DESIGN DATA				
Traffic	Average Daily			
Current 2016	Pass: 1680 - 4850	Trucks: 185 - 430	Total: 1890 - 5050	
Forecast 2036	Pass: 2050 - 5920	Trucks: 250 - 495	Total: 2330 - 6225	
Clear Zone Distance:		Design Speed: 25 - 65		
Minimum Sight Dist. for Stopping: 155-645'		Bridges: N/A		
Sight Dist. for No Passing Zone:				
Pavement Design Life 20 (years)				
Design Accumulated One-way Flexible ESALs:				

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	21812	1	1

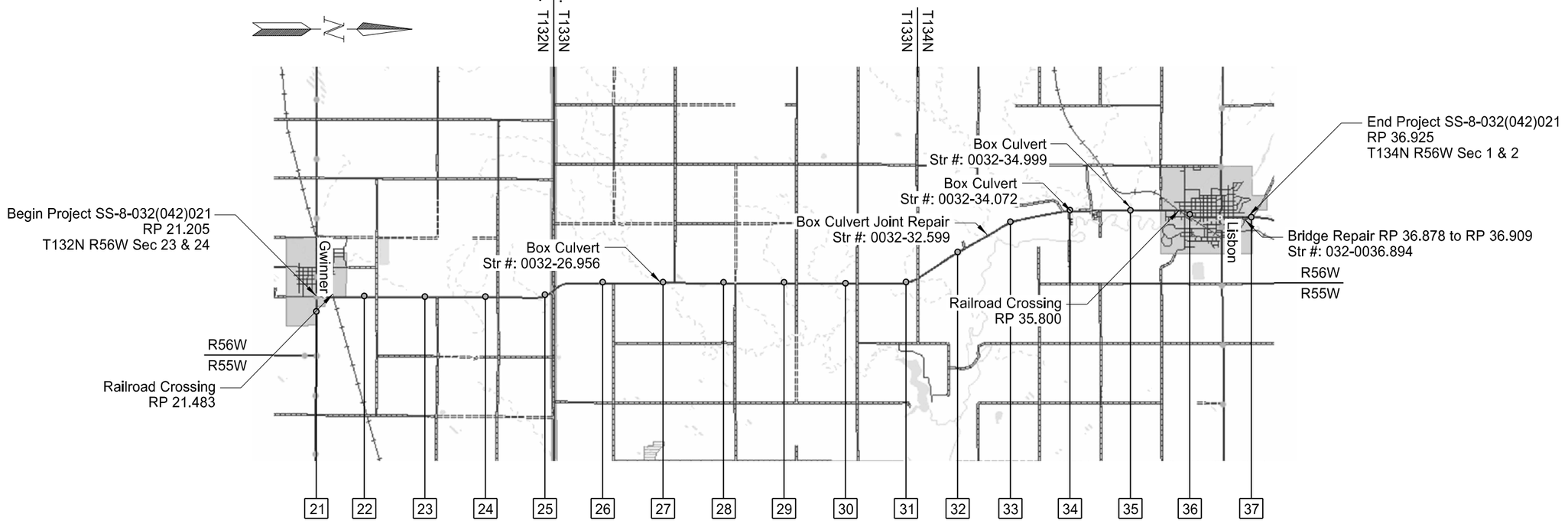
JOB # 83
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

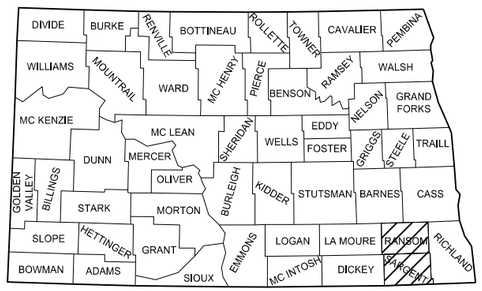
SS-8-032(042)021

Ransom County & Sargent County
ND 32 - W Jct 12 N to Riverside Dr Lisbon
RP 21.205 to RP 36.925
Minor Rehabilitation
Mill, HMA Overlay, Selective Sliver Grade

GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SS-8-032(042)021	15.720	15.720





STATE COUNTY MAP

DESIGNER
Aaron Murra, P.E.

DESIGNER
Brady L. Haussler, P.E.

DESIGNER
Erica Corcoran

DESIGNER
Etta DeLong

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Design Division

This document was originally issued and sealed by James Douglas Rath Registration Number PE- 4288 , on 01/06/20 and the original document is stored at the North Dakota Department of Transportation

TABLE OF CONTENTS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	2	1

PLAN SECTIONS

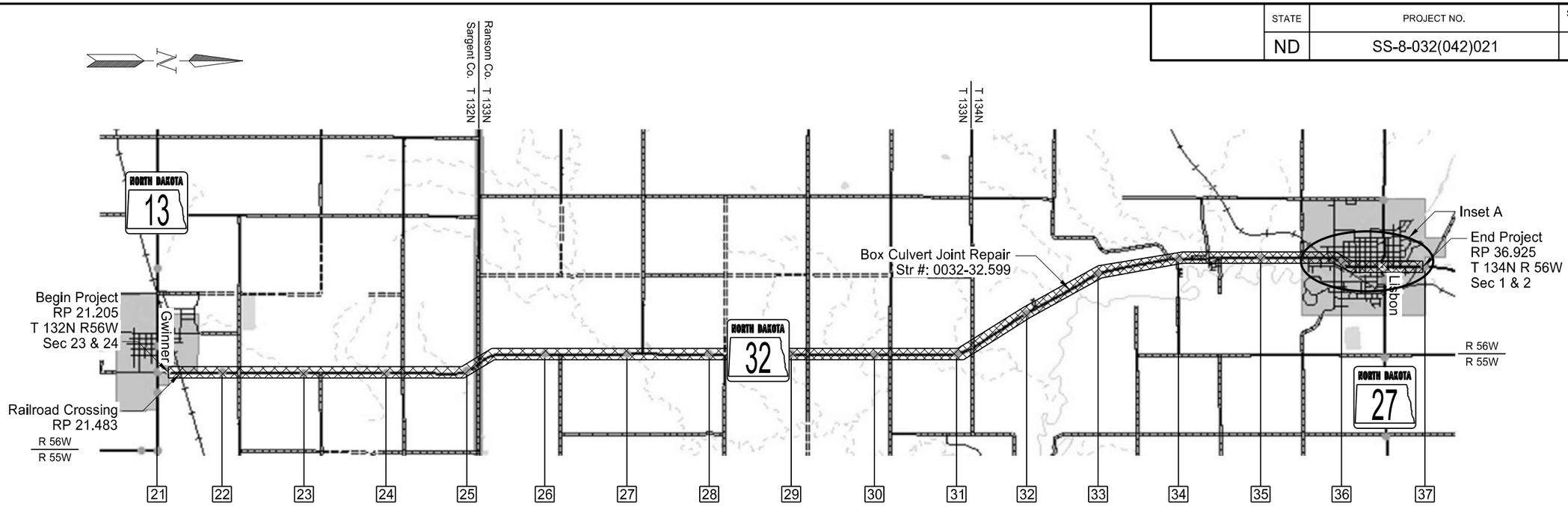
SPECIAL PROVISIONS

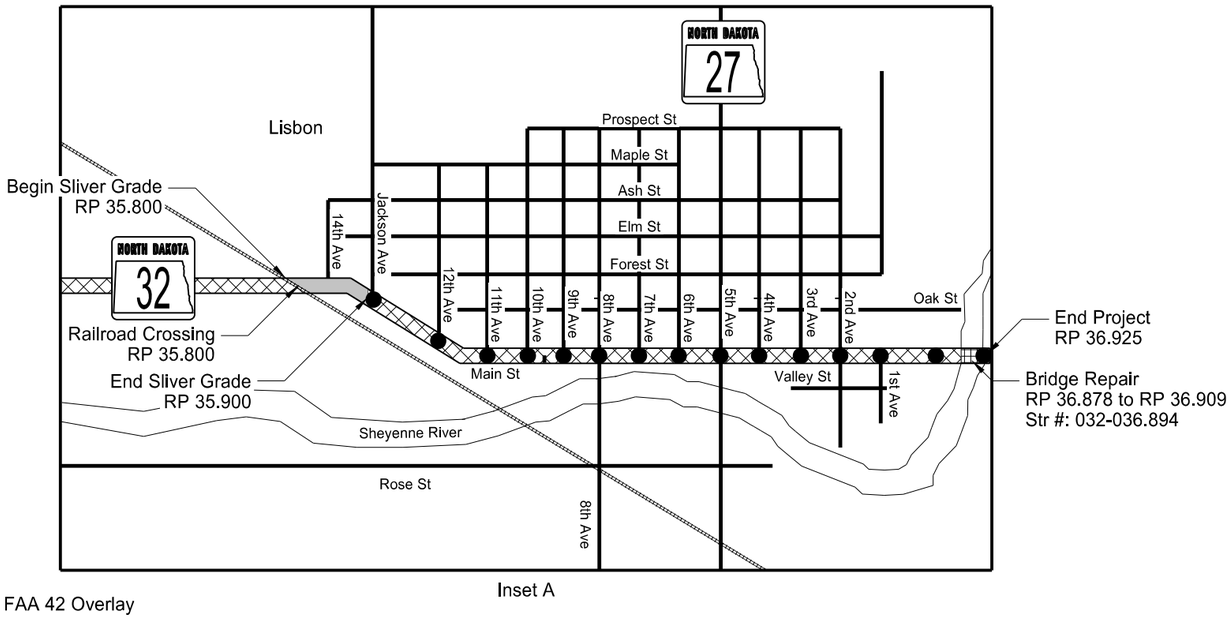
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	2	2

TABLE OF CONTENTS

LIST OF STANDARD DRAWINGS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	4	1





Inset A

2" Mill and RAP Superpave FAA 42 Overlay

ADA Improvements

2" Mill, 3" RAP Superpave FAA 42 Overlay & Sliver Grading

Bridge Spall and Bearing Repair

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Scope of Work

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	6	1

NOTES

107-114 RAILROAD PROTECTIVE LIABILITY INSURANCE: This project crosses the Red River Valley and Western Railroad Company at RP 21.483 and 35.800. The type of work that will be performed within the railroad right of way is sliver widening, milling, and HMA overlay. Direct inquiries regarding protective liability insurance to:

Mr. Dan Zink, Director of Administration
Red River Valley and Western Railroad Company
P.O. Box 608
Wahpeton, ND 58074
701-642-8257

Obtain information regarding crossing number 103382J and 071004W from the Federal Railroad Administration website: http://safetydata.fra.dot.gov/Officeofsafety/

107-P01 MAINTAINING TRAFFIC –DROP-OFFS: If, at the end of the work-day, drop-offs greater than 2 inches and less than 18 inches or slopes steeper than 4:1 exist between the edge of a traffic lane and the outside edge of the proposed roadway, perform one of the following actions:

- Construct a traversable wedge in the area of the drop-off or steep slope; or
- Close the lane adjacent to the drop-off or steep slope and provide 24-hour flagging or pilot car operations.

When constructing a wedge, construct a wedge composed of aggregate or earthen materials with a 4:1 or flatter slope along the entire length of the area. Compact materials using Type C compaction, as specified in 203.04 E.4, "Compaction Control Type C."

Install stackable vertical panels that meet the requirements of Section 704.03 H, "Stackable Vertical Panels", along the edge of the driving lane closest to the wedge.

The Engineer will measure stackable vertical panels as specified in Section 704.05, "Method of Measurement" and will pay for panels as specified in Section 704.06, "Basis of Payment."

The Engineer will not measure material used to construct the wedge. Include the cost of materials, equipment, labor, and incidentals required for this operation in the price bid for "SALVAGED BASE COURSE."

If a 4:1 or flatter wedge is not installed, provide 24 hour flagging or pilot car operations and associated traffic control at no additional cost to the Department.
The requirements of Section 704.04 O, "Traffic Control for Uneven Pavement" apply to drop-offs created by milling or the placement of hot mix asphalt.

108-100 WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required.

108-150 PUBLIC RELATIONS COORDINATOR: Provide a public relations and information coordinator. The coordinator cannot be the project superintendent or construction foreman. The coordinator should be knowledgeable in construction operations, be able to develop effective media releases, possess written and verbal communication skills, and be able to organize productive meetings.

Provide the name, work address, and work phone number to the relevant project, community, and media personnel.

The public relations coordinator is responsible for providing the following:

1. Organizing, scheduling, and conducting the meeting specified in Note 108-100, "Weekly Planning/Reporting Meeting."
2. Advise Gwen Crawford, from the City of Lisbon, PH: 701-683-4140, of upcoming construction activities in regard to street closures and traffic detour routes so that city police, emergency services, schools, and other pertinent city agencies may be notified.
3. Provide news releases and necessary drawings to the media before and during construction. News releases should inform the public on construction activities, schedules, street closures, width or height restrictions to traffic, and traffic detour routes. Update news releases regarding construction activities every other week, at a minimum.
4. Be available for media interviews.
5. Work directly with property owners and businesses affected by construction activities. The coordinator must have sufficient knowledge and authority to resolve property owner and business concerns regarding scheduling, maintaining access, and construction operations.

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

302-P01 WATER: Include all costs for providing water for the project as specified in 216 in the unit price bid for "SALVAGED BASE COURSE."

401-P01 FOG COAT: Fog seal the RAP - Superpave FAA 42 top lift after final rolling with a minimum mat temperature of 125 degrees Fahrenheit.

411-P01 MILLED MATERIAL: Use the milled bituminous material as recycle for "RAP – SUPERPAVE FAA 42." Handle excess millings as shown in Section 10.

Deliver milled material not required for RAP production to the NDDOT pit south of Lisbon located at N ½ Section 24 – 134TWP – RGE 56. Provide a payloader and stockpile milled material using a payloader. Keep payloader tires off of stockpile. Notify Engineer prior to hauling to stockpile location. Include all costs associated with this work in the contract unit price for "MILLING PAVEMENT SURFACE."

430-P01 RAP – SUPERPAVE FAA 42: RAP may be incorporated into the mix at a rate between 10 and 20 percent of the mix, by weight.

704-100 TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.

704-255 TRAFFIC CONTROL FOR SHOULDER DROP-OFF: If the shoulder and adjacent driving lane are not even at the end of the day, the following criteria will apply:

Place the following sign assembly at the locations listed below.

Sign Assembly: Sign No. W8-9a-48 "Shoulder Drop Off" and supplemental plate Sign No. W20-52-54 to identify the distance.

Locations:

- In advance of the drop off;
- Spaced at each mile from the advance sign; and
- At major intersections (CMC routes, state and US highways, and Interstate Ramps).

This document was originally issued and sealed by Aaron Murra, Registration Number PE-6536, on 01/07/20 and the original document is stored at the North Dakota Department of Transportation.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	6	2

NOTES

If the difference in elevation between the shoulder and the driving lane is 2" or greater, construct a slough on the driving lane that is 4:1 or flatter. If the difference in elevation between the shoulder and driving lane is less than 2", no slough is required.

Sign assemblies will be measured and paid for according to Section 704 "TEMPORARY TRAFFIC CONTROL."

704-500 PORTABLE RUMBLE STRIPS (PRS): Provide PRS made of rubber or engineered polymers. Install PRS that meet the following criteria:

- Have no adhesives or fasteners required for placement;
- Have a manufacture's speed rating that meets or exceeds the posted speed limit;
- Weigh at least 100 pounds per strip in the array.

Use individual PRS constructed in one of the following manners:

- In a single piece;
- Inter locking segments;
- Two pieces hinged at the midpoint.

Install an array of PRS consisting of a minimum of 3 individual strips. Move rumble strips with the flagging operation. Do not place rumble strips on horizontal curves.

The Engineer will count and measure each array as one unit. Include the cost of providing, installing, maintaining, and relocating PRS in the unit price bid for "PORTABLE RUMBLE STRIPS."

704-P01 TRAFFIC CONTROL FOR BITUMINOUS PAVEMENT: Provide traffic control consisting of a temporary lane closure, flagging, and a pilot car.

Traffic control device quantities are based on a 6 mile limitation and the list below. Provide additional devices at no additional cost to the Department.

1. Standard D-704-15, layout C
2. Standard D-704-19, layout F
3. Standard D-704-20, layout G – signing will be required at junctions: 81st St SE, 79th St SE, 74th St SE, 72nd St SE, 69 ½ St SE, and Jackson Ave
4. Standard D-704-23
5. Standard D-704-25, layout X
6. Standard D-704-26, layout GG and layout KK

Place flaggers and traffic control devices as shown on Standard D-704-25, layout X for urban and Standard D-704-26, layout KK for rural at the following intersections when the lane closure spans across them:

1. 81st St SE
2. 79th St SE
3. 74th St SE
4. 72nd St SE
5. 69 ½ St SE
6. ND Hwy 27 (5th Ave; Urban)

704-P02 TRAFFIC CONTROL DEVICES: The traffic control devices list was developed based on the layouts in the plans and on two single lane closures per D-704-34. Provide additional devices to accommodate the contractor's operations at no cost to the Department.

704-610 PEDESTRIAN CHANNELIZATION: Provide pedestrian channelization meeting the following requirements:

- Interlocked with a 1" maximum gap between devices;
- Upper rail with a smooth continuous guide handrail positioned 32 to 38 inches above the walkway;
- A smooth lower edge on the pedestrian side of the wall to allow sight impaired cane tapping positioned based on the following requirements:
  - The bottom edge is less than 2 inches above the walkway; and
  - The top edge a minimum of 6 inches above the walkway
- Openings in the bottom of the wall to allow for water passage;
- Support legs that do not impede the clear walkway;
- In compliance with NCHRP Report 350 or MASH Test Level 3 (TL3);
- Channelization portions are orange or white, or a combination of orange and white, in color.

Install the pedestrian channelization as follows:

- Place pedestrian channelization to delineate a clear, temporary pedestrian pathway directing pedestrians through the work area;
- Provide a minimum, continuous, clear width of 48 inches, free of vertical discontinuities greater than 0.25 inches and obstructions;
- Where the clear width of a temporary pedestrian access route is less than 60 inches, provide passing spaces at maximum intervals of 200 feet that have minimum dimension of 60 × 60 inches.
- Move and reset the pedestrian channelization as needed for multiple phase construction.

The Engineer will pay for the maximum required length of pedestrian channelization used at one time. The Engineer will measure channelization in place and will not make any deductions in length for hinged gaps or connection hardware. If pedestrian channelization is necessary to delineate both sides of the walkway, the Engineer will measure both sides of the walkway. Include all costs to furnish, install, maintain, move, relocate, replace, and remove pedestrian channelization in the contract unit price for "PEDESTRIAN CHANNELIZATION."

704-620 TEMPORARY PEDESTRIAN SURFACING: Provide a stable, firm, weather resistant, non-slip surfacing to be used for the temporary pedestrian access connections as shown in Section 100 Work Zone Traffic Control plan sheets.

Place the temporary surfacing to a minimum width of 5 feet, a maximum cross slope of 2% and a maximum running slope of 5%. Construct and maintain the surface with no vertical discontinuities greater than 0.25 inches and free of barriers to wheelchair use. Compacted aggregate is not an acceptable surface.

Include all costs to furnish, construct, maintain and remove the pedestrian access surfacing in the price bid for "TEMPORARY PEDESTRIAN SURFACING."

706-P01 FIELD OFFICE: Provide a field office which meets the following requirements:

1. Minimum total area of 400 square feet.
2. Indoor bathroom facilities with weekly cleaning services.
3. Hookups for heat, electricity, sewer, and potable water.
4. Minimum cabinet space of 32 cubic feet.

This document was originally issued and sealed by Aaron Murra, Registration Number PE-6536, on 01/07/20 and the original document is stored at the North Dakota Department of Transportation.

NOTES

5. Minimum counter space of 60 square feet.
6. A heating/cooling system capable of maintaining a temperature between 65°F & 78°F.
7. Lighting with a minimum of 110 foot-candles.
8. Photocopier/Printer with scanning capabilities capable of producing 11x17 photocopies and enough toner to last the duration of the project. Other features to include digital copying and scanning. Provide a photocopier/printer with operating software compatible with that used by the NDDOT.
9. Microsoft Windows 10 compatible laser color printer with updated drivers that are capable of both LAN and Wireless printing.

Place the field office on the project, or as close to the project as possible. The Contractor is responsible for the following fees:

- Rental fees
- Cleaning Service
- Heating
- Electricity
- Sewer
- Potable Water

Make the field office available for occupancy one week before the start of the project and remain through project completion. The Engineer will approve the location and the condition of the office. The Engineer is responsible for the following items:

- Furnishing office equipment;
- Supplying paper; and
- Supplying and paying for internet service.

All requirements of the Field Office are subject to approval by the Engineer. Include the costs for the field office in the contract unit price for “Field Office.” Schedule for Payments:

- 25% when set up on site.
- 50% when 30% of the work is complete.
- 75% when 60% of the work is complete.
- 100% when the project is complete.

708-P01 INLET PROTECTION: Include all costs for installing, cleaning, removing sediment, maintaining, removing, and replacing damaged inlet protection devices in the unit price bid for "INLET PROTECTION-SPECIAL."

722-P01 ADJUST INLET – Provide new Type B Alternate Grate Castings, as shown in D-722-3, for all locations where existing inlet castings are built into the ADA ramp splitter islands or existing curb getting removed. Adjust the casting / inlet as necessary to maintain drainage. Salvage the existing castings to the City of Lisbon; coordinate with the Engineer for delivery. Include all costs associated with replacing and setting castings and adjusting the inlets in the unit price bid for “ADJUST INLET.”

748-P01 CURB & GUTTER REPAIR – A quantity of 150 LF has been included to be used as directed by the Engineer. Include costs for materials, equipment, and labor to remove & reconstruct curb in the price bid for “REMOVAL OF CURB & GUTTER” & “CURB & GUTTER – TYPE I.”

750-P01 SIDEWALK CONCRETE – Provide topsoil, seeding class II, and hydraulic mulch in the areas shown in section 20 of the plans. Complete this work according to Sections 251 and 253. Include all costs for regrading, stripping, importing, and placing topsoil, seed, mulch, and restoring landscaping to pre-construction condition in the unit price bid for “SIDEWALK CONCRETE.”

750-P02 DETECTABLE WARNING PANELS: Install unpainted, cast iron detectable warning panels.

750-P03 PIGMENTED IMPRINTED CONCRETE: Develop a mix design using any size coarse aggregate specified in Section 802.01 C.2, "Coarse Aggregate" and with a 60-40 fine aggregate-coarse aggregate ratio.

Provide a pigment from the list below or provide an approved equal. To be considered an approved equal, pigments must meet the requirements of ASTM C 979.

1. Number 366 Natural Red, produced by Soloman Colors, Inc. http://www.solomoncolors.com/;
2. Brick Red pigment Number 160, produced by Davis 1 Colors http:/www.daviscolors.com/;
3. Pigment R/M – Brick Red, produced by Southern Color Company http://www.southerncolor.com/.

Use the same supplier for all colored concrete placed under the contract.

Add pigment at the ratio recommended by the manufacturer directly into the mixer along with the aggregate, cement, and water. Add pigment while the mixer is operating at mixing speed. Continue mixing for 5 to 10 minutes or between 50 and 100 revolutions.

Form a pattern in the concrete using a roller to create a 4 inch × 8 inch brick pattern.

Cure concrete using curing compound that meets the requirements of ASTM C 309, Type 1.

This document was originally issued and sealed by Aaron Murra, Registration Number PE-6536, on 01/07/20 and the original document is stored at the North Dakota Department of Transportation.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	6	4

NOTES

SECTION 140

770-P01 LED LUMINAIRE: Provide luminaires, black in color, that meet the following:

Light Source	LED
Light Output	19,000 lm to 21,000 lm
Driver	500 mA to 900 mA
Wattage	155W to 170W
Color Temperature	3000K ±300K
Operating Temperature Range	-40°C to +40°C
Luminaire Housing	Die Cast Aluminum
Vibration Testing	ANSI/NEMA C136.31 Level 2, 3 G
Surge Suppression Rating	ANSI/IEEE C62.41 Cat C
Outdoor rating for housing, wiring, and drivers	ANSI C136.25 IP-65
Tool-less Access	Yes

Ensure the Effective Projected Area of the luminaire does not exceed the capacity of the light standard.

The lighting system was designed using these values:

Roadway Classification (ND 200 and ND 49)	Principal Arterial
Average Maintained Illuminance	0.8 foot-candles
Illuminance Uniformity Ratio (avg/min)	4.0:1
Minimum Illuminance	As required
Light Loss Factor	0.69

Provide one of the luminaires listed or an approved equal:

Company	Catalog Number
American Electric Lighting	ATB2 60BLEDE85 MVOLT R3 3K
Philips Lumec	RFL-160W96LED3K-G2-R3M-UNV

770-P02 ORNAMENTAL LIGHT STANDARD – 30 FT: The ornamental light standards shall be furnished and installed as shown on the plans. The light standards shall be Millerbernd Decorative Stainless Steel Lighting Standard 8-SDN1-8-300-001, 28 foot pole height, “H” base, decorative pole top arm mount, octagonal pole shaft, and black finish color. The light standards shall be breakaway and shall have stainless steel “H” base with a breakaway system. The light standard shall be mounted on a foundation and shall not be direct burial.

The mast arms shall be Millerbernd 70A203 Decorative DN8 Mastarm, 8 foot length, and black finish color.

The Light Standards and Mast Arms shall be included in the item “Lighting System.”

770-P03 ORNAMENTAL LED LIGHT FIXTURE: Furnish and install the ornamental light fixture as shown on the plans. Provide Holophane Esplanade Teardrop, number ESL2 P30S 30K AS BK TG 3 S.

Include all costs associated with furnishing and installing the light standards in the price bid for “Lighting System”.

770-P04 DECORATIVE LUMINAIRE MAST ARM: The existing luminaire extension will be removed and replaced with the Millerbernd 70A203 8’ decorative luminaire mast arm and 30’ mounting height luminaire extension.

Include all costs associated with furnishing and installing the Millerbernd 70A203 8’ decorative luminaire mast arm and 30’ mounting height luminaire extension in the price bid for “Lighting System”.

770-P05 LIGHTING SYSTEM: Provide light standards that can accommodate future speakers, banners, flower baskets, and flags as shown in the plans. Include festoon circuit and flap pole holders on light standards.

The 42’ and 40’ mounted height conventional light standards shall be the davit type. Light standards shall be galvanized and painted black.

Include all costs in the price bid for “Lighting System”.

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE-5047, on 12/5/19 and the original document is stored at the North Dakota Department

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	6	5

NOTES

SECTION 150

772-P01 REVISE TRAFFIC SIGNAL SYSTEM-OPTION 1: Remove and repaint traffic signal system. This includes poles and mast arms.

1. Disconnect conductors and remove traffic signal standard from existing foundation and perform sandblasting and painting off site.
2. Remove all signs, heads and attachment hardware.
3. Completely remove all rust and paint by white metal blasting the signal standard pole and mast arm.
4. Sandblast surface to a grey-white uniform color. The surface shall be free of all oil, dirt, grease, mill scale, rust, corrosion, stains or other contaminant across 100% of the surface blasted.
5. Sandblast media shall be steel grit angular carbon steel or approved equal.
6. All sandblast material and debris become property of the Contractor and disposed of as per Section 107.17 of the Standard Specifications.
7. Mask anything galvanized and all electrical cables.
8. Prim bare metal with Devone Devran 205 primer.
9. Apply two top coats of Devthane 379UVA manufactured by Devoe High Performance Coatings, and one coat of clear coat as recommended by the top coat manufacturer. Paint signal standard black in color.
10. Apply paint in thickness according to the manufacturer's recommended film thickness. Follow manufacturer's direction for use on application of all materials.
11. Reinstall traffic signal standard on existing foundation and reattach all heads, signs and hardware.

Include all costs in the price bid for "Revise Traffic Signal System-Option 1".

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE-5047, on 12/5/19 and the original document is stored at the North Dakota Department

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	100% CITY	TOTAL
103	0100	CONTRACT BOND	L SUM	0.94	0.06	1
107	0103	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1		1
107	0104	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1		1
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	780	52	832
202	0130	REMOVAL OF CURB & GUTTER	LF	1,231	128	1,359
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY		795	795
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	77		77
203	0101	COMMON EXCAVATION-TYPE A	CY	2,252		2,252
203	0109	TOPSOIL	CY	368		368
203	0140	BORROW-EXCAVATION	CY	563		563
251	0200	SEEDING CLASS II	ACRE	0.492		0.492
251	2000	TEMPORARY COVER CROP	ACRE	0.492		0.492
253	0201	HYDRAULIC MULCH	ACRE	0.984		0.984
255	0102	ECB TYPE 2	SY	63		63
261	0112	FIBER ROLLS 12IN	LF	180		180
302	0100	SALVAGED BASE COURSE	TON	568.8		568.8
302	0101	SALVAGED BASE COURSE	CY		533	533
302	0314	TEMPORARY TRAFFIC SURFACE AGGREGATE	TON		250	250
401	0050	TACK COAT	GAL	20,493	40	20,533
401	0060	PRIME COAT	GAL	74	199	273
401	0070	FOG SEAL	GAL	20,395		20,395
411	0100	MILLING PAVEMENT SURFACE	TON	44,348		44,348
430	0142	RAP - SUPERPAVE FAA 42	TON	44,458		44,458
430	1000	CORED SAMPLE	EA	102		102
430	2000	PATCHING	TON		265	265
430	5803	PG 58S-28 ASPHALT CEMENT	TON	2,048		2,048
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	686		686
602	1260	BRIDGE DECK CRACK SEALING	LF	600		600
602	7000	SPECIAL SURFACE FINISH	SF	1,730		1,730
702	0100	MOBILIZATION	L SUM	0.94	0.06	1
704	0100	FLAGGING	MHR	1,400		1,400
704	1000	TRAFFIC CONTROL SIGNS	UNIT	3,619	861	4,480
704	1048	PORTABLE RUMBLE STRIPS	EA	2		2

ESTIMATE NUMBER: 20093 ESTIMATE TYPE: FINAL FINALIZED: N RUN DATE: 01/06/2020 TIME: 16:40:40

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	8	2

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	100% CITY	TOTAL
704	1052	TYPE III BARRICADE	EA	98	50	148
704	1054	SIDEWALK BARRICADE	EA	38	22	60
704	1056	PEDESTRIAN CHANNELIZATION	LF	583	70	653
704	1060	DELINEATOR DRUMS	EA	535	100	635
704	1067	TUBULAR MARKERS	EA	111	125	236
704	1080	STACKABLE VERTICAL PANELS	EA		50	50
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	2		2
704	1185	PILOT CAR	HR	400		400
704	2200	TEMPORARY PEDESTRIAN SURFACING	SY	63	30	93
706	0400	FIELD OFFICE	EA	1		1
706	0500	AGGREGATE LABORATORY	EA	1		1
706	0550	BITUMINOUS LABORATORY	EA	1		1
706	0600	CONTRACTOR'S LABORATORY	EA	1		1
708	1540	INLET PROTECTION-SPECIAL	EA	44		44
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY		774	774
714	2010	PIPE CONC REINF ARCH 29IN X 18IN CL II	LF	6		6
714	4216	PIPE CONDUIT ARCH 22IN X 13IN	LF	77		77
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	1		1
722	6160	ADJUST INLET	EA	17		17
724	0270	REMOVE GATE VALVE & BOX	EA		33	33
724	0290	GATE VALVE & BOX 4IN	EA		2	2
724	0300	GATE VALVE & BOX 6IN	EA		10	10
724	0310	GATE VALVE & BOX 8IN	EA		23	23
724	0400	HYDRANT-INSTALL 6IN	EA		9	9
724	0430	REMOVE HYDRANT	EA		8	8
724	0670	TEMPORARY WATER SERVICE	L SUM		1	1
724	0810	WATERMAIN 6IN PVC	LF		50	50
748	0140	CURB & GUTTER-TYPE I	LF	1,231	133	1,364
748	1020	VALLEY GUTTER 36IN	SY		4	4
750	0100	SIDEWALK CONCRETE	SY	859	46	905
750	1000	DRIVEWAY CONCRETE	SY		6	6
750	2115	DETECTABLE WARNING PANELS	SF	713		713
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	24		24

ESTIMATE NUMBER: 20093 ESTIMATE TYPE: FINAL FINALIZED: N RUN DATE: 01/06/2020 TIME: 16:40:40

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	8	3

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	100% CITY	TOTAL
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	40		40
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	429		429
754	0592	RESET SIGN PANEL	EA	24		24
760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	25.4		25.4
760	0007	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	12.7		12.7
762	0103	PVMT MK PAINTED-MESSAGE	SF	96		96
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	530		530
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	263,092		263,092
762	0434	SHORT TERM 8IN LINE-TYPE NR	LF	481		481
762	0442	SHORT TERM MESSAGE-TYPE NR	SF	1,926		1,926
762	1104	PVMT MK PAINTED 4IN LINE	LF	190,682		190,682
762	1106	PVMT MK PAINTED 6IN LINE	LF	2,645		2,645
762	1108	PVMT MK PAINTED 8IN LINE	LF	1,109		1,109
762	1124	PVMT MK PAINTED 24IN LINE	LF	365		365
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	56		56
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	36		36
766	0100	MAILBOX-ALL TYPES	EA	5		5
770	0001	LIGHTING SYSTEM	EA	1		1
770	0690	SPEAKER WIRE	LF	2,251		2,251
930	8644	SILICONE SEALANT	LF	76		76
930	9505	BRIDGE REPAIR-BEARING	L SUM	1		1
930	9612	SPALL REPAIR	SF	981		981
930	9650	ABUTMENT REPAIR	SF	2		2
930	9671	BOX CULVERT JOINT REPAIR	EA	4		4
930	9690	CURB OVERLAY	LF	16		16
		GROUP 2 ALTERNATE 'A' BID OPTION - 1				
772	2891	REVISE TRAFFIC SIGNAL SYSTEM-OPTION 1	EA	1		1

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	10	1

					Reference Points			
					RP 21.205 to RP 23.472 RP 23.620 to RP 35.496		RP 23.472 to RP 23.620	
Spec	Code	Material	Rate	Unit	Width (Ft)	Quantity per Mile	Width (Ft)	Quantity per Mile
302	0100	Salvaged Base Course	1.875 Ton/CY	Ton	-	-	-	-
401	0050	Tack Coat	0.05 Gal/SY	Gal	41.8	1,226	53.8	1,578
401	0060	Prime Coat	0.25 Gal/SY	Gal	-	-	-	-
401	0070	Fog Seal	0.05 Gal/SY	Gal	41.8	1,226	53.8	1,578
411	0100	Milling Pavement Surface	2.0 Ton/CY	Ton	40	2,666	52	3,448
430	0142	RAP - Superpave FAA 42	2.0 Ton/CY	Ton	40	2,666	52	3,448
430	5803	PG 58S-28 Asphalt Cement	4.6% of RAP	Ton	40	123	52	159

HBP Cored Samples							
Specification Section	A Length(Ft)/2000	B Lanes	C Lifts	D Sublots (AxBxC)	Quantity (D)	Quantity (1 / mile)	Unit
430.04 I.2.b(2), "Pavement Thickness Determination Cores"	-	-	-	-	-	16	EA
SP 968(14) Longitudinal Joint Density in HMA Pavements	0	0	0	0	0	-	EA
430.04 I.2.b.(1), "General"	41.5	2	1	84	84	-	EA
430.04 I.2.b.(1), "General"	0.3	2	2	2	2	-	EA
				Total	102		EA

					Reference Points			
					RP 35.496 to RP 35.800		RP 35.800 to RP 35.900 *(Sliver Grade)	
Spec	Code	Material	Rate	Unit	Width (Ft)	Quantity per Mile	Width (Ft)	Quantity per Mile
302	0100	Salvaged Base Course	1.875 Ton/CY	Ton	-	-	7.2	2,310
401	0050	Tack Coat	0.05 Gal/SY	Gal	53.3	1,564	32.2	945
					-	-	36.1	1,059
401	0060	Prime Coat	0.25 Gal/SY	Gal	-	-	5	734
401	0070	Fog Seal	0.05 Gal/SY	Gal	53.3	1,564	35	1,027
411	0100	Milling Pavement Surface	2.0 Ton/CY	Ton	52	3,434	31	2,060
430	0142	RAP - Superpave FAA 42	2.0 Ton/CY	Ton	52	3,434	35	2,595
430	5803	PG 58S-28 Asphalt Cement	4.6% of RAP	Ton	52	158	35	119

Estimated Milled Material Quantities			
Milled Material Available (Typical Section)	Milled Area (SF)	Length (Mi)	Tons (2 Ton/CY)
RP 21.205-RP 23.472	6.816	2.267	6,044
RP 23.472-RP 23.620	8.815	0.148	510
RP 23.620-RP 35.496	6.816	11.876	31,661
RP 35.496-RP 35.800	8.779	0.304	1,044
RP 35.800-RP 35.900	5.267	0.079	162
RP 35.900-RP 36.088	7.493	0.188	551
RP 36.088-RP 36.732	9.160	0.644	2,307
RP 36.732-RP 36.878	7.493	0.146	428
RP 36.909-RP 36.925	5.469	0.016	34
Approaches	-	-	1,607
		Total	44,348
		Total - 10%(Losses)	39,914
Milled Material Required for production of RAP - Superpave FAA 42 *(44,458 tons RAP-Superpave FAA 42 x 20% RAP = 8,892 tons)*			8,892
Milled Material Required for Salvage Base Course (Sliver Widening) *(192 tons Salvage Base Course x 50% RAP = 96 tons)*			96
Milled Material Required for Salvage Base Course (Approaches) *(47 tons Salvage Base Course x 50% RAP = 24 tons)*			24
Milled Material Required for Salvage Base Course (ADA Ramps) *(329 tons Salvage Base Course x 50% RAP = 165 tons)*			165
Milled Material to become the property of the NDDOT			30,737

					Reference Points			
					RP 35.900 to RP 36.088 RP 36.732 to RP 36.878		RP 36.088 to RP 36.732	
Spec	Code	Material	Rate	Unit	Width (Ft)	Quantity per Mile	Width (Ft)	Quantity per Mile
302	0100	Salvaged Base Course	1.875 Ton/CY	Ton	-	-	-	-
401	0050	Tack Coat	0.05 Gal/SY	Gal	45	1,320	55	1,613
401	0060	Prime Coat	0.25 Gal/SY	Gal	-	-	-	-
401	0070	Fog Seal	0.05 Gal/SY	Gal	45	1,320	55	1,613
411	0100	Milling Pavement Surface	2.0 Ton/CY	Ton	45	2,931	55	3,582
430	0142	RAP - Superpave FAA 42	2.0 Ton/CY	Ton	45	2,931	55	3,582
430	5803	PG 58S-28 Asphalt Cement	4.6% of RAP	Ton	45	135	55	165

					Reference Points	
					RP 36.909 to RP 36.925	
Spec	Code	Material	Rate	Unit	Width (Ft)	Quantity per Mile
302	0100	Salvaged Base Course	1.875 Ton/CY	Ton	-	-
401	0050	Tack Coat	0.05 Gal/SY	Gal	33.2	980
401	0060	Prime Coat	0.25 Gal/SY	Gal	-	-
401	0070	Fog Seal	0.05 Gal/SY	Gal	33.2	980
411	0100	Milling Pavement Surface	2.0 Ton/CY	Ton	32.5	2,139
430	0142	RAP - Superpave FAA 42	2.0 Ton/CY	Ton	32.5	2,139
430	5803	PG 58S-28 Asphalt Cement	4.6% of RAP	Ton	32.5	99

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	10	2

SPEC	CODE	BID ITEM	QTY	UNIT
Use or Location		Rate or Reference Point		
760	0005	Rumble Strips - Asphalt Shoulder		
		RP 22.229 to RP 34.920 Rt	12.7	Mi
		RP 22.229 to RP 34.920 Lt	12.7	Mi
760	0007	Rumble Strips - Asphalt Centerline		
		RP 22.229 to RP 34.920	12.7	Mi
762	430	Short Term 4IN Line - Type NR		
	Rural: RP 21.205 to RP 34.900			
		One Application		
		Edgeline White	151,330	LF
		Three Applications		
		Centerline - Skips	48,860	LF
		Centerline - Solid Skips	36,040	LF
		Centerline - Double Solid	3,010	LF
		Centerline - Middle Turn Lane	10,748	LF
		Centerline - Turn Lane Taper	5,892	LF
	Urban: RP 34.900 to RP 36.890			
		One Application		
		Edgeline White	168	LF
		Three Applications		
		Centerline - Skips	2,940	LF
		Centerline - Double Solid	4,104	LF
766	0100	Mailboxes All Types		
		RP 21.381 Lt	1	EA
		RP 22.195 Lt	1	EA
		RP 34.498 Rt	1	EA
		RP 35.202 Rt	1	EA
		RP 35.497 Rt	1	EA

Watermain Replacement

	Water	QTY	UNIT
Incidental	Aggregate: 20 Gal/ Ton Seeding: 2.8 Gal/SY/Week for 6 Weeks		

SPEC	CODE	BID ITEM	QTY	UNIT
Use or Location		Rate or Reference Point		
762	734	Short Term 8IN Line - Type NR		
	Rural: RP 21.205 to RP 34.900			
		One Application		
		Passing/Turning Lines White	481	LF
762	442	Short Term Message - Type NR		
	Rural: RP 21.205 to RP 34.900			
		One Application		
		8 Left Turn Arrows (16 SF)	128	SF
		Two Applications		
		2 Railroad Crossings (132.5 SF)	1,060	SF
	Urban: RP 34.900 to RP 36.890			
		One Application		
		8th Ave (N)/ Hwy 32 Crosswalk	156	SF
		8th Ave (S)/ Hwy 32 Crosswalk	156	SF
		5th Ave (E)/ Hwy 32 Crosswalk	47	SF
		5th Ave (E)/ Hwy 32 Stop Line	43	SF
		5th Ave (W)/ Hwy 32 Crosswalk	54	SF
		5th Ave (W)/ Hwy 32 Stop Line	43	SF
		5th Ave (N)/ Hwy 32 Crosswalk	62	SF
		5th Ave (N)/ Hwy 32 Stop Line	55	SF
		5th Ave (S)/ Hwy 32 Crosswalk	67	SF
		5th Ave (S)/ Hwy 32 Stop Line	55	SF

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	10	3

Location

SPEC	CODE	BID ITEM	QTY	UNIT
Jackson Ave SW Corner				
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.1	TON
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	4	SY
750	2115	Detectable Warning Panels	8	SF
Jackson Ave NW Corner				
202	0114	Removal of Concrete Pavement	7	SY
202	0130	Removal of Curb & Gutter	14	LF
302	0100	Salvaged Base Course	3.3	TON
748	0140	Curb & Gutter - Type 1	14	LF
750	0100	Sidewalk Concrete	7	SY
750	2115	Detectable Warning Panels	8	SF
Between Jackson Ave and 12th Ave				
708	1540	Inlet Protection - Special	7	EA
12th Ave SW Corner				
202	0114	Removal of Concrete Pavement	8	SY
202	0130	Removal of Curb & Gutter	10	LF
302	0100	Salvaged Base Course	2.8	TON
748	0140	Curb & Gutter - Type 1	10	LF
750	0100	Sidewalk Concrete	7	SY
750	2115	Detectable Warning Panels	9	SF
11th Ave SW Corner				
202	0114	Removal of Concrete Pavement	4	SY
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.4	TON
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	6	SY
750	2115	Detectable Warning Panels	9	SF
11th Ave NW Corner				
202	0114	Removal of Concrete Pavement	4	SY
202	0130	Removal of Curb & Gutter	10	LF
302	0100	Salvaged Base Course	2.5	TON
748	0140	Curb & Gutter - Type 1	10	LF
750	0100	Sidewalk Concrete	5	SY
750	2115	Detectable Warning Panels	12	SF
10th Ave SW Corner				
202	0114	Removal of Concrete Pavement	25	SY
202	0130	Removal of Curb & Gutter	46	LF
302	0100	Salvaged Base Course	12.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	46	LF
750	0100	Sidewalk Concrete	28	SY
750	2115	Detectable Warning Panels	24	SF

Location

SPEC	CODE	BID ITEM	QTY	UNIT
10th Ave NW Corner				
202	0114	Removal of Concrete Pavement	20	SY
202	0130	Removal of Curb & Gutter	27	LF
302	0100	Salvaged Base Course	8.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	27	LF
750	0100	Sidewalk Concrete	21	SY
750	2115	Detectable Warning Panels	16	SF
10th Ave SE Corner				
202	0114	Removal of Concrete Pavement	18	SY
202	0130	Removal of Curb & Gutter	38	LF
302	0100	Salvaged Base Course	10.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	38	LF
750	0100	Sidewalk Concrete	23	SY
750	2115	Detectable Warning Panels	24	SF
10th Ave NE Corner				
202	0114	Removal of Concrete Pavement	33	SY
202	0130	Removal of Curb & Gutter	25	LF
302	0100	Salvaged Base Course	10.5	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	25	LF
750	0100	Sidewalk Concrete	34	SY
750	2115	Detectable Warning Panels	23	SF
9th Ave SW Corner				
202	0114	Removal of Concrete Pavement	17	SY
202	0130	Removal of Curb & Gutter	43	LF
302	0100	Salvaged Base Course	13.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	43	LF
750	0100	Sidewalk Concrete	34	SY
750	2115	Detectable Warning Panels	21	SF
9th Ave NW Corner				
202	0114	Removal of Concrete Pavement	9	SY
202	0130	Removal of Curb & Gutter	11	LF
302	0100	Salvaged Base Course	3.9	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	11	LF
750	0100	Sidewalk Concrete	11	SY
750	2115	Detectable Warning Panels	11	SF

Location

SPEC	CODE	BID ITEM	QTY	UNIT
9th Ave SE Corner				
202	0114	Removal of Concrete Pavement	19	SY
202	0130	Removal of Curb & Gutter	23	LF
302	0100	Salvaged Base Course	7.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	23	LF
750	0100	Sidewalk Concrete	19	SY
750	2115	Detectable Warning Panels	20	SF
9th Ave NE Corner				
202	0114	Removal of Concrete Pavement	7	SY
202	0130	Removal of Curb & Gutter	28	LF
302	0100	Salvaged Base Course	8.0	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	28	LF
750	0100	Sidewalk Concrete	19	SY
750	2115	Detectable Warning Panels	10	SF
8th Ave SW Corner				
202	0114	Removal of Concrete Pavement	17	SY
202	0130	Removal of Curb & Gutter	23	LF
302	0100	Salvaged Base Course	6.9	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	23	LF
750	0100	Sidewalk Concrete	18	SY
750	2115	Detectable Warning Panels	21	SF
8th Ave NW Corner				
202	0114	Removal of Concrete Pavement	22	SY
202	0130	Removal of Curb & Gutter	20	LF
302	0100	Salvaged Base Course	7.1	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	20	LF
750	0100	Sidewalk Concrete	21	SY
750	2115	Detectable Warning Panels	12	SF
8th Ave SE Corner				
202	0114	Removal of Concrete Pavement	4	SY
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.2	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	4	SY
750	2115	Detectable Warning Panels	10	SF

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	10	4

Location

SPEC	CODE	BID ITEM	QTY	UNIT
8th Ave NE Corner				
202	0114	Removal of Concrete Pavement	8	SY
202	0130	Removal of Curb & Gutter	10	LF
302	0100	Salvaged Base Course	3.2	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	10	LF
750	0100	Sidewalk Concrete	9	SY
750	2115	Detectable Warning Panels	9	SF
7th Ave SW Corner				
202	0114	Removal of Concrete Pavement	21	SY
202	0130	Removal of Curb & Gutter	26	LF
302	0100	Salvaged Base Course	8.3	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	26	LF
750	0100	Sidewalk Concrete	22	SY
750	2115	Detectable Warning Panels	20	SF
7th Ave NW Corner				
202	0114	Removal of Concrete Pavement	24	SY
202	0130	Removal of Curb & Gutter	29	LF
302	0100	Salvaged Base Course	9.0	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	29	LF
750	0100	Sidewalk Concrete	24	SY
750	2115	Detectable Warning Panels	20	SF
7th Ave SE Corner				
202	0114	Removal of Concrete Pavement	20	SY
202	0130	Removal of Curb & Gutter	22	LF
302	0100	Salvaged Base Course	6.9	TON
748	0140	Curb & Gutter - Type 1	22	LF
750	0100	Sidewalk Concrete	18	SY
750	2115	Detectable Warning Panels	18	SF
7th Ave NE Corner				
202	0114	Removal of Concrete Pavement	21	SY
202	0130	Removal of Curb & Gutter	22	LF
302	0100	Salvaged Base Course	6.8	TON
748	0140	Curb & Gutter - Type 1	22	LF
750	0100	Sidewalk Concrete	18	SY
750	2115	Detectable Warning Panels	18	SF
6th Ave SW Corner				
202	0114	Removal of Concrete Pavement	11	SY
202	0130	Removal of Curb & Gutter	21	LF
302	0100	Salvaged Base Course	5.5	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	21	LF
750	0100	Sidewalk Concrete	12	SY
750	2115	Detectable Warning Panels	11	SF

Location

SPEC	CODE	BID ITEM	QTY	UNIT
6th Ave NW Corner				
202	0114	Removal of Concrete Pavement	25	SY
202	0130	Removal of Curb & Gutter	27	LF
302	0100	Salvaged Base Course	9.1	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	27	LF
750	0100	Sidewalk Concrete	25	SY
750	2115	Detectable Warning Panels	19	SF
6th Ave SE Corner				
202	0114	Removal of Concrete Pavement	13	SY
202	0130	Removal of Curb & Gutter	22	LF
302	0100	Salvaged Base Course	5.9	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	22	LF
750	0100	Sidewalk Concrete	14	SY
750	2115	Detectable Warning Panels	11	SF
6th Ave NE Corner				
202	0114	Removal of Concrete Pavement	42	SY
202	0130	Removal of Curb & Gutter	40	LF
302	0100	Salvaged Base Course	14.5	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	40	LF
750	0100	Sidewalk Concrete	43	SY
750	2115	Detectable Warning Panels	24	SF
5th Ave SW Corner				
202	0114	Removal of Concrete Pavement	20	SY
202	0130	Removal of Curb & Gutter	22	LF
302	0100	Salvaged Base Course	7.0	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	22	LF
750	0100	Sidewalk Concrete	19	SY
750	2115	Detectable Warning Panels	10	SF
5th Ave NW Corner				
202	0114	Removal of Concrete Pavement	30	SY
202	0130	Removal of Curb & Gutter	35	LF
302	0100	Salvaged Base Course	11.2	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	35	LF
750	0100	Sidewalk Concrete	31	SY
750	2115	Detectable Warning Panels	20	SF
5th Ave SE Corner				
202	0114	Removal of Concrete Pavement	22	SY
202	0130	Removal of Curb & Gutter	28	LF
302	0100	Salvaged Base Course	8.6	TON
748	0140	Curb & Gutter - Type 1	28	LF
750	0100	Sidewalk Concrete	22	SY
750	2115	Detectable Warning Panels	18	SF

Location

SPEC	CODE	BID ITEM	QTY	UNIT
5th Ave NE Corner				
202	0114	Removal of Concrete Pavement	26	SY
202	0130	Removal of Curb & Gutter	30	LF
302	0100	Salvaged Base Course	9.6	TON
748	0140	Curb & Gutter - Type 1	30	LF
750	0100	Sidewalk Concrete	26	SY
750	2115	Detectable Warning Panels	26	SF
4th Ave SW Corner				
202	0114	Removal of Concrete Pavement	30	SY
202	0130	Removal of Curb & Gutter	36	LF
302	0100	Salvaged Base Course	11.3	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	36	LF
750	0100	Sidewalk Concrete	30	SY
750	2115	Detectable Warning Panels	16	SF
4th Ave NW Corner				
202	0114	Removal of Concrete Pavement	28	SY
202	0130	Removal of Curb & Gutter	34	LF
302	0100	Salvaged Base Course	10.6	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	34	LF
750	0100	Sidewalk Concrete	28	SY
750	2115	Detectable Warning Panels	20	SF
4th Ave SE Corner				
202	0114	Removal of Concrete Pavement	23	SY
202	0130	Removal of Curb & Gutter	30	LF
302	0100	Salvaged Base Course	9.0	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	30	LF
750	0100	Sidewalk Concrete	23	SY
750	2115	Detectable Warning Panels	18	SF
4th Ave NE Corner				
202	0114	Removal of Concrete Pavement	20	SY
202	0130	Removal of Curb & Gutter	28	LF
302	0100	Salvaged Base Course	8.3	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	28	LF
750	0100	Sidewalk Concrete	21	SY
750	2115	Detectable Warning Panels	21	SF

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 01/02/20 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	10	5

Location				
SPEC	CODE	BID ITEM	QTY	UNIT
Between 4th Ave & 3rd Ave				
708	1540	Inlet Protection - Special	1	EA
3rd Ave SW Corner				
202	0114	Removal of Concrete Pavement	29	SY
202	0130	Removal of Curb & Gutter	32	LF
302	0100	Salvaged Base Course	10.5	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	32	LF
750	0100	Sidewalk Concrete	29	SY
750	2115	Detectable Warning Panels	20	SF
3rd Ave NW Corner				
202	0114	Removal of Concrete Pavement	18	SY
202	0130	Removal of Curb & Gutter	26	LF
302	0100	Salvaged Base Course	7.7	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	26	LF
750	0100	Sidewalk Concrete	19	SY
750	2115	Detectable Warning Panels	20	SF
3rd Ave SE Corner				
202	0114	Removal of Concrete Pavement	32	SY
202	0130	Removal of Curb & Gutter	35	LF
302	0100	Salvaged Base Course	11.6	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	35	LF
750	0100	Sidewalk Concrete	32	SY
750	2115	Detectable Warning Panels	20	SF
3rd Ave NE Corner				
202	0114	Removal of Concrete Pavement	20	SY
202	0130	Removal of Curb & Gutter	28	LF
302	0100	Salvaged Base Course	8.2	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	28	LF
750	0100	Sidewalk Concrete	21	SY
750	2115	Detectable Warning Panels	16	SF
Between 3rd Ave & 2nd Ave				
708	1540	Inlet Protection - Special	1	EA

Location				
SPEC	CODE	BID ITEM	QTY	UNIT
2nd Ave SW Corner				
202	0114	Removal of Concrete Pavement	18	SY
202	0130	Removal of Curb & Gutter	24	LF
302	0100	Salvaged Base Course	7.3	TON
708	1540	Inlet Protection - Special	1	EA
722	6160	Adjust Inlet	1	EA
748	0140	Curb & Gutter - Type 1	24	LF
750	0100	Sidewalk Concrete	19	SY
750	2115	Detectable Warning Panels	17	SF
2nd Ave NW Corner				
202	0114	Removal of Concrete Pavement	5	SY
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.5	TON
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	7	SY
750	2115	Detectable Warning Panels	8	SF
2nd Ave SE Corner				
202	0114	Removal of Concrete Pavement	23	SY
202	0130	Removal of Curb & Gutter	26	LF
302	0100	Salvaged Base Course	8.4	TON
748	0140	Curb & Gutter - Type 1	26	LF
750	0100	Sidewalk Concrete	23	SY
750	2115	Detectable Warning Panels	18	SF
2nd Ave NE Corner				
202	0114	Removal of Concrete Pavement	4	SY
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.3	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	5	SY
750	2115	Detectable Warning Panels	9	SF
1st Ave SE Corner				
202	0114	Removal of Concrete Pavement	4	SY
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.3	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	5	SY
750	2115	Detectable Warning Panels	8	SF

Location				
SPEC	CODE	BID ITEM	QTY	UNIT
1st Ave NE Corner				
202	0114	Removal of Concrete Pavement	17	SY
202	0130	Removal of Curb & Gutter	36	LF
302	0100	Salvaged Base Course	8.6	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	36	LF
750	0100	Sidewalk Concrete	18	SY
750	2115	Detectable Warning Panels	10	SF
1st Ave West Side				
708	1540	Inlet Protection - Special	1	EA
Between 1st Ave & South of Bridge (East Side)				
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	3.3	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	10	SY
750	2115	Detectable Warning Panels	10	SF
Between 1st Ave & South of Bridge (West Side)				
202	0130	Removal of Curb & Gutter	9	LF
302	0100	Salvaged Base Course	2.7	TON
708	1540	Inlet Protection - Special	1	EA
748	0140	Curb & Gutter - Type 1	9	LF
750	0100	Sidewalk Concrete	7	SY
750	2115	Detectable Warning Panels	10	SF
Riverside SW Corner				
202	0114	Removal of Concrete Pavement	7	SY
202	0130	Removal of Curb & Gutter	22	LF
302	0100	Salvaged Base Course	5.8	TON
748	0140	Curb & Gutter - Type 1	22	LF
750	0100	Sidewalk Concrete	13	SY
750	2115	Detectable Warning Panels	10	SF

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/12/19 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	11	1

Common Excavation Type A (Pay Item)	Embankment*	Borrow Excavation (Pay Item)	Topsoil (Pay Item)
CY	CY	CY	CY
I	J	K=J-I	L
2252	2598	346	368

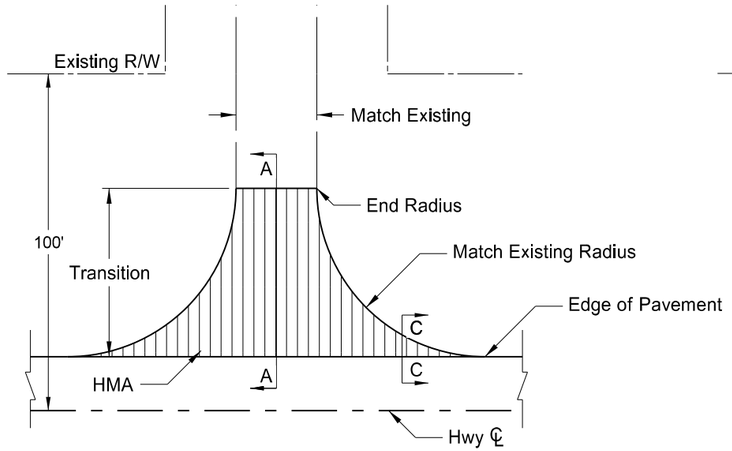
* 25% volume was added to embankment volumes to allow for shrinkage.

This document was originally issued and sealed by Aaron Murra Registration Number PE- 6536 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

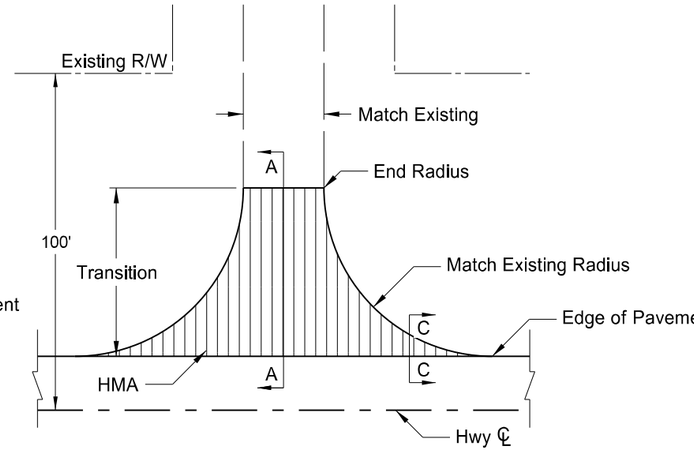
Earthwork Summary

ND 32 - W Jct 13 N to Riverside Dr Lisbon

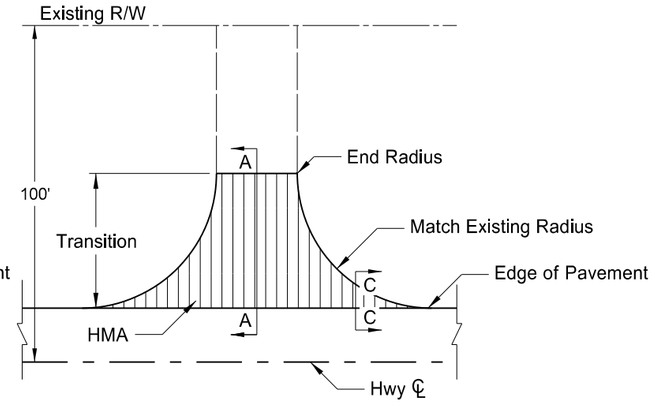
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	20	1



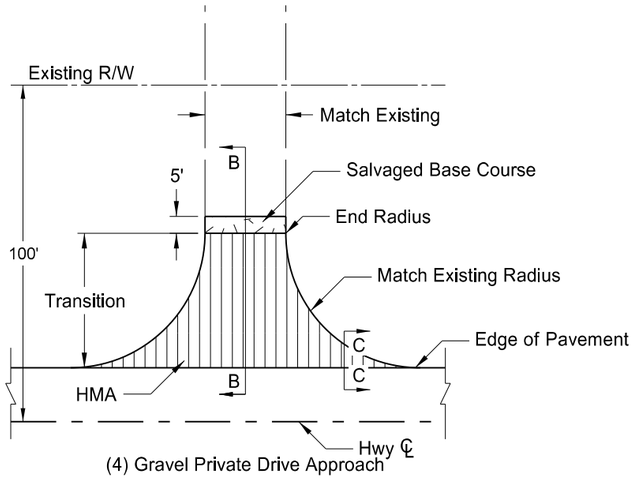
(1) Paved Section Line, County Road, or Street Approach



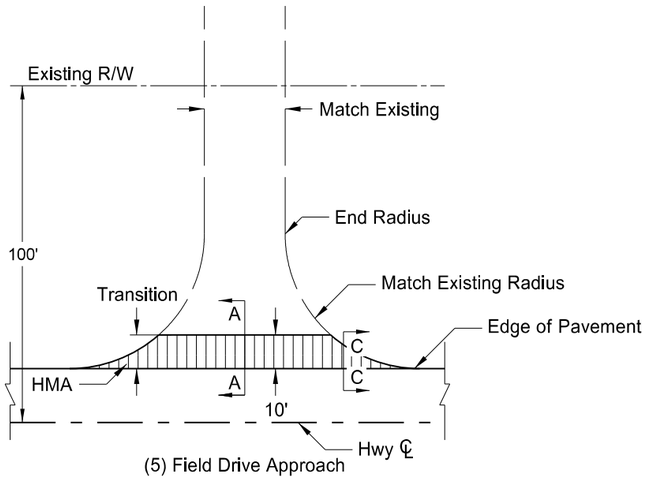
(2) Gravel Section Line, County Road, or Street Approach



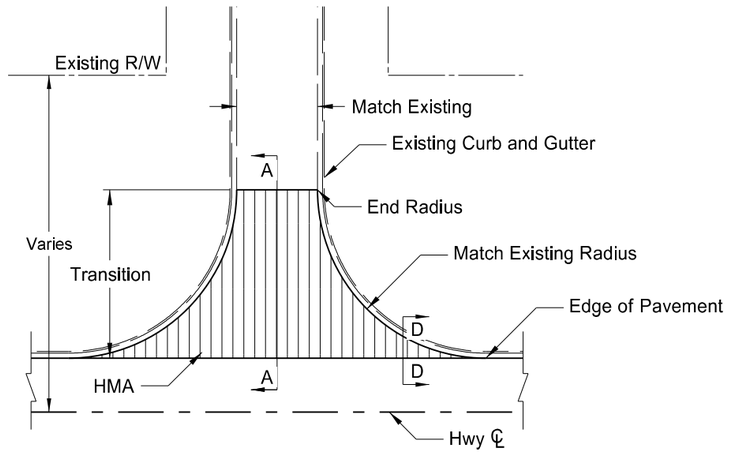
(3) Paved Private Drive Approach



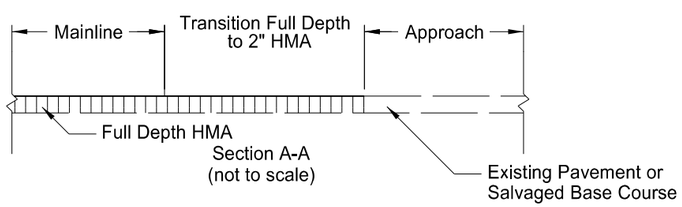
(4) Gravel Private Drive Approach



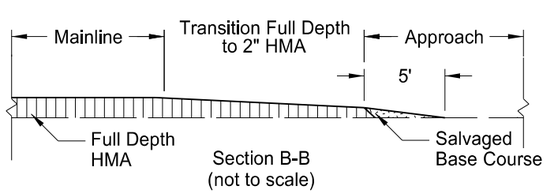
(5) Field Drive Approach



(6) Paved Urban Approach



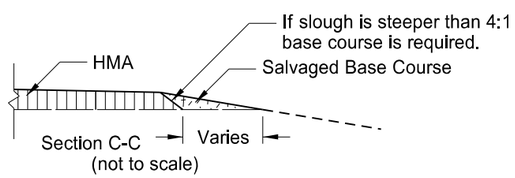
Section A-A
(not to scale)



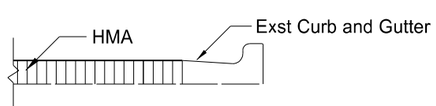
Section B-B
(not to scale)

Notes:

1. Actual RAP - Superpave FAA 42 and Salvaged Base Course locations may vary in the field, as approved by the Engineer.
2. Quantity totals have been included in the bid items of the "Estimated Quantities" of the plans.
3. Salvaged Base Course has been provided in the quantities to fill in around the radii. This material will be required when sloughs are steeper than 4:1 (see section C-C).



