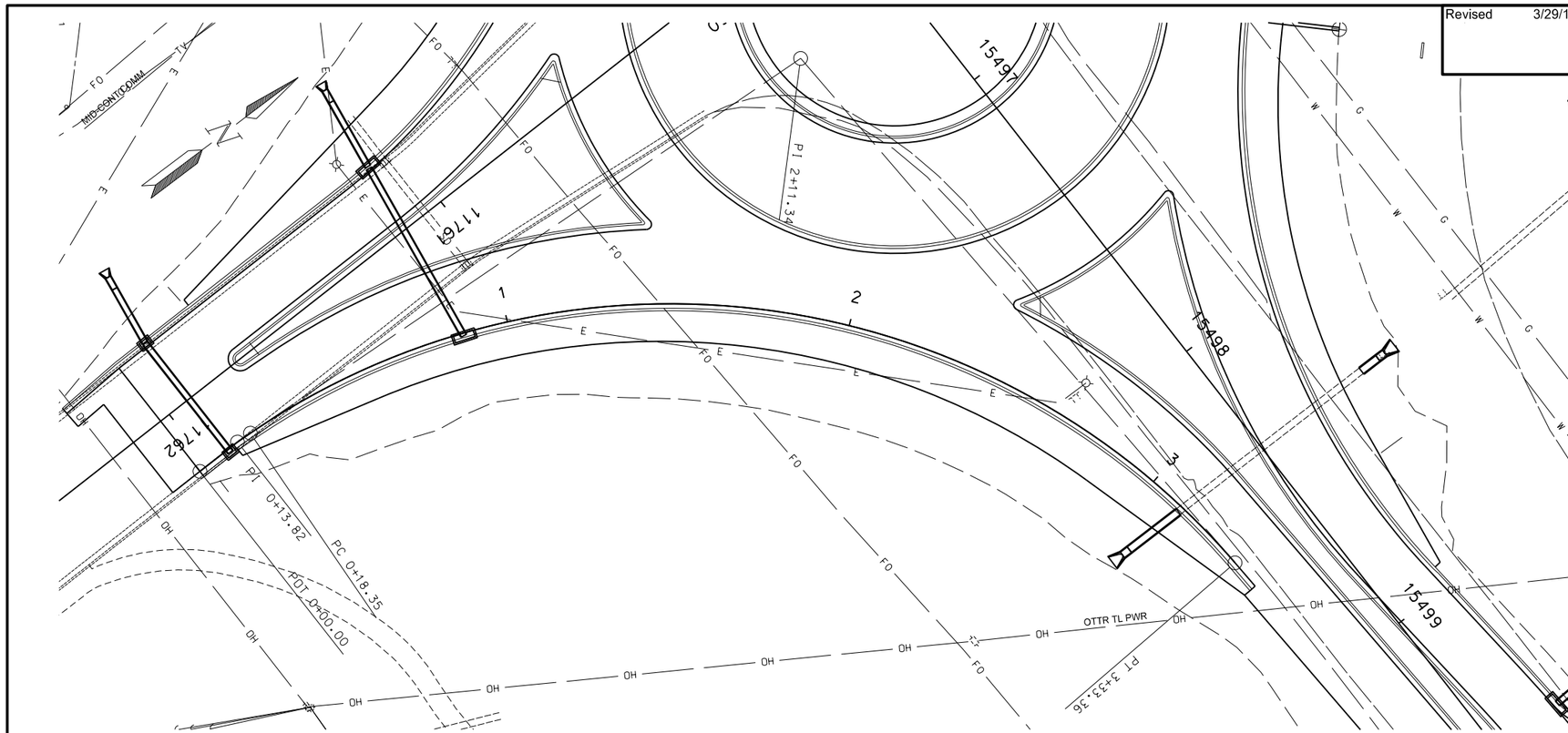
Roundabout Southwest EOP

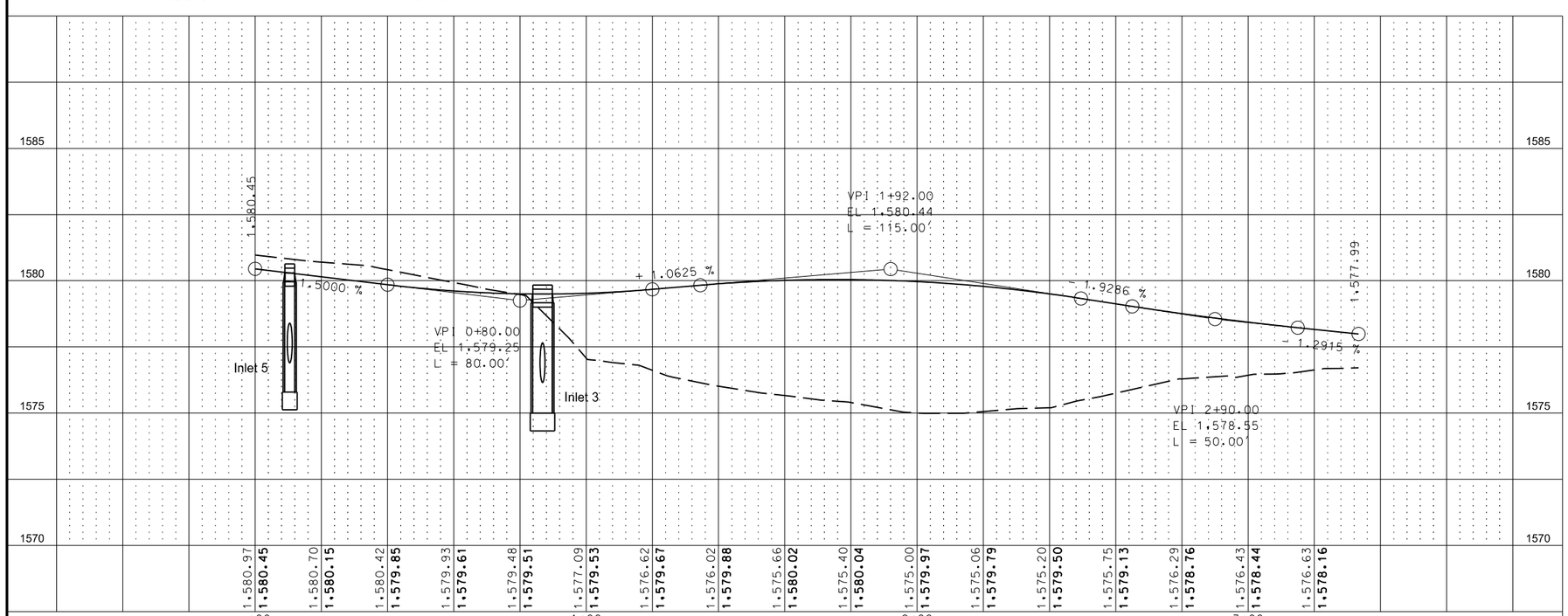
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	79



INLET-TYPE 2	Qty
Sta 0+10 - 1' Rt SEOUT	1 EA

INLET-TYPE 2 DOUBLE	Qty
Sta 0+87 - 1' Rt SEOUT	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 0+87 - 1' Rt SEOUT to Sta 2+45 - 1' Rt SWOUT	56.0 LF
Sta 0+10 - 1' Rt SEOUT to Sta 3+28 - 1' Rt SWOUT	40.0 LF



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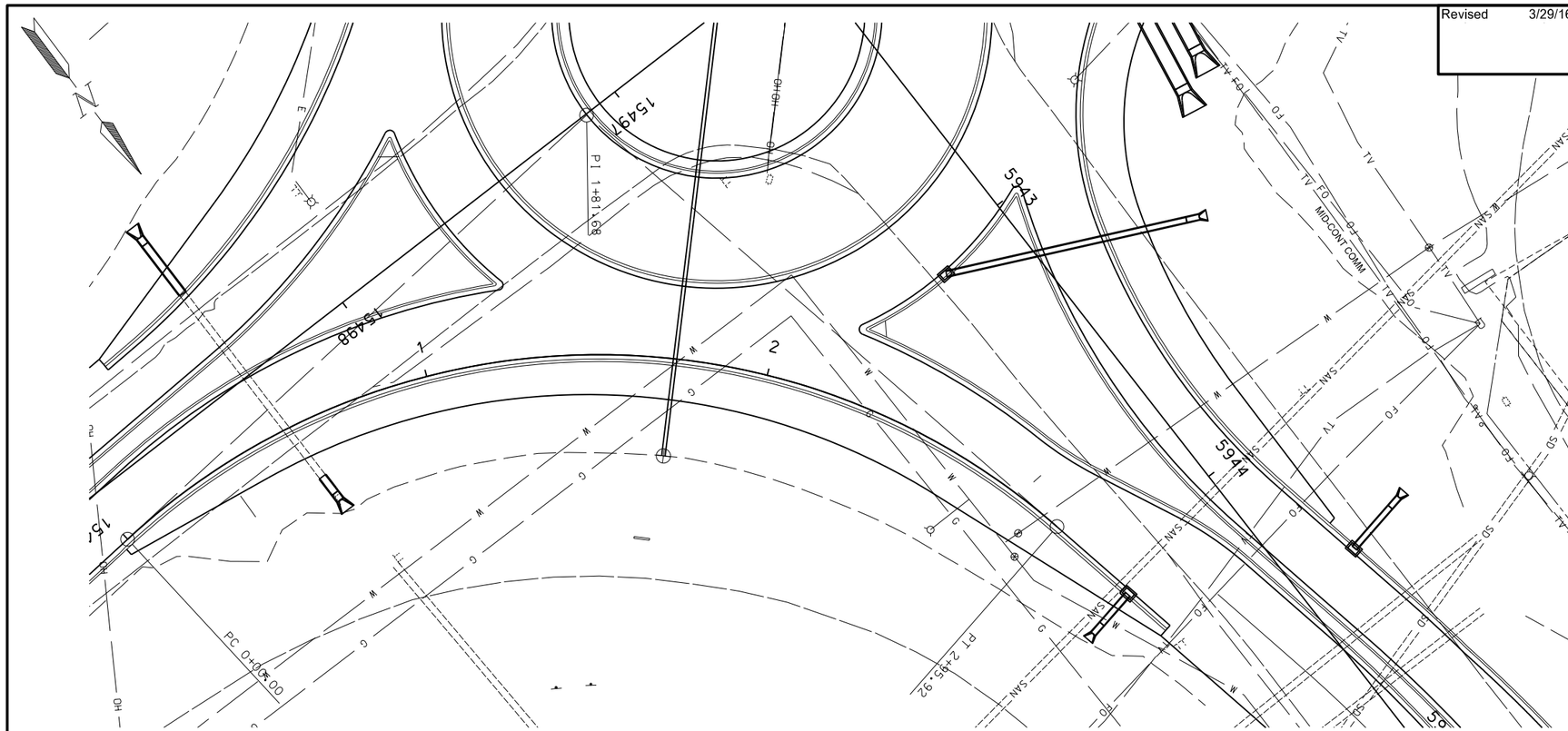
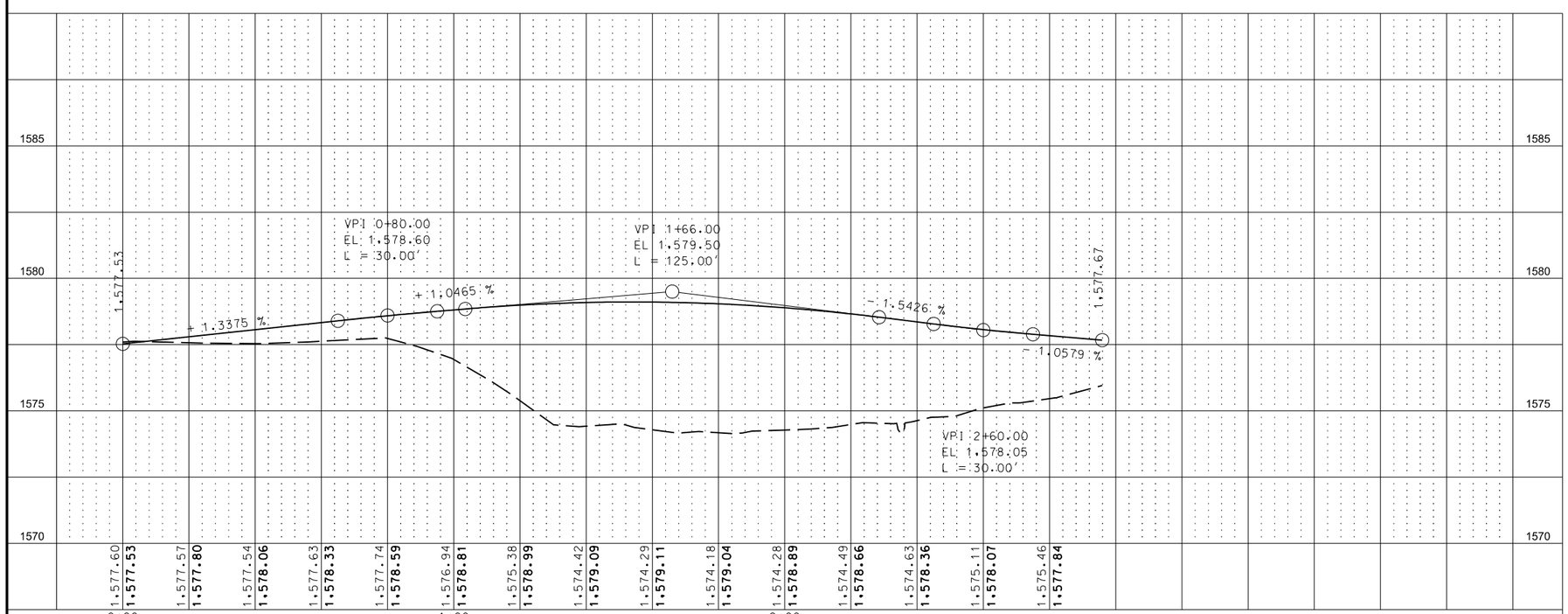
Roundabout Southeast EOP

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	80





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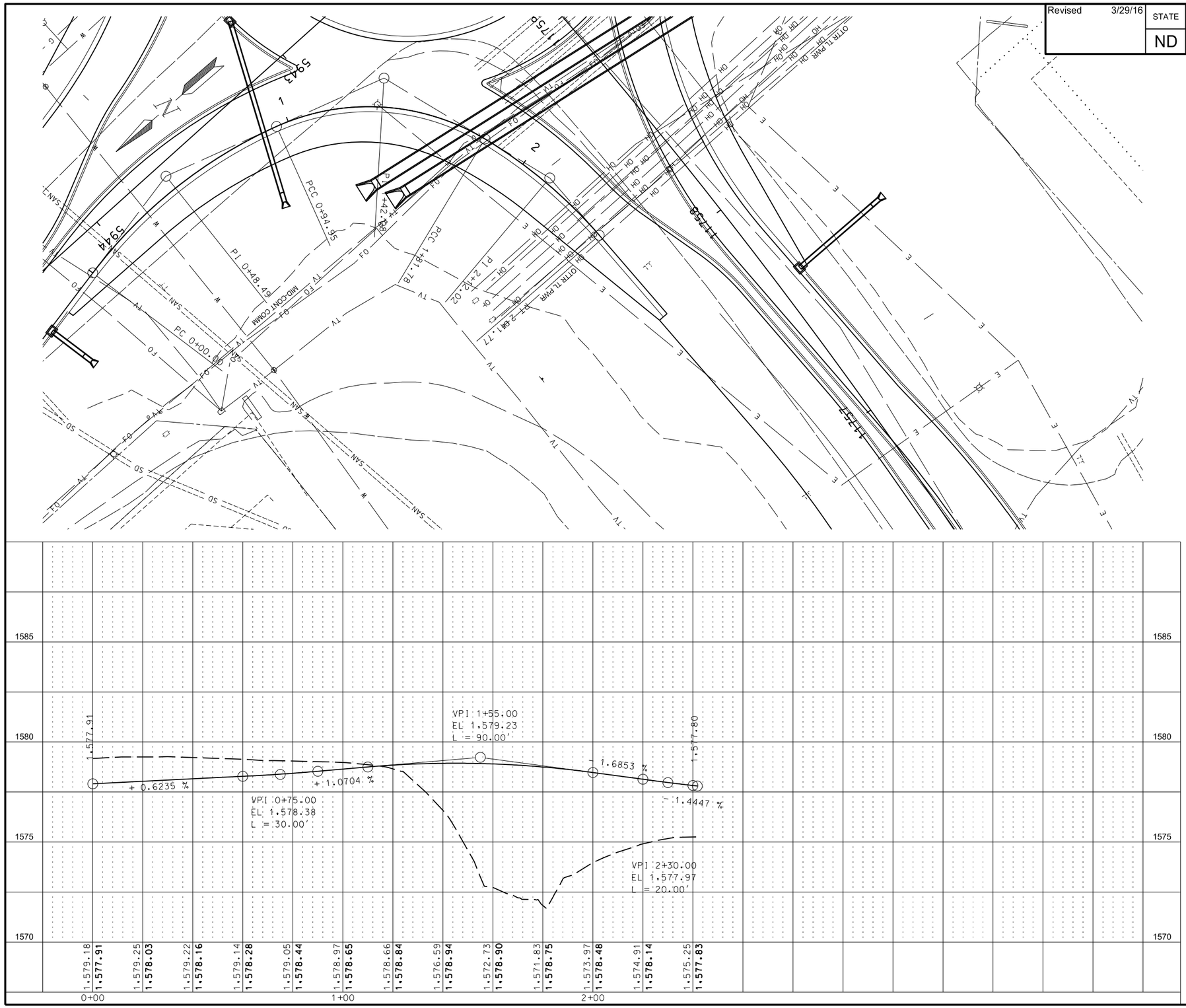
Roundabout Northeast EOP

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	81



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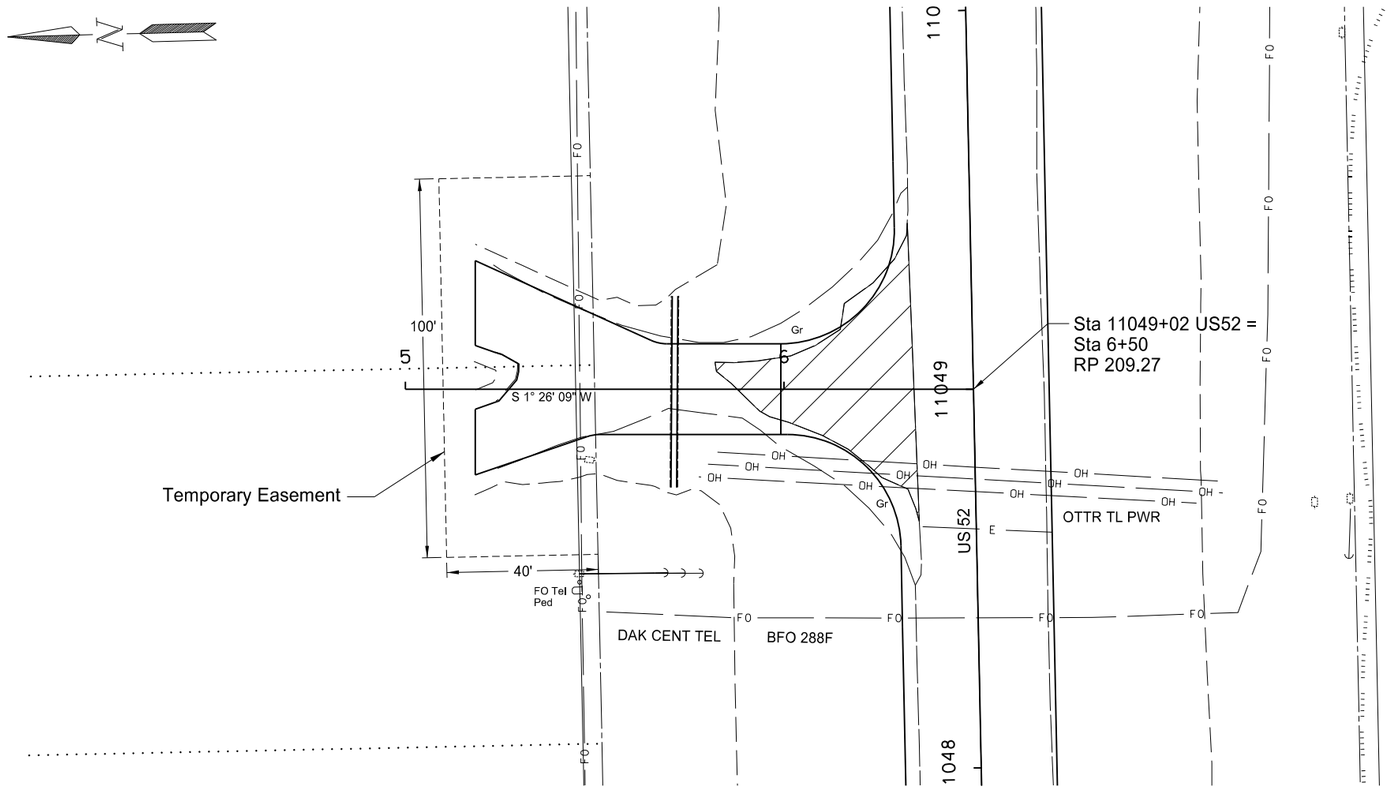
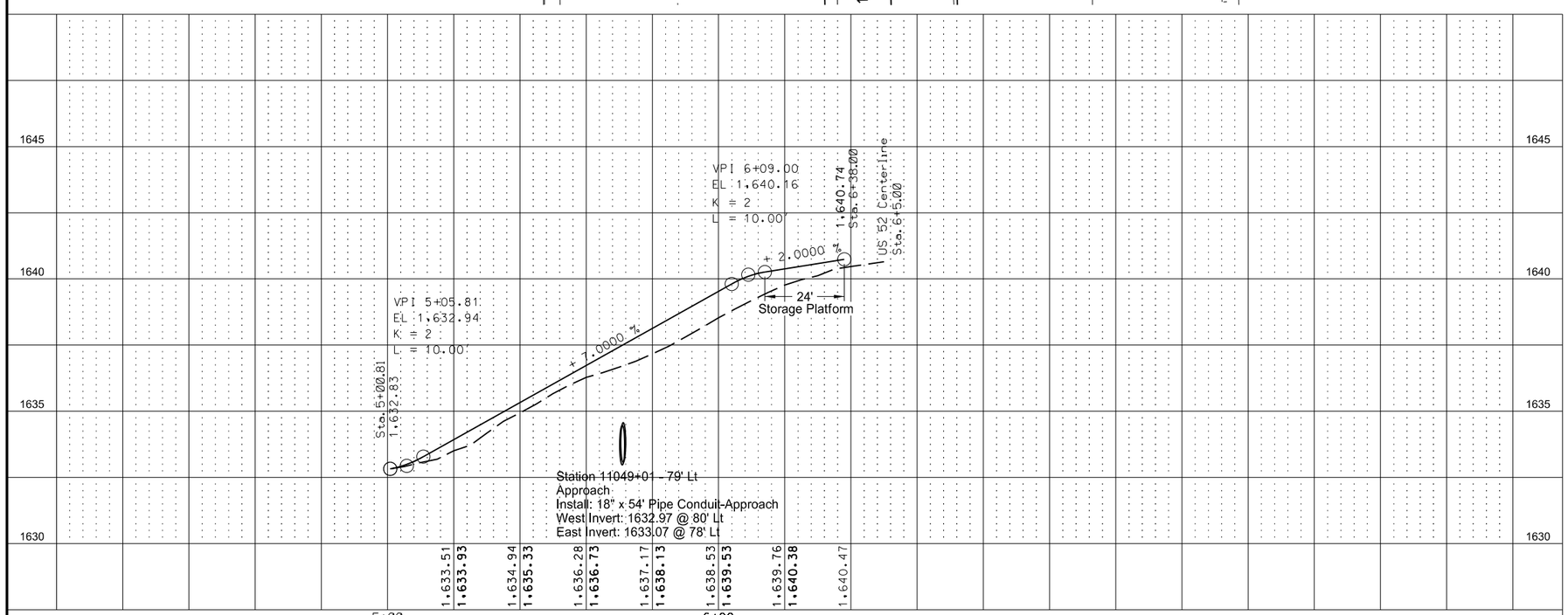
Roundabout Northwest EOP

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	82



Removal of Bituminous Surfacing	Qty
Sta. 11049+02 LT	169 SY
Aggregate Base Course CL 5	**Qty**
Sta. 11049+02 LT	49.78 Tons
Tack Coat	**Qty**
Sta. 11049+02 LT	14 Gal
Superpave FAA 45	**Qty**
Sta. 11049+02 LT	28.10 Tons
PG 64-28 Asphalt Cement	**Qty**
Sta. 11049+02 LT	1.69 Tons

Removal of Pavement



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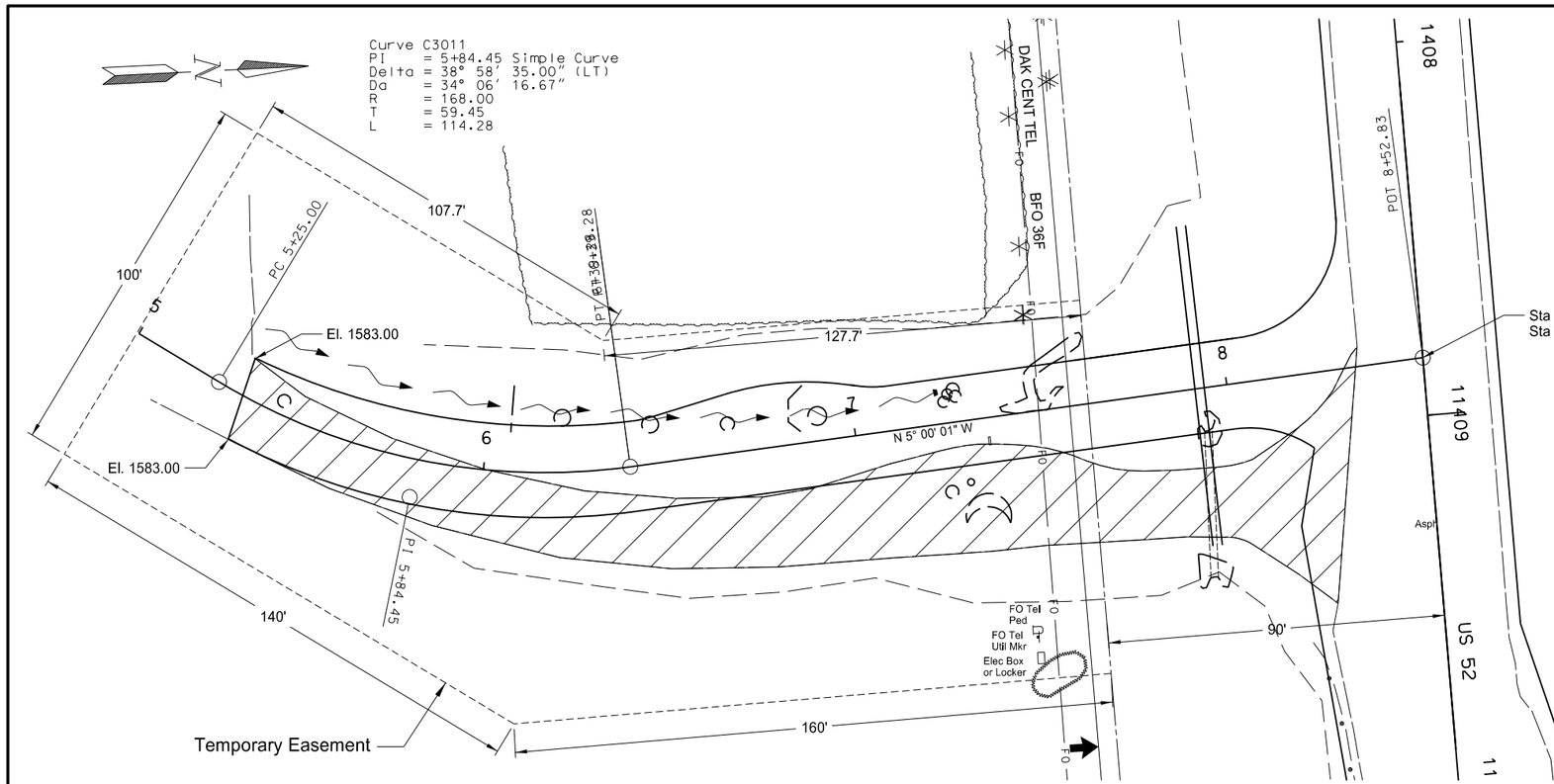
Approach Sta. 11049+02 LT

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	83



Removal of Bituminous Surfacing	Qty
11408+85 RT	753 SY

Common Excavation - Type A	Qty
11408+85 RT	290 CY

Removal of Obstructions	Qty
11408+85 RT	1 LSUM

Aggregate Base Course CL 5	Qty
11408+85 RT	538.89 Tons

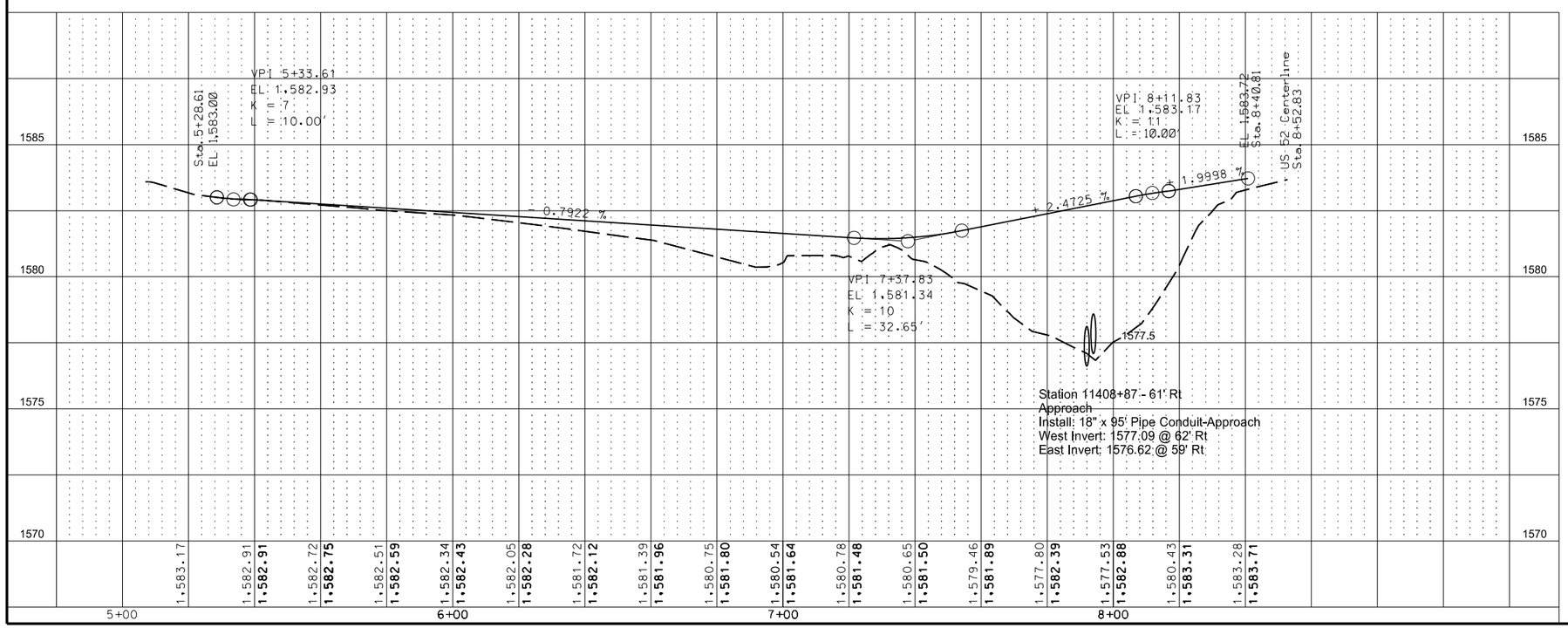
Tack Coat	Qty
11408+85 RT	88 Gal

Superpave FAA 45	Qty
11408+85 RT	191.60 Tons

PG 64-28 Asphalt Cement	Qty
11408+85 RT	11.50 Tons

Removal of Obstructions

Removal of Pavement



Station 11408+87 - 61' Rt
Approach
Install: 18" x 95' Pipe Conduit-Approach
West Invert: 1577.09 @ 62' Rt
East Invert: 1576.62 @ 59' Rt

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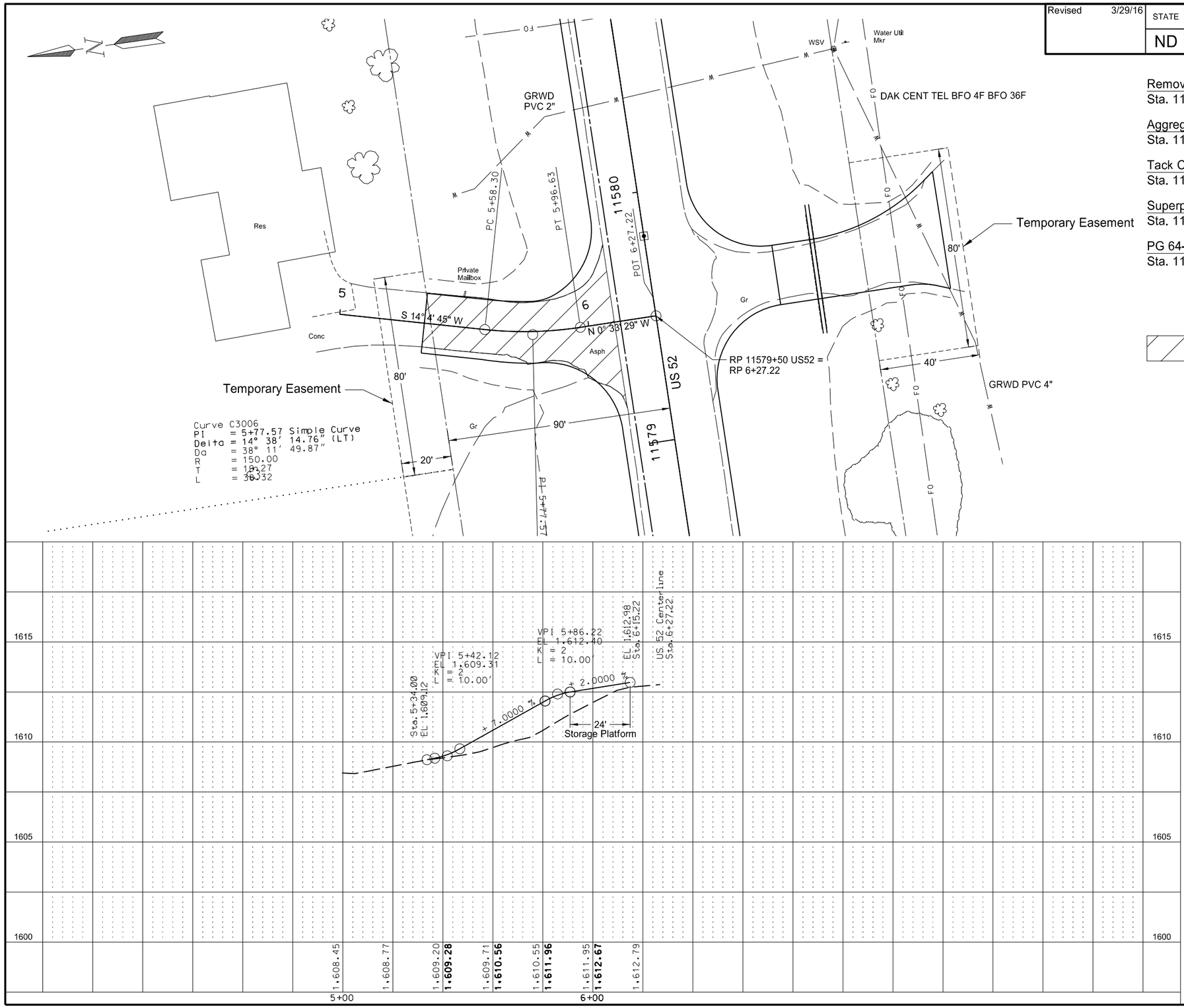
Approach Sta. 11408+85 RT

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	84



Removal of Bituminous Surfacing	Qty
Sta. 11579+55 LT	231 SY

Aggregate Base Course CL5	Qty
Sta. 11579+55 LT	150.14 Tons

Tack Coat	Qty
Sta. 11579+55 LT	26 Gal

Superpave FAA 45	Qty
Sta. 11579+55 LT	53.38 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11579+55 LT	3.2 Tons

REMOVAL OF PAVEMENT

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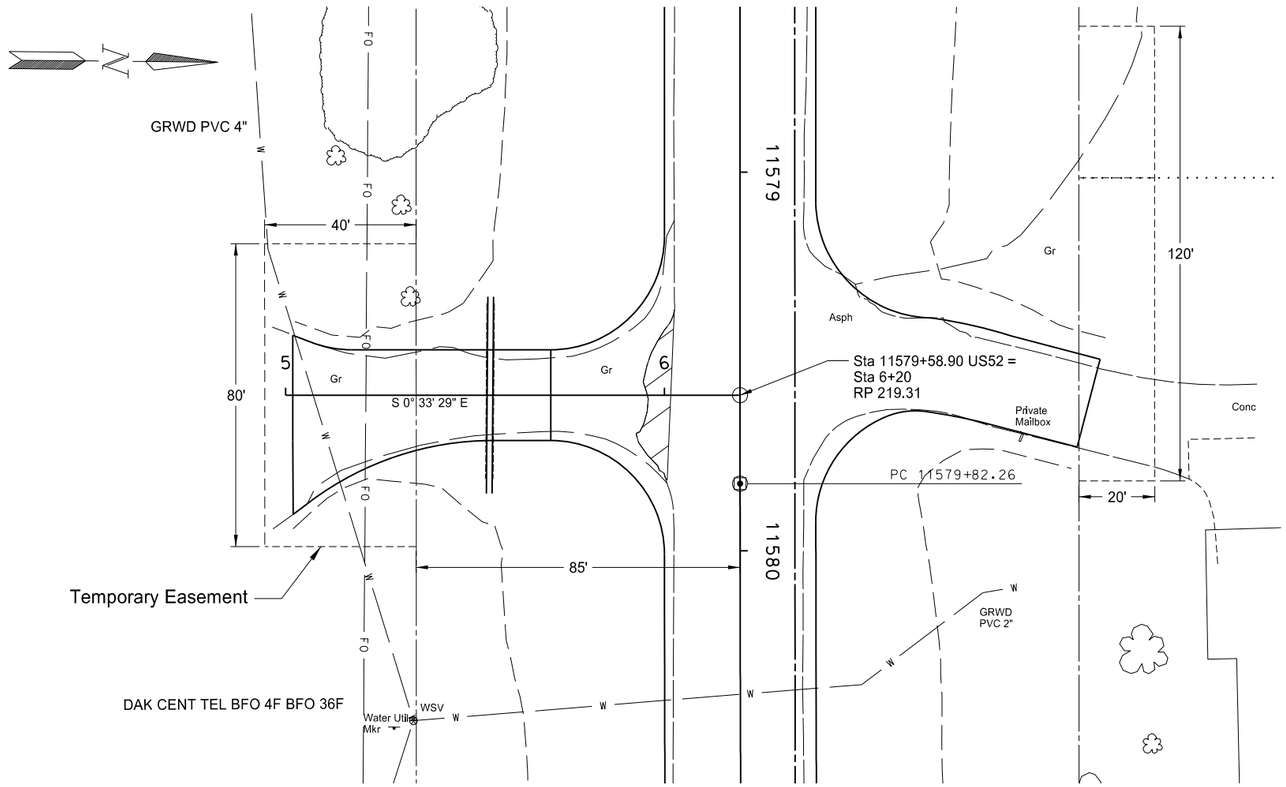
Approach Sta. 11579+55 LT

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	85



Removal of Bituminous Surfacing	Qty
Sta. 11579+60 RT	26 SY

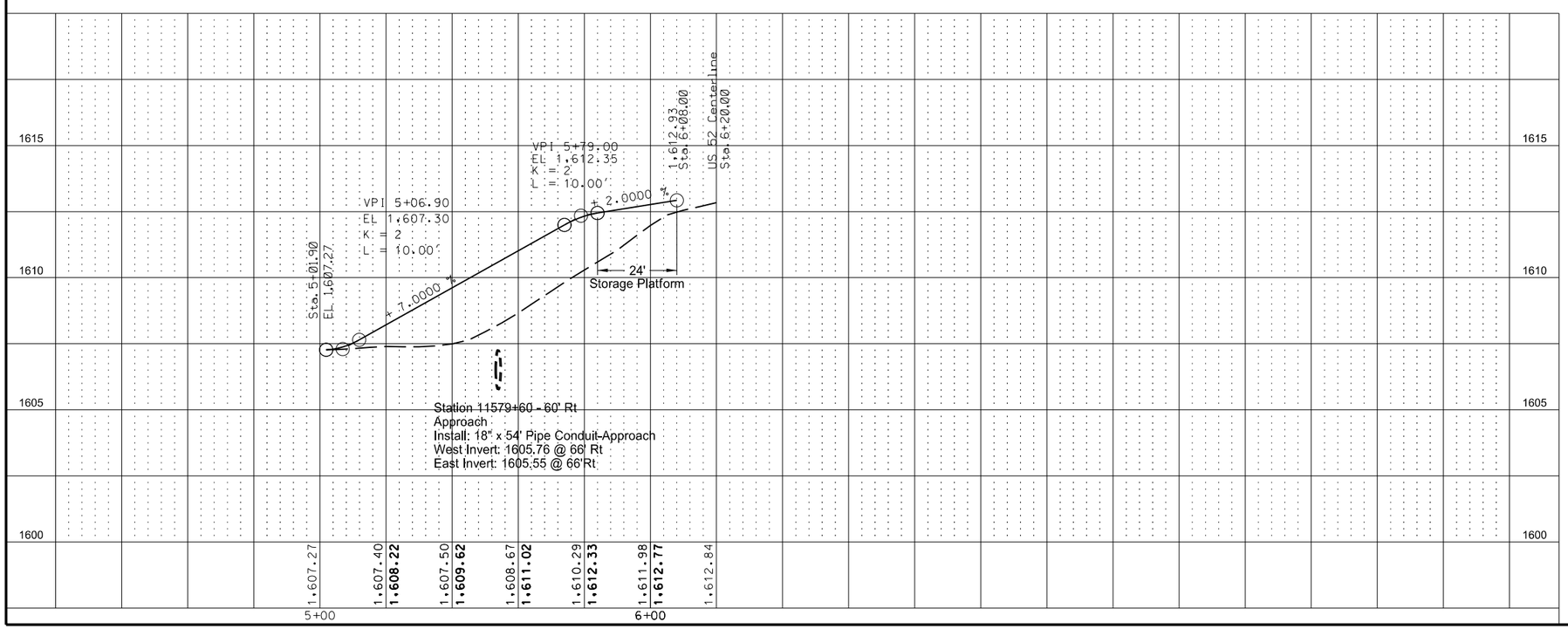
Aggregate Base Course CL 5	Qty
Sta. 11579+60 RT	52.53 Tons

Tack Coat	Qty
Sta. 11579+60 RT	14 Gal

Superpave FAA 45	Qty
Sta. 11579+60 RT	27.31 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11579+60 RT	1.64 Tons

Removal of Pavement



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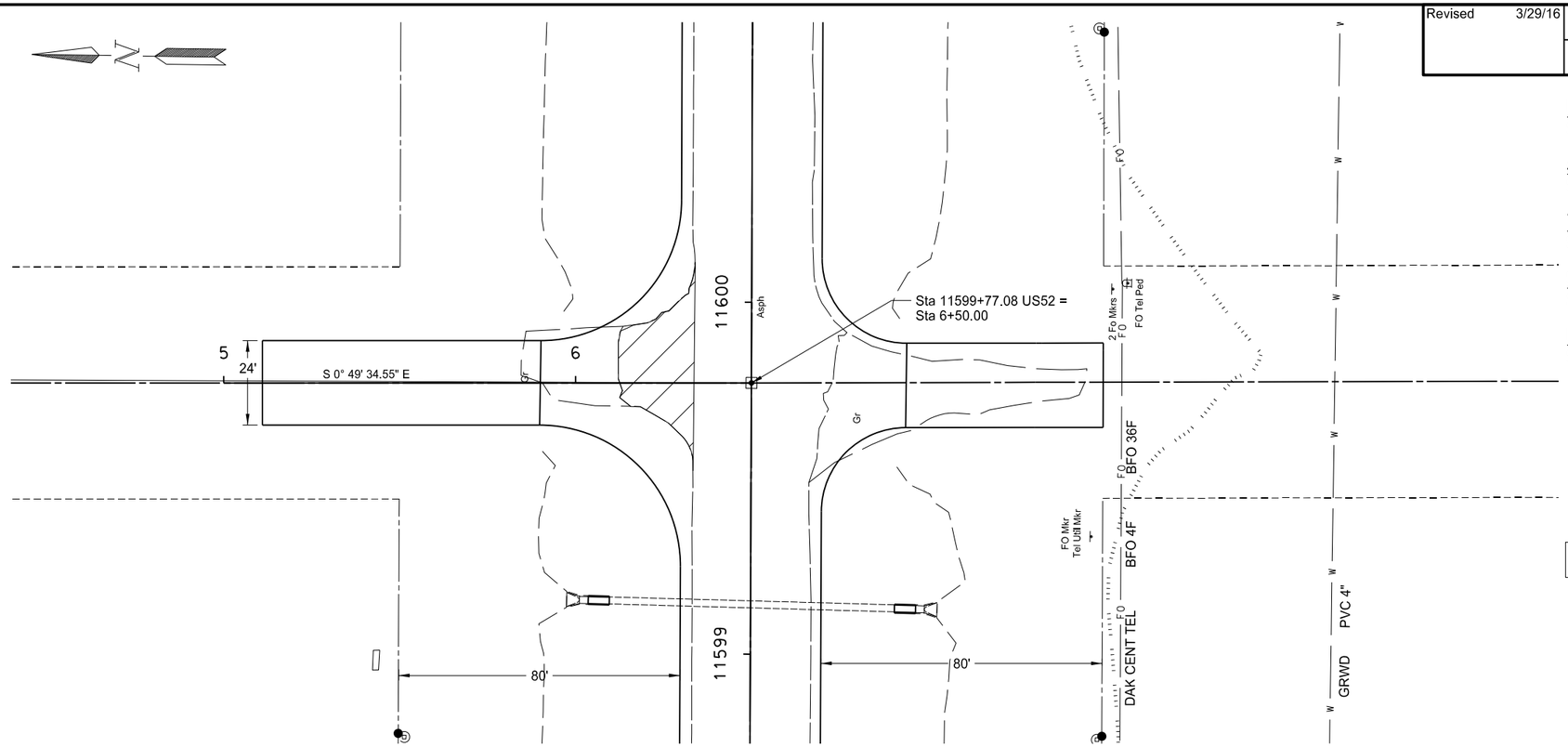
Approach Sta. 11579+60 RT

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	86



Removal of Bituminous Surfacing	Qty
Sta. 11599+75 LT	71 SY

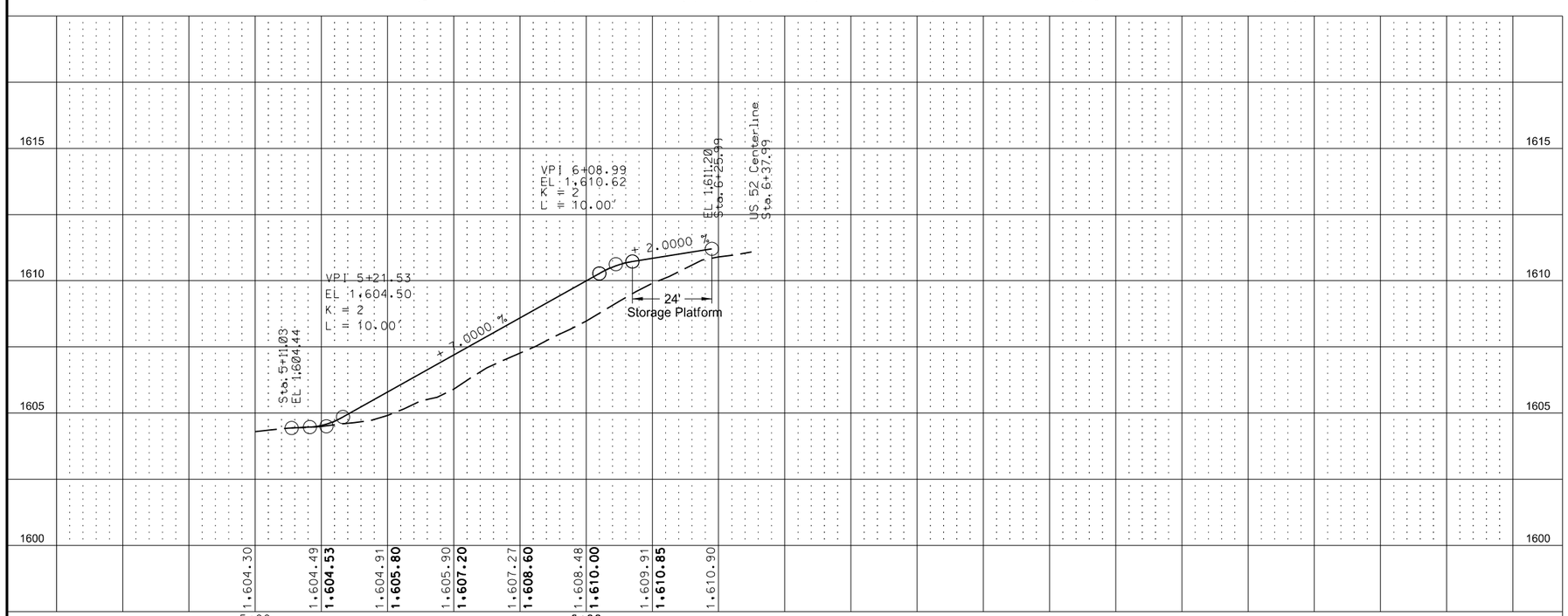
Aggregate Base Course CL 5	Qty
Sta. 11599+75 LT	83.78 Tons

Tack Coat	Qty
Sta. 11599+75 LT	20 Gal

Superpave FAA 45	Qty
Sta. 11599+75 LT	40.66 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11599+75 LT	2.44 Tons

Removal of Pavement



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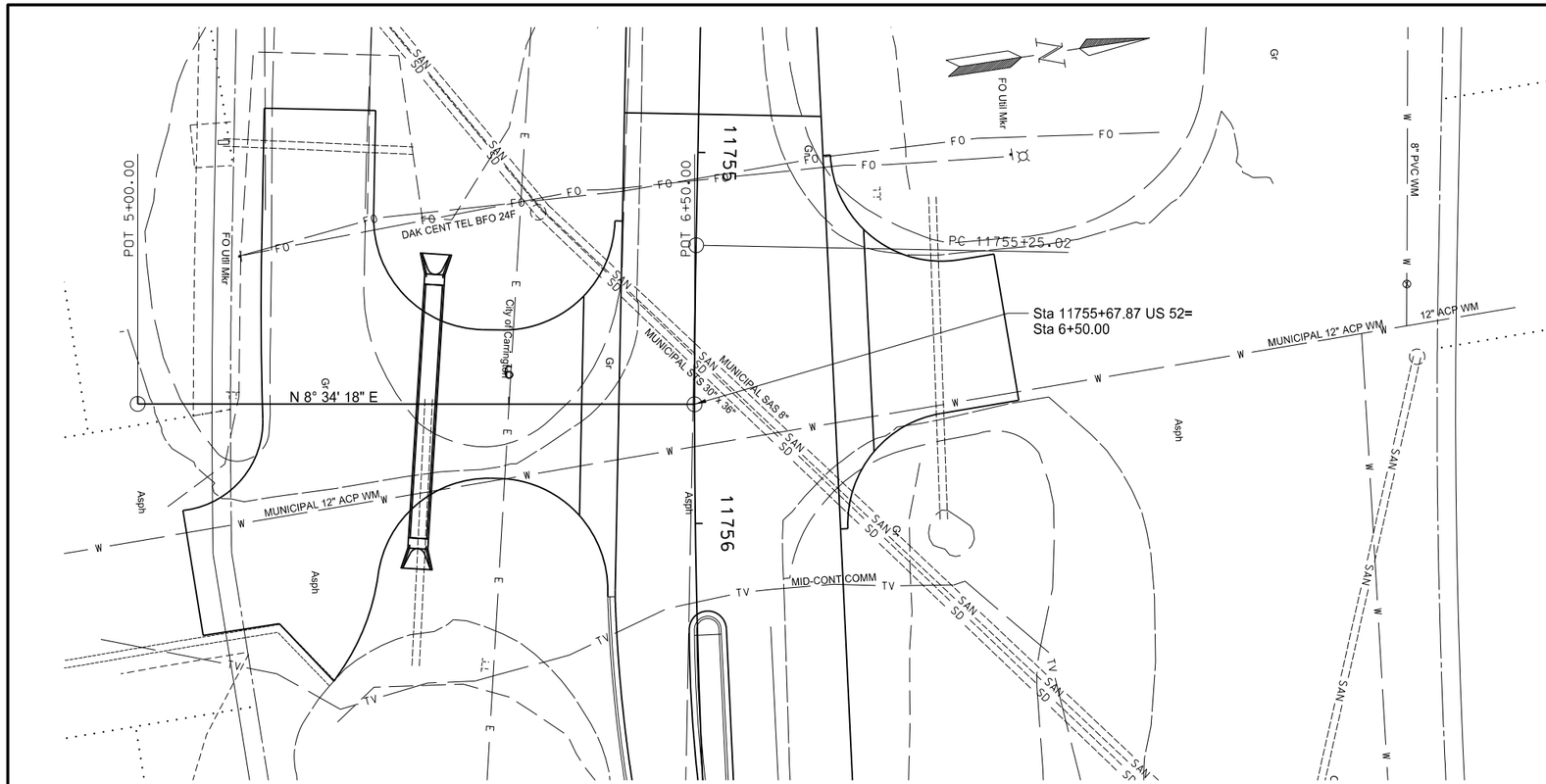
Approach Sta. 11599+75 LT

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	87

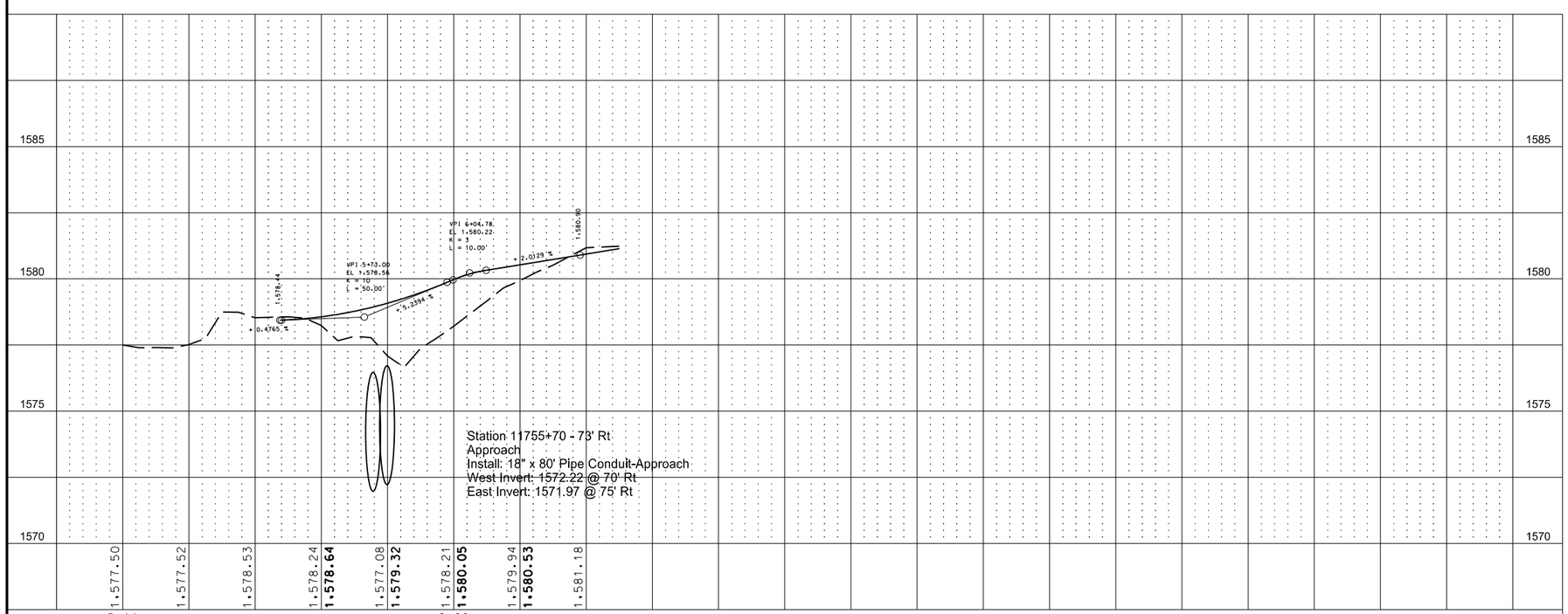


Aggregate Base Course CL 5	Qty
Sta. 11599+75 LT	560 Tons

Tack Coat	Qty
Sta. 11599+75 LT	44.8 Gal

Superpave FAA 45	Qty
Sta. 11599+75 LT	198.9 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11599+75 LT	12 Tons



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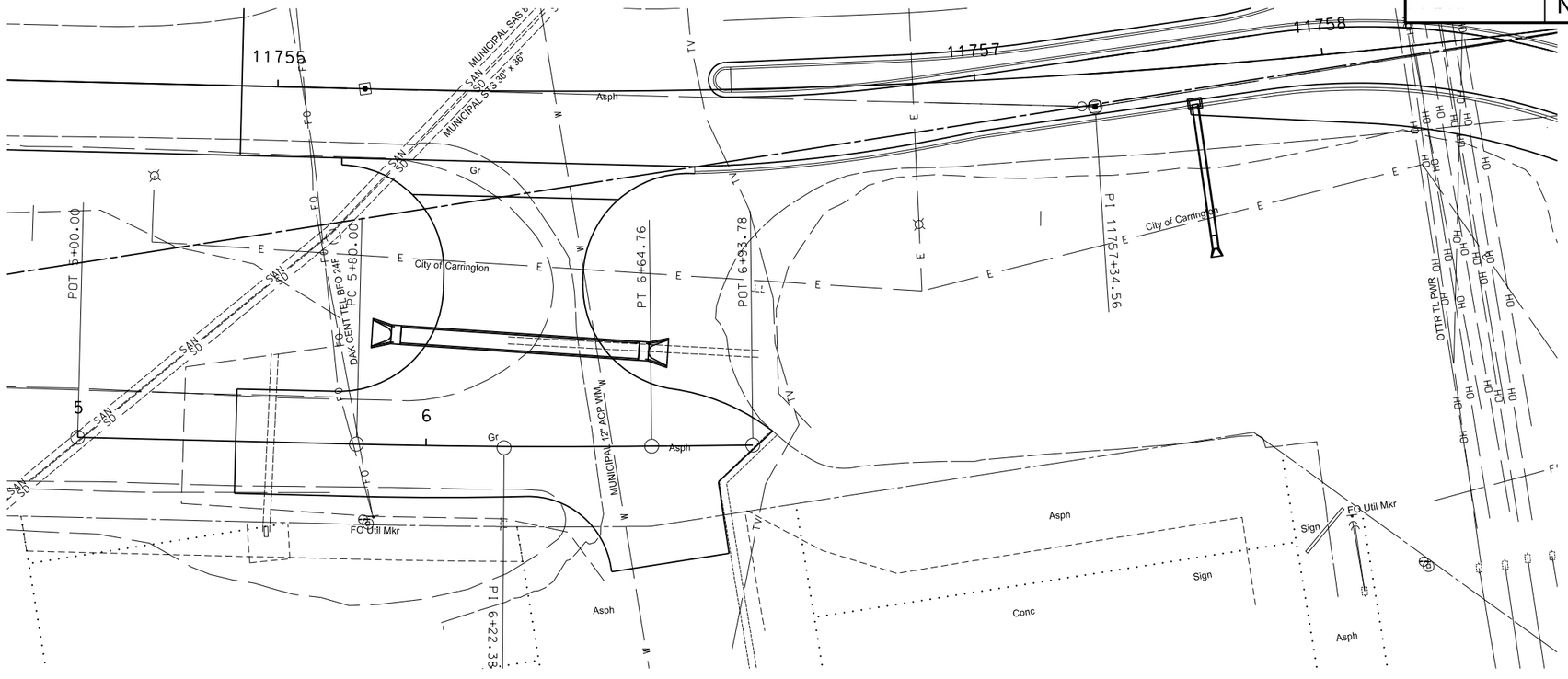
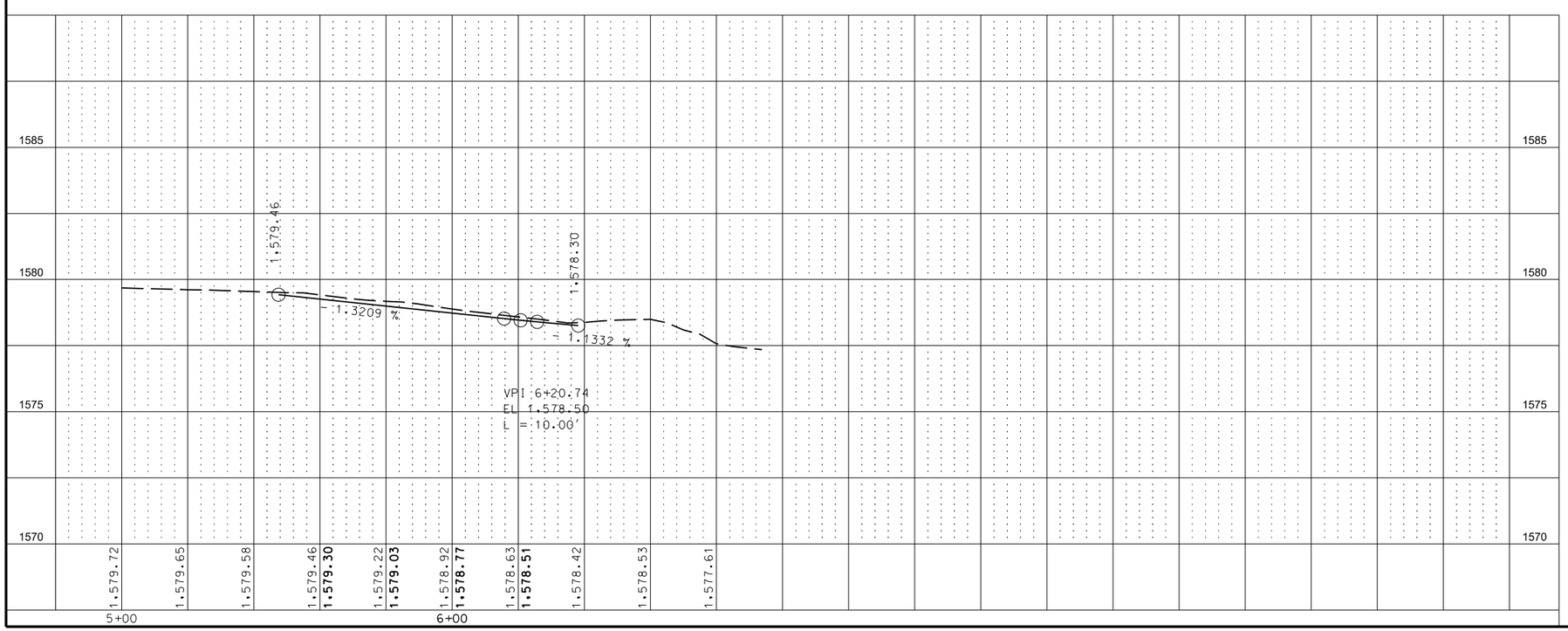
5th Avenue Approach

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	60	88





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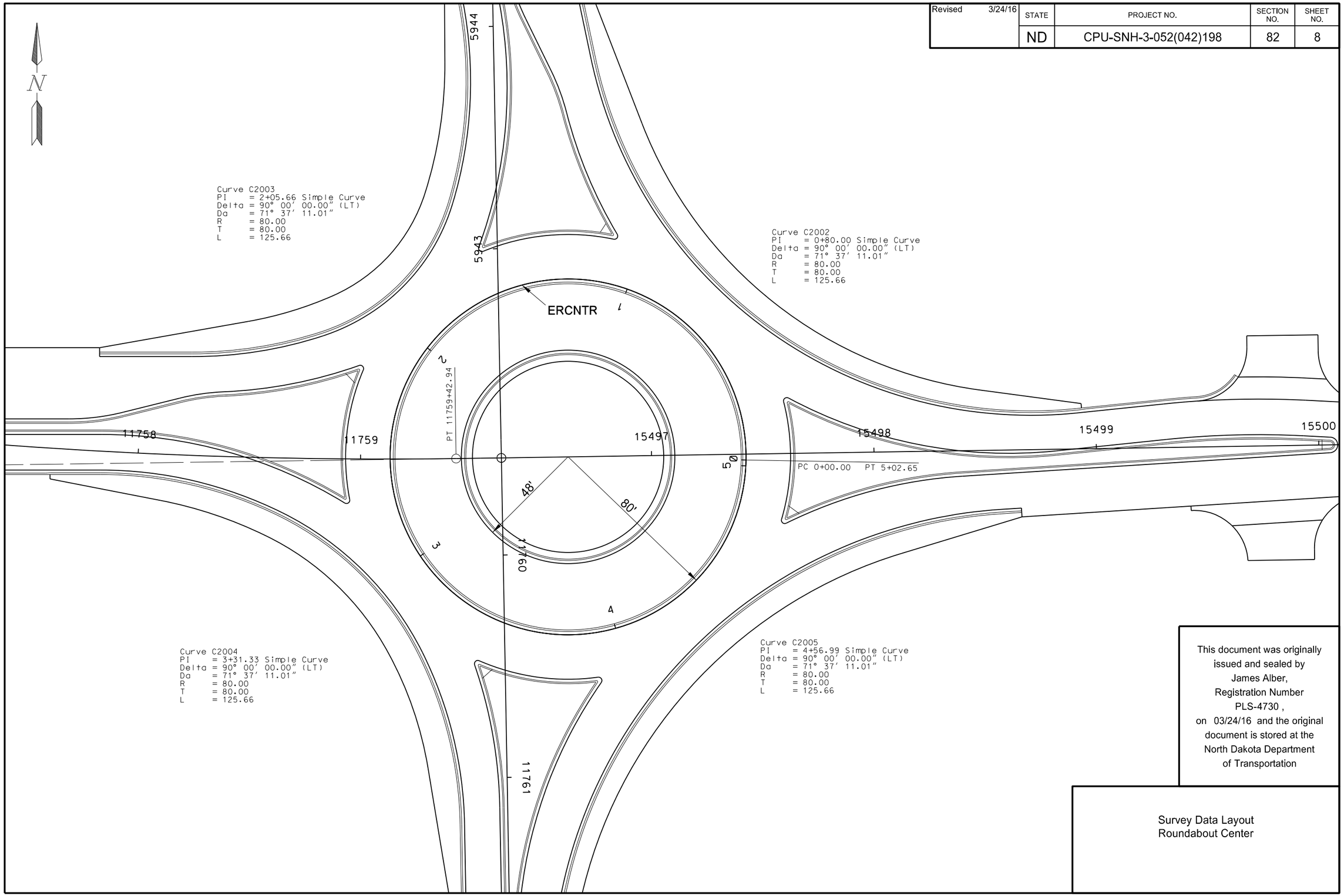
8th Street

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	8



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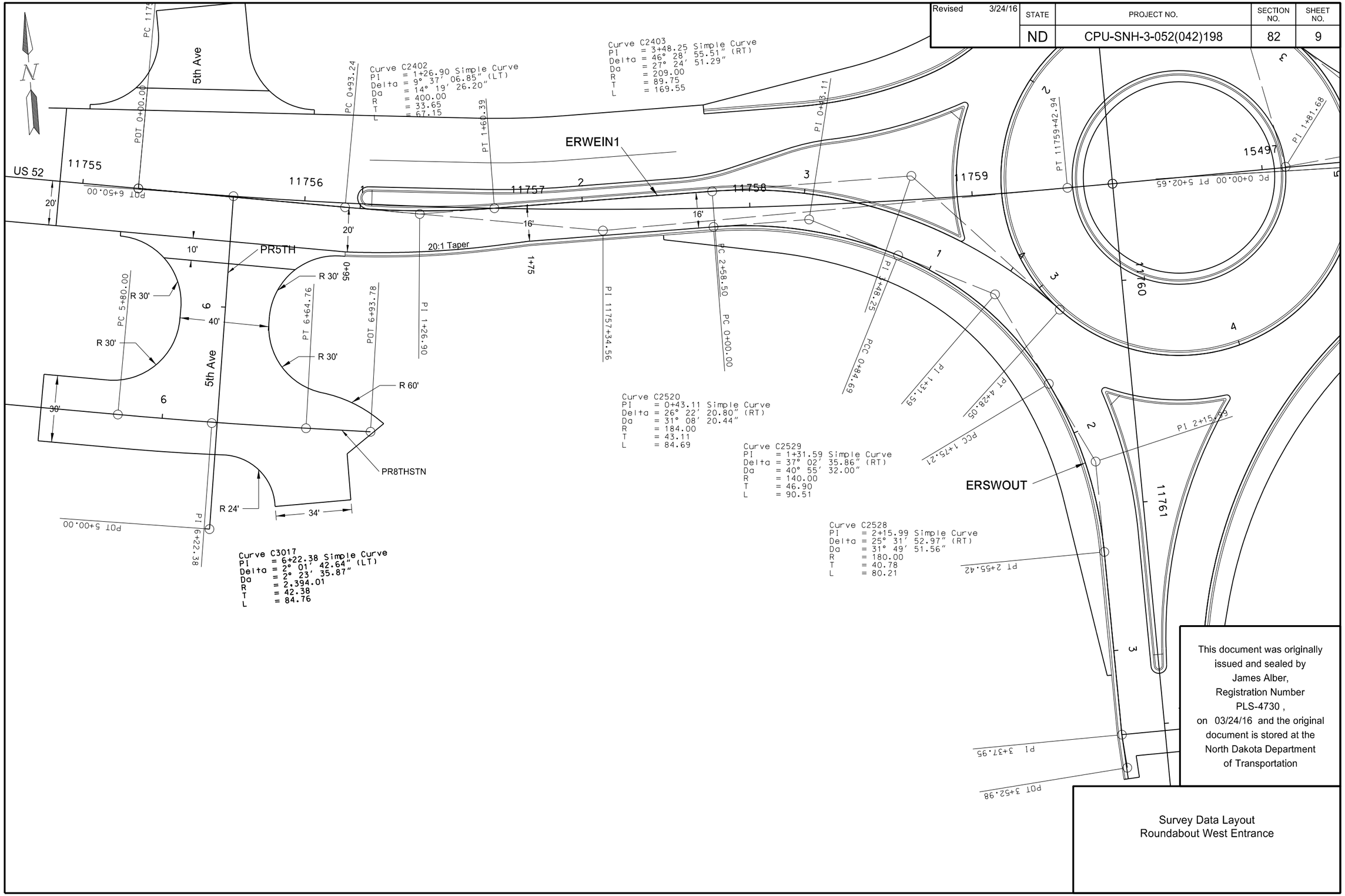
Survey Data Layout
Roundabout Center