Section C-C
(not to scale)



Section D-D
(not to scale)

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/11/19 and the original document is stored at the North Dakota Department of Transportation

Approach Paving Detail

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	2

RP	Location	Type	Street	2" Salvaged Base Course (TON)	Tack Coat (GAL)	2" RAP Superpave FAA 42 (TON)	PG 58S-28 Asphalt Cement (TON)
21.285	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
21.294	RT	Paved Private Drive		0.2	6.2	13.7	0.7
21.343	LT	Paved Private Drive		0.2	6.2	13.7	0.7
21.343	RT	Field Drive		0.1	2.0	4.4	0.3
21.502	LT	Paved Section Line		0.5	27.0	59.8	2.8
21.520	RT	Field Drive		0.1	2.0	4.4	0.3
21.693	LT	Field Drive		0.1	2.0	4.4	0.3
21.693	RT	Field Drive		0.1	2.0	4.4	0.3
21.910	LT	Field Drive		0.1	2.0	4.4	0.3
22.160	RT	Gravel Private Drive		0.8	2.0	4.4	0.3
22.180	RT	Paved Private Drive		0.2	3.9	8.5	0.4
22.200	LT	Gravel Section Line	81st St SE	0.3	9.2	20.3	1.0
22.200	RT	Gravel Section Line	81st St SE	0.2	6.2	13.7	0.7
22.469	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
22.469	RT	Field Drive		0.1	2.9	6.3	0.3
22.694	RT	Field Drive		0.1	3.0	6.7	0.4
22.837	LT	Field Drive		0.1	2.5	5.5	0.3
22.875	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
23.128	LT	Paved Private Drive		0.2	6.2	13.7	0.7
23.198	LT	Field Drive		0.1	2.8	6.2	0.3
23.198	RT	Gravel Section Line	80th St SE	0.3	9.2	20.3	1.0
23.440	RT	Field Drive		0.1	2.5	5.4	0.3
23.768	LT	Field Drive		0.1	3.0	6.6	0.4
23.768	RT	Field Drive		0.1	2.4	5.3	0.3
24.149	RT	Field Drive		0.1	2.4	5.3	0.3
24.199	LT	Paved Section Line	79th St SE	0.4	13.2	29.2	1.4
24.199	RT	Gravel Section Line	79th St SE	0.3	9.2	20.3	1.0
24.694	LT	Field Drive		0.1	2.5	5.4	0.3
24.694	RT	Field Drive		0.1	3.2	7.0	0.4
25.102	RT	Gravel Section Line	78th St SE	0.3	9.2	20.3	1.0
25.198	LT	Gravel Section Line	78th St SE	0.3	9.0	19.9	1.0
25.643	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
25.724	LT	Field Drive		0.1	3.2	6.9	0.4
26.184	LT	Field Drive		0.1	2.8	6.2	0.3
26.184	RT	Gravel Section Line	77th St SE	0.3	9.2	20.3	1.0
26.688	LT	Field Drive		0.1	2.7	5.9	0.3
26.688	RT	Field Drive		0.1	3.5	7.7	0.4
26.961	LT	Gravel Private Drive		0.6	4.5	10.0	0.5
27.186	LT	Gravel Section Line	76th St SE	0.3	9.2	20.3	1.0
27.186	RT	Field Drive		0.1	2.0	4.4	0.3

RP	Location	Type	Street	2" Salvaged Base Course (TON)	Tack Coat (GAL)	2" RAP Superpave FAA 42 (TON)	PG 58S-28 Asphalt Cement (TON)
27.237	RT	Field Drive		0.1	2.0	4.4	0.3
27.250	LT	Paved Private Drive		0.2	6.2	13.7	0.7
27.775	LT	Field Drive		0.1	2.0	4.4	0.3
27.775	RT	Field Drive		0.1	2.0	4.4	0.3
27.954	RT	Field Drive		0.1	2.0	4.4	0.3
28.184	LT	Field Drive		0.1	2.0	4.4	0.3
28.184	RT	Gravel Section Line	75th St SE	0.3	9.2	20.3	1.0
28.449	LT	Field Drive		0.1	2.0	4.4	0.3
28.449	RT	Field Drive		0.1	2.0	4.4	0.3
28.808	RT	Field Drive		0.1	2.0	4.4	0.3
29.044	LT	Field Drive		0.1	2.0	4.4	0.3
29.137	RT	Field Drive		0.1	2.0	4.4	0.3
29.188	LT	Gravel Section Line	74th St SE	0.3	9.2	20.3	1.0
29.188	RT	Gravel Section Line	74th St SE	0.3	9.2	20.3	1.0
29.258	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
29.407	LT	Field Drive		0.1	2.0	4.4	0.3
29.663	LT	Field Drive		0.1	2.0	4.4	0.3
29.663	RT	Field Drive		0.1	2.0	4.4	0.3
30.001	RT	Field Drive		0.1	2.0	4.4	0.3
30.191	LT	Gravel Section Line	73rd St SE	0.3	9.2	20.3	1.0
30.191	RT	Gravel Section Line	73th St SE	0.3	9.2	20.3	1.0
30.443	LT	Field Drive		0.1	2.0	4.4	0.3
30.709	LT	Field Drive		0.1	2.0	4.4	0.3
30.845	RT	Field Drive		0.1	2.0	4.4	0.3
30.955	RT	Gravel Private Drive		0.9	6.0	13.2	0.7
31.206	LT	Gravel Section Line	72th St SE	0.2	9.7	21.5	1.0
31.206	RT	Gravel Section Line	72th St SE	0.2	8.4	18.7	0.9
31.536	LT	Field Drive		0.1	3.0	6.6	0.4
31.536	RT	Field Drive		0.1	2.8	6.1	0.3
31.796	RT	Field Drive		0.1	3.0	6.5	0.3
31.813	LT	Field Drive		0.1	3.6	7.9	0.4
32.122	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
32.122	RT	Field Drive		0.1	3.0	6.6	0.4
32.488	LT	Field Drive		0.1	2.8	6.1	0.3
32.544	RT	Gravel Private Drive	71st St SE	0.9	7.4	16.2	0.8
32.614	LT	Field Drive		0.1	2.7	5.9	0.3
32.614	RT	Field Drive		0.1	2.8	6.1	0.3
32.766	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
32.839	LT	Gravel Private Drive		0.9	6.2	13.7	0.7

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Approach Quantities

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	3

RP	Location	Type	Street	2" Salvaged Base Couse (TON)	Tack Coat (GAL)	2" RAP Superpave FAA 42 (TON)	PG 58S-28 Asphalt Cement (TON)
32.952	RT	Gravel Private Drive		0.9	6.3	13.8	0.7
33.025	RT	Field Drive		0.1	2.8	6.2	0.3
33.068	LT	Gravel Private Drive		0.9	6.1	13.5	0.7
33.479	RT	Field Drive		0.1	2.9	6.3	0.3
33.886	LT	Gravel Section Line	71st St SE	0.3	9.1	20.0	1.0
33.981	RT	Paved Section Line	69 1/2 St SE	0.3	11.2	24.8	1.2
34.039	LT	Gravel Private Drive		0.9	6.2	13.6	0.7
34.076	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.177	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.199	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.266	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.266	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.349	LT	Gravel Private Drive	69th St SE	0.9	6.2	13.7	0.7
34.349	RT	Gravel Private Drive	Willow Rd	0.9	6.2	13.7	0.7
34.455	RT	Gravel Private Drive	Birch Rd	0.9	6.2	13.7	0.7
34.485	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.493	RT	Gravel Private Drive	69th St SE	0.9	6.2	13.7	0.7
34.932	LT	Field Drive		0.1	2.0	4.4	0.3
34.934	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
34.934	RT	Field Drive		0.1	2.0	4.4	0.3
35.032	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.041	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.088	LT	Paved Private Drive		0.2	6.2	13.7	0.7
35.105	RT	Paved Private Drive		0.2	6.2	13.7	0.7
35.12	LT	Paved Private Drive		0.2	6.2	13.7	0.7
35.156	LT	Paved Private Drive		0.2	6.2	13.7	0.7
35.196	RT	Paved Private Drive		0.2	6.2	13.7	0.7
35.217	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.261	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.298	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.431	LT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.493	LT	Gravel Section Line	68th St SE	0.3	9.2	20.3	1.0
35.493	RT	Gravel Private Drive	68th St SE	0.9	6.2	13.7	0.7
35.565	RT	Paved Private Drive		0.2	6.2	13.7	0.7
35.582	RT	Paved Section Line	17th Ave E	0.3	12.0	26.6	1.3
35.727	RT	Paved Section Line	15th Ave E	0.3	12.0	26.6	1.3
35.778	RT	Gravel Private Drive		0.9	6.2	13.7	0.7
35.835	LT	Gravel Section Line	14th Ave E	0.3	13.6	30.1	1.4
35.848	RT	Gravel Private Drive		0.9	2.1	4.5	0.3
35.869	RT	Gravel Private Drive		0.9	2.1	4.5	0.3

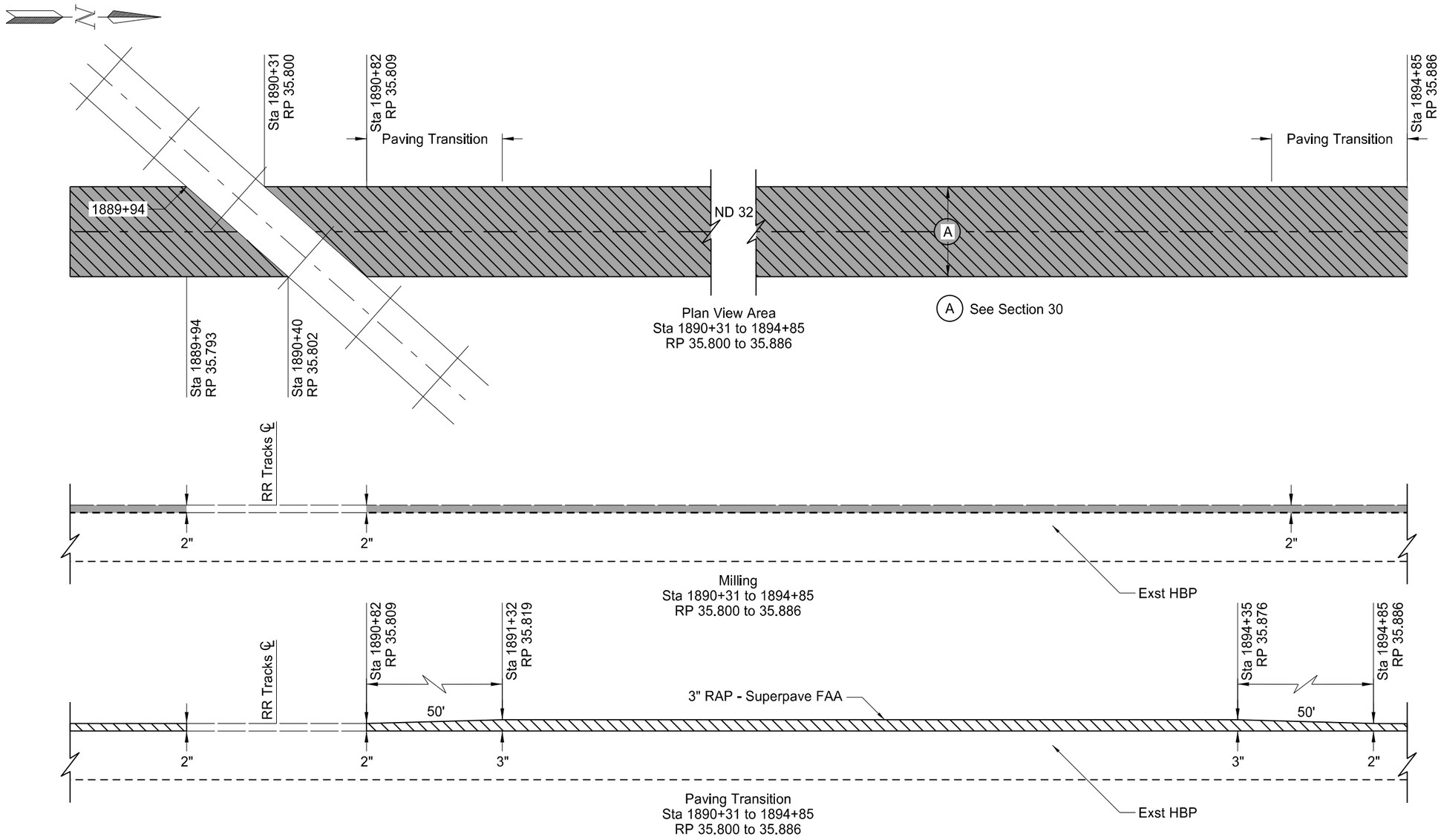
RP	Location	Type	Street	Tack Coat (GAL)	2" RAP Superpave FAA 42 (TON)	PG 58S-28 Asphalt Cement (TON)
35.900	LT	Paved Urban Approach	Jackson Ave W	11.6	25.6	1.2
35.900	RT	Paved Urban Approach	Jackson Ave W	9.2	20.4	1.0
36.031	LT	Paved Urban Approach	12th Ave W	8.4	18.7	0.9
36.115	LT	Paved Urban Approach	11th Ave W	3.3	7.3	0.4
36.185	LT	Paved Urban Approach	10th Ave W	3.3	7.3	0.4
36.185	RT	Paved Urban Approach	10th Ave E	3.3	7.3	0.4
36.247	LT	Paved Urban Approach	9th Ave W	3.1	6.8	0.3
36.247	RT	Paved Urban Approach	9th Ave E	3.1	6.8	0.3
36.309	LT	Paved Urban Approach	8th Ave W	3.1	6.8	0.3
36.309	RT	Paved Urban Approach	8th Ave E	3.1	6.8	0.3
36.378	LT	Paved Urban Approach	7th Ave W	3.1	6.8	0.3
36.448	LT	Paved Urban Approach	6th Ave W	3.1	6.8	0.3
36.517	LT	Paved Urban Approach	5th Ave W	7.0	15.4	0.8
36.517	RT	Paved Urban Approach	5th Ave E	3.9	8.6	0.4
36.586	LT	Paved Urban Approach	4th Ave W	3.9	8.6	0.4
36.586	RT	Paved Urban Approach	4th Ave E	3.9	8.6	0.4
36.656	LT	Paved Urban Approach	3rd Ave W	3.1	6.8	0.3
36.656	RT	Paved Urban Approach	3rd Ave E	3.9	8.6	0.4
36.725	LT	Paved Urban Approach	2nd Ave W	3.1	6.8	0.3
36.725	RT	Paved Urban Approach	2nd Ave E	3.1	6.7	0.3
36.794	RT	Paved Urban Approach	1st Ave E	3.1	6.8	0.3

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/11/19 and the original document is stored at the North Dakota Department of Transportation

Approach Quantities

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	20	4



2" Mill

Overlay

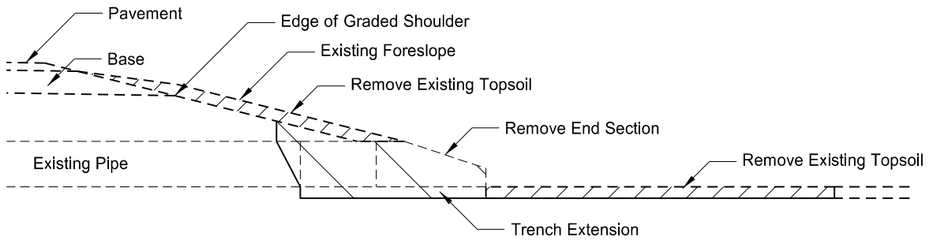
Notes:
1. Drawing is not to scale
2. Provide a minimum of 50 feet per 1 inch of lift for paving transition

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Milling and Paving Transition Details

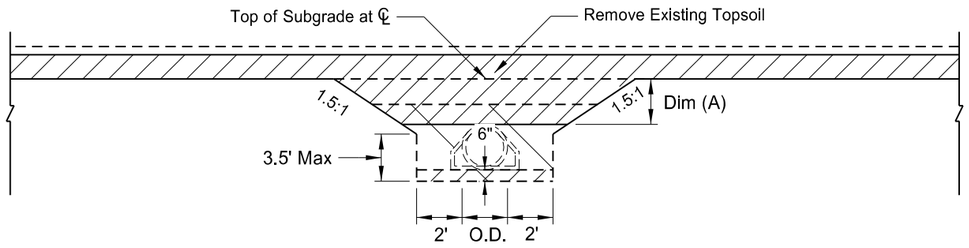
ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	20	5



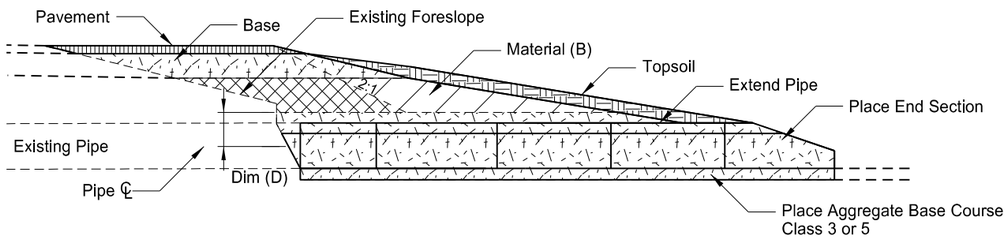
Removal Section

Cross Section View



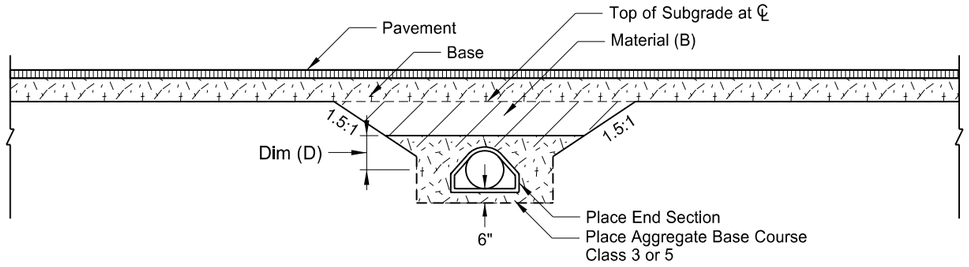
Removal Detail

Side View



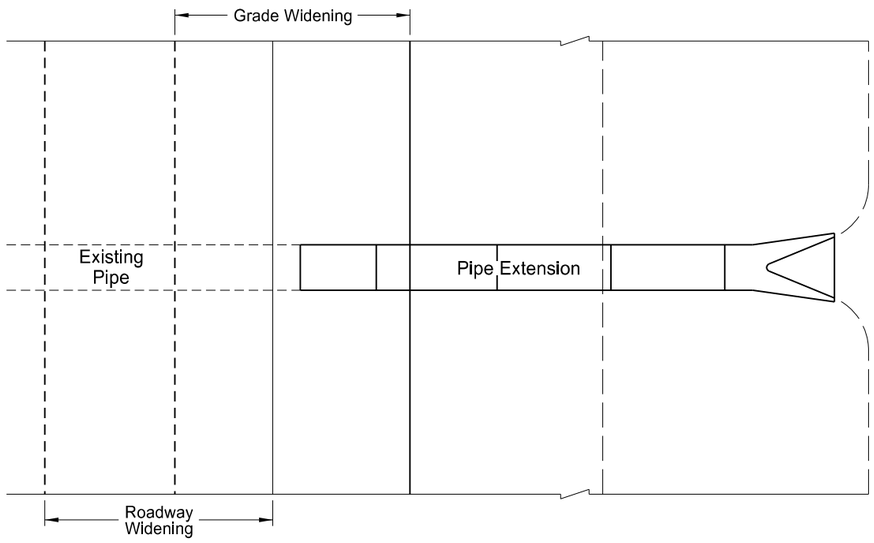
Proposed Section

Cross Section View



Backfill Detail

Side View (Topsoil not shown)



Proposed Section

Plan View

Pay Items

1) Pipe*
2) Remove & Relay Pipe - All Types & Sizes (when required)
3) Remove & Reset End Section or
   Remove End Section and Place New End Section
4) Borrow Excavation or Common Excavation
5) Topsoil
6) Seeding
7) Mulching

*Included in Pipe Pay Item

1) Pipe
2) Trench excavation
3) Aggregate Base Course Class 3 or Class 5

Pipe Materials	Dim (A)<=4 Feet		Backfill Dimension
	Material (B)	Material (C)	Dim (D)
Concrete	Embank or Aggr	Aggregate	0.5 O.D.
Metal	Embank or Aggr	Aggregate	0.5 O.D.+1 Foot

Pipe Materials	Dim (A)>4 Feet		Backfill Dimension
	Material (B)	Material (C)	Dim (D)
Concrete	Embankment	Embankment	0.5 O.D.
Metal	Embankment	Embankment	0.5 O.D.+1 Foot

NOTES:

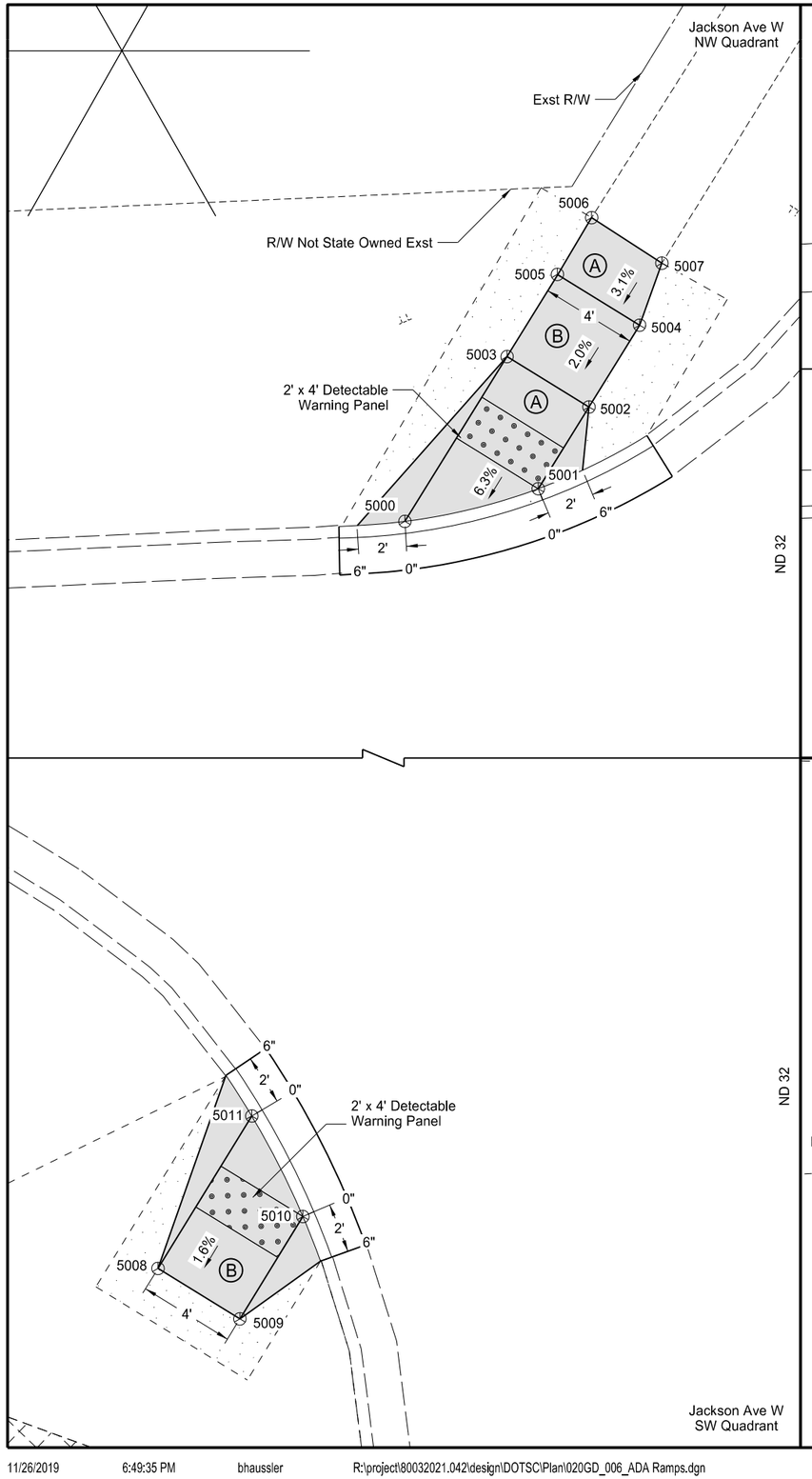
1. Embankment may be either Borrow Excavation or Common Excavation
2. Aggregate may be either Class 3 or Class 5 Aggregate Base Course.

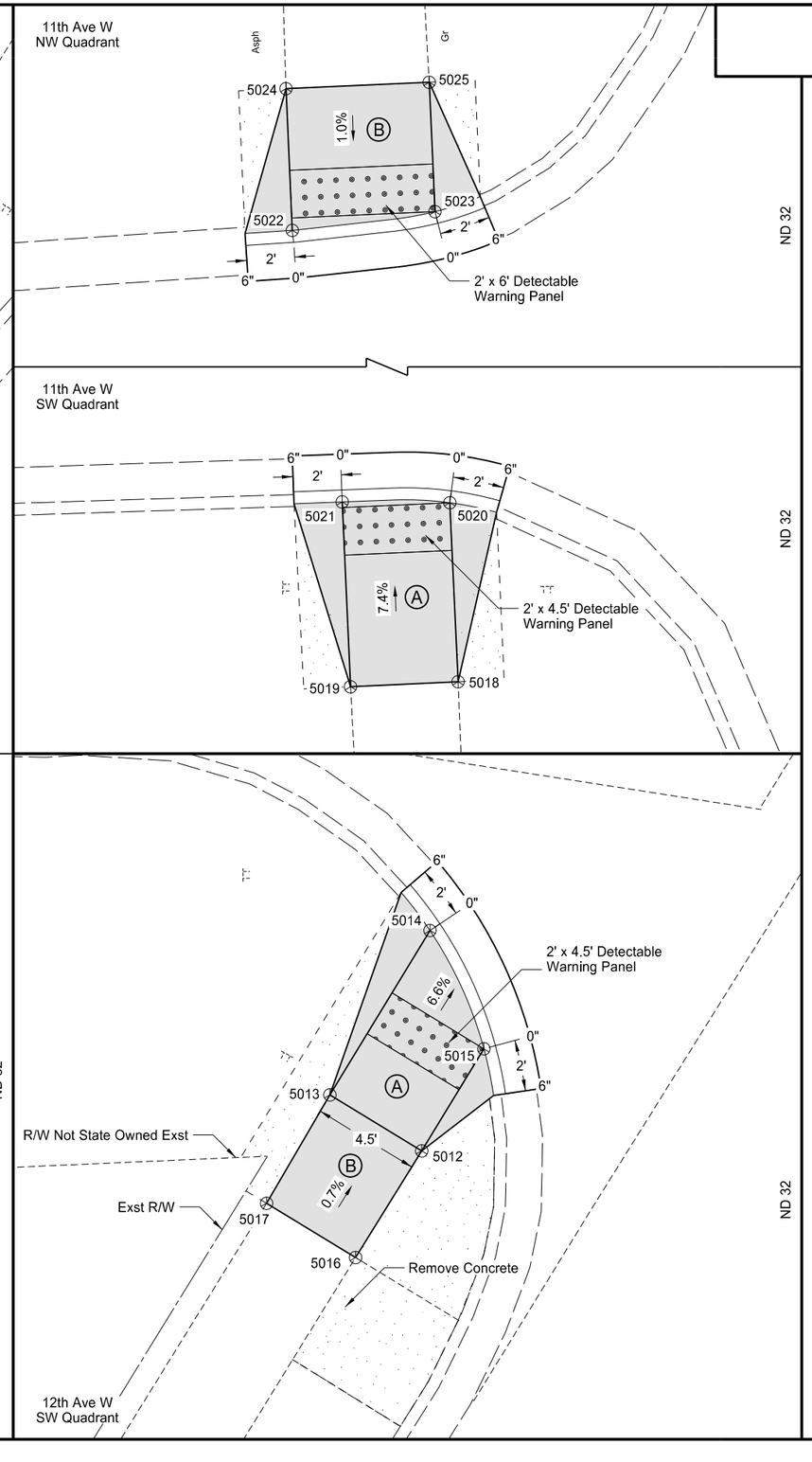
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Mainline ℄ Pipe Extension Detail

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	6





Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5000	292254.27	2678723.15	1895+65.59	-33.6	1090.80
5001	292255.62	2678728.70	1895+69.66	-29.6	1090.74
5002	292259.03	2678730.81	1895+73.66	-29.6	1091.07
5003	292261.12	2678727.41	1895+73.66	-33.6	1091.15
5004	292262.43	2678732.92	1895+77.66	-29.6	1091.15
5005	292264.52	2678729.51	1895+77.66	-33.6	1091.23
5006	292266.90	2678730.93	1895+80.42	-33.6	Match Exst
5007	292265.01	2678733.85	1895+80.34	-30.1	Match Exst
5008	292198.45	2678688.82	1895+00.10	-33.6	Match Exst
5009	292196.35	2678692.22	1895+00.09	-29.6	Match Exst
5010	292200.61	2678694.84	1895+05.06	-29.6	1092.33
5011	292204.79	2678692.72	1895+07.50	-33.6	1092.24
5012	292788.89	2679056.87	1901+95.81	-29.6	1088.53
5013	292791.23	2679053.03	1901+95.79	-34.1	1088.60
5014	292798.10	2679057.22	1902+03.84	-34.2	1088.19
5015	292793.16	2679059.48	1902+00.81	-29.6	1088.12
5016	292784.43	2679054.10	1901+90.56	-29.6	Match Exst
5017	292786.69	2679050.38	1901+90.54	-34.0	Match Exst
5018	293208.25	2679239.76	1906+82.09	-36.1	Match Exst
5019	293208.03	2679235.26	1906+82.08	-40.6	Match Exst
5020	293215.74	2679239.42	1906+89.59	-36.1	1090.59
5021	293215.77	2679234.91	1906+89.82	-40.6	1090.52
5022	293246.51	2679233.06	1907+20.61	-41.2	1090.56
5023	293247.29	2679239.03	1907+21.13	-35.2	1090.60
5024	293252.43	2679232.80	1907+26.54	-41.2	Match Exst
5025	293252.70	2679238.79	1907+26.55	-35.2	Match Exst

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

N

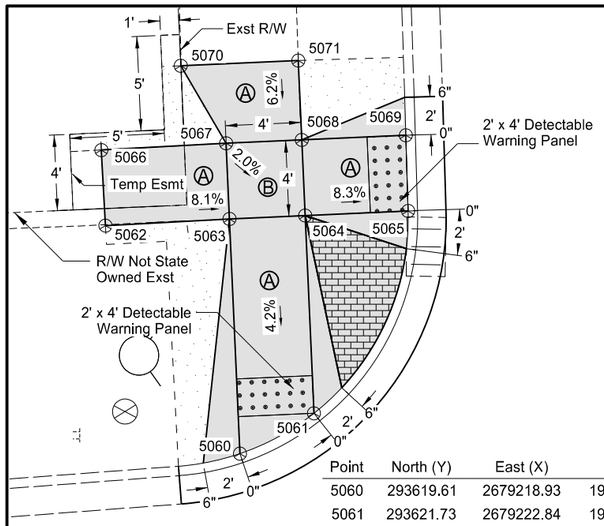
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

ADA Ramps
Jackson Ave, 12th Ave W, 11th Ave W

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	7

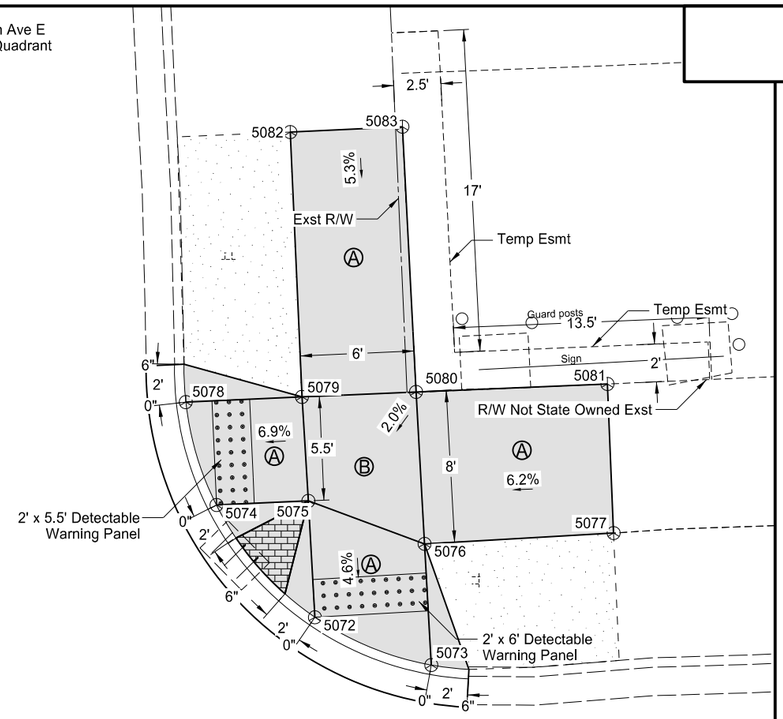
10th Ave W
NW Quadrant



ND 32

Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5060	293619.61	2679218.93	1910+93.97	-39.0	1089.24
5061	293621.73	2679222.84	1910+95.93	-35.0	1089.23
5062	293631.65	2679211.83	1911+06.31	-45.6	Match Exst
5063	293632.00	2679218.38	1911+06.38	-39.0	1089.70
5064	293632.18	2679222.37	1911+06.38	-35.0	1089.62
5065	293632.42	2679227.81	1911+06.39	-29.6	1089.19
5066	293635.64	2679211.61	1911+10.31	-45.6	Match Exst
5067	293636.00	2679218.20	1911+10.38	-39.0	1089.78
5068	293636.18	2679222.20	1911+10.38	-35.0	1089.70
5069	293636.42	2679227.69	1911+10.39	-29.5	1089.28
5070	293640.09	2679215.80	1911+14.57	-41.3	Match Exst
5071	293640.37	2679222.01	1911+14.57	-35.0	Match Exst

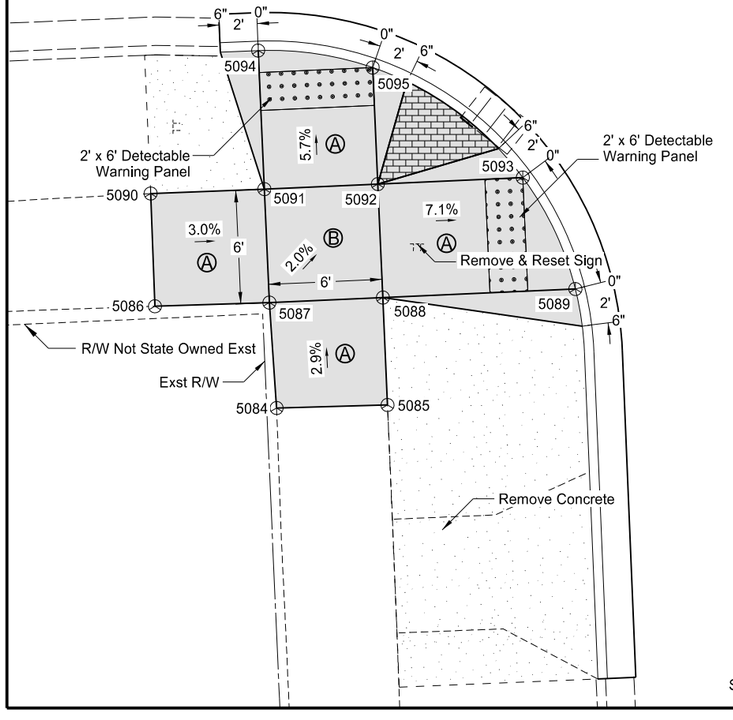
10th Ave E
NE Quadrant



ND 32

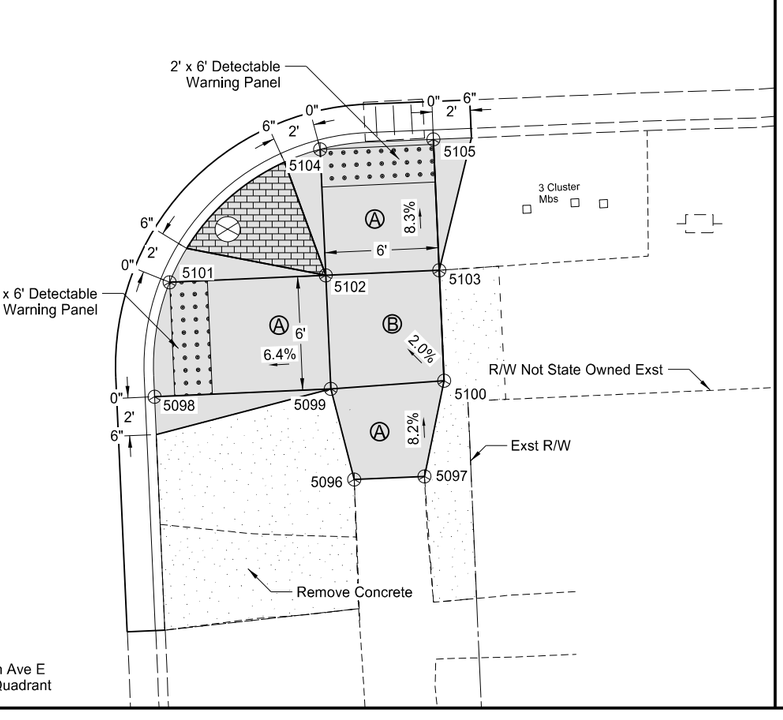
Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5072	293624.50	2679293.68	1910+95.60	35.9	1089.32
5073	293621.98	2679299.83	1910+92.81	41.9	1089.47
5074	293630.43	2679288.48	1911+01.75	30.9	1089.25
5075	293630.64	2679293.34	1911+01.76	35.8	1089.63
5076	293628.37	2679299.47	1910+99.22	41.8	1089.73
5077	293628.94	2679309.46	1910+99.36	51.8	Match Exst
5078	293635.86	2679286.86	1911+07.25	29.6	1089.40
5079	293636.13	2679293.00	1911+07.26	35.7	1089.70
5080	293636.40	2679299.02	1911+07.26	41.7	1089.79
5081	293636.82	2679309.13	1911+07.24	51.8	Match Exst
5082	293650.12	2679292.38	1911+21.26	35.7	Match Exst
5083	293650.40	2679298.30	1911+21.28	41.6	Match Exst
5084	293561.83	2679219.74	1910+36.21	-40.7	Match Exst
5085	293561.99	2679225.60	1910+36.11	-34.9	Match Exst
5086	293567.20	2679213.31	1910+41.86	-46.9	Match Exst
5087	293567.39	2679219.36	1910+41.79	-40.9	1089.79
5088	293567.66	2679225.35	1910+41.79	-34.9	1089.75
5089	293568.11	2679235.52	1910+41.80	-24.7	1089.11
5090	293573.15	2679213.09	1910+47.81	-46.9	Match Exst
5091	293573.39	2679219.09	1910+47.79	-40.9	1089.75
5092	293573.65	2679225.09	1910+47.79	-34.9	1089.63
5093	293573.99	2679232.74	1910+47.80	-27.2	1088.99
5094	293580.70	2679218.77	1910+55.11	-40.9	1089.34
5095	293579.81	2679224.81	1910+53.95	-34.9	1089.28
5096	293566.27	2679295.42	1910+37.36	35.1	Match Exst
5097	293566.44	2679299.12	1910+37.36	38.8	Match Exst
5098	293570.64	2679284.87	1910+42.18	24.7	1089.43
5099	293571.06	2679294.18	1910+42.19	34.0	1090.03
5100	293571.49	2679300.17	1910+42.36	40.0	1090.07
5101	293576.69	2679285.66	1910+48.18	25.8	1089.38
5102	293577.05	2679293.91	1910+48.19	34.0	1089.91
5103	293577.32	2679299.91	1910+48.20	40.0	1090.02
5104	293583.71	2679293.62	1910+54.85	34.0	1089.36
5105	293584.23	2679299.60	1910+55.12	40.0	1089.45

10th Ave W
SW Quadrant



ND 32

10th Ave E
SE Quadrant



ND 32

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

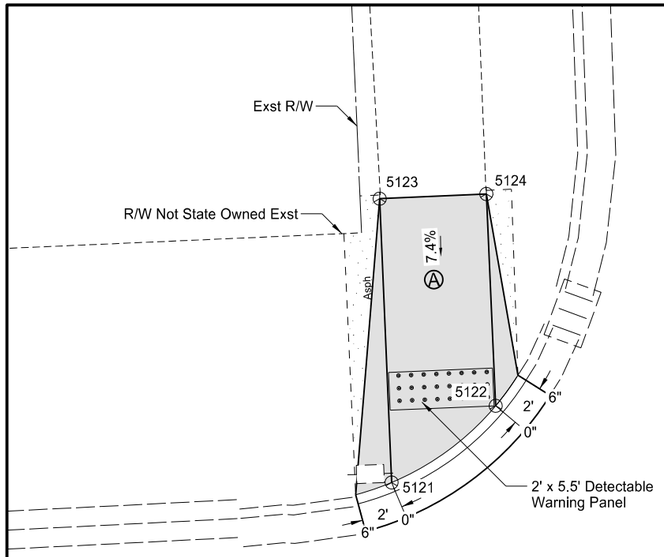
ADA Ramps
10th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

11/26/2019 6:49:46 PM bhaussler R:\project\80032021.042\design\DOTSC\Plan\020GD_007_ADA Ramps.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	8

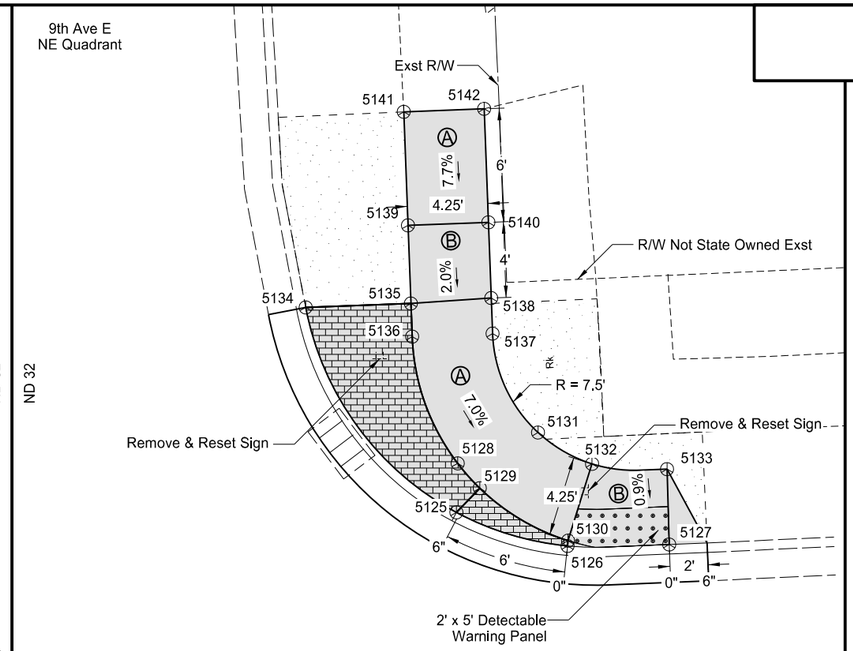
9th Ave W
NW Quadrant



ND 32

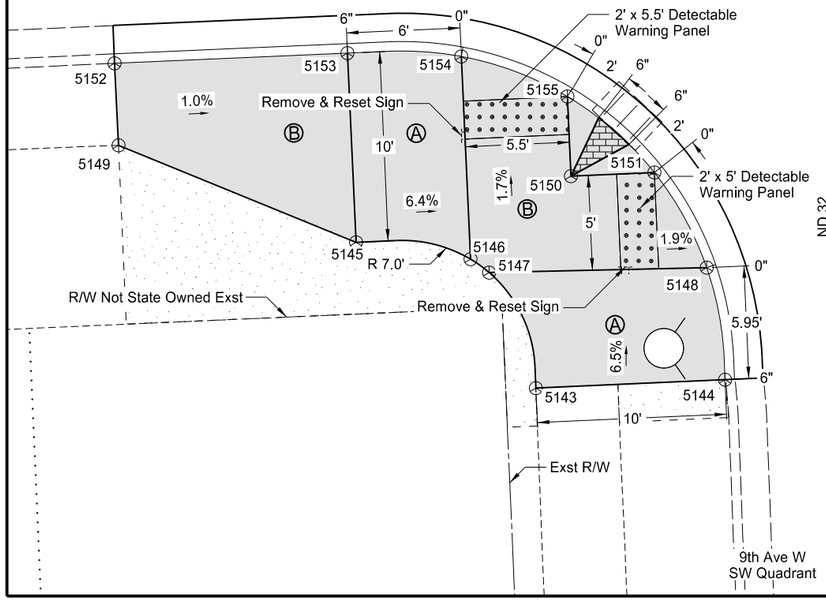
Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5121	293945.24	2679203.52	1914+19.97	-40.2	1089.52
5122	293949.29	2679209.02	1914+23.78	-34.6	1089.41
5123	293960.42	2679202.88	1914+35.16	-40.2	Match Exst
5124	293960.67	2679208.51	1914+35.17	-34.6	Match Exst

9th Ave E
NE Quadrant



ND 32

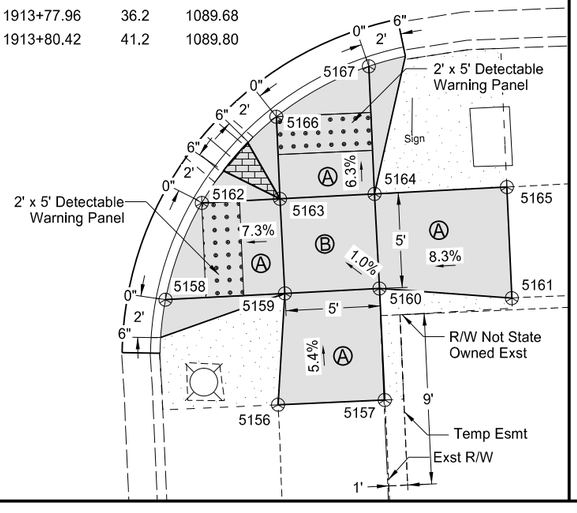
Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5125	293949.90	2679281.69	1914+21.22	38.1	1090.19
5126	293948.13	2679287.56	1914+19.19	43.8	1089.78
5127	293948.21	2679292.93	1914+19.03	49.2	1089.75
5128	293952.49	2679281.76	1914+23.80	38.2	1090.19
5129	293951.18	2679282.92	1914+22.44	39.3	1090.10
5130	293948.41	2679287.59	1914+19.47	43.9	1089.78
5131	293954.12	2679286.00	1914+25.25	42.6	1090.09
5132	293952.47	2679288.86	1914+23.47	45.3	1089.82
5133	293952.19	2679292.81	1914+23.02	49.3	1089.78
5134	293960.73	2679273.73	1914+32.38	30.6	Match Exst
5135	293960.93	2679279.29	1914+32.35	36.1	1090.73
5136	293959.18	2679279.35	1914+30.59	36.1	1090.63
5137	293959.34	2679283.60	1914+30.57	40.4	1090.58
5138	293961.22	2679283.53	1914+32.45	40.4	1090.73
5139	293965.06	2679279.13	1914+36.47	36.2	1090.81
5140	293965.22	2679283.38	1914+36.45	40.4	1090.81
5141	293971.06	2679278.91	1914+42.47	36.2	Match Exst
5142	293971.21	2679283.16	1914+42.45	40.5	Match Exst
5143	293888.25	2679206.59	1913+62.89	-39.7	Match Exst
5144	293888.69	2679216.57	1913+62.90	-29.7	Match Exst
5145	293895.94	2679197.09	1913+70.99	-48.8	1089.91
5146	293895.05	2679203.13	1913+69.84	-42.8	1089.60
5147	293894.35	2679204.12	1913+69.09	-41.9	1089.60
5148	293894.61	2679215.61	1913+68.85	-30.4	1089.41
5149	293901.07	2679184.55	1913+76.66	-61.1	Match Exst
5150	293899.44	2679208.44	1913+73.99	-37.3	1089.46
5151	293899.63	2679212.85	1913+74.00	-32.9	1089.38
5152	293905.40	2679184.34	1913+81.00	-61.1	Match Exst
5153	293905.93	2679196.63	1913+81.00	-48.8	1089.96
5154	293905.76	2679202.65	1913+80.56	-42.8	1089.46
5155	293903.65	2679208.25	1913+78.21	-37.3	1089.38



ND 32

Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5156	293891.40	2679281.82	1913+62.77	35.6	Match Exst
5157	293891.65	2679287.46	1913+62.77	41.3	Match Exst
5158	293896.95	2679275.88	1913+68.57	29.9	1089.68
5159	293897.28	2679282.18	1913+68.63	36.3	1090.08
5160	293897.54	2679287.18	1913+68.67	41.3	1090.16
5161	293897.03	2679294.17	1913+67.85	48.2	Match Exst
5162	293902.06	2679277.79	1913+73.59	32.1	1089.67
5163	293902.27	2679281.92	1913+73.63	36.2	1090.02
5164	293902.54	2679286.92	1913+73.67	41.2	1090.12
5165	293902.90	2679293.91	1913+73.73	48.2	Match Exst
5166	293906.61	2679281.73	1913+77.96	36.2	1089.68
5167	293909.27	2679286.62	1913+80.42	41.2	1089.80

9th Ave E
SE Quadrant



Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

N

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

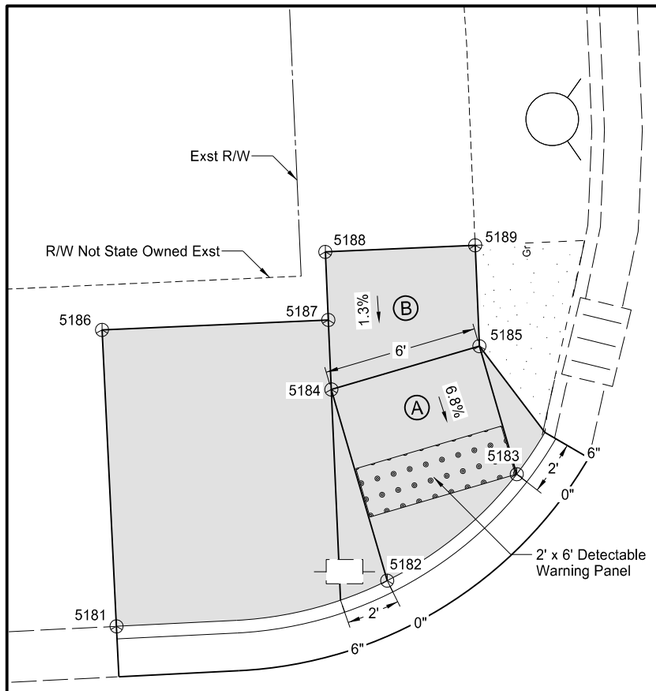
ADA Ramps
9th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

11/26/2019 6:49:57 PM bhaussler R:\project\80032021.042\design\DOTSC\Plan\020GD_008_ADA Ramps.dgn

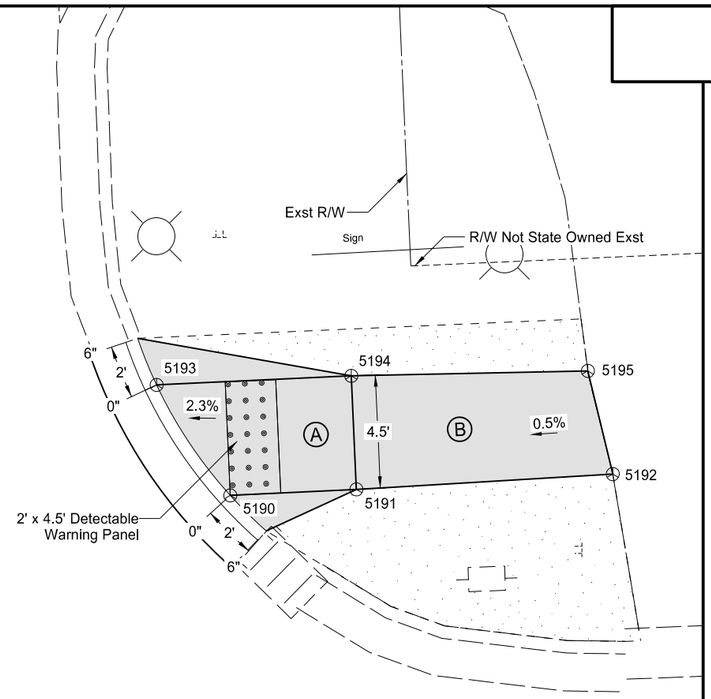
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	9

8th Ave W
NW Quadrant

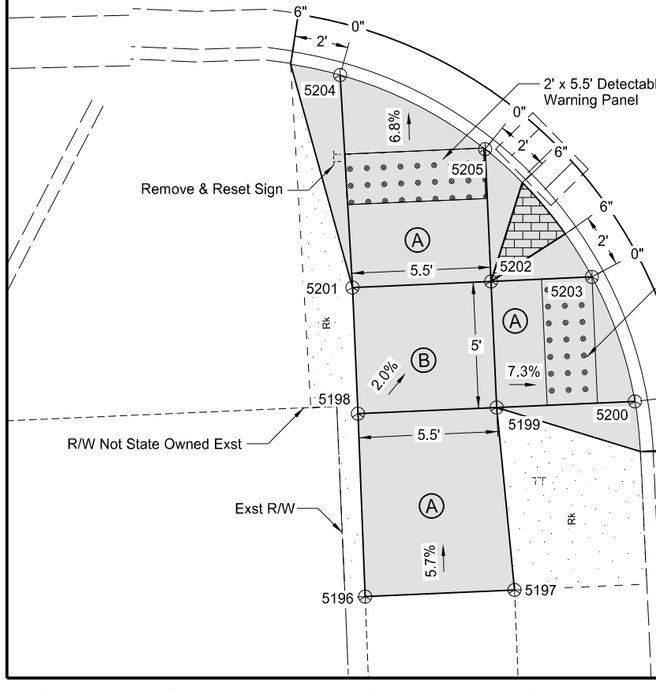


ND 32

8th Ave E
NE Quadrant



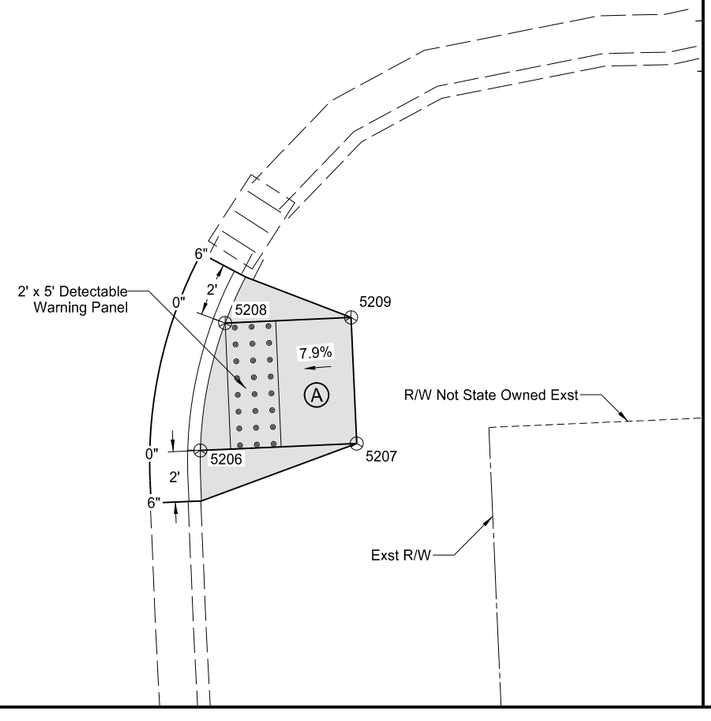
ND 32



8th Ave W
SW Quadrant

ND 32

8th Ave E
SE Quadrant



Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5181	294270.25	2679180.42	1917+45.67	-49.2	Match Exst
5182	294272.06	2679191.14	1917+47.01	-38.4	1089.89
5183	294276.28	2679196.27	1917+51.00	-33.1	1089.75
5184	294279.63	2679188.93	1917+54.68	-40.3	1090.31
5185	294281.35	2679194.79	1917+56.13	-34.3	1090.19
5186	294281.99	2679179.85	1917+57.43	-49.2	Match Exst
5187	294282.38	2679188.81	1917+57.43	-40.3	1090.35
5188	294285.08	2679188.69	1917+60.13	-40.3	Match Exst
5189	294285.34	2679194.63	1917+60.13	-34.3	Match Exst
5190	294278.65	2679263.01	1917+50.47	33.7	1089.84
5191	294278.89	2679268.00	1917+50.49	38.7	1090.01
5192	294279.49	2679278.16	1917+50.65	48.9	Match Exst
5193	294283.03	2679260.09	1917+54.97	31.0	1089.93
5194	294283.38	2679267.80	1917+54.99	38.7	1090.01
5195	294283.58	2679277.17	1917+54.78	48.1	Match Exst
5196	294210.65	2679191.74	1916+85.63	-40.5	Match Exst
5197	294210.91	2679197.65	1916+85.64	-34.5	Match Exst
5198	294217.89	2679191.45	1916+92.88	-40.4	1090.28
5199	294218.14	2679196.95	1916+92.89	-34.9	1090.23
5200	294218.38	2679202.42	1916+92.89	-29.4	1089.86
5201	294222.89	2679191.23	1916+97.88	-40.4	1090.18
5202	294223.13	2679196.72	1916+97.89	-34.9	1090.13
5203	294223.31	2679200.72	1916+97.89	-30.9	1089.82
5204	294231.30	2679190.75	1917+06.31	-40.5	1089.73
5205	294228.37	2679196.49	1917+03.13	-34.9	1089.69
5206	294220.88	2679261.60	1916+92.82	29.8	1089.91
5207	294221.16	2679267.80	1916+92.83	36.0	Match Exst
5208	294225.93	2679262.59	1916+97.82	31.0	1089.85
5209	294226.16	2679267.57	1916+97.83	36.0	Match Exst

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

N

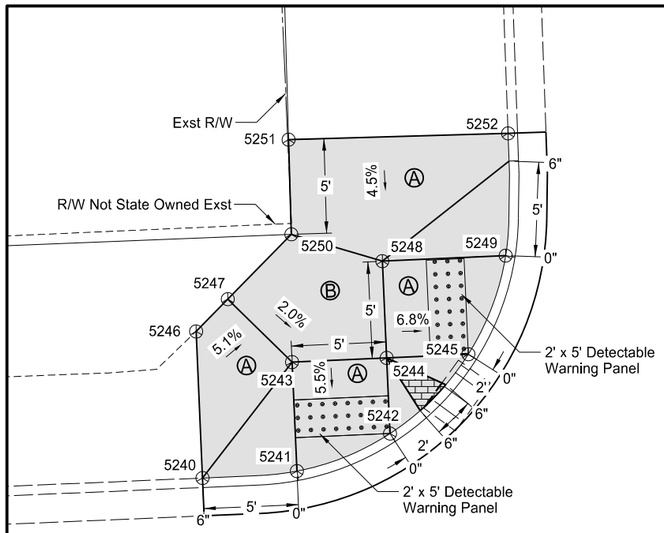
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

ADA Ramps
8th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	10

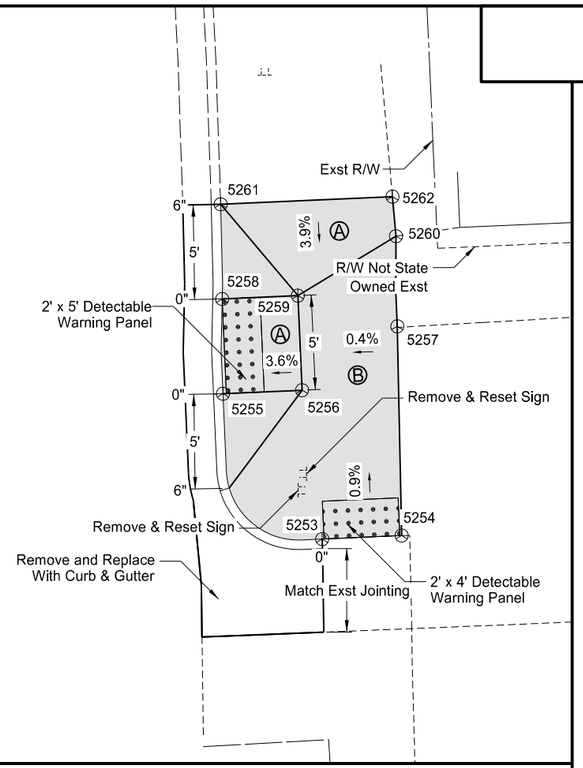
7th Ave W
NW Quadrant



ND 32

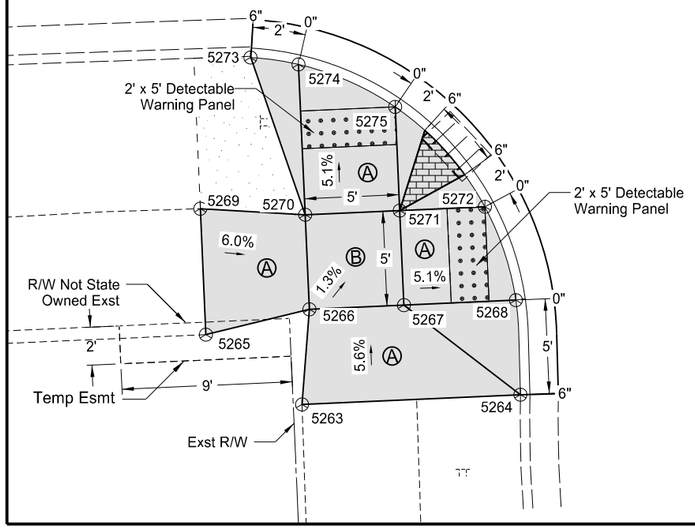
ND 32

7th Ave E
NE Quadrant



Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5240	294636.33	2679167.10	1921+11.98	-46.5	Match Exst
5241	294636.69	2679172.09	1921+12.13	-41.5	1089.12
5242	294638.68	2679177.00	1921+13.90	-36.5	1089.08
5243	294642.45	2679171.83	1921+17.89	-41.5	1089.4
5244	294642.67	2679176.82	1921+17.90	-36.5	1089.33
5245	294642.86	2679181.14	1921+17.90	-32.2	1088.97
5246	294644.07	2679166.76	1921+19.73	-46.5	Match Exst
5247	294645.77	2679168.44	1921+21.36	-44.8	1089.49
5248	294647.78	2679176.60	1921+23.01	-36.5	1089.43
5249	294648.07	2679183.11	1921+23.02	-30.0	1089.09
5250	294649.20	2679171.79	1921+24.64	-41.3	1089.49
5251	294654.20	2679171.65	1921+29.64	-41.2	Match Exst
5252	294654.53	2679183.24	1921+29.46	-29.6	Match Exst
5253	294638.04	2679248.13	1921+10.16	34.5	1089.60
5254	294638.22	2679252.32	1921+10.17	38.7	Match Exst
5255	294645.71	2679242.88	1921+18.06	29.6	1089.45
5256	294645.90	2679247.06	1921+18.06	33.8	1089.54
5257	294649.27	2679252.09	1921+21.21	38.9	Match Exst
5258	294650.71	2679242.84	1921+23.06	29.8	1089.43
5259	294650.89	2679246.84	1921+23.06	33.8	1089.63
5260	294654.03	2679252.02	1921+25.97	39.1	Match Exst
5261	294655.71	2679242.76	1921+28.06	29.9	Match Exst
5262	294656.12	2679251.84	1921+28.07	39.0	Match Exst
5263	294579.29	2679175.34	1920+54.64	-40.8	Match Exst
5264	294579.81	2679186.87	1920+54.65	-29.2	Match Exst
5265	294582.98	2679170.26	1920+58.55	-45.7	Match Exst
5266	294584.32	2679175.72	1920+59.65	-40.2	1089.76
5267	294584.54	2679180.72	1920+59.65	-35.2	1089.72
5268	294584.80	2679186.63	1920+59.65	-29.3	1089.49
5269	294589.63	2679169.96	1920+65.20	-45.7	Match Exst
5270	294589.31	2679175.50	1920+64.65	-40.2	1089.74
5271	294589.53	2679180.50	1920+64.65	-35.2	1089.67
5272	294589.73	2679184.99	1920+64.65	-30.7	1089.38
5273	294597.61	2679172.64	1920+73.07	-42.7	Match Exst
5274	294597.25	2679175.15	1920+72.59	-40.2	1089.44
5275	294595.01	2679180.25	1920+70.13	-35.2	1089.32

Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5276	294582.43	2679245.77	1920+54.71	29.7	Match Exst
5277	294582.83	2679254.87	1920+54.72	38.8	Match Exst
5278	294587.42	2679245.55	1920+59.71	29.7	1089.72
5279	294587.64	2679250.55	1920+59.71	34.7	1090.04
5280	294587.83	2679254.65	1920+59.72	38.8	Match Exst
5281	294592.42	2679245.34	1920+64.71	29.7	1089.74
5282	294592.64	2679250.33	1920+64.71	34.7	1090.06
5283	294594.11	2679254.37	1920+66.00	38.8	Match Exst
5284	294601.07	2679249.73	1920+73.16	34.5	1089.93
5285	294601.26	2679254.01	1920+73.16	38.8	Match Exst