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	9



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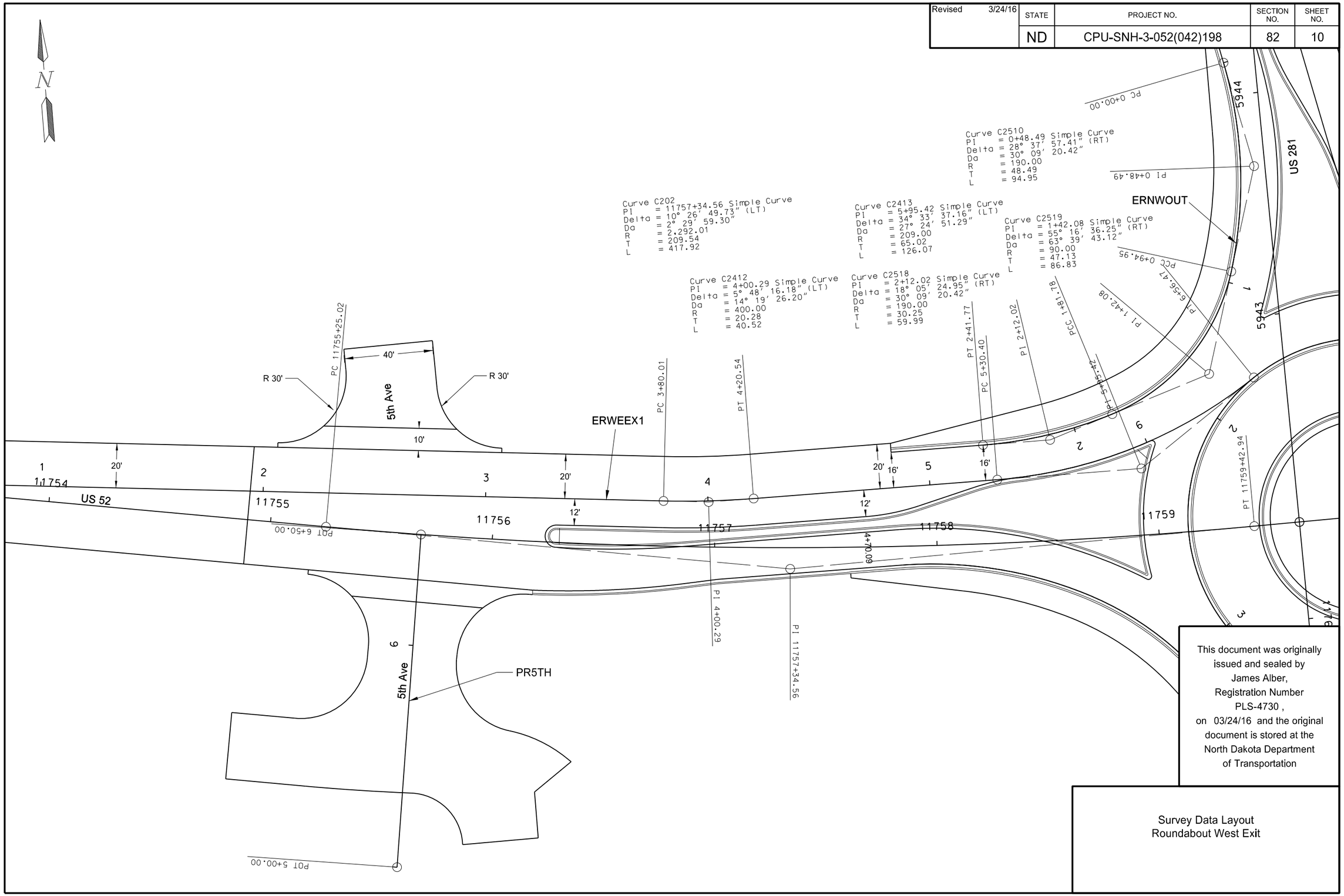
Survey Data Layout
Roundabout West Entrance

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	10



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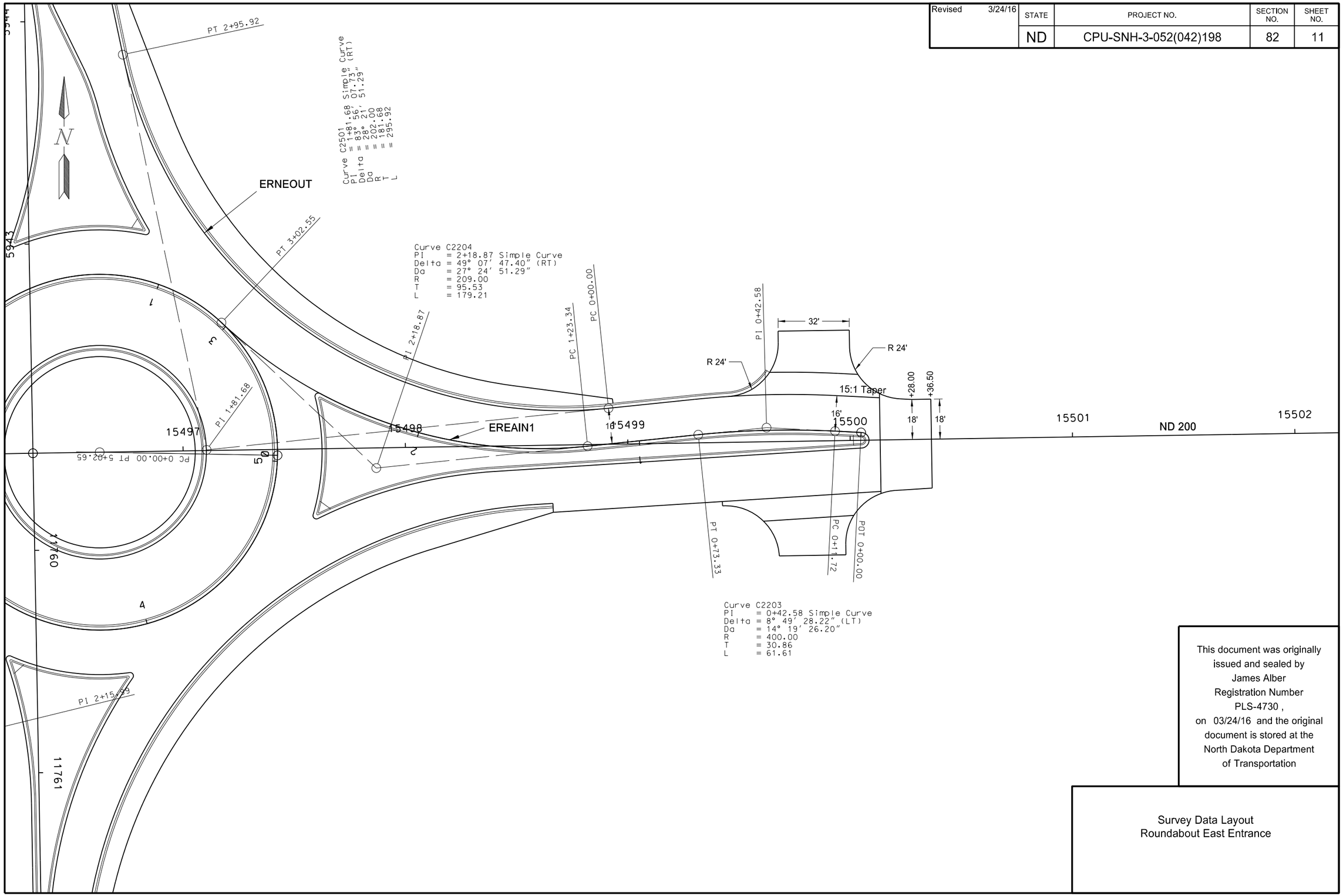
Survey Data Layout
Roundabout West Exit

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	11



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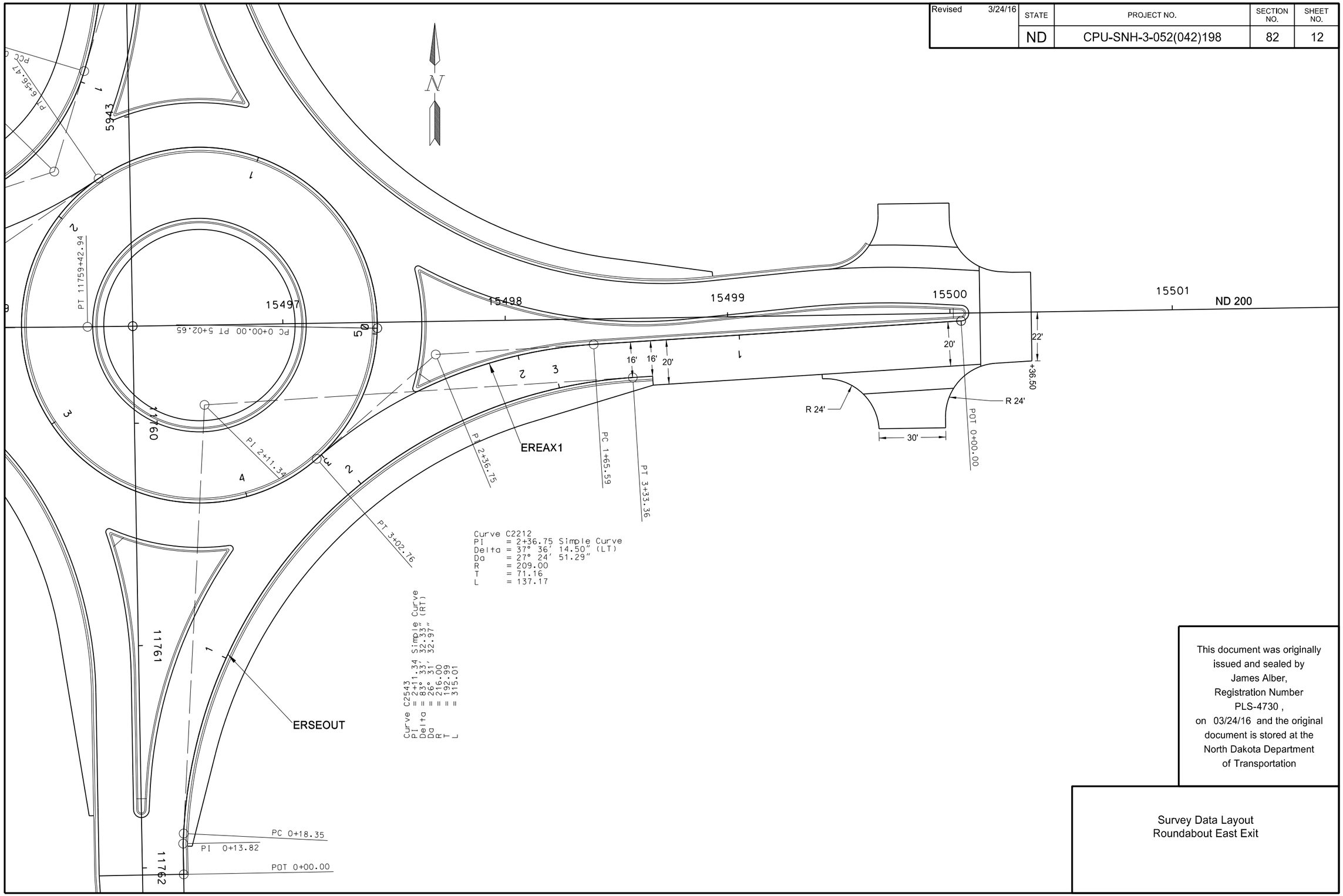
Survey Data Layout
Roundabout East Entrance

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	12



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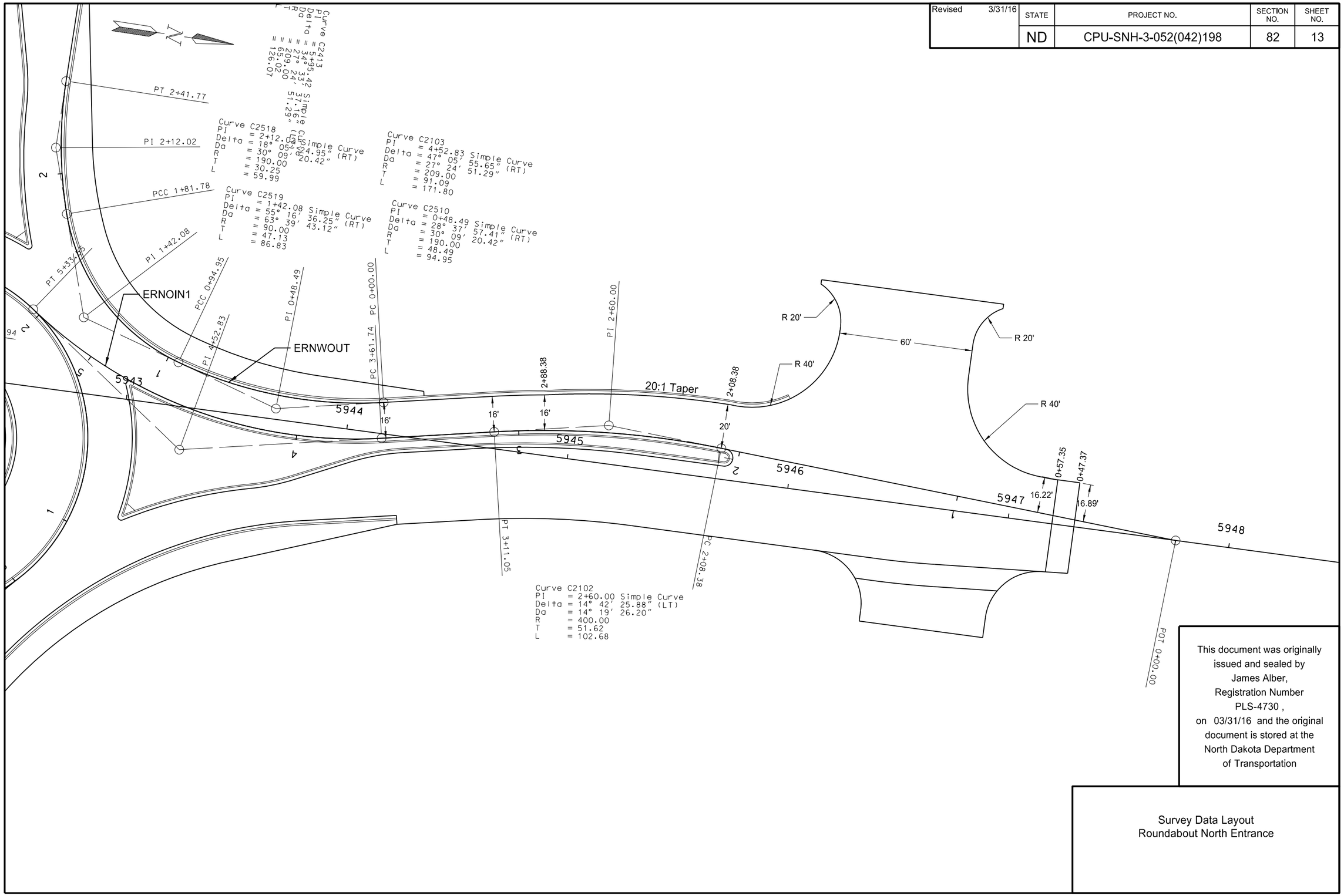
Survey Data Layout
Roundabout East Exit

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	13



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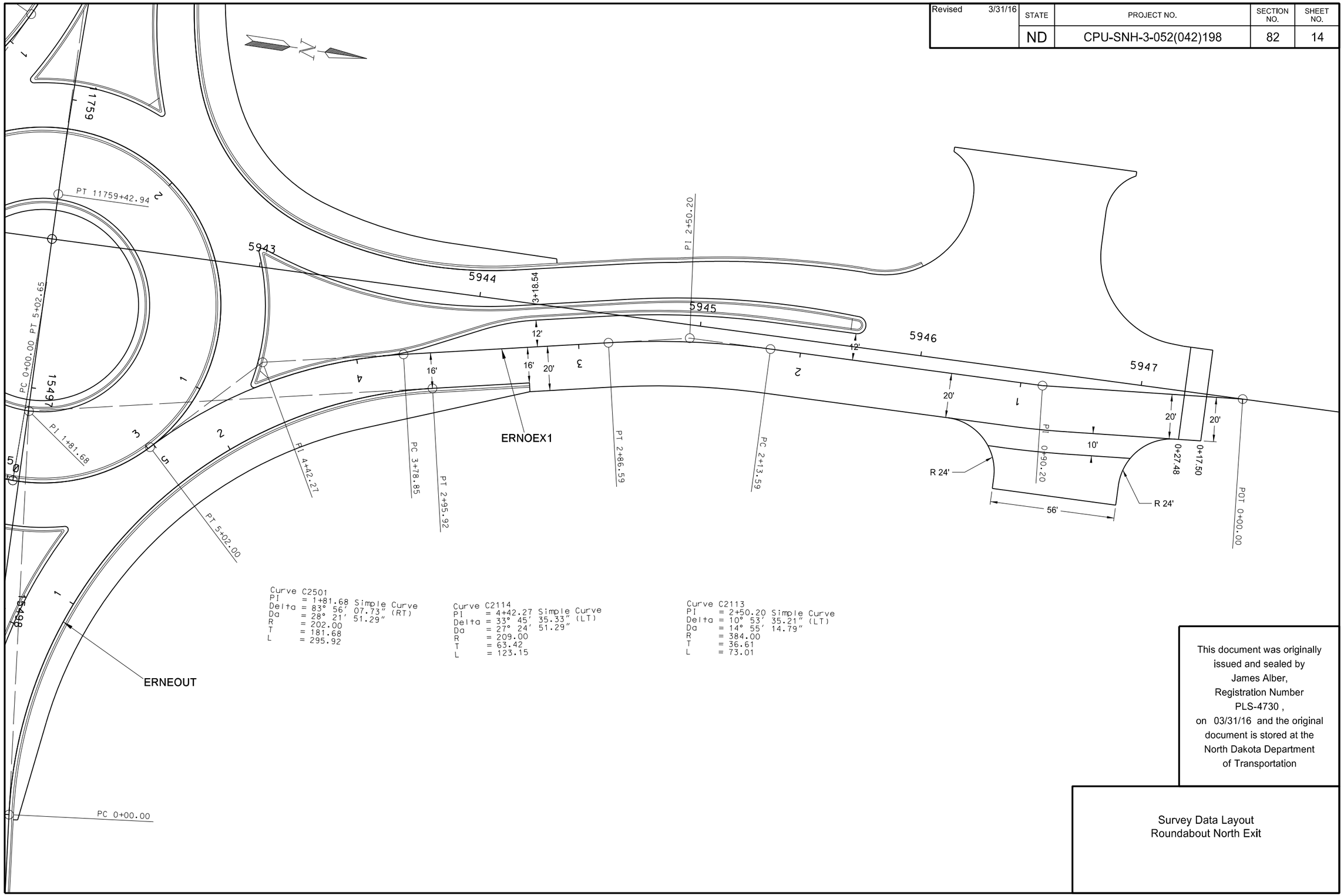
Survey Data Layout
Roundabout North Entrance

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	14



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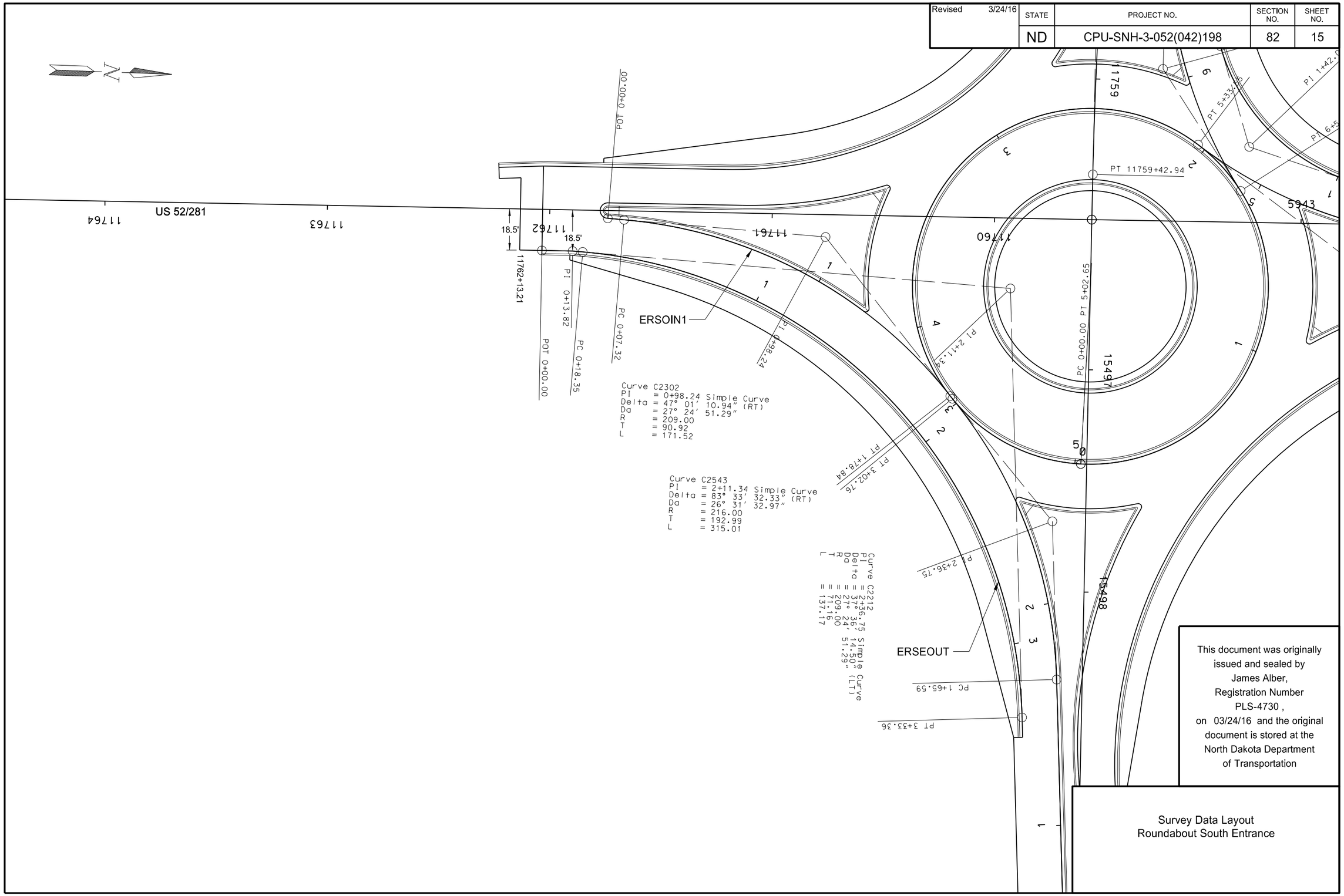
Survey Data Layout
Roundabout North Exit

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	15



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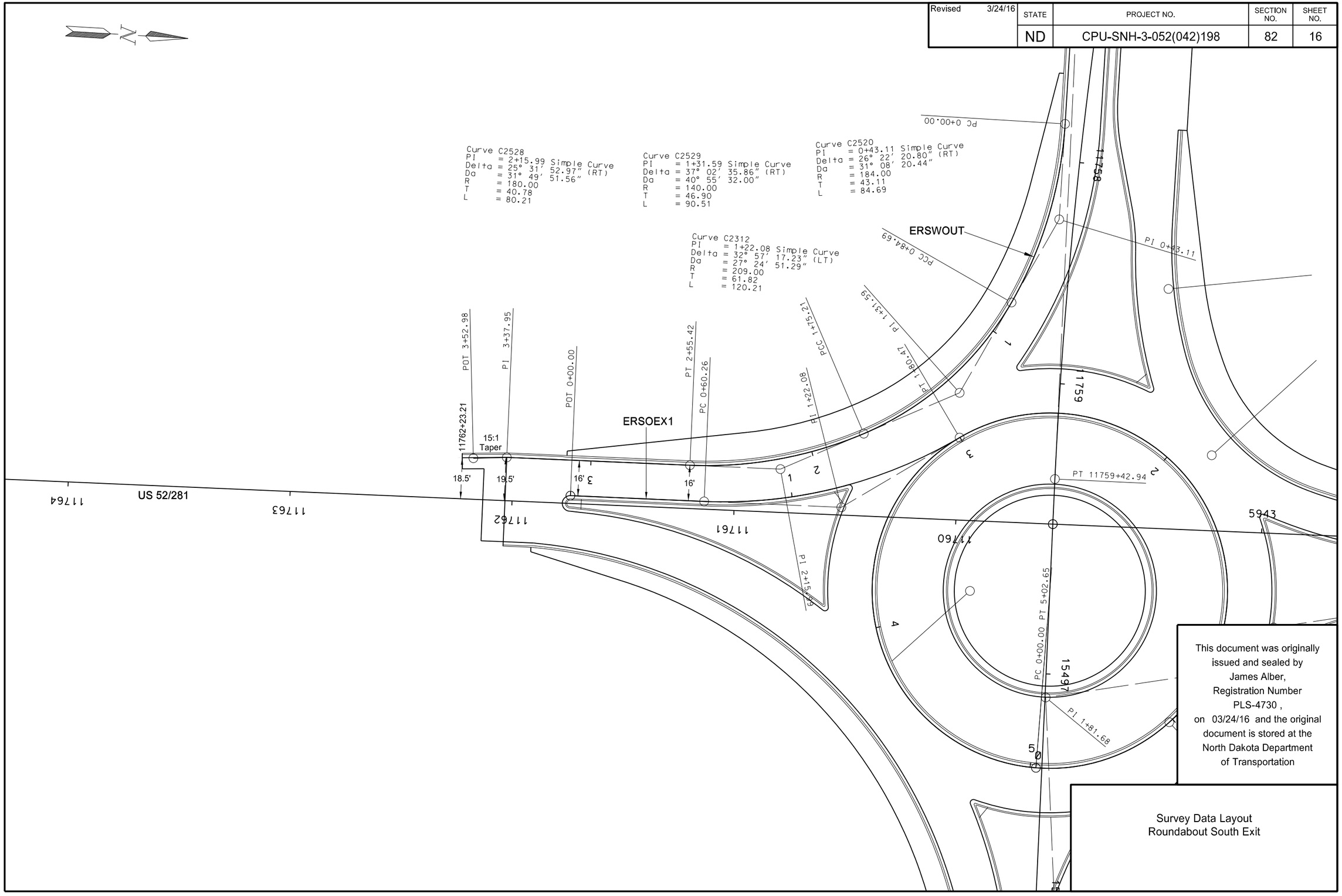
Survey Data Layout
Roundabout South Entrance

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	16



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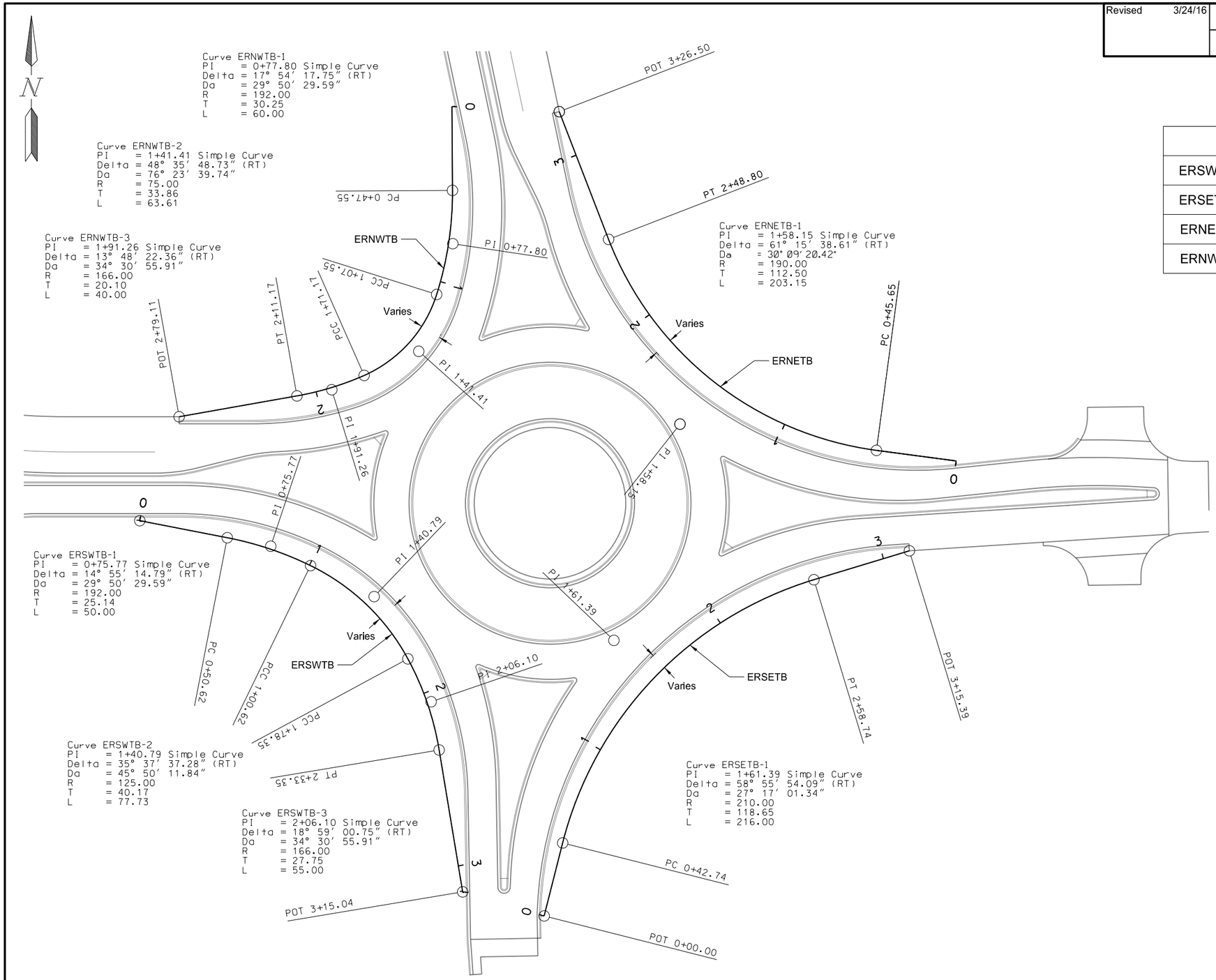
Survey Data Layout
Roundabout South Exit

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	82	17



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

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Survey Data Layout
Roundabout
Truck Blister Layout

Revised	3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	CPU-SNH-3-052(042)198	82	24

N

Stations and Offsets from US HWY 52 Centerline Chain: EX52

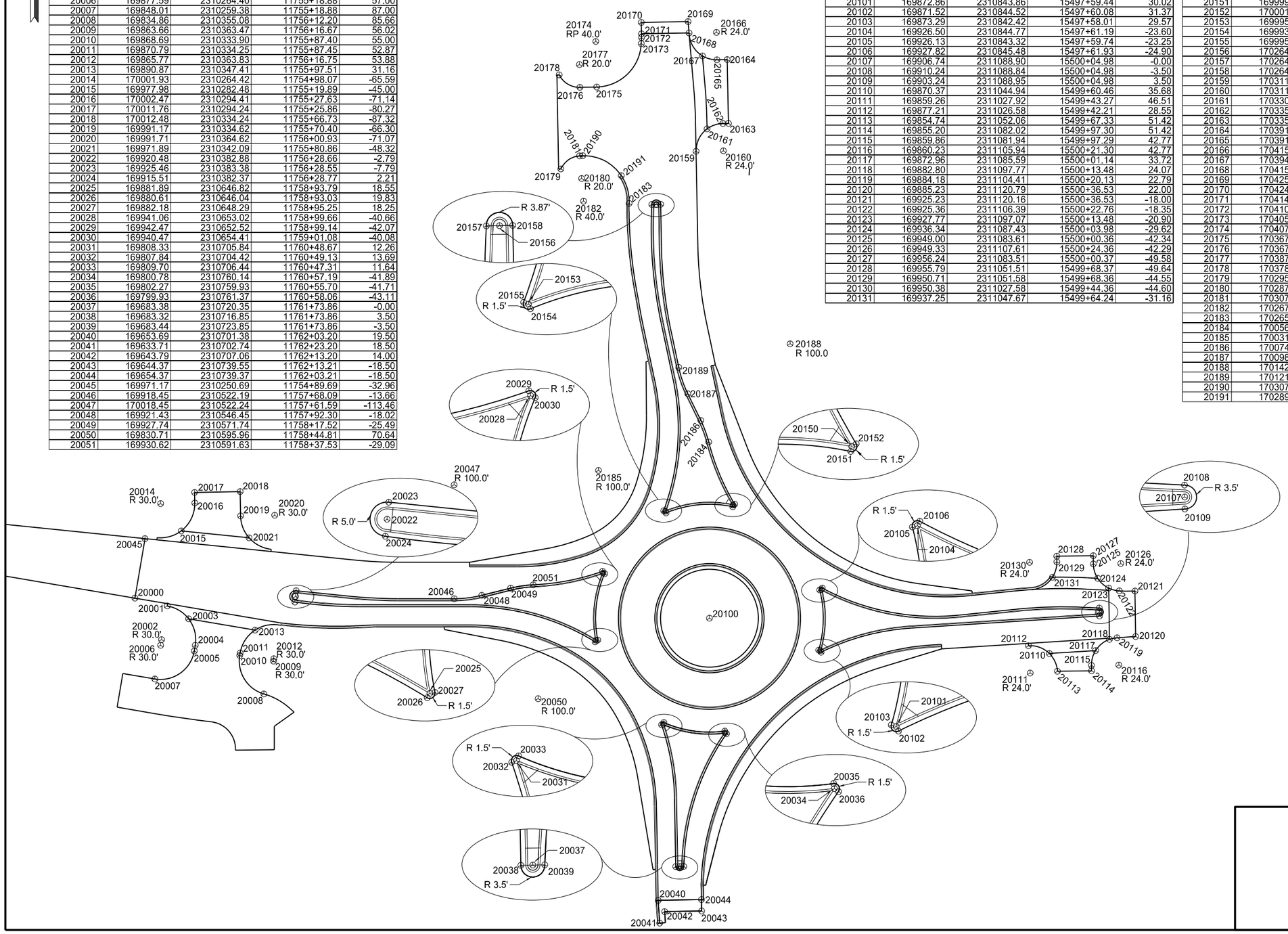
Point	North	East	Station	Offset
20000	169918.96	2310241.82	11754+89.69	20.00
20001	169912.10	2310270.27	11755+18.88	22.00
20002	169882.52	2310265.24	11755+18.88	52.00
20003	169900.79	2310289.04	11755+39.10	30.04
20004	169877.49	2310294.82	11755+48.35	52.12
20005	169872.56	2310293.98	11755+48.30	57.13
20006	169877.59	2310264.40	11755+18.88	57.00
20007	169848.01	2310259.38	11755+18.88	87.00
20008	169834.86	2310355.08	11756+12.20	85.66
20009	169863.66	2310363.47	11756+16.67	56.02
20010	169868.69	2310333.90	11755+87.40	55.00
20011	169870.79	2310334.25	11755+87.45	52.87
20012	169865.77	2310363.83	11756+16.75	53.88
20013	169890.87	2310347.41	11755+97.51	31.16
20014	170001.93	2310264.42	11754+98.07	-65.59
20015	169977.98	2310282.48	11755+19.89	-45.00
20016	170002.47	2310294.41	11755+27.63	-71.14
20017	170011.76	2310294.24	11755+25.86	-80.27
20018	170012.48	2310334.24	11755+66.73	-87.32
20019	169991.17	2310334.62	11755+70.40	-66.30
20020	169991.71	2310364.62	11756+00.93	-71.07
20021	169971.89	2310342.09	11755+80.86	-48.32
20022	169920.48	2310382.88	11756+28.66	-2.79
20023	169925.46	2310383.38	11756+28.55	-7.79
20024	169915.51	2310382.37	11756+28.77	2.21
20025	169881.89	2310646.82	11758+93.79	18.55
20026	169880.61	2310646.04	11758+93.03	19.83
20027	169882.18	2310648.29	11758+95.25	18.25
20028	169941.06	2310653.02	11758+99.66	-40.66
20029	169942.47	2310652.52	11758+99.14	-42.07
20030	169940.47	2310654.41	11759+01.08	-40.08
20031	169808.33	2310705.84	11760+48.67	12.26
20032	169807.84	2310704.42	11760+49.13	13.69
20033	169809.70	2310706.44	11760+47.31	11.64
20034	169800.78	2310760.14	11760+57.19	-41.89
20035	169802.27	2310759.93	11760+55.70	-41.71
20036	169799.93	2310761.37	11760+58.06	-43.11
20037	169683.38	2310720.35	11761+73.86	-0.00
20038	169683.32	2310716.85	11761+73.86	3.50
20039	169683.44	2310723.85	11761+73.86	-3.50
20040	169653.69	2310701.38	11762+03.20	19.50
20041	169633.71	2310702.74	11762+23.20	18.50
20042	169643.79	2310707.06	11762+13.20	14.00
20043	169644.37	2310739.55	11762+13.21	-18.50
20044	169654.37	2310739.37	11762+03.21	-18.50
20045	169971.17	2310250.69	11754+89.69	-32.96
20046	169918.45	2310522.19	11757+68.09	-13.66
20047	170018.45	2310522.24	11757+61.59	-113.46
20048	169921.43	2310546.45	11757+92.30	-18.02
20049	169927.74	2310571.74	11758+17.52	-25.49
20050	169830.71	2310595.96	11758+44.81	70.64
20051	169930.62	2310591.63	11758+37.53	-29.09

Stations and Offsets from ND HWY 200 Centerline Chain: EX200

Point	North	East	Station	Offset
20100	169901.36	2310746.44	15496+62.48	-0.00
20101	169872.86	2310843.86	15497+59.44	30.02
20102	169871.52	2310844.52	15497+60.08	31.37
20103	169873.29	2310842.42	15497+58.01	29.57
20104	169926.50	2310844.77	15497+61.19	-23.60
20105	169926.13	2310843.32	15497+59.74	-23.25
20106	169927.82	2310845.48	15497+61.93	-24.90
20107	169906.74	2311088.90	15500+04.98	-0.00
20108	169910.24	2311088.84	15500+04.98	-3.50
20109	169903.24	2311088.95	15500+04.98	3.50
20110	169870.37	2311044.94	15499+60.46	35.68
20111	169859.26	2311027.92	15499+43.27	46.51
20112	169877.21	2311026.58	15499+42.21	28.55
20113	169854.74	2311052.06	15499+67.33	51.42
20114	169855.20	2311082.02	15499+97.30	51.42
20115	169859.86	2311081.94	15499+97.29	42.77
20116	169860.23	2311105.94	15500+21.30	42.77
20117	169872.96	2311085.59	15500+01.14	33.72
20118	169882.80	2311097.77	15500+13.48	24.07
20119	169884.18	2311104.41	15500+20.13	22.79
20120	169885.23	2311120.79	15500+36.53	22.00
20121	169925.23	2311120.16	15500+36.53	-18.00
20122	169925.36	2311106.39	15500+22.76	-18.35
20123	169927.77	2311097.07	15500+13.48	-20.90
20124	169936.34	2311087.43	15500+03.98	-29.62
20125	169949.00	2311083.61	15500+00.36	-42.34
20126	169949.33	2311107.61	15500+24.36	-42.29
20127	169956.24	2311083.51	15500+00.37	-49.58
20128	169955.79	2311051.51	15499+68.37	-49.64
20129	169950.71	2311051.58	15499+68.36	-44.55
20130	169950.38	2311027.58	15499+44.36	-44.60
20131	169937.25	2311047.67	15499+64.24	-31.16

Stations and Offsets from US HWY 281 Centerline Chain: EX281

Point	North	East	Station	Offset
20150	170000.70	2310767.24	5943+04.76	52.67
20151	169999.23	2310766.93	5943+03.29	52.34
20152	170001.47	2310768.53	5943+05.50	53.98
20153	169995.17	2310707.70	5943+00.35	-6.96
20154	169993.78	2310708.27	5942+98.95	-6.42
20155	169995.69	2310706.29	5943+00.90	-8.36
20156	170264.58	2310699.70	5945+69.87	-9.87
20157	170264.50	2310695.83	5945+69.86	-13.74
20158	170264.65	2310703.57	5945+69.86	-6.00
20159	170311.15	2310734.70	5946+15.77	26.00
20160	170311.61	2310758.69	5946+15.77	50.00
20161	170330.83	2310744.33	5946+35.27	36.00
20162	170335.60	2310758.24	5946+39.77	50.00
20163	170335.69	2310763.11	5946+39.77	54.87
20164	170391.69	2310762.05	5946+95.78	54.87
20165	170391.52	2310753.03	5946+95.78	45.84
20166	170415.52	2310752.57	5947+19.78	45.84
20167	170394.90	2310740.29	5946+99.40	33.17
20168	170415.06	2310728.52	5947+19.78	21.79
20169	170425.05	2310727.67	5947+29.78	21.13
20170	170424.27	2310686.55	5947+29.78	-20.00
20171	170414.28	2310686.74	5947+19.79	-20.00
20172	170410.95	2310686.80	5947+16.45	-20.00
20173	170405.68	2310686.55	5947+11.19	-20.35
20174	170407.59	2310646.60	5947+13.85	-60.26
20175	170367.60	2310647.35	5946+73.86	-60.26
20176	170367.32	2310632.62	5946+73.86	-75.00
20177	170387.32	2310632.24	5946+93.86	-75.00
20178	170378.26	2310214.41	5946+85.14	-93.00
20179	170295.66	2310615.98	5946+02.52	-92.99
20180	170287.29	2310634.13	5945+93.81	-75.00
20181	170307.21	2310632.36	5946+13.76	-76.39
20182	170267.36	2310635.90	5945+73.85	-73.61
20183	170265.46	2310675.86	5945+71.20	-33.69
20184	170056.07	2310745.79	5943+60.52	32.27
20185	170031.07	2310648.96	5943+37.35	-65.01
20186	170074.92	2310738.84	5943+79.50	25.68
20187	170098.35	2310727.40	5944+03.14	14.69
20188	170142.21	2310817.27	5944+45.29	105.37
20189	170121.46	2310719.45	5944+26.40	7.17
20190	170307.36	2310635.15	5946+13.86	-73.60
20191	170289.81	2310669.01	5945+95.67	-40.08



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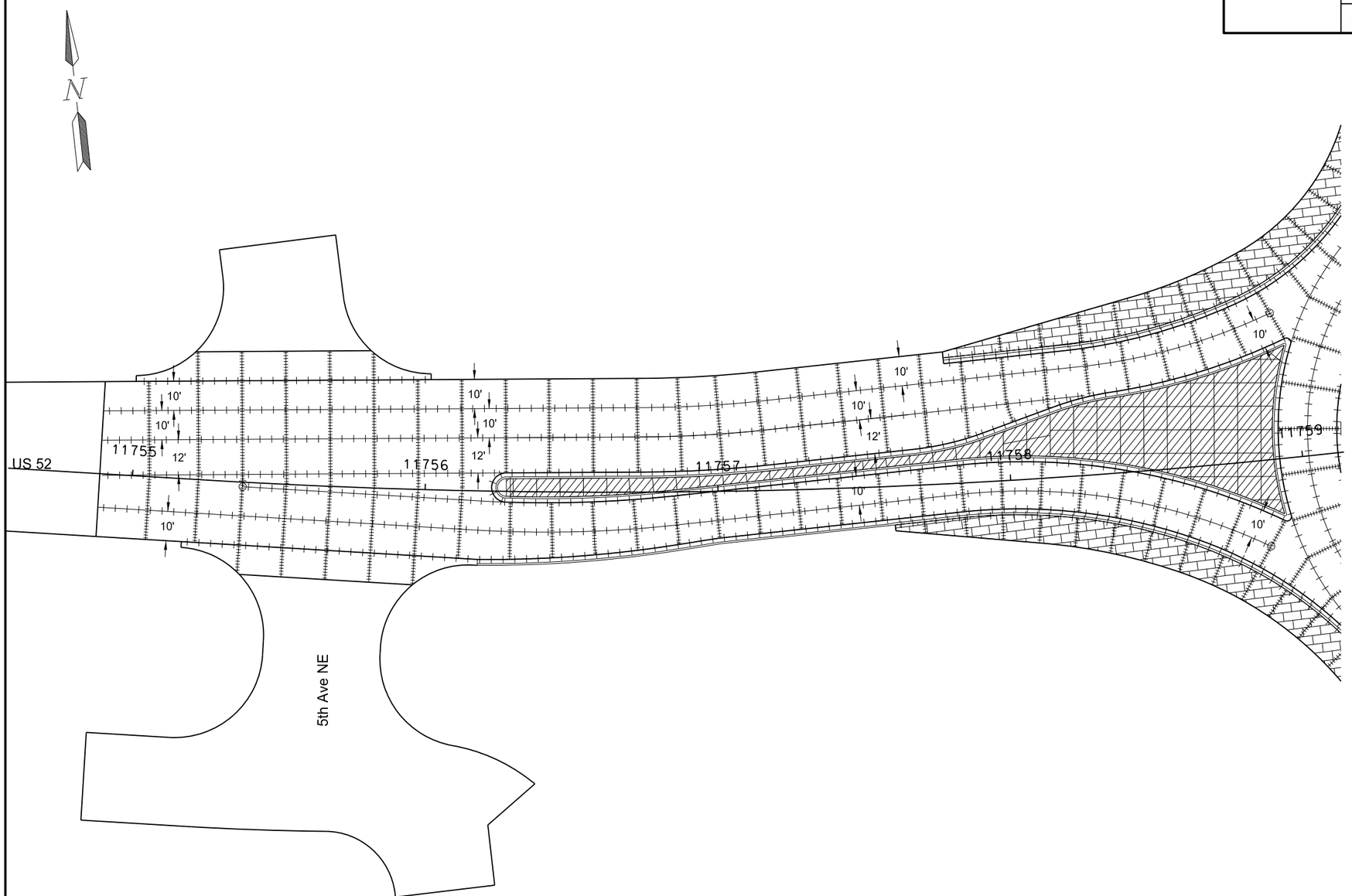
Survey Data Layout
Roundabout and
Splitter Islands

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	90	1



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
WEST LEG	2,340.4 SY

CONCRETE MEDIAN PAVEMENT	Qty
WEST LEG MEDIAN	367.0 SY

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

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

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

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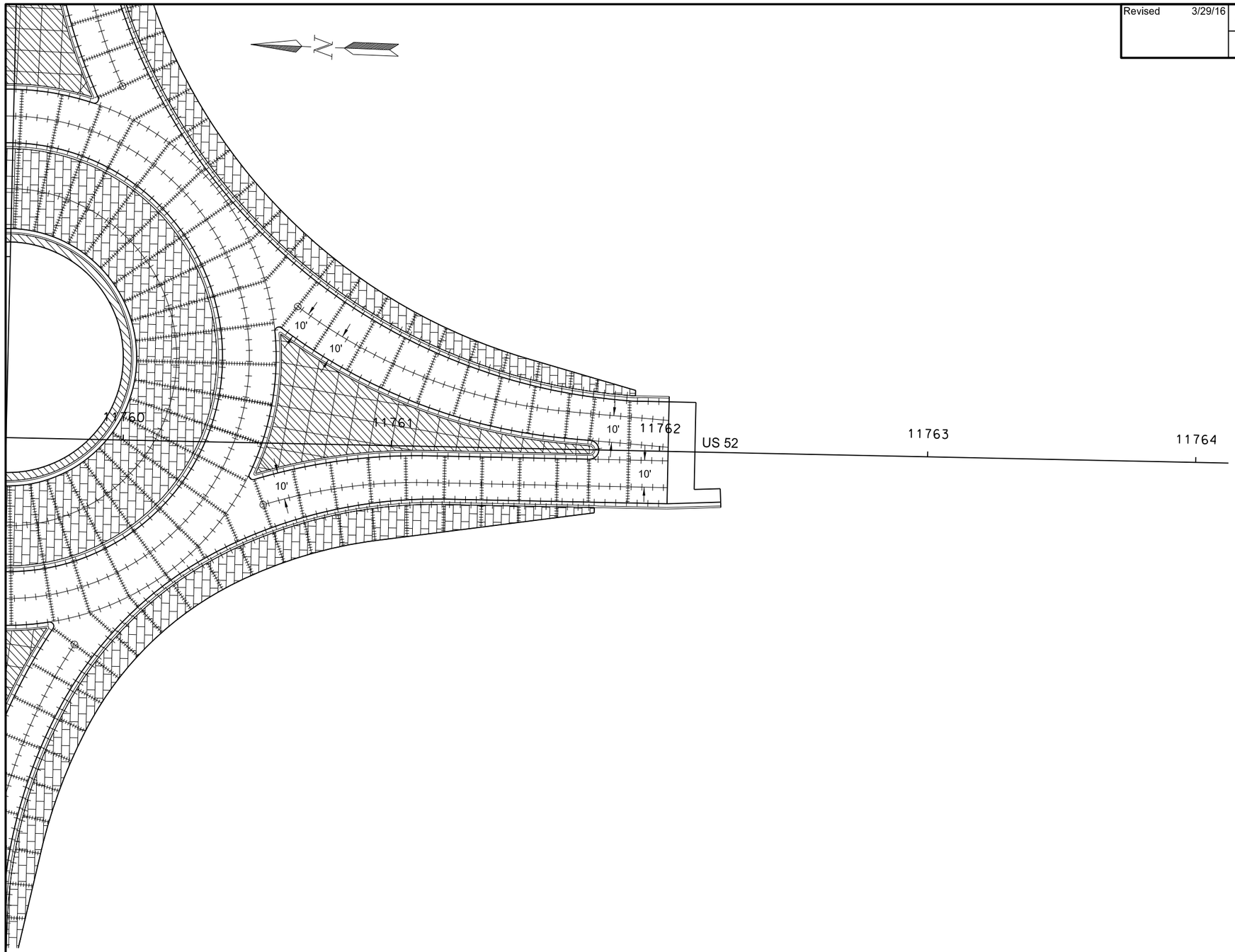
Dowel Basket
Tie Bar
Keyed Joint
Concrete Saw cut
9" Reinf Concrete Pvmt CL AE-Colored & Text
Concrete Median Pavement

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

Paving Layout
West Roundabout Leg

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	90	2



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

CONCRETE MEDIAN PAVEMENT	Qty
SOUTH LEG MEDIAN	234.6 SY

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

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

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

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Dowel Basket

Tie Bar

Keyed Joint

Concrete Saw cut

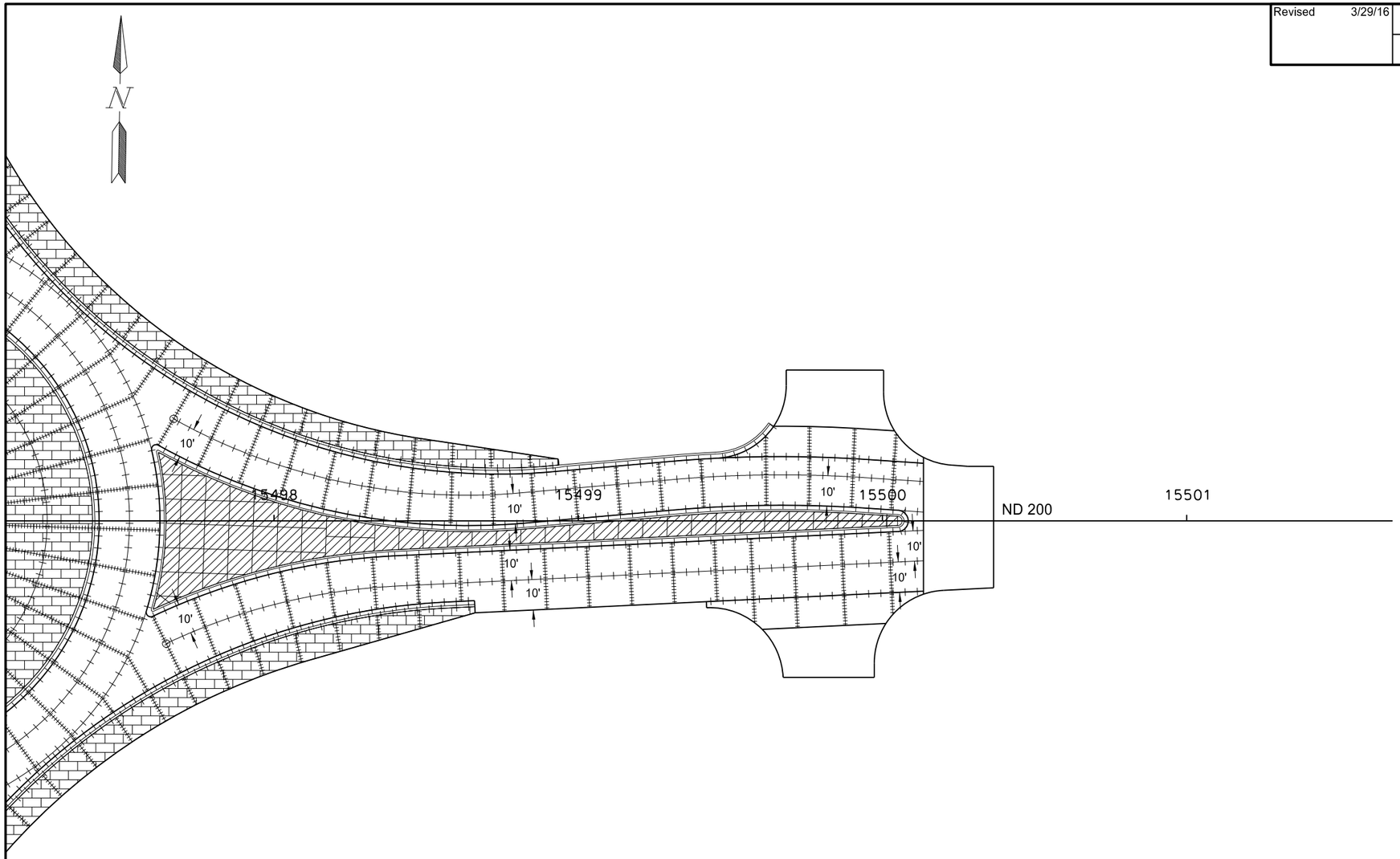
9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

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

Paving Layout
South Roundabout Leg

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	90	3



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
EAST LEG	1160.0 SY

CONCRETE MEDIAN PAVEMENT	Qty
EAST LEG MEDIAN	300.5 SY

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

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

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

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Dowel Basket

Tie Bar

Keyed Joint

Concrete Saw cut

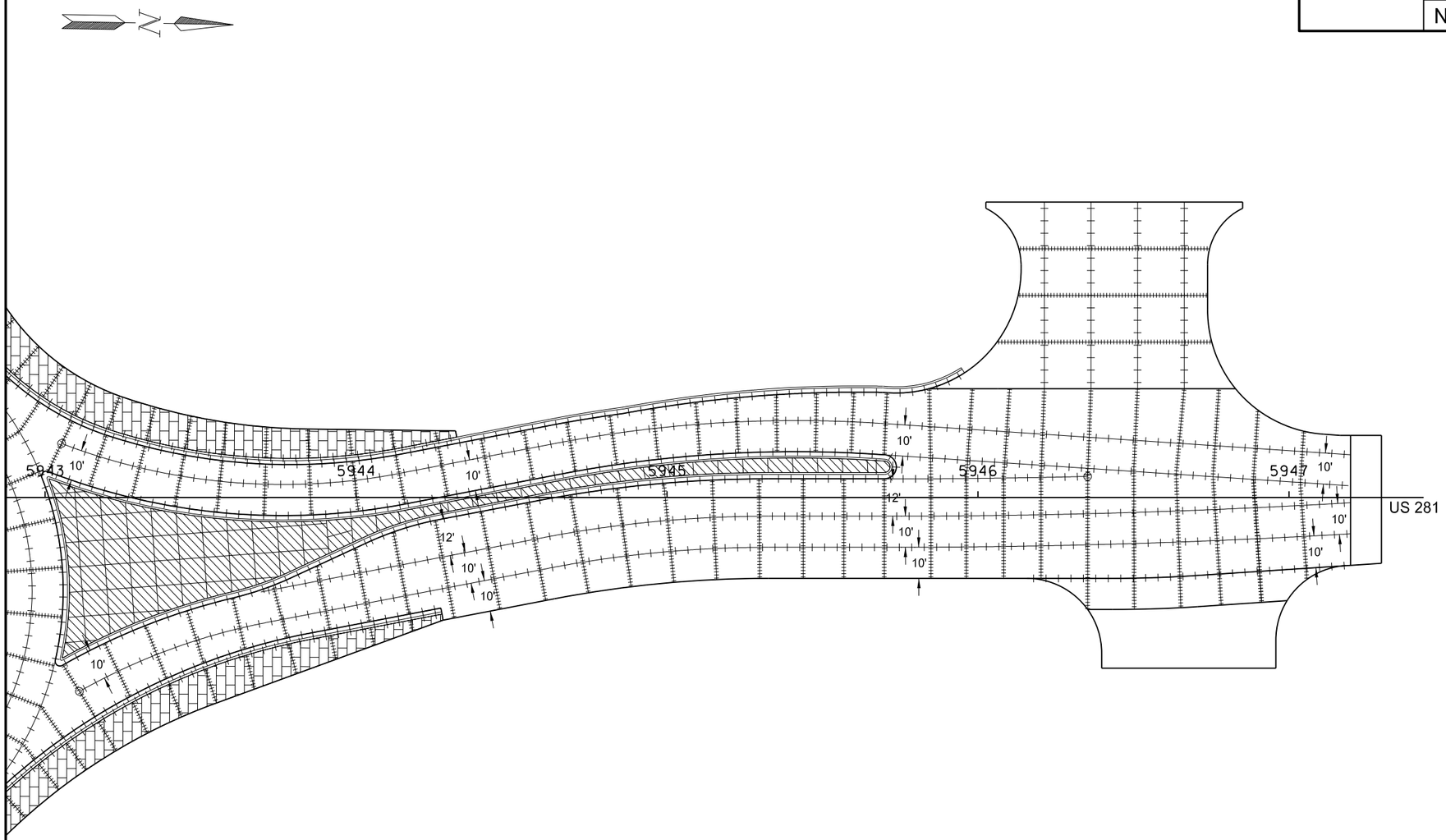
9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

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

Paving Layout
East Roundabout Leg

Revised 3/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	90	4



9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Qty
NORTH LEG	2804.2 SY

CONCRETE MEDIAN PAVEMENT	Qty
NORTH LEG MEDIAN	361.6 SY

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

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

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

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Dowel Basket

Tie Bar

Keyed Joint

Concrete Saw cut

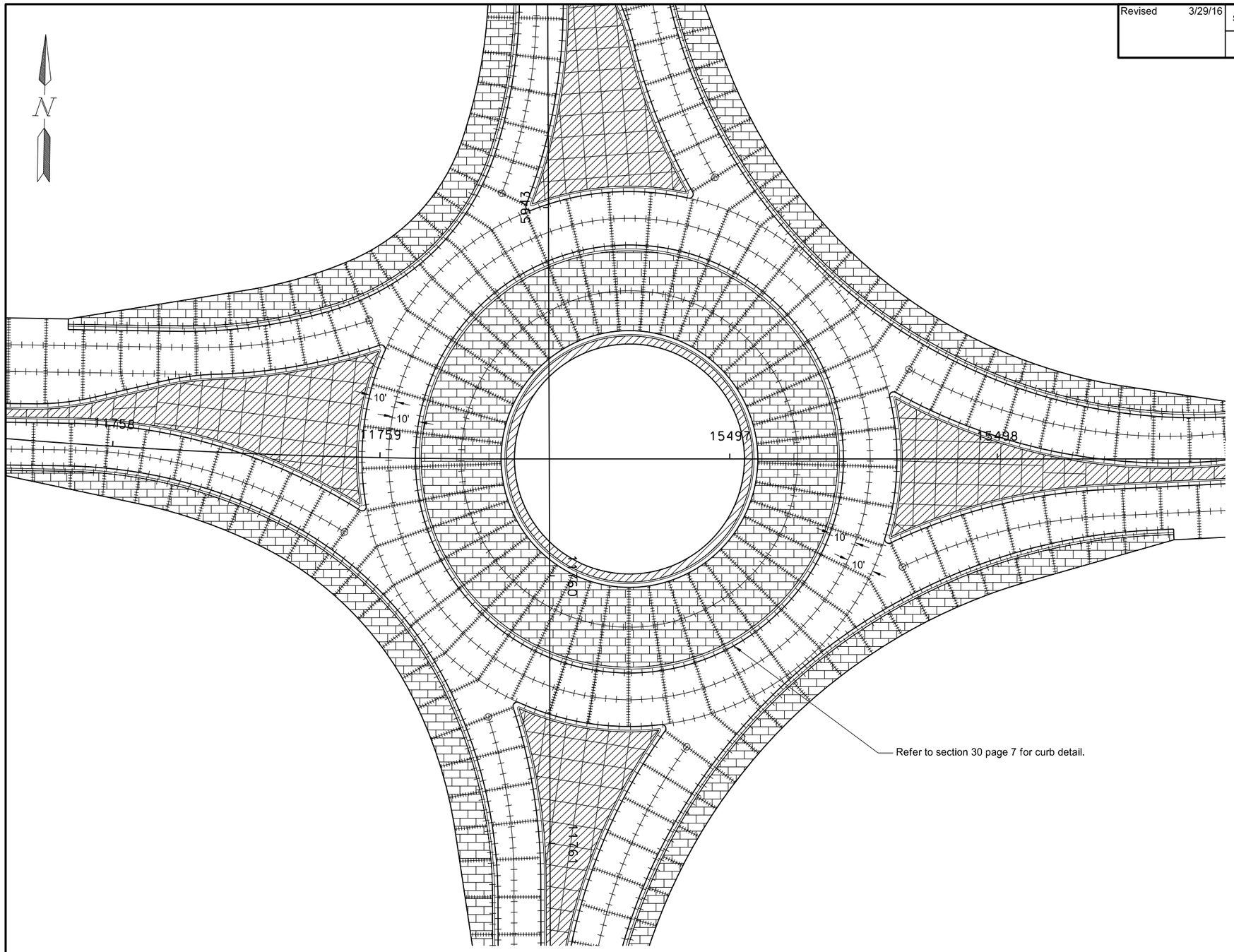
9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

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

Paving Layout
North Roundabout Leg

Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	90	5



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

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

CONCRETE MEDIAN PAVEMENT	Qty
INSIDE TRUCK APRON	93.2 SY

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

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

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Dowel Basket

Tie Bar

Keyed Joint

Concrete Saw cut

9" Reinf Concrete Pvmt CL AE-Colored & Text

Concrete Median Pavement

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

Paving Layout
Roundabout Circle

Revised 3/24/2016

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

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)		6	
G20-1-60	**60"x24"**	**ROAD WORK NEXT __ MILES**	**1**	**34**	**34**
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)		26	
G20-2-48	**48"x24"**	**END ROAD WORK**	**6**	**19**	**114**
G20-4-36	**36"x18"**	**PILOT CAR FOLLOW ME (Mounted to back of pilot car)**	**1**	**18**	**18**
G20-10-108	**108"x48"**	**CONTRACTOR SIGN**	**1**	**64**	**64**
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**	**45**	**37**	**1665**
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**	**5**	**59**	**295**
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT		23	
M5-1-21	21"x15"	ARROW AHD AND RT or LT(Mounted on route marker post)		7	
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)		7	
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)		7	
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)		7	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)		7	
R1-1-48	**48"x48"**	**STOP**	**8**	**32**	**256**
R1-1a-18	**18"x18"**	**STOP and SLOW PADDLE Back to Back**	**6**	**5**	**30**
R1-2-60	60"x60"	YIELD		29	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**18**	**39**	**702**
R2-1a-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**	**6**	**10**	**60**
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT		13	
R7-1-12	12"x18"	NO PARKING		11	
R10-6-24	**24"x36"**	**STOP HERE ON RED**	**4**	**16**	**64**
R11-2-48	48"x30"	ROAD CLOSED		28	
R11-2a-48	48"x30"	STREET CLOSED		28	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC		31	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW		35	
W1-4-48	**48"x48"**	**RIGHT or LEFT REVERSE CURVE ARROW**	**2**	**35**	**70**
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-6-48	48"x24"	LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL		35	
W3-3-48	**48"x48"**	**SIGNAL AHEAD SYMBOL**	**4**	**35**	**140**
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**	**6**	**35**	**210**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**7**	**35**	**245**
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL		35	
W8-1-48	**48"x48"**	**BUMP**	**1**	**35**	**35**
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF		35	
W8-11-48	**48"x48"**	**UNEVEN LANES**	**1**	**35**	**35**
W8-12-48	48"x48"	NO CENTER STRIPE		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	**48"x48"**	**TRUCKS ENTERING AHEAD or __ FT.**	**4**	**35**	**140**
W8-55-48	**48"x48"**	**TRUCKS CROSSING AHEAD or __ FT.**	**4**	**35**	**140**
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL		35	
W13-1-24	24"x24"	__ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)		11	
W13-4-48	48"x60"	RAMP ARROW		39	
W14-3-48	48"x36"	NO PASSING ZONE		23	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**28**	**35**	**980**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT.		35	
W20-4-48	**48"x48"**	**ONE LANE ROAD AHEAD or __ FT.**	**4**	**35**	**140**
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or __ FT.		35	
W20-7a-48	**48"x48"**	**FLAGGING SYMBOL**	**6**	**35**	**210**
W20-7k-24	24"x18"	__ FEET (Mounted on warning sign post)		10	
W20-8-48	48"x48"	STREET CLOSED		35	
W20-51-48	48"x48"	EQUIPMENT WORKING		35	
W20-52-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**	**6**	**12**	**72**
W21-1a-48	48"x48"	WORKERS SYMBOL		35	
W21-2-48	**48"x48"**	**FRESH OIL**	**1**	**35**	**35**
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __FT		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-5-48	**48"x48"**	**SHOULDER WORK**	**2**	**35**	**70**
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT.		35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT.		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)		11	

SPECIAL SIGNS

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**5824**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	**FLAGGING**	**MHR**	**4400**
704-1018	**LANE CLOSURE-SIGNAL CONTROLLER/FLAGGING CONTROL**	**EACH**	**2**
704-1039	**ATTENUATION DEVICE-TYPE B-45**	**EACH**	**2**
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH	
704-1043	**ATTENUATION DEVICE-TYPE B-65**	**EACH**	**2**
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1051	TYPE II BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**6**
704-1060	**DELINEATOR DRUMS**	**EACH**	**20**
704-1065	TRAFFIC CONES	EACH	
704-1067	**TUBULAR MARKERS**	**EACH**	**729**
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH	
704-1095	TYPE B FLASHERS	EACH	
704-1185	**PILOT CAR**	**HR**	**700**
704-1500	**OBLITERATION OF PVMT MK**	**SF**	**1570**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	**PRECAST CONCRETE MED BARRIER - STATE FURNISHED**	**EACH**	**97**
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	**SHORT TERM 4IN LINE - TYPE R**	**LF**	**76739**
762-0430	**SHORT TERM 4IN LINE - TYPE NR**	**LF**	**7320**
772-2110	FLASHING BEACON - POST MOUNTED	EACH	

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

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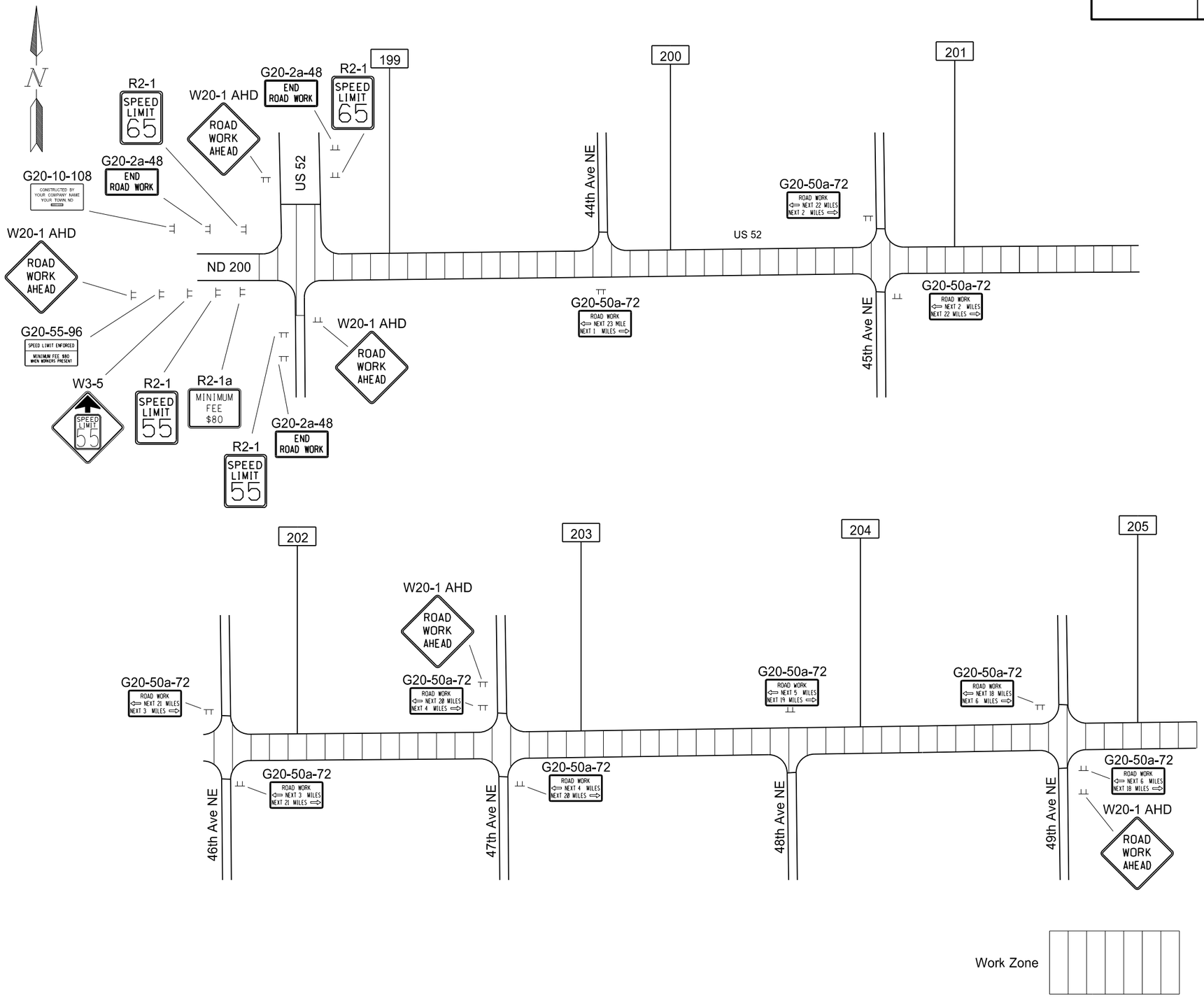
Traffic Control Devices List
Widening and Paving