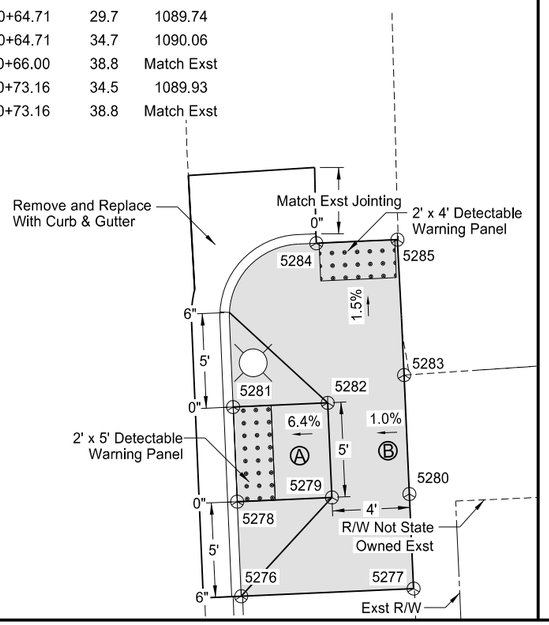


ND 32

ND 32

7th Ave W
SW Quadrant

7th Ave E
SE Quadrant



Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

N

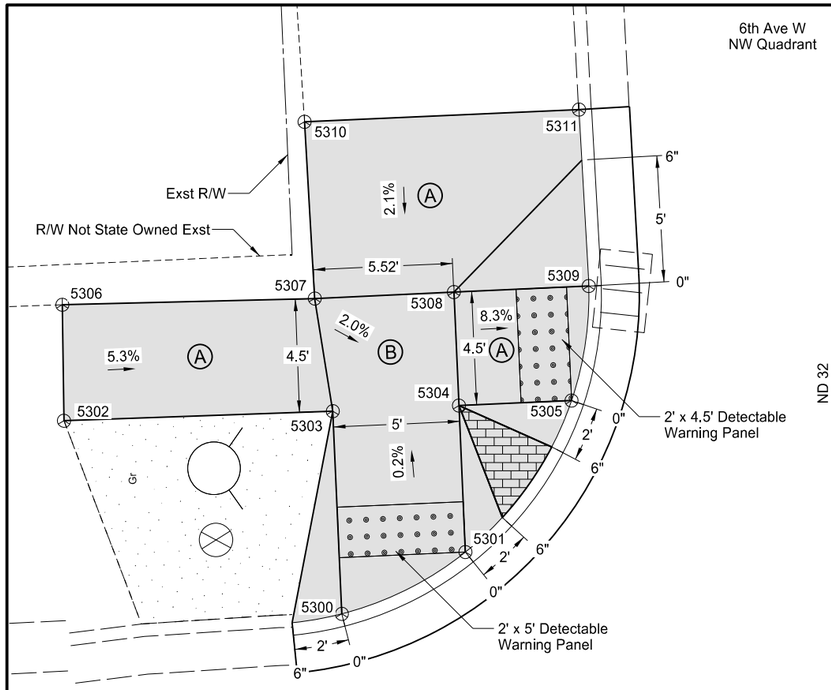
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

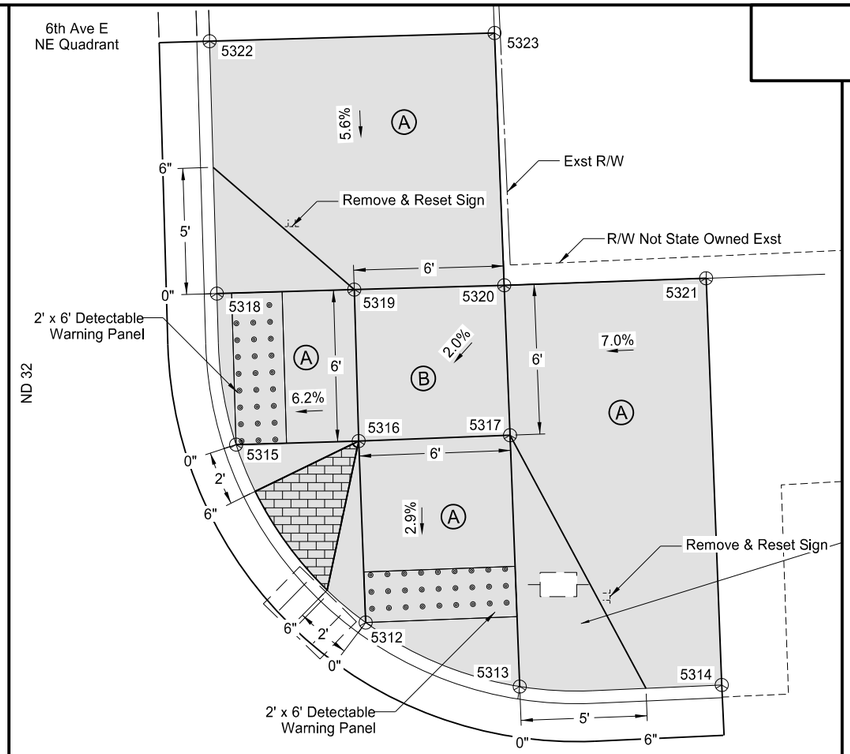
ADA Ramps
7th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

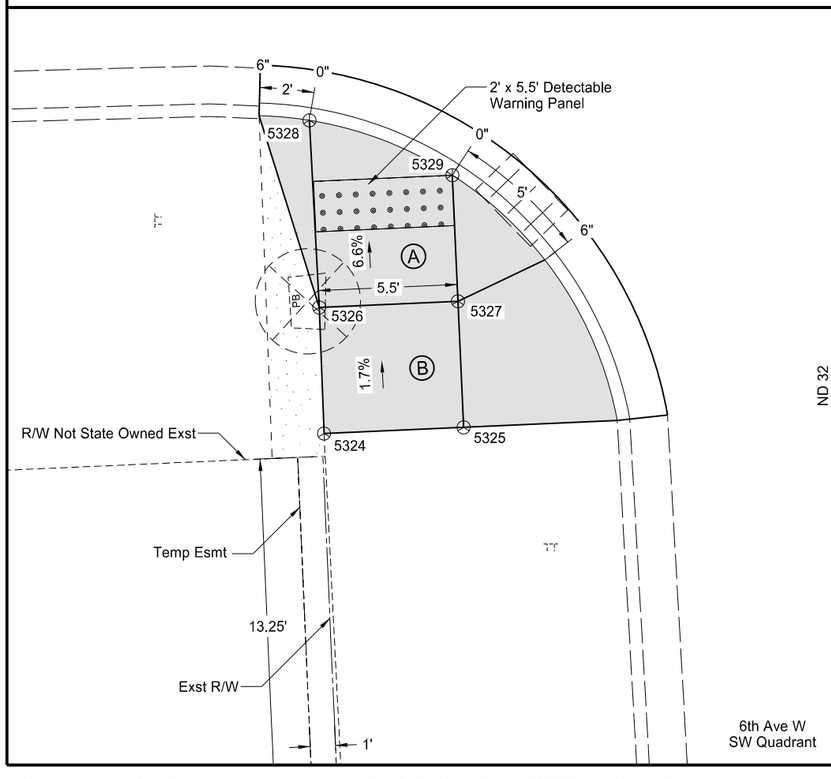
11/26/2019 6:50:19 PM bhaussler R:\project\80032021.042\design\DOTSC\Plan\020GD_010_ADA Ramps.dgn

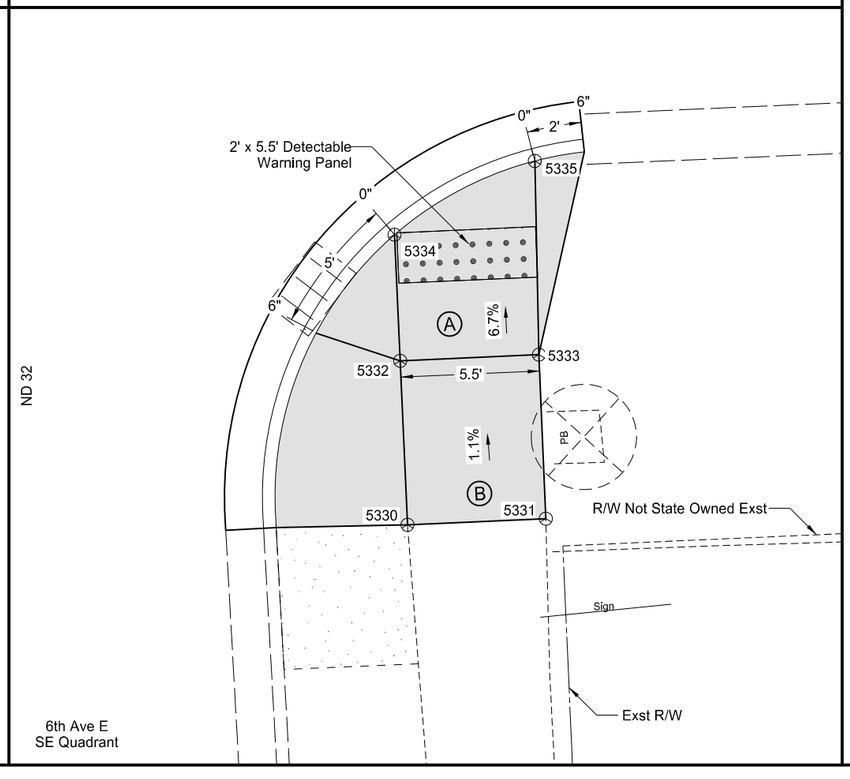
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	11





ND 32





ND 32

Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5300	295001.19	2679157.83	1924+76.91	-39.9	1087.64
5301	295003.64	2679162.73	1924+79.14	-34.9	1087.55
5302	295008.84	2679146.82	1924+85.03	-50.6	Match Exst
5303	295009.22	2679157.47	1924+84.94	-39.9	1087.62
5304	295009.44	2679162.47	1924+84.95	-34.9	1087.55
5305	295009.64	2679166.93	1924+84.95	-30.4	1087.18
5306	295013.44	2679146.76	1924+89.62	-50.4	Match Exst
5307	295013.68	2679156.76	1924+89.43	-40.4	1087.69
5308	295013.94	2679162.27	1924+89.45	-34.9	1087.61
5309	295014.18	2679167.61	1924+89.45	-29.6	1087.17
5310	295020.68	2679156.35	1924+96.44	-40.5	Match Exst
5311	295021.17	2679167.22	1924+96.45	-29.6	Match Exst
5312	295004.88	2679232.55	1924+77.34	34.9	1088.48
5313	295002.34	2679238.65	1924+74.54	40.9	1088.58
5314	295002.41	2679246.66	1924+74.25	48.9	Match Exst
5315	295011.93	2679227.42	1924+84.60	30.1	1088.41
5316	295012.07	2679232.27	1924+84.53	34.9	1088.72
5317	295012.30	2679238.27	1924+84.50	40.9	1088.81
5318	295017.91	2679226.66	1924+90.61	29.6	1088.42
5319	295018.07	2679232.10	1924+90.53	35.0	1088.77
5320	295018.24	2679238.04	1924+90.44	41.0	1088.88
5321	295018,52	2679246.04	1924+90,37	49,0	Match Exst
5322	295027.90	2679226.37	1925+00.61	29.7	Match Exst
5323	295028.23	2679237.66	1925+00.44	41.0	Match Exst
5324	294950.39	2679158.78	1924+26.11	-41.2	Match Exst
5325	294950.63	2679164.31	1924+26.11	-35.6	Match Exst
5326	294955.38	2679158.59	1924+31.11	-41.1	1087.97
5327	294955.63	2679164.08	1924+31.11	-35.6	1087.74
5328	294962.79	2679158.20	1924+38.53	-41.2	1087.51
5329	294960.62	2679163.86	1924+36.11	-35.6	1087.40
5330	294953.94	2679235.00	1924+26.34	35.1	Match Exst
5331	294954.18	2679240.48	1924+26.34	40.6	Match Exst
5332	294960.43	2679234.71	1924+32.84	35.1	1087.58
5333	294960.68	2679240.20	1924+32.84	40.6	1087.58
5334	294965.43	2679234.49	1924+37.84	35.1	1087.16
5335	294968,35	2679240,04	1924+40,52	40,8	1087.18

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

Ⓐ Ramp

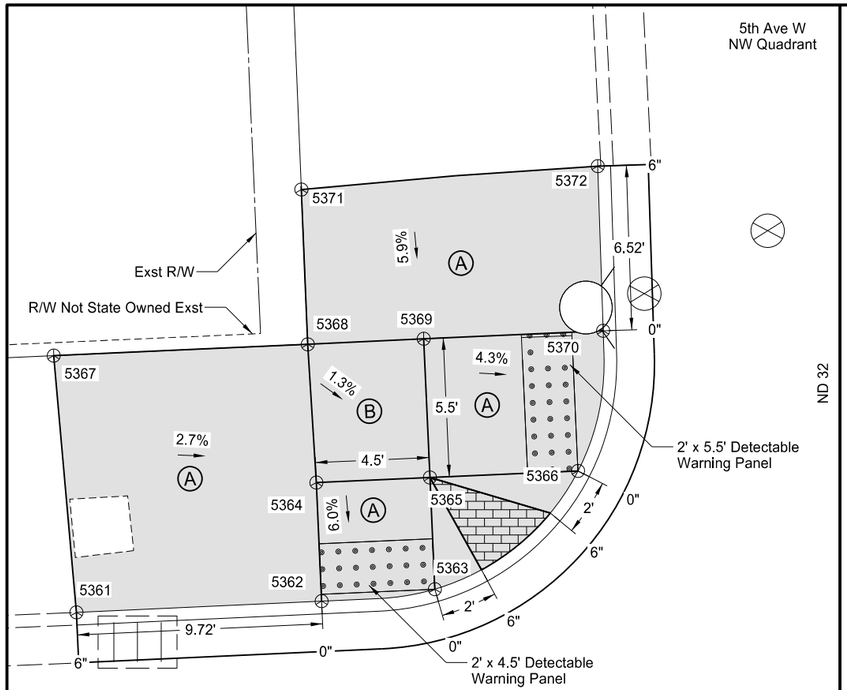
Ⓑ Landing

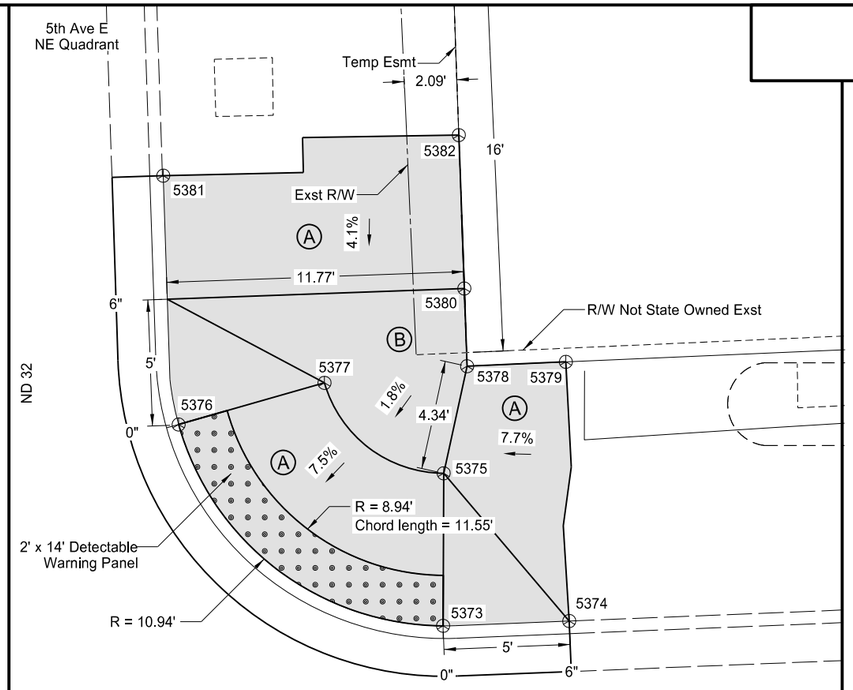
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

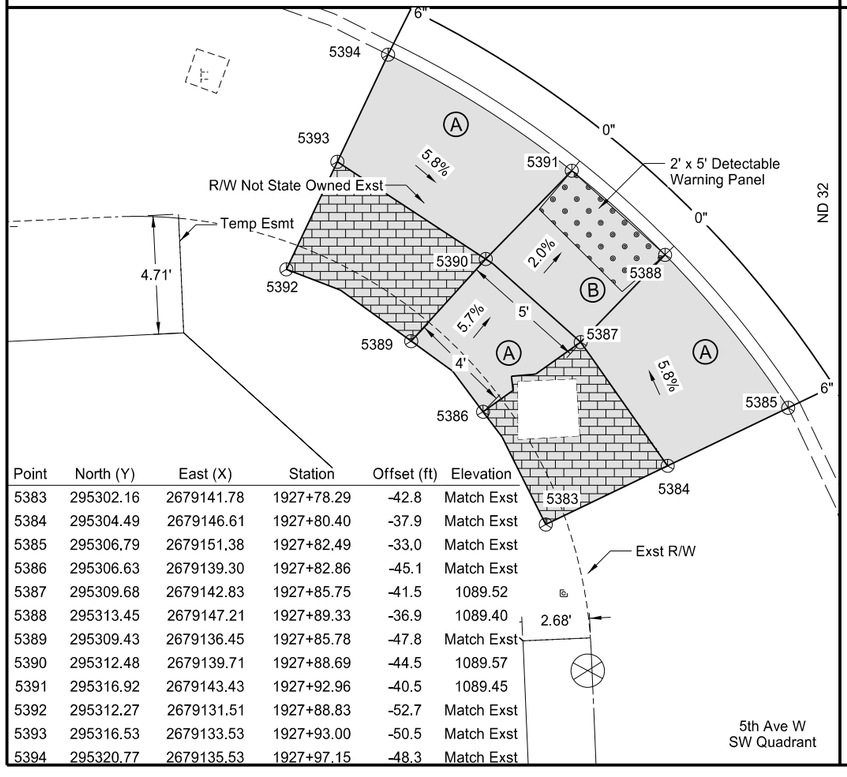
ADA Ramps
6th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

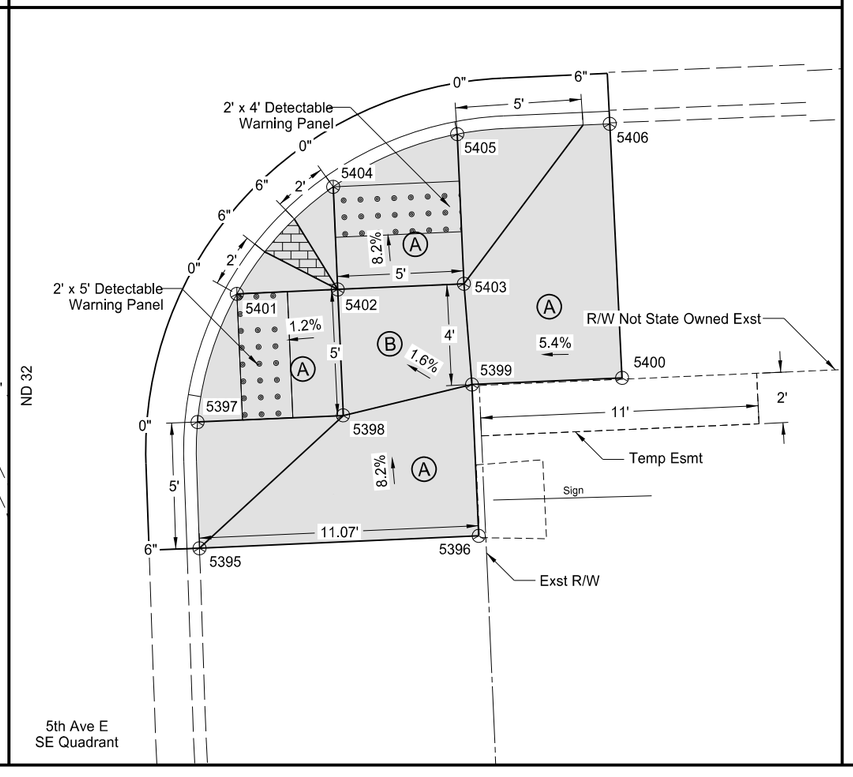
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	12







Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5383	295302.16	2679141.78	1927+78.29	-42.8	Match Exst
5384	295304.49	2679146.61	1927+80.40	-37.9	Match Exst
5385	295306.79	2679151.38	1927+82.49	-33.0	Match Exst
5386	295306.63	2679139.30	1927+82.86	-45.1	Match Exst
5387	295309.68	2679142.83	1927+85.75	-41.5	1089.52
5388	295313.45	2679147.21	1927+89.33	-36.9	1089.40
5389	295309.43	2679136.45	1927+85.78	-47.8	Match Exst
5390	295312.48	2679139.71	1927+88.69	-44.5	1089.57
5391	295316.92	2679143.43	1927+92.96	-40.5	1089.45
5392	295312.27	2679131.51	1927+88.83	-52.7	Match Exst
5393	295316.53	2679133.53	1927+93.00	-50.5	Match Exst
5394	295320.77	2679135.53	1927+97.15	-48.3	Match Exst



Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5361	295369.95	2679130.59	1928+46.50	-51.1	Match Exst
5362	295370.40	2679140.30	1928+46.52	-41.3	1089.38
5363	295370.87	2679144.78	1928+46.79	-36.8	1089.48
5364	295375.09	2679140.09	1928+51.22	-41.3	1089.70
5365	295375.29	2679144.59	1928+51.22	-36.8	1089.69
5366	295375.55	2679150.45	1928+51.23	-31.0	1089.45
5367	295380.12	2679129.69	1928+56.69	-51.5	Match Exst
5368	295380.57	2679139.75	1928+56.70	-41.4	1089.78
5369	295380.79	2679144.34	1928+56.72	-36.8	1089.76
5370	295381.10	2679151.45	1928+56.73	-29.7	1089.44
5371	295386.70	2679139.50	1928+62.84	-41.4	Match Exst
5372	295387.63	2679151.35	1928+63.26	-29.5	Match Exst
5373	295373.87	2679221.36	1928+46.47	39.8	1088.76
5374	295374.06	2679226.36	1928+46.44	44.8	Match Exst
5375	295379.91	2679221.39	1928+52.50	40.1	1089.26
5376	295381.84	2679210.89	1928+54.89	29.7	1088.90
5377	295383.49	2679216.67	1928+56.28	35.5	1089.28
5378	295384.15	2679222.31	1928+56.70	41.2	1089.33
5379	295384.33	2679226.23	1928+56.70	45.1	Match Exst
5380	295387.23	2679222.20	1928+59.78	41.2	1089.38
5381	295391.70	2679210.28	1928+64.76	29.5	Match Exst
5382	295393.31	2679221.99	1928+65.86	41.3	Match Exst
5395	295312.31	2679214.14	1927+85.28	29.9	Match Exst
5396	295312.80	2679225.20	1927+85.29	41.0	Match Exst
5397	295317.31	2679214.06	1927+90.27	30.0	1089.27
5398	295317.57	2679219.83	1927+90.28	35.8	1089.32
5399	295318.79	2679224.93	1927+91.28	41.0	1089.35
5400	295319.06	2679230.87	1927+91.29	46.9	Match Exst
5401	295322.38	2679215.62	1927+95.27	31.8	1089.19
5402	295322.56	2679219.61	1927+95.28	35.8	1089.25
5403	295322.78	2679224.61	1927+95.28	40.8	1089.29
5404	295326.62	2679219.43	1927+99.34	35.8	1088.91
5405	295328.71	2679224.34	1928+01.22	40.8	1088.82
5406	295329.12	2679230.38	1928+01.36	46.9	Match Exst

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

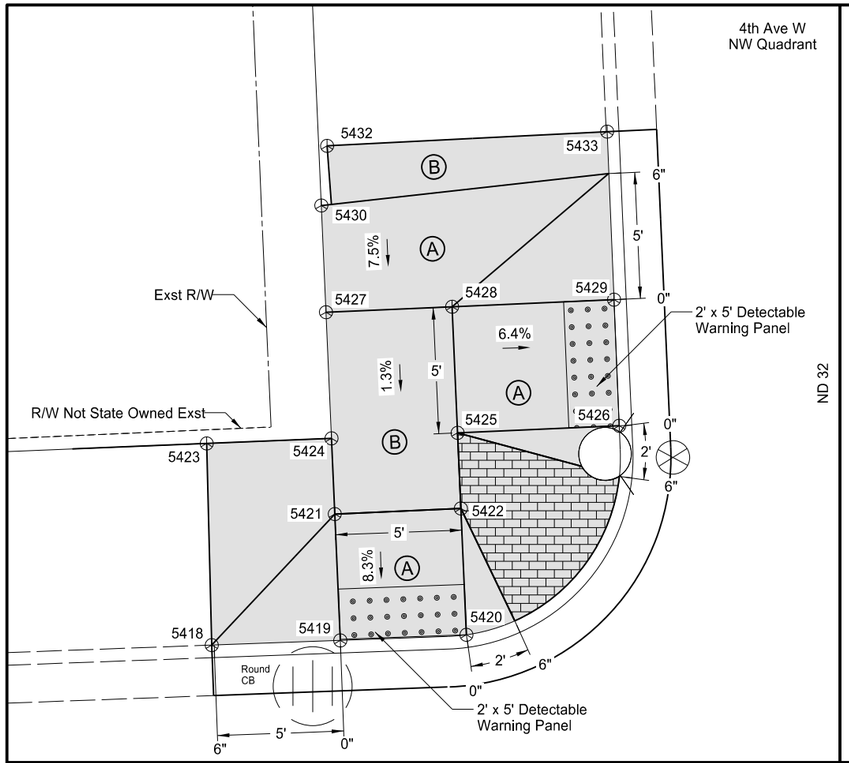
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

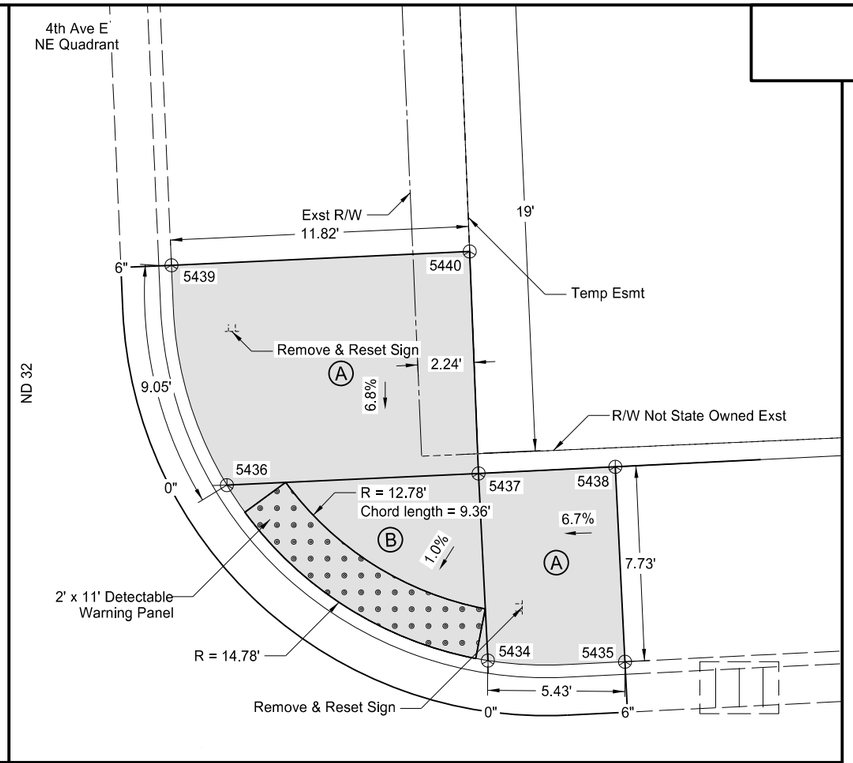
N

ADA Ramps
5th Ave

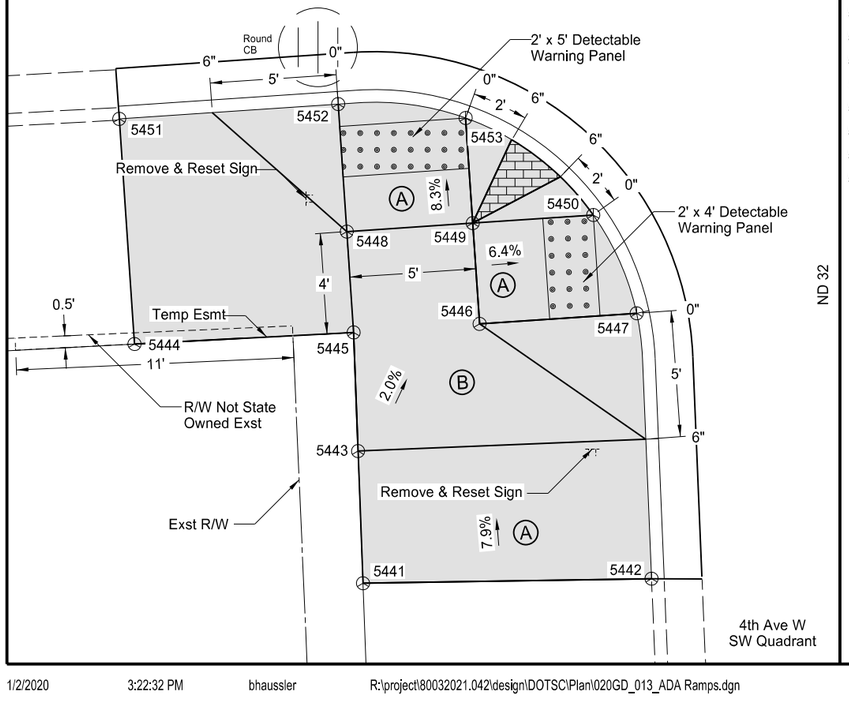
ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	13

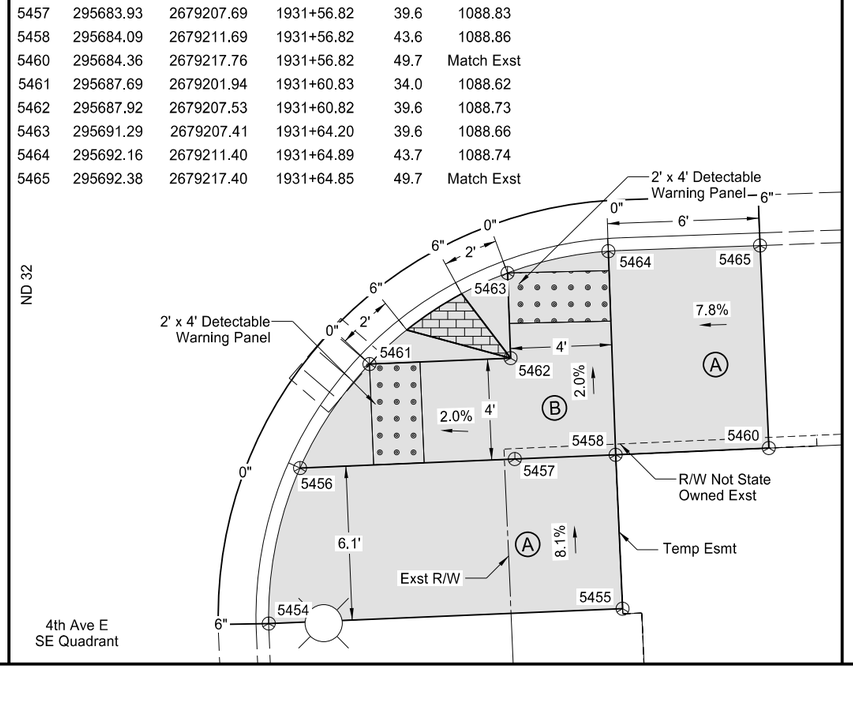




Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5418	295738.00	2679119.63	1932+14.68	-46.0	Match Exst
5419	295738.19	2679124.72	1932+14.64	-40.9	1088.97
5420	295738.42	2679129.71	1932+14.65	-35.9	1088.99
5421	295743.20	2679124.50	1932+19.65	-40.9	1089.39
5422	295743.41	2679129.50	1932+19.65	-35.9	1089.40
5423	295745.99	2679119.43	1932+22.67	-45.9	Match Exst
5424	295746.19	2679124.37	1932+22.65	-40.9	1089.45
5425	295746.41	2679129.37	1932+22.65	-35.9	1089.45
5426	295746.69	2679135.77	1932+22.65	-29.5	1089.04
5427	295751.19	2679124.15	1932+27.65	-40.9	1089.50
5428	295751.41	2679129.15	1932+27.65	-35.9	1089.49
5429	295751.69	2679135.56	1932+27.65	-29.5	1089.08
5430	295755.41	2679123.97	1932+31.88	-40.9	1089.82
5432	295757.78	2679124.20	1932+34.23	-40.6	Match Exst
5433	295758.34	2679135.29	1932+34.32	-29.5	Match Exst
5434	295742.17	2679207.02	1932+15.04	41.5	1088.91
5435	295742.12	2679212.45	1932+14.76	46.9	Match Exst
5436	295749.11	2679196.68	1932+22.43	31.4	1089.00
5437	295749.58	2679206.65	1932+22.46	41.4	1089.06
5438	295749.84	2679212.07	1932+22.49	46.8	Match Exst
5439	295757.82	2679194.48	1932+31.22	29.6	Match Exst
5440	295758.37	2679206.30	1932+31.26	41.5	Match Exst
5441	295670.51	2679127.64	1931+46.90	-41.0	Match Exst
5442	295670.69	2679139.06	1931+46.59	-29.5	Match Exst
5443	295675.75	2679127.44	1931+52.14	-40.9	1089.37
5444	295679.99	2679118.58	1931+56.76	-49.6	Match Exst
5445	295680.45	2679127.26	1931+56.84	-40.9	1089.27
5446	295680.78	2679132.25	1931+56.96	-35.9	1089.24
5447	295681.21	2679138.47	1931+57.11	-29.7	1088.87
5448	295684.44	2679126.99	1931+60.84	-41.0	1089.20
5449	295684.78	2679131.98	1931+60.96	-36.0	1089.17
5450	295685.10	2679136.76	1931+61.08	-31.2	1088.84
5451	295688.90	2679117.98	1931+65.70	-49.8	Match Exst
5452	295689.49	2679126.65	1931+65.90	-41.1	1088.78
5453	295688.94	2679131.70	1931+65.13	-36.1	1088.82



Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5454	295677.41	2679197.95	1931+50.74	29.6	Match Exst
5455	295678.00	2679211.96	1931+50.71	43.6	Match Exst
5456	295683.57	2679199.19	1931+56.84	31.1	1088.66
5457	295683.93	2679207.69	1931+56.82	39.6	1088.83
5458	295684.09	2679211.69	1931+56.82	43.6	1088.86
5460	295684.36	2679217.76	1931+56.82	49.7	Match Exst
5461	295687.69	2679201.94	1931+60.83	34.0	1088.62
5462	295687.92	2679207.53	1931+60.82	39.6	1088.73
5463	295691.29	2679207.41	1931+64.20	39.6	1088.66
5464	295692.16	2679211.40	1931+64.89	43.7	1088.74
5465	295692.38	2679217.40	1931+64.85	49.7	Match Exst



Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

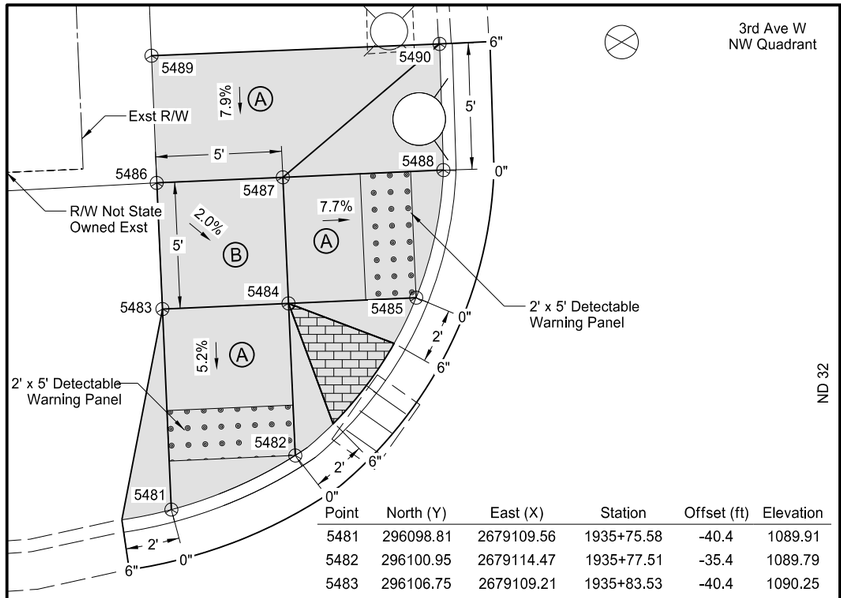
N

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 01/02/20 and the original document is stored at the North Dakota Department of Transportation

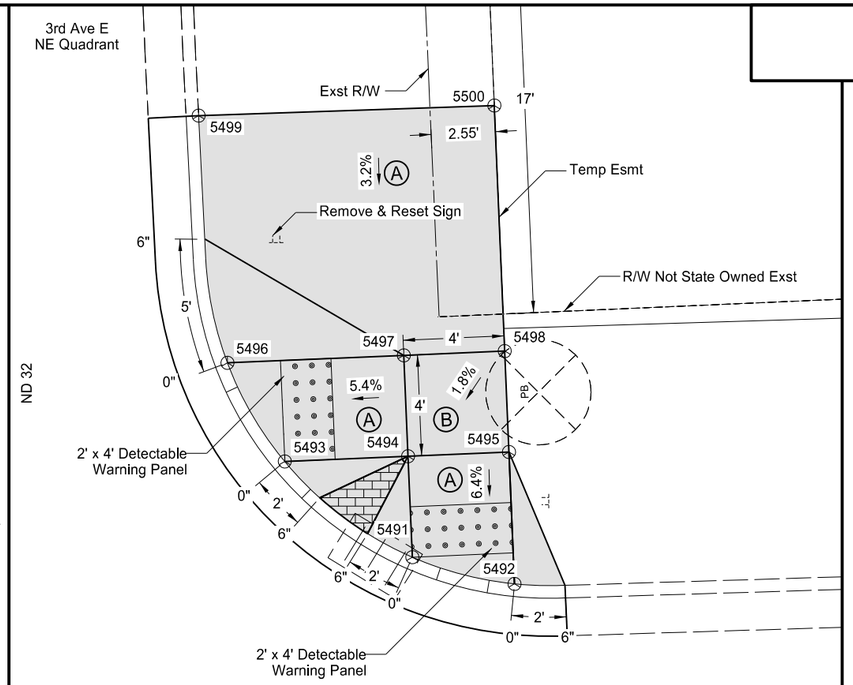
ADA Ramps
4th Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

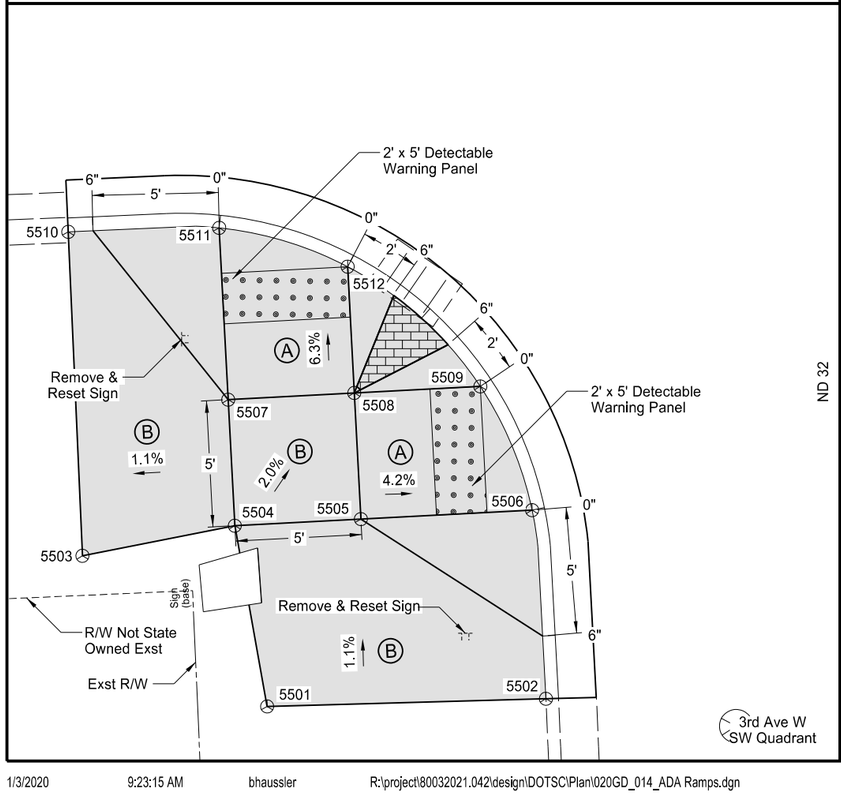
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	14

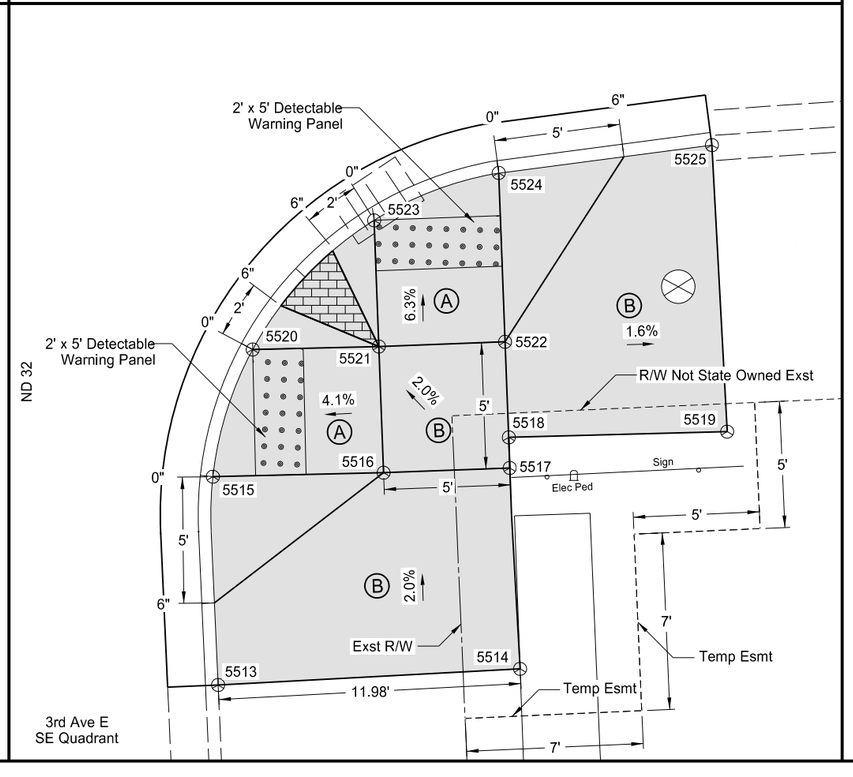


Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5481	296098.81	2679109.56	1935+75.58	-40.4	1089.91
5482	296100.95	2679114.47	1935+77.51	-35.4	1089.79
5483	296106.75	2679109.21	1935+83.53	-40.4	1090.25
5484	296106.98	2679114.20	1935+83.54	-35.4	1090.16
5485	296107.20	2679119.26	1935+83.54	-30.3	1089.74
5486	296111.75	2679108.98	1935+88.53	-40.4	1090.30
5487	296111.97	2679113.98	1935+88.54	-35.4	1090.25
5488	296112.26	2679120.34	1935+88.55	-29.0	1089.85
5489	296116.79	2679108.78	1935+93.57	-40.4	Match Exst
5490	296117.25	2679120.19	1935+93.54	-29.0	Match Exst



Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5491	296106.39	2679187.43	1935+79.77	37.7	1089.93
5492	296105.34	2679191.48	1935+78.54	41.7	1089.98
5493	296110.18	2679182.38	1935+83.78	32.8	1089.90
5494	296110.39	2679187.26	1935+83.77	37.7	1080.23
5495	296110.56	2679191.26	1935+83.77	41.7	1090.28
5496	296114.09	2679180.11	1935+87.78	30.7	1090.00
5497	296114.39	2679187.10	1935+87.77	37.7	1090.28
5498	296114.55	2679191.09	1935+87.77	41.7	1090.33
5499	296123.88	2679178.97	1935+97.61	30.0	Match Exst
5500	296124.28	2679190.68	1935+97.50	41.8	Match Exst
5501	296041.77	2679111.89	1935+18.49	-40.6	Match Exst
5502	296042.08	2679122.93	1935+18.32	-29.5	Match Exst
5503	296047.74	2679104.58	1935+24.77	-47.6	Match Exst
5504	296048.93	2679110.61	1935+25.70	-41.5	1090.24
5505	296049.19	2679115.61	1935+25.75	-36.5	1090.18
5506	296049.55	2679122.39	1935+25.81	-29.7	1089.90
5507	296053.92	2679110.35	1935+30.70	-41.6	1090.19
5508	296054.18	2679115.34	1935+30.74	-36.6	1090.10
5509	296054.45	2679120.34	1935+30.79	-31.6	1089.89
5510	296060.57	2679104.01	1935+37.62	-47.6	Match Exst
5511	296060.73	2679109.99	1935+37.51	-41.6	1089.80
5512	296059.19	2679115.08	1935+35.76	-36.6	1089.76
5513	296039.31	2679182.10	1935+12.99	29.5	Match Exst
5514	296039.95	2679194.06	1935+13.10	41.5	Match Exst
5515	296047.56	2679181.89	1935+21.24	29.6	1089.88
5516	296047.72	2679188.65	1935+21.10	36.4	1090.13
5517	296047.91	2679193.65	1935+21.07	41.4	1090.19
5518	296049.12	2679193.61	1935+22.28	41.4	1090.17
5519	296049.34	2679202.26	1935+22.13	50.1	Match Exst
5520	296052.60	2679183.47	1935+26.20	31.4	1089.83
5521	296052.72	2679188.47	1935+26.10	36.4	1090.05
5522	296052.90	2679193.46	1935+26.07	41.4	1090.12
5523	296057.71	2679188.28	1935+31.10	36.5	1089.67
5524	296059.59	2679193.21	1935+32.76	41.5	1089.77
5525	296060.69	2679201.66	1935+33.50	50.0	Match Exst





Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

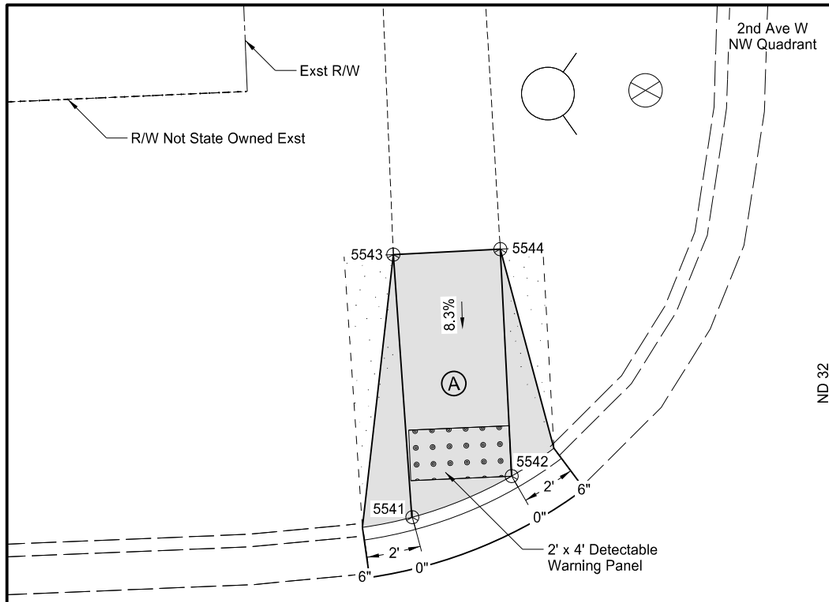
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 01/03/20 and the original document is stored at the North Dakota Department of Transportation

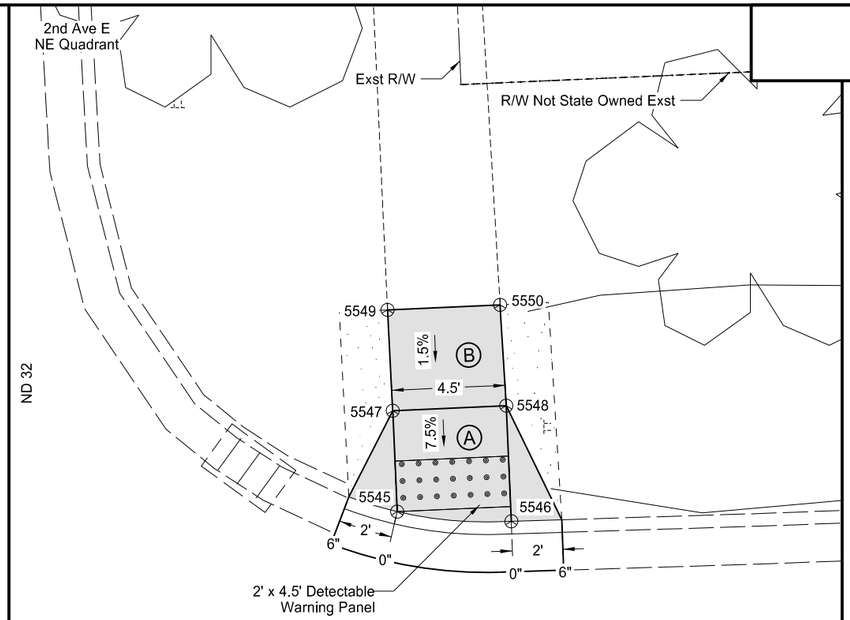
ADA Ramps
3rd Ave

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

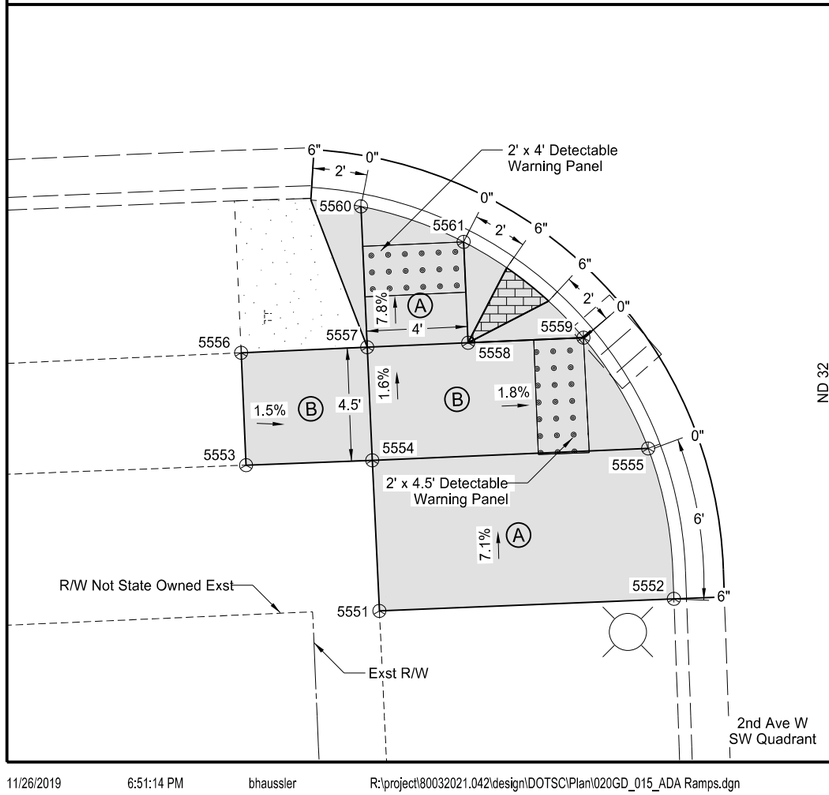
1/3/2020 9:23:15 AM bhaussler R:\project\80032021.042\design\DOTSC\Plan\020GD_014_ADA Ramps.dgn

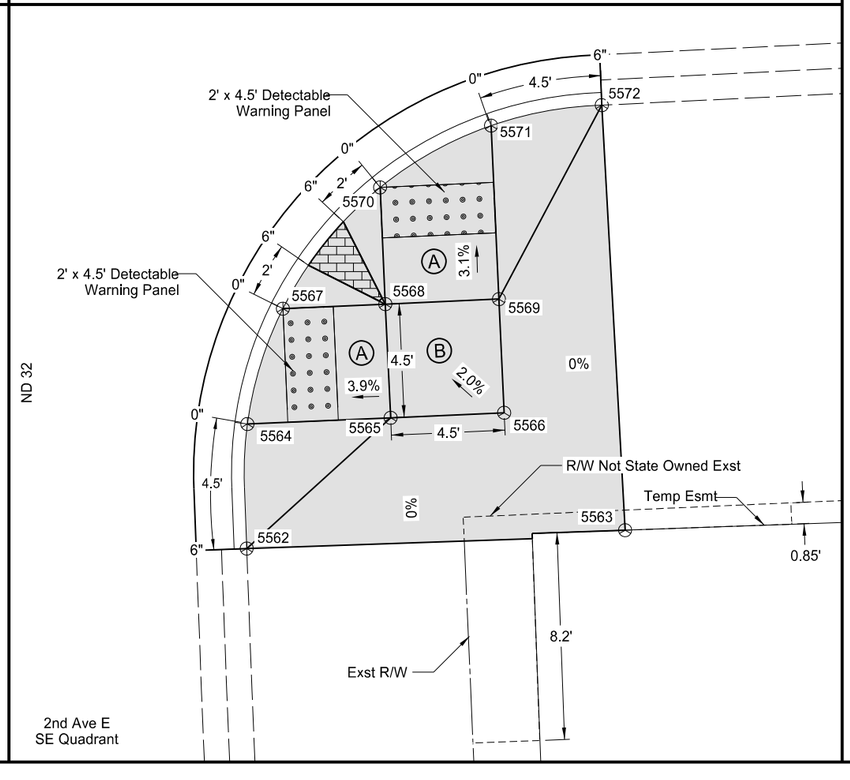
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	15





Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5541	296461.07	2679096.69	1939+38.06	-37.5	1089.4
5542	296462.72	2679100.64	1939+39.53	-33.5	1089.59
5543	296471.49	2679095.95	1939+48.50	-37.8	Match Exst
5544	296471.71	2679100.19	1939+48.53	-33.6	Match Exst
5545	296464.65	2679170.07	1939+38.45	35.9	1089.67
5546	296464.27	2679174.59	1939+37.87	40.4	1089.75
5547	296468.65	2679169.89	1939+42.45	35.9	1090.00
5548	296468.85	2679174.39	1939+42.45	40.4	1090.08
5549	296472.64	2679169.68	1939+46.45	35.9	Match Exst
5550	296472.84	2679174.14	1939+46.45	40.4	Match Exst
5551	296412.05	2679095.68	1938+89.13	-40.7	Match Exst
5552	296412.53	2679107.35	1938+89.10	-29.0	Match Exst
5553	296417.82	2679090.40	1938+95.12	-45.7	Match Exst
5554	296418.01	2679095.40	1938+95.10	-40.7	1090.03
5555	296418.48	2679106.33	1938+95.09	-29.7	1089.90
5556	296422.27	2679090.20	1938+99.58	-45.7	Match Exst
5557	296422.49	2679095.20	1938+99.58	-40.7	1089.98
5558	296422.67	2679099.20	1938+99.59	-36.7	1089.91
5559	296422.87	2679103.76	1938+99.59	-32.1	1089.82
5560	296428.07	2679094.95	1939+05.17	-40.7	1089.54
5561	296426.67	2679099.02	1939+03.59	-36.7	1089.60
5562	296414.39	2679166.88	1938+88.37	30.6	Match Exst
5563	296415.12	2679181.87	1938+88.45	45.6	Match Exst
5564	296419.32	2679166.91	1938+93.29	30.8	1090.60
5565	296419.57	2679172.58	1938+93.30	36.5	1090.82
5566	296419.77	2679177.08	1938+93.30	41.0	1090.86
5567	296423.89	2679168.32	1938+97.80	32.4	1090.59
5568	296424.07	2679172.37	1938+97.80	36.5	1090.74
5569	296424.27	2679176.87	1938+97.81	41.0	1090.82
5570	296428.69	2679172.17	1939+02.43	36.5	1090.61
5571	296431.14	2679176.56	1939+04.69	41.0	1090.60
5572	296431.95	2679180.95	1939+05.30	45.4	Match Exst





Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

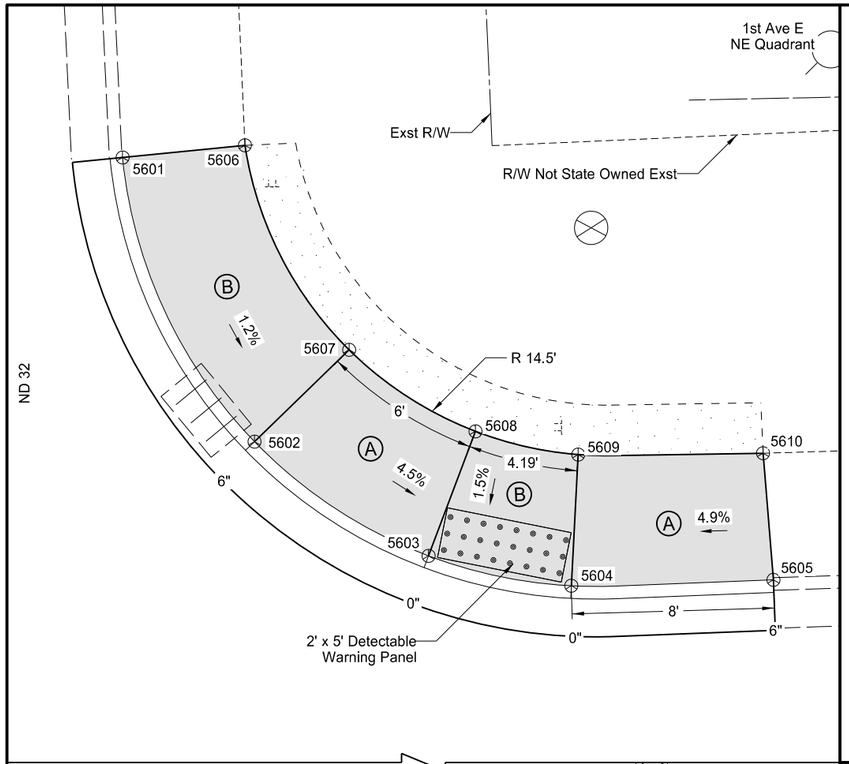
N

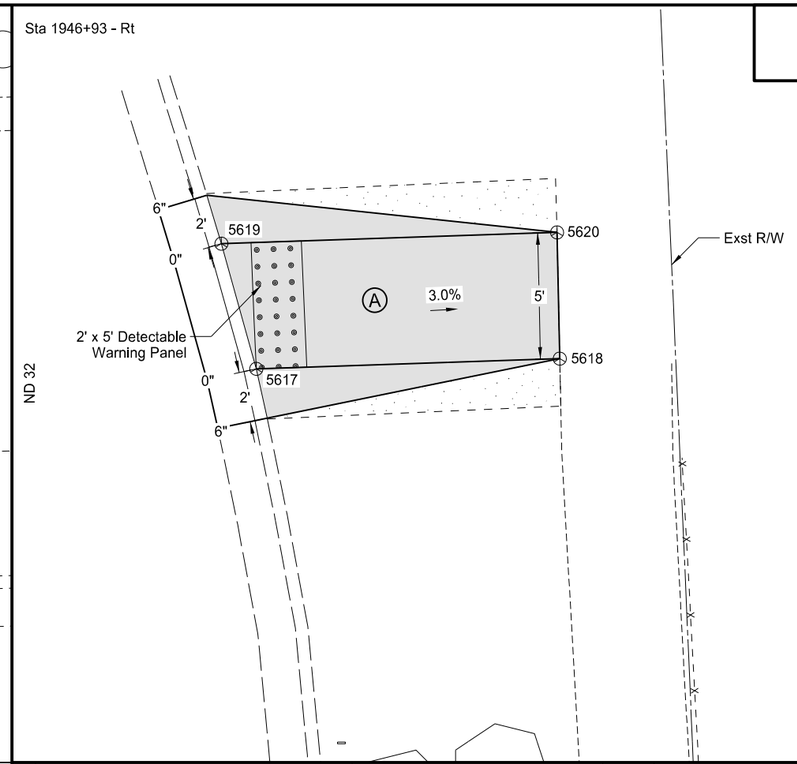
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

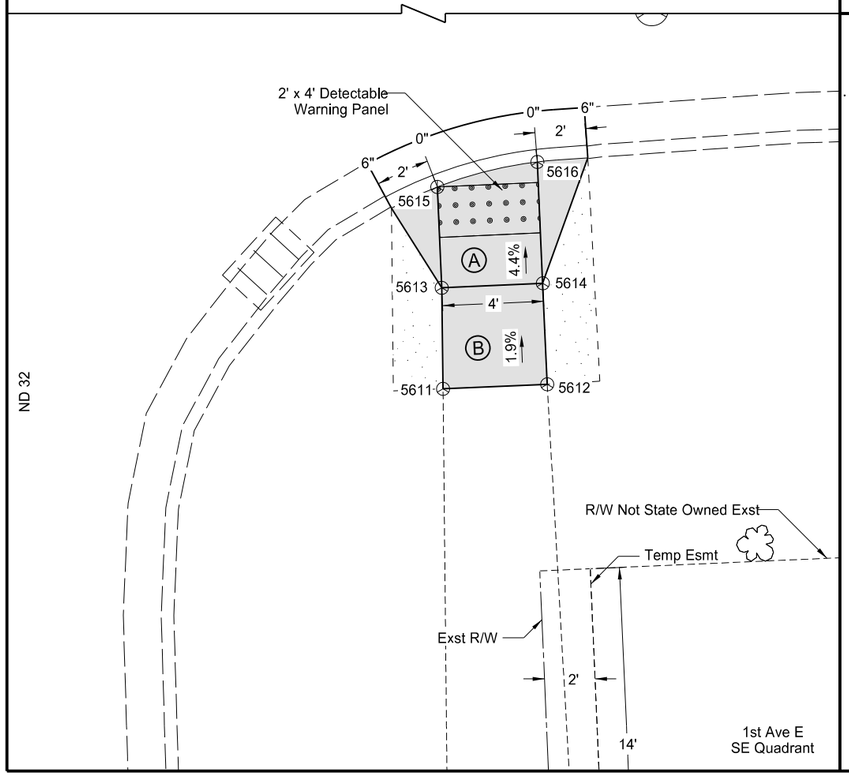
ADA Ramps
2nd Ave

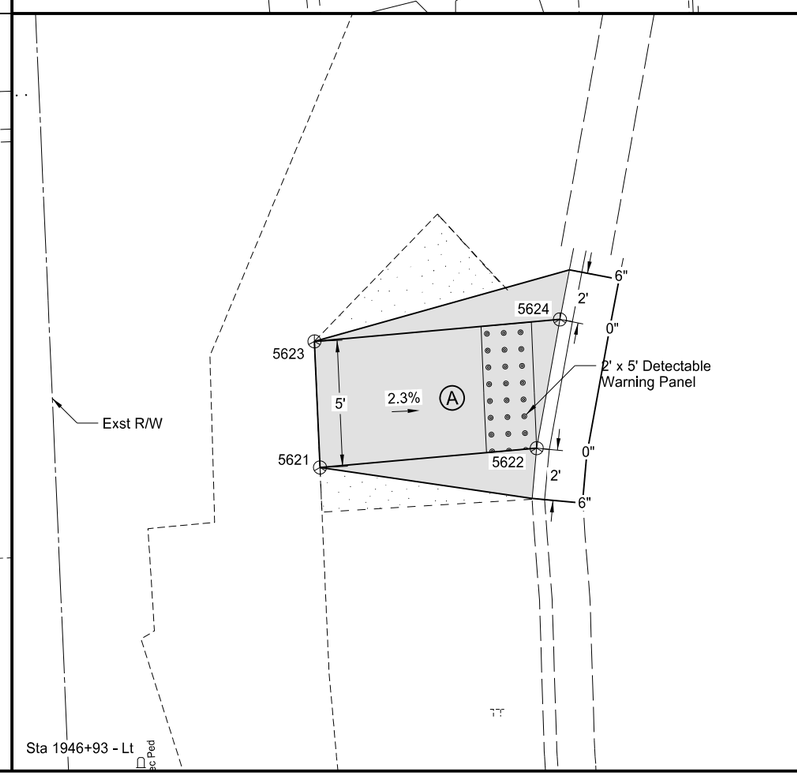
ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	16









Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5601	296846.75	2679142.05	1943+21.41	24.6	Match Exst
5602	296835.50	2679147.28	1943+09.94	29.3	1089.16
5603	296830.98	2679154.17	1943+05.12	36.0	1088.83
5604	296829.79	2679159.83	1943+03.69	41.6	1088.92
5605	296832.53	2679167.63	1943+06.09	49.5	Match Exst
5606	296847.24	2679146.90	1943+21.68	29.4	Match Exst
5607	296839.14	2679151.03	1943+13.41	33.2	1089.24
5608	296835.91	2679156.03	1943+09.96	38.0	1088.94
5609	296834.99	2679160.10	1943+08.87	42.1	1088.97
5610	296835.04	2679167.42	1943+08.60	49.4	Match Exst
5611	296788.50	2679155.73	1942+62.61	35.7	Match Exst
5612	296788.68	2679159.85	1942+62.61	39.8	Match Exst
5613	296792.50	2679155.67	1942+66.61	35.8	1089.05
5614	296792.67	2679159.67	1942+66.61	39.8	1089.13
5615	296796.49	2679155.50	1942+70.61	35.8	1088.80
5616	296797.48	2679159.46	1942+71.42	39.8	1088.81
5617	297215.05	2679124.06	1946+90.13	22.6	1090.42
5618	297215.45	2679136.08	1946+90.02	34.6	Match Exst
5619	297220.00	2679122.68	1946+95.15	21.4	1090.51
5620	297220.45	2679135.97	1946+95.02	34.7	Match Exst
5621	297212.47	2679068.71	1946+89.96	-32.8	Match Exst
5622	297213.23	2679077.29	1946+90.35	-24.2	1090.32
5623	297217.46	2679068.49	1946+94.96	-32.8	Match Exst
5624	297218.33	2679078.21	1946+95.41	-23.1	1090.38

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

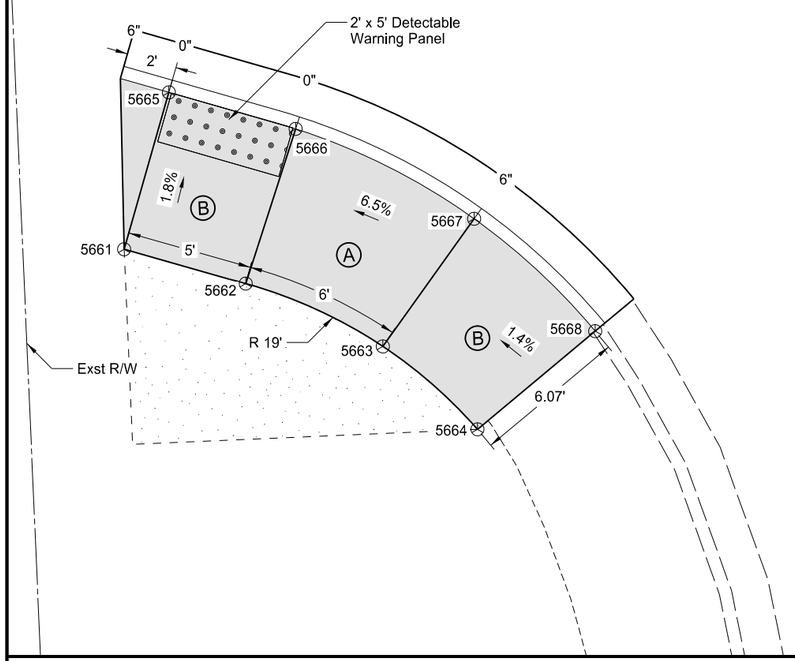
This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/12/19 and the original document is stored at the North Dakota Department of Transportation

ADA Ramps
1st Ave and Sta 1946+93 - 23 Lt/Rt

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

12/12/2019 1:52:28 PM bhaussler R:\project\80032021.042\design\DOTSC\Plan\020GD_016_ADA Ramps.dgn

Riverside Dr
SW Quadrant



ND 32

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	20	17

Point	North (Y)	East (X)	Station	Offset (ft)	Elevation
5661	297494.84	2679049.96	1949+72.88	-39.3	1091.37
5662	297493.49	2679054.78	1949+71.32	-34.5	1091.47
5663	297491.00	2679060.21	1949+68.59	-29.2	1091.70
5664	297487.71	2679063.96	1949+65.15	-25.6	Match Exst
5665	297501.06	2679051.73	1949+79.02	-37.2	1091.27
5666	297499.61	2679056.76	1949+77.35	-32.3	1091.36
5667	297496.05	2679063.83	1949+73.49	-25.4	1091.7
5668	297491.60	2679068.62	1949+68.83	-20.8	Match Exst

Seeding or Landscaping

Sidewalk Concrete

Pigmented Imprinted Concrete

(A) Ramp

(B) Landing

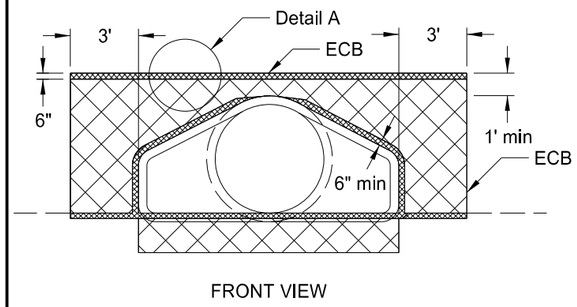
N

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

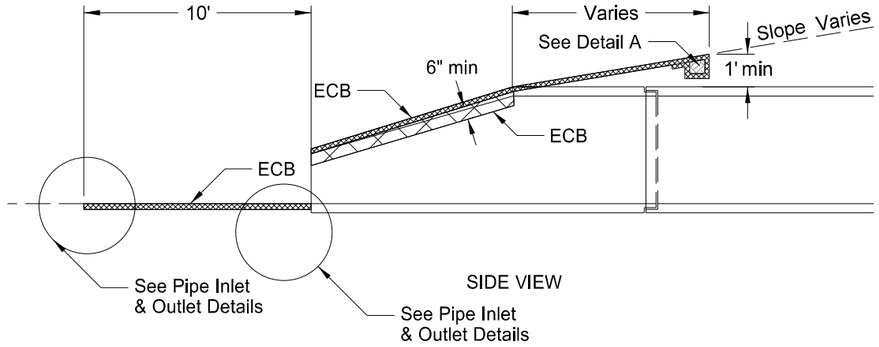
ADA Ramps
Riverside Dr

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

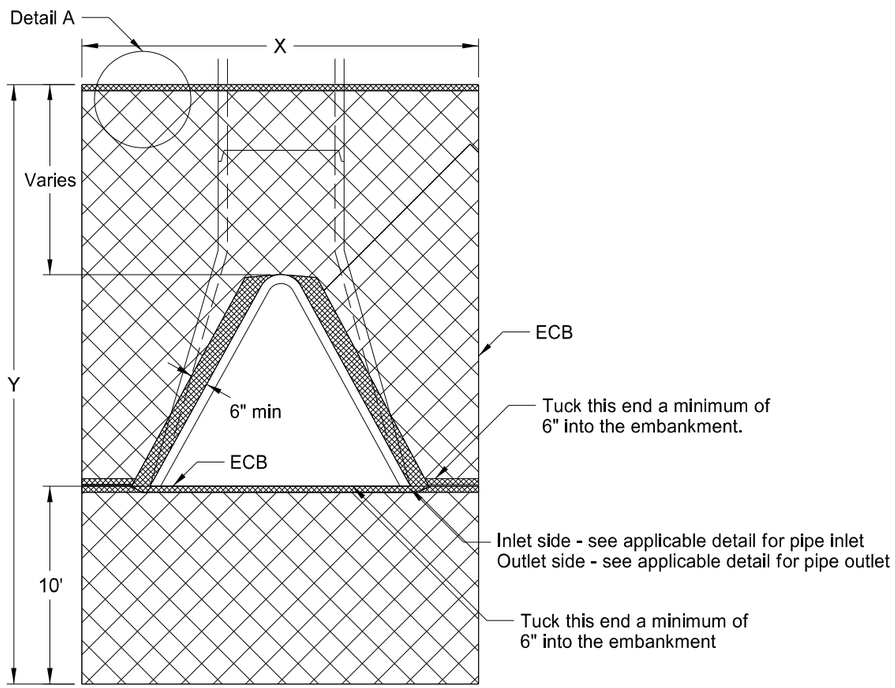
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	20	18



FRONT VIEW



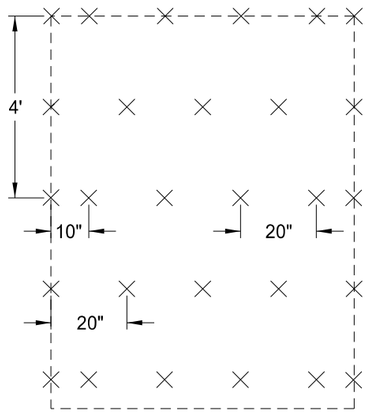
SIDE VIEW



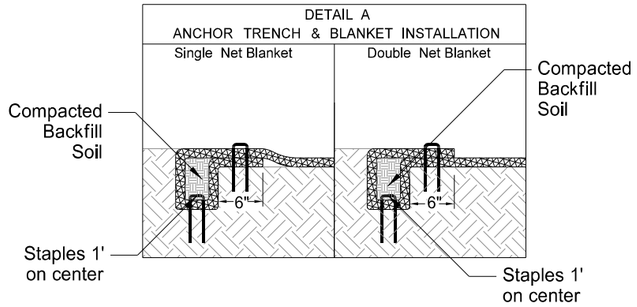
TOP VIEW

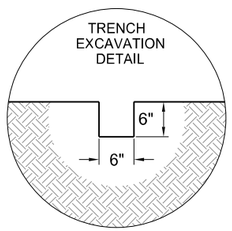
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the flared end section) around the opening of the flared end section.