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	100	3



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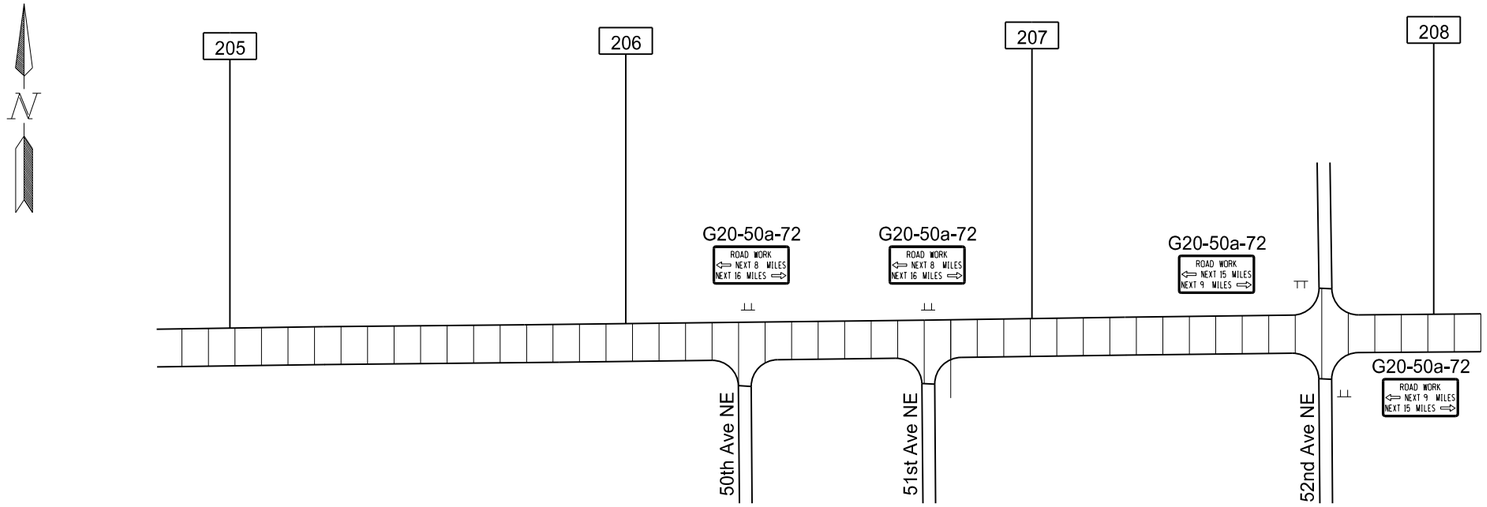
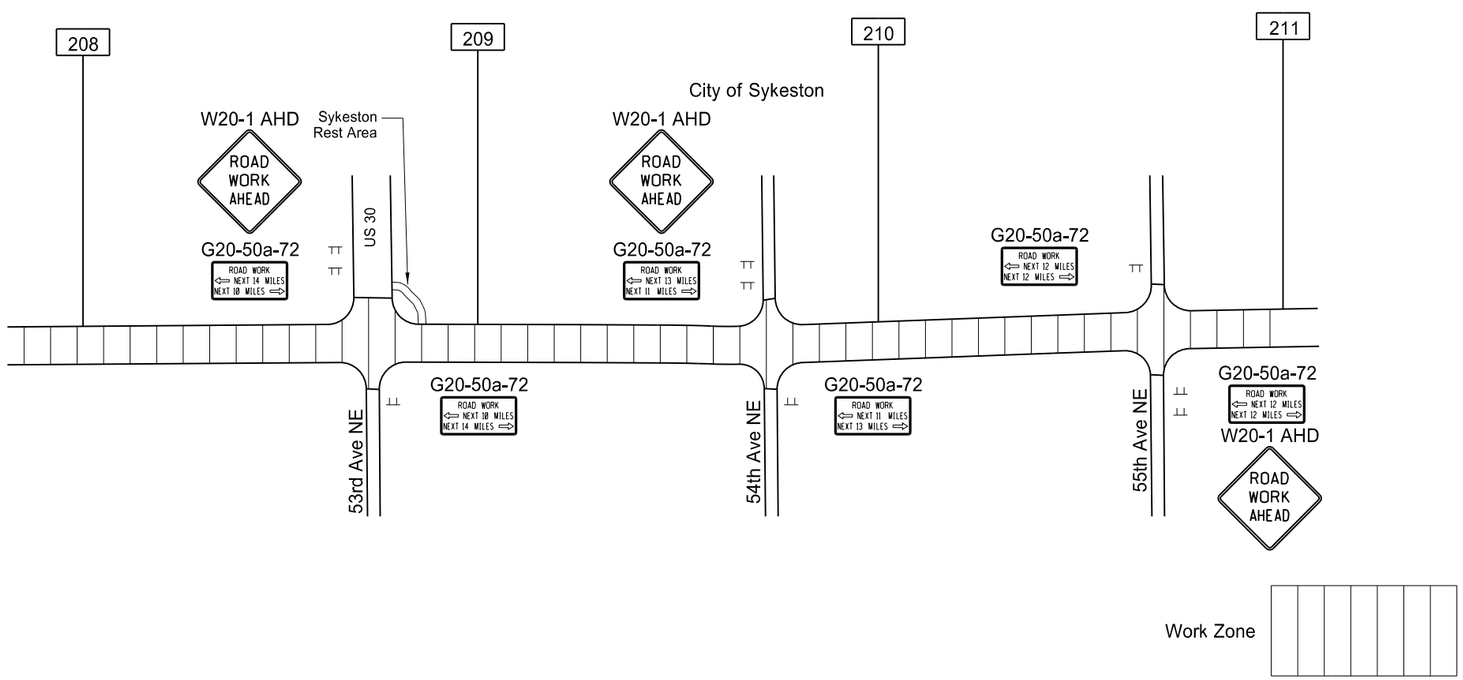
Work Zone Traffic Control

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	100	4





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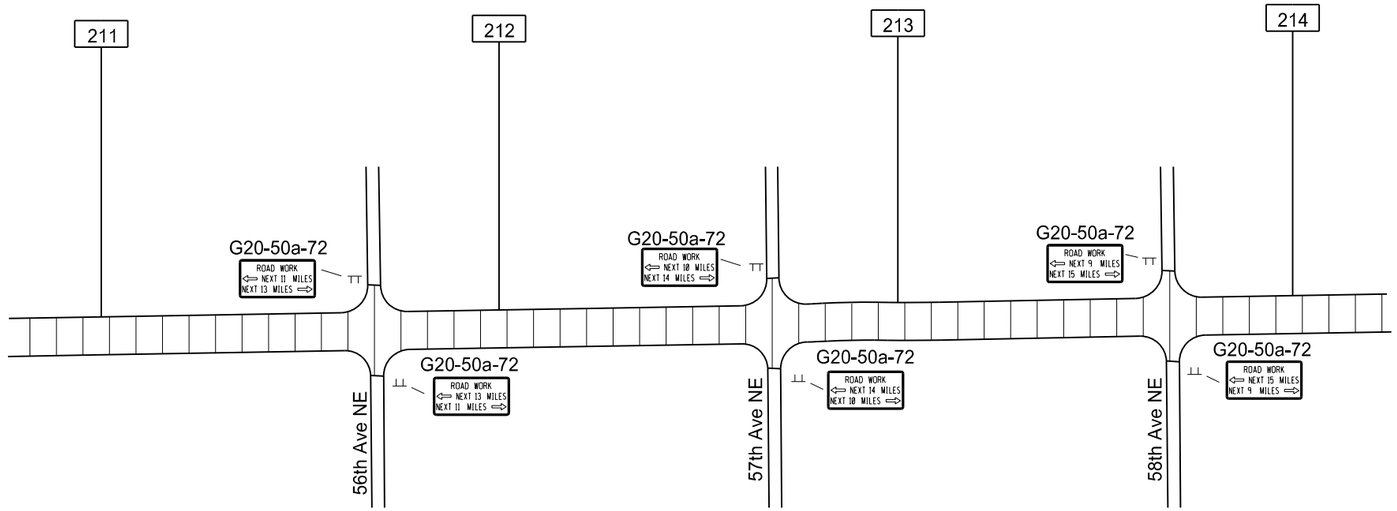
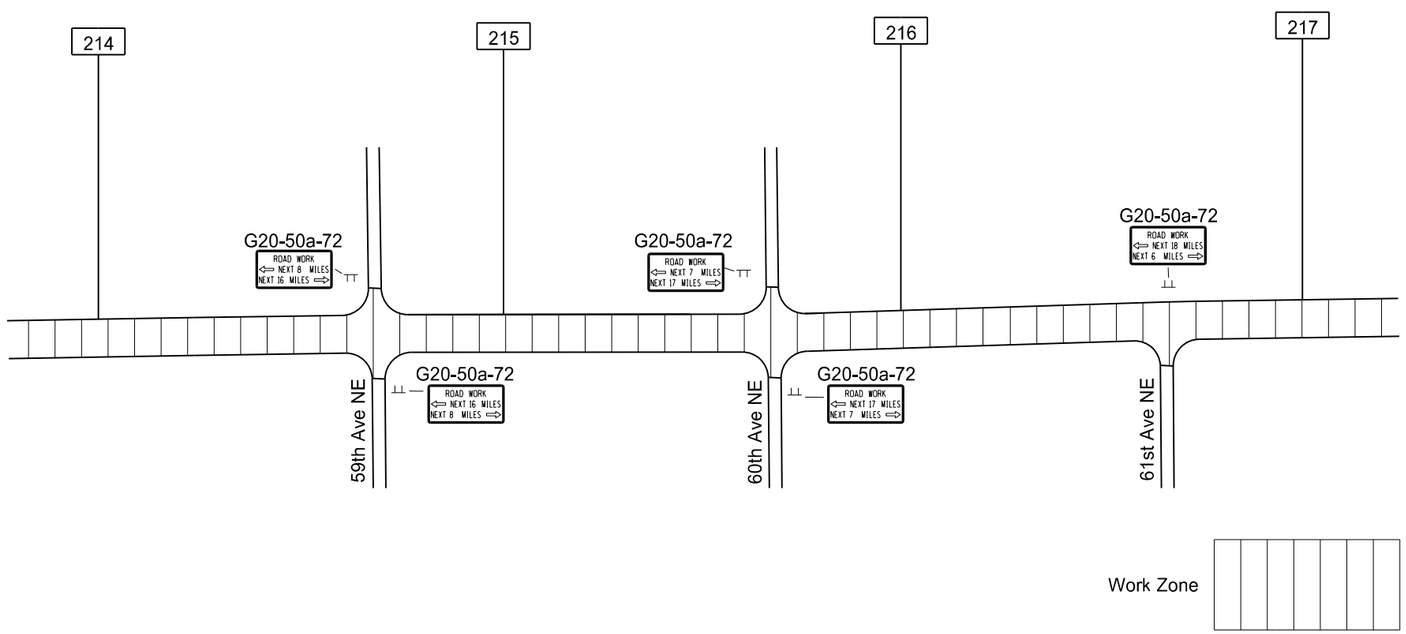
Work Zone Traffic Control

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	100	5





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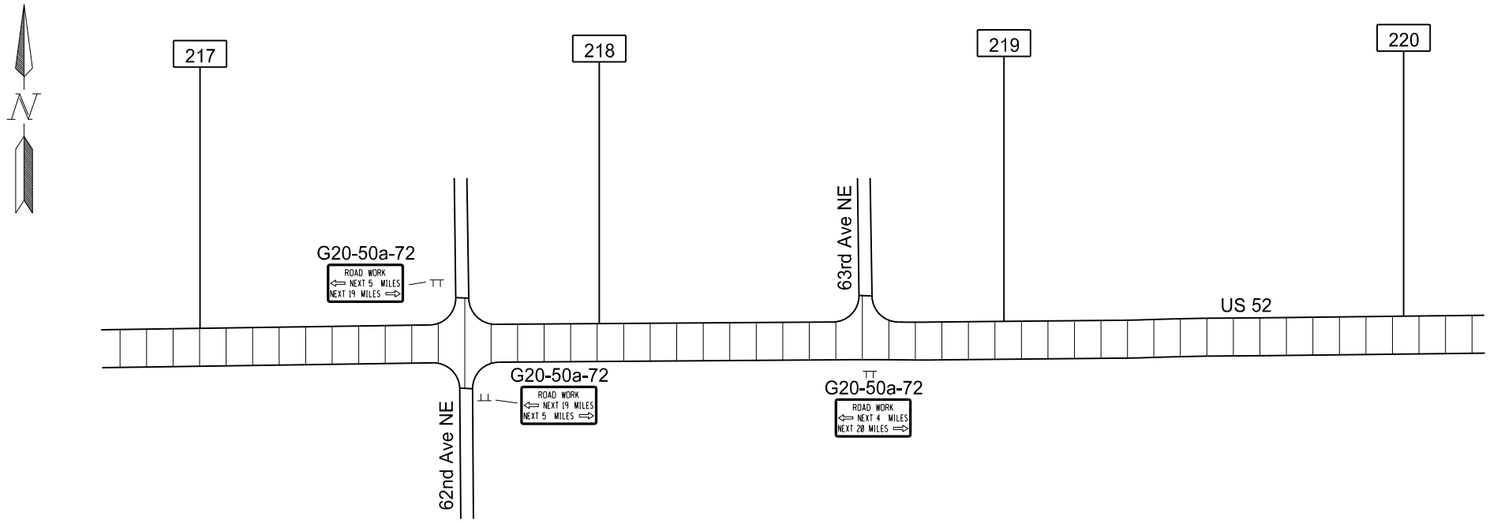
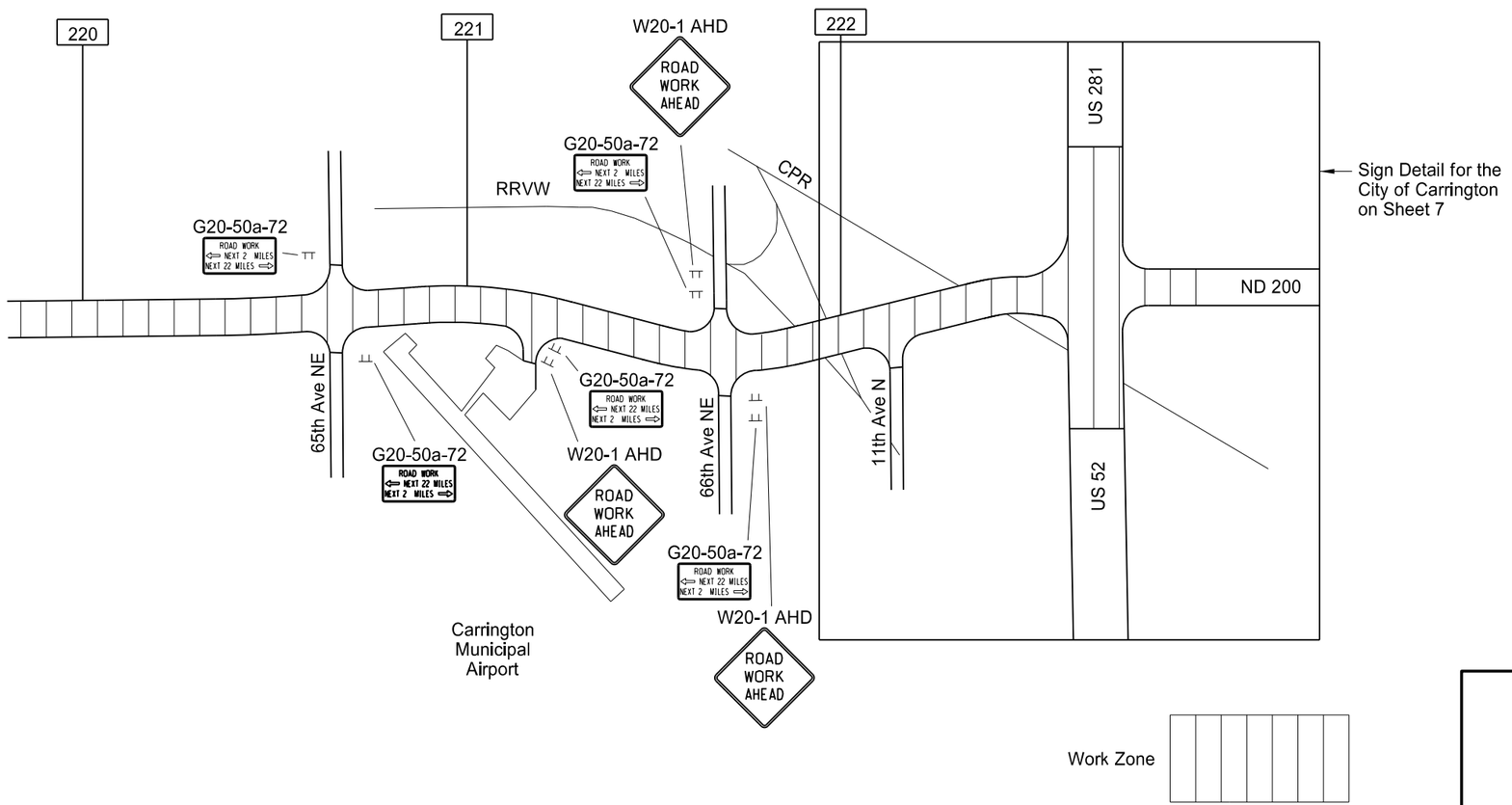
Work Zone Traffic Control

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	100	6





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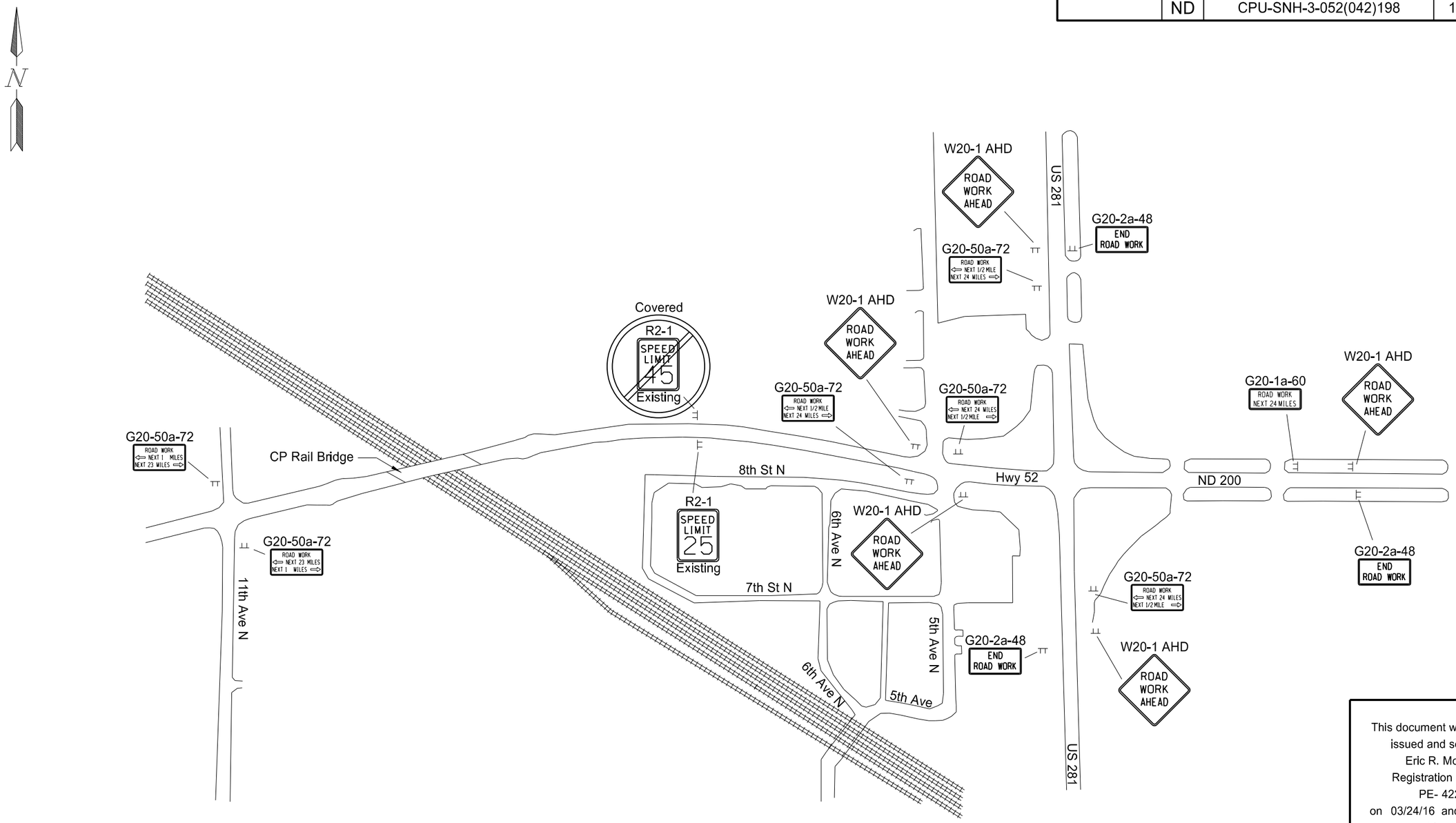
Work Zone Traffic Control

Revised 3/24/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	100	7



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Work Zone Traffic Control

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
ND 200																						
14176+54 Rt	SA A		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
14178+58 Lt		372	7.0		11.2				2.25 x 2.25 12 ga	11.3						1	4	2.5 x 2.5 12 ga				
14180+62 Rt	SA C				10.1				2 x 2 12 ga	13.0						1	4	2.25 x 2.25 12 ga	1			
14180+62. Rt		9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
15497+21 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
15497+47 Lt			7.1																			Mount on Light Standard
15497+80 Lt	R1-2	4		3.9	9.9				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
15498+77 Lt	SN 25		34.0		9.7	10.4	11.1	11.7	2.5 x 2.5 10 ga	13.1						4	4	3 x 3 7 ga			4	
15499+83 Lt	R3-2			8.0	7.2				2 x 2 12 ga	13.0											1	Include surface mount breakaway per D-754-24
15500+03 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5											1	Include surface mount breakaway per D-754-24
15500+55 Rt		372	7.0		12.5				2.5 x 2.5 12 ga	14.1						1	4	3 x 3 7 ga				
15500+62 Lt	SA L		39.6		16.3	16.9	17.5		2.5 x 2.5 10 ga	18.0	4.4	5.0	5.6		2.19 x 2.19 10 ga	3	4	3 x 3 7 ga			3	
15501+55 Rt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
15501+62 Lt		380	9.2		13.3				2.5 x 2.5 10 ga	13.9						1	4	3 x 3 7 ga			1	
15502+55 Rt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
15502+62 Lt		396	11.2		14.2				2.5 x 2.5 12 ga	16.7	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
15504+62 Lt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
15505+05 Rt	SN 27		25.5		11.2	11.9	12.5	13.2	2.5 x 2.5 12 ga	13.9						4	4	3 x 3 7 ga			4	
15506+76 Lt	W14-1	21			12.2	12.5			2.5 x 2.5 10 ga	14.3						2	4	3 x 3 7 ga	1		2	
15510+96 Lt	SA J				11.3				2 x 2 12 ga	16.9						1	4	2.25 x 2.25 12 ga	1			
15512+96 Lt	SN 21		12.0		11.1				2.5 x 2.5 12 ga	12.9	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
Sub Total			182.0	35.9		**Total**	356.2									**Total**	112		4	0	22	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

This document was originally issued and sealed by Gabriel J Schell, Registration Number 6876, on 3/21/2016 and the original document is stored at the North Dakota Department of Transportation

Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
US 52																						
10489+97 Lt		371	6.0		11.2				2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
10491+64 Rt	SA O			7.2	11.7	11.8			2.5 x 2.5 10 ga	12.9						2	4	3 x 3 7 ga			2	
10491+66 Lt	SA O			7.2	11.7	11.8			2.5 x 2.5 10 ga	12.9						2	4	3 x 3 7 ga			2	
10491+70 Lt	SA 1E				9.6				2 x 2 12 ga	24.1						1	4	2.25 x 2.25 12 ga	1			
10491+87 Rt	SA B		26.6		12.1	12.6			2.5 x 2.5 12 ga	13.3	3.6	4.2			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
10492+60 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10494+60 Rt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10496+52 Lt		388	17.4		12.0	12.3			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
10498+60 Rt	SN2		13.0		9.4	10.1			2.5 x 2.5 12 ga	13.4						2	4	3 x 3 7 ga			2	
10500+52 Lt	SN1		32.0		11.0	11.7			2.5 x 2.5 10 ga	12.3	3.5	4.2			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
10502+61 Rt	R2-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
10504+52 Lt		388	17.4		12.0	12.3			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
10545+52 Lt	SA D		3.8		12.7				2.5 x 2.5 12 ga	16.1	2.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10597+48 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10598+08 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10650+34 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10651+00 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
10699+57 Rt	SN 4		12.0		10.3				2.5 x 2.5 12 ga	12.9	2.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10703+33 Lt	SA 4E				12.7				2.25 x 2.25 12 ga	13.6	4.0				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10703+99 Rt	SA 4E				12.7				2.25 x 2.25 12 ga	13.6	4.0				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10707+82 Lt	SN 5		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
10808+29 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10808+89 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10914+85 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10967+39 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
10967+97 Rt	SA 4E				12.1				2.5 x 2.5 10 ga	12.5						1	4	3 x 3 7 ga	1		1	
10981+84 Rt	SA D				12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
10999+84 Rt	Sign1		21.0		10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga			2	
11003+84 Rt		391	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11007+84 Rt		389	17.4		12.0	12.4			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
11009+84 Rt	Sign2				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11012+34 Rt	SN 3		34.0		10.8	11.2	11.6	12.1	2.5 x 2.5 10 ga	13.1						4	4	3 x 3 7 ga			4	
11014+15 Lt	R1-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
11016+34 Rt	SA A		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

This document was originally issued and sealed by Gabriel J Schell, Registration Number 6876, on 3/21/2016 and the original document is stored at the North Dakota Department of Transportation

Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11018+15 Lt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11019+97 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11020+15 Rt	SA E		32.4		14.0	14.4	14.8		2.5 x 2.5 12 ga	16.9	3.1	3.5	3.9		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11020+73 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11023+68 Lt	SA F		25.6		12.1	12.6			2.5 x 2.5 12 ga	13.7	3.4	3.9			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
11025+46 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11028+18 Rt		377	13.0		10.9				2.5 x 2.5 12 ga	12.8	3.0				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11031+30 Lt	SN 6		30.0		11.0	11.3	11.7		2.25 x 2.25 12 ga	12.5	3.3	3.6	4.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
11032+24 Rt	R2-1	9			10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
11035+30 Lt		389	17.4		12.0	12.4			2.5 x 2.5 10 ga	13.9						2	4	3 x 3 7 ga			2	
11037+85 Lt	Sign2				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11041+85 Lt		391	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11048+20 Lt	Sign1				10.7	11.2			2.25 x 2.25 12 ga	12.0	3.3	3.8			2 x 2 12 ga	2	4	3 x 3 7 ga	1		2	
11049+81 Rt	SN 7		17.0		9.5	10.3			2.5 x 2.5 10 ga	12.6						2	4	3 x 3 7 ga			2	
11051+86 Rt	SN 9		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11055+58 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11060+07 Lt	SN 10		12.0		9.7				2.5 x 2.5 12 ga	12.9	2.1				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11064+07 Lt	SN 8		17.0		9.5	10.3			2.5 x 2.5 10 ga	12.6						2	4	3 x 3 7 ga			2	
11072+99 Lt	R1-1	2			11.2				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11073+60 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11125+06 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11140+39 Lt	SA D				12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11177+41 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11178+02 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11230+83 Rt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11336+26 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11336+84 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11383+21 Rt	SA P		28.5		13.3	13.8			2.5 x 2.5 10 ga	14.4	3.8	4.4			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11387+25 Lt	SN 14		13.5		10.3				2.5 x 2.5 12 ga	11.9	3.2				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11389+03 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11389+62 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11391+11 Lt	SN 13		13.5		10.3				2.5 x 2.5 12 ga	11.9	3.2				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11395+45 Lt	SA P		28.5		13.8	14.5			2.5 x 2.5 10 ga	15.2	3.9	4.6			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11493+79 Lt	R1-1	1		5.2	10.7				2.25 x 2.25 12 ga	13.7						1	4	2.5 x 2.5 12 ga				
11494+39 Rt	SA 2E			5.2	12.2				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11546+71 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

This document was originally issued and sealed by Gabriel J Schell, Registration Number 6876, on 3/21/2016 and the original document is stored at the North Dakota Department of Transportation

Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11547+27 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11652+49 Lt	SA 4E				12.2				2.25 x 2.25 12 ga	13.6	3.4				2 x 2 12 ga	1	4	3 x 3 7 ga	1		1	
11653+02 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11653+51 Rt	SA D		3.8		12.2				2.25 x 2.25 12 ga	12.9	3.8				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
11674+60 Rt	I-5	399	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11679+04 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11682+86 Lt	I-5	399	6.2		11.4				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11684+00 Rt	W3-5	20		9.0	11.6				2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
11691+65 Lt	BUCKL	9	5.0		10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11694+00 Lt	R2-1	9		5.0	10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11694+00 Rt	R2-1	9		5.0	10.6				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
11695+68 Lt	SA H		17.5		12.3				2.5 x 2.5 10 ga	12.8	4.1				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
11705+97 Lt	R1-1	2			12.0				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11706+60 Lt	SA I		26.4		15.2	15.6	15.9		2.25 x 2.25 12 ga	16.8	4.2	4.6	5.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
11706+71 Rt	SA 2E			5.2	13.5				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga	1			
11708+03 Rt					11.6				2.5 x 2.5 12 ga	13.3	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
11710+00 Rt	SN 21		12.0		11.1				2.5 x 2.5 12 ga	12.9	3.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11712+00 Rt	SA J				11.0				2 x 2 12 ga	17.6						1	4	2.25 x 2.25 12 ga	1			
11718+61 Rt	W10-1	63		7.1	11.2				2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga				
11722+31 Lt	W10-1	63		7.1	11.2				2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga				
11729+09 Rt	D9-2	399	6.2		11.9				2.25 x 2.25 12 ga	12.7						1	4	2.5 x 2.5 12 ga				
11732+57 Lt					10.8				2.5 x 2.5 12 ga	13.3	2.9				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
11733+31 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11733+70 Rt	R1-1	2			12.0				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11737+19 Lt	D9-2	399	6.2		12.7				2.5 x 2.5 12 ga	15.9						1	4	3 x 3 7 ga				
11749+00 Lt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
11749+00 Rt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
11751+00 Lt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11751+00 Rt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
11752+00 Lt	SN 19		22.8		11.9	12.9			2.5 x 2.5 12 ga	14.2	3.4	4.4			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
11752+00 Rt		392	7.2		11.5				2.5 x 2.5 12 ga	13.9						1	4	3 x 3 7 ga				
11753+00 Lt	R2-1	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
11753+00 Rt		388	17.4		13.3	13.8			2.25 x 2.25 12 ga	15.1	3.7	4.2			2 x 2 12 ga	2	4	3 x 3 7 ga			2	
11754+00 Lt		377	13.0		12.2				2.5 x 2.5 12 ga	12.8	4.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
11754+00 Rt	SA K		33.6		15.1	15.5	15.8		2.5 x 2.5 12 ga	17.7	3.5	3.9	4.2		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11755+09 Lt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
11756+05 Rt	R1-1	2			10.7				2.5 x 2.5 12 ga	12.1						1	4	3 x 3 7 ga	1			
11756+30 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5											1	Include surface mount breakaway per D-754-24
11757+43 Rt	SN 20		34.0		9.9	11.1			2.5 x 2.5 10 ga	11.6	2.7	3.9			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11758+76 Rt	R1-2	4		3.9	9.6				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
11759+33 Rt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
11760+19 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
11760+32 Rt			15.6																			Mount on Light Standard
11760+46 Lt			9.6																			Mount on Light Standard
11760+80 Lt	R1-2	4		3.9	9.6				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
11761+47 Rt		377	13.0		9.8				2.25 x 2.25 12 ga	10.1	3.3				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
11761+58 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5											1	Include surface mount breakaway per D-754-24
11761+58. Lt	SN 22		34.0		9.9	11.1			2.5 x 2.5 10 ga	11.6	2.7	3.9			2.19 x 2.19 10 ga	2	4	3 x 3 7 ga			2	
11763+47 Rt	SN 24		26.3		9.0	9.6	10.2		2.5 x 2.5 12 ga	10.7						3	4	3 x 3 7 ga			3	
11763+58 Lt	SA M		33.6		13.1	13.7	14.3		2.5 x 2.5 12 ga	16.9	2.0	2.5	3.1		2.25 x 2.25 12 ga	3	4	3 x 3 7 ga			3	
11765+35 Lt		389	17.4		10.3				2.5 x 2.5 10 ga	12.4	2.3				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
11766+35 Lt		392	7.2		9.5				2.25 x 2.25 12 ga	11.2						1	4	2.5 x 2.5 12 ga				
11767+35 Lt	W2-6			9.0																		Mount on Light Standard
11776+16 Lt	R2-1	9			7.7				2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
Sub Total			915.0	139.6		**Total**	1837.1									**Total**	628		51	0	109	
ND 30																						
4664+33 Rt		371	6.0		12.4				2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
Sub Total			6.0	0.0		**Total**	12.4									**Total**	4		0	0	0	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16

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

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
US 281																						
5942+57 Lt	R6-4	32		5.0	7.2				2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5942+99 Lt			13.6																			Mount on Light Standard
5943+13 Lt	R1-2	4		3.9	9.9				2 x 2 12 ga	13.6						1	4	2.25 x 2.25 12 ga				
5944+03 Rt		372	7.0		10.3				2.25 x 2.25 12 ga	11.3						1	4	2.5 x 2.5 12 ga				
5944+99 Lt	SN 26		32.0		10.1	10.7	11.2		2.25 x 2.25 12 ga	11.7	2.9	3.4	4.0		2 x 2 12 ga	3	4	3 x 3 7 ga			3	
5945+03 Rt	R2-1	9		5.0	11.7				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
5945+70 Lt	R4-7	9		5.0	7.7				2 x 2 12 ga	11.5											1	Include surface mount breakaway per D-754-24
5945+96 Lt	R1-1	1			8.2				2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
5946+03 Rt	SN 23		25.5		9.4	10.6			2.5 x 2.5 12 ga	12.5	1.9	3.1			2.25 x 2.25 12 ga	2	4	3 x 3 7 ga			2	
5947+19 Rt	R8-3	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
5948+11 Lt	SA N		39.6		16.3	16.9	17.5		2.5 x 2.5 10 ga	18.0	4.4	5.0	5.6		2.19 x 2.19 10 ga	3	4	3 x 3 7 ga			3	
5948+34 Rt	R8-3	9		5.0	11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
5949+75 Lt	R2-1	11			12.3				2.5 x 2.5 12 ga	14.3	3.6				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga	1		1	
5950+65 Rt	R8-3	9			11.9				2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga	1			
5951+11 Lt		380	9.2		13.3				2.5 x 2.5 10 ga	13.9						1	4	3 x 3 7 ga			1	
5952+11 Lt		396	11.2		14.2				2.5 x 2.5 12 ga	16.7	3.7				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
5952+37 Rt	SA D		3.8		13.4				2.5 x 2.5 12 ga	16.2	3.3				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
5953+11 Lt	W2-6	20		9.0	12.9				2.25 x 2.25 12 ga	14.1	4.1				2 x 2 12 ga	1	4	3 x 3 7 ga			1	
Sub Total			141.9	37.9		**Total**	259.3									**Total**	84		3	0	14	
Grand Total			1244.9	213.4		**Total**	2465.0									**Total**	828		58	0	145	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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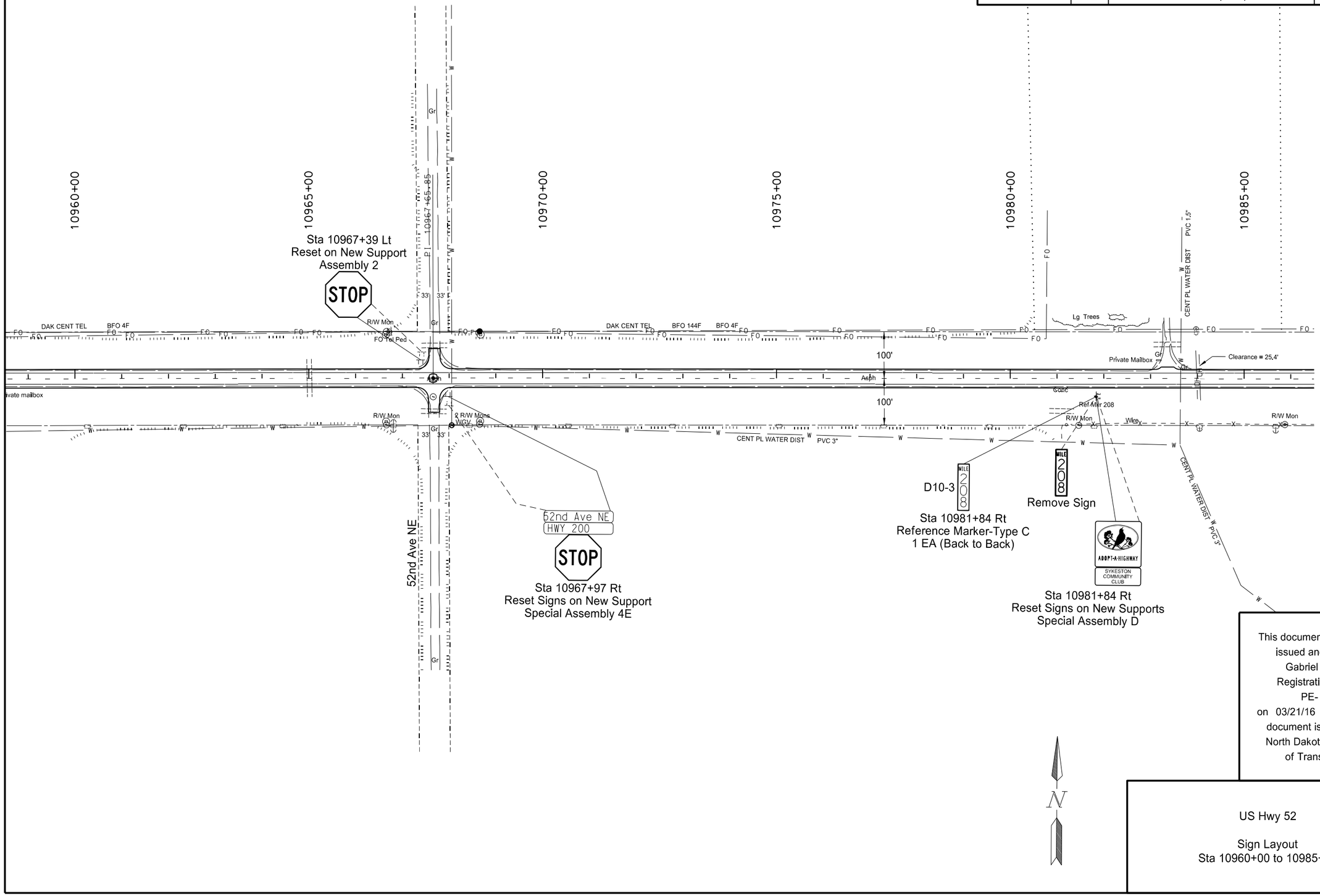
Sign Summary
Perforated Tube

US Hwy 52

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	34



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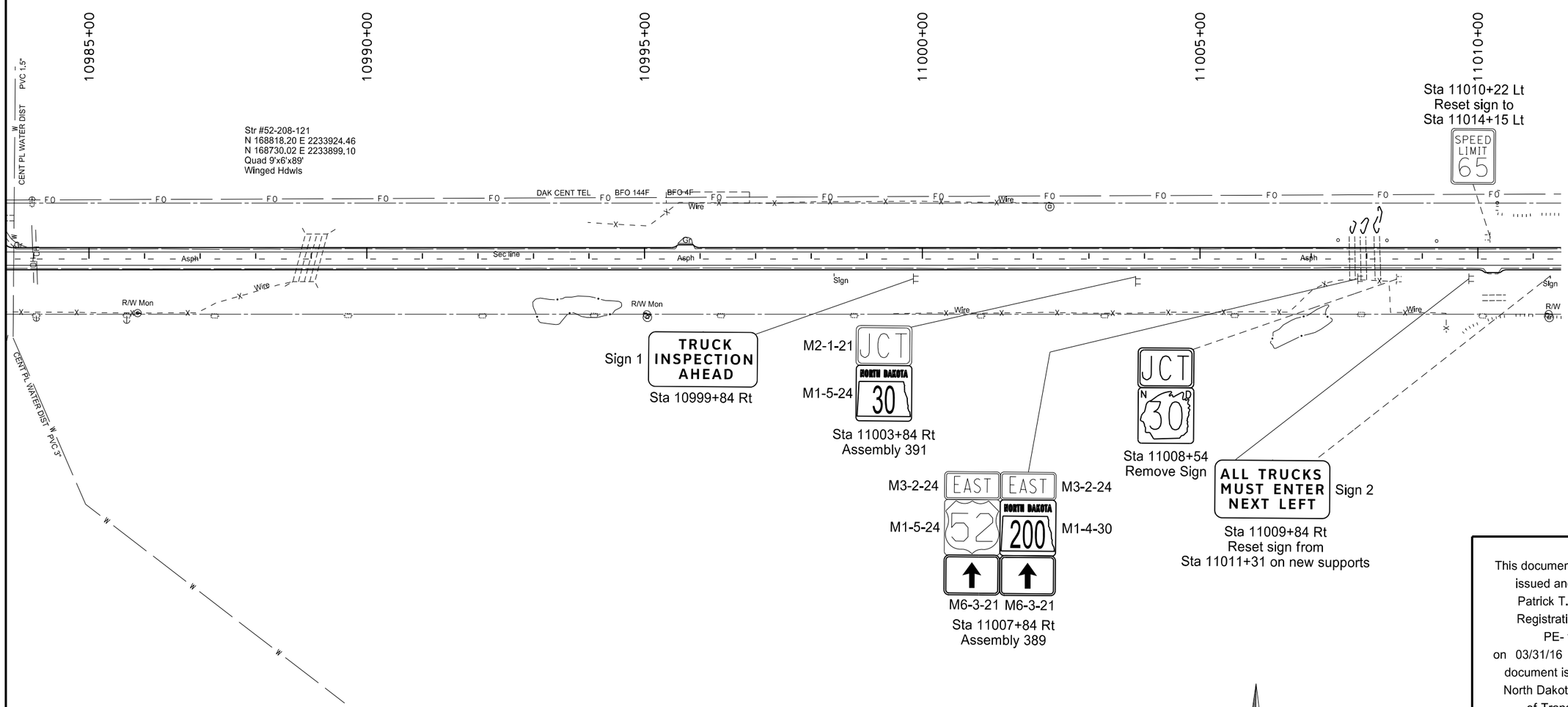
US Hwy 52

Sign Layout
Sta 10960+00 to 10985+00

Revised 03/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	35



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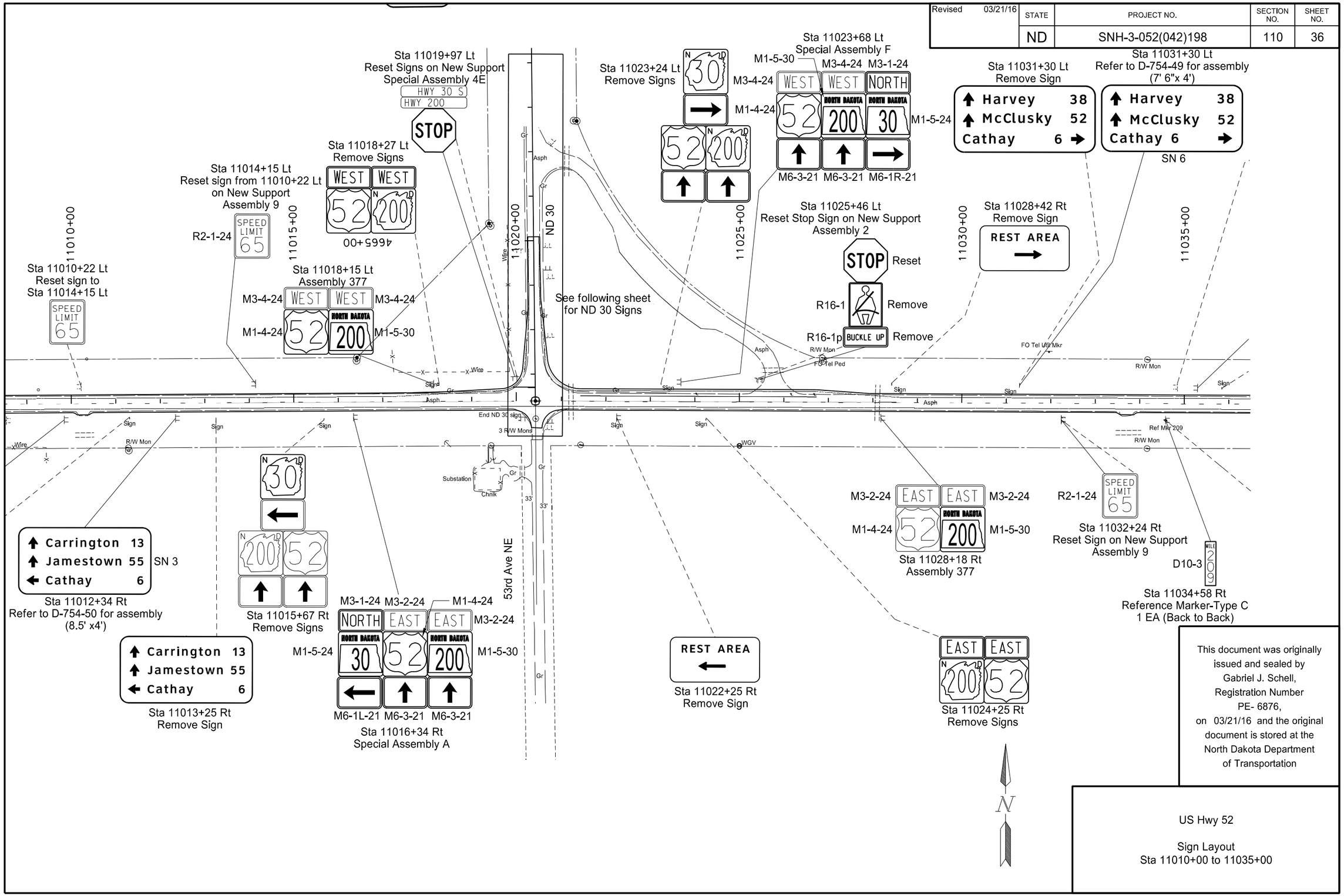
US Hwy 52

Sign Layout
Sta 10985+00 to 11010+00

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	36



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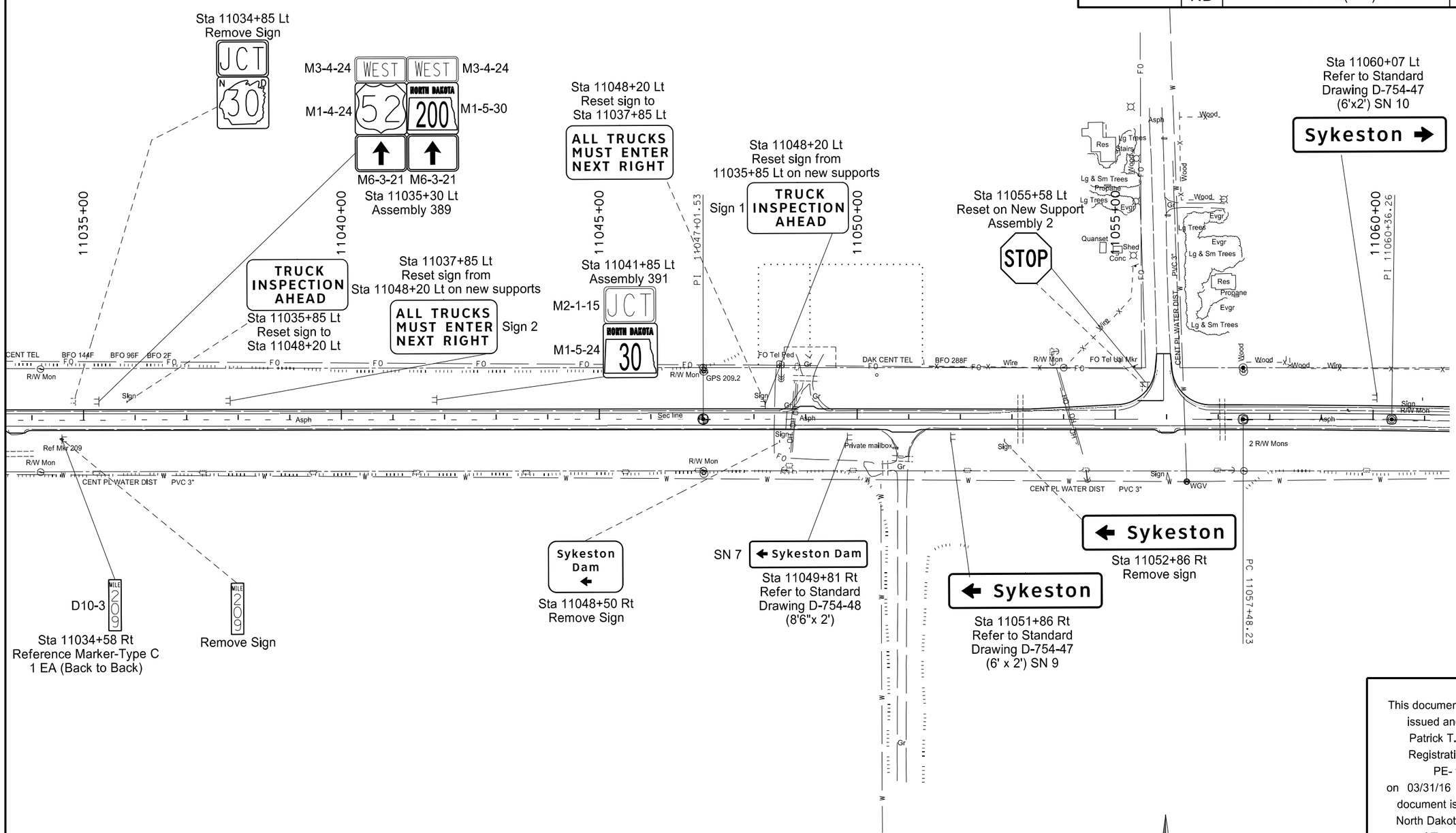
US Hwy 52

Sign Layout
Sta 11010+00 to 11035+00

Revised 03/31/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	38



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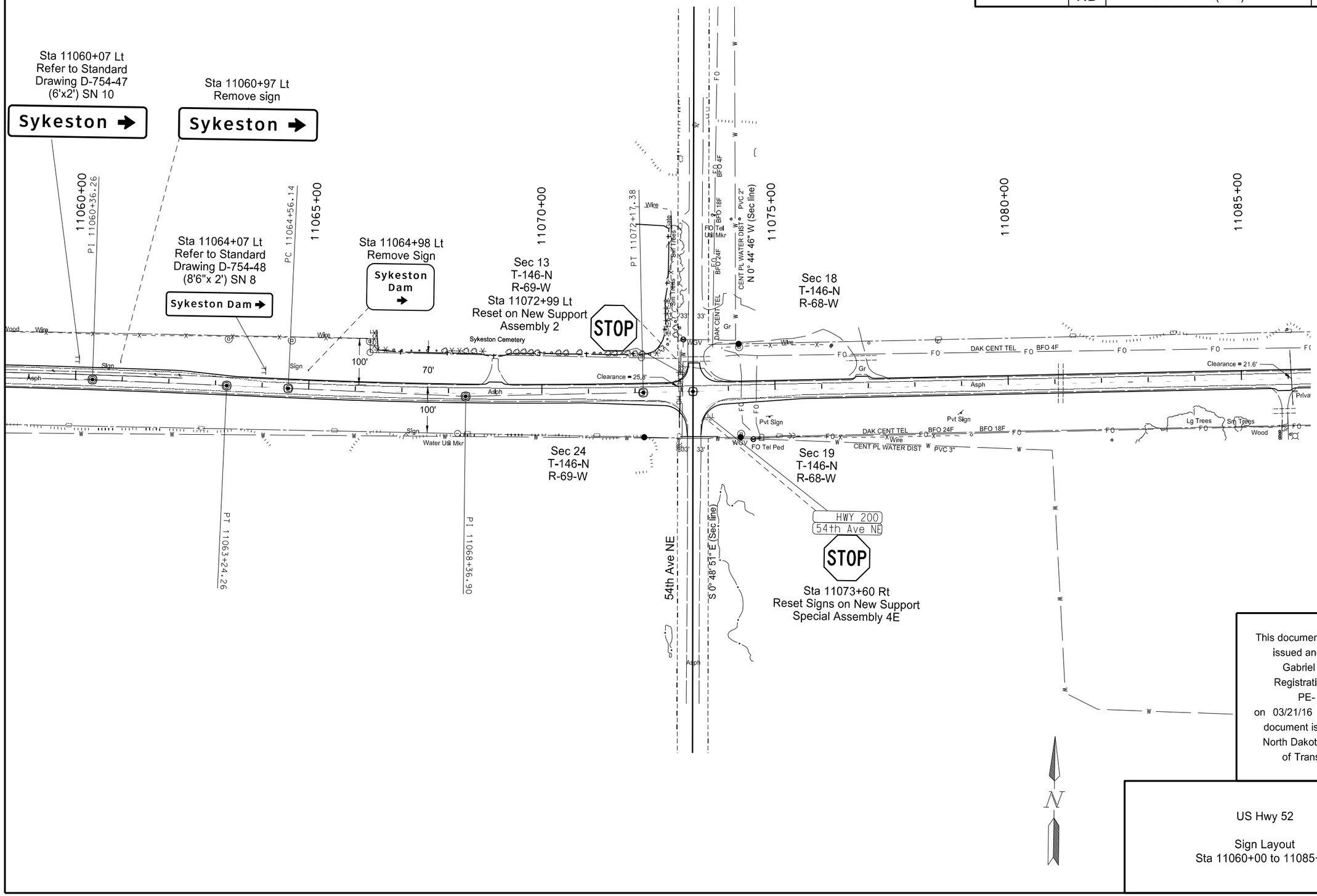
US Hwy 52

Sign Layout
Sta 11035+00 to 11060+00

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	39



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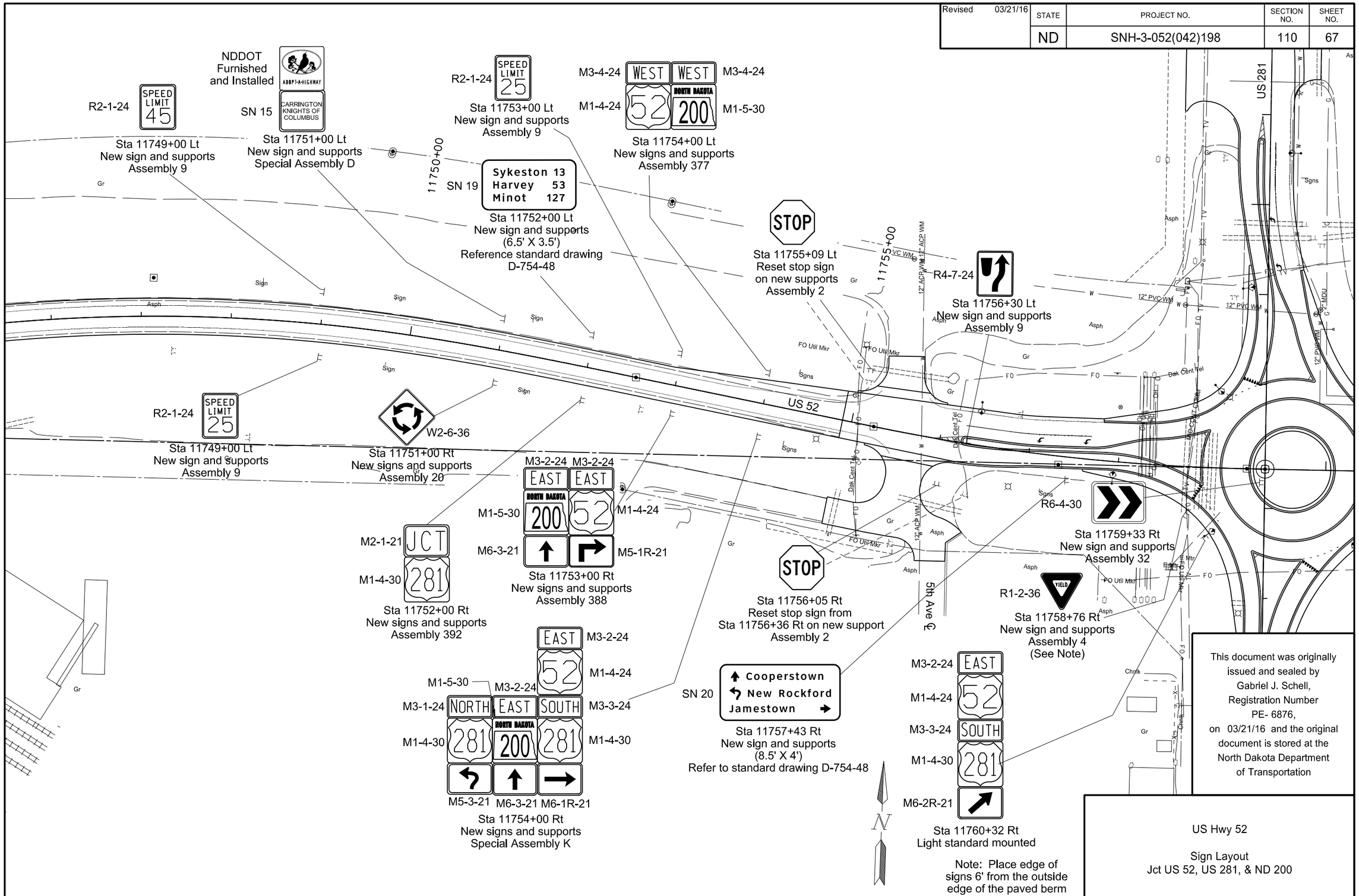
US Hwy 52

Sign Layout
Sta 11060+00 to 11085+00

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	67



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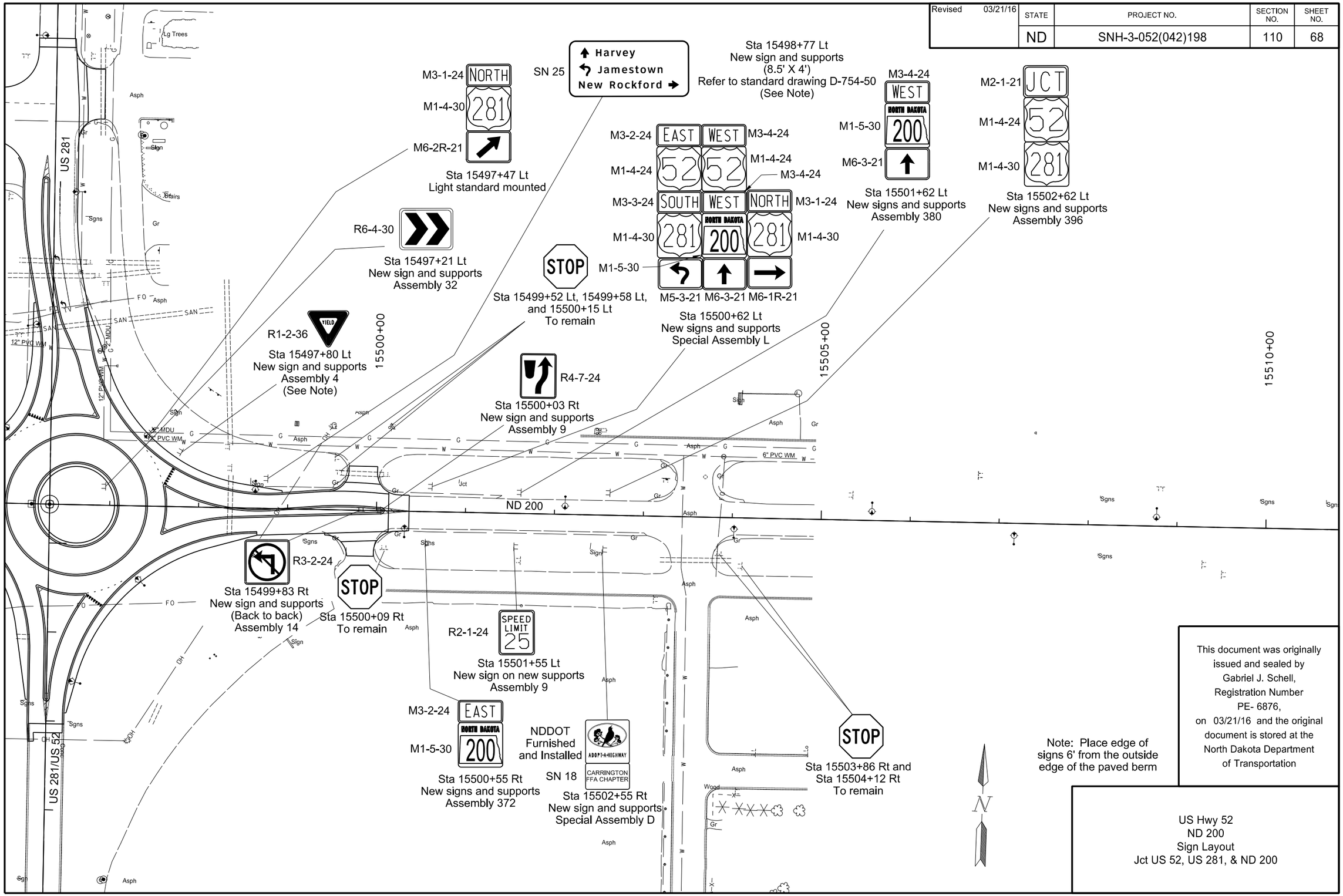
US Hwy 52

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

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	68



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

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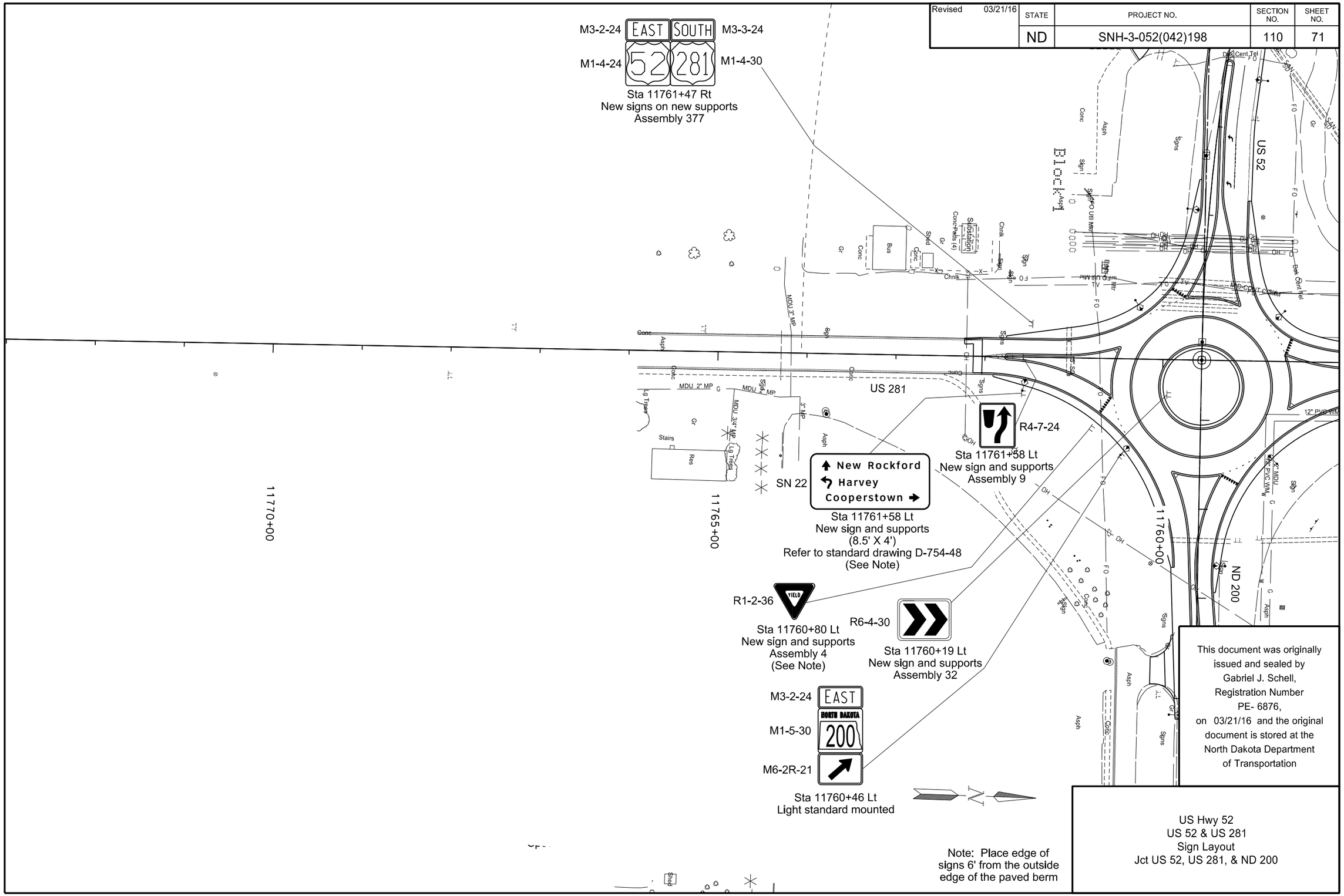
US Hwy 52
ND 200
Sign Layout
Jct US 52, US 281, & ND 200

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	71



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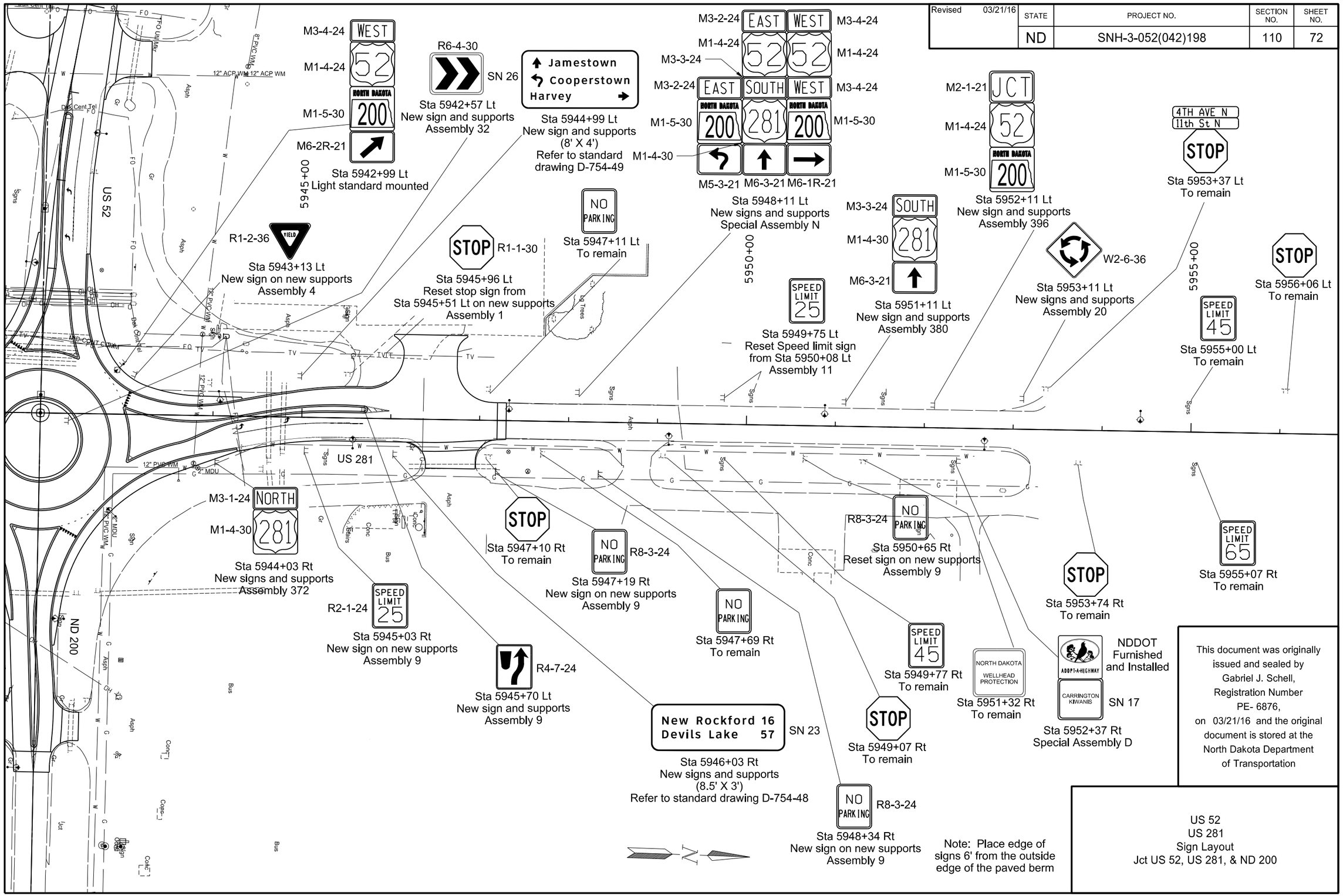
US Hwy 52
US 52 & US 281
Sign Layout
Jct US 52, US 281, & ND 200