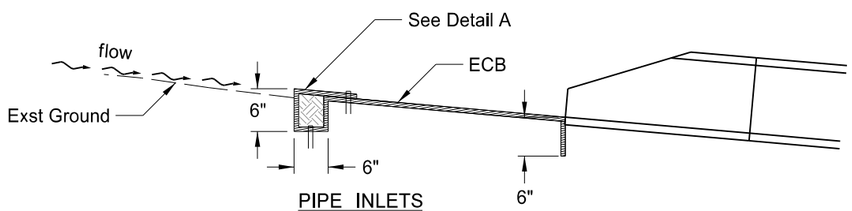
Erosion Control Blanket (ECB)						
Location to be Protected	Culvert Type Appr/CL	Pipe Size	Unit Quantity			
Station			X	Y	SF	SY
1892+12-28' Lt	Appr	22"x13"x77'	9.2	19.0	174.8	20
1892+89-29' Lt	Appr	22"x13"x77'	9.2	19.0	174.8	20
1894+93-29' Lt	CL	29"x18"x46'	10.3	20.0	206.0	23



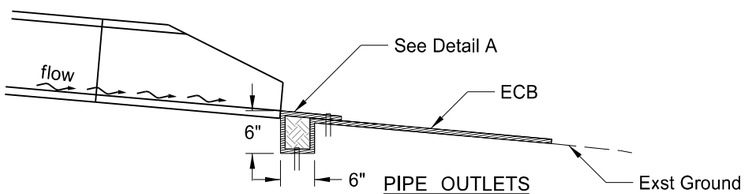
STAPLE PATTERN







PIPE INLETS



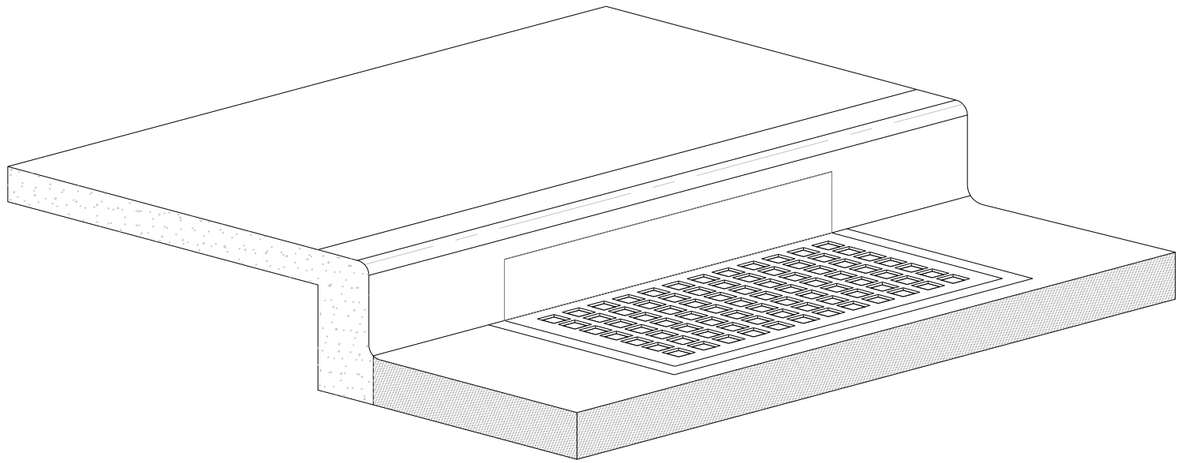
PIPE OUTLETS

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Erosion Control at Culvert Flared End Sections

ND 32-W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	20	19



Inlet Protection Device

Installation Notes:

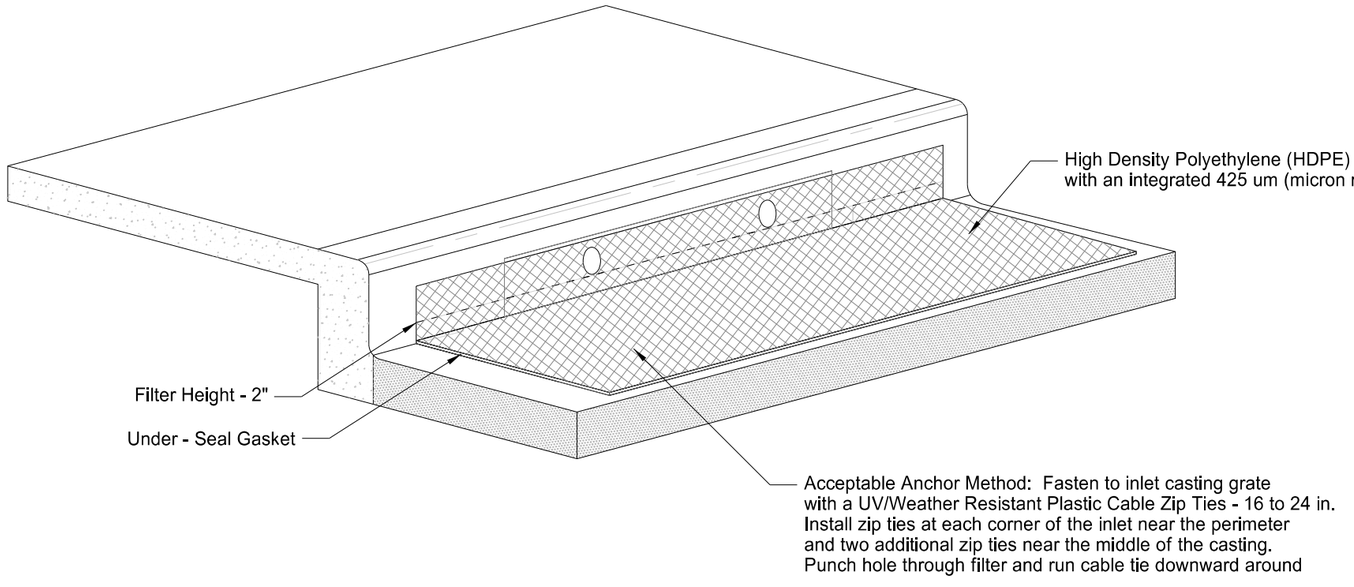
1. Place device tightly against drain opening and cover entire grate. Extend the device at least 2 inches past the grate toward the street.

2. Overlap the segments at longer openings.

3. Anchor the device so that water cannot flow behind it.

General Notes:

1. Remove material that falls into the inlet during maintenance or removal of the device.

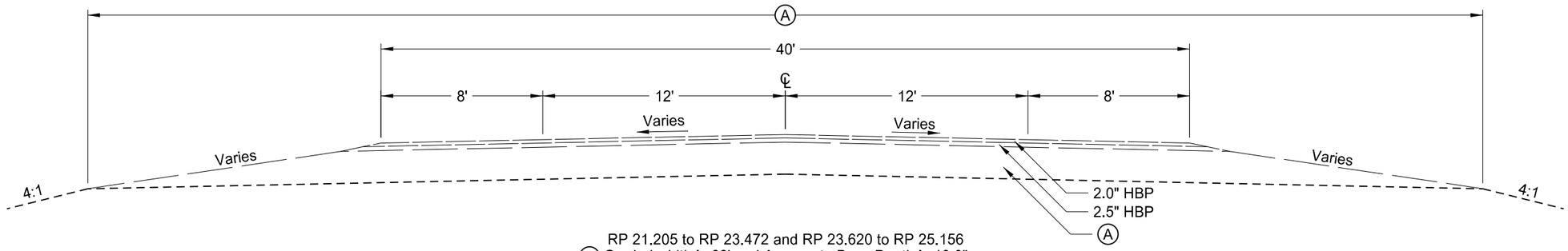


This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

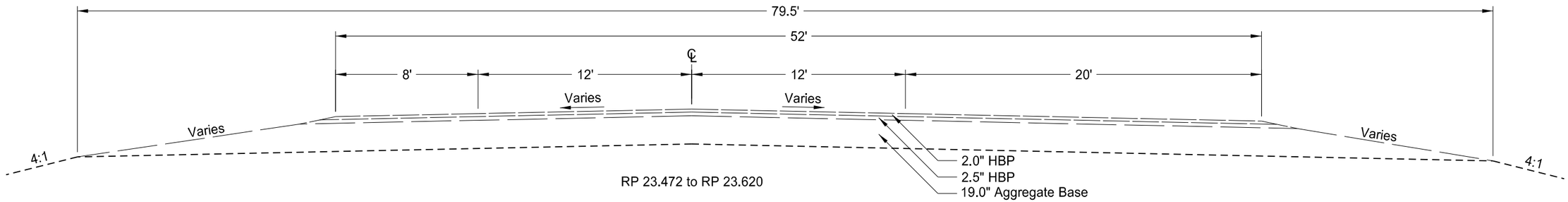
Inlet Protection Device

ND 32 - W Jct 13 N to Riverside Dr Lisbon

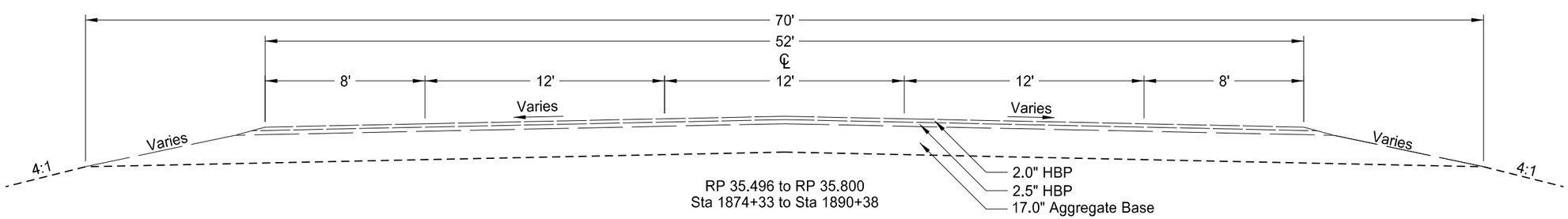
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	1



RP 21.205 to RP 23.472 and RP 23.620 to RP 25.156
(A) Graded width is 69' and Aggregate Base Depth is 19.0"
RP 25.156 to RP 35.496
(A) Graded width is 67' and Aggregate Base Depth is 17.0"



RP 23.472 to RP 23.620



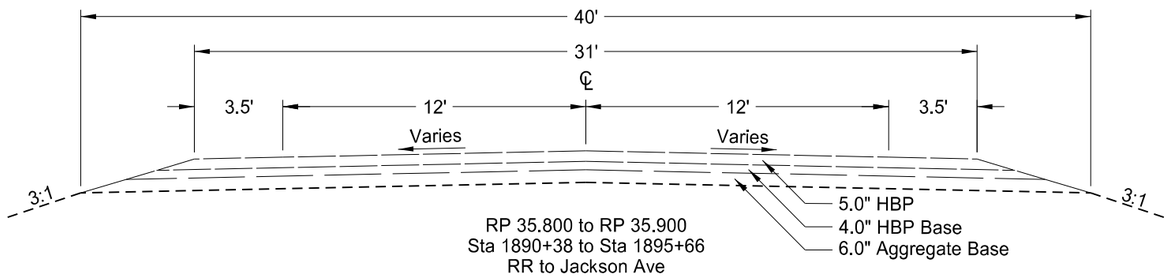
RP 35.496 to RP 35.800
Sta 1874+33 to Sta 1890+38

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

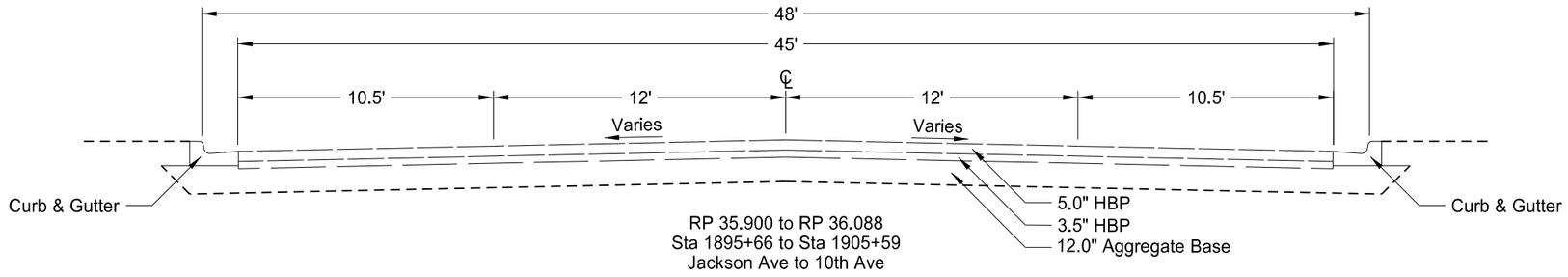
Existing Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

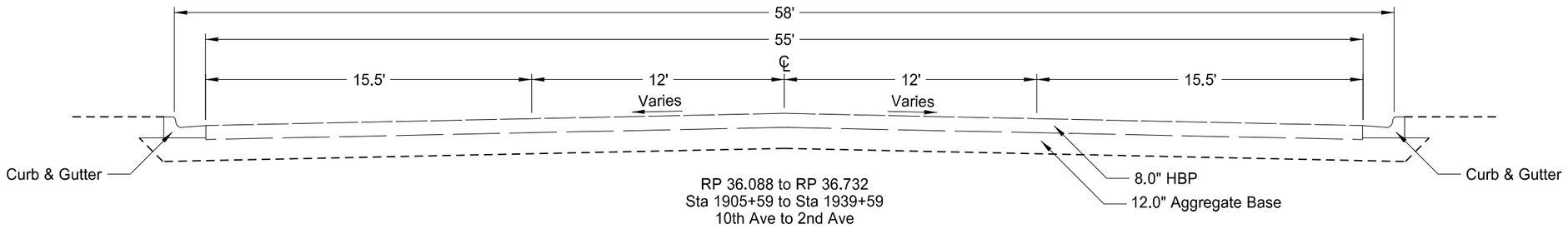
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	2



RP 35.800 to RP 35.900
Sta 1890+38 to Sta 1895+66
RR to Jackson Ave



RP 35.900 to RP 36.088
Sta 1895+66 to Sta 1905+59
Jackson Ave to 10th Ave



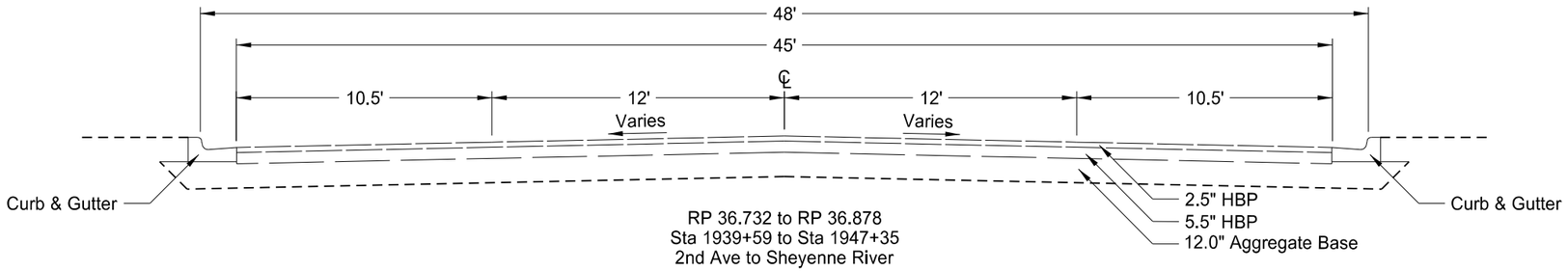
RP 36.088 to RP 36.732
Sta 1905+59 to Sta 1939+59
10th Ave to 2nd Ave

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

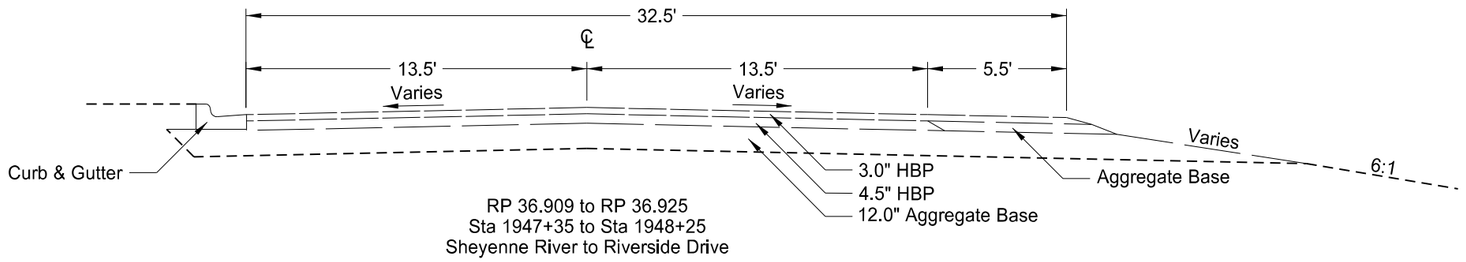
Existing Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	3



RP 36.732 to RP 36.878
Sta 1939+59 to Sta 1947+35
2nd Ave to Sheyenne River



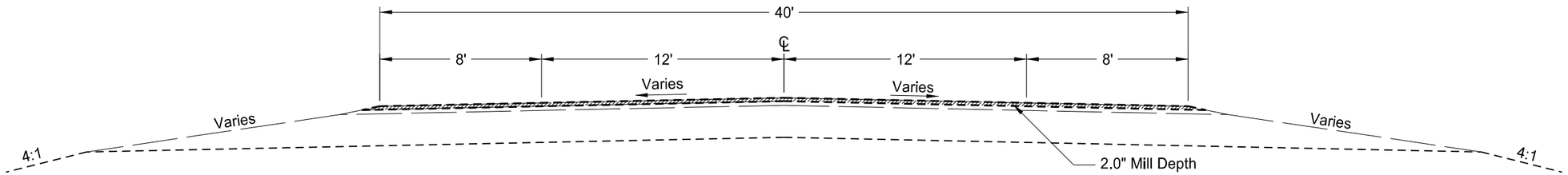
RP 36.909 to RP 36.925
Sta 1947+35 to Sta 1948+25
Sheyenne River to Riverside Drive

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

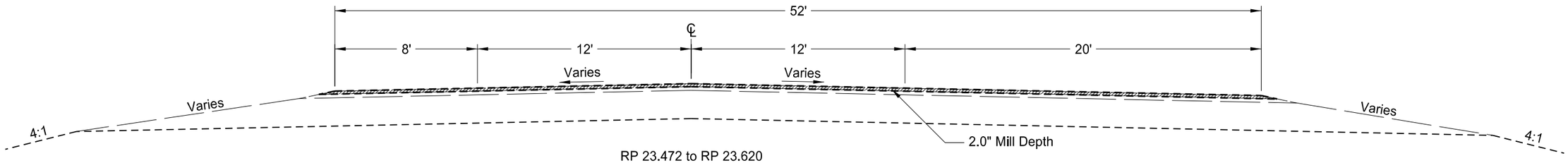
Existing Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

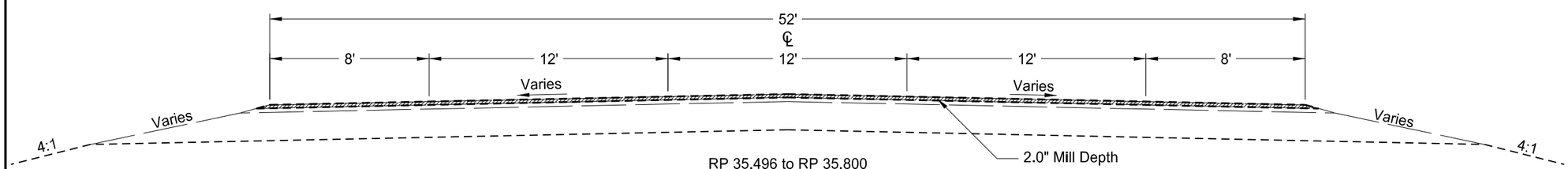
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	4



RP 21.205 to RP 23.472 and RP 23.620 to RP 35.496



RP 23.472 to RP 23.620



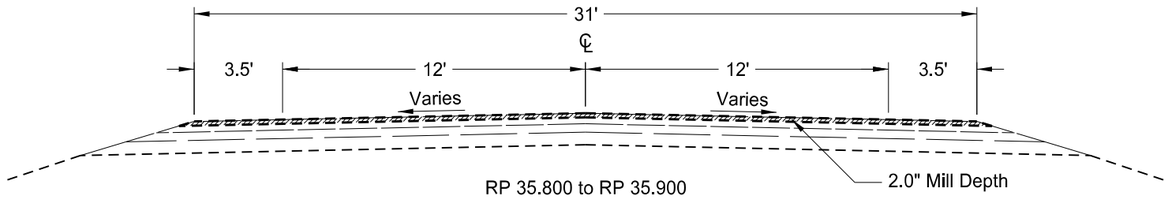
RP 35.496 to RP 35.800
Sta 1874+47 to Sta 1890+57

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

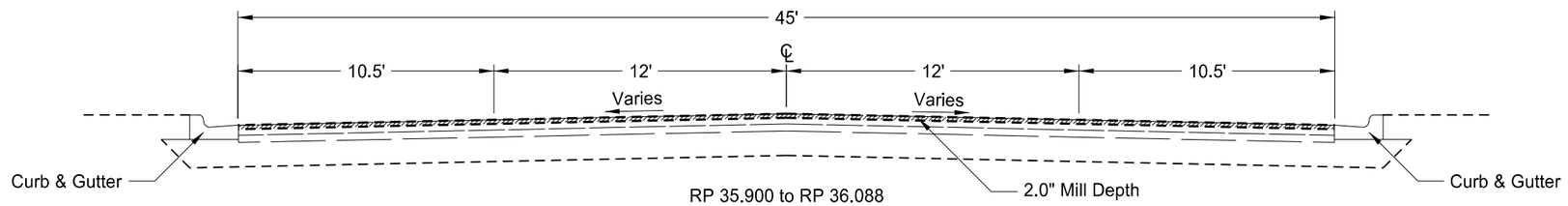
Milling Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

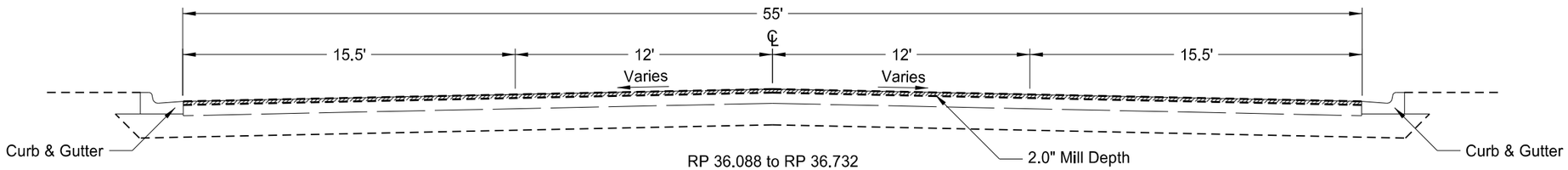
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	5



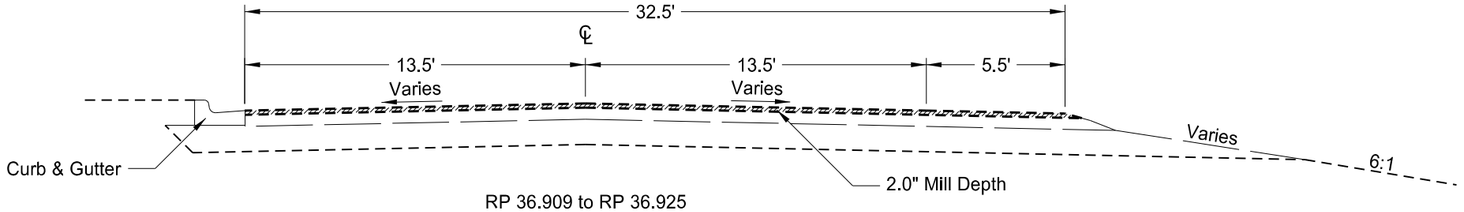
RP 35.800 to RP 35.900
Sta 1890+57 to Sta 1894+85
RR to Jackson Ave



RP 35.900 to RP 36.088
Sta 1894+85 to Sta 1940+74
Jackson Ave to 10th Ave
and
RP 36.732 to RP 36.878
Sta 1939+21 to Sta 1947+28
2nd Ave to Sheyenne River



RP 36.088 to RP 36.732
Sta 1910+74 to Sta 1939+21
10th Ave to 2nd Ave



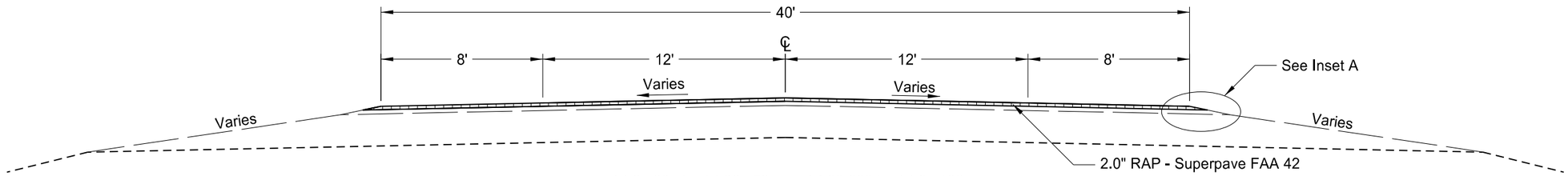
RP 36.909 to RP 36.925
Sta 1949+26 to Sta 1950+02
Sheyenne River to Riverside Drive

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

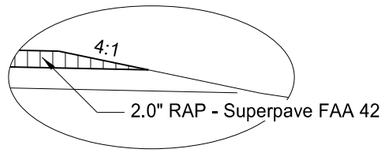
Milling Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

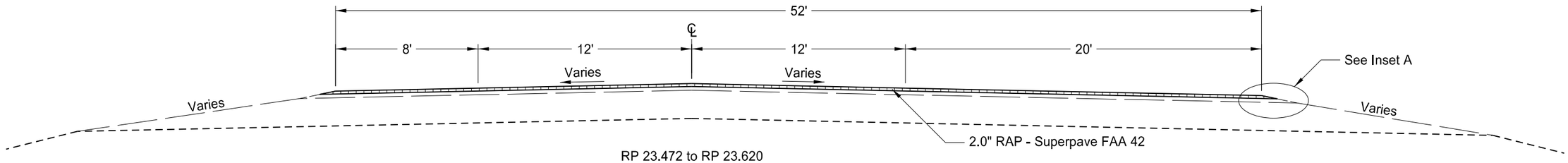
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	6



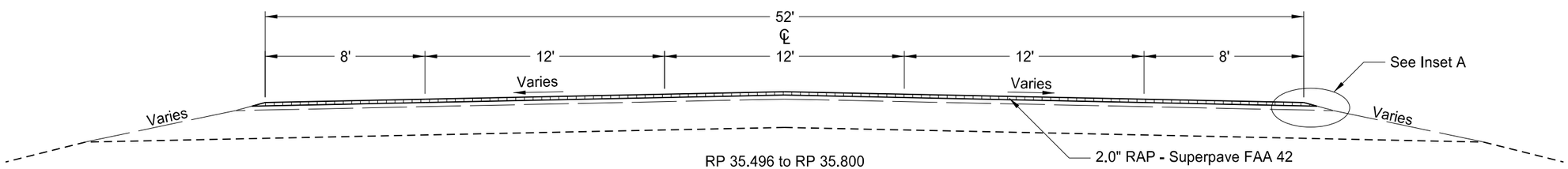
RP 21.205 to RP 23.472 and RP 23.620 to RP 35.496



Inset A



RP 23.472 to RP 23.620



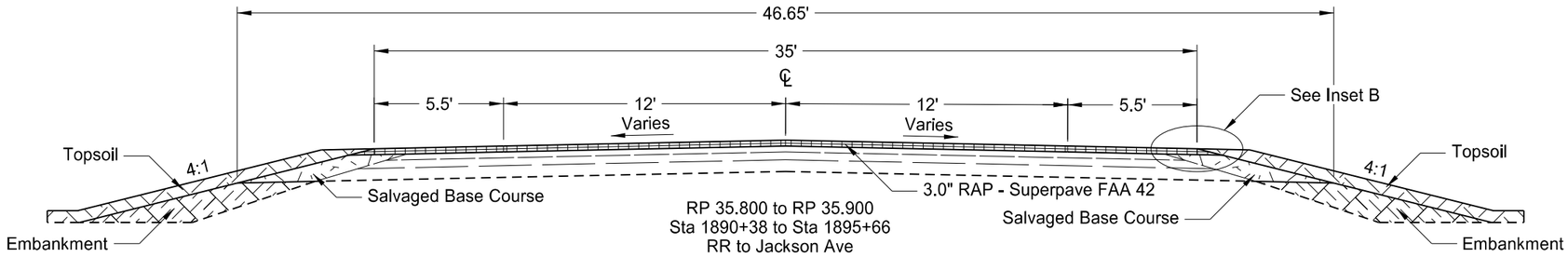
RP 35.496 to RP 35.800
Sta 1874+33 to Sta 1890+38

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

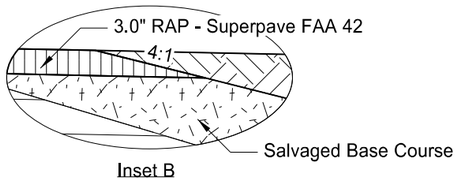
Proposed Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

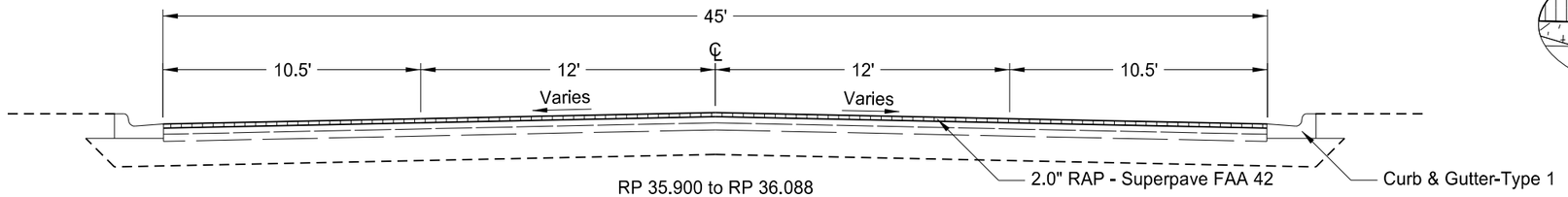
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	30	7



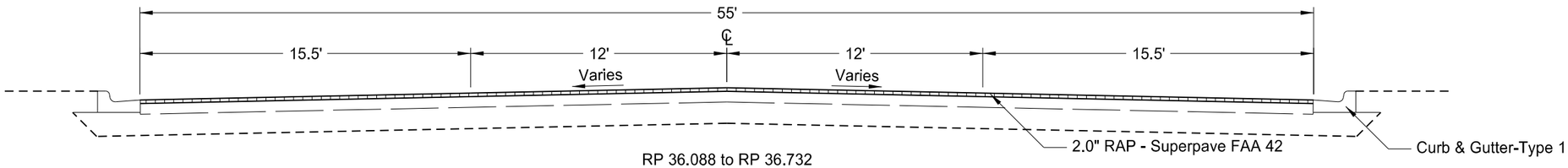
RP 35.800 to RP 35.900
Sta 1890+38 to Sta 1895+66
RR to Jackson Ave



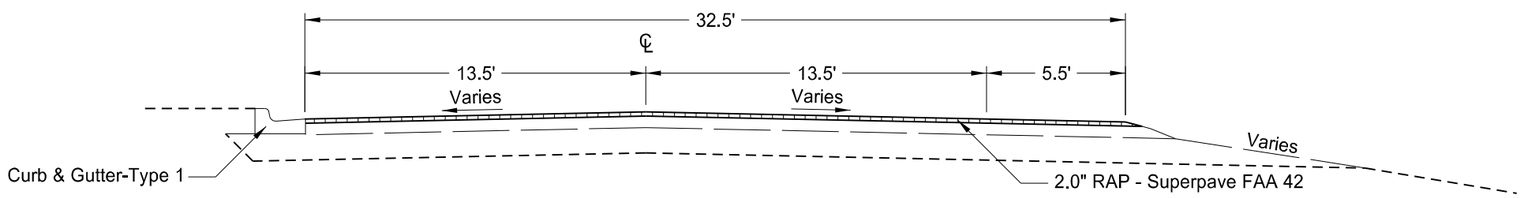
Inset B



RP 35.900 to RP 36.088
Sta 1895+66 to Sta 1905+59
Jackson Ave to 10th Ave
and
RP 36.732 to RP 36.878
Sta 1939+59 to 1947+35
2nd Ave to Sheyenne River



RP 36.088 to RP 36.732
Sta 1905+59 to Sta 1939+59
10th Ave to 2nd Ave



RP 36.909 to RP 36.925
Sta 1947+35 to Sta 1948+25
Sheyenne River to Riverside Drive

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Proposed Typical Sections

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	51	1

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
													Begin	End	
				In	Bid Item	LF		In	Type		In	SY	EA	EA	
1892+12	28' Lt	1892+89	29' Lt	22x13	Pipe Conduit Arch 22IN X 13IN	77	Reinforced Concrete Pipe - Class III (barrel length = 77 LF)	18					FES	FES	Section 20 Sheet 5
							Corrugated Steel Pipe	18	Z,A,P	2	0.064				
							Spiral Rib Steel Pipe	18	Z,A,P	3/4, 1	0.064				
1894+89	23' Lt	1894+88	29' Lt	29x18	Pipe Conc. Reinf.	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24					Remove & Relay		Section 20 Sheet 5

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"

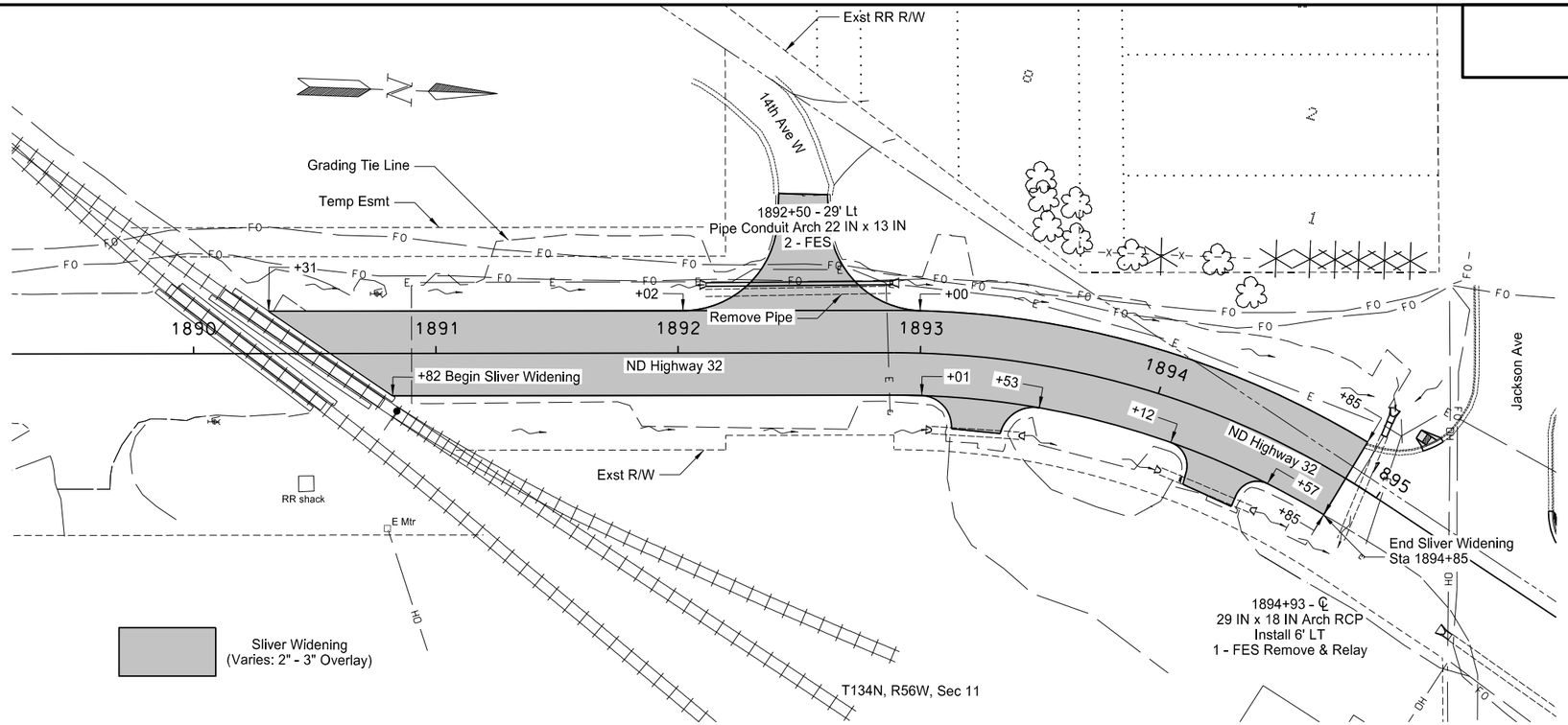
(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

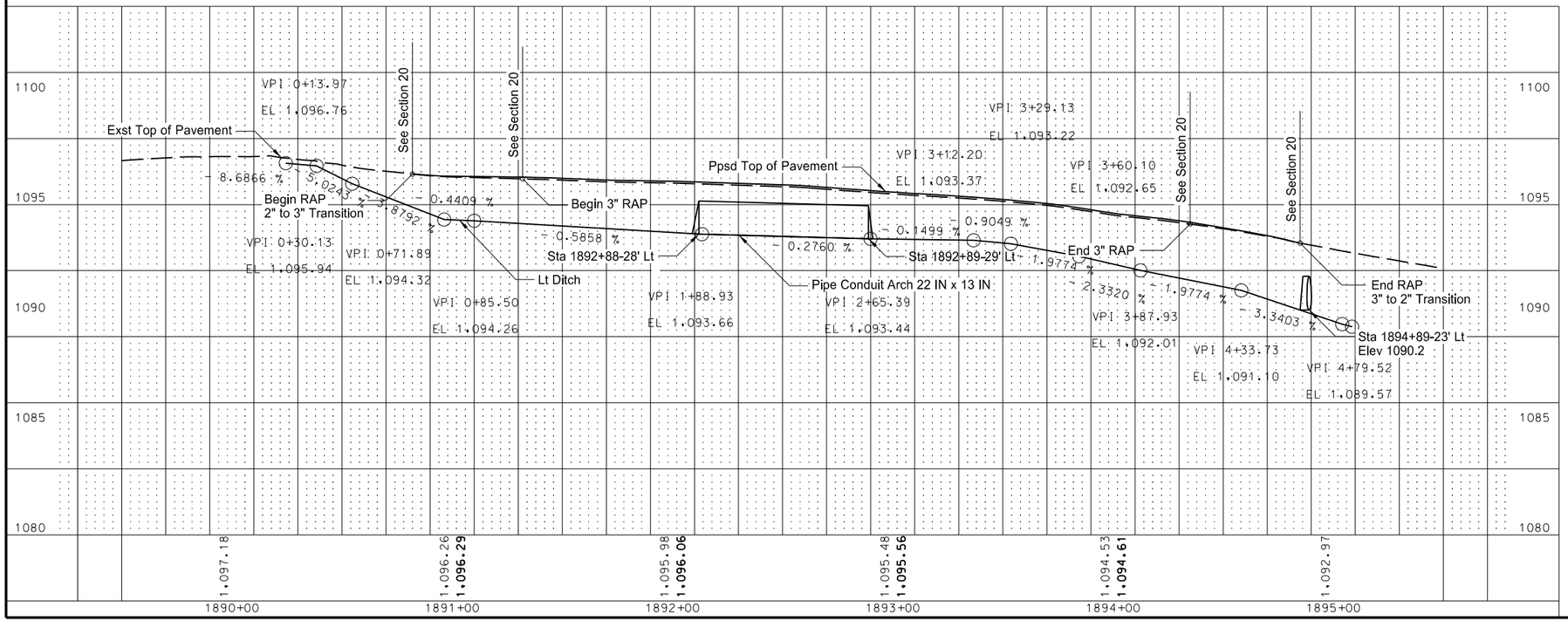
Allowable Pipe List

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	60	1



SPEC	CODE	BID ITEM	QTY	UNIT
202	174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 1892+50 - 25' Lt	77	LF
714	2010	PIPE CONC REINF ARCH 29IN X 18IN		
		Sta 1894+93 - 6' Lt	6	LF
714	4216	PIPE CONDUIT ARCH 22IN X 13IN		
		Sta 1892+12 - 28' Lt to Sta 1892+89 - 29' Lt	77	LF
714	9660	REMOVE & RELAY END SECTION-ALL TYPES & SIZES		
		Sta 1894+93	1	EA



This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 01/03/20 and the original document is stored at the North Dakota Department of Transportation

Plan & Profile
Sliver Widening
Sta 1889+50 to 1895+50

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

1/3/2020 9:01:15 AM bhaussler R:\project\80032021.042\design\DOTSC\Plan\060PP_001.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts Acre(s)		USFWS Easement Impacts Acre(s)		Wetland Mitigation						
								Mitigation Required			Onsite			
				Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Mitigation Location; Ratio	Acre(s)	Constructed Site #	Constructed Size Acre(s)
1a	Sec.11, T134N, R56W	Artificial	Yes	0	0.00			N	N	N				
				0	0.00	0	0					0		0

[1] A wetland Jurisdictional Determination was issued by the USACE on 10/20/2017; NWO-2017-01767-BIS.

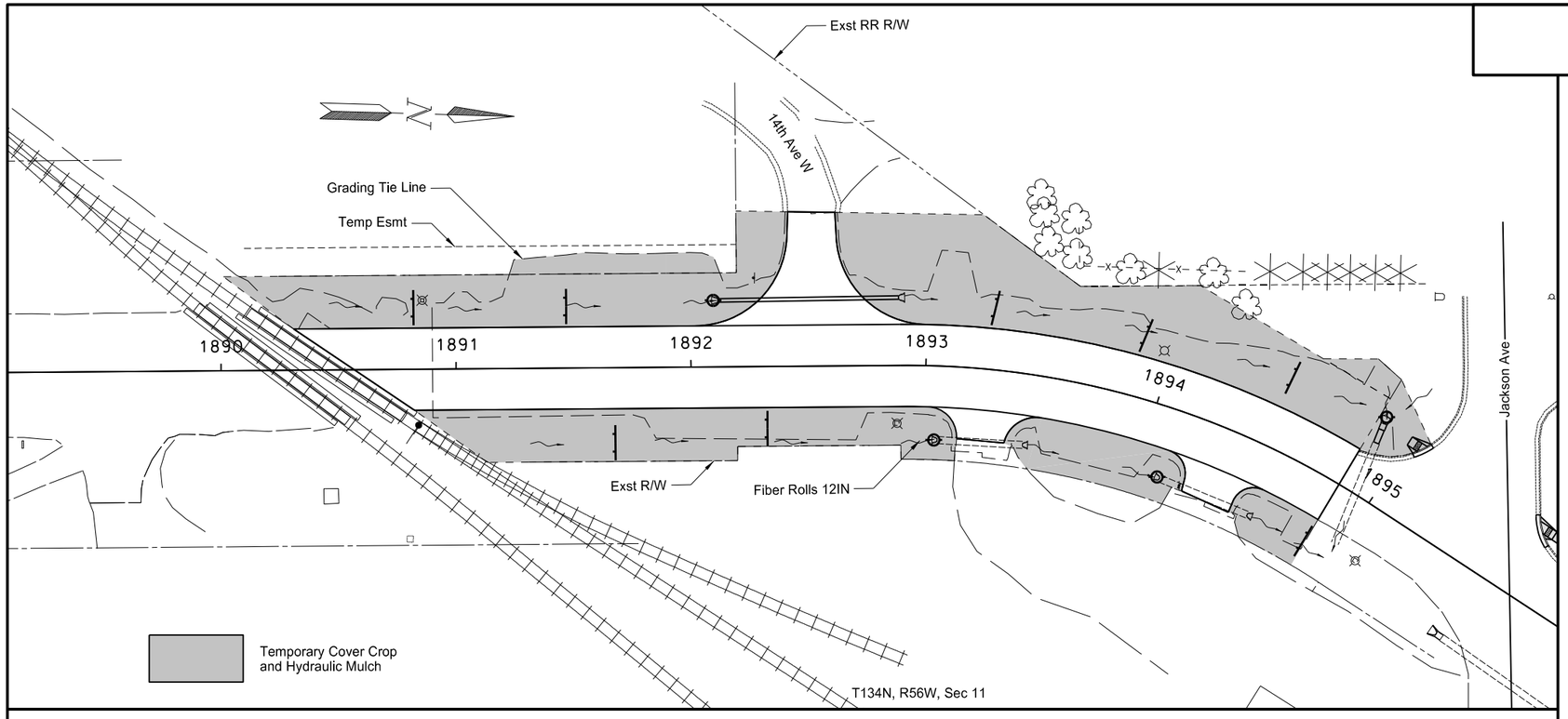
USACE Mitigation Requirements - All jurisdictional impacts greater than 0.10 acre to each resource (cumulative. eg 1a ,1b,1c..etc.) requires mitigation. Other Water impact greater than 300 linear feet requires mitigation.

[2] All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Wetland Impact Table

ND 32 - W Jct 13 N to Riverside Dr
Lisbon



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	76	1

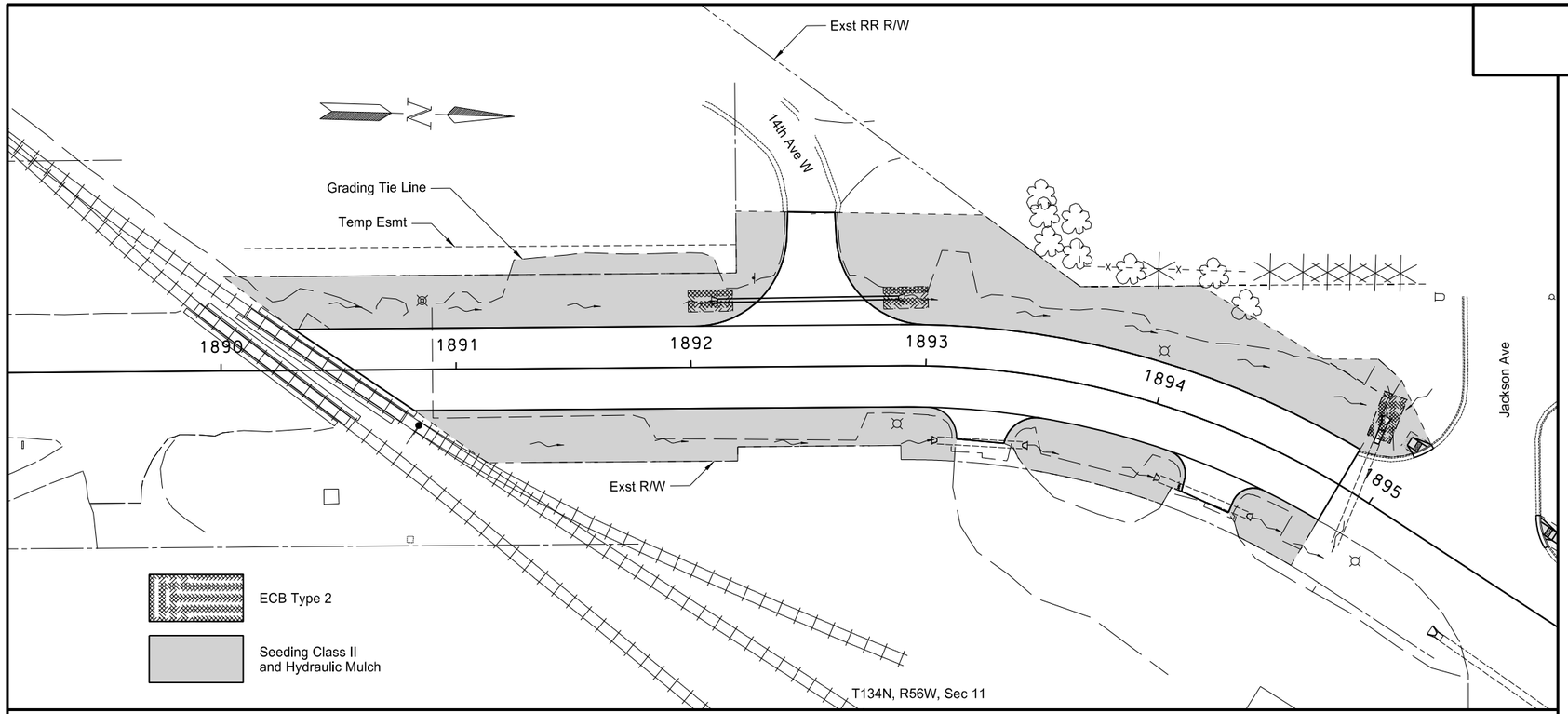
SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 1890+01 to 1894+85 LT	0.338	Acre
		Sta 1890+82 to 1894+85 RT	0.154	Acre
253	0201	HYDRAULIC MULCH		
		Sta 1890+01 to 1894+85 LT	0.338	Acre
		Sta 1890+82 to 1894+85 RT	0.154	Acre
261	0112	FIBER ROLLS 12IN		
		Sta 1890+11 to 1894+85 LT	105	LF
		Sta 1890+82 to 1894+85 RT	75	LF

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Temporary Sediment & Erosion Control
Sliver Widening
Sta 1890+00 to 1895+50

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	77	1



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 1890+01 to 1894+85 LT	0.338	Acre
		Sta 1890+82 to 1894+85 RT	0.154	Acre
253	0201	HYDRAULIC MULCH		
		Sta 1890+01 to 1894+85 LT	0.338	Acre
		Sta 1890+82 to 1894+85 RT	0.154	Acre
255	0102	ECB TYPE 2		
		Sta 1892+12 - 28' Lt	20	SY
		Sta 1892+89 - 29' Lt	20	SY
		Sta 1894+93 - 29' Lt	23	SY

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control
Sliver Widening
Sta 1890+00 to 1895+50

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - Lisbon ADA / Sliver Grading

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
ND 32 (Chain: SCL_HWY32)			
BEG	1874+47.49	290139.34	2678732.21
PC	1892+89.08	291979.70	2678664.61
PI C800	1893+97.96	292088.51	2678660.61
PT	1895+00.53	292181.24	2678717.68
PC	1904+65.09	293002.69	2679223.23
PI C801	1905+74.93	293096.24	2679280.80
PT	1906+78.25	293205.98	2679276.02
PI ND 27	1928+23.94	295349.63	2679182.58
END	1950+02.30	297525.94	2679087.94

CURVE DATA

ARC DEFINITION

C800	
PI STA	= 1893+97.96
Delta	= 33° 42' 46" RT
D_a	= 15° 56' 38"
R	= 359.36'
T	= 108.88'
L	= 211.45'
C801	
PI STA	= 1905+74.93
Delta	= 34° 06' 19" LT
D_a	= 16° 00' 00"
R	= 358.10'
T	= 109.84'
L	= 213.16'

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
SW Cor	Sec 11 T-134-N R-56-W	289966.73	2674797.40

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
CONTROL POINT DESCRIPTION					
PRIMARY CONTROL					
GPS 2	286664.89	2678784.52	1088.84	N/A	N/A
#6 Rebar w/ cap stampted NDDOT Control					
GPS 1	291410.93	2682342.70	1122.20	1904+91	3501 Rt'
#5 Rebar w/ 1 1/2" Alum cap stampted NDDOT Control					
SECONDARY CONTROL					
RTK 1015	291930.89	2678707.64	1093.07	1892+39	41 Rt'
RTK 51427	293555.59	2679225.91	1089.97	1910+30	35' Lt
RTK 51428	293782.06	2679210.97	1090.03	1912+57	40' Lt
RTK 51808	294211.78	2679197.12	1090.62	1916+87	35' Lt
RTK 1016	294444.42	2679089.96	1091.49	1919+24	132' Lt
RTK 52329	294578.71	2679182.51	1091.58	1920+54	34' Lt
RTK 52330	294946.40	2679236.95	1087.74	1924+19	37 Rt'
RTK 4674	295312.52	2678966.95	1090.73	1927+96	217' Lt
RTK 4673	295314.46	2679219.44	1089.63	1927+87	35 Rt'
RTK 4234	295697.55	2679017.59	1089.90	1931+79	150' Lt
RTK 4233	295738.74	2679195.70	1089.16	1932+12	30 Rt'
RTK 3496	296412.60	2679095.92	1090.68	1938+90	40' Lt
RTK 3225	296984.64	2679145.94	1089.64	1944+59	34 Rt'
RTK 99	297056.89	2679513.26	1095.05	1945+15	405 Rt'
RTK 3224	297101.22	2679072.89	1089.77	1945+79	33' Lt
RTK 1017	298368.12	2678991.68	1119.92	N/A	N/A
BM - USGS Lisbon 1934	296772.45	2678397.89	1087.57	1942+80	722' Lt

NOTES: Sheet 1 of 1

Date Survey Completed 5/19/18

☐ Assumed Coordinates

☒ All coordinates on this sheet are Ransom County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9999010

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

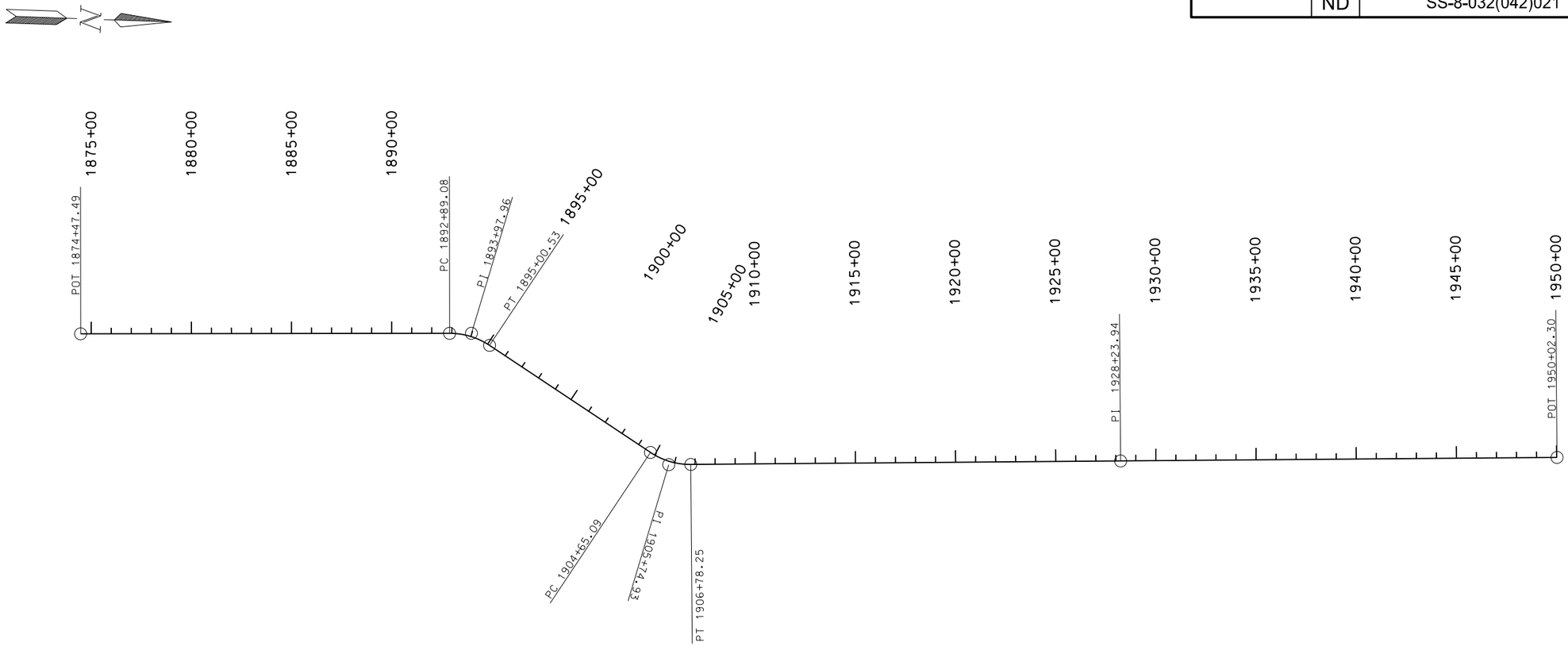
INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID 09 ☒ GEOID 12B
☐ GEOID 12A

This document was originally issued and sealed by Kristofor Johnson Registration Number LS-10169, on 11/18/2019and the original document is stored at the North Dakota Department of Transportation

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	82	1



==========

Point 55 N 290,139.3450 E 2,678,732.2060 Sta 1874+47.49

Course from 55 to PC SCL HWY32 3 N 2° 06' 12.74" W Dist 1,841.5912

Curve Data

Curve SCL HWY32 3

P.I. Station		1893+97.96	N	292,088.5054	E 2,678,660.6130
Delta	=	33° 42' 46.42" (RT)			
Degree	=	15° 56' 37.82"			
Tangent	=	108.8836			
Length	=	211.4478			
Radius	=	359.3600			
External	=	16.1333			
Long Chord	=	208.4107			
Mid. Ord.	=	15.4402			
P.C. Station		1892+89.08	N	291,979.6952	E 2,678,664.6096
P.T. Station		1895+00.53	N	292,181.2352	E 2,678,717.6816
C.C.			N	291,992.8856	E 2,679,023.7275
Back	=	N 2° 06' 12.74" W			
Ahead	=	N 31° 36' 33.68" E			
Chord Bear	=	N 14° 45' 10.47" E			

Course from PT SCL HWY32 3 to PC SCL HWY32 6 N 31° 36' 33.68" E Dist 964.5604

Curve Data

Curve SCL HWY32 6

P.I. Station		1905+74.93	N	293,096.2405	E 2,679,280.8026
Delta	=	34° 06' 18.75" (LT)			
Degree	=	15° 59' 59.78"			
Tangent	=	109.8418			
Length	=	213.1584			
Radius	=	358.1000			
External	=	16.4675			
Long Chord	=	210.0254			
Mid. Ord.	=	15.7435			
P.C. Station		1904+65.09	N	293,002.6947	E 2,679,223.2318
P.T. Station		1906+78.25	N	293,205.9781	E 2,679,276.0193
C.C.			N	293,190.3839	E 2,678,918.2590
Back	=	N 31° 36' 33.68" E			
Ahead	=	N 2° 29' 45.07" W			
Chord Bear	=	N 14° 33' 24.30" E			

Course from PT SCL HWY32 6 to 56 N 2° 29' 45.07" W Dist 2,145.6911

Point 56 N 295,349.6337 E 2,679,182.5807 Sta 1928+23.94

Course from 56 to 57 N 2° 29' 24.53" W Dist 2,178.3653

Point 57 N 297,525.9420 E 2,679,087.9360 Sta 1950+02.30

==========

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Survey Data Layout

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE					35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES					28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)					18	
G20-2-48	**48"x24"**	**END ROAD WORK**	**2**	**2**		**2**	**26**	**52**
G20-4-36	**36"x18"**	**PILOT CAR FOLLOW ME (Mounted to back of pilot car)**	**1**			**1**	**18**	**18**
G20-4b-36	**36"x30"**	**WAIT FOR PILOT CAR**	**4**			**4**	**18**	**72**
G20-10-108	**108"x48"**	**CONTRACTOR SIGN**	**2**			**2**	**70**	**140**
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**	**4**	**21**		**21**	**43**	**903**
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW					36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT					59	
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 (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)					7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)					7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)					9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)					7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)					9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)					7	
R1-1-48	**48"x48"**	**STOP**		**4**		**4**	**32**	**128**
R1-2-60	60"x60"	YIELD					29	
R2-1-36	36"x48"	SPEED LIMIT __ (Portable only)					30	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**4**	**6**		**6**	**39**	**234**
R2-1aP-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**	**2**	**2**		**2**	**10**	**20**
R3-2-48	48"x48"	NO LEFT TURN					35	
R4-1-48	**48"x60"**	**DO NOT PASS**	**2**			**2**	**39**	**78**
R4-7-48	48"x60"	KEEP RIGHT					39	
R5-1-48	48"x48"	DO NOT ENTER					35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)					14	
R7-1-12	**12"x18"**	**NO PARKING ANY TIME**		**12**		**12**	**11**	**132**
R8-8-24	**24"x30"**	**DO NOT STOP ON TRACKS**	**2**			**2**	**6**	**12**
R9-9-24	**24"x12"**	**SIDEWALK CLOSED (Mounted on barricade)**		**38**		**38**	**3**	**114**
R10-6-24	24"x36"	STOP HERE ON RED					16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)					12	
R11-2a-48	**48"x30"**	**STREET CLOSED (Mounted on barricade)**		**6**		**6**	**12**	**72**
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)					15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)					15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)					15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT					35	
W1-4-48	**48"x48"**	**REVERSE CURVE RIGHT or LEFT**		**2**		**2**	**35**	**70**
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT					35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW					26	
W3-1-48	48"x48"	STOP AHEAD					35	
W3-3-48	48"x48"	SIGNAL AHEAD					35	
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**	**2**			**2**	**35**	**70**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**2**			**2**	**35**	**70**
W4-2-48	**48"x48"**	**LANE ENDS RIGHT or LEFT**		**2**		**2**	**35**	**70**
W5-1-48	48"x48"	ROAD NARROWS					35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE					35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW					35	
W6-3-48	48"x48"	TWO WAY TRAFFIC					35	
W8-1-48	**48"x48"**	**BUMP**	**2**			**2**	**35**	**70**
W8-3-48	48"x48"	PAVEMENT ENDS					35	
W8-7-48	48"x48"	LOOSE GRAVEL					35	
W8-11-48	**48"x48"**	**UNEVEN LANES**	**2**			**2**	**35**	**70**
W8-12-48	48"x48"	NO CENTER LINE					35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL					35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY					35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or _ MILE					35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or _ MILE					35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY					35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL					35	
W12-2-48	48"x48"	LOW CLEARANCE					35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)					14	
W14-3-64	64"x48"	NO PASSING ZONE					28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)					10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**6**	**20**		**20**	**35**	**700**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or _ MILE					35	
W20-3-48	**48"x48"**	**ROAD or STREET CLOSED AHEAD or __ FT or _ MILE**		**6**		**6**	**35**	**210**
W20-4-48	**48"x48"**	**ONE LANE ROAD AHEAD or __ FT or _ MILE**	**2**			**2**	**35**	**70**
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE					35	
W20-7-48	**48"x48"**	**FLAGGER**	**2**	**2**		**2**	**35**	**70**
W20-8-18	**18"x18"**	**STOP - SLOW PADDLE Back to Back**	**2**	**2**		**2**	**5**	**10**
W20-52P-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**	**2**			**2**	**12**	**24**
W21-1-48	**48"x48"**	**WORKERS**		**2**		**2**	**35**	**70**
W21-2-48	48"x48"	FRESH OIL					35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE					35	
W21-5-48	48"x48"	SHOULDER WORK					35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED					35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE					35	
W21-6-48	48"x48"	SURVEY CREW					35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT					35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY					35	
W21-52-48	48"x48"	PAVEMENT BREAKS					35	
W21-53-48	**48"x48"**	**RUMBLE STRIPS AHEAD**	**2**			**2**	**35**	**70**
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK					35	

SPECIAL SIGNS

SPEC & CODE			
704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**3619**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. 1	2		TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**1350**	**50**		**1400**
704-1048	**PORTABLE RUMBLE STRIPS**	EACH	**2**			**2**
704-1050	TYPE I BARRICADES	EACH				
704-1052	**TYPE III BARRICADES**	EACH		**98**		**98**
704-1054	**SIDEWALK BARRICADE**	EA		**38**		**38**
704-1056	**PEDESTRIAN CHANNELIZATION**	LF		**583**		**583**
704-1060	**DELINEATOR DRUMS**	EACH	**535**	**216**		**535**
704-1065	TRAFFIC CONES	EACH				
704-1067	**TUBULAR MARKERS**	EACH		**111**		**111**
704-1070	DELINEATOR	EACH				
704-1072	FLEXIBLE DELINEATORS	EACH				
704-1080	STACKABLE VERTICAL PANELS	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		**2**		**2**
704-1185	**PILOT CAR**	HR	**400**			**400**
704-1500	OBLITERATION OF PVMT MK	SF				
704-2200	**TEMPORARY PEDESTRIAN SURFACING**	SY		**63**		**63**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF				
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH				
762-0200	RAISED PAVEMENT MARKERS	EACH				
762-0420	SHORT TERM 4IN LINE - TYPE R	LF				
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF				

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

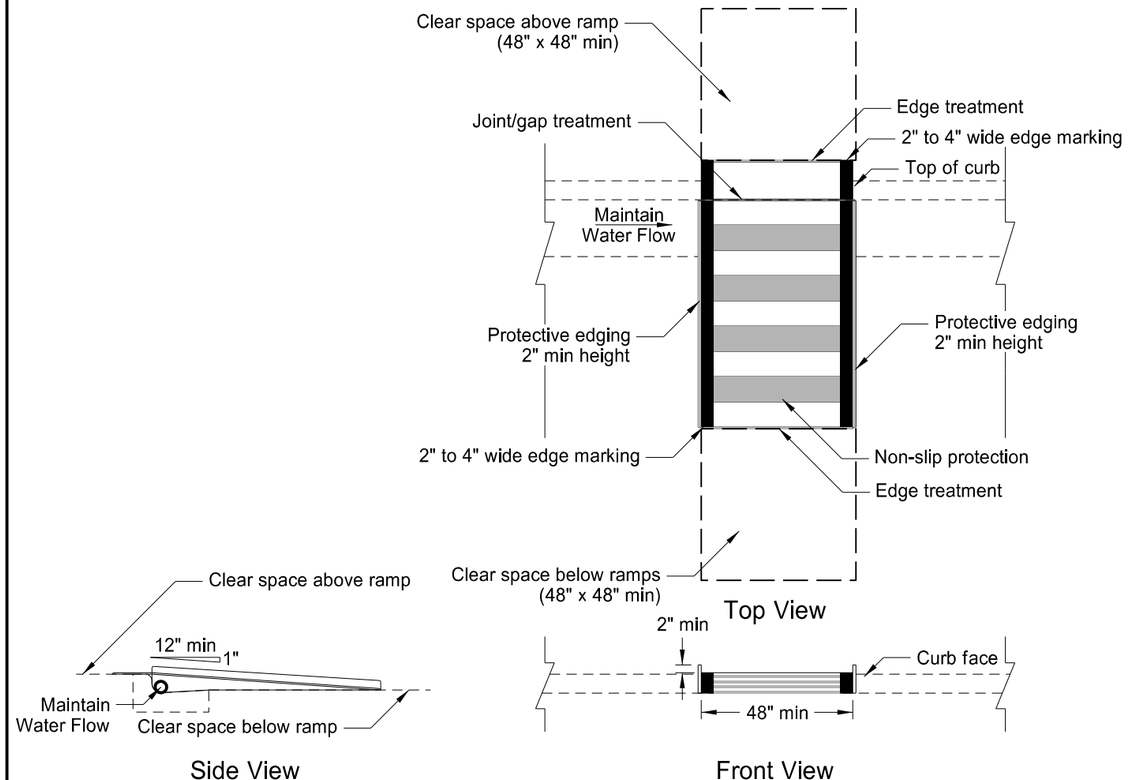
This document was originally issued and sealed by Aaron Murra, Registration Number PE-6536, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation.

Traffic Control Devices List

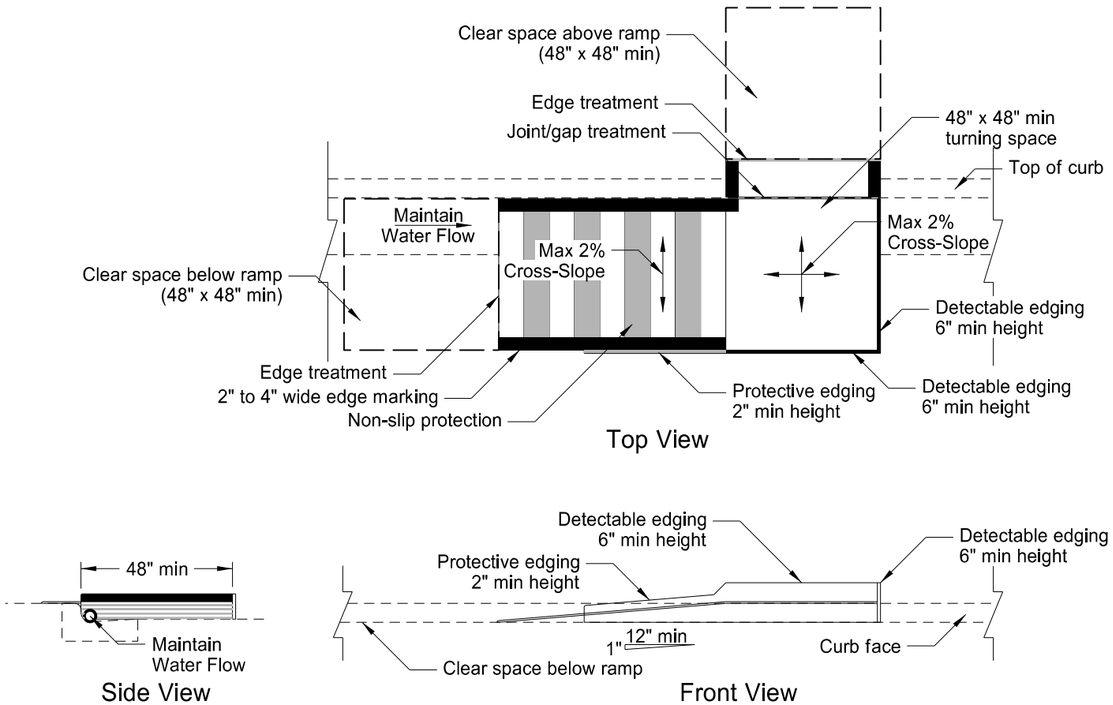
ND 32 - W Jct 13 N to Riverside Dr

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	2

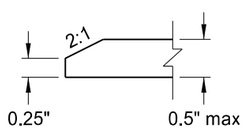


Temporary Perpendicular Curb Ramp



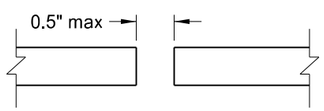
Temporary Parallel Curb Ramp

Edge Treatment



Maximum Surface
Height Change Detail

Joint/Gap Treatment



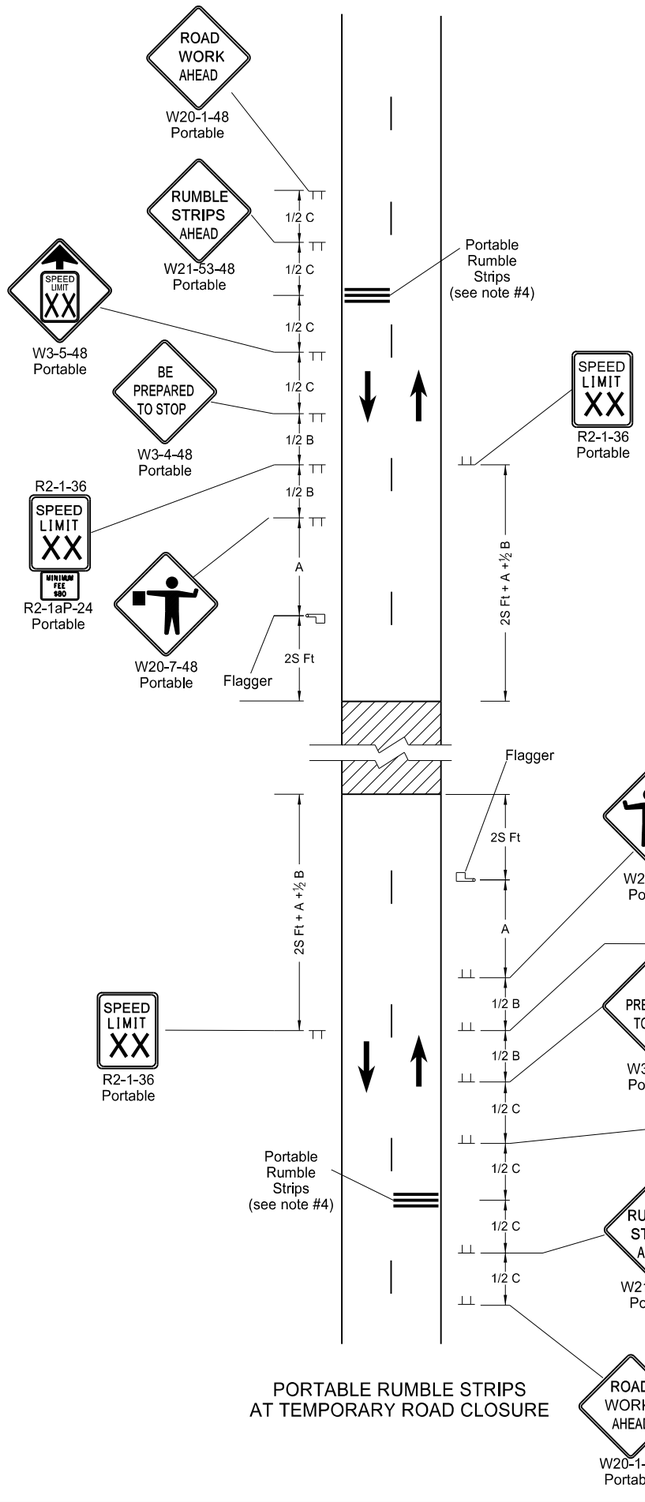
Maximum Width
Lateral Joints or Gaps

This document was originally issued and sealed by Aaron Murra Registration Number PE- 6536 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

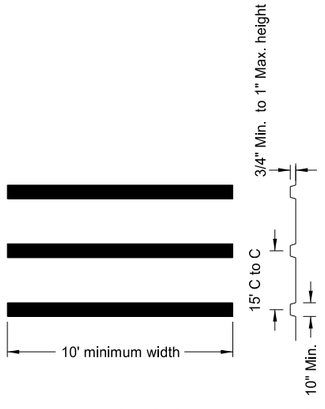
Temporary Pedestrian Curb Ramp Details

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

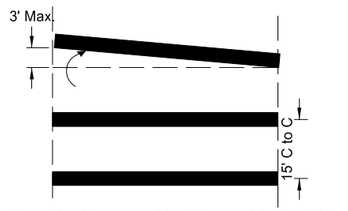
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	3



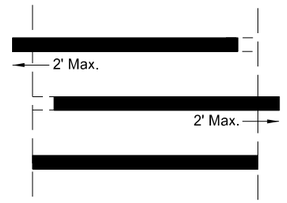
PORTABLE RUMBLE STRIPS AT TEMPORARY ROAD CLOSURE



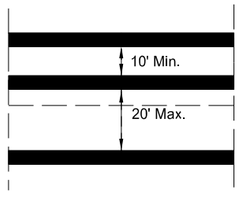
PORTABLE RUMBLE STRIPS ARRAY DETAIL



Reposition if movement is >3' from original position.
Skewing



Reposition if movement is >2' from original position.
Lateral



Reposition if distance between strips is <10' or >20'.
Perpendicular to Travel with or against traffic

PORTABLE RUMBLE STRIPS ARRAY
TYPES OF MOVEMENT AND MAXIMUM ALLOWANCES

Notes:
1. Number of devices were calculated using 40 mph. Speed determined in the field based on location and conditions.
2. Re-establish the speed limit. Determine the exact speed limit in the field, dependent on location and conditions.
3. Sign R2-1aP-24 is not required when pilot car operation is used.
4. Rumble strips are not used on a non paved surface or in a pre-construction speed zone of 25 mph or less.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720

KEY
- Work area
- Flagger
- Sign

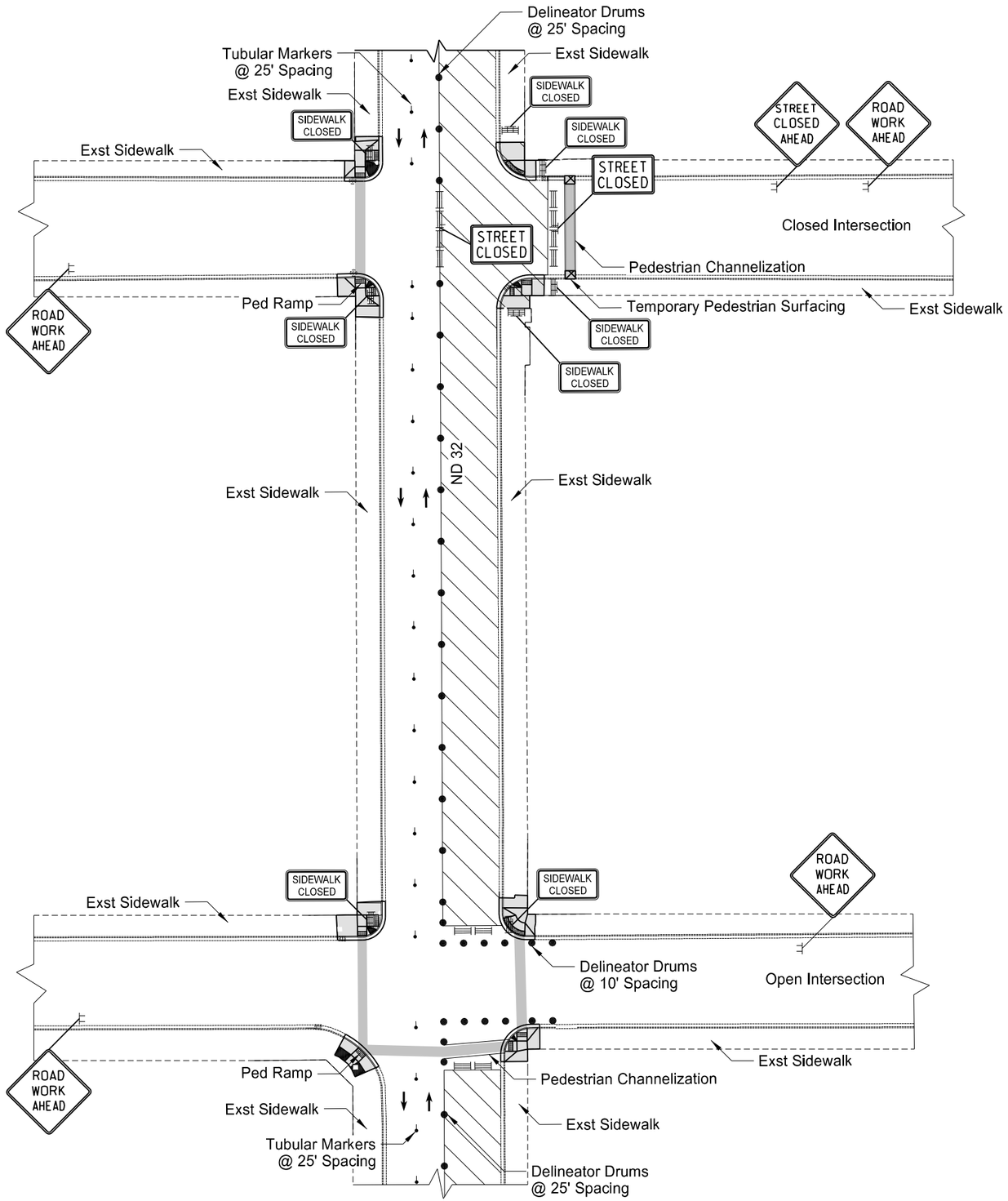
S = Numerical value of speed limit or 85th percentile.

This document was originally issued and sealed by Aaron Murra Registration Number PE- 6536 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Typical Pedestrian Crossing Layout

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	4



Work Area

Open Pedestrian Crossing

Temporary Pedestrian Surfacing

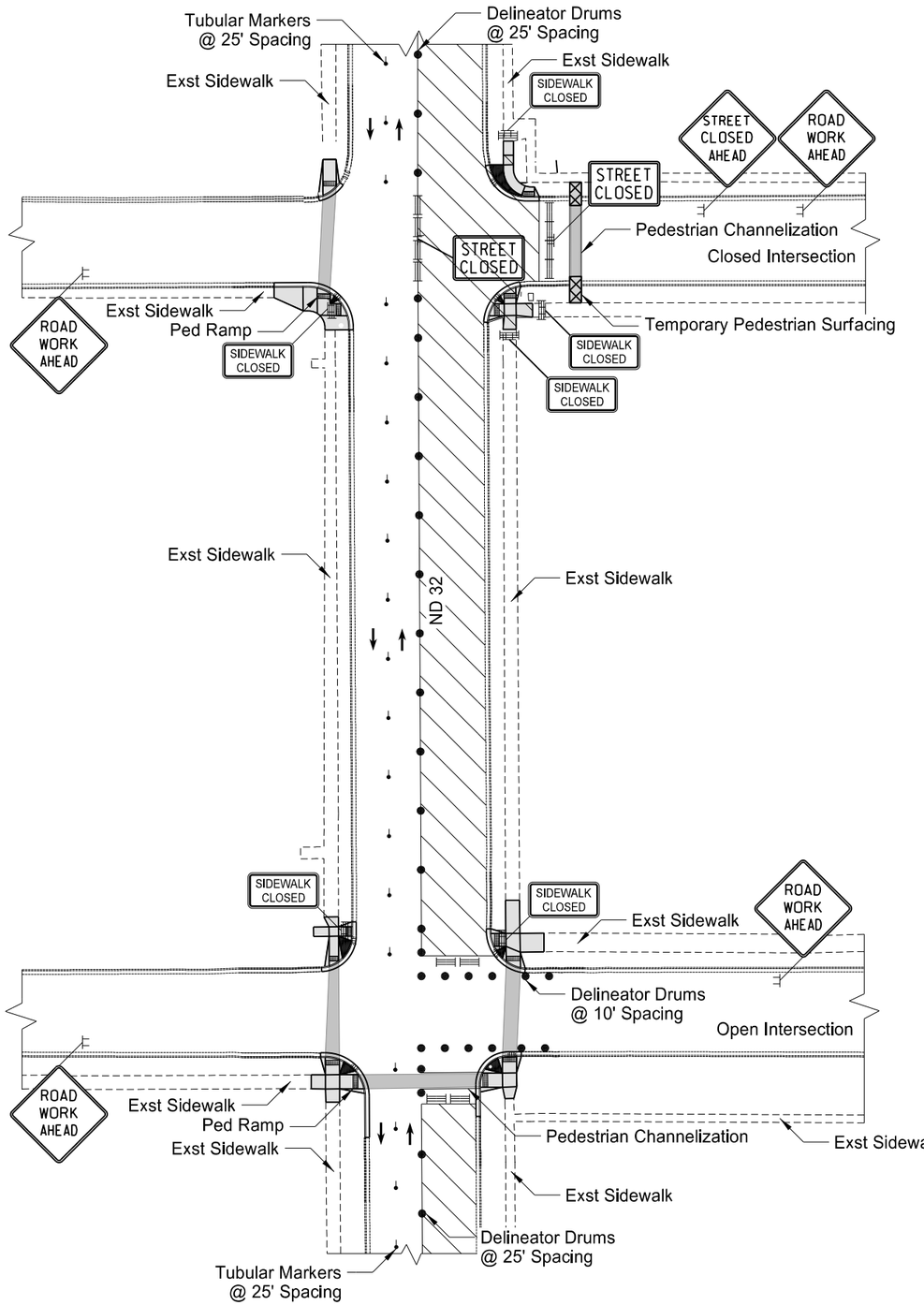
This document was originally issued and sealed by Aaron Murra Registration Number PE- 6536 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Typical Pedestrian Crossing Layout

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

11/26/2019 7:01:58 PM bhaussler R:\project\80032021.042\design\DOTSC\Plan\100WZ_004_Typical Intersections.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	5



Work Area

Open Pedestrian Crossing

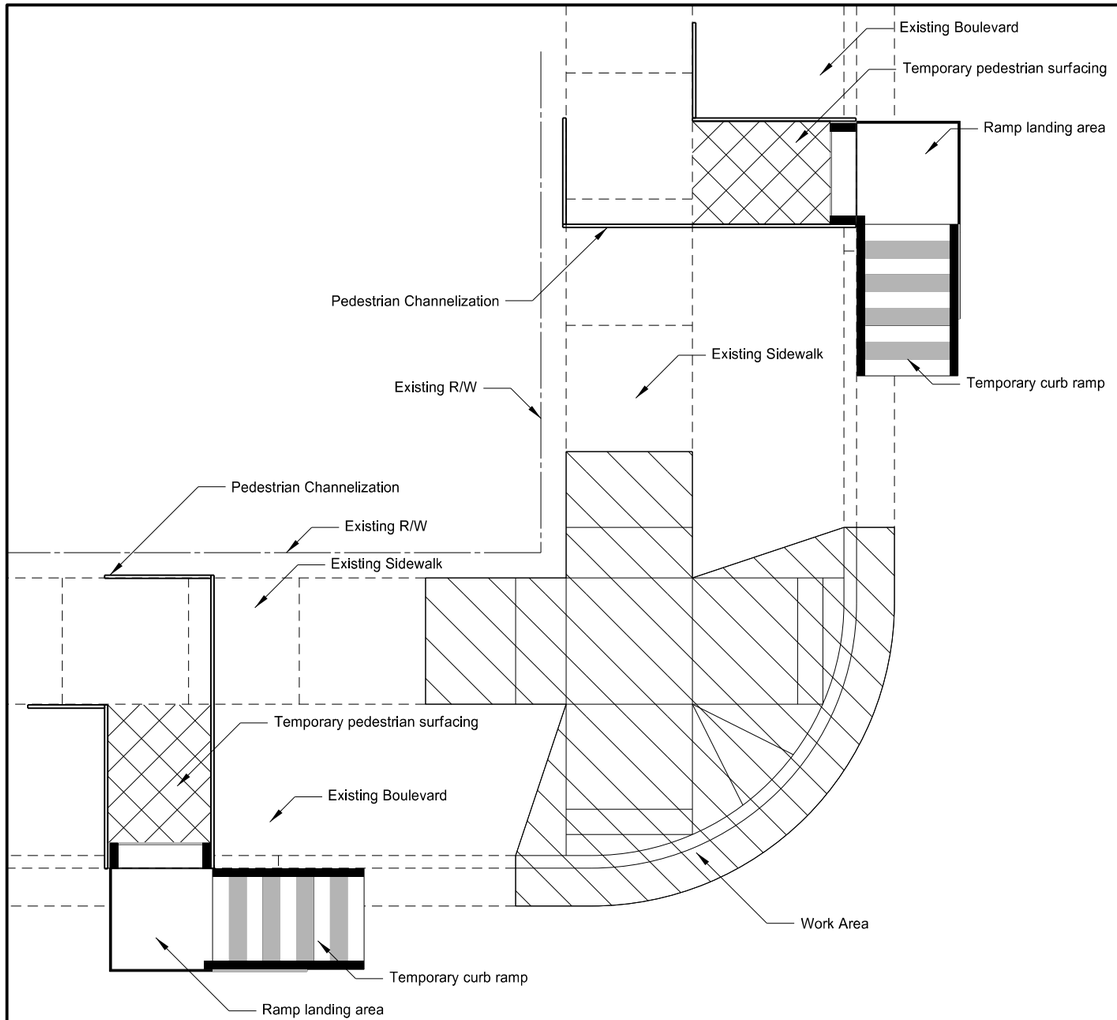
Temporary Pedestrian Surfacing

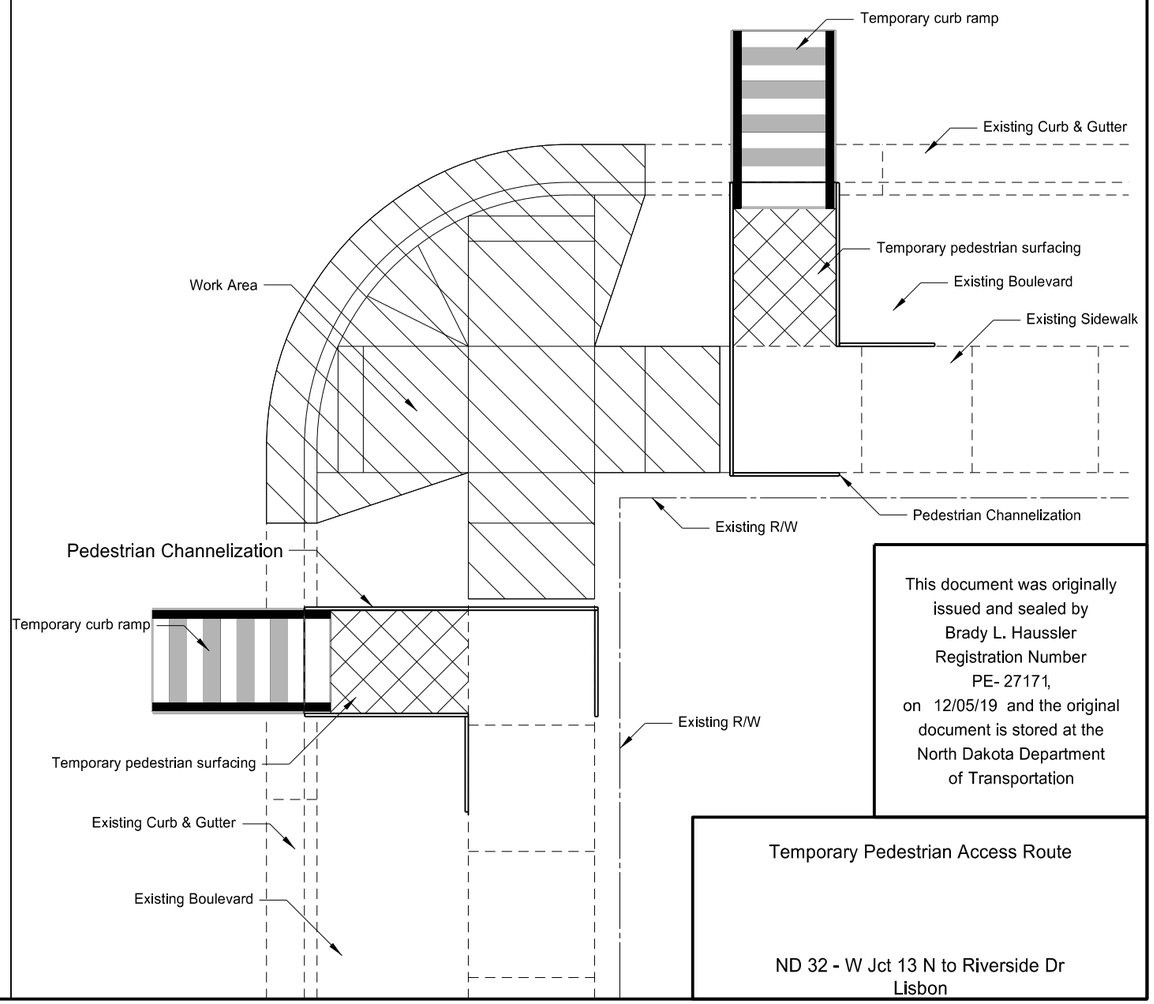
This document was originally issued and sealed by Aaron Murra Registration Number PE- 6536 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Typical Pedestrian Crossing Layout

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	6



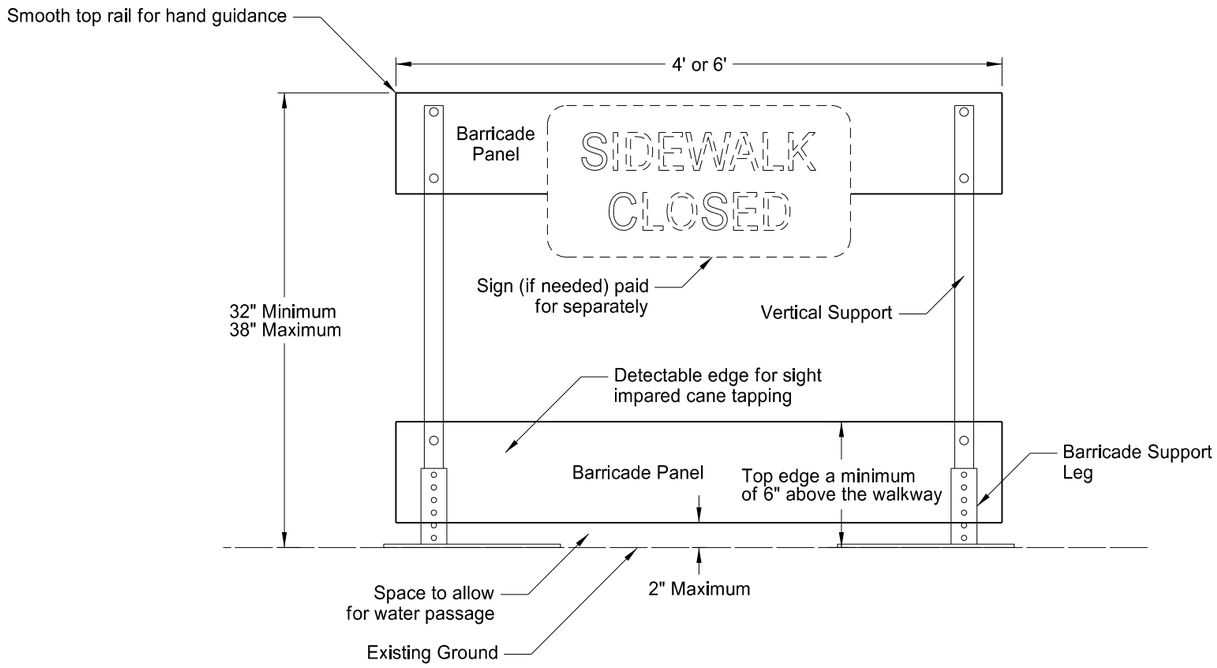


This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

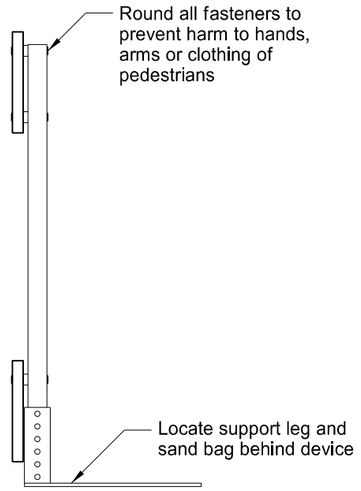
Temporary Pedestrian Access Route

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	100	7



Front View

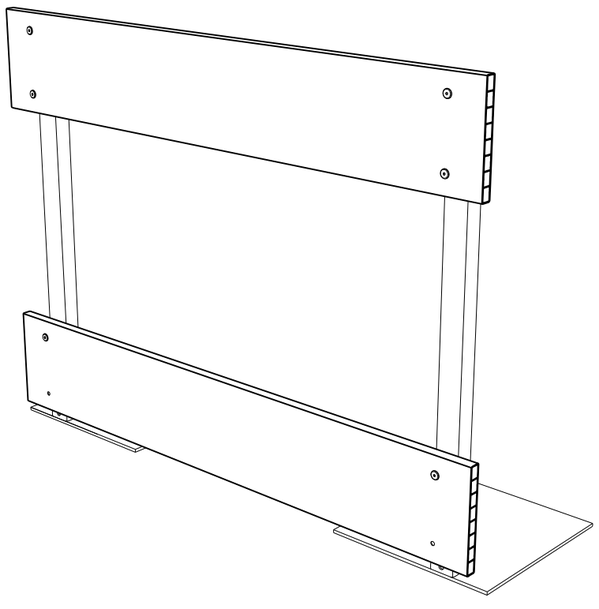


End View

NOTES:

Sidewalk Barricades

1. Provide self standing sidewalk barricade with no supports extending into the pedestrians path.
2. Use orange or orange and white diagonal striped barricade panels contrasting with the walkway surface.
3. Provide ADA compliant and NCHRP 350 or Mash Test Level 3 (TL3) approved sidewalk barricades.
4. Include all costs to furnish, maintain and remove sidewalk barricades in the price bid for "Sidewalk Barricade".



Perspective View

This document was originally issued and sealed by Brady L. Haussler Registration Number PE- 27171, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

Sidewalk Barricade

ND 32 - W Jct 13 N to Riverside Dr Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SS-8-032(042)021	110	1

Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
Lisbon																							
1877+44 Rt					12.7				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga	1			
1885+23 Lt					12.2				5.0	2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga	1			
1888+22 Rt		63		7.1	12.4				5.0	2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga				
1891+64 Rt					13.0				5.0	2.5 x 2.5 12 ga	14.4						1	4	3 x 3 7 ga	1			
1891+79 Lt					12.4				5.0	2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga	1			
1895+07 Rt	SN 1		14.0		12.5				5.0	2.5 x 2.5 10 ga	13.9	4.0				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1	
1896+89 Lt	SN 2		14.0		9.7				7.0	2.5 x 2.5 12 ga	11.8	2.5				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1	
1910+42 Lt					8.7				7.0	2 x 2 12 ga	12.5						1	4	2.25 x 2.25 12 ga	1			
1913+69 Lt					8.7				7.0	2 x 2 12 ga	12.5						1	4	2.25 x 2.25 12 ga	1			
1913+76 Lt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1914+22 Rt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1914+29 Rt					8.7				7.0	2 x 2 12 ga	12.5						1	4	2.25 x 2.25 12 ga	1			
1917+03 Lt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1920+70 Lt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1921+13 Rt					8.0				7.0	2.5 x 2.5 10 ga	10.1						1	4	3 x 3 7 ga	1		1	
1924+77 Rt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1924+93 Rt					8.7				7.0	2 x 2 12 ga	12.5						1	4	2.25 x 2.25 12 ga	1			
1931+52 Lt					10.2				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
1931+62 Lt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1932+17 Rt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1932+29 Rt					10.2				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
1933+03 Lt		399	6.2						7.0														Mount on Light Standard
1935+21 Lt					10.2				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
1935+33 Lt					9.2				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga	1			
1935+92 Rt					10.2				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
1938+88 Lt					9.2				7.0	2 x 2 12 ga	11.0						1	4	2.25 x 2.25 12 ga	1			
1945+51 Rt	S.A.A			8.3	11.2				7.0	2.5 x 2.5 12 ga	12.4						1	4	3 x 3 7 ga				
1946+69 Lt	S.A.A			8.3	11.2				7.0	2.5 x 2.5 12 ga	12.4						1	4	3 x 3 7 ga				
Sub Total			34.2	23.7		**Total**	273.7										**Total**	108.0		22	0	3	
Gwinner																							
Railroad 1 Rt					12.2				5.0	2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga	1			
Railroad 2 Lt					12.2				5.0	2.5 x 2.5 12 ga	12.7						1	4	3 x 3 7 ga	1			
City Sign Lt	SN 3		6.0		10.9				5.0	2.5 x 2.5 12 ga	14.0						1	4	3 x 3 7 ga				
Sub Total			6.0	0.0		**Total**	35.3										**Total**	12.0		2	0	0	

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE-5047, on 12/3/19 and is stored at the North Dakota Department of Transportation.

Sign Summary
Perforated Tube

W JCT 13 N - Riverside Dr Lisbon

ND Hwy 32

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SS-8-032(042)021	110	2

Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
Grand Total			40.2	23.7	Total	309.0											Total	120	0	24	0	3	

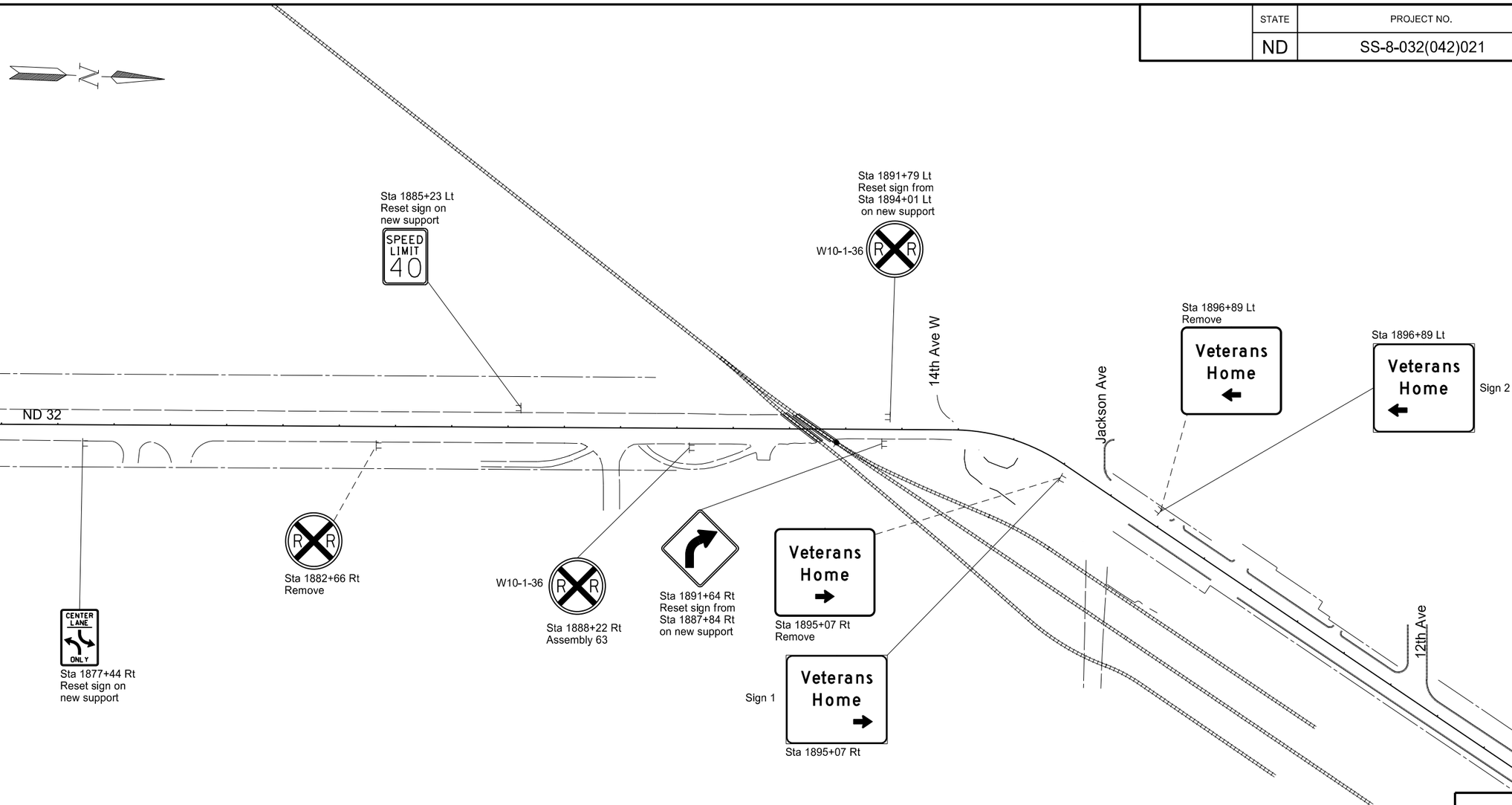
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE-5047, on 12/3/19 and is stored at the North Dakota Department of Transportation.

Sign Summary
Perforated Tube

W JCT 13 N - Riverside Dr Lisbon

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	110	3



This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Sign Layout

W JCT 13 N - Riverside Dr Lisbon

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	110	4

Sta 1910+42 Lt
Reset sign on
new support

Sta 1913+69 Lt
Reset sign on
new support

Sta 1913+76 Lt
Reset sign on
new support

9TH AVE
MAIN ST
x2 each
Back-to-back

STOP

Sta 1917+03 Lt
Reset sign on
new support

x2 each
Back-to-back
8TH AVE
MAIN ST

STOP

Sta 1920+70 Lt
Reset sign on
new support

7th Ave
Main St
x2 each
Back-to-back

STOP

Sta 1930+22 Lt
Remove

Veterans
Home

Sta 1931+62 Lt
Reset sign on
new support

4TH AVE
MAIN ST

STOP

Sta 1931+52 Lt
Reset sign on
new support

NO PARKING

Sta 1933+03 Lt
Assembly 399
Lt Std Mount

H

D9-2-24

Reset

Sta 1935+33 Lt
Reset sign on
new support

3RD AVE
MAIN ST
x2 each
Back-to-back

STOP

Sta 1935+21 Lt
Reset sign on
new support

NO PARKING

Sta 1938+88 Lt
Reset sign on
new support

SPEED
LIMIT
25

Sta 1946+69 Lt
Special Assembly A

W11-2-30
(Fluorescent
yellow-green)

10th Ave
9th Ave
8th Ave
7th Ave
6th Ave
5th Ave
4th Ave
3rd Ave
2nd Ave
1st Ave

NORTH
N D
32

Sta 1913+63 Rt
Remove

x2 each
Back-to-back
9TH AVE
MAIN ST

STOP

Sta 1914+22-55' Rt
Reset sign on
new support

Sta 1914+29 Rt
Reset sign on
new support

7th Ave
Main St
x2 each
Back-to-back

Sta 1921+13 Rt
Reset sign on
new support

x2 each
Back-to-back
6TH AVE
MAIN ST

STOP

Sta 1924+77 Rt
Reset sign on
new support

Sta 1924+93 Rt
Reset sign on
new support

x2 each
Back-to-back
4TH AVE
MAIN ST

STOP

Sta 1932+17 Rt
Reset sign on
new support

NO PARKING

Sta 1932+29 Rt
Reset sign on
new support

NO PARKING

Sta 1935+92 Rt
Reset sign on
new support

W11-2-30
(Fluorescent
yellow-green)

Sta 1946+51 Rt
Special Assembly A

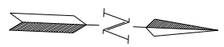
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Sign Layout

W JCT 13 N - Riverside Dr Lisbon

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	110	5



Remove
Gwinner

Railroad 2
Reset sign from
RP 21.628 Lt

City Sign
Gwinner
Sign 4

Existing speed limit sign

200'

200'

100'

Railroad 1
Reset sign from
RP 21.338 Rt

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Signing Layout

W JCT 13 N - Riverside Dr Lisbon

ND 32

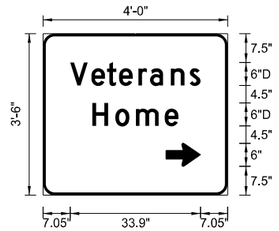
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	110	6

SIGN NUMBER	Sign 1
WIDTH X HEIGHT	4'-0" x 3'-6"
BORDER WIDTH	0.75" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_6IN_TYPE D	31.9	7.5	6	9	270

STATION(S):
1895+07 Rt

AREA: 14.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssl

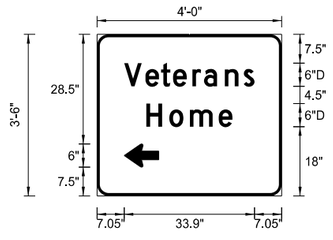
LETTER POSITION (X)																		LENGTH	SIZE	SERIES
V	e	t	e	r	a	n	s											33.9	6/4.5	D 2000
7.1	12.6	16.6	19.8	24.8	27.8	33.2	38.1													
H	o	m	e															22.4	6/4.5	D 2000
12.8	18.8	24.1	31.6																	

SIGN NUMBER	Sign 2
WIDTH X HEIGHT	4'-0" x 3'-6"
BORDER WIDTH	0.75" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_6IN_TYPE D	7.1	7.5	6	9	90

STATION(S):
1896+89 Lt

AREA: 14.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssl

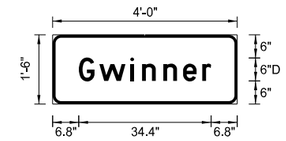
LETTER POSITION (X)																		LENGTH	SIZE	SERIES
V	e	t	e	r	a	n	s											33.9	6/4.5	D 2000
7.1	12.6	16.6	19.8	24.8	27.8	33.2	38.1													
H	o	m	e															22.4	6/4.5	D 2000
12.8	18.8	24.1	31.6																	

SIGN NUMBER	Sign 3
WIDTH X HEIGHT	4'-0" x 1'-6"
BORDER WIDTH	0.75" (inset 0")
CORNER RADIUS	2.25"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
City Sign Lt

AREA: 6.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Boundary.ssl

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
G	w	i	n	n	e	r												34.4	6/4.5	D 2000
6.8	12.2	20.2	23.3	28.8	33.9	38.9														

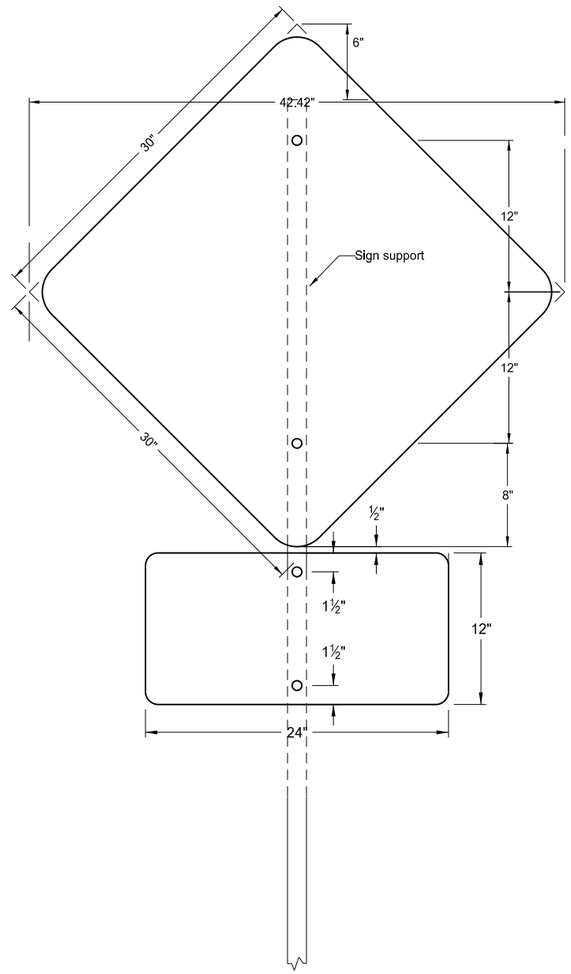
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047 , on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Sign Details

W JCT 13 N - Riverside Dr Lisbon

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	110	7



Special Assembly A

Sta 1945+51 Rt
Sta 1946+69 Lt

Pay Area: 8.3 SF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Sign Assembly

W JCT 13 N - Riverside Dr Lisbon

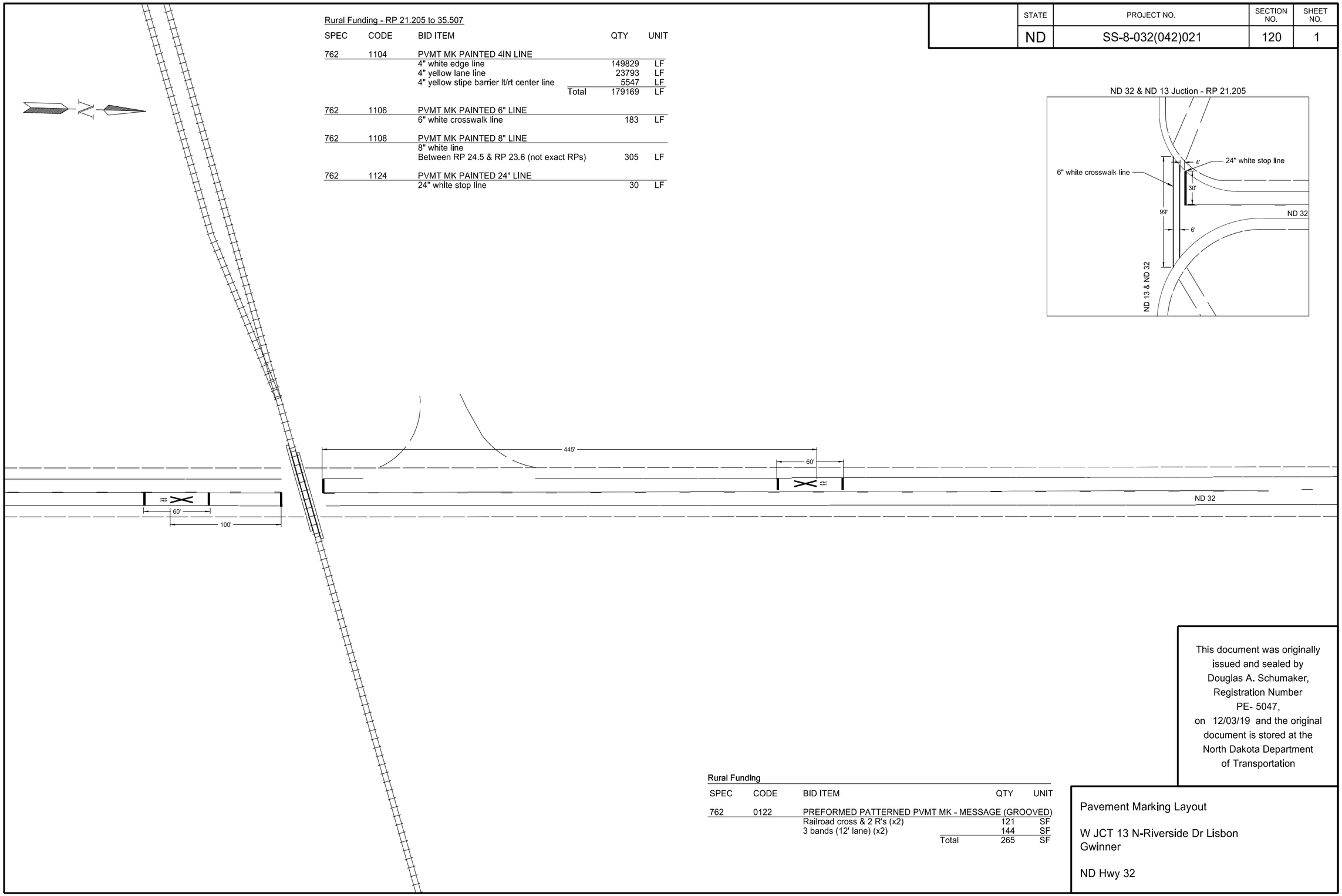
ND Hwy 32

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	120	1

Rural Funding - RP 21.205 to 35.507

SPEC	CODE	BID ITEM		QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE			
		4" white edge line		149829	LF
		4" yellow lane line		23793	LF
		4" yellow stipe barrier lt/rt center line		5547	LF
			Total	179169	LF
762	1106	PVMT MK PAINTED 6" LINE			
		6" white crosswalk line		183	LF
762	1108	PVMT MK PAINTED 8" LINE			
		8" white line			
		Between RP 24.5 & RP 23.6 (not exact RPs)		305	LF
762	1124	PVMT MK PAINTED 24" LINE			
		24" white stop line		30	LF

ND 32 & ND 13 Juction - RP 21.205



Rural Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	0122	PREFORMED PATTERNED PVMT MK - MESSAGE (GROOVED)			
		Railroad cross & 2 R's (x2)		121	SF
		3 bands (12' lane) (x2)		144	SF
			Total	265	SF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

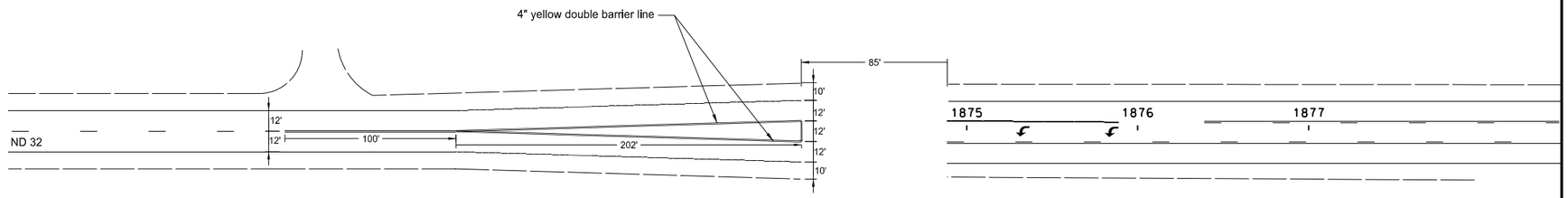
Pavement Marking Layout

W JCT 13 N-Riverside Dr Lisbon
Gwinner

ND Hwy 32

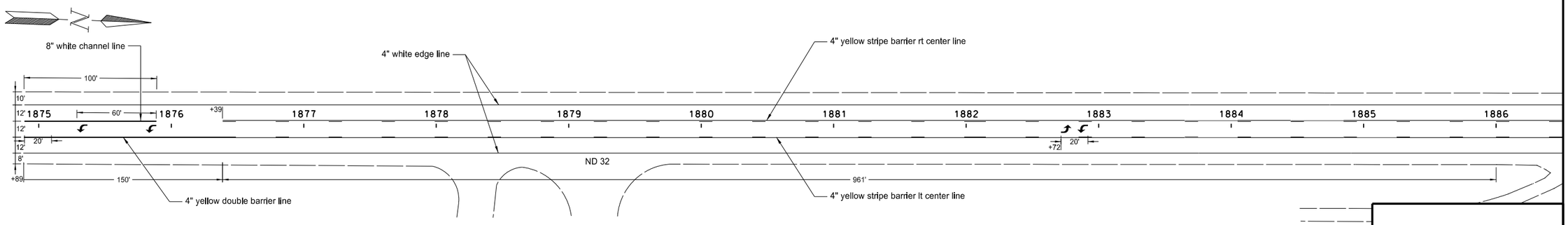
12/3/2019 1:53:58 PM jallery R:\project\80032021.042\traffic\120MK_001_LPvmt_Gwinner2.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	2



Rural Funding

SPEC	CODE	BID ITEM	QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE		
		4" yellow double barrier line	1032	LF



Rural Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	0103	PVMT MK PAINTED - MESSAGE			
		Left turn arrow (x4)		64	SF
762	1104	PVMT MK PAINTED 4IN LINE			
		4" white edge line		2222	LF
		4" yellow double barrier line		300	LF
		4" yellow stripe barrier lt center line		1201	LF
		4" yellow stripe barrier rt center line		1201	LF
			Total	4924	LF
762	1108	PVMT MK PAINTED 8IN LINE			
		8" white channel line		100	LF

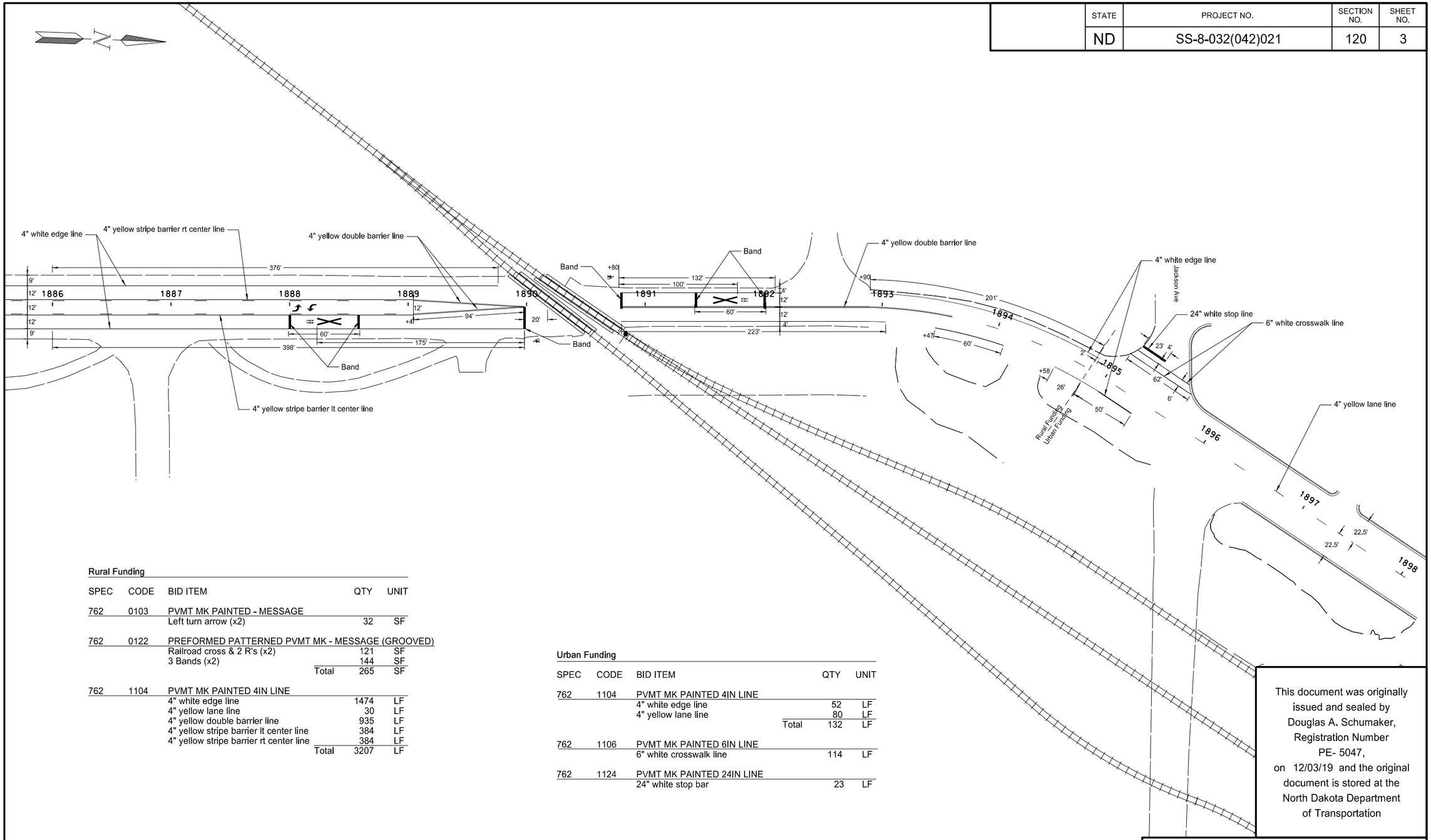
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

W JCT 13 N-Riverside Dr Lisbon
Sta 1874+89 to Sta 1886+00

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	3



Rural Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	0103	PVMT MK PAINTED - MESSAGE			
		Left turn arrow (x2)		32	SF
762	0122	PREFORMED PATTERNED PVMT MK - MESSAGE (GROOVED)			
		Railroad cross & 2 R's (x2)		121	SF
		3 Bands (x2)		144	SF
			Total	265	SF
762	1104	PVMT MK PAINTED 4IN LINE			
		4" white edge line		1474	LF
		4" yellow lane line		30	LF
		4" yellow double barrier line		935	LF
		4" yellow stripe barrier lt center line		384	LF
		4" yellow stripe barrier rt center line		384	LF
			Total	3207	LF

Urban Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE			
		4" white edge line		52	LF
		4" yellow lane line		80	LF
			Total	132	LF
762	1106	PVMT MK PAINTED 6IN LINE			
		6" white crosswalk line		114	LF
762	1124	PVMT MK PAINTED 24IN LINE			
		24" white stop bar		23	LF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