3/23/2016 8:03:48 AM patrickgallagher \\bsmk-files01\P\State\NDDOT\1214130\CADD\30052198.042\Traffic\Addendum 1\110SN_071_Proposed_addendum.dgn

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	110	72



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

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

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	120	1

Edge Line (4-IN White)			
Chain	Begin Station	End Station	Length
ND 30	4661+63	4665+09	350
US 52	10488+55	11754+90	126,640
ND 200	14178+50	14180+85	240
	Total: (x2)		254,460

EB BARRIER STRIPE (4-IN Yellow)		
Begin Station	End Station	Length
11388+00	11393+00	500
11407+00	11416+00	900
11714+07	11754+90	4,083
Total:		5,483

WB BARRIER STRIPE (4-IN Yellow)		
Begin Station	End Station	Length
11399+00	11416+00	1,700
11714+07	11754+90	4,083
Total:		5,783

Center Skip (4-IN Yellow)			
Begin Station	End Station	Description	Length
10500+39	11013+50	CL	12,830
11028+53	11049+00	CL	520
11064+07	11388+00	CL	8,100
11388+00	11393+00	WB	130
11393+00	11399+00	CL	150
11399+00	11407+00	EB	200
11416+00	11698+63	CL	7,070
Total:			29,000

SUMMARY PERMANENT PAVEMENT MARKING			
SPEC	CODE	ITEM	QUANTITY
762	103	PVMT MK PAINTED-MESSAGE	601 SF
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	142 SF
762	1104	PVMT MK PAINTED 4IN LINE (WHITE)	254,460 LF
762	1104	PVMT MK PAINTED 4IN LINE (YELLOW)	51,446 LF
762	1108	PVMT MK PAINTED 8IN LINE (WHITE)	2,802 LF
762	1124	PVMT MK PAINTED 24IN LINE (WHITE)	264 LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED (WHITE)	621 LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED (YELLOW)	712 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED (WHITE)	328 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED (YELLOW)	70 LF

Pavement Marking Details Summary - Section 120, Sheets No. 2 - 6							
Begin Station	End Station	Description	Sheet No.	PVMT MK PAINTED-MESSAGE (SF)	PVMT MK PAINTED 4IN LINE (LF) Yellow	PVMT MK PAINTED 8IN LINE (LF)	PVMT MK PAINTED 24IN LINE (LF)
14174+00	10500+39	W Jct ND 200 WB Right Turn Lane	2	48	2,313	530	50
11013+50	11028+53	ND 30 WB Right Turn Lane	3	48	2,420	530	50
11049+00	11064+07	Hughes Ave S WB Right Turn Lane	4	48	1,935	542	50
11698+63	11705+77	19th Ave N EB Left and Right Turn Lanes	5	80	2,256	500	40
11706+93	11714+07	19th Ave N WB Left and Right Turn Lanes	5	80	2,256	500	40
11718+37	11722+55	Railroad Crossing	6	265	-	-	-
11729+21	11732+65	11th Ave NE EB Right Turn Lane	6	32	-	200	34
Total:				601	11,180	2,802	264

Pavement Marking Details Summary - Section 120, Sheet No. 7						
Description	Sheet No.	PREF. PATT. PVMT MK Message Grooved (SF)	PREF. PATT. PVMT MK 4IN Line Grooved White (LF)	PREF. PATT. PVMT MK 4IN Line Grooved Yellow (LF)	PREF. PATT. PVMT MK 8IN Line Grooved White (LF)	PREF. PATT. PVMT MK 8IN Line Grooved Yellow (LF)
Roundabout Detail	7	142	621	712	328	70
Total:		142	621	712	328	70

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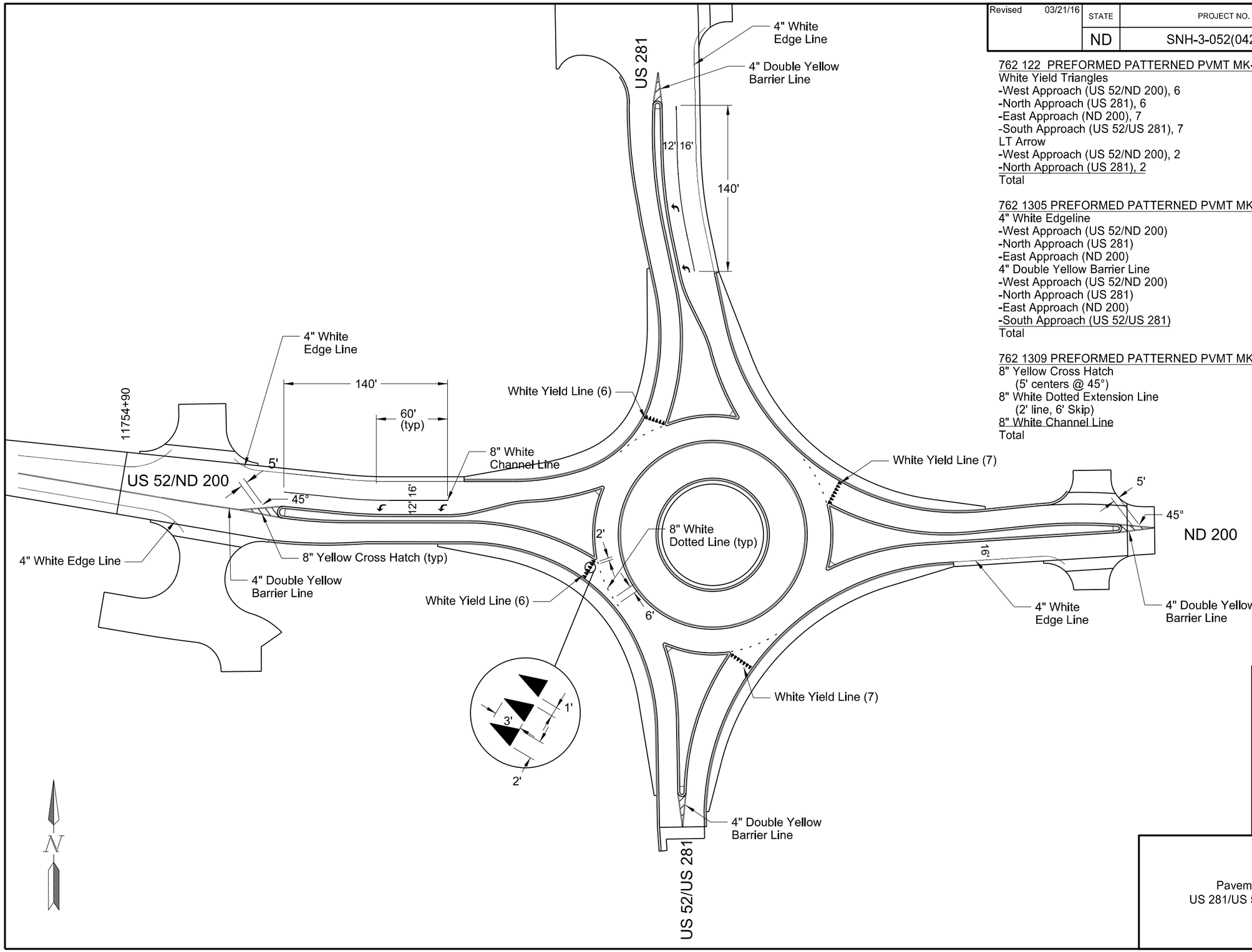
US 52
Pavement Marking
Locations and Quantities

Revised 03/21/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SNH-3-052(042)198	120	7



762 122 PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)

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

762 1305 PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED

4" White Edgeline		
-West Approach (US 52/ND 200)	312	LF
-North Approach (US 281)	213	LF
-East Approach (ND 200)	96	LF
4" Double Yellow Barrier Line		
-West Approach (US 52/ND 200)	353	LF
-North Approach (US 281)	114	LF
-East Approach (ND 200)	127	LF
-South Approach (US 52/US 281)	118	LF
Total	1333	LF

762 1309 PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED

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

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

23 USC § 409 Documents
NDDOT Reserves All Objections

Revised 3/24/2016	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	130	3

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES

THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS

LOCATION	(A) 5/8" @ x 16" LONG BUTTON HEAD BOLT	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 6" x 6" x 14" TIMBER BLOCK	(A) 5/8" @ x 1 1/4" LONG BUTTON HEAD BOLT	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFL-ECTOR-IZED PLATES	(A) 8"x8" x 6' WOOD POST	(A) 8"x8" x 22" WOOD OFF-SET BLOCK	(A) 8"x8" x 18" WOOD OFF-SET BLOCK	(A) 8"x8" x 14" WOOD OFF-SET BLOCK	(A) 6'-3" DOUBLE W-THRIE BEAM TRANS-ITION SECTION	(A) 12'-6" DOUBLE THRIE BEAM SEC-TION	(A) 2' 6" THRIE BEAM TERM-INAL CON-ENECTOR	(A) 5/8" @ x 18" LONG BUT-TON HEAD BOLT	(A) 7/8" @ x VAR-IABLE LONG BOLT	(A) 3/4" @ x 2-1/2" LONG POST BOLT
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 11409+24 to 11411+34 Rt	18	18	18	36	8	1	9	9	7	1	1	1	1	1	7	5	2
Sta 11409+99 to 11411+34 Lt	4	4	4	8	1	1	6	9	7	1	1	1	1	1	7	5	2
Sta 11412+10 to 11413+46 Rt	4	4	4	8	1	1	6	9	7	1	1	1	1	1	7	5	2
Sta 11412+10 to 11414+21 Lt	18	18	18	36	8	1	9	9	7	1	1	1	1	1	7	5	2
TOTAL	44	44	44	88	18	4	30	36	28	4	4	4	4	4	28	20	8

W-beam guardrail

Sta 11409+24 to 11411+34 Rt	112.5	LF
Sta 11409+99 to 11411+34 Lt	25.0	LF
Sta 11412+10 to 11413+46 Rt	25.0	LF
Sta 11412+10 to 11414+21 Lt	112.5	LF
Total	275.0	LF

W-beam guardrail end terminal

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

Remove W-beam guardrail & posts

Sta 11409+24 to 11411+34 Rt	139.3	LF
Sta 11409+99 to 11411+34 Lt	75.7	LF
Sta 11412+10 to 11413+46 Rt	75.7	LF
Sta 11412+10 to 11414+21 Lt	139.3	LF
Total	430.0	LF

Remove end treatment & transition

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

Reset W-beam guardrail

Sta 11409+24 to 11411+34 Rt	45.6	LF
Sta 11409+99 to 11411+34 Lt	58.1	LF
Sta 11412+10 to 11413+46 Rt	58.1	LF
Sta 11412+10 to 11414+21 Lt	45.6	LF
Total	207.4	LF

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

This document was originally Issued and sealed by Eric R. Molbert, Registration Number PE-4222, on 03/24/16 and the original document is stored at the North Dakota Department of Transportation

Thrie/W-Beam Guardrail Quantities

Pipestem Creek Bridge

RP 216.127

23 USC § 409 Documents
NDDOT Reserves All Objections

Revised 3/24/2016	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	130	6

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES

W-BEAM GUARDRAIL AT BRIDGE ENDS

LOCATION	(A) TERM-INAL CON-NECTOR	(A) 5/8" Ø x 22" LONG GUARD-RAIL BOLT	(A) 5/8" Ø x 20" LONG GUARD-RAIL BOLT	(A) 7/8" Ø x 9" LONG H.S. HEX HEAD BOLT	(A) 5/8" Ø x 18" LONG GUARD-RAIL BOLT	(A) 6"x 8" x 14" WOOD OFF-SET BLOCK	(A) 6"x 8" x 6' TIMBER POST	(A) 5/8" Ø x 1 1/4" LONG GUARD-RAIL BOLT	(A) 12'-6" DOUBLE RAIL SECTION	(A) 12'-6" STRAIGHT RAIL SECTION	(A) 12'-6" CURVED RAIL SECTION	(A) 5/8" Ø x 11" LONG HEX HEAD BOLT	(A) 1/2" Ø x 4" LONG LAG SCREW	(A) 6" x 8" x 7'-0" TIMBER POSTS	(A) RUB RAIL END SHOE	(A) C 6 x 8.2 x 14'-6 1/4" RUB RAIL SECTION	(A) C 6 x 8.2 x 12'-7" BENT RUB RAIL SECTION	(A) 5/8" Ø x 1 1/2" LONG GUARD-RAIL BOLT	(A) 7 3/4" x 4 ½" x 3/8" RUB RAIL SPLICE PLATE	(A) 10"x 10" x 8'-0" TIMBER POST	(A) 10"x 8" x 21" TAPERED TIMBER BLOCK	(A) 6"x 8" x 21" TIMBER BLOCK	(A) 6"x 9 3/4" x 14" TIMBER BLOCK	(A) REFL-ECTOR-IZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 11736+71 to 11738+50 Rt	1	2	10	4	16	9	14	56	1	4	1	2	1	3	1	1	1	4	1	2	2	7	1	11
Sta 11736+99 to 11738+28 Lt	1	2	10	4	12	5	10	40	1	2	1	2	1	3	1	1	1	4	1	2	2	7	1	9
Sta 11741+44 to 11742+74 Rt	1	2	10	4	12	5	10	40	1	2	1	2	1	3	1	1	1	4	1	2	2	7	1	9
Sta 11741+21 to 11743+01 Lt	1	2	10	4	16	9	14	56	1	5		2	1	3	1	1	1	4	1	2	2	7	1	11
TOTAL	4	8	40	16	56	28	48	192	4	13	3	8	4	12	4	4	4	16	4	8	8	28	4	40

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

Reset W-beam guardrail		
Sta 11736+71 to 11738+50 Rt	64.4	LF
Sta 11736+99 to 11738+28 Lt	39.4	LF
Sta 11741+44 to 11742+74 Rt	39.4	LF
Sta 11741+21 to 11743+00 Lt	64.4	LF
Total	207.6	LF

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

W-beam guardrail end terminal		
Sta 11736+71 to 11738+50 Rt	1	ea
Sta 11736+99 to 11738+28 Lt	1	ea
Sta 11741+44 to 11742+74 Rt	1	ea
Sta 11741+21 to 11743+00 Lt	1	ea
Total	4	ea

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

Remove W-beam guardrail & posts		
Sta 11736+71 to 11738+50 Rt	148.0	LF
Sta 11736+99 to 11738+28 Lt	86.0	LF
Sta 11741+44 to 11742+74 Rt	86.0	LF
Sta 11741+21 to 11743+00 Lt	148.0	LF
Total	468.0	LF

Curb & Gutter - Type I Special		
Sta 11736+71 to 11738+50 Rt	20.0	LF
Sta 11736+99 to 11738+28 Lt	20.0	LF
Sta 11741+44 to 11742+74 Rt	20.0	LF
Sta 11741+21 to 11743+00 Lt	20.0	LF
Total	80.0	LF

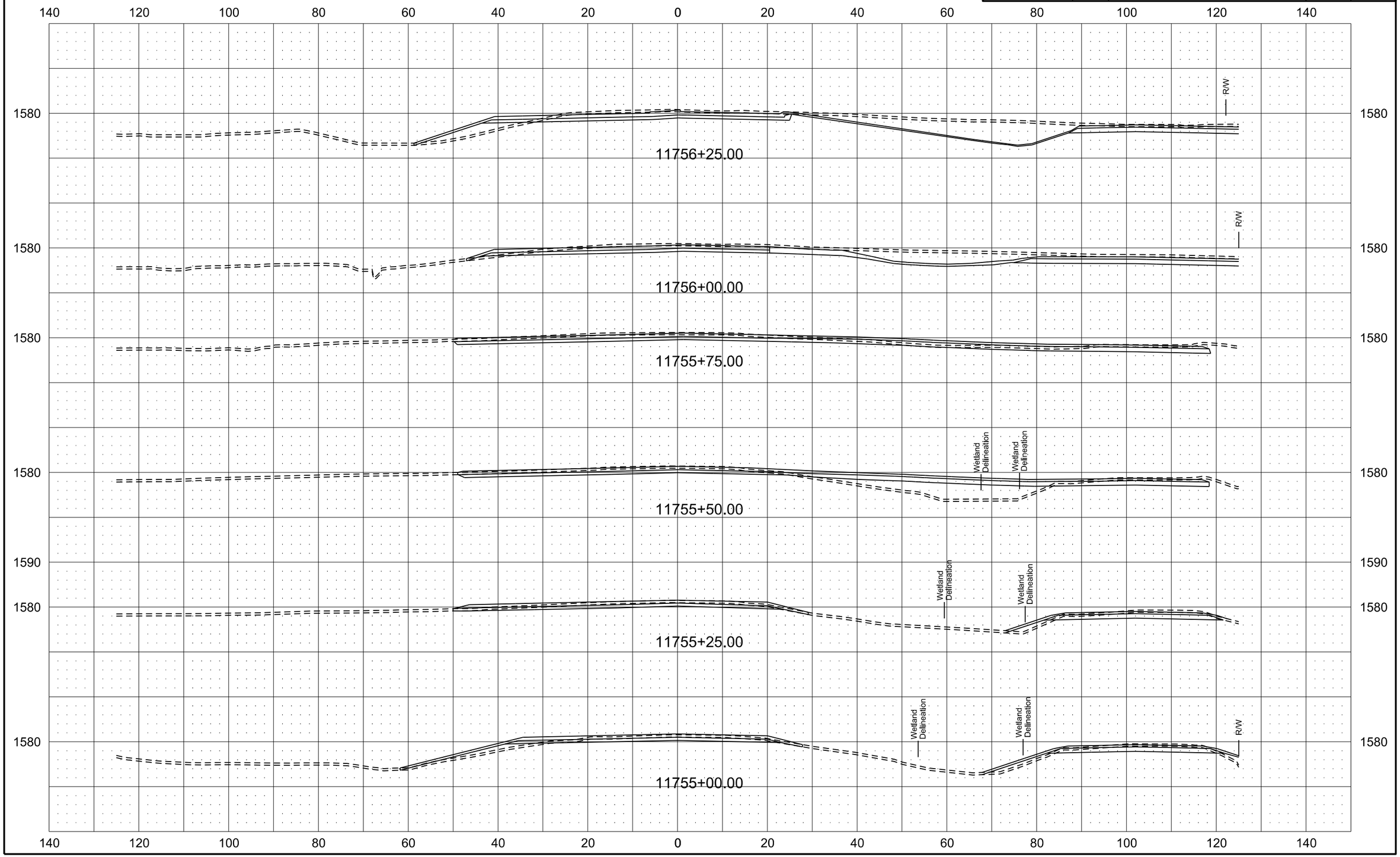
This document was originally Issued and sealed by Eric R. Molbert, Registration Number PE-4222, on 03/24/16 and the original document is stored at the North Dakota Department of Transportation

W-Beam Guardrail Quantities

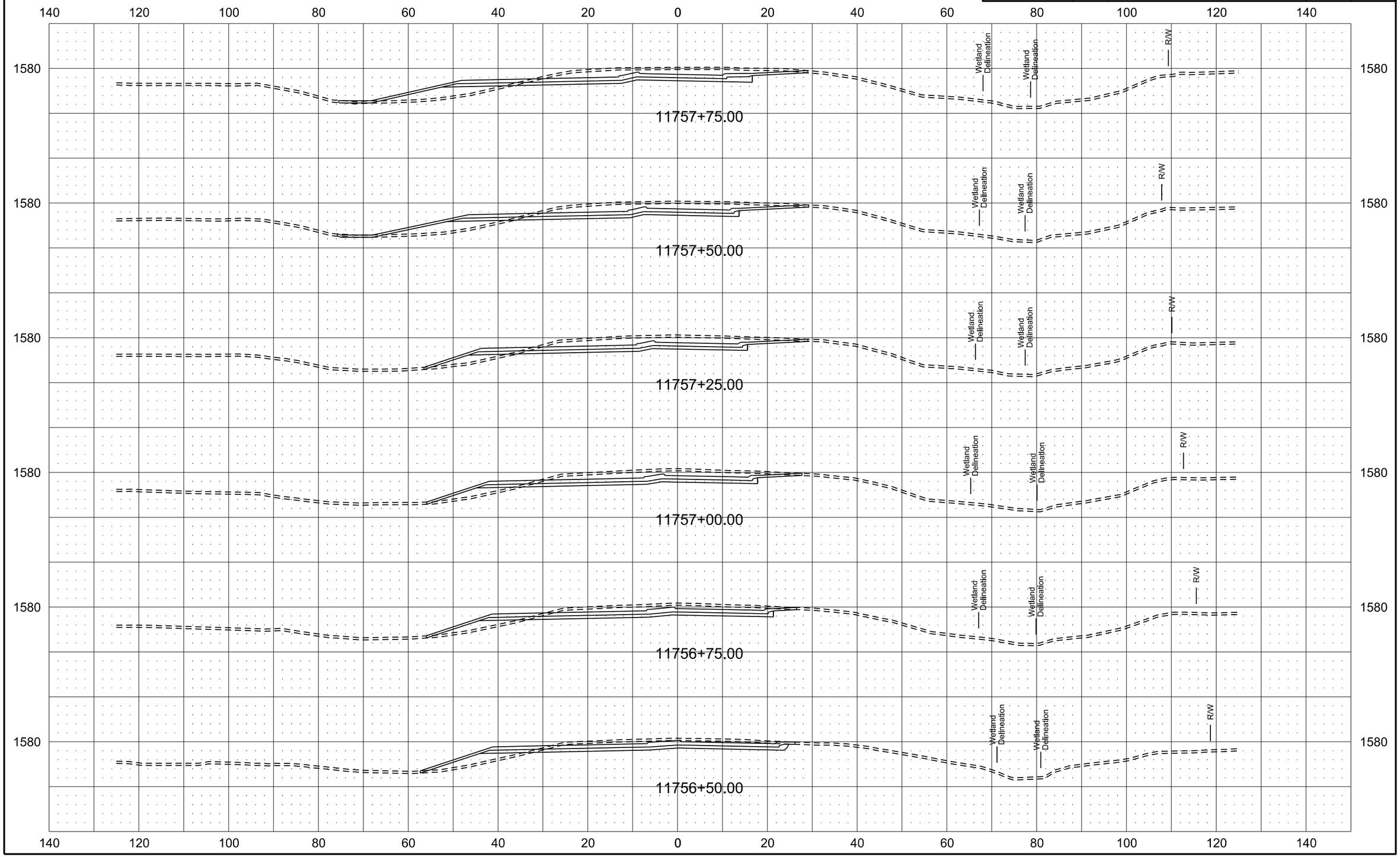
Canadian Pacific Overhead Bridge

RP 222.340

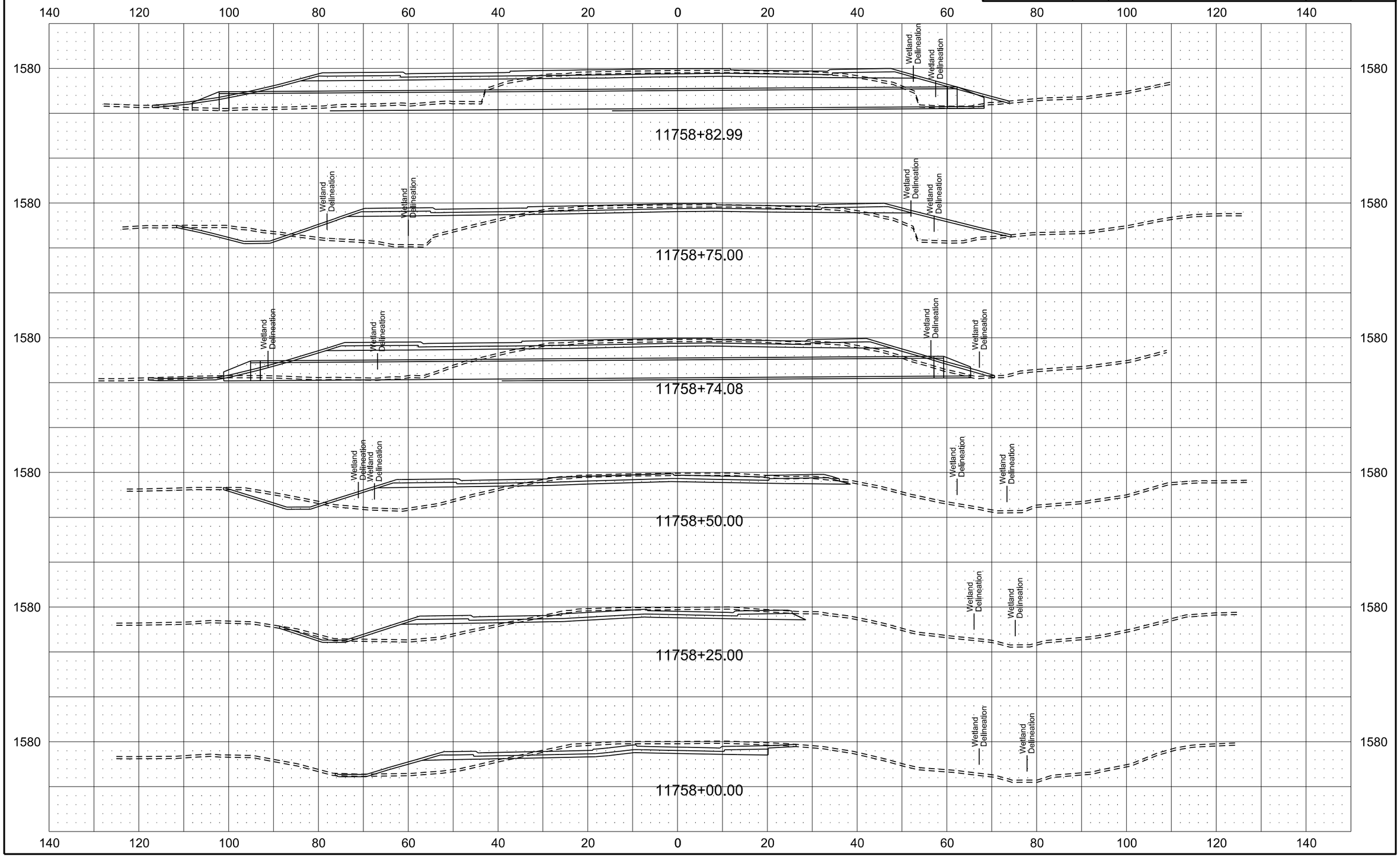
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	253



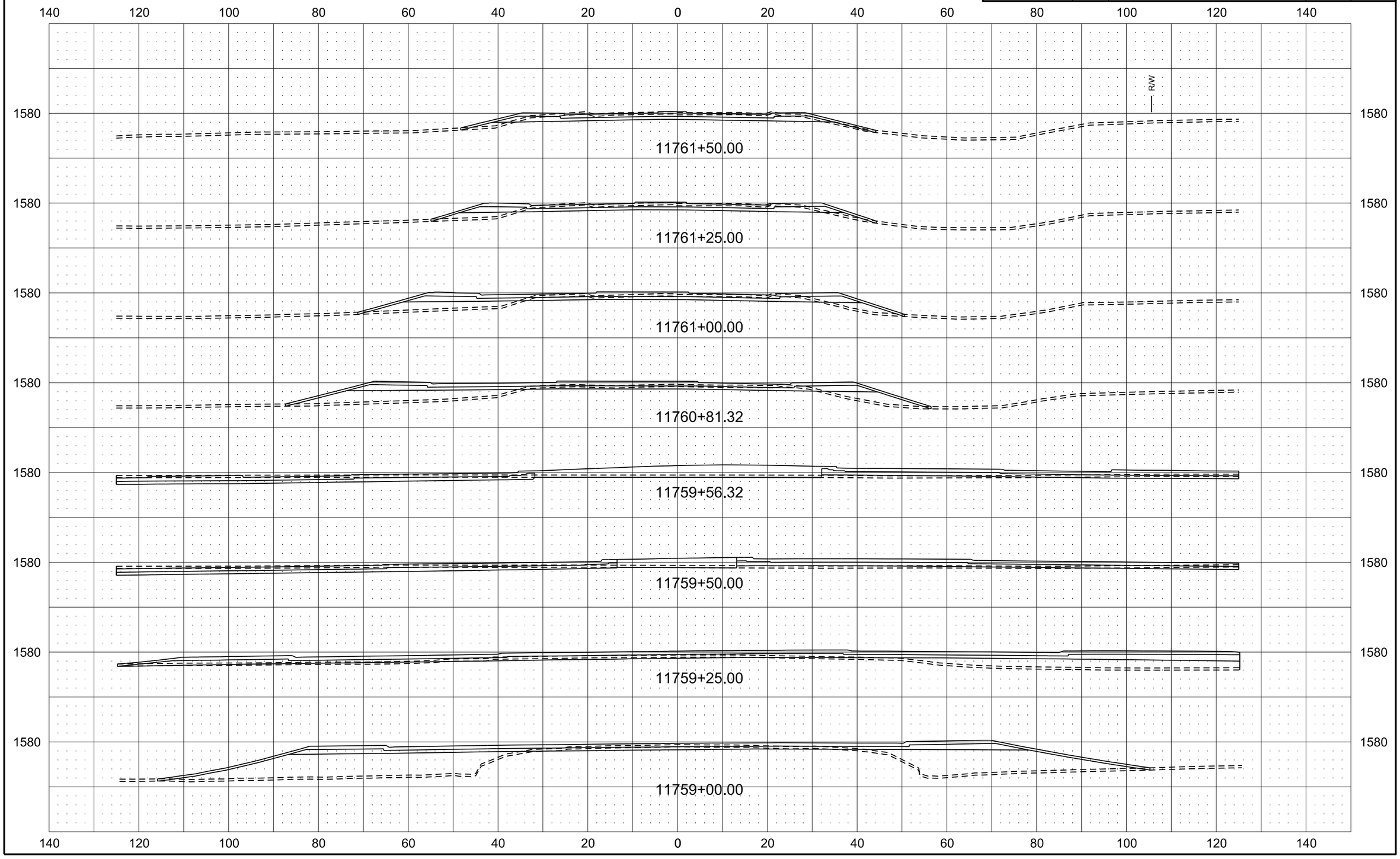
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	254



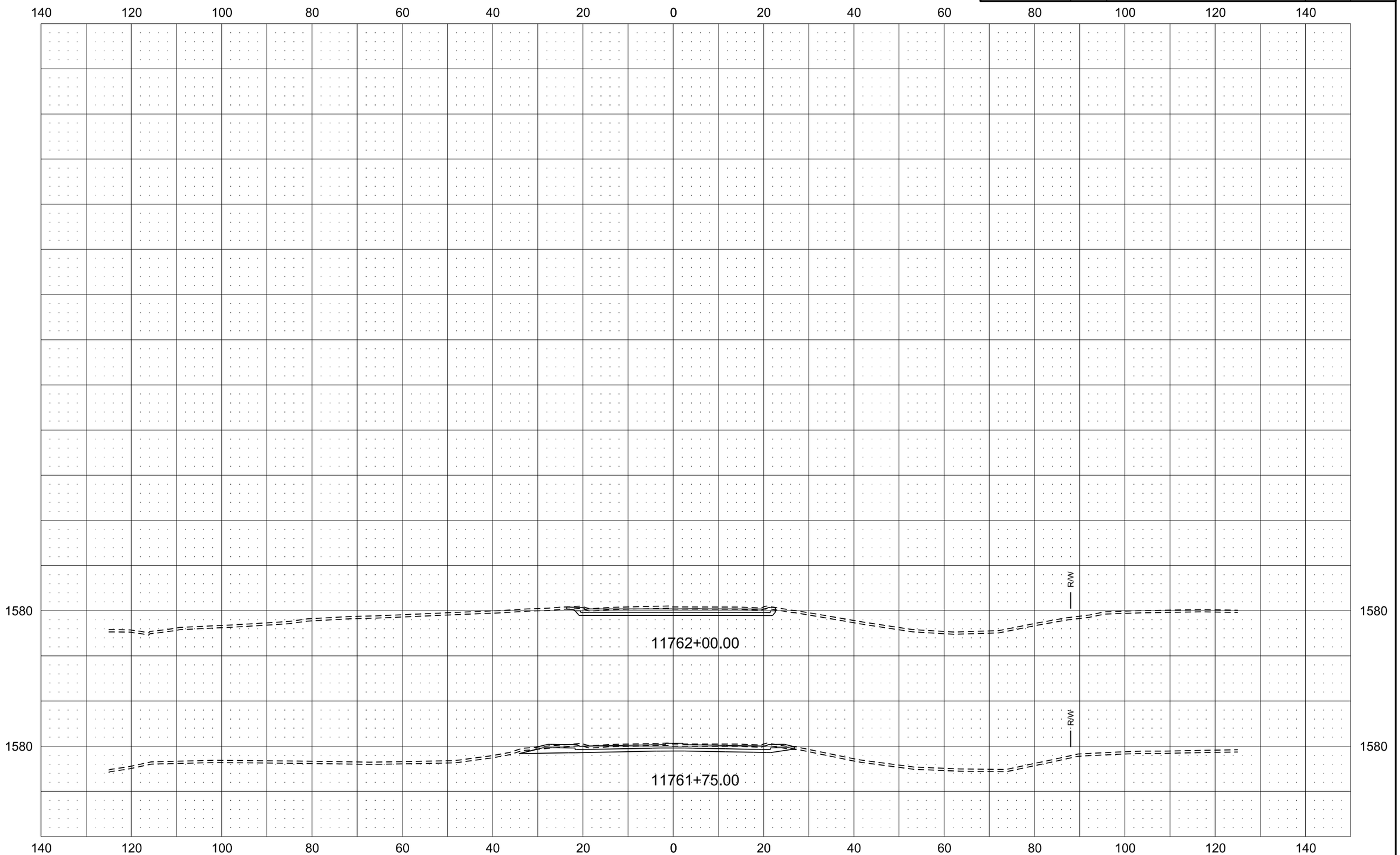
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	255