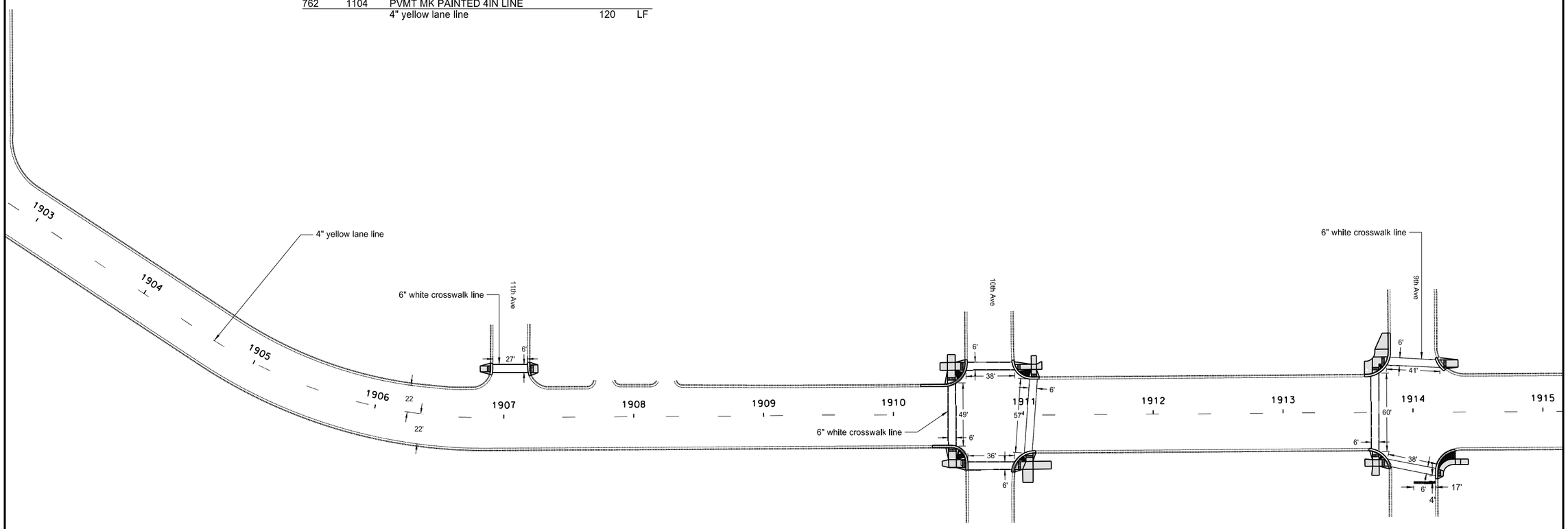
W Jct 13 N-Riverside Dr Lisbon
Sta 1886+00 to Sta 1898+00

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	4

Urban Funding - STA 1898+00 TO STA 1903+00

SPEC	CODE	BID ITEM	QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE		
		4" yellow lane line	120	LF



Urban Funding

SPEC	CODE	BID ITEM	QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE		
		4" yellow center line	260	LF
762	1106	PVMT MK PAINTED 6IN LINE		
		6" white crosswalk line	668	LF

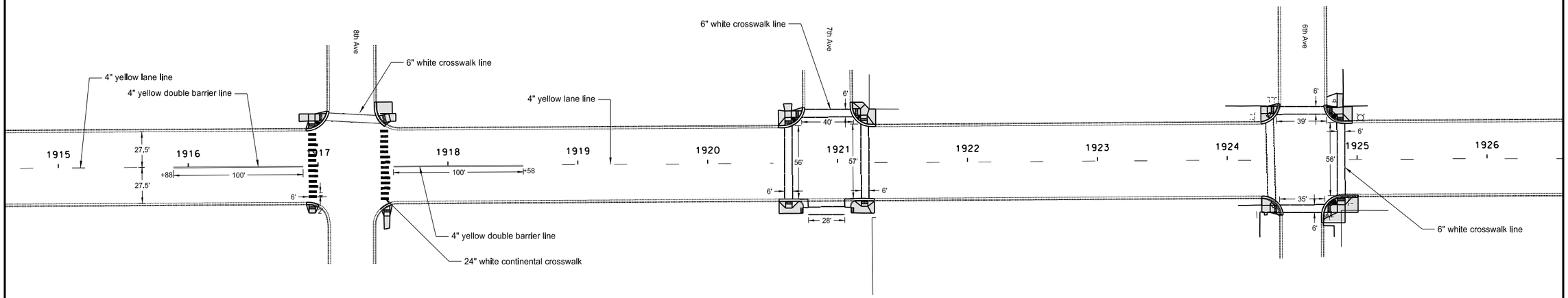
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

W JCT 13 N-Riverside Dr Lisbon
Sta 1903+00 to Sta 1915+00

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	5



Urban Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE			
		4" yellow center line		180	LF
		4" yellow double barrier line		400	LF
			Total	580	LF
762	1106	PVMT MK PAINTED 6IN LINE			
		6" white crosswalk line		806	LF
762	1124	PVMT MK PAINTED 24IN LINE			
		24" continental crosswalk		162	LF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

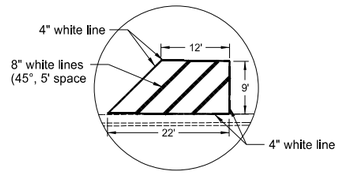
W JCT 13 N-Riverside Dr Lisbon
Sta 1915+00 to Sta 1926+00

ND Hwy 32

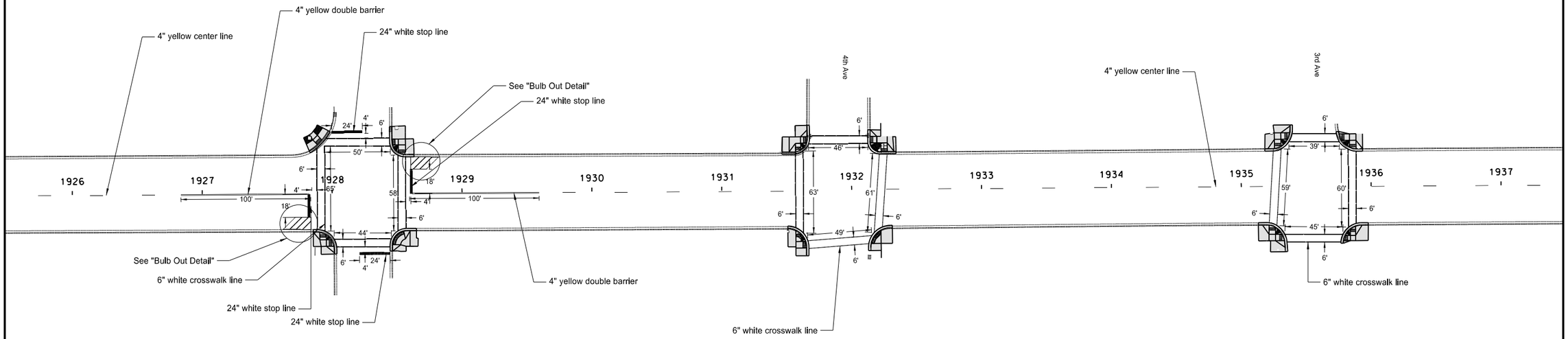
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	6

Urban Funding

SPEC	CODE	BID ITEM	QTY	UNIT
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" white line	56	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" white line	36	LF



Bulb Out Detail



Urban Funding

SPEC	CODE	BID ITEM		QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE			
		4" yellow center line		180	LF
		4" yellow double barrier line		400	LF
			Total	580	LF
762	1106	PVMT MK PAINTED 6IN LINE			
		6" white crosswalk line		1243	LF
762	1124	PVMT MK PAINTED 24IN LINE			
		24" white stop bar		84	LF

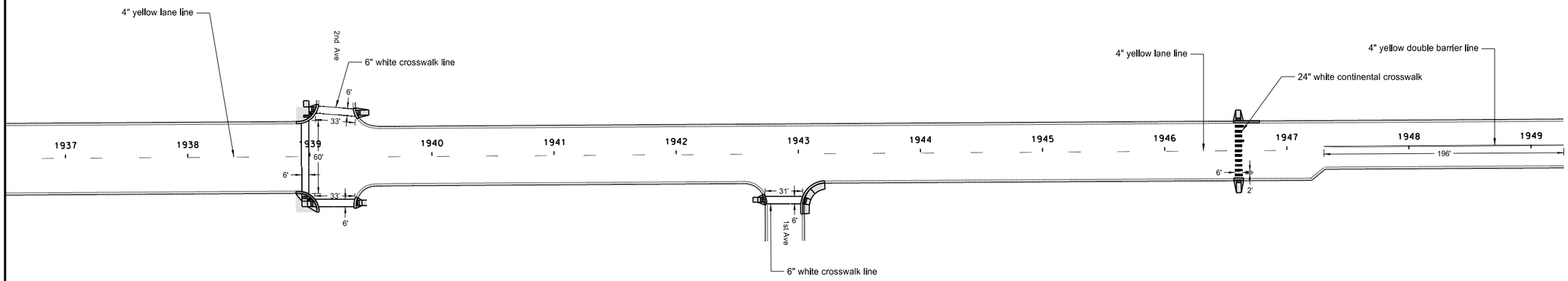
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

W JCT 13 N-Riverside Dr Lisbon
Sta 1926+00 to Sta 1937+00

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	120	7



SPEC	CODE	BID ITEM		QTY	UNIT
762	1104	PVMT MK PAINTED 4IN LINE			
		4" yellow center line		230	LF
		4" yellow double barrier line		392	LF
			Total	622	LF
762	1106	PVMT MK PAINTED 6IN LINE			
		6" white crosswalk line		299	LF
762	1124	PVMT MK PAINTED 24IN LINE			
		24" white continental crosswalk		66	LF

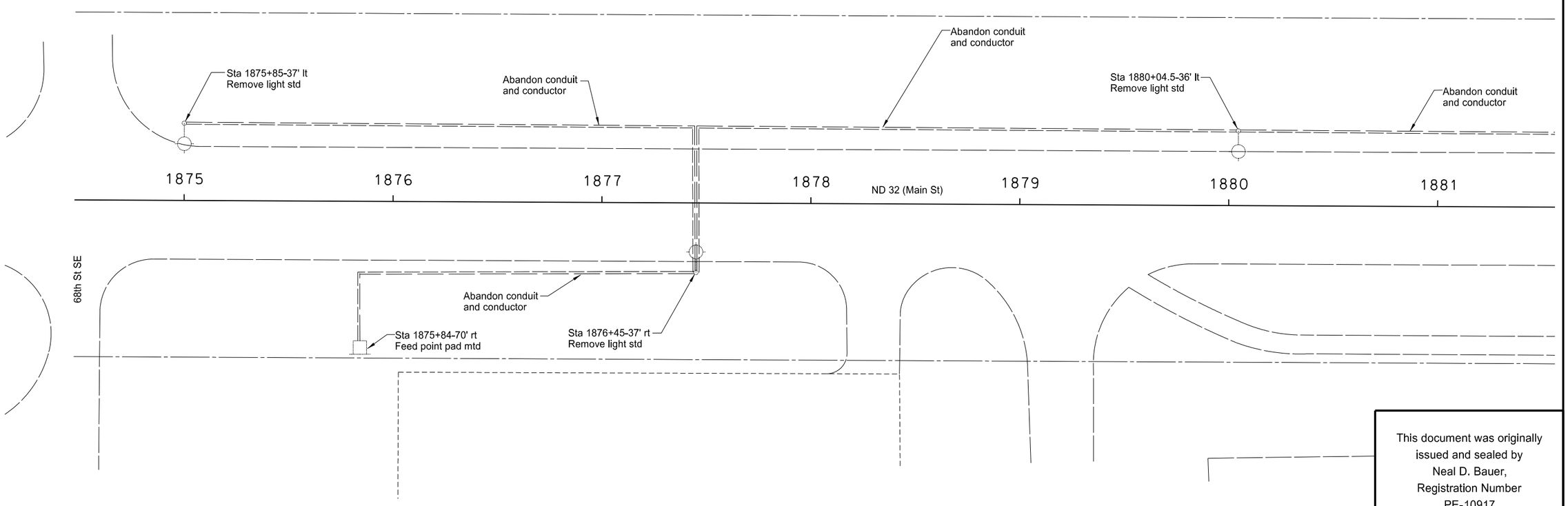
This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Pavement Marking Layout

W JCT 13 N-Riverside Dr Lisbon
Sta 1937+00 to Sta 1949+27

ND Hwy 32

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	1



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

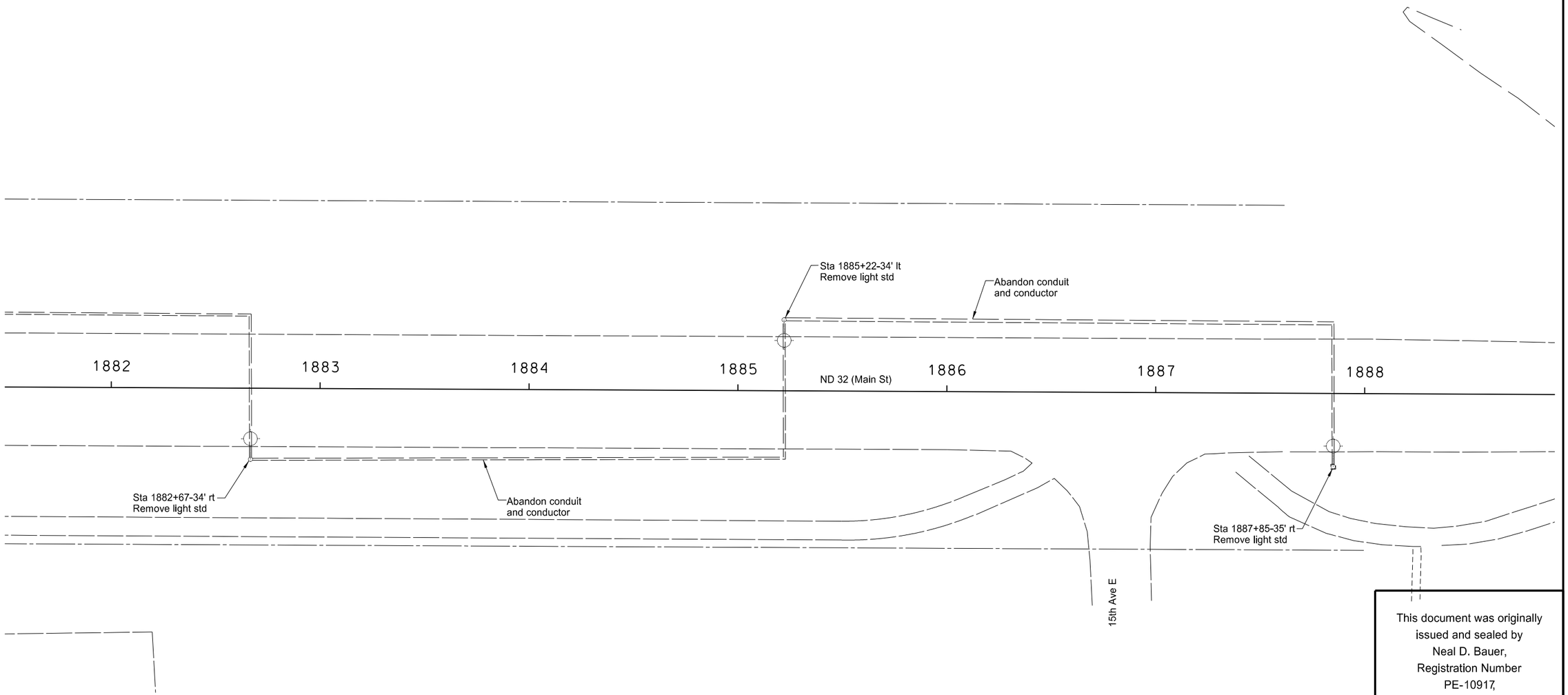
Remove Lighting System

ND 32

Lisbon

12/4/2019 7:39:00 AM nbauer R:\project\80032021.042\traffic\140LT_001_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	2



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Remove Lighting System

ND 32

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	3

Sta 1890+86-29' lt
Remove light std

Abandon conduit
and conductor

14th Ave W

Sta 1890+93-22' lt
Remove light std

Jackson Ave W

Abandon conduit
and conductor

1889 1890 1891 1892 1893 1894 1895

Main St (ND 32)

Sta 1890+87-29' rt
Remove light std

Sta 1895+09-24' rt
Remove light std

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

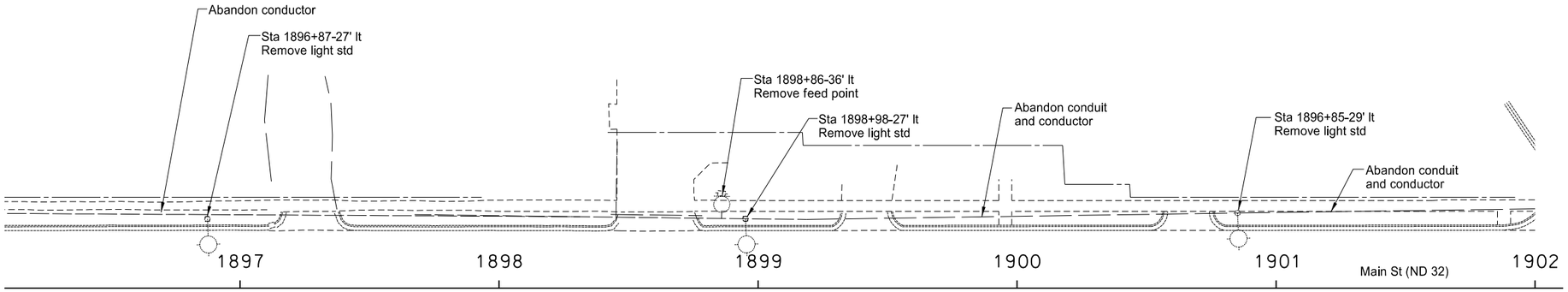
Remove Lighting System

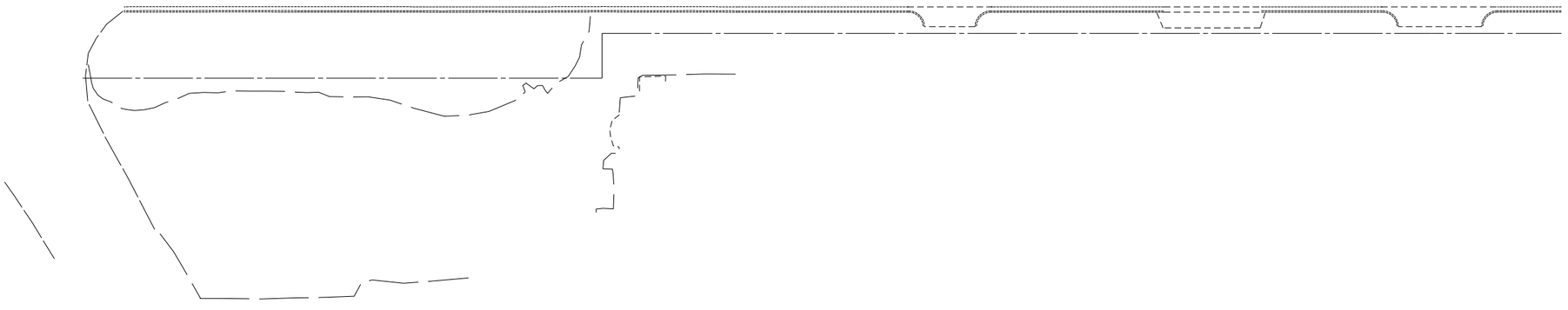
Main St (ND 32)

Lisbon

12/4/2019 7:39:05 AM nbauer R:\project\80032021.042\traffic\140LT_003_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	4





This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

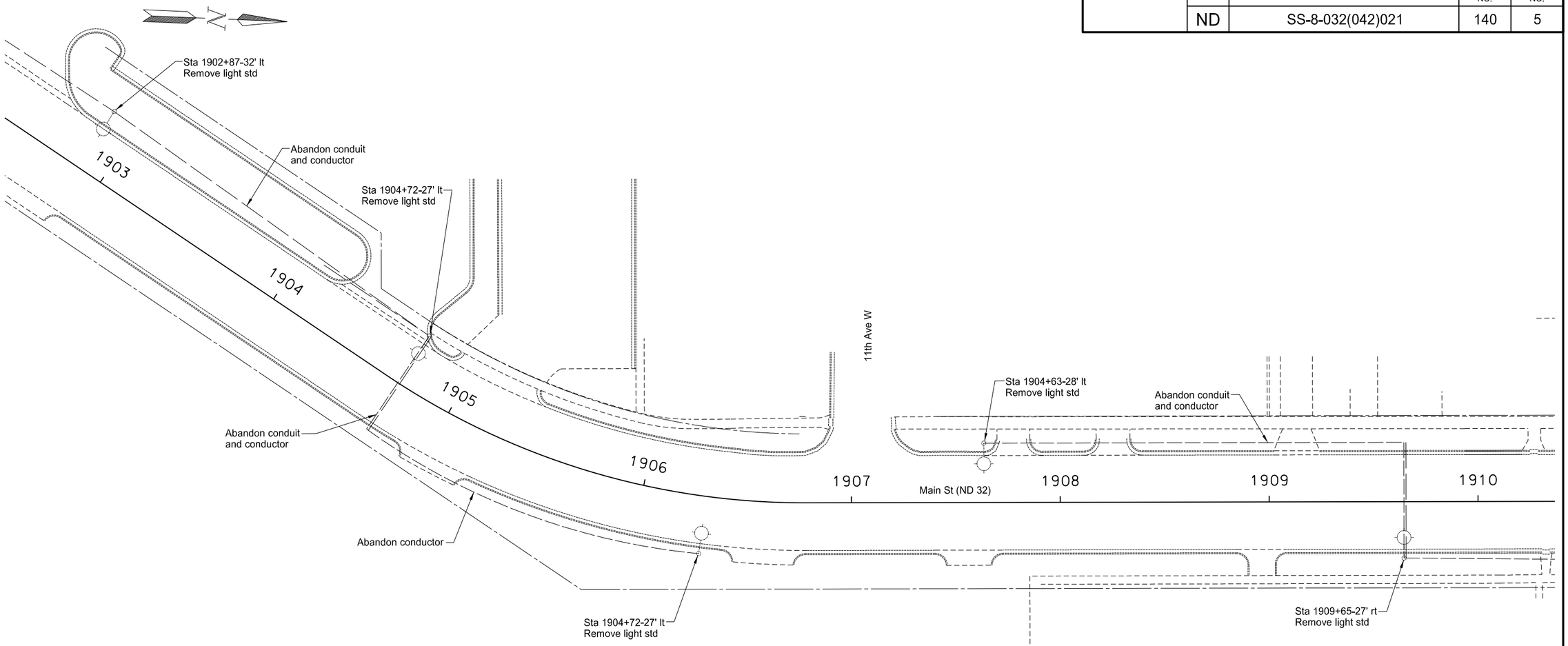
Remove Lighting System

Main St (ND 32)

Lisbon

12/4/2019 7:39:07 AM nbauer R:\project\80032021.042\traffic\140LT_004_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	5



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

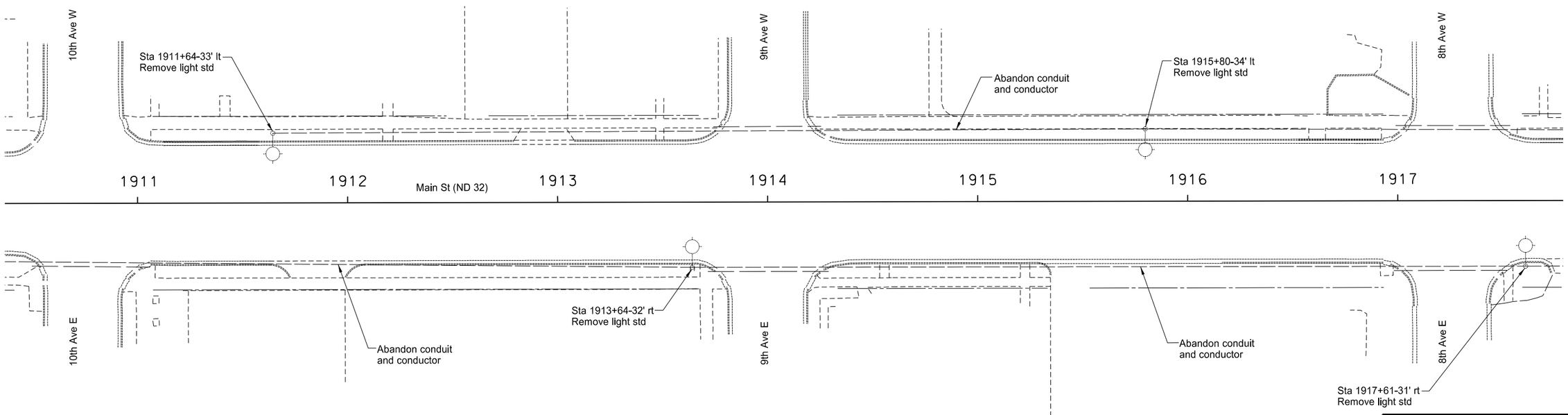
Remove Lighting System

Main St (ND 32)

Lisbon

12/4/2019 7:39:10 AM nbauer R:\project\80032021.042\traffic\140LT_005_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	6



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

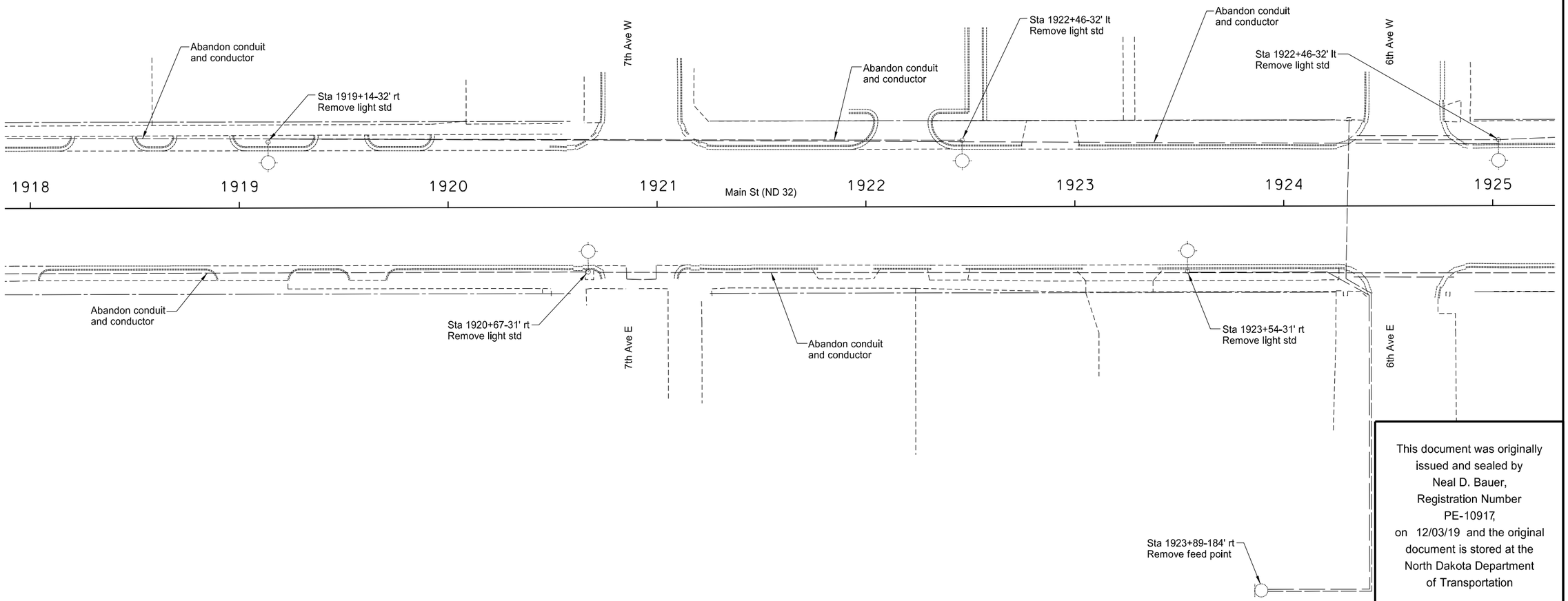
Remove Lighting System

Main St (ND 32)

Lisbon

12/4/2019 7:39:12 AM nbauer R:\project\80032021.042\traffic\140LT_006_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	7



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

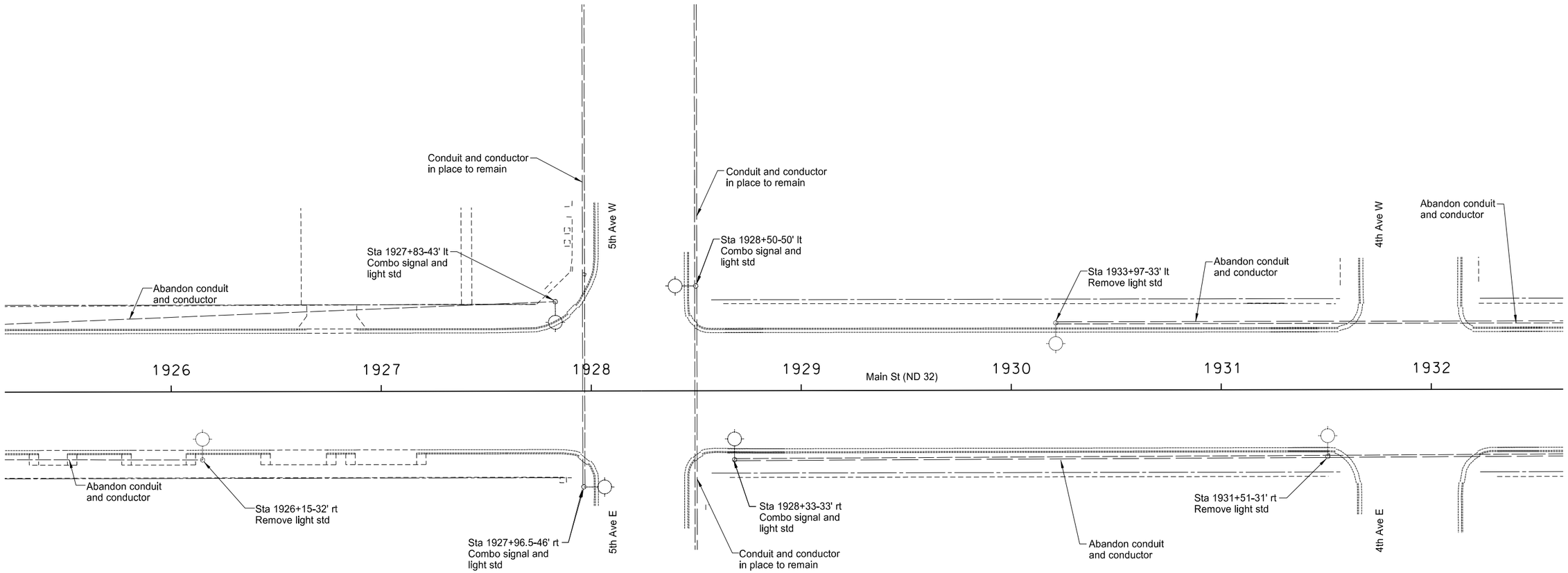
Remove Lighting System

Main St (ND 32)

Lisbon

12/4/2019 7:39:14 AM nbauer R:\project\80032021.042\traffic\140LT_007_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	8



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

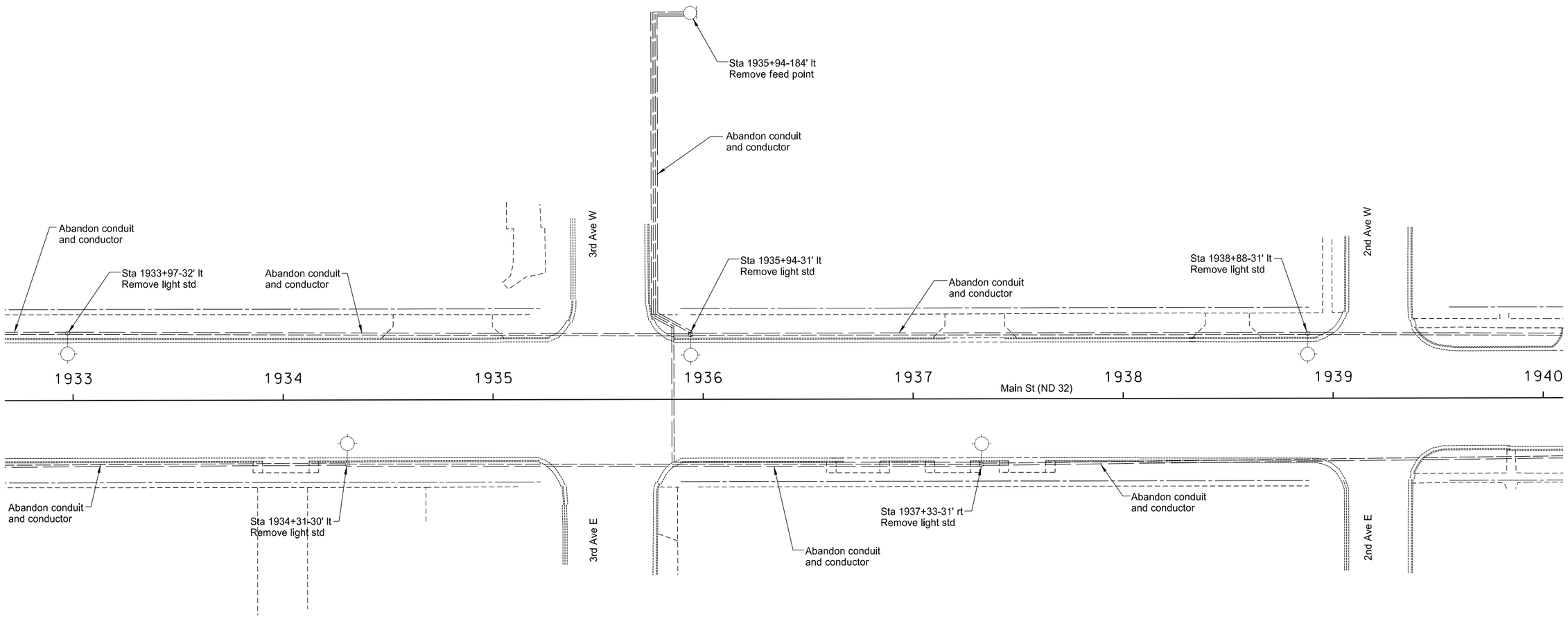
Remove Lighting System

Main St (ND 32)

Lisbon

12/4/2019 7:39:17 AM nbauer R:\project\80032021.042\traffic\140LT_008_LLIGHT_REMOVE.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	9



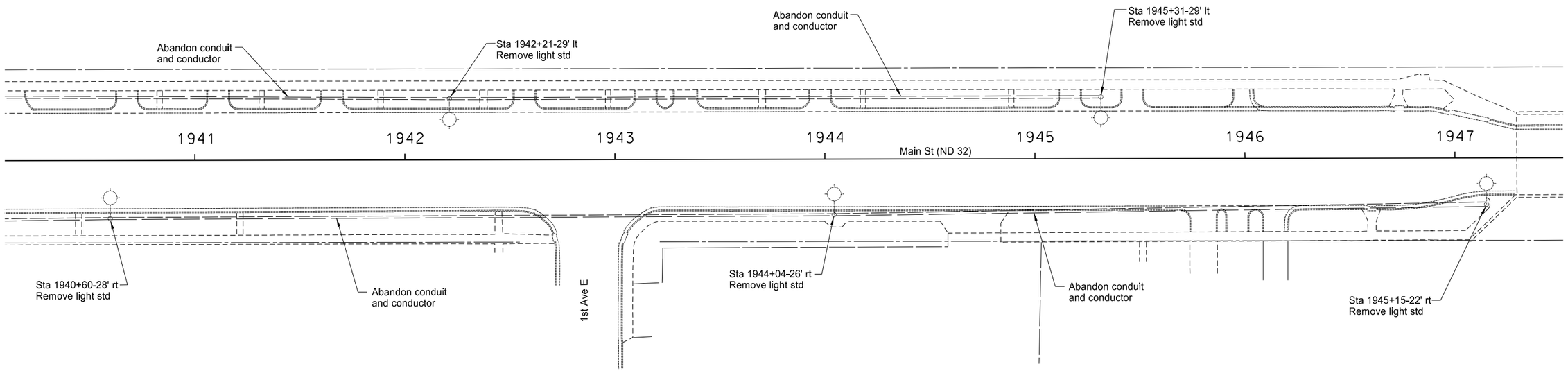
This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Remove Lighting System

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	10



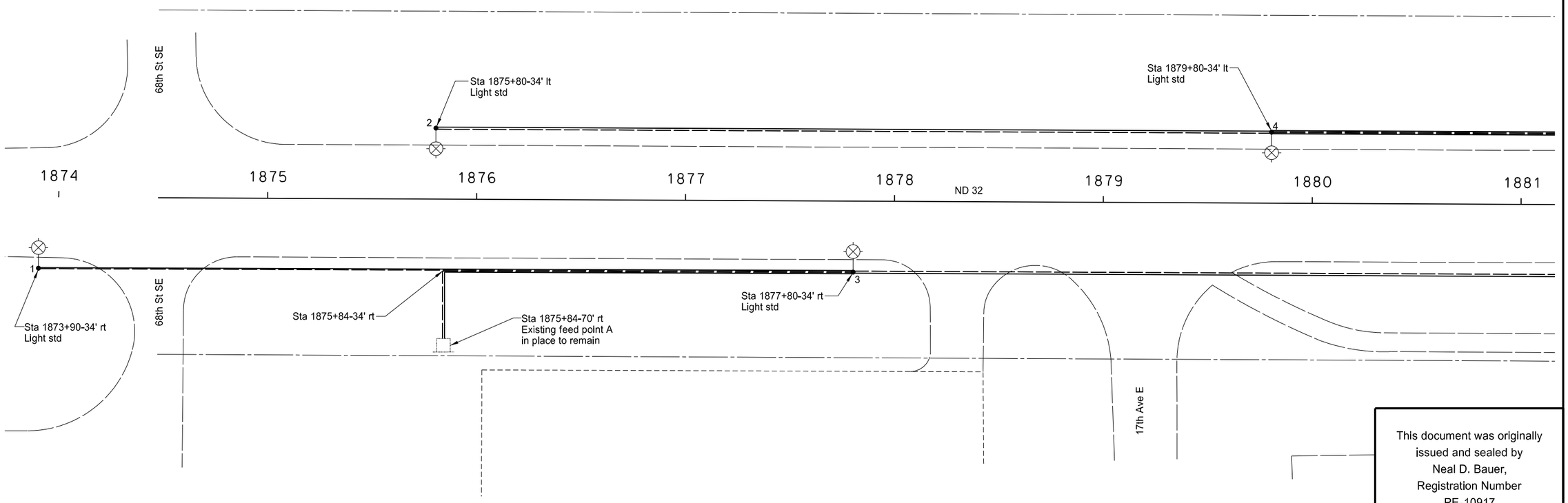
This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Remove Lighting System

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	11



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Lighting System

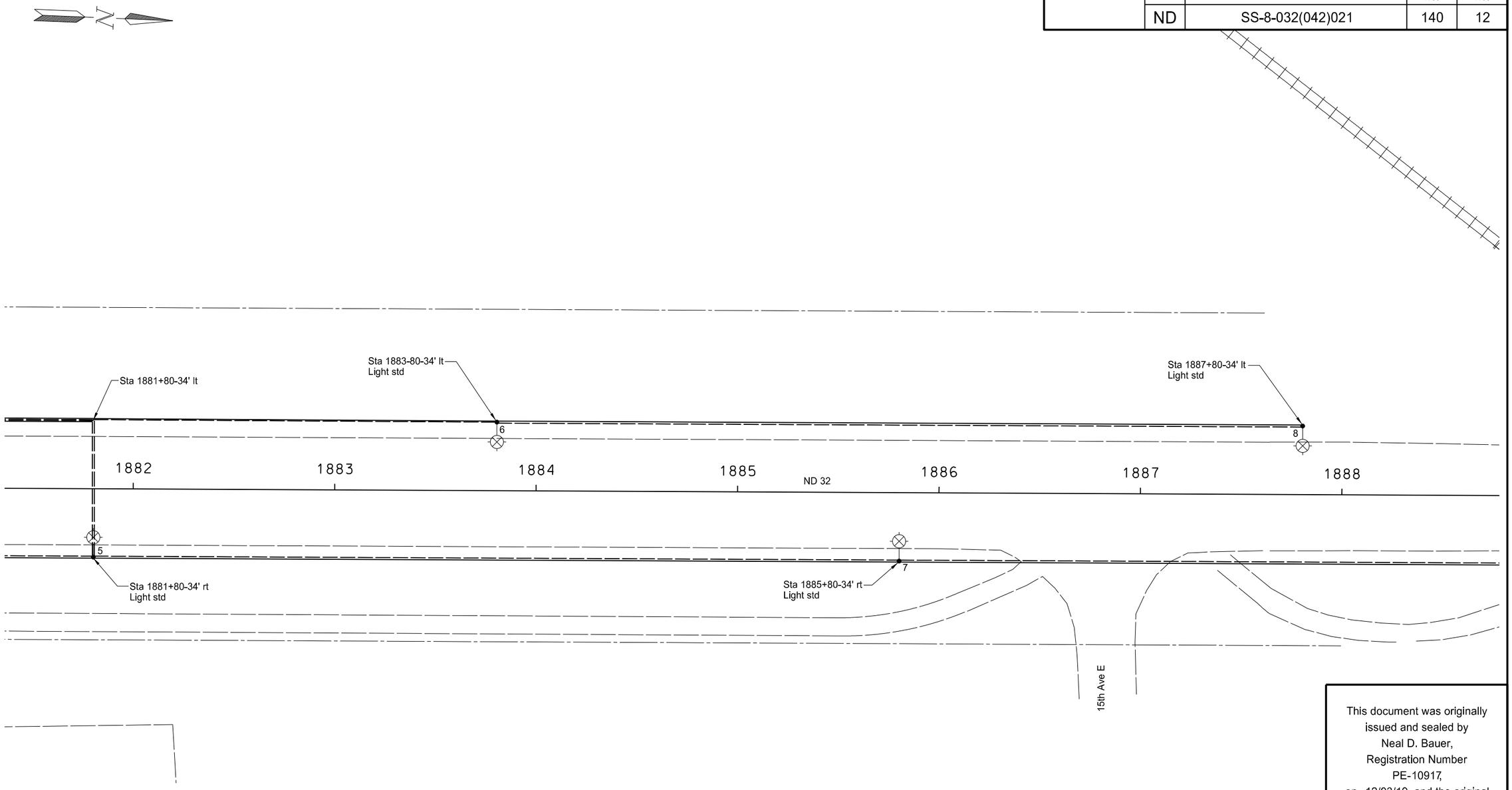
Lighting Layout

ND 32

Lisbon

12/4/2019 7:39:24 AM nbauer R:\project\80032021.042\traffic\140LT_011_LLIGHT.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	12



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

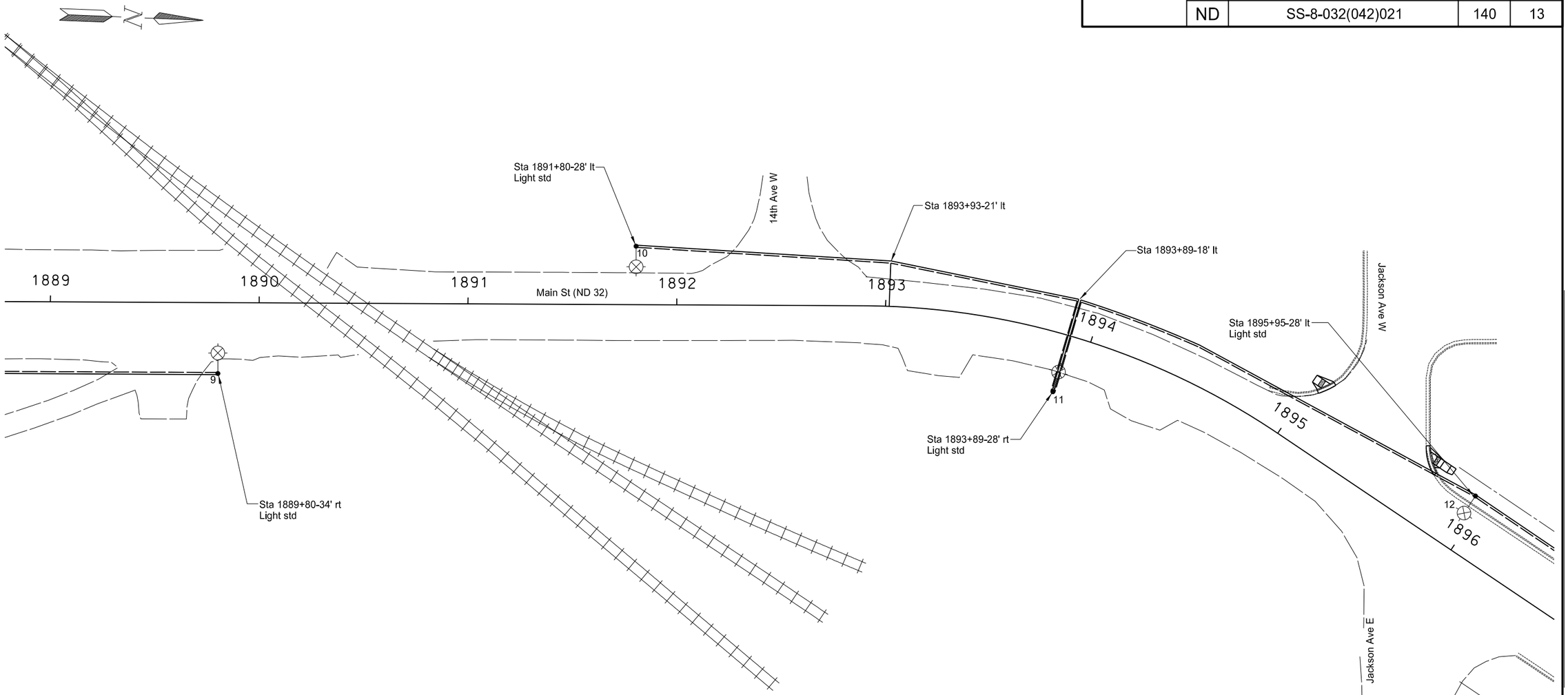
Lighting System

Lighting Layout

ND 32

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	13



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Lighting System

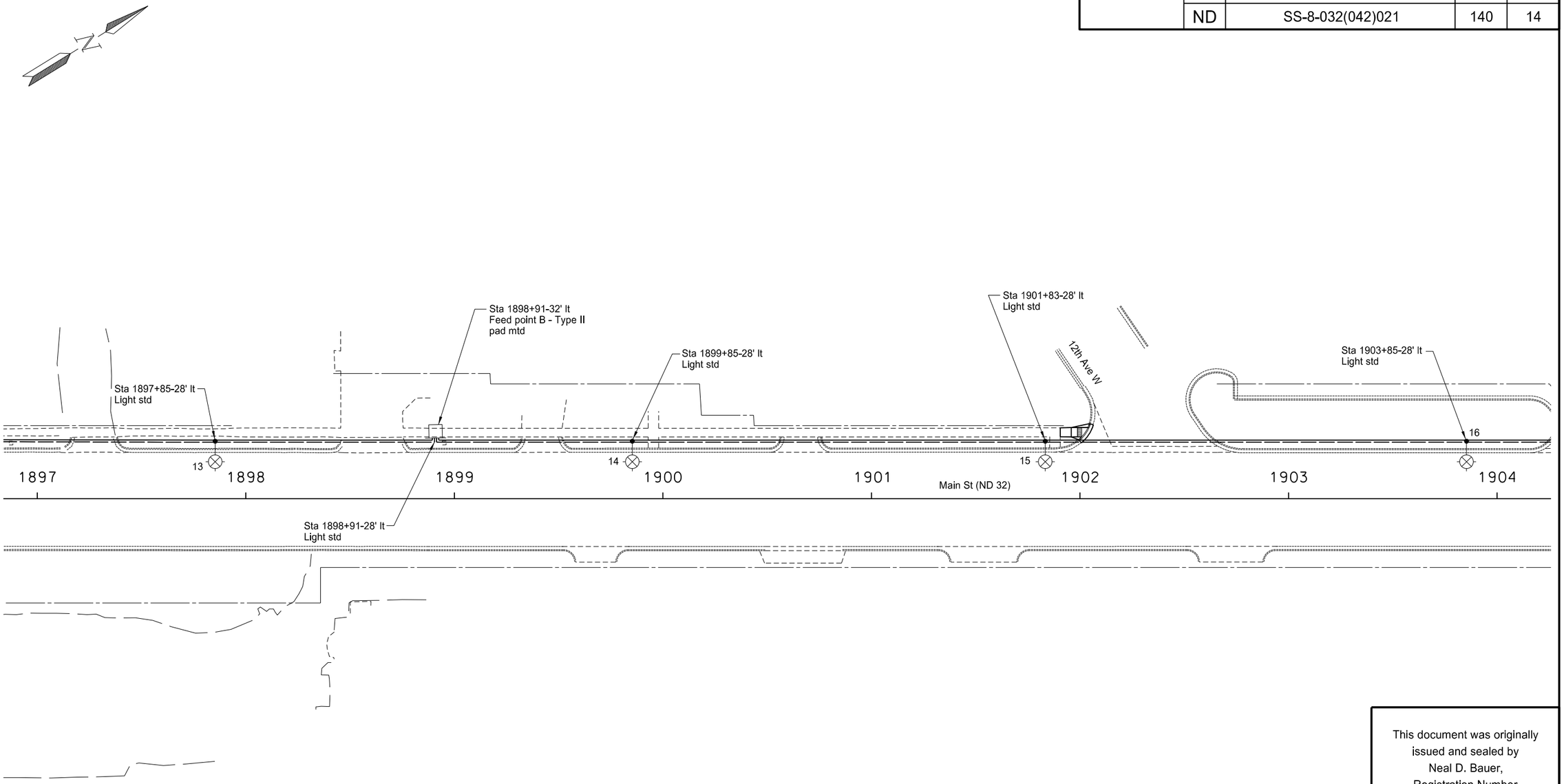
Lighting Layout

Main St (ND 32)

Lisbon

12/4/2019 7:39:29 AM nbauer R:\project\80032021.042\traffic\140LT_013_LLIGHT.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	14



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

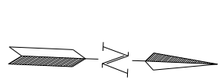
Lighting System

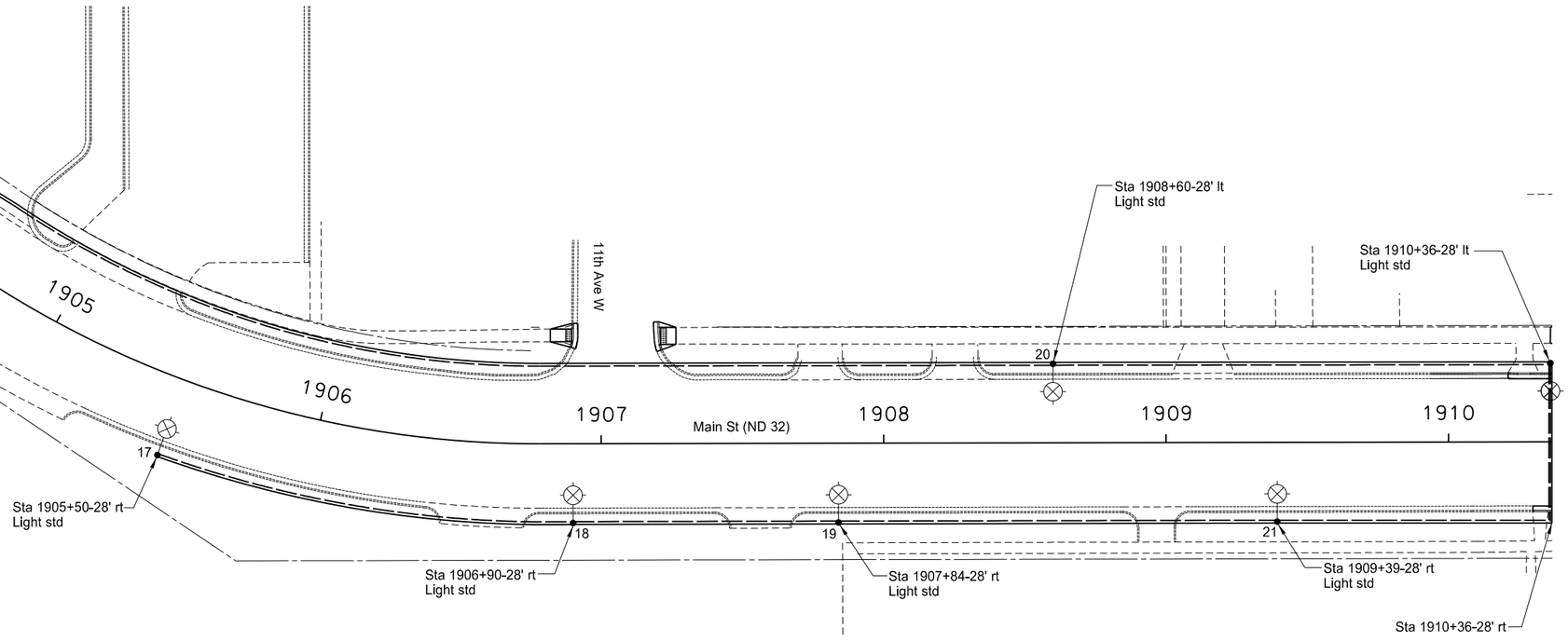
Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	15





This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

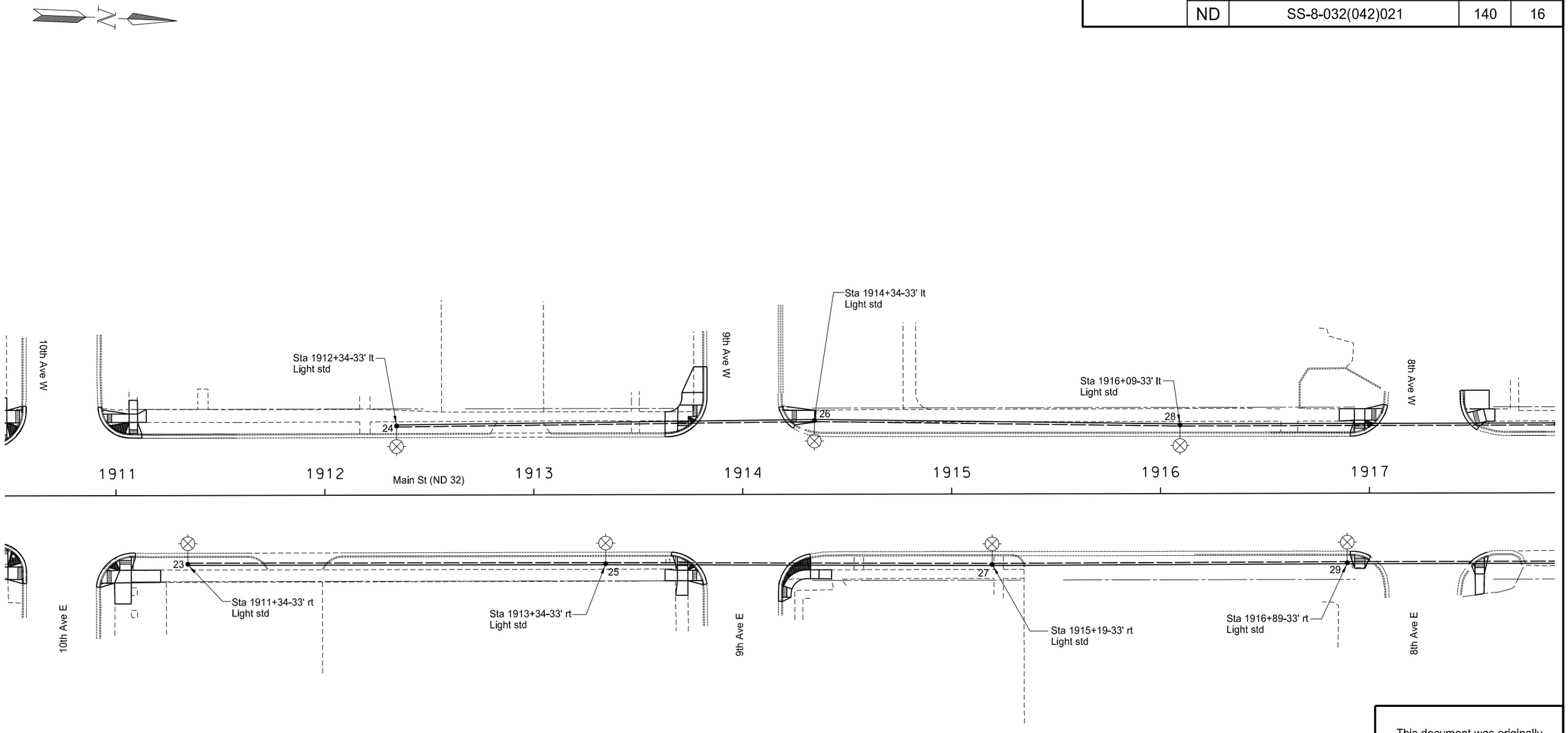
Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	16



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

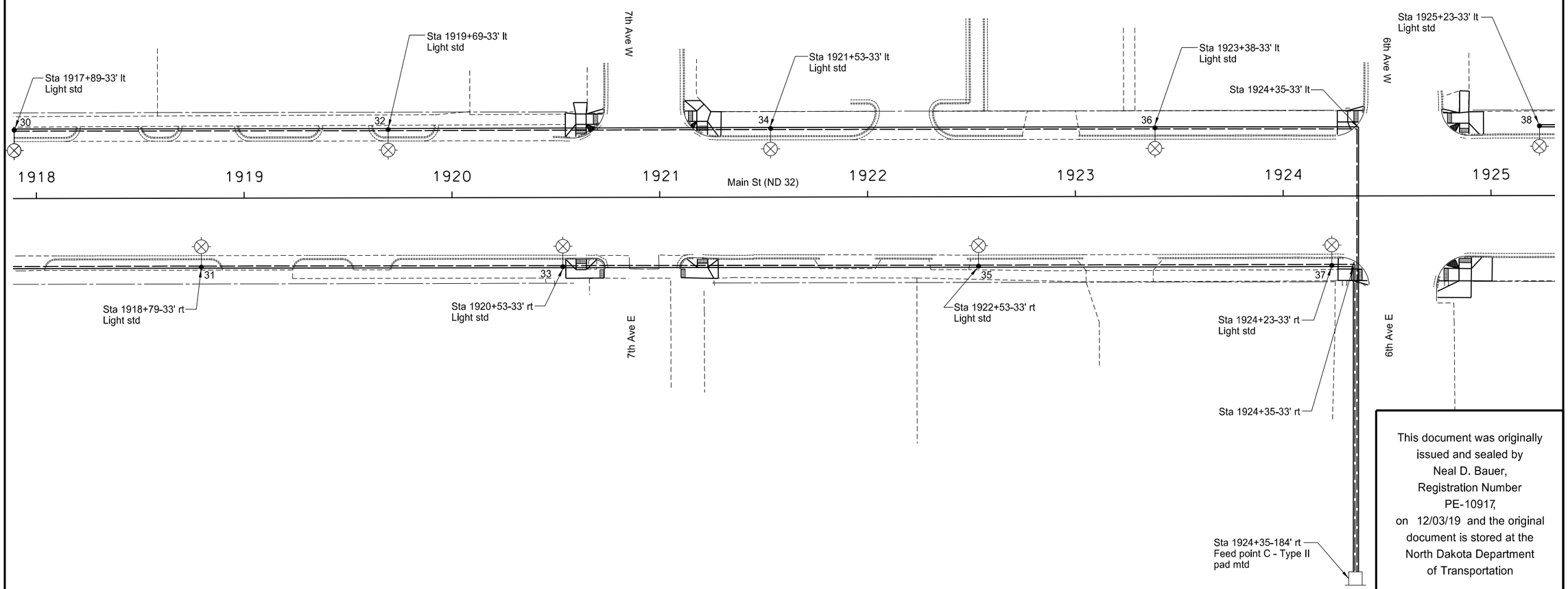
Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	17



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

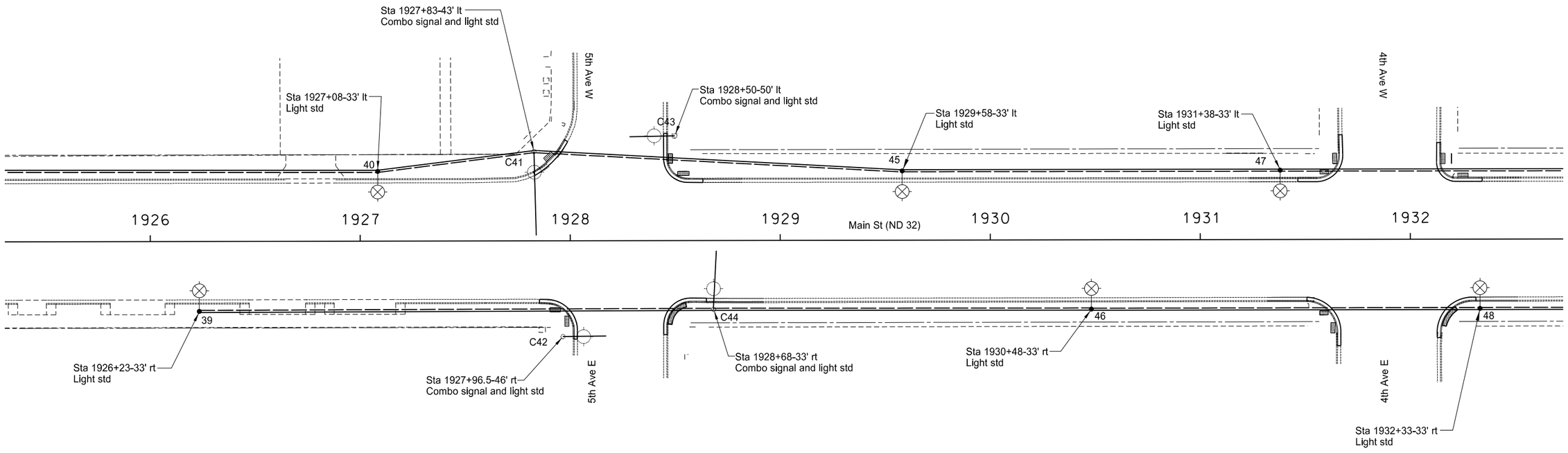
Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	18



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

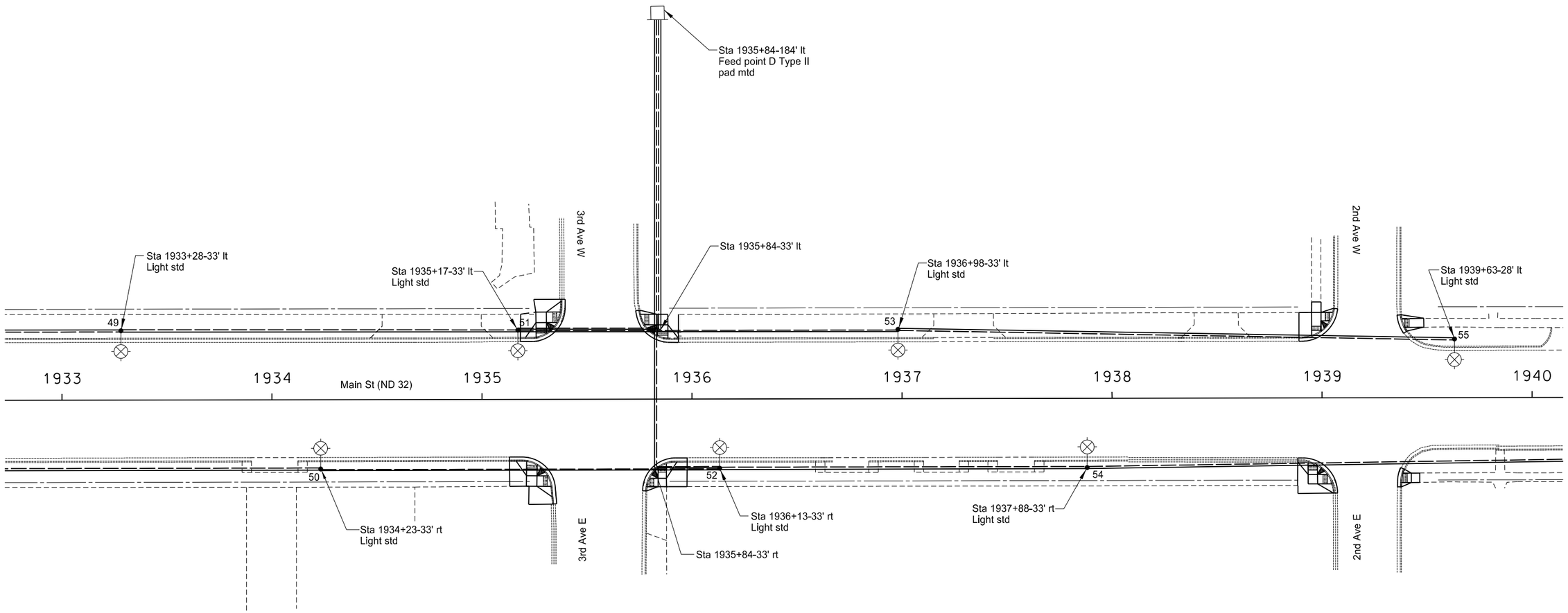
Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	19