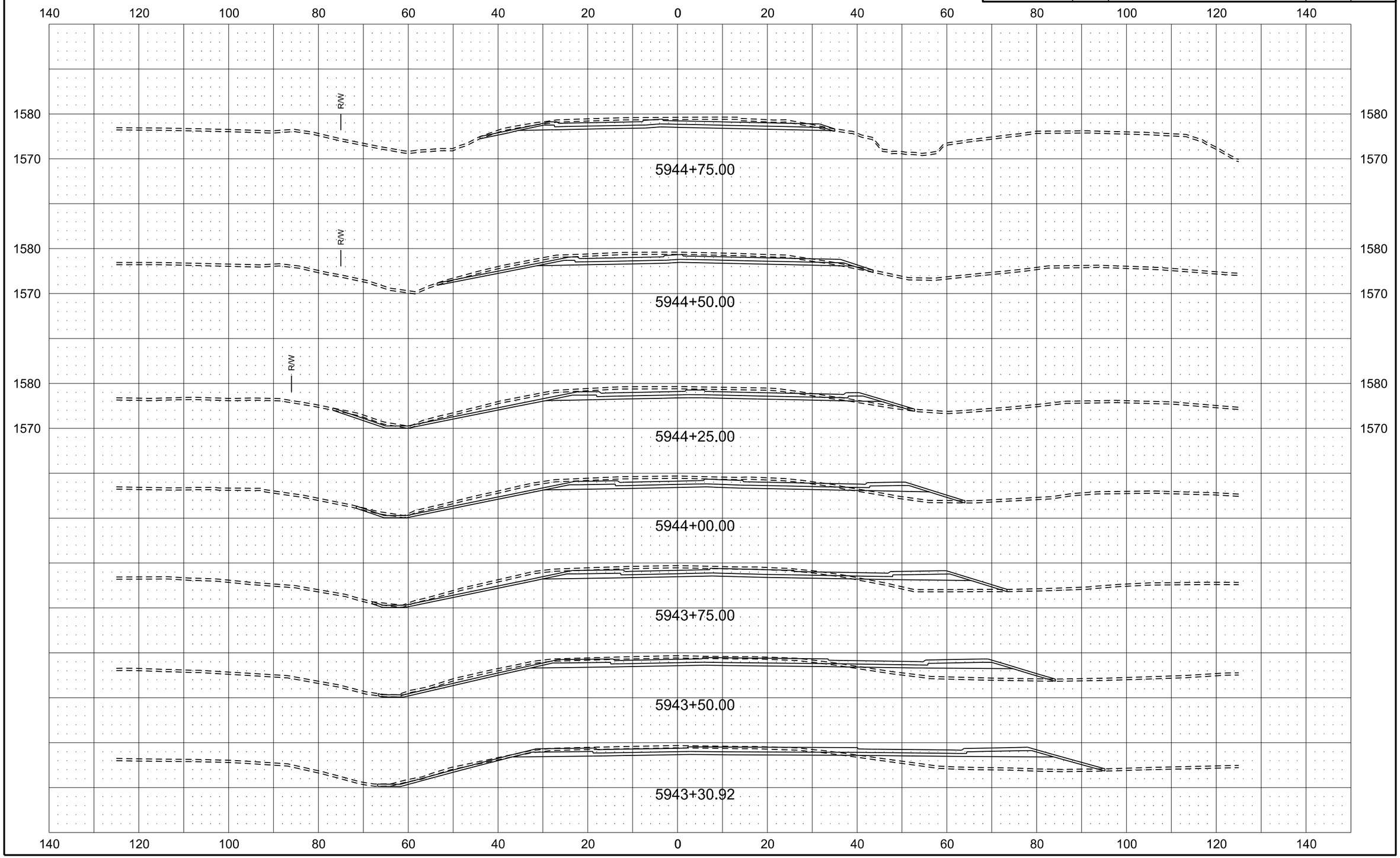
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	256



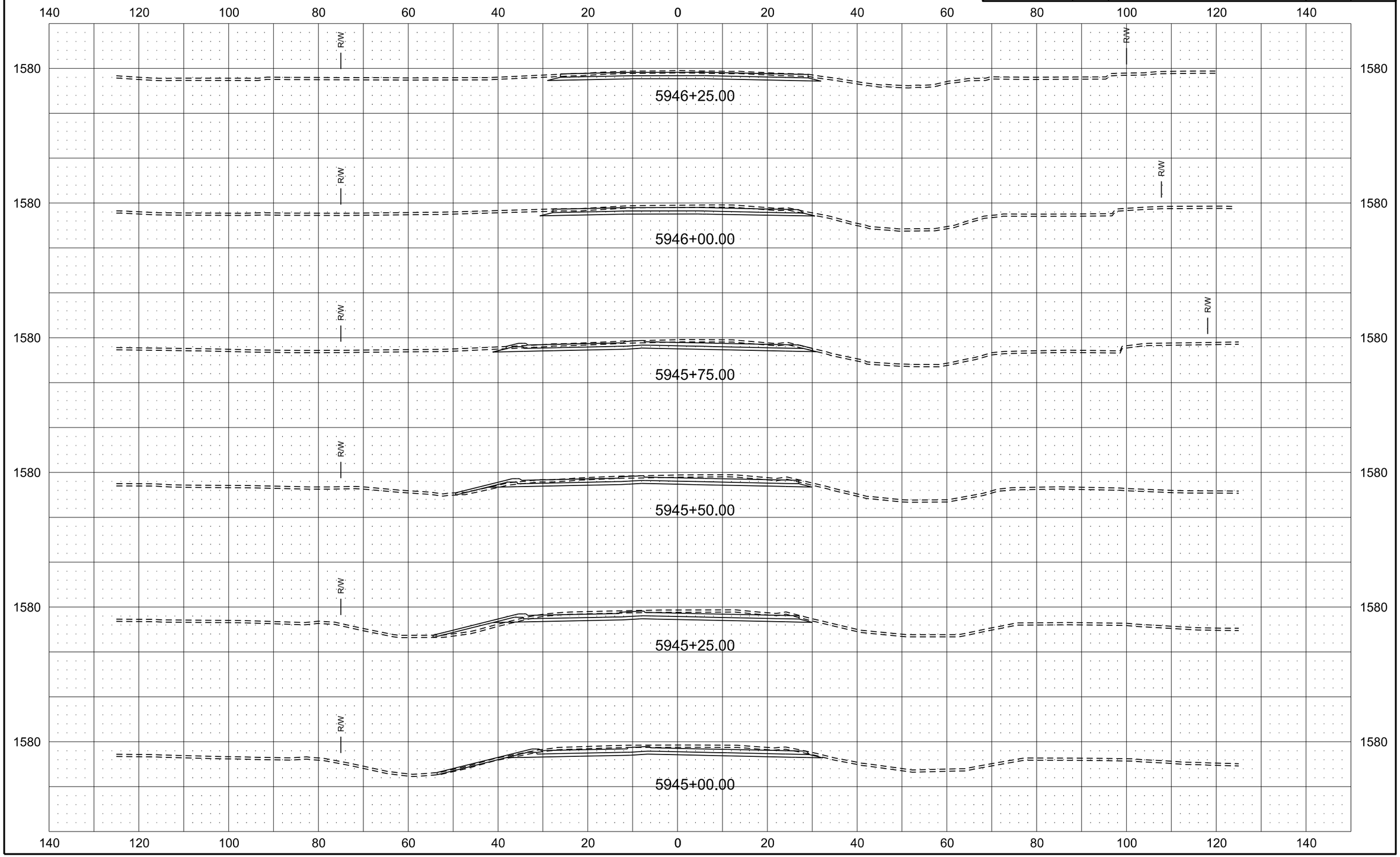
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	257



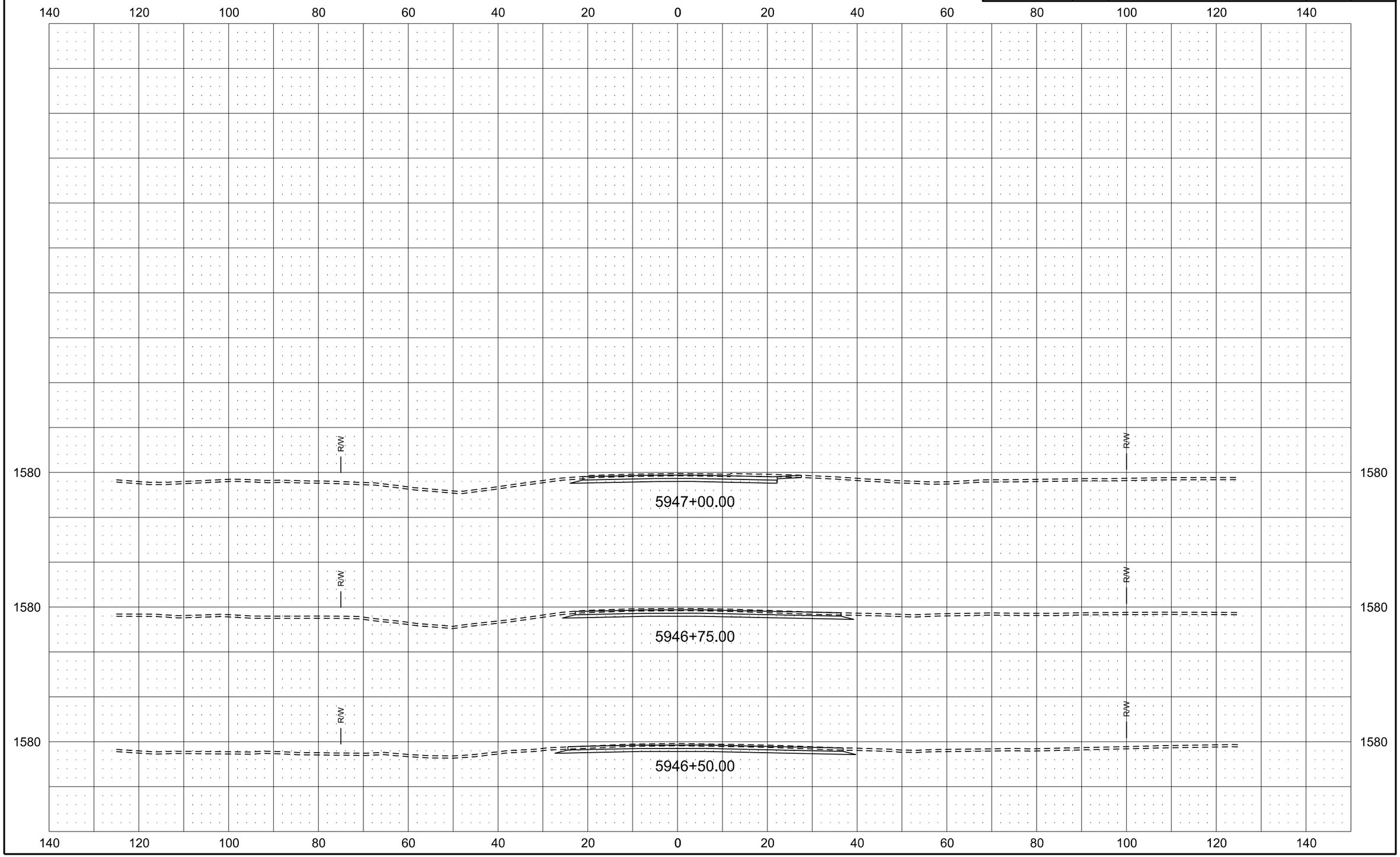
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	258



Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	259



Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	260



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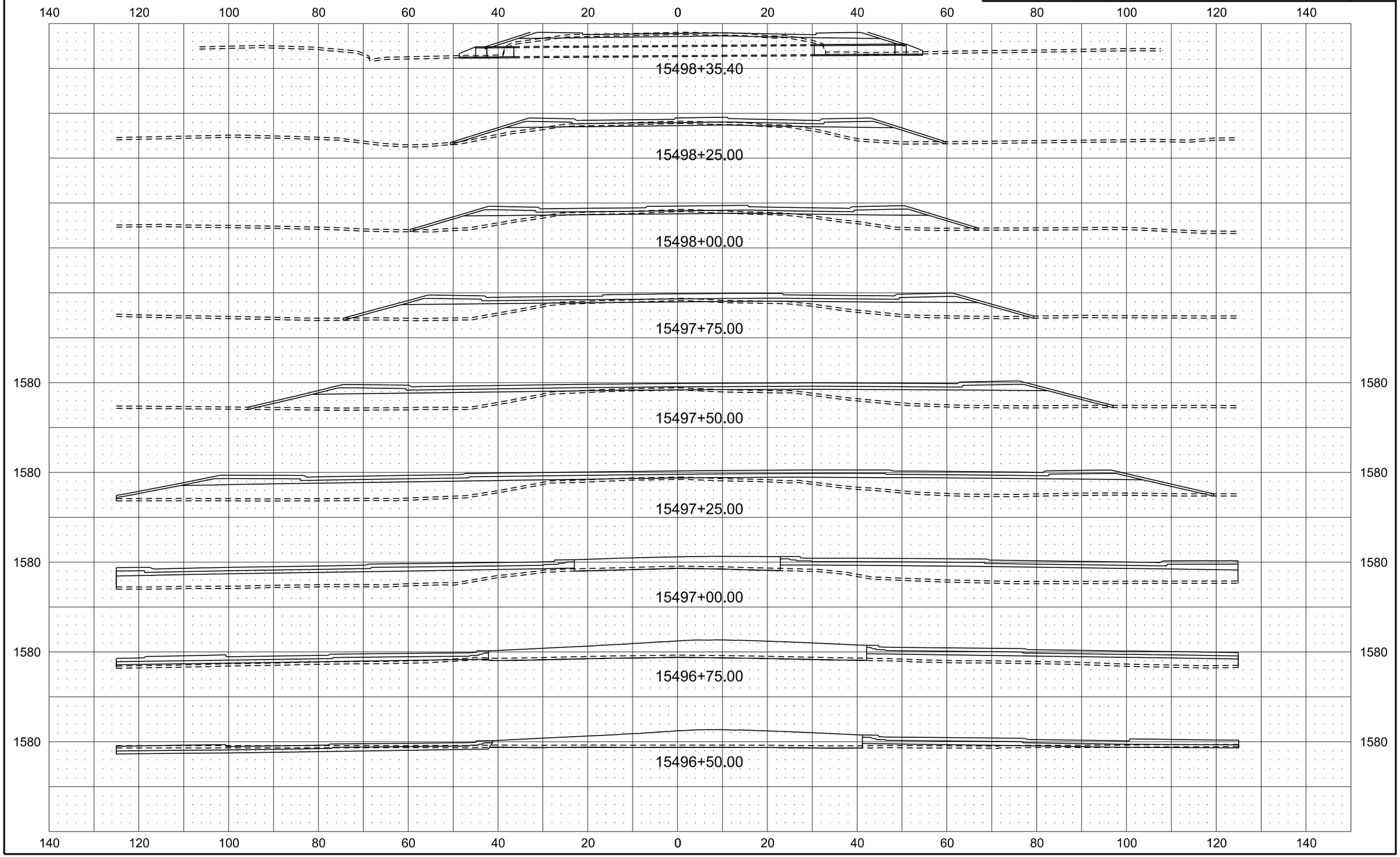
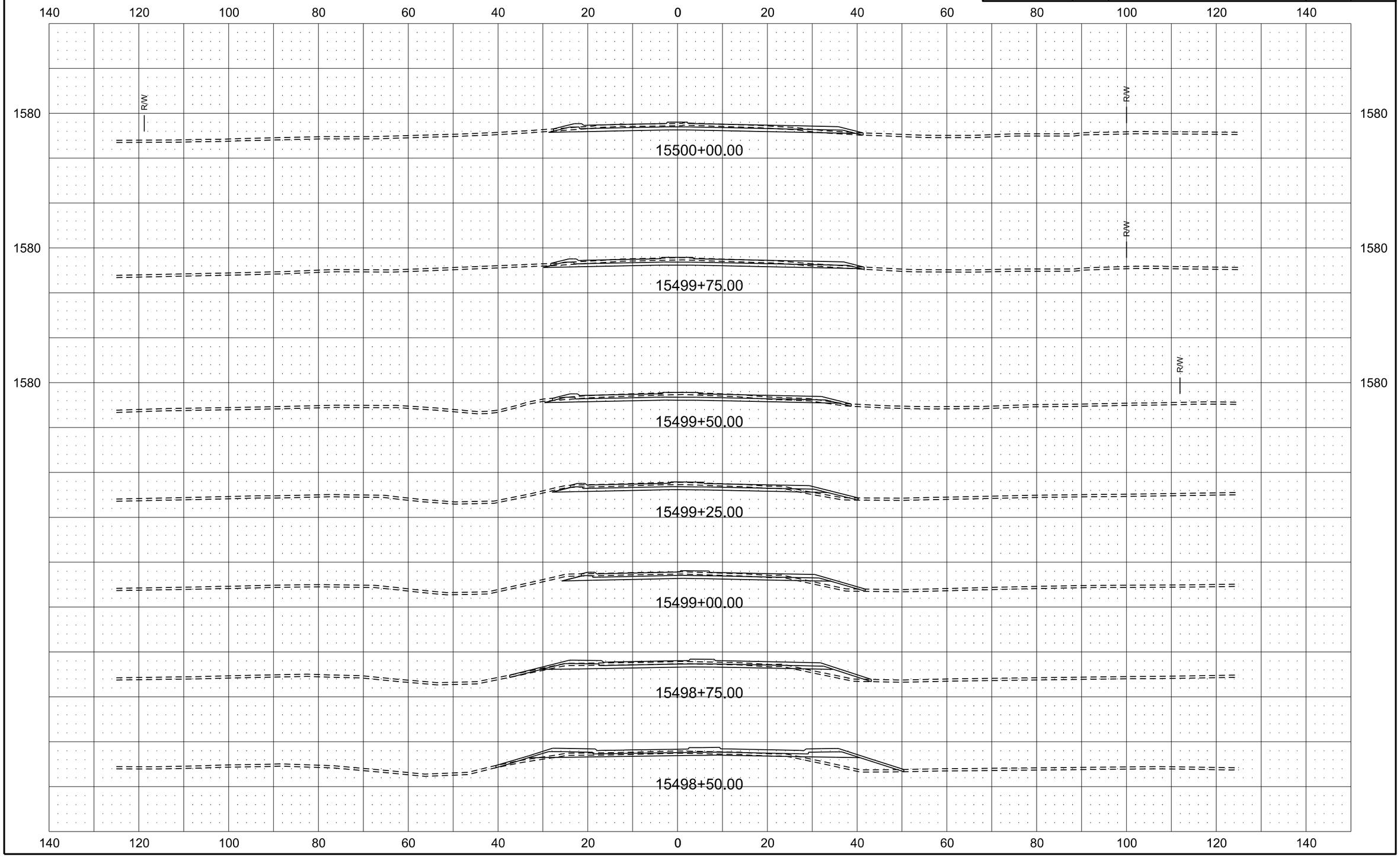
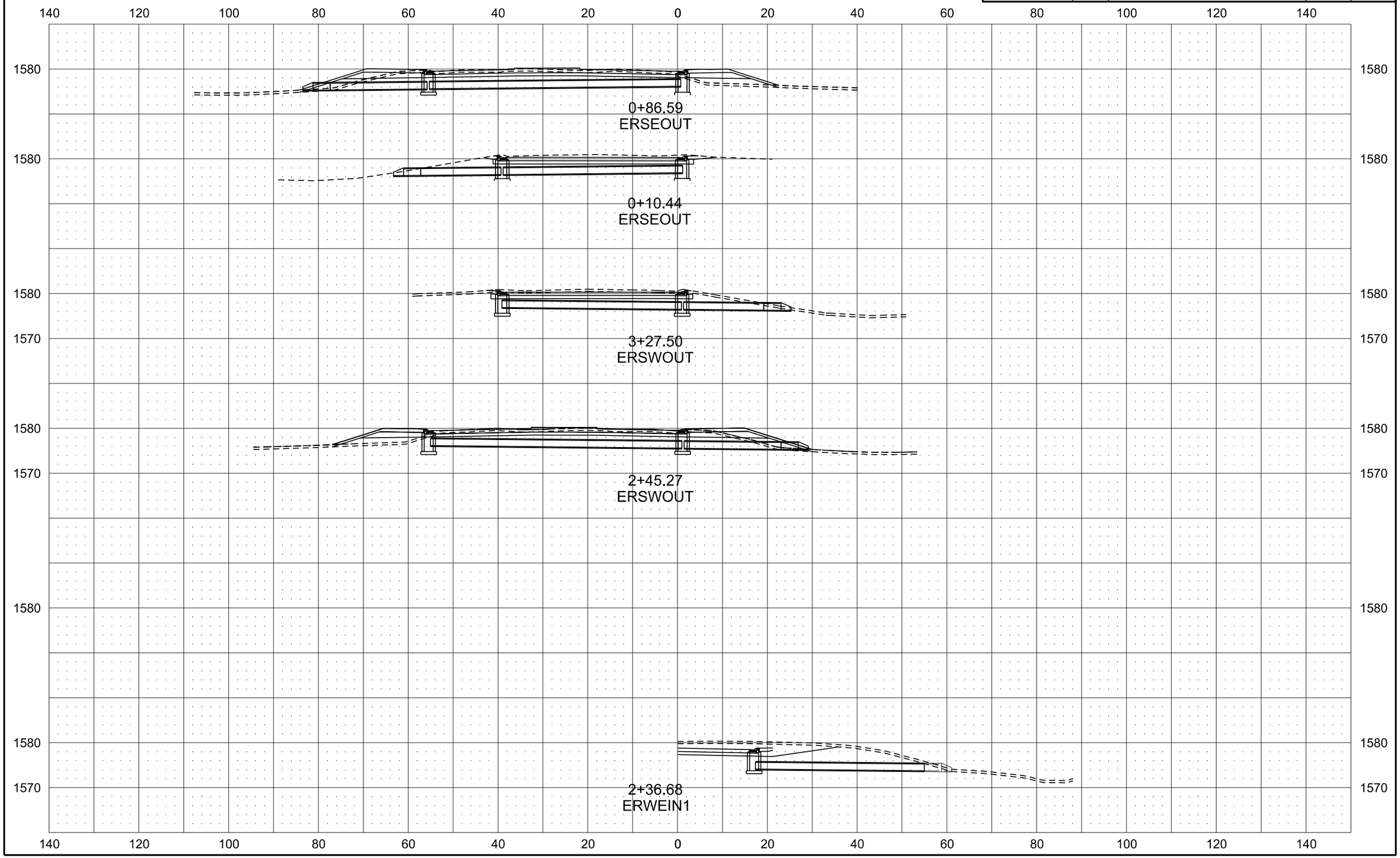
	ND	CPU-SNH-3-052(042)198	200	261



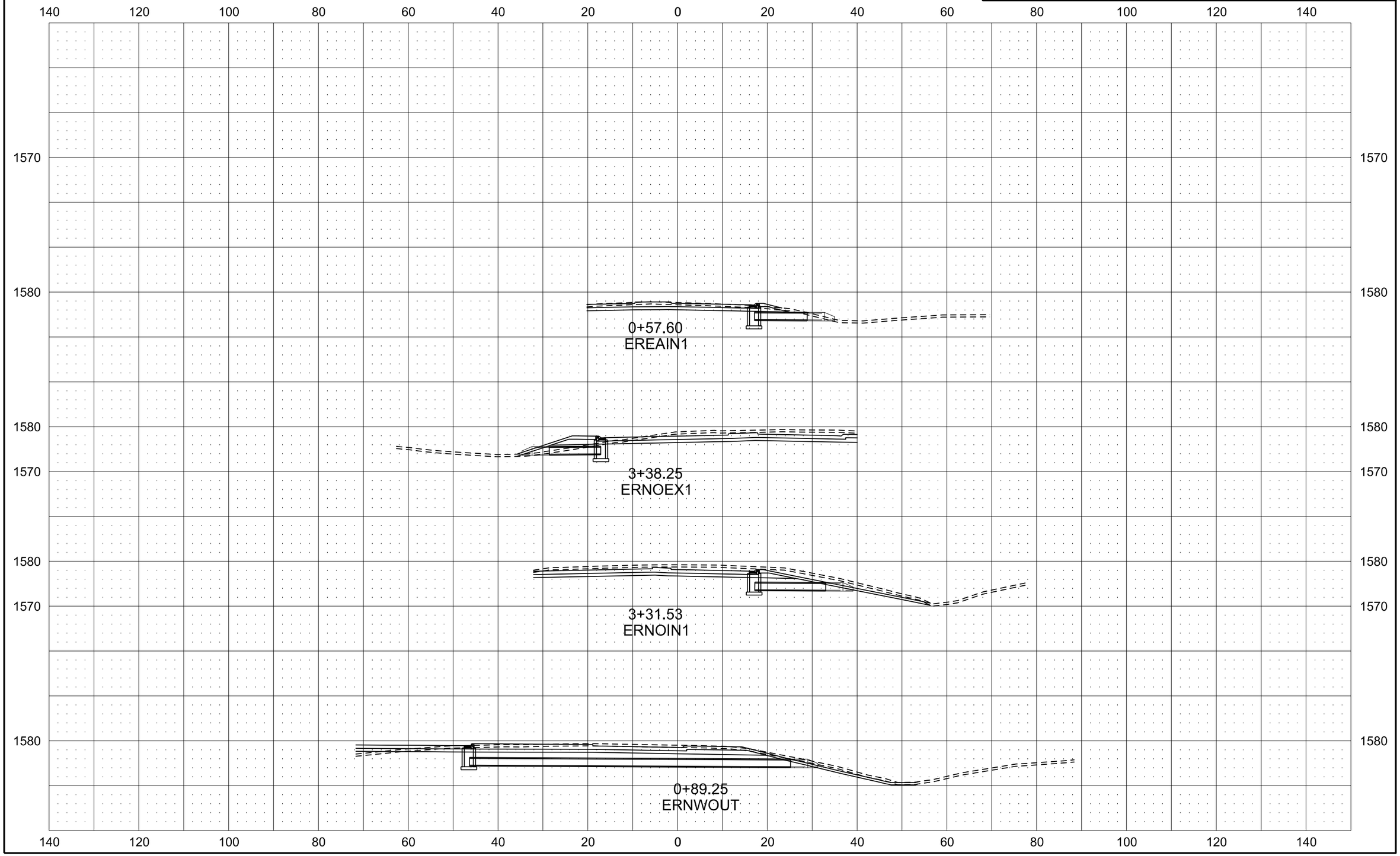
Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	262



Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	263



Revised 3/29/16	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CPU-SNH-3-052(042)198	200	264



Added 3/24/2016

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SHE-3-281(116)125	110	1

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
6633+75 Lt		406	13.4		13.2				2.5 x 2.5 10 ga	14.9	4.0				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
6637+75 Lt	SN 1		34.0		13.1	13.7	14.4	15.1	2.5 x 2.5 12 ga	18.5	2.1	2.8	3.5	4.1	2.25 x 2.25 12 ga	4	4	3 x 3 7 ga			4	
Sub Total			47.4	0.0		**Total**	69.5									**Total**	20		0	0	5	
Grand Total			47.4	0.0		**Total**	69.5									**Total**	20		0	0	5	

Basis of Estimate
Sign Support Lengths

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

Rural Roadway - 60"

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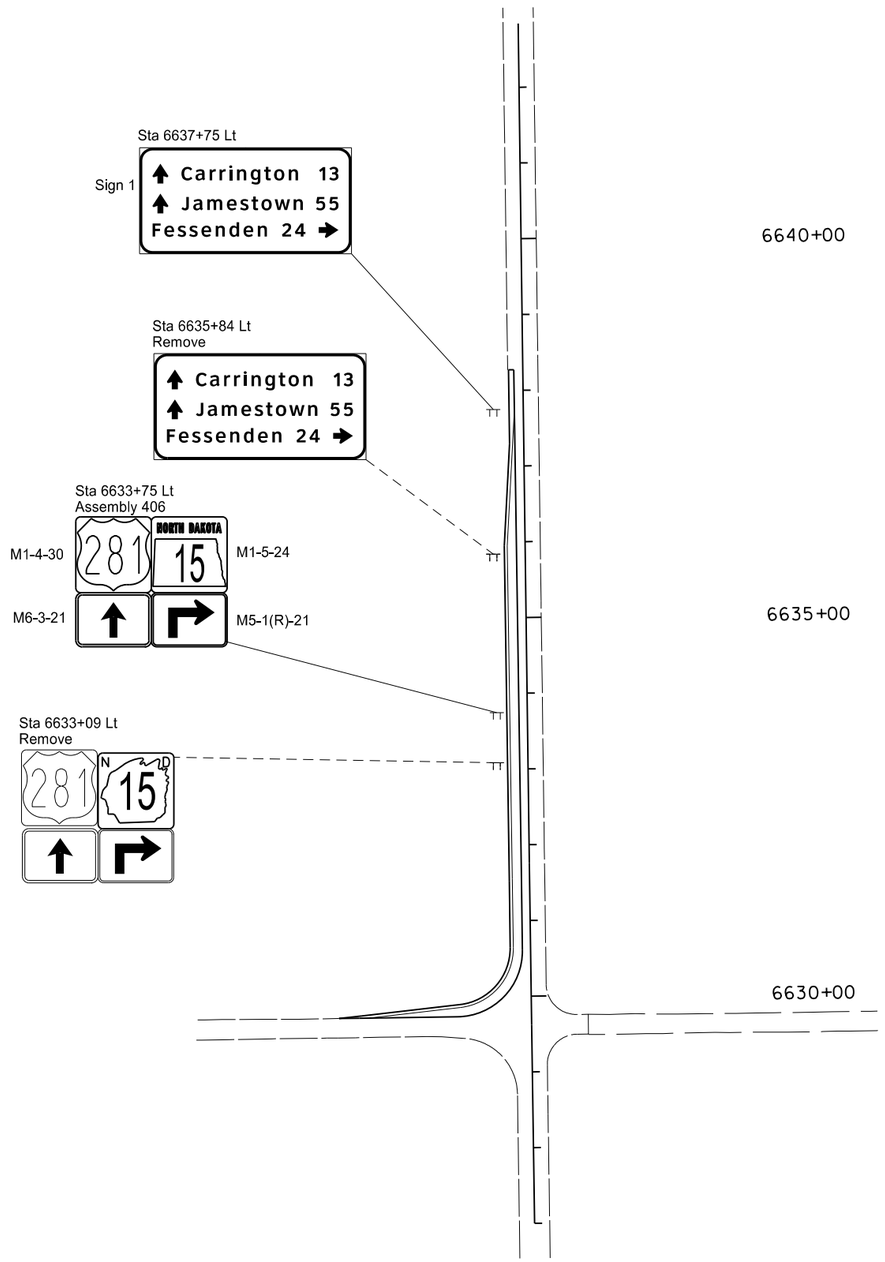
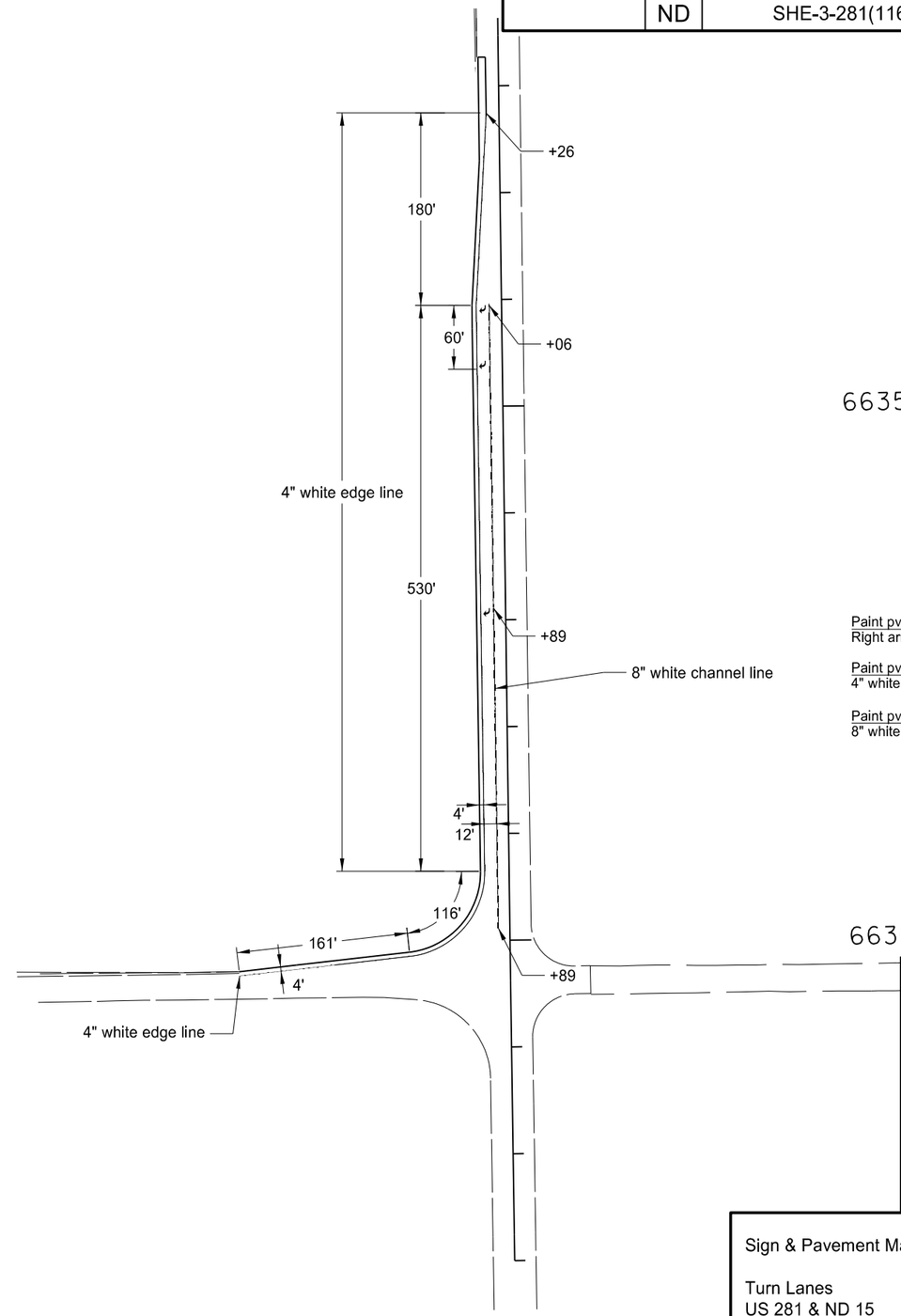
Sign Summary
Perforated Tube

US 281 & ND 15

US Hwy 281

Added 3/24/2016	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SHE-3-281(116)125	110	2





Paint pvmt mk message
Right arrow (x3) 48 SF

Paint pvmt mk 4" line
4" white edge line 987 LF

Paint pvmt mk 8" line
8" white channel line 583 LF

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Sign & Pavement Marking Layout

Turn Lanes
US 281 & ND 15

US Hwy 281

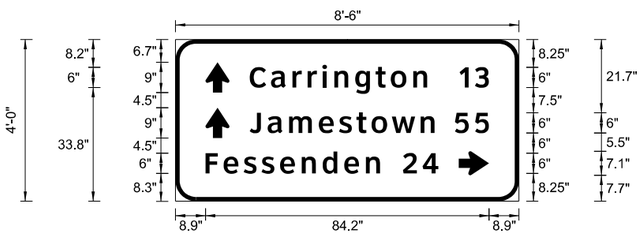
Added 3/24/2016	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SHE-3-281(116)125	110	3

SIGN NUMBER	Sign 1
WIDTH x HEIGHT	8'-6" x 4'-0"
BORDER WIDTH	1.25" (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	ANGLE
ARDD	8.9	32.3	7.1	9	90
ARDD	8.9	18.8	7.1	9	90
ARDD	84.1	7.7	7.1	9	0

STATION(S):
6637+75 Lt

AREA: 34.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
C	a	r	r	i	n	g	t	o	n	1	3								71.1	6/4.9	ClearviewHwy-5-W
22	28.4	34.7	39.2	43.6	47.2	53.4	59.4	63.9	70.6	84.3	88.9										
J	a	m	e	s	t	o	w	n	5	5									71.1	6/4.9	ClearviewHwy-5-W
22	27.4	33.7	42.6	48.5	53.7	58.2	64.2	72.8	83	89											
F	e	s	s	e	n	d	e	n	2	4									69.2	6/4.9	ClearviewHwy-5-W
8.9	14.3	20.2	25.5	31	37.5	43.7	50.1	56.6	67.5	73.4											

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Sign Details

Turn Lanes
US 281 & ND 15

US Hwy 281