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

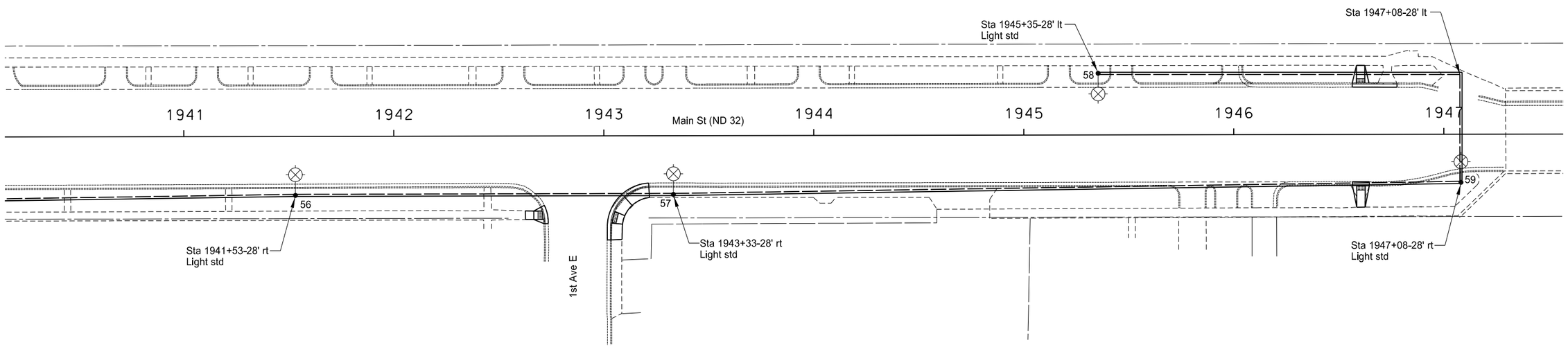
Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	20



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Lighting System

Lighting Layout

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	21

Light Std Number	Station	Conduit Runs		Cable Runs	
		LF	Dia	LF	Type
9 7	1889+80-34' rt to 1885+80-34' rt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
8 6	1887+80-34' lt to 1883+80-34' lt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
7 5	1885+80-34' rt to 1881+80-34' rt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
6 4	1883+80-34' lt to 1879+80-34' lt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
2 4	1875+80-34' lt to 1879+80-34' lt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
4 5	1879+80-34' lt to 1881+80-34' lt to 1881+80-34' rt	199 67	2" 2"	828 276	(3) No. 6 RHW (1) No. 6 THW
5 3	1881+80-34' rt to 1877+80-34' rt	398	2"	1224 408	(3) No. 6 RHW (1) No. 6 THW
1 3	1873+90-34' rt to 1877+80-34' rt	388	2"	1194 398	(3) No. 6 RHW (1) No. 6 THW
1 FP	1877+80-34' rt to 1875+84-34' rt to 1875+84-70' rt to	195 35	2" 2"	738 246	(3) No. 6 RHW (1) No. 6 THW
10 11	1891+80-28' lt to 1893+02-21' lt to 1893+89-18' lt to 1893+89-28' rt	121 92 45	2" 2" 2"	804 268	(3) No. 6 RHW (1) No. 6 THW
11 12	1893+89-28' rt to 1893+89-18' lt to 1895+95-28' lt	45 211	2" 2"	798 266	(3) No. 6 RHW (1) No. 6 THW
12 13	1895+95-28' lt to 1897+85-28' lt	188	2"	594 198	(3) No. 6 RHW (1) No. 6 THW
13 FP	1897+85-28' lt to 1898+91-28' lt 1898+91-32' lt	105 3	2" 2"	372 124	(3) No. 6 RHW (1) No. 6 THW
17 18	1905+50-28' rt to 1906+90-28' rt	148	2"	474 158	(3) No. 4 RHW (1) No. 6 THW
18 19	1906+90-28' rt to 1907+84-28' rt	92	2"	306 102	(3) No. 4 RHW (1) No. 6 THW
19 21	1907+84-28' rt to 1909+39-28' rt	238	2"	744 248	(3) No. 4 RHW (1) No. 6 THW
21 22	1909+39-28' rt to 1910+36-28' rt to 1910+36-28' lt	96 55	2" 2"	483 161	(3) No. 4 RHW (1) No. 6 THW
22 20	1910+36-28' lt to 1908+60-28' lt	175	2"	555 185	(3) No. 4 RHW (1) No. 6 THW
20 16	1908+60-28' lt to 1903+85-28' lt	456	2"	1398 466	(3) No. 4 RHW (1) No. 6 THW
16 15	1903+85-28' lt to 1901+83-28' lt	200	2"	630 210	(3) No. 2 RHW (1) No. 6 THW
15 14	1901+83-28' lt to 1899+85-28' lt	196	2"	618 206	(3) No. 2 RHW (1) No. 6 THW
14 FP	1899+85-28' lt to 1898+91-28' lt to 1898+91-32' lt	93 3	2" 2"	318 106	(3) No. 2 RHW (1) No. 6 THW

Light Std Number	Station	Conduit Runs		Cable Runs	
		LF	Dia	LF	Type
23 25	1911+34-33' rt to 1913+34-33' rt	198	2"	624 208	(3) No. 6 RHW (1) No. 6 THW
24 26	1912+34-33' lt to 1914+34-33' lt	198	2"	624 208	(3) No. 6 RHW (1) No. 6 THW
25 27	1913+34-33' rt to 1915+19-33' rt	183	2"	579 193	(3) No. 6 RHW (1) No. 6 THW
26 28	1914+34-33' lt to 1916+09-33' lt	173	2"	549 183	(3) No. 6 RHW (1) No. 6 THW
27 29	1915+19-33' rt to 1916+89-33' rt	168	2"	534 178	(3) No. 6 RHW (1) No. 6 THW
28 30	1916+09-33' lt to 1917+89-33' lt	178	2"	564 188	(3) No. 6 RHW (1) No. 6 THW
29 31	1916+89-33' rt to 1918+79-33' rt	188	2"	594 198	(3) No. 6 RHW (1) No. 6 THW
30 32	1917+89-33' lt to 1919+69-33' lt	178	2"	564 188	(3) No. 6 RHW (1) No. 6 THW
31 33	1918+79-33' rt to 1920+53-33' rt	172	2"	546 182	(3) No. 4 RHW (1) No. 6 THW
32 34	1919+69-33' lt to 1921+53-33' lt	182	2"	576 192	(3) No. 4 RHW (1) No. 6 THW
33 35	1920+53-33' rt to 1922+53-33' rt	198	2"	624 208	(3) No. 4 RHW (1) No. 6 THW
34 36	1921+53-33' lt to 1923+38-33' lt	183	2"	579 193	(3) No. 4 RHW (1) No. 6 THW
35 37	1922+43-33' rt to 1924+23-33' rt	168	2"	534 178	(3) No. 4 RHW (1) No. 6 THW
36 FP	1923+38-33' lt to 1924+35-33' lt to 1924+35-184' rt	96 216	2" 2"	984 328	(3) No. 4 RHW (1) No. 6 THW
37 FP	1924+23-33' rt to 1924+35-33' rt to 1924+35-184' rt	11 150	2" 2"	531 177	(3) No. 4 RHW (1) No. 6 THW
38 40	1925+38-33' lt to 1927+08-33' lt	183	2"	579 193	(3) No. 6 RHW (1) No. 6 THW
39 C44	1926+23-33' rt to 1928+68-33' rt	243	2"	759 253	(3) No. 6 RHW (1) No. 6 THW
40 C41	1927+08-33' lt to 1927+83-43' lt	73	2"	249 83	(3) No. 6 RHW (1) No. 6 THW
C44 46	1928+68-33' rt to 1930+48-33' rt	178	2"	564 188	(3) No. 6 RHW (1) No. 6 THW
C41 45	1927+83-43' lt to 1929+58-33' lt	174	2"	552 184	(3) No. 6 RHW (1) No. 6 THW
46 48	1931+48-33' rt to 1934+73-33' rt	183	2"	579 193	(3) No. 6 RHW (1) No. 6 THW
45 47	1929+58-33' lt to 1931+38-33' lt	178	2"	564 188	(3) No. 6 RHW (1) No. 6 THW
48 50	1932+33-33' rt to 1934+23-33' rt	188	2"	594 198	(3) No. 6 RHW (1) No. 6 THW
47 49	1931+38-33' lt to 1933+28-33' lt	188	2"	594 198	(3) No. 6 RHW (1) No. 6 THW

Light Std Number	Station	Conduit Runs		Cable Runs	
		LF	Dia	LF	Type
50 52	1934+23-33' rt to 1936+13-33' rt	188	2"	594 198	(3) No. 6 RHW (1) No. 6 THW
49 51	1933+28-33' lt to 1935+17-33' lt	187	2"	591 197	(3) No. 4 RHW (1) No. 6 THW
58 59	1945+35-28' lt to 1947+08-28' lt to 1947+08-28' lt	171 55	2" 2"	708 236	(3) No. 6 RHW (1) No. 6 THW
59 57	1947+08-28' rt to 1943+33-28' rt	373	2"	1149 383	(3) No. 6 RHW (1) No. 6 THW
57 56	1943+33-28' rt to 1941+53-28' rt	178	2"	564 188	(3) No. 4 RHW (1) No. 6 THW
56 54	1941+53-28' rt to 1937+88-33' rt	363	2"	1119 373	(3) No. 4 RHW (1) No. 6 THW
55 53	1939+63-28' lt to 1936+98-33' lt	263	2"	819 273	(3) No. 6 RHW (1) No. 6 THW
54 52	1937+88-33' rt to 1936+13-33' rt	173	2"	549 183	(3) No. 4 RHW (1) No. 6 THW
53 51	1936+98-33' lt to 1935+17-33' lt	179	2"	567 189	(3) No. 6 RHW (1) No. 6 THW
52 FP	1936+13-33' rt to 1935+84-33' rt 1935+84-184' lt	28 216	2" 2"	780 260	(3) No. 4 RHW (1) No. 6 THW
51 FP	1935+17-33' lt to 1935+84-33' lt to 1935+84-184' lt	66 150	2" 2"	696 232	(3) No. 4 RHW (1) No. 6 THW

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Lighting System

Cable Runs

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	22

Light Standards - Feed Point					
No.	Station	Wattage	Circuit	Pole Ht.	Mast Arm
1	1873+90-34' rt	155-170	A1	42'	6'
2	1875+80-34' lt	155-170	A1	42'	6'
3	1877+80-34' rt	155-170	A1	42'	6'
4	1879+80-34' lt	155-170	A1	42'	6'
5	1881+80-34' rt	155-170	A1	42'	6'
6	1883+80-34' lt	155-170	A1	42'	6'
7	1885+80-34' rt	155-170	A1	42'	6'
8	1887+80-34' lt	155-170	A1	42'	6'
9	1889+80-34' rt	155-170	A1	42'	6'
10	1891+80-28' lt	155-170	B1	42'	6'
11	1893+89-28' rt	155-170	B1	42'	6'
12	1895+95-28' lt	155-170	B1	40'	6'
13	1897+85-28' lt	155-170	B1	40'	6'
14	1899+85-28' lt	155-170	B2	40'	6'
15	1901+83-28' lt	155-170	B2	40'	6'
16	1903+85-28' lt	155-170	B2	40'	6'
17	1905+50-28' rt	155-170	B2	40'	6'
18	1906+90-28' rt	118	B2	30'	8'
19	1907+84-28' rt	118	B2	30'	8'
20	1908+60-28' lt	118	B2	30'	8'
21	1909+39-28' rt	118	B2	30'	8'
22	1910+36-28' lt	118	B2	30'	8'
23	1911+34-33' rt	118	C2	30'	8'
24	1912+34-33' lt	118	C1	30'	8'
25	1913+34-33' rt	118	C2	30'	8'
26	1914+34-33' lt	118	C1	30'	8'
27	1915+19-33' rt	118	C2	30'	8'
28	1916+09-33' lt	118	C1	30'	8'
29	1916+89-33' rt	118	C2	30'	8'
30	1917+89-33' lt	118	C1	30'	8'
31	1918+79-33' rt	118	C2	30'	8'
32	1919+69-33' lt	118	C1	30'	8'
33	1920+53-33' rt	118	C2	30'	8'
34	1921+53-33' lt	118	C1	30'	8'
35	1922+53-33' rt	118	C2	30'	8'
36	1923+38-33' lt	118	C1	30'	8'
37	1924+23-33' rt	118	C2	30'	8'
38	1925+23-33' lt	118	D1	30'	8'
39	1926+23-33' rt	118	D2	30'	8'
40	1927+08-33' lt	118	D1	30'	8'
C41	1927+83-43' lt	118	D1	30'	8'
C42	1927+96.5-46' rt	118	(B)	30'	8'
C43	1928+50-50' lt	118	(B)	30'	8'
C44	1928+68-33' rt	118	D2	30'	8'

(B) Existing ND 27 feed point.

Light Standards - Feed Point B					
No.	Station	Wattage	Circuit	Pole Ht.	Mast Arm
45	1929+58-33' lt	118	D1	30'	8'
46	1930+48-33' rt	118	D2	30'	8'
47	1931+38-33' lt	118	D1	30'	8'
48	1932+33-33' rt	118	D2	30'	8'
49	1933+28-33' lt	118	D1	30'	8'
50	1934+23-33' rt	118	D2	30'	8'
51	1935+17-33' lt	118	D1	30'	8'
52	1936+13-33' rt	118	D2	30'	8'
53	1936+98-33' lt	118	D1	30'	8'
54	1937+88-33' rt	118	D2	30'	8'
55	1941+53-28' lt	155-170	D1	40'	6'
56	1941+53-28' rt	155-170	D2	40'	6'
57	1943+33-28' rt	155-170	D2	40'	6'
58	1945+35-28' lt	155-170	D2	40'	6'
59	1947+08-28' rt	155-170	D2	40'	6'

LIGHTING FOUNDATION TABLE		
Description	Footing Depth "D" 24" and 30" Dia	Footing Depth "D" 36" and 42" Dia
Light Standard 30' - 35' Mt Ht	6'	5'
Light Standard 36' - 44' Mt Ht	6'	5'

Lighting Quantities (A)															
Concrete Foundation - Highway Lighting	Concrete Foundation - Feed Point - Type B	2" Dia Rigid Conduit	Underground Conductor No 2 Type RHW	Underground Conductor No 4 Type RHW	Underground Conductor No 6 Type RHW	Underground Conductor No 6 Type THW	Feed Point - Type II - Pad Mounted	Light Std Decorative	Light Std 6' MA 42' Pole Breakaway	Light Std 6' MA 40' Pole	LED Luminaire 118 Watt	LED Luminaire 165 Watt	Remove Light Std	Remove Feed Point	Lighting System
EA	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA
55	3	12852	1566	12621	26175	13458	3	33	11	11	37	22	39	3	1

(A) Do not bid seperately but include in the item "Lighting System".

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

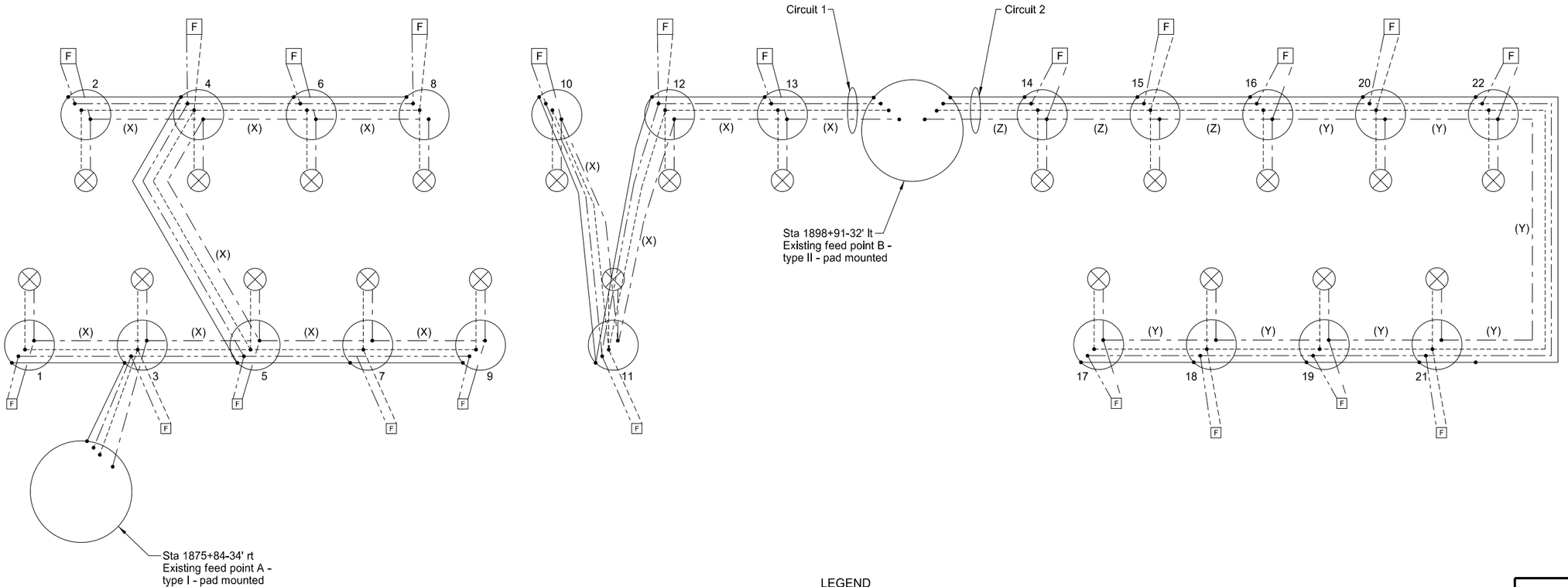
Lighting System

Quantities

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	23



LEGEND

Phase conductor	
Phase conductor	
Ground conductor	
Neutral conductor	
(X)	Underground conductor (3) No. 6 RHW Underground conductor (1) No. 6 THW
(Y)	Underground conductor (3) No. 4 RHW Underground conductor (1) No. 6 THW
(Z)	Underground conductor (3) No. 2 RHW Underground conductor (1) No. 6 THW
	LED luminaire 120v x 240v operated on 240v
	Light standard
5	Light standard number
C14	Luminaire extension
F	Fesstoon

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

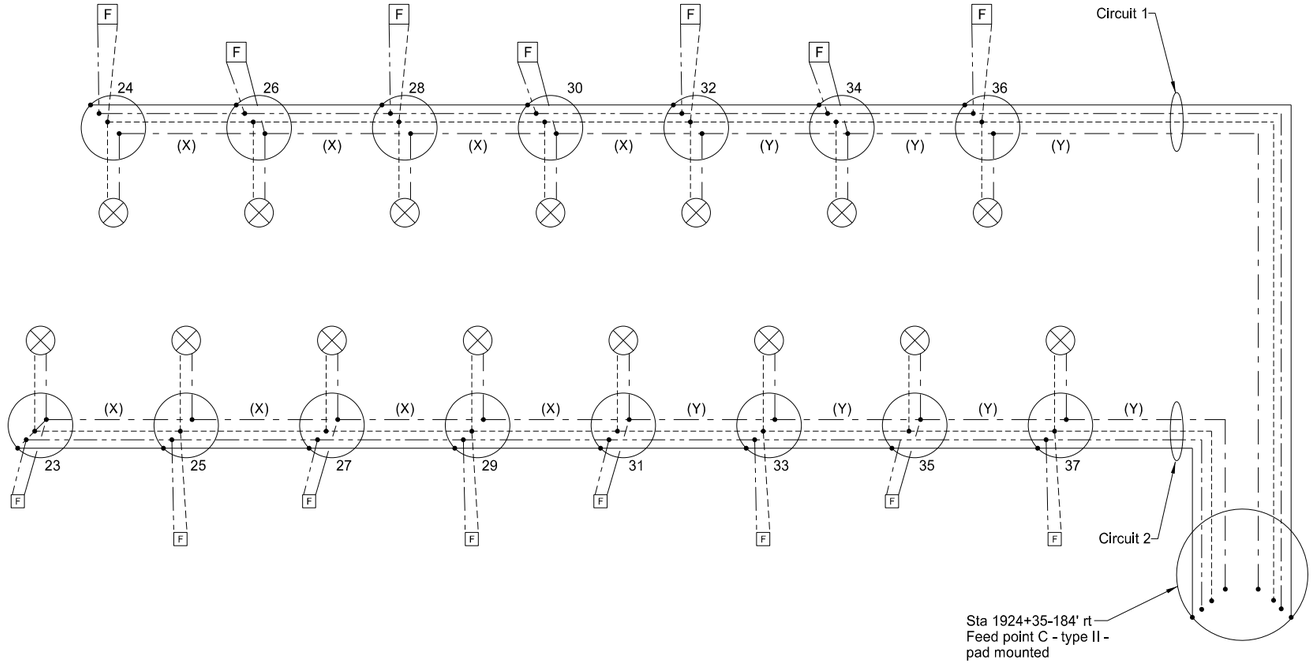
Lighting System

Lighting Schematic

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	24



LEGEND

Phase conductor	
Phase conductor	
Ground conductor	
Neutral conductor	
(X)	Underground conductor (3) No. 6 RHW Underground conductor (1) No. 6 THW
(Y)	Underground conductor (3) No. 4 RHW Underground conductor (1) No. 6 THW
	LED luminaire 120v x 240v operated on 240v
	Light standard
5	Light standard number
C14	Luminaire extension

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

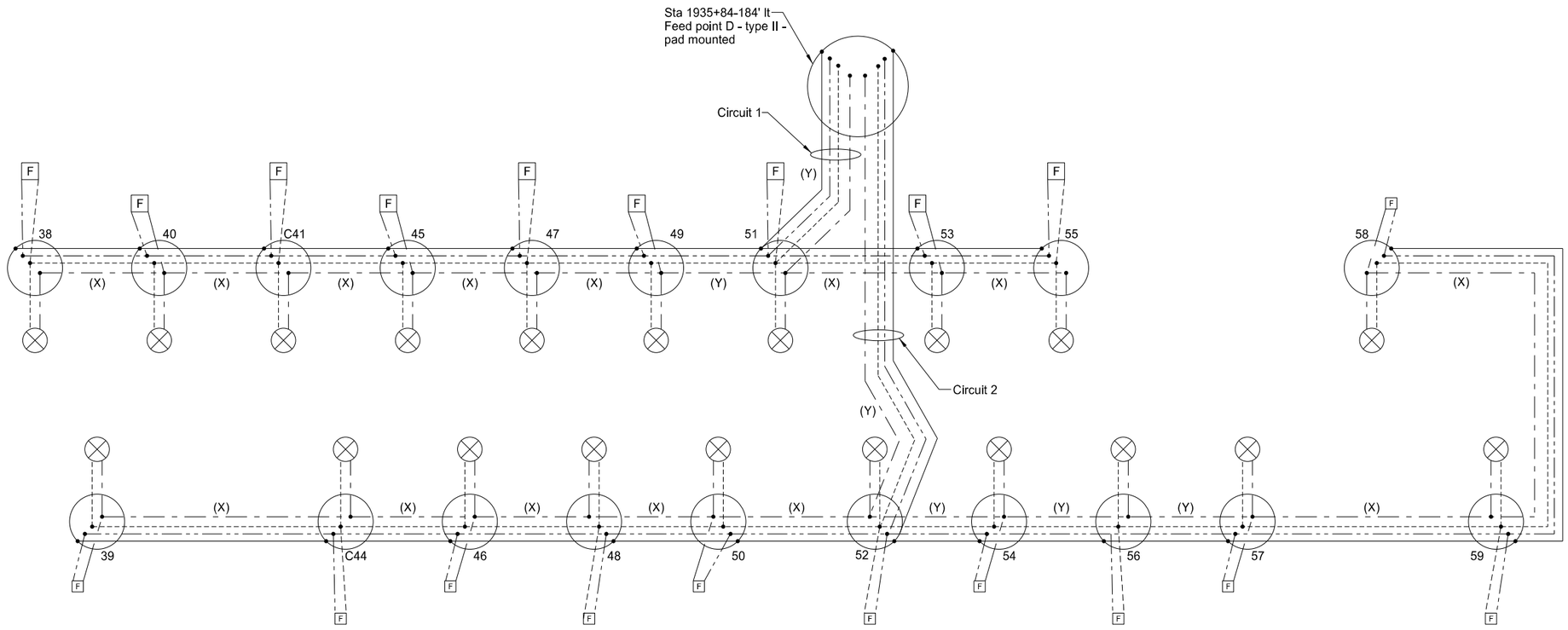
Lighting System

Lighting Schematic

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	25



LEGEND

Phase conductor	
Phase conductor	
Ground conductor	
Neutral conductor	
(X)	Underground conductor (3) No. 6 RHW Underground conductor (1) No. 6 THW
(Y)	Underground conductor (3) No. 4 RHW Underground conductor (1) No. 6 THW
	LED luminaire 120v x 240v operated on 240v
	Light standard
47	Light standard number
C14	Luminaire extension

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

Lighting System

Lighting Schematic

Main St (ND 32)

Lisbon

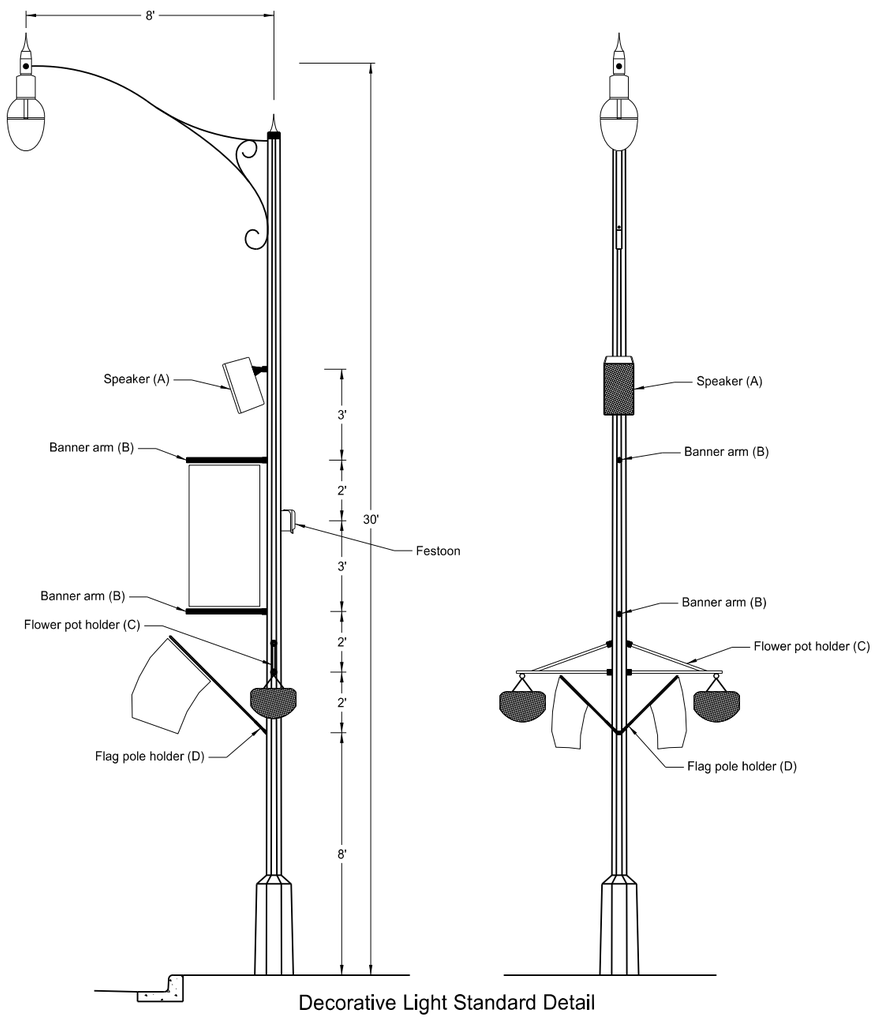
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	26

(A) Provide a coupler for speaker wire. Coil 3 feet of speaker wire at coupler. Dimensions are 20.5" height, 12" width, 10.9" deep. Weight is 30.8 lbs. City will install speaker.

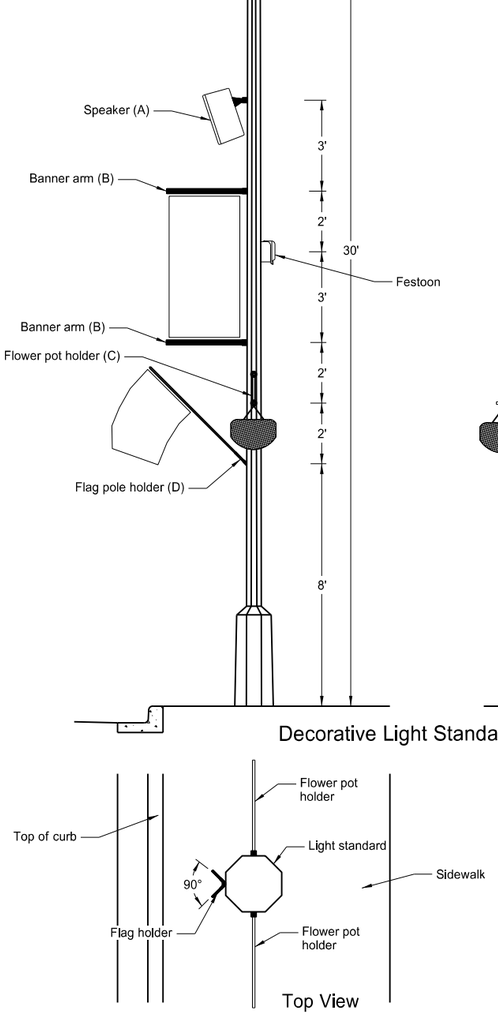
(B) Future banners and banner arms will be installed by the city.

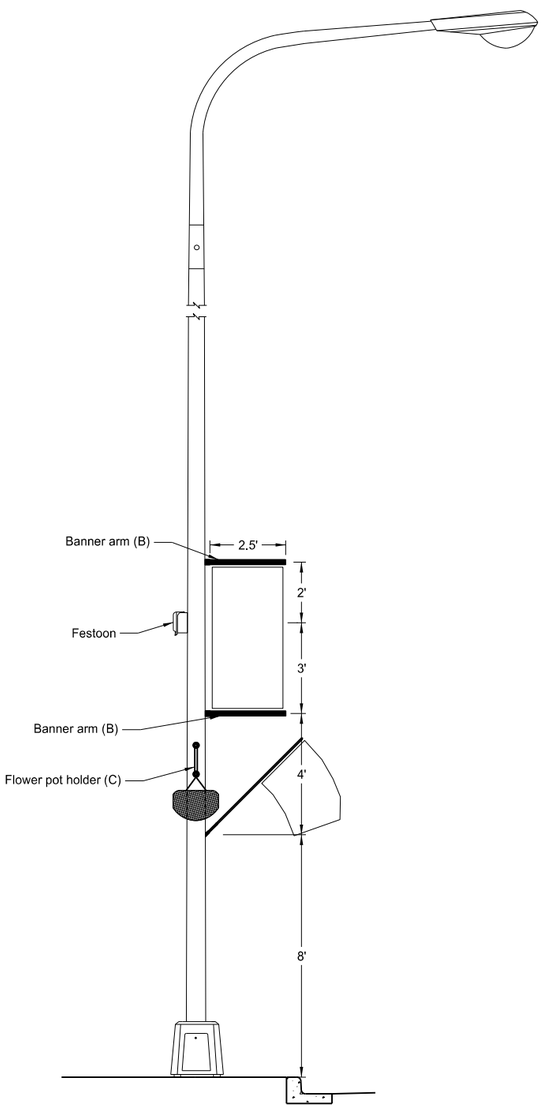
(C) Install the flower pot holders. The flower pots will be supplied by the city.

(D) Install the flag pole holders. Ensure the double flag holders are 45° above horizontal and 90° apart.

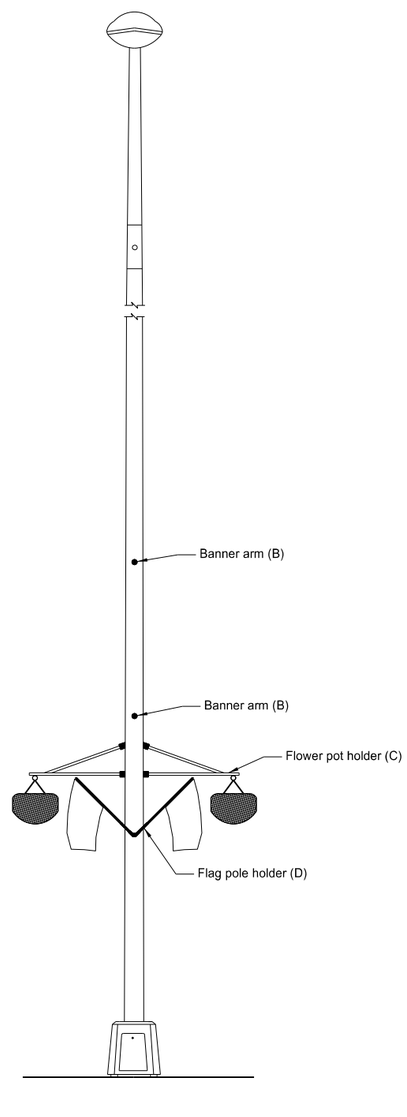


Decorative Light Standard Detail





Conventional Light Standard Detail



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/03/19 and the original document is stored at the North Dakota Department of Transportation

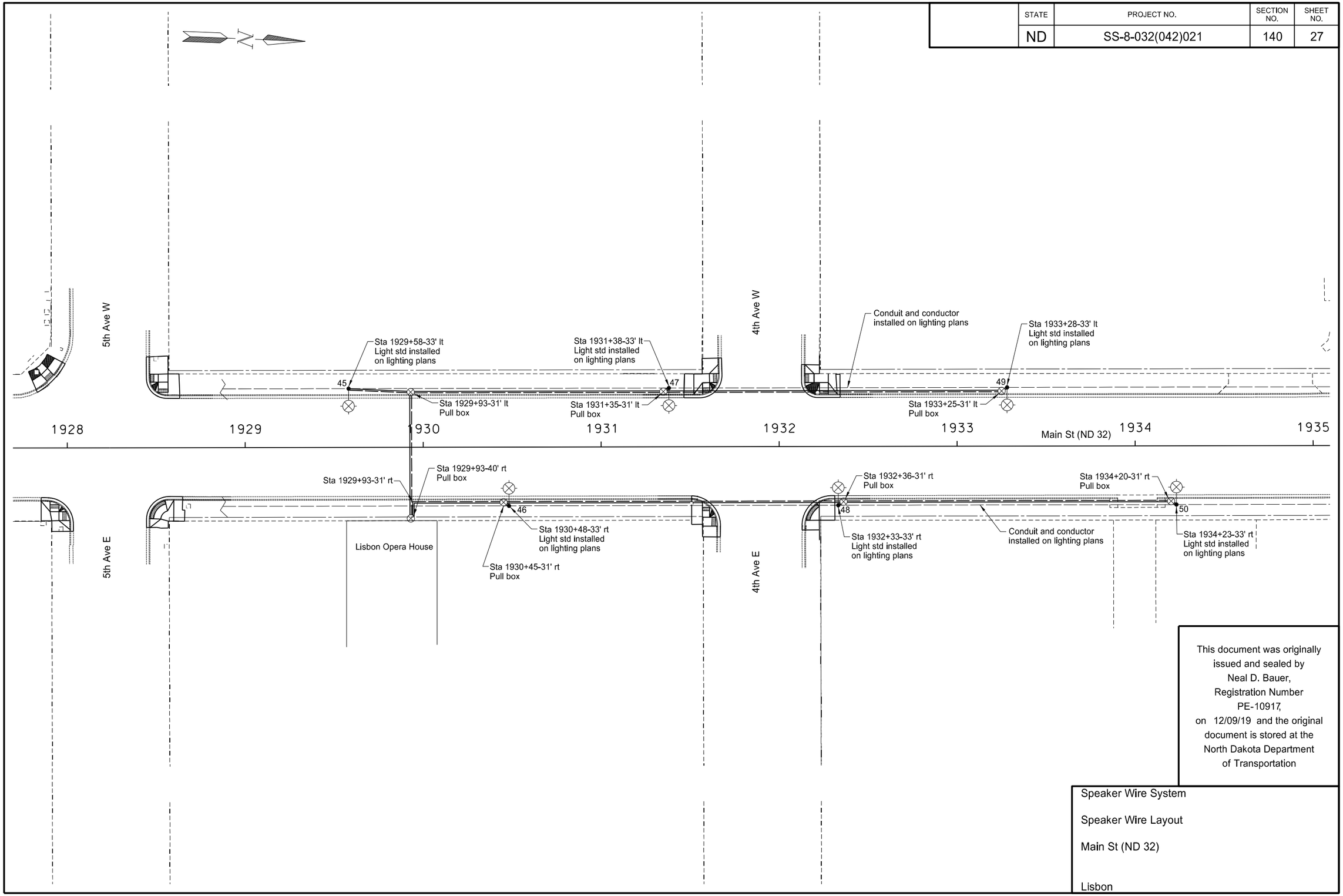
Lighting System

Light Standard Detail

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	140	27



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/09/19 and the original document is stored at the North Dakota Department of Transportation

Speaker Wire System

Speaker Wire Layout

Main St (ND 32)

Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	140	28

	Station	Conduit Runs		Cable Runs	
		LF	Dia	LF	Type
Light std 49 Pull box	1933+28-33' lt to 1933+25-31' lt	2	2"		
Pull box (B) Pull box	1933+25-31' lt to 1931+35-31' lt	189	2"	220	Speaker Wire #5
Light std 47 Pull box	1931+38-33' lt to 1931+35-31' lt	2	2"		
Pull box (C) Pull box	1931+35-31' lt to 1929+93-31' lt	141	2"	172 142	Speaker Wire #3 Speaker Wire #5
Light std 45 Pull box	1929+58-33' lt to 1929+93-31' lt	34	2"		
Pull box (D) Pull box (E)	1929+93-31' lt to 1929+93-40' lt	70	2"	236 171 171	Speaker Wire #1 Speaker Wire #3 Speaker Wire #5
Light std 50 Pull box	1934+23-33' rt to 1934+20-31' rt	2	2"		
Pull box (F) Pull box	1934+20-31' rt to 1932+36-31' rt	183	2"	214	Speaker Wire #6
Light std 48 Pull box	1932+33-33' rt to 1932+36-31' rt	2	2"		
Pull box (G) Pull box	1932+36-31' rt to 1930+45-31' rt	190	2"	221 191	Speaker Wire #4 Speaker Wire #6
Light std 46 Pull box	1930+48-33' rt to 1930+45-31' rt	2	2"		
Pull box (H) Pull box (I)	1930+45-31' rt to 1929+93-31' rt to 1929+93-40' rt	52 9	2" 2"	191 161 161	Speaker Wire #2 Speaker Wire #4 Speaker Wire #6

(B) Coil 30 feet of speaker wire #5 in pull box.

(C) Coil 30 feet of speaker wire #3 in pull box.

(D) Coil 65 feet of speaker wire #1 in pull box.
(E) Coil 100 feet of speaker wire #1 in pull box.
Coil 100 feet of speaker wire #3 in pull box.
Coil 100 feet of speaker wire #5 in pull box.

(F) Coil 30 feet of speaker wire #6 in pull box.

(G) Coil 30 feet of speaker wire #4 in pull box.

(H) Coil 30 feet of speaker wire #2 in pull box.
(I) Coil 100 feet of speaker wire #2 in pull box.
Coil 100 feet of speaker wire #4 in pull box.
Coil 100 feet of speaker wire #6 in pull box.

Note: Speaker wire #1 is for the speaker mounted to light std 45.
Speaker wire #2 is for the speaker mounted to light std 46.
Speaker wire #3 is for the speaker mounted to light std 47.
Speaker wire #4 is for the speaker mounted to light std 48.
Speaker wire #5 is for the speaker mounted to light std 49.
Speaker wire #6 is for the speaker mounted to light std 50.

Quantities (A)					
Pull Box	2" Dia Rigid Conduit	2 Conductor 12 AWG Speaker Wire			Speaker Wire
EA	LF	LF			LF
7	878	2251			2251

(A) Do not bid seperately but include in the item "Speaker Wire".

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/09/19 and the original document is stored at the North Dakota Department of Transportation

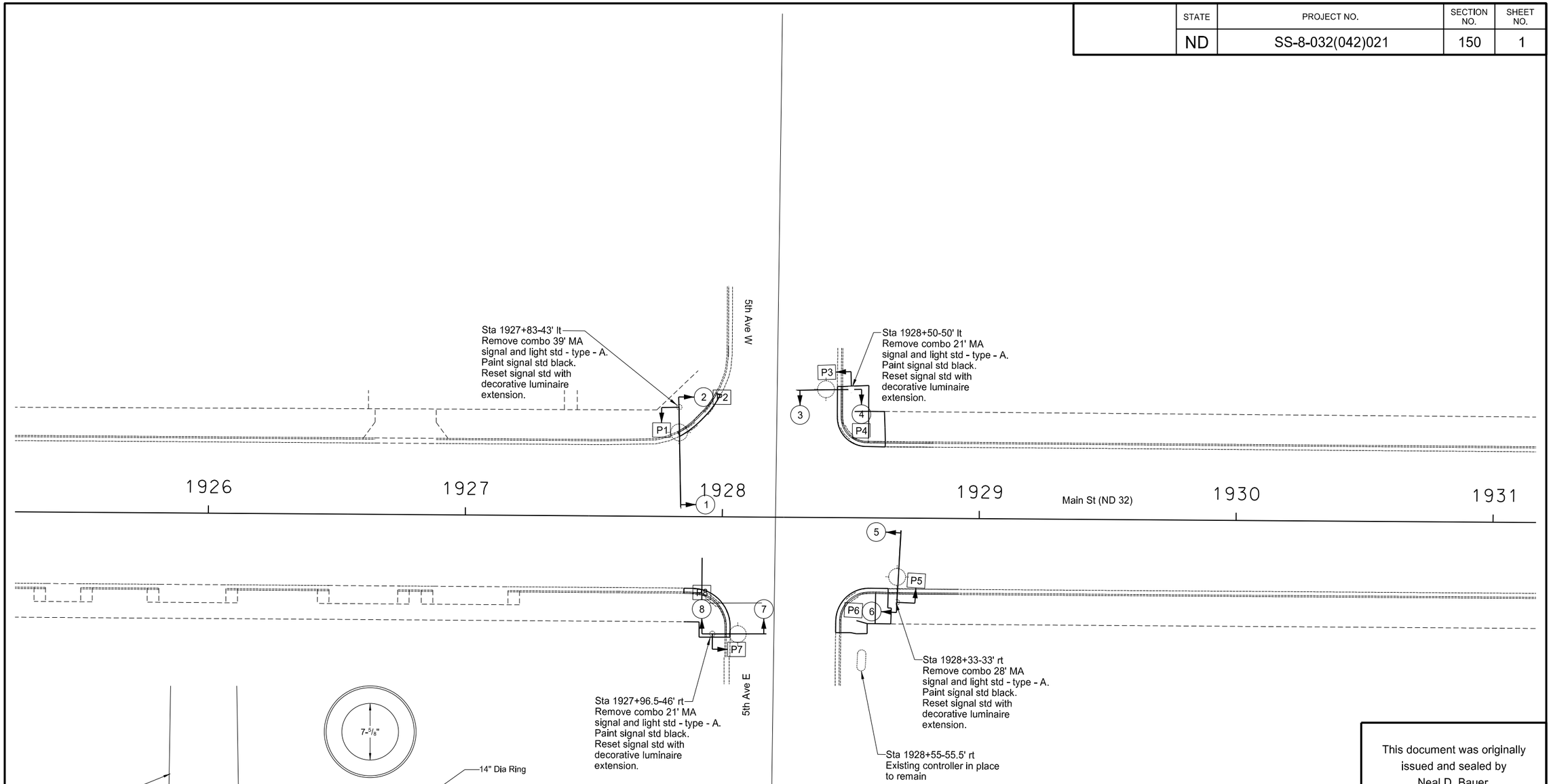
Speaker Wire System

Conduit and Cable Runs and Quantities

Main St (ND 32)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	150	1



This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

Revise Traffic Signal System

Traffic Signal Layout

Main St (ND 32) and 5th Ave (ND 27)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	150	2

QUANTITIES (A)

STATION	No. 14 AWG 3 Conductor Cable	No. 14 AWG 5 Conductor Cable	Paint 39 FT MA Signal Std	Paint 21 FT MA Signal Std	Paint 28 FT MA Signal Std	Reset Post Mounted Signal Head	Reset Mast Arm Mounted Signal Head	Reset Post Mounted Pedestrian Head	Reset Mast Arm Mounted Sign			Revise Traffic Signal System - Option 1
		LF	EA	EA	EA	EA	EA	EA	EA			EA
1927+83-43' lt	24 (B)	76 (B)	1			1	1	2	1			
1927+96.5-46' rt	24 (B)	58 (B)		1		1	1	2	1			
1928+50-50' lt	24 (B)	58 (B)		1		1	1	2	1			
1928+33-33' rt	24 (B)	65 (B)			1	1	1	2	1			
TOTAL	96	257	1	2	1	4	4	8	4			1

(A) Do not bid these items separately but include in the item "Revise Traffic Signal System".

(B) Used for internal wiring of signal standards.

(C) Luminaire extension included with Lighting System bid item.

Existing signal standard shop drawing information is available at the NDDOT.

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

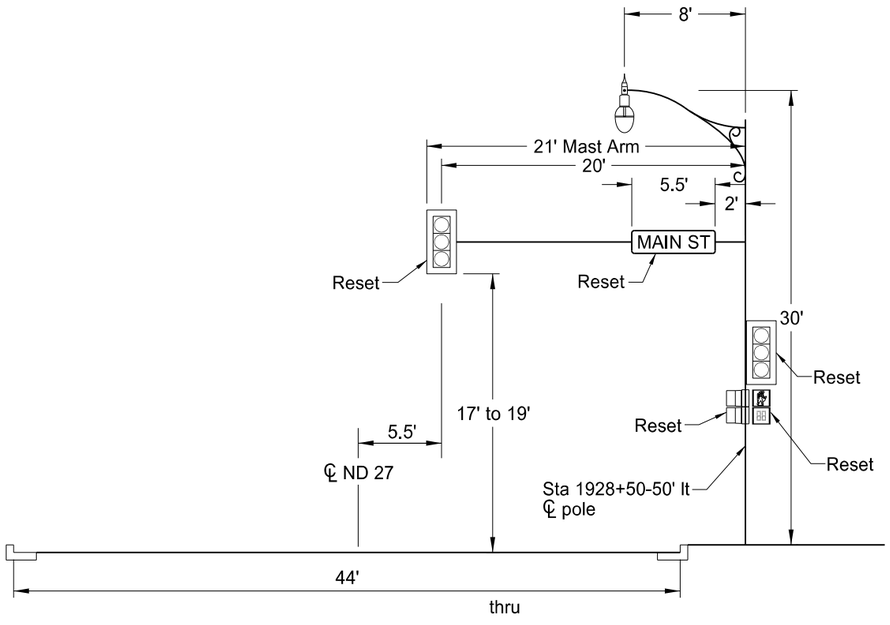
Revise Traffic Signal System

Main St (ND 32) and 5th Ave (ND 27)

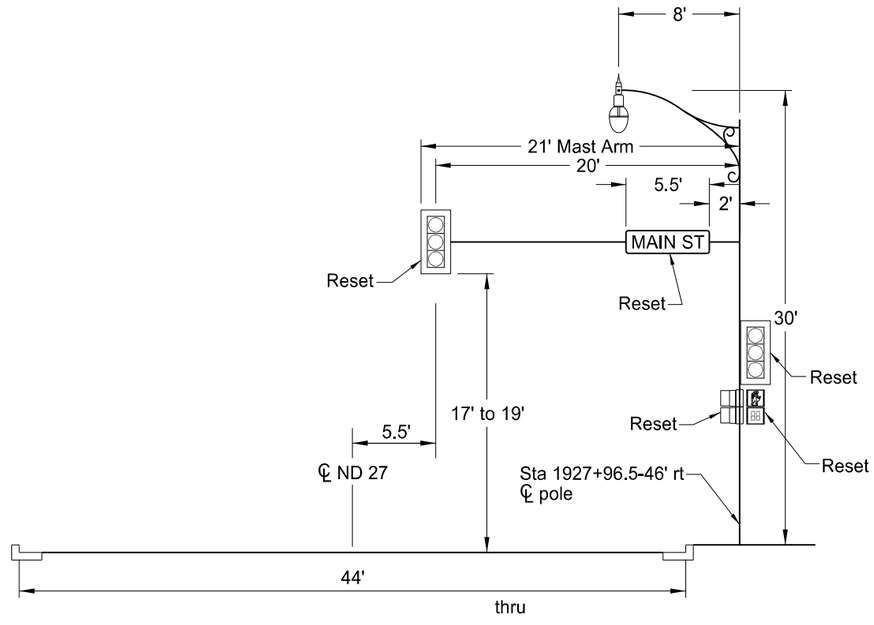
Quantities

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	150	3



Westbound



Eastbound

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

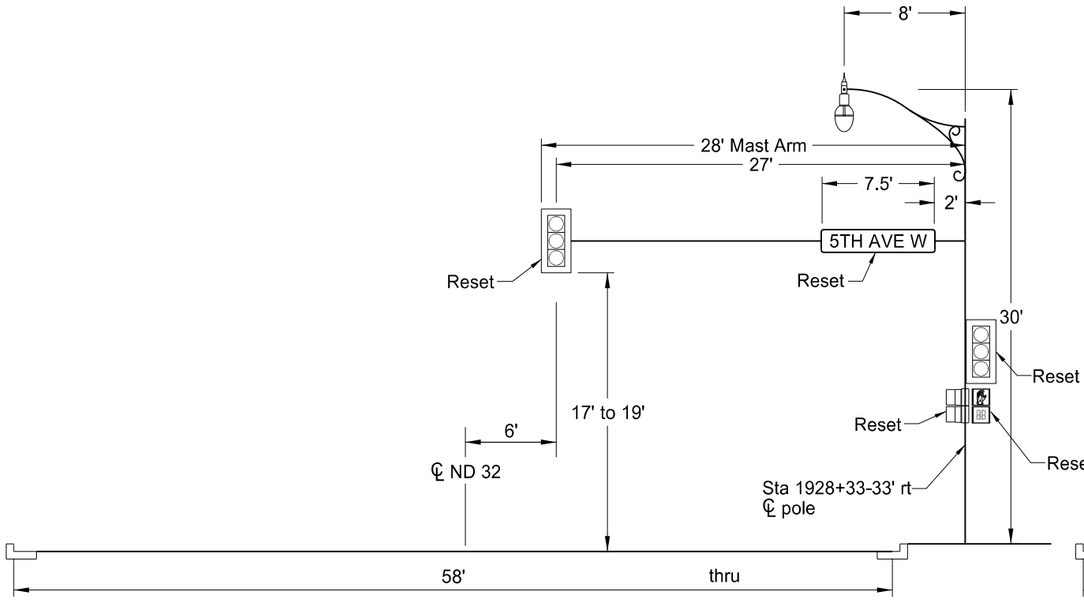
Revise Traffic Signal System

Signal Standards and Head Locations

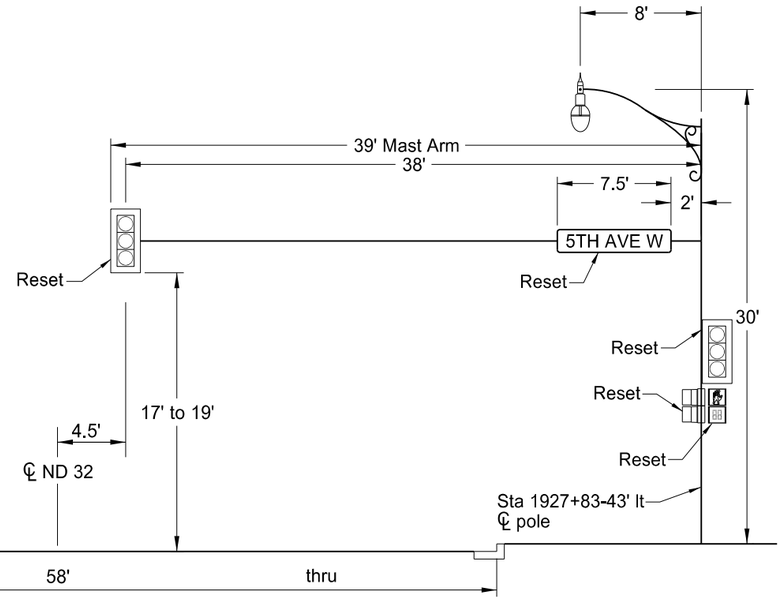
Main St (ND 32) and 5th Ave (ND 27)

Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	150	4



Northbound



Southbound

This document was originally issued and sealed by Neal D. Bauer, Registration Number PE-10917, on 12/05/19 and the original document is stored at the North Dakota Department of Transportation

Revise Traffic Signal System

Signal Standards and Head Locations

Main St (ND 32) and 5th Ave (ND 27)

Lisbon

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	170	1

NOTES:

100 SCOPE OF WORK: Work at this site consists of filling voids, with expansive polyurethane foam insulation or flowable fill, caused by the untied construction joint separating on a reinforced concrete box culvert. Remove all debris from the box culvert.

930 BOX CULVERT JOINT REPAIR: The construction joint is untied and has separated approximately 1", allowing seepage into the box culvert.

Remove all soil from joints and clean contact surfaces before filling.

Attach an 18" wide, ¼" galvanized steel plate to both side wall joints. Fill the voids along the box culvert floor with concrete and side walls with flowable fill from inside the box culvert. Install one ±3' section of ¼" steel plate to the roof, and then fill the voids above this ±3' section by spraying expansive foam insulation from inside the box culvert. Attach another ±3' section of steel plate and fill the voids above with the foam insulation. Continue this procedure until all voids have been filled. The contractor has the option to use expansive foam insulation to replace the flowable fill.

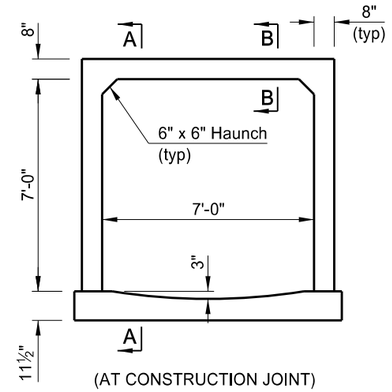
Use an anchorage system with a high strength adhesive that is specifically intended for concrete anchorage and meets the requirements of Section 806.02, "Epoxy Resin Adhesives". Install the anchorage system according to manufacturer's recommendations.

A total of 4 joint segments will be paid for: 1 floor, 1 roof, and 2 exterior wall segments.

Include the cost of all equipment, labor and materials required to dewater, remove all debris from the existing box culvert and extensions, and fill the void areas in the price bid for "Box Culvert Joint Repair."

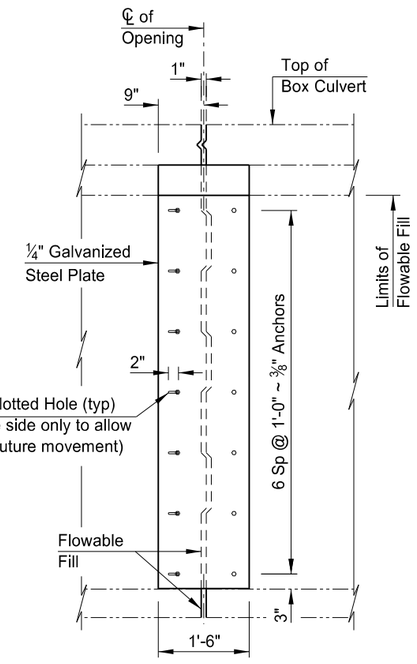
FLOWABLE FILL MIX DESIGN:

CEMENT	=	60 LBS/CY
FLY ASH	=	290 LBS/CY
FINE AGGREGATE	=	2900 LBS/CY
WATER	=	± 70 GAL/CY

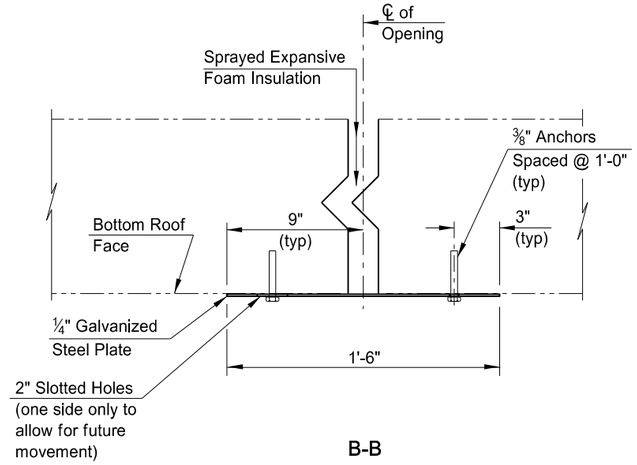


(AT CONSTRUCTION JOINT)

BARREL SECTION



A-A



B-B

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
930	9671	BOX CULVERT JOINT REPAIR	EA	4

This document was originally issued and sealed by Tim L Schwagler, Registration Number PE 3151, on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

4 SOUTH OF ND 27

BOX CULVERT JOINT REPAIR

CLEAR SPAN 1 x 7' CLEAR HEIGHT 7'

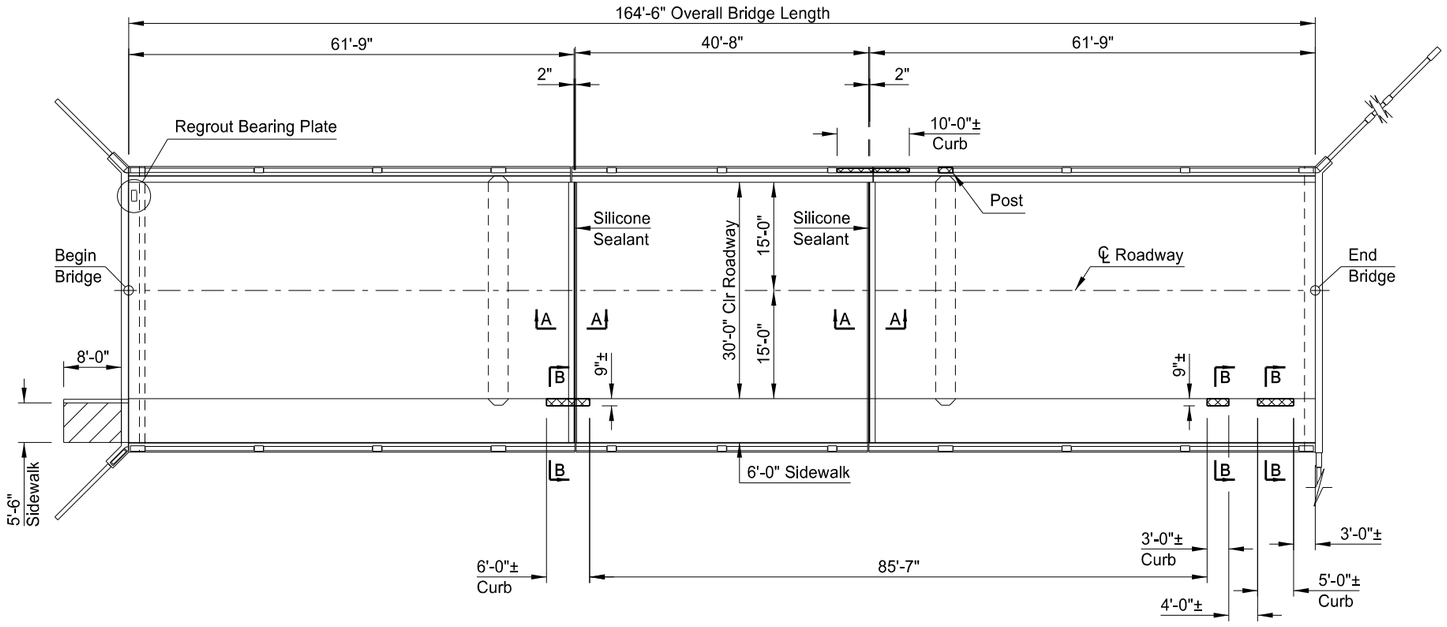
PROJECT: SS-8-032(021)042

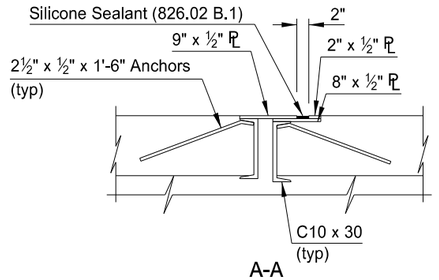
RANSOM COUNTY

12/10/19 (DATE) Jon Ketterling (BRIDGE ENGINEER)

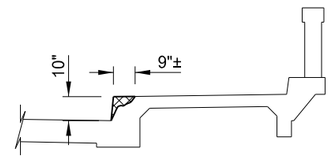
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	170	2





A-A



B-B

Hatched area indicates curb overlay areas.

Hatched area indicates sidewalk to be removed and replaced with 4 inches of salvaged base course and 4 inches of sidewalk concrete. Include cost of sidewalk removal and materials under sidewalk in "Removal of Concrete Pavement."

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	5
302	0100	SALVAGED BASE COURSE	TON	.8
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	686
602	1260	BRIDGE DECK CRACK SEALING	LF	600
602	7000	SPECIAL SURFACE FINISH	SF	1,730
750	0100	SIDEWALK CONCRETE	SY	5
930	8644	SILICONE SEALANT	LF	76
930	9505	BRIDGE REPAIR - BEARING	L SUM	1
930	9612	SPALL REPAIR	SF	981
930	9650	ABUTMENT REPAIR	SF	2
930	9690	CURB OVERLAY	LF	16

This document was originally issued and sealed by Tim L Schwagler, Registration Number PE 3151, on 1/06/20 and the original document is stored at the North Dakota Department of Transportation

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SHEYENNE RIVER - LISBON

BRIDGE LAYOUT

PROJECT: SS-8-032(021)042

RANSOM COUNTY

1/06/20 — Jon Ketterling
DATE — BRIDGE ENGINEER

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	170	3

NOTES

100 SCOPE OF WORK: Work at this site consists of sealing the joints on the bridge deck and sidewalk, regrouting under a bridge bearing plate, resurfacing the bridge sidewalk, and repairing concrete areas on the bridge curb, wall, post and abutment.

602 SPEACIAL SURFACE TREATMENT: Apply special surface treatment to the front face of the curb, the front face and top of the barrier along the full length of the bridge and abutments and the front and sides of the light poles. Use white colored special surface finish as approved by the engineer.

602 PENETRATING WATER REPELLENT TREATMENT: Apply the penetrating water repellent solution to the top of the bridge deck and sidewalk and the front face and top of all three curbs. Apply penetrating water repellent solution after concrete patching is complete and prior to sealing the bridge deck cracks.

602 BRIDGE DECK CRACK SEALING: Wash the deck surface with a minimum water pressure of 3,000 psi. Perform a visual inspection of the bridge deck surface and mark all visible cracks appearing on the top surface 0.007" or greater in width at its widest segment or as directed by the Engineer. Air dry the wet deck a minimum of 72 hours before applying the sealer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.007" wide. For the epoxy sealer use Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal. Include all work and materials associated with the deck crack sealing in the bid item "Bridge Deck Crack Sealing."

930 SILICONE SEALANT: Install silicone sealant in both steel expansion joints located on bridge deck & sidewalk. Clean the joint of all foreign material and sand blast before the new silicone sealant is installed. Extend the silicone sealant up the front face of the curbs. Include all materials, labor, and equipment required to remove and replace the silicone sealant in the bid item "Silicone Sealant."

930 BRIDGE REPAIR - BEARING: Install grout material between bearing plate and abutment. For the grout material use SikaGrout -212 (Sika Corporation), DRY PACK GROUT (A.W. Cook Cement Products), WEDJROK FS DRY PACK GROUT (Metalcrete Industries), or an approved equal grout. Install as recommended by the manufacturer.

930 SPALL REPAIR: The sidewalk has scaled areas. Remove all unsound concrete, shot blast the entire surface and replace it with concrete patch to the original constructed section.

Clean the existing concrete surface by shot blasting.

Use a thin patch mortar repair or other concrete material that is specifically intended for patching concrete. For the patching material use SikaQuick EZ Patch (Sika Corporation), Tamms Thin Patch (The Euclid Chemical Company), Right Crete Thin Repair (Right/Pointe Company), or an approved equal repair mortar. Install and cure as recommended by the manufacturer.

The spall repair quantity is based on the assumption that the entire sidewalk will be refinished. Include all labor, equipment, and materials need for the repair of the spall areas in the bid item "Spall Repair."

930 ABUTMENT REPAIR: The north abutment bearing area has a spall on it. Remove all unsound concrete and replace it with new concrete to the original constructed section. Use a 15 pound maximum size chipping hammer on any unsound concrete. Provide sharp, neat lines at least 1 inch deep at the edges of the repair areas. Produce these sharp, neat lines by saw cutting or other means approved by the Engineer.

Sand blast clean any rust scale found on the exposed reinforcing steel. Clean the existing concrete surface by light sand blasting or high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

Use Class AE-5 concrete or other concrete material that is specifically intended for patching concrete. For the patching material use SikaTop 122 Plus(Sika Corporation), Tamms Industries Duraltop Gel, ThoRoc JB2 (ChemRex Incorporated), or an approved equal repair mortar. Install and cure the material as recommended by the manufacturer.

The actual limits of the repair are to be determined by the Engineer in the field. Include all labor, equipment, and materials need for the repair of the spall areas in the bid item "Abutment Repair."

930 CURB OVERLAY: The curb, bridge rail, and post have damaged areas as shown in the layout. Remove all unsound concrete and replace it with new concrete to the original constructed section. Use a 15 pound maximum size chipping hammer on any unsound concrete. Provide sharp, neat lines at least 1 inch deep at the edges of the repair areas. Produce these sharp, neat lines by saw cutting or other means approved by the Engineer.

Sand blast clean any rust scale found on the exposed reinforcing steel. Clean the existing concrete surface by light sand blasting or high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

Use Class AE-5 concrete or other concrete material that is specifically intended for patching concrete. For the patching material use SikaTop 122 Plus(Sika Corporation), Tamms Industries Duraltop Gel, ThoRoc JB2 (ChemRex Incorporated), or an approved equal repair mortar. Install and cure the material as recommended by the manufacturer.

The curb overlay quantity is based on the assumption that the areas to be repaired are to the dimensions shown in the layout views. The actual limits of the repair are to be determined by the Engineer in the field. It is also assumed that the partial depth curb overlay areas are approximately 2 inches deep. Include all labor, equipment, and materials need for the repair of the spall areas in the bid item "Curb Overlay."

This document was originally issued and sealed by Tim Schwagler, Registration Number PE-3151, on 12/09/19 and the original document is stored at the North Dakota Department of Transportation.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	180	1

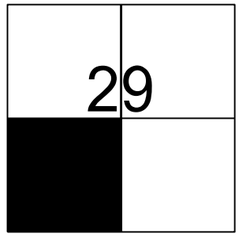
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

TEST HOLE PLAT

Location: SW1/4 29-134-55 County: Ransom

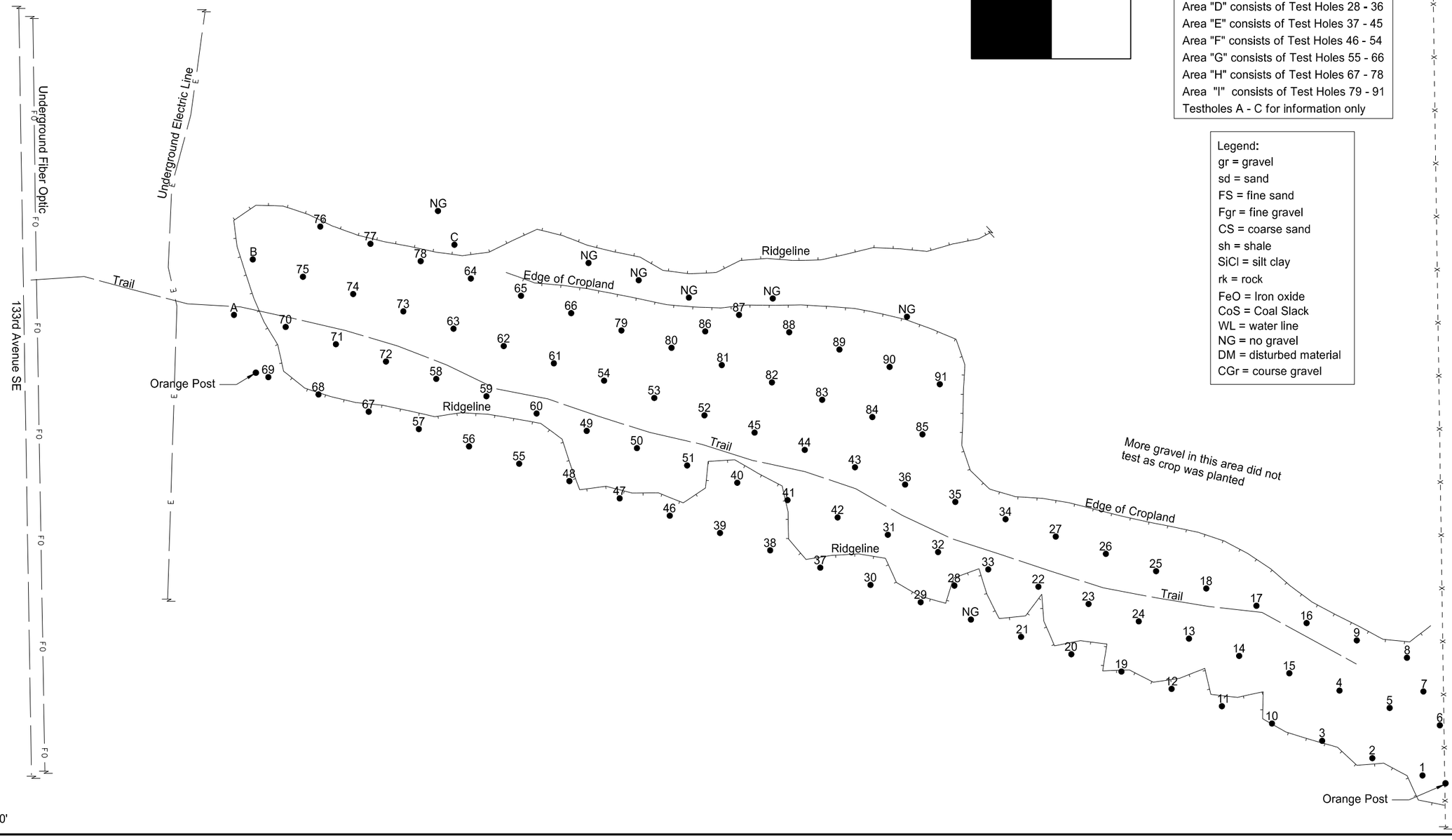
Ownership: William and Joan Hanson

LOCATION OF PIT IN SECTION



Area "A" consists of Test Holes 1 - 9
Area "B" consists of Test Holes 10 - 18
Area "C" consists of Test Holes 19 - 27
Area "D" consists of Test Holes 28 - 36
Area "E" consists of Test Holes 37 - 45
Area "F" consists of Test Holes 46 - 54
Area "G" consists of Test Holes 55 - 66
Area "H" consists of Test Holes 67 - 78
Area "I" consists of Test Holes 79 - 91
Testholes A - C for information only

Legend:
gr = gravel
sd = sand
FS = fine sand
Fgr = fine gravel
CS = coarse sand
sh = shale
SiCl = silt clay
rk = rock
FeO = Iron oxide
CoS = Coal Slack
WL = water line
NG = no gravel
DM = disturbed material
CGr = course gravel



Scale 1"+200'

10/16/2019 4:58:17 PM jaswank H:\jswank\Swank_Hoesel\Microstation\Range 50-59\2913405501_Hanson.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	180	2

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
1	1.0	3.0 gr SiCl	1	14	28	42	SiCl
2	1.0	2.0 Fgr SiCl	0	3	12	25	SiCl
3	0.5	0.5 gr sh	0	0	10	28	SiCl
		3.0 sd sh					
		0.5 gr SiCl					
4	1.0	1.0 gr SiCl	1	8	18	36	rk
		1.0 **Fgr sh SiCl**					
		2.0 Fgr sh					
5	1.0	3.0 gr SiCl	2	13	21	36	SiCl
6	1.0	3.0 Fgr SiCl	2	12	22	33	rk
7	1.5	1.5 gr SiCl	0	9	20	33	SiCl
		1.0 Fgr sh					
		1.0 gr sh					
8	1.0	5.0 gr SiCl	2	10	28	43	rk
		1.0 Fgr					
9	1.0	1.0 Fgr SiCl	0	5	17	38	SiCl
		1.0 gr SiCl					
		1.0 gr sh					
		1.0 Fgr sh					
		4.0 gr sh					
10	0.5	0.5 gr	0	2	9	19	+WL 7.0
		6.0 sd sh					
11	0.5	0.5 gr SiCl	0	3	10	21	rk
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 gr SiCl					
		1.0 sd SiCl					
12	1.0	1.0 Fgr sh	0	0	3	8	rk
		1.0 FS					
		3.0 FS sh					
13	1.0	1.0 sd SiCl	1	10	24	37	SiCl
		1.0 Fgr SiCl					
		1.0 gr SiCl					
		2.0 Fgr					
		1.0 gr SiCl					
		1.0 CS					
		1.0 Fgr					
14	1.0	2.0 gr SiCl	0	8	18	33	SiCl
		3.0 gr sh					
		1.0 CS sh					
		2.0 gr sh					
15	1.0	1.0 sd SiCl	0	6	16	30	rk
		1.0 sd sh					
		1.0 Fgr sh					
		2.0 gr sh					
		1.0 sd sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
16	1.0	1.0 Fgr SiCl	1	15	28	45	+WL 10.0
		2.0 gr SiCl					
		5.0 gr sh					
		1.0 gr					
17	1.0	2.0 **Fgr sh SiCl**	1	16	33	53	SiCl
		1.0 Fgr sh					
		1.0 gr SiCl					
		1.0 Fgr					
		2.0 gr SiCl					
18	1.0	2.0 gr SiCl	0	14	29	44	SiCl
		7.0 gr sh					
19	0.5	0.5 sd SiCl	0	1	8	17	SiCl
		1.0 Fgr sh					
		3.0 sd sh					
		1.0 FS					
		1.0 sd sh					
		1.0 gr sh					
		1.0 gr SiCl					
20	0.5	0.5 gr SiCl	0	0	8	19	rk
		1.0 gr sh					
		1.0 Fgr sh					
		2.0 sd sh					
		2.0 Fgr sh					
21	0.5	3.5 gr SiCl	2	12	26	38	+WL 4.0
22	1.0	2.0 sd sh	1	17	33	47	+WL 12.0
		6.0 gr SiCl					
		3.0 gr sh					
23	1.0	1.0 sd SiCl	2	12	28	48	+WL 12.0
		1.0 Fgr sh					
		1.0 gr SiCl					
		1.0 Fgr SiCl					
		4.0 gr SiCl					
		2.5 Fgr sh					
		0.5 gr					
24	1.0	2.0 gr SiCl	1	10	27	46	sd SiCl
		1.0 gr sh					
		2.0 gr SiCl					
		1.0 gr sh					
		3.0 gr SiCl					
		1.0 gr sh					
		1.0 sd sh					
25	2.0	3.0 gr SiCl	0	12	29	48	SiCl
		3.0 Fgr sh					
		2.0 gr SiCl					
26	1.0	2.0 gr SiCl	1	13	29	46	SiCl
		7.0 gh sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
27	1.0	2.0 gr SiCl	1	8	23	44	SiCl
		2.0 Fgr sh					
		3.0 gr SiCl					
		2.0 gr					
28	2.0	1.0 Fgr sh	1	11	27	44	+WL 9.0
		1.0 gr sh					
		1.0 gr SiCl					
		4.0 gr sh					
29	1.5	1.5 FS	0	3	8	16	SiCl
		1.0 sd sh					
		2.0 FS sh					
		2.0 gr					
		1.0 CS SiCl					
		1.0 sd sh					
30	1.5	0.5 gr SiCl	0	5	19	33	SiCl
		1.0 Fgr SiCl					
		1.5 gr SiCl					
		0.5 gr sh					
		1.0 sd SiCl					
31	0.5	4.5 gr SiCl	1	8	23	39	SiCl
		1.0 Fgr SiCl					
		2.0 Fgr sh					
		1.0 Fgr SiCl					
		3.0 gr					
32	1.0	3.5 gr SiCl	2	13	31	49	SiCl
		0.5 gr sh					
		2.0 gr SiCl					
		3.0 gr sh					
		1.0 gr					
33	1.0	2.0 Fgr SiCl	2	10	28	45	+WL 13.0
		5.0 Fgr sh					
		2.0 gr					
		3.0 gr SiCl					
34	1.0	1.0 gr SiCl	3	17	32	51	+WL 9.0
		1.0 gr sh					
		4.0 gr SiCl					
		1.0 gr sh					
		1.0 gr					
35	1.0	3.0 **Fgr sh SiCl**	0	3	16	36	SiCl
		3.0 Fgr					
		2.0 Fgr sh					
36	1.0	2.0 gr SiCl	0	14	30	52	SiCl
		1.0 Fgr sh					
		2.0 gr SiCl					
		1.0 gr					
		3.0 gr sh					
		1.0 gr SiCl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	
37	2.0	1.0 gr SiCl	0	6	16	33	SiCl
		1.0 Fgr sh					
		1.0 gr					
		1.0 Fgr					
		1.0 Fgr sh					
38	1.0	1.0 Fgr sh	1	8	26	34	SiCl
		1.5 gr sh					
		0.5 gr SiCl					
39	3.0	1.0 Fgr SiCl	1	7	14	31	SiCl
		2.0 Fgr					
40	1.0	1.0 Fgr SiCl	0	8	20	41	SiCl
		1.0 Fgr sh					
		3.0 gr sh					
		1.0 gr					
		2.0 gr sh					
		1.0 CS sh					
41	1.0	5.0 **gr sh SiCl**	0	10	25	44	SiCl
		1.0 Fgr					
		2.0 **gr sh SiCl**					
		2.0 Fgr					
		2.0 gr					
42	0.5	1.5 Fgr SiCl	1	11	26	40	rk
		1.0 Fgr sh					
		2.0 gr su					
		1.0 gr sh					
		2.0 gr SiCl					
		1.0 Fgr sh					
		1.0 Fgr sh					
43	1.0	1.0 Fgr SiCl	0	6	20	38	SiCl
		7.0 gr sh					
		1.0 gr					
44	1.0	2.0 gr SiCl	1	10	26	45	SiCl
		1.0 gr sh					
		1.0 Fgr SiCl					
		2.0 Fgr sh					
		4.0 gr sh					
		1.0 Fgr					

RANGE 55 **TWP** 134 **SEC** SW1/4

COUNTY Ransom Jun-19

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jul-19

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	180	3

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
45	1.0	1.0 gr sh	0	10	26	43	rk
		1.0 gr SiCl					
		1.0 gr SiCl					
		5.0 gr sh					
		1.0 gr SiCl					
		1.0 gr sh					
		1.0 CS					
46	1.5	3.0 Fgr SiCl	0	6	14	31	+WL 4.5
47	0.5	1.5 gr sh	0	7	22	41	+WL 7.0
		1.0 gr					
		3.0 gr sh					
		1.0 CS sh					
48	1.5	1.5 **gr sh SiCl**	2	15	33	51	SiCl
		1.0 Fgr sh					
		3.0 gr SiCl					
		1.0 gr sh					
		1.5 Fgr					
49	0.5	0.5 Fgr SiCl	1	17	38	59	SiCl
		2.0 gr SiCl					
		4.0 gr sh					
		1.5 gr SiCl					
		0.5 gr sh					
		4.0 gr SiCl					
50	1.0	2.0 **gr sh SiCl**	0	9	26	45	rk
		3.0 Fgr sh					
		5.0 **gr sh SiCl**					
51	1.0	2.0 gr SiCl	3	15	34	53	+WL 12.0
		2.0 gr sh					
		3.0 gr SiCl					
		1.0 gr					
		3.0 gr sh					
52	2.0	2.0 gr SiCl	1	6	22	38	rk
		3.0 Fgr sh					
		1.0 gr SiCl					
53	1.0	1.0 gr SiCl	1	14	31	49	SiCl
		2.0 gr sh					
		1.0 gr					
		6.0 gr sh					
54	2.0	7.0 **gr sh SiCl**	1	11	23	37	rk
55	1.0	3.0 gr SiCl	2	13	28	47	SiCl
		5.5 gr sh					
56	0.5	2.5 gr SiCl	1	11	29	45	SiCl
		1.0 **sd sh SiCl**					
		2.0 **Fgr sh SiCl**					
		2.5 **gr sh SiCl**					
		0.5 gr SiCl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
57	0.5	0.5 Fgr SiCl	0	8	24	49	+WL 14.0
		2.0 gr sh					
		4.0 gr SiCl					
		1.0 gr sh					
		2.0 CS sh					
		1.0 Fgr SiCl					
		3.0 gr					
58	2.0	2.0 **Fgr sh SiCl**	2	11	29	50	SiCl
		1.0 **gr sh SiCl**					
		1.0 **Fgr sh SiCl**					
		6.0 **gr sh SiCl**					
		2.0 gr sh					
		4.0 gr					
59	2.0	1.0 Fgr SiCl	2	26	53	69	+Cave
		2.0 gr sh					
		4.5 gr SiCl					
		2.5 gr sh					
		4.0 gr SiCl					
60	1.0	1.0 **Fgr sh SiCl**	1	10	28	49	+WL 16.0
		4.0 **gr sh SiCl**					
		5.5 Fgr sh SiCl					
		4.5 gr					
61	1.0	1.0 gr SiCl	0	10	29	54	rk
		2.0 Fgr sh SiCl					
		5.0 gr sh					
		2.0 gr SiCl					
		1.0 gr sh					
		3.0 gr					
		1.0 gr SiCl					
62	1.0	2.0 **Fgr sh SiCl**	2	10	31	55	+WL 15.0
		1.0 Fgr sh					
		3.0 **gr sh SiCl**					
		6.0 gr					
		1.0 gr SiCl					
		1.0 gr					
63	1.0	1.0 **Fgr sh SiCl**	1	12	28	56	SiCl
		3.0 gr sh					
		2.0 Fgr sh					
		2.0 **gr sh SiCl**					
		1.0 gr sh					
		2.5 gr SiCl					
		0.5 gr					
64	1.0	2.0 Fgr sh	0	8	18	40	SiCl
		2.0 Fgr					
		1.0 Fgr sh					
		1.0 gr sh					
		1.0 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
65	1.0	1.0 **gr sh SiCl**	0	2	16	45	SiCl
		2.0 Fgr sh					
		1.0 gr sh SiCl					
		1.0 CS					
		1.0 Fgr					
		1.0 gr					
		0.5 gr SiCl					
66	1.5	1.0 **Fgr sh SiCl**	1	5	19	41	SiCl
		1.0 **sd sh SiCl**					
		2.0 Fgr					
		2.0 gr SiCl					
		2.0 **Fgr**					
		1.0 Fgr sh					
67	0.5	3.5 **Fgr sh SiCl**	1	14	29	50	rk
		6.0 **gr sh SiCl**					
68	1.0	3.0 **gr sh SiCl**	3	18	38	60	+Cave
		2.5 **gr SiCl**					
		0.5 gr					
		3.0 gr SiCl					
		6.0 gr sh					
		1.0 gr					
69	0.5	4.5 **gr sh SiCl**	1	7	23	44	SiCl
		1.0 Fgr					
		1.0 gr SiCl					
		1.0 **Fgr**					
		4.5 gr					
70	1.0	3.0 **gr sh SiCl**	3	28	56	72	+Cave
		2.0 gr sh					
		6.0 gr SiCl					
		1.0 gr					
		4.0 gr SiCl					
71	0.5	2.5 gr SiCl	2	10	27	47	SiCl
		2.0 **Fgr sh SiCl**					
		5.0 gr SiCl					
		3.0 Fgr					
		3.0 **Fgr sh SiCl**					
72	1.0	2.0 **gr sh SiCl**	1	23	40	59	FS SiCl
		3.0 gr sh					
		1.0 gr SiCl					
		2.0 gr sh					
		1.0 gr					
		3.0 gr sh					
		3.0 gr					
73	1.0	5.0 **Fgr sh SiCl**	0	8	21	41	rk
		4.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
74	1.0	3.0 **Fgr sh SiCl**	0	9	26	50	FS SiCl
		3.0 gr sh					
		5.0 gr sh					
		2.0 gr sh					
75	1.0	6.0 **gr sh SiCl**	0	6	19	42	SiCl
		5.0 Fgr					
76	1.5	0.5 **Fgr sh SiCl**	0	2	15	34	SiCl
		1.0 **gr sh SiCl**					
		2.0 gr sh					
		1.0 sd sh					
		0.5 Fgr sh					
77	1.0	4.5 **gr sh SiCl**	0	8	25	46	SiCl
		2.5 Fgr					
78	1.0	1.0 **Fgr sh SiCl**	1	13	29	50	SiCl
		5.5 **gr sh SiCl**					
79	1.0	3.5 **Fgr sh SiCl**	2	15	35	59	SiCl
		0.5 gr sh					
		1.0 Fgr sh					
		3.0 gr SiCl					
		1.0 gr					
		1.0 CS					
		2.0 gr					
		1.0 gr SiCl					
80	1.0	3.0 **Fgr sh SiCl**	2	19	34	55	FS SiCl
		2.0 **gr sh SiCl**					
		2.0 gr SiCl					
		3.0 gr					
		1.0 Fgr SiCl					
81	1.0	1.0 **gr sh SiCl**	1	6	23	45	SiCl
		3.0 **Fgr sh SiCl**					
		3.5 **gr sh SiCl**					
		1.5 gr					
82	1.0	2.0 **gr sh SiCl**	2	9	20	39	SiCl
		1.0 gr sh					
		1.5 Fgr sh					
		1.5 gr sh					
		1.0 CS					
		2.0 gr					
83	2.5	5.0 **gh sh SiCl**	2	12	23	39	rk

RANGE 55 **TWP** 134 **SEC** SW1/4

COUNTY Ransom Jan-00

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jul-19

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	180	4

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
84	2.0	2.0 **gr sh SiCl**	0	6	21	47	rk
		1.0 Fgr sh					
		2.0 gr sh					
85	2.0	3.0 **Fgr sh SiCl**	1	5	17	32	SiCl
		1.0 **gr sh SiCl**					
		1.0 gr					
86	1.0	3.0 **Fgr sh SiCl**	0	4	18	37	SiCl
		1.0 **gr sh SiCl**					
		1.0 CS sh					
		5.0 grt sh	0	7	18	32	SiCl
87	2.0	2.0 **gr sh SiCl**					
		1.0 Fgr sh					
		1.0 **Fgr sh SiCl**					
88	1.0	2.0 **gr sh SiCl**	2	20	37	53	SiCl
		3.0 gr sh					
		1.0 gr SiCl					
89	2.0	2.0 CS sh	0	2	12	32	SiCl
		2.0 Fgr					
		1.0 **gr sh SiCl**					
90	1.0	2.0 gr sh	0	4	23	44	FS SiCl
		1.0 Fgr sh					
		3.0 gr sh					
91	2.0	1.0 Fgr sh					
		3.0 gr sh					
		2.0 **Fgr sh SiCl**	0	2	16	40	SiCl
		1.0 **gr sh SiCl**					
		1.0 fgr sh					
		1.0 gr SiCl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
A	1.0	6.0 gr sh	2	11	33	56	SiCl
B	1.0	1.0 **Fgr sh SiCl**	0	6	18	41	SiCl
		1.0 Fgr sh					
		1.0 CS sh					
		1.0 gr sh					
		2.0 gr					
C	1.0	1.0 **gr sh SiCl**	0	14	29	52	SiCl

Holes A-C are for Informational Purposes Only

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole

RANGE 55 **TWP** 134 **SEC** SW1/4

COUNTY Ransom Jan-00

PROSPECTED BY Volk/Nelson

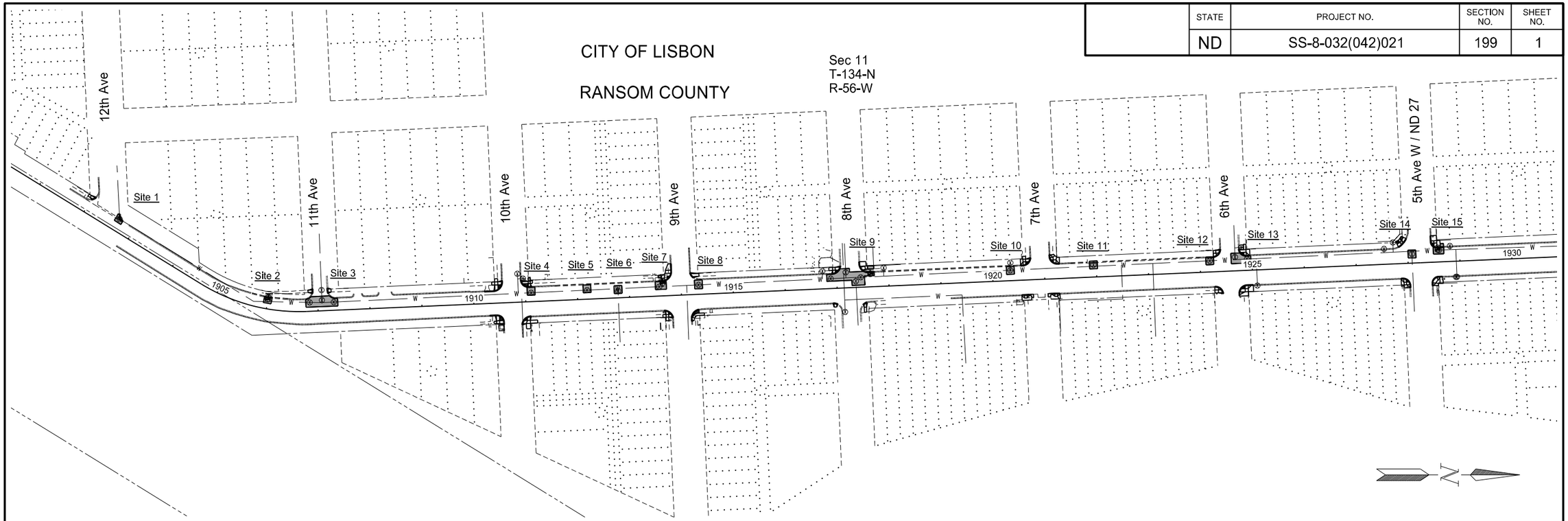
INSPECTED & APPROVED Jeffrey Swank Jul-19

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	1

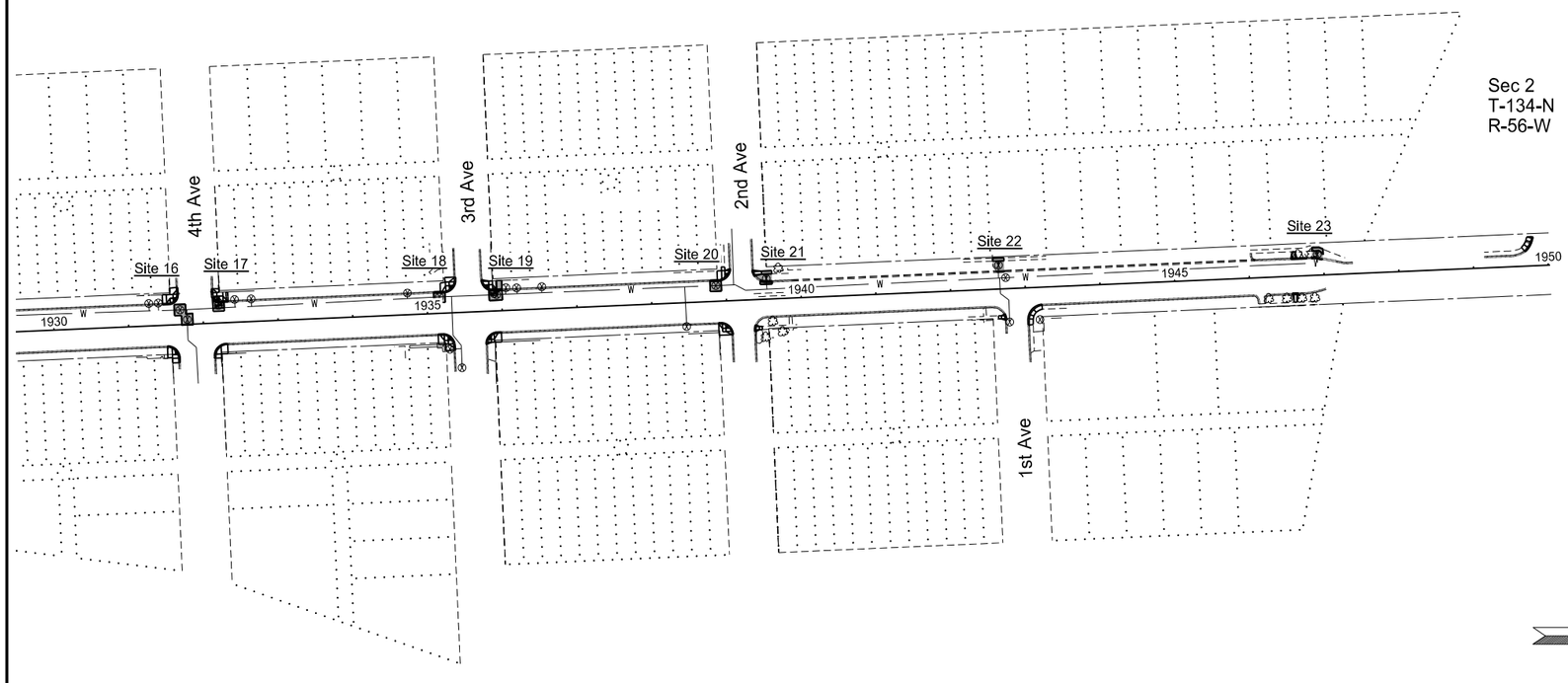
CITY OF LISBON

RANSOM COUNTY

Sec 11
T-134-N
R-56-W



Sec 2
T-134-N
R-56-W



This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Scope of Work

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	2

NOTES

202-P01 REMOVAL OF BITUMINOUS SURFACING: Removal limits are approximate. Contractor to minimize removals to complete work.

302-P01 TEMPORARY TRAFFIC SURFACE AGGEGRATE: Install Temporary Traffic Surface Aggregate up to finished pavement elevation to provide a traversable driving surface by 7:00 pm at the end of each working day for Sites 3, 9, 13, 14, & 16. Backfill excavation to a maximum of 12 inches below pavement surface elevation and install Temporary Traffic Surface Aggregate as a 4:1 safety wedge along any edge adjacent to travel lanes for all other sites.

This includes blading, watering, pumping, graveling, or fixing soft areas if necessary. Include all cost for labor, equipment and material necessary for the installation, removal, and disposal of aggregate needed to maintain a traversable driving surface or safety wedge for utility patch areas in the price bid for "TEMPORARY TRAFFIC SURFACE AGGEGRATE."

430-P01 PATCHING: Patching consists of RAP-SUPERPAVE FAA42 with PG 58S-28 ASPHALT CEMENT. Basis of estimated quantity for PG 58S-28 ASPHALT CEMENT is 4.6% of the RAP-SUPERPAVE FAA42. Include all costs for placement of asphalt in the unit price bid for "PATCHING."

704-P01 TRAFFIC CONTROL PHASING: See Section 199 plan sheets, "Work Zone Traffic Control" for overview and detailed layouts of the construction phasing plan. Any alterations require the Engineer's approval a minimum of 2 weeks prior to implementing.

Phase 3

A maximum of 8 sites are to be closed concurrently. All work must be completed and open to traffic before proceeding to the next set of sites.

- Replacement of Utilities
  - Close affected lanes as needed to complete replacement using the layouts found in Section 199.
  - All patches must have a traversable driving surface or safety wedge adjacent to any travel lanes by 7:00 pm at the end of each working day, depending on each site as listed above.
  - Keep all cross streets open when possible. When construction requires a cross street closure only one may be closed at a time using the layout found in Section 199.
- Paving
  - Close affected lanes as needed to complete patching using the layouts found in Section 199.
  - Keep all cross streets open when possible. When construction requires a cross street closure, two streets may be closed at a time, except at 5th Ave E and 6th Ave E, using the layout found in Section 199 as long as they are not concurrent.
  - Once patch is completed, open the affected area to traffic.

704-P02 TRAFFIC CONTROL DEVICES: The traffic control devices list for each phase has been developed using traffic control sign layouts (shown in Section 100) and Standard Drawings as listed below:

D-704-07, 8, 9, 10, 11A: Are applicable.
D-704-13, 14: Are applicable.
D-704-26: Type JJ for traversable driving surface
Maintain a minimum 11 foot wide through lanes at all times, and when required a 9 foot wide parking lane. If 9' parking lane cannot be maintained, coordinate with affected businesses.

704-P03 TRAVERSABLE DRIVING SURFACE: Provide a traversable driving surface that is either an aggregate surface, completed asphalt base course surface, or completed asphalt wear course surface to match adjacent pavement surfaces elevation.

704-P04 MAINTAINING ACCESS: Maintain a traversable driving surface for two way traffic at all times for all residents and businesses. Coordinate and alert residents and businesses regarding changes to access points, shifting traffic control, and temporary access restrictions along the construction zone a minimum of 48 hours in advance.

724-P01 TEMPORARY WATER SERVICE: Contractor must provide temporary water service to all affected residential City water users if water service is to be interrupted for more than 4 hours per day.

Contractor to provide temporary water service to all businesses such as gas stations, restaurants, and motels, also medical facilities such as the hospital & clinic affected by this work.

Contractor to notify the Engineer and City 48 hours prior to disruption of water service. Contact City of Lisbon Public Works Jerry Ramerman at 701-308-0557 to locate gate valves & coordinate water shut off. Include all cost for labor, equipment and material necessary for the installation and removal of temporary water service system in the price bid for "TEMPORARY WATER SERVICE."

724-P02 GATE VALVE __IN: Contractor to verify all gate valve sizes in the field.

750-P01 SIDEWALK CONCRETE: Provide topsoil, seeding class II, hydraulic mulch in the areas shown in section 199 of the plans. Include all costs for regrading, stripping, importing, and placing topsoil, seed, mulch, and restoring landscaping to pre-construction condition in the unit price bid for "SIDEWALK CONRETE."

This document was originally issued and sealed by Kevin J. Knott Registration Number PE-5679, on 11/26/2019 and the original document is stored at the North Dakota Department of Transportation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	3

SITE NO. & LOCATION

SPEC	CODE	BID ITEM	QTY	UNIT
SITE 1 - 12TH AVE NW CORNER				
202	0130	REMOVAL OF CURB & GUTTER	15	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	12	SY
302	0101	SALVAGED BASE COURSE	17	TON
401	0050	TACK COAT	0.6	GAL
401	0060	PRIME COAT	3.1	GAL
430	2000	PATCHING	4.1	TON
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
748	0140	CURB & GUTTER-TYPE I	15	LF
748	1020	VALLEY GUTTER 36IN	4	SY
SITE 2 - SOUTH OF 11TH AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	7	SY
202	0130	REMOVAL OF CURB & GUTTER	15	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	21	SY
302	0101	SALVAGED BASE COURSE	18	TON
401	0050	TACK COAT	1.1	GAL
401	0060	PRIME COAT	5.3	GAL
430	2000	PATCHING	7.1	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	26	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	8	LF
748	0140	CURB & GUTTER-TYPE I	15	LF
750	0100	SIDEWALK CONCRETE	7	SY
SITE 3 - 11TH AVE				
202	0132	REMOVAL OF BITUMINOUS SURFACING	125	SY
302	0101	SALVAGED BASE COURSE	78	TON
401	0050	TACK COAT	6.3	GAL
401	0060	PRIME COAT	31.3	GAL
430	2000	PATCHING	41.8	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	125	SY
724	0270	REMOVE GATE VALVE & BOX	3	EA
724	0310	GATE VALVE & BOX 8IN	3	EA
SITE 4 - 10TH AVE NW CORNER				
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
SITE 5 - BETWEEN 10TH & 9TH AVE				
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
SITE 6 - BETWEEN 10TH & 9TH AVE				
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0290	GATE VALVE & BOX 4IN	1	EA
SITE 7 - 9TH AVE SW CORNER				
202	0130	REMOVAL OF CURB & GUTTER	6	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	26	SY
302	0101	SALVAGED BASE COURSE	12	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.4	GAL
430	2000	PATCHING	8.5	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	26	SY
724	0270	REMOVE GATE VALVE & BOX	2	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	8	LF
748	0140	CURB & GUTTER-TYPE I	6	LF

SITE NO. & LOCATION

SPEC	CODE	BID ITEM	QTY	UNIT
SITE 8 - 9TH AVE NW CORNER				
202	0132	REMOVAL OF BITUMINOUS SURFACING	28	SY
302	0101	SALVAGED BASE COURSE	18	TON
401	0050	TACK COAT	1.4	GAL
401	0060	PRIME COAT	7.1	GAL
430	2000	PATCHING	9.4	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	28	SY
724	0270	REMOVE GATE VALVE & BOX	3	EA
724	0310	GATE VALVE & BOX 8IN	3	EA
SITE 9 - 8TH AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	8	SY
202	0130	REMOVAL OF CURB & GUTTER	20	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	181	SY
302	0101	SALVAGED BASE COURSE	119	TON
401	0050	TACK COAT	9.1	GAL
401	0060	PRIME COAT	45.3	GAL
430	2000	PATCHING	60.4	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	181	SY
724	0270	REMOVE GATE VALVE & BOX	4	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0310	GATE VALVE & BOX 8IN	4	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	6	LF
748	0140	CURB & GUTTER-TYPE I	20	LF
750	0100	SIDEWALK CONCRETE	8	SY
SITE 10 - 7TH AVE SW CORNER				
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
SITE 11 - BETWEEN 7TH & 6TH AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	6	SY
202	0132	REMOVAL OF BITUMINOUS SURFACING	19	SY
302	0101	SALVAGED BASE COURSE	12	TON
401	0050	TACK COAT	1.0	GAL
401	0060	PRIME COAT	4.8	GAL
430	2000	PATCHING	6.4	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	19	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0350	GATE VALVE & BOX 8IN	1	EA
750	1000	DRIVEWAY CONCRETE	6	SY
SITE 12 - SOUTH OF 6TH AVE				
202	0130	REMOVAL OF CURB & GUTTER	15	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	22	SY
302	0101	SALVAGED BASE COURSE	17	TON
401	0050	TACK COAT	1.1	GAL
401	0060	PRIME COAT	5.6	GAL
430	2000	PATCHING	7.4	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	22	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
748	0140	CURB & GUTTER-TYPE I	15	LF
SITE 13 - 6TH AVE				
202	0132	REMOVAL OF BITUMINOUS SURFACING	72	SY
302	0101	SALVAGED BASE COURSE	45	TON
401	0050	TACK COAT	3.6	GAL
401	0060	PRIME COAT	17.9	GAL
430	2000	PATCHING	23.9	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	72	SY
724	0270	REMOVE GATE VALVE & BOX	2	EA
724	0310	GATE VALVE & BOX 8IN	2	EA
SITE 14 - 5TH AVE				
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0290	GATE VALVE & BOX 4IN	1	EA

SITE NO. & LOCATION

SPEC	CODE	BID ITEM	QTY	UNIT
SITE 15 - 5TH AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	4	SY
202	0130	REMOVAL OF CURB & GUTTER	6	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	27	SY
302	0101	SALVAGED BASE COURSE	19	TON
401	0050	TACK COAT	1.4	GAL
401	0060	PRIME COAT	6.8	GAL
430	2000	PATCHING	9.1	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	27	SY
724	0270	REMOVE GATE VALVE & BOX	2	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	6	LF
748	0140	CURB & GUTTER-TYPE I	6	LF
750	0100	SIDEWALK CONCRETE	4	SY
SITE 16 - 4TH AVE SW CORNER				
202	0132	REMOVAL OF BITUMINOUS SURFACING	49	SY
302	0101	SALVAGED BASE COURSE	30	TON
401	0050	TACK COAT	2.4	GAL
401	0060	PRIME COAT	12.2	GAL
430	2000	PATCHING	16.2	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	49	SY
724	0270	REMOVE GATE VALVE & BOX	2	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
SITE 17 - 4TH AVE NW CORNER				
202	0132	REMOVAL OF BITUMINOUS SURFACING	14	SY
302	0101	SALVAGED BASE COURSE	9	TON
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	6	TON
401	0050	TACK COAT	0.7	GAL
401	0060	PRIME COAT	3.4	GAL
430	2000	PATCHING	4.6	TON
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	6	LF
SITE 18 - 3RD AVE SW CORNER				
202	0130	REMOVAL OF CURB & GUTTER	9	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	22	SY
302	0101	SALVAGED BASE COURSE	14	TON
401	0050	TACK COAT	1.1	GAL
401	0060	PRIME COAT	5.4	GAL
430	2000	PATCHING	7.2	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	22	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
748	0140	CURB & GUTTER-TYPE I	9	LF
SITE 19 - 3RD AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	9	SY
202	0130	REMOVAL OF CURB & GUTTER	7	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	25	SY
302	0101	SALVAGED BASE COURSE	19	TON
401	0050	TACK COAT	1.3	GAL
401	0060	PRIME COAT	6.3	GAL
430	2000	PATCHING	8.3	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	25	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0310	GATE VALVE & BOX 8IN	1	EA
724	0810	WATERMAIN 6IN PVC	6	LF
748	0140	CURB & GUTTER-TYPE I	7	LF
750	0100	SIDEWALK CONCRETE	9	SY
SITE 20 - 2ND AVE SW CORNER				
202	0130	REMOVAL OF CURB & GUTTER	10	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	22	SY
302	0101	SALVAGED BASE COURSE	16	TON
401	0050	TACK COAT	1.1	GAL
401	0060	PRIME COAT	5.6	GAL
430	2000	PATCHING	7.4	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	22	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0350	GATE VALVE & BOX 8IN	1	EA
748	0140	CURB & GUTTER-TYPE I	10	LF

SITE NO. & LOCATION

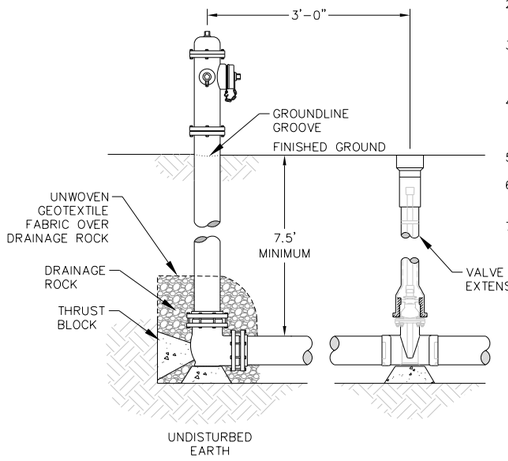
SPEC	CODE	BID ITEM	QTY	UNIT
SITE 21 - 2ND AVE NW CORNER				
202	0114	REMOVAL OF CONCRETE PAVEMENT	4	SY
202	0130	REMOVAL OF CURB & GUTTER	15	LF
202	0132	REMOVAL OF BITUMINOUS SURFACING	5	SY
302	0101	SALVAGED BASE COURSE	7	TON
401	0050	TACK COAT	0.2	GAL
401	0060	PRIME COAT	1.2	GAL
430	2000	PATCHING	1.6	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	5	SY
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	4	LF
748	0140	CURB & GUTTER-TYPE I	15	LF
750	0100	SIDEWALK CONCRETE	4	SY
SITE 22 - 1ST AVE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	7	SY
302	0101	SALVAGED BASE COURSE	1	TON
724	0270	REMOVE GATE VALVE & BOX	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	3	LF
750	0100	SIDEWALK CONCRETE	7	SY
SITE 23 - SOUTH OF SHEYENNE BRIDGE				
202	0114	REMOVAL OF CONCRETE PAVEMENT	7	SY
202	0130	REMOVAL OF CURB & GUTTER	10	LF
302	0101	SALVAGED BASE COURSE	2	TON
724	0300	GATE VALVE & BOX 6IN	1	EA
724	0400	HYDRANT-INSTALL 6IN	1	EA
724	0430	REMOVE HYDRANT	1	EA
724	0810	WATERMAIN 6IN PVC	3	LF
748	0140	CURB & GUTTER-TYPE I	15	LF
750	0100	SIDEWALK CONCRETE	7	SY
APPLICATION RATES:				
302	0100	SALVAGED BASE COURSE	1.875	TON/CY
401	0050	TACK COAT	0.05	GAL/SY
401	0060	PRIME COAT	0.25	GAL/SY
430	2000	PATCHING	2.0	TON/CY
302	0100	SALVAGED BASE COURSE	1.875	TON/CY
401	0050	TACK COAT	0.05	GAL/SY
401	0060	PRIME COAT	0.25	GAL/SY
430	2000	PATCHING	2.0	TON/CY

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Basis of Estimate

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

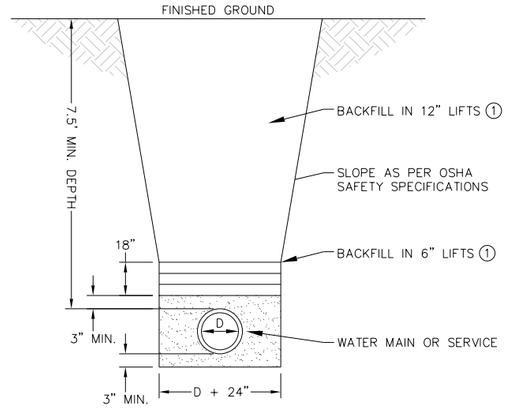
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	4



NOTES:
1. DO NOT BLOCK WEEP HOLE ON HYDRANT.
2. DO NOT COVER ANY JOINT WITH CONCRETE.
3. ALL UNDERGROUND METAL ITEMS TO BE WRAPPED WITH 8 MIL POLYETHYLENE PLASTIC.
4. NOZZLE HEIGHT SHALL BE MINIMUM 24" FROM FINISHED GROUND OR AS SHOWN ON PLANS.
5. RESTRAIN ALL JOINTS.
6. VERIFY VALVE IS NOT LOCATED IN CURB OR VALLEY GUTTER.
7. GATE VALVE MAY BE ADJUSTED AWAY FROM HYDRANT AS NEEDED. BUT SHALL NOT BE CLOSER THAN NOTED.

HYDRANT - INSTALL 6IN

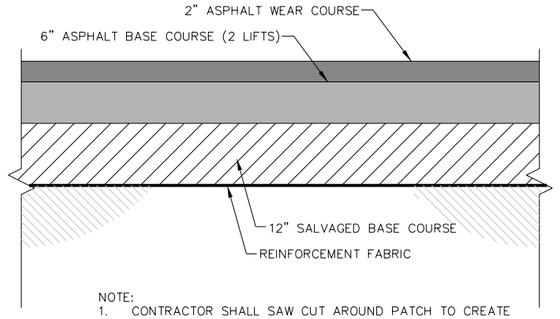
NO SCALE



(1) COMPACT TO 95% MINIMUM STANDARD PROCTOR DENSITY. COMPACT TOP 3 FEET BELOW ROADWAY SECTION TO 98% MINIMUM STANDARD PROCTOR DENSITY.

WATER MAIN OR SERVICE TRENCH

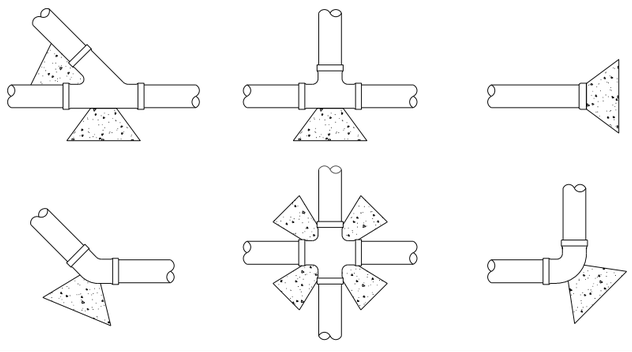
NO SCALE



NOTE:
1. CONTRACTOR SHALL SAW CUT AROUND PATCH TO CREATE A CLEAN STRAIGHT LINE.

ASPHALT HIGHWAY PATCH

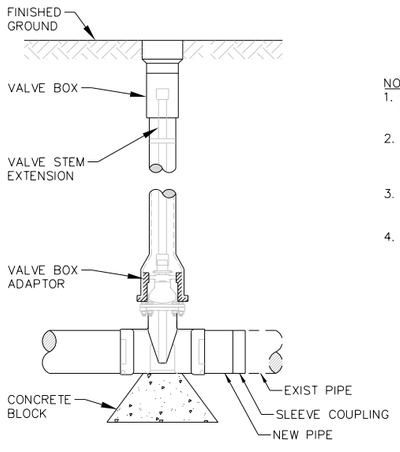
NO SCALE



MINIMUM THRUST BLOCK SIZES										
	REQUIRED BEARING AREA (S.F.)									
PIPE DIAMETER	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
CROSS, DEAD END OR TEE	2	4	7	11	16	21	28	36	44	63
90 BEND	3	6	10	16	22	30	39	50	62	88
45 BEND	2	3	6	9	12	17	21	27	34	48
22 1/2 BEND	1	2	3	5	7	9	14	17	17	25
NOTE: ALL THRUST BLOCKS A MINIMUM OF 12" THICK AND MUST BEAR AGAINST UNDISTURBED SOIL.										

THRUST BLOCKS

NO SCALE



NOTES:
1. WRAP ALL UNDERGROUND METAL ITEMS WITH 8 MIL POLYETHYLENE PLASTIC.
2. BACKFILL VALVE AND BOX WITH GRANULAR MATERIAL TO TOP COMPACTED TO 95% DENSITY.
3. TOP OF VALVE BOX SHALL BE SET TO PROVIDE 12" OF UPWARD ADJUSTMENT.
4. VALVE STEM EXTENSION SHALL BE MADE UP OF TOP WRENCH 2" SQUARE NUT, DEBRIS SHIELD, 1" DIAMETER EXTENSION ROD (OR PIPE) AND A BOTTOM WRENCH NUT COUPLING. THE TOP NUT SHALL BE INSTALLED A MINIMUM OF 6" BELOW FINISHED GRADE. THE DEBRIS SHALL BE MINIMUM 1/4" THICK WITH TWO 1/2" DIAMETER DRAIN HOLES, HAVE A MAXIMUM 4 1/2" DIAMETER FOR A 5 1/4" VALVE BOX, BE LOCATED 1" BELOW TOP WRENCH NUT AND WELDED TO THE EXTENSION ROD (OR PIPE).

GATE VALVE & BOX

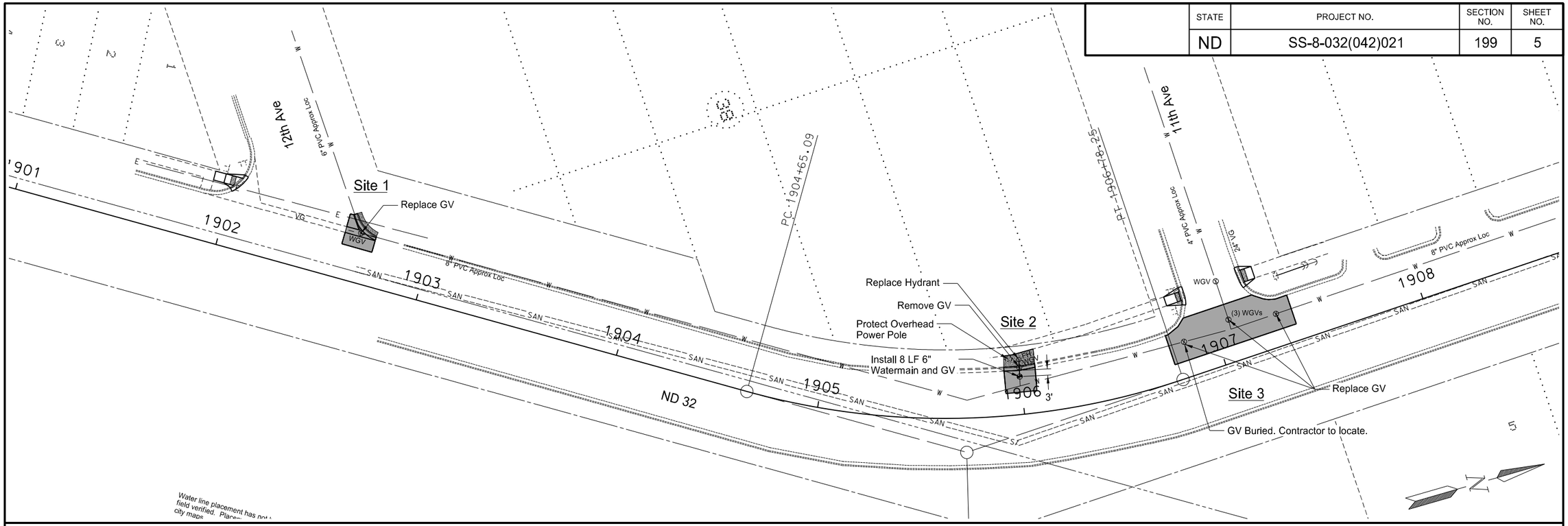
NO SCALE

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

General Details

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	5



This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Water Valve Replacement

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	6

Sec 11

8th Ave

7th Ave

6th Ave

Site 9

Replace GVs

8" PVC Raw Approx Loc

8" PVC Approx Loc

Super 8

Replace Hydrant

4 WGVs

Install 6 LF 6" Watermain and GV

6" PVC Raw Approx Loc

Site 10

Replace GV

Bremer Bank

Site 11

Replace GV

Senior Center

2" Service Line Approx Loc

2" PVC Approx Loc

ND 32

Site 12

Replace GV

2 WGVs

Site 13

Replace GV

Otter Tail Power Company

Subway

Replace GV

Site 14

Site 15

Replace Hydrant

Coml

Remove GV

Replace GV

2 WGVs

Install 6 LF 6" Watermain and GV

2 WSVs

Municipal

24" VG

4" PVC Approx Loc

ND 27

5th Ave W

Sec 11
T-134-N
R-56-W

LEGEND

Construction Limits
See Sheet 3 for pay items.

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Water Valve Replacement

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	7

Site 16
Site 17
Site 18
Site 19
Site 20
Site 21
Site 22
Replace Hydrant
Replace GV
Remove GV
Install 6 LF 6" Watermain and GV
Install 4 LF 6" Watermain
Install 3 LF 6" Watermain
Thrifty White Pharmacy
Thirft Store
Casual Living
Razor's Edge
Lisbon School Bus Terminal
Welton Tire Service
Water valve box
4th Ave
3rd Ave
2nd Ave
1st Ave
ND 32
2 WSVs
(2) WGVs
WSV
WGV
FH
8" PVC Approx Loc
6" PVC Approx Loc
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945

LEGEND

Construction Limits
See Sheet 3 for pay items.

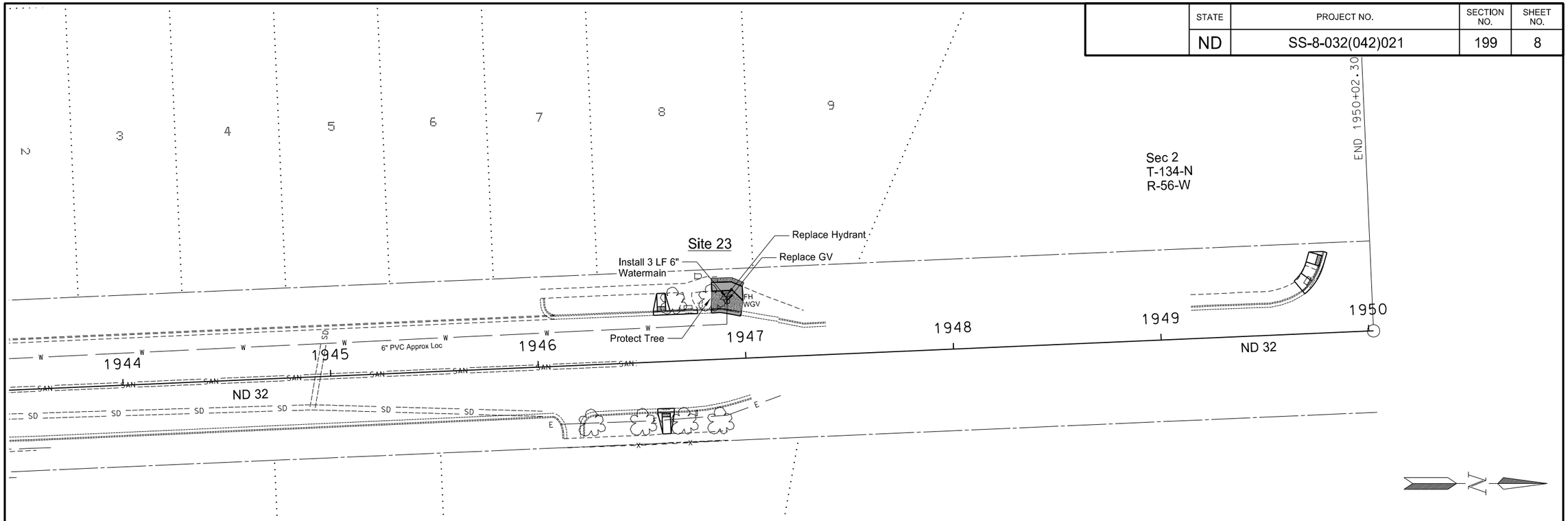
Water line placement has not been field verified. Placement based on city maps.

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Water Valve Replacement

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	8



LEGEND

Construction Limits
See Sheet 3 for pay items.

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Water Valve Replacement

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	9

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		34	
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)		26	
G20-2-48	**48"x24"**	**END ROAD WORK**	**2**	**19**	**38**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-10-108	108"x48"	CONTRACTOR SIGN		64	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS		37	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW		30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		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	
M4-8a-24	24"x18"	END DETOUR		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	
M6-1-21	21"x15"	ARROW RT or LT		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		32	
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back		5	
R1-2-60	60"x60"	YIELD		29	
R1-2aP-24	24"x18"	TO ON COMING TRAFFIC		7	
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**2**	**39**	**78**
R2-1a-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**	**2**	**10**	**20**
R3-2-24	24"x24"	LEFT TURN PROHIB		14	
R3-4-24	24"x24"	U TURN PROHIBITED		14	
R3-5-30	30"x36"	RIGHT or LEFT TURN OLNY		15	
R3-5a-30	30"x36"	STRAIGHT AHEAD		9	
R3-6a-30	30"x36"	THRU LANE		15	
R3-6R-24	30"x36"	THRU WITH RIGHT TURN		15	
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	
R8-3-12	12"x12"	NO PARKING		10	
R9-9-24	**24"x12"**	**SIDEWALK CLOSED**	**12**	**10**	**120**
R9-11a-24	**24"X12"**	**SIDEWALK CLOSED, CROSS HERE**	**10**	**7**	**70**
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED		28	
R11-2a-48	**48"x30"**	**STREET CLOSED**	**2**	**28**	**56**
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC		31	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW		35	
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-6-48	48"x24"	LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL		35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD		35	
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL		35	
W5-1-48	**48"x48"**	**ROAD NARROWS**	**1**	**35**	**35**
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER STRIPE		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT.		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT.		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W12-1-48	48"x48	DOUBLE ARROW		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	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W16-5p-24	24"x18"	LEFT or RIGHT		7	
W16-6p-24	24"x18"	LEFT or RIGHT AHEAD		7	
W16-7p-24	24"x12"	RIGHT or LEFT DOWNWARD DIAGINAL ARROW		7	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**10**	**35**	**350**
W20-2-48	48"x48"	DETOUR AHEAD or __FT		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT.		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT.		35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or __ FT.		35	
W20-7a-48	48"x48"	FLAGGING SYMBOL		35	
W20-7k-24	24"x18"	__ FEET (Mounted on warning sign post)		10	
W20-8-48	48"x48"	STREET CLOSED		35	
W20-51-48	48"x48"	EQUIPMENT WORKING		35	
W20-52-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**	**2**	**12**	**24**
W21-1a-48	48"x48"	WORKERS SYMBOL		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT		35	
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT.		35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT.		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W21-52-48	**48"X48"**	**PAVEMENT BREAKS**	**2**	**35**	**70**
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**	**861**

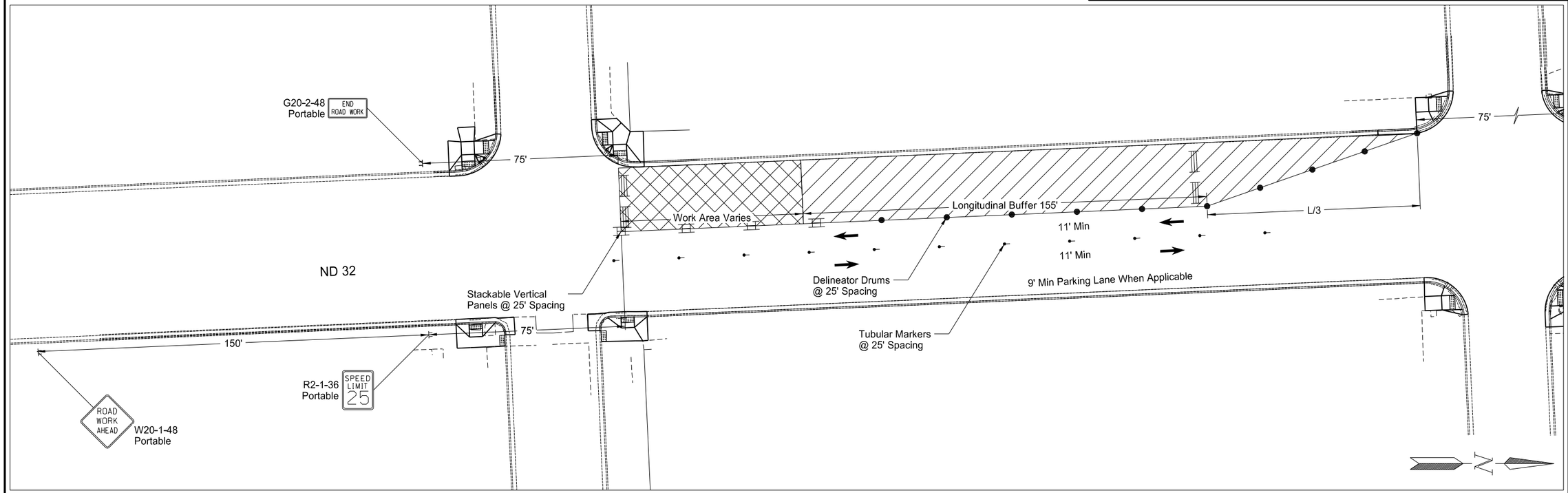
SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
302-0314	**TEMPORARY TRAFFIC SURFACE AGGREGATE**	**TON**	**250**
704-0100	FLAGGING	MHR	
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH	
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH	
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1051	TYPE II BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**50**
704-1054	**SIDEWALK BARRICADE**	**EACH**	**22**
704-1056	**PEDESTRIAN CHANNELIZATION**	**LF**	**70**
704-1060	**DELINEATOR DRUMS**	**EACH**	**100**
704-1065	TRAFFIC CONES	EACH	
704-1067	**TUBULAR MARKERS**	**EACH**	**100**
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	**STACKABLE VERTICAL PANELS**	**EACH**	**50**
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH	
704-1095	TYPE B FLASHERS	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	
704-2200	**TEMPORARY PEDESTRIAN SURFACING**	**SY**	**30**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	
772-2110	FLASHING BEACON - POST MOUNTED	EACH	

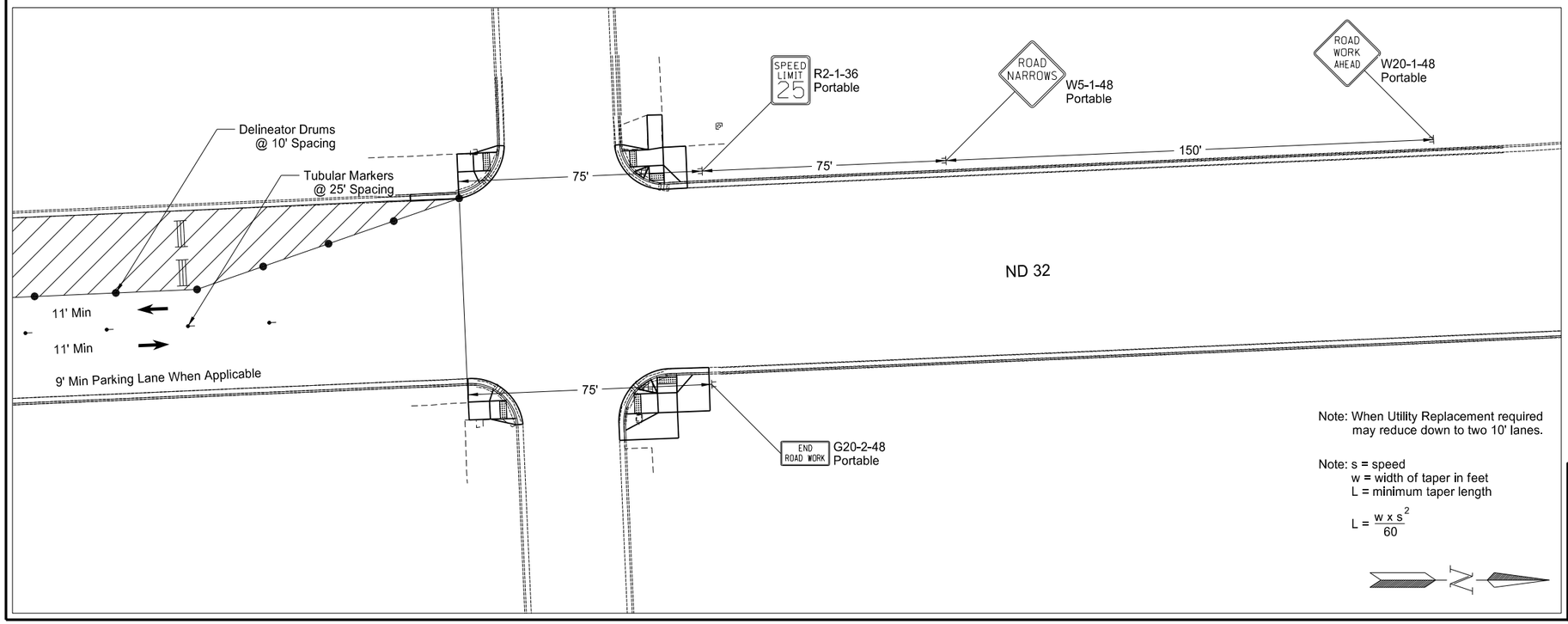
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.
http://www.dot.nd.gov/

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Traffic Control Devices List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	10





LEGEND

- Work Area
- Lane Closure
- Type 3 Barricade
- Delineator Drum
- Tubular Marker
- Stackable Vertical Panel

Note: When Utility Replacement required may reduce down to two 10' lanes.

Note: s = speed
w = width of taper in feet
L = minimum taper length

$$L = \frac{w \times s^2}{60}$$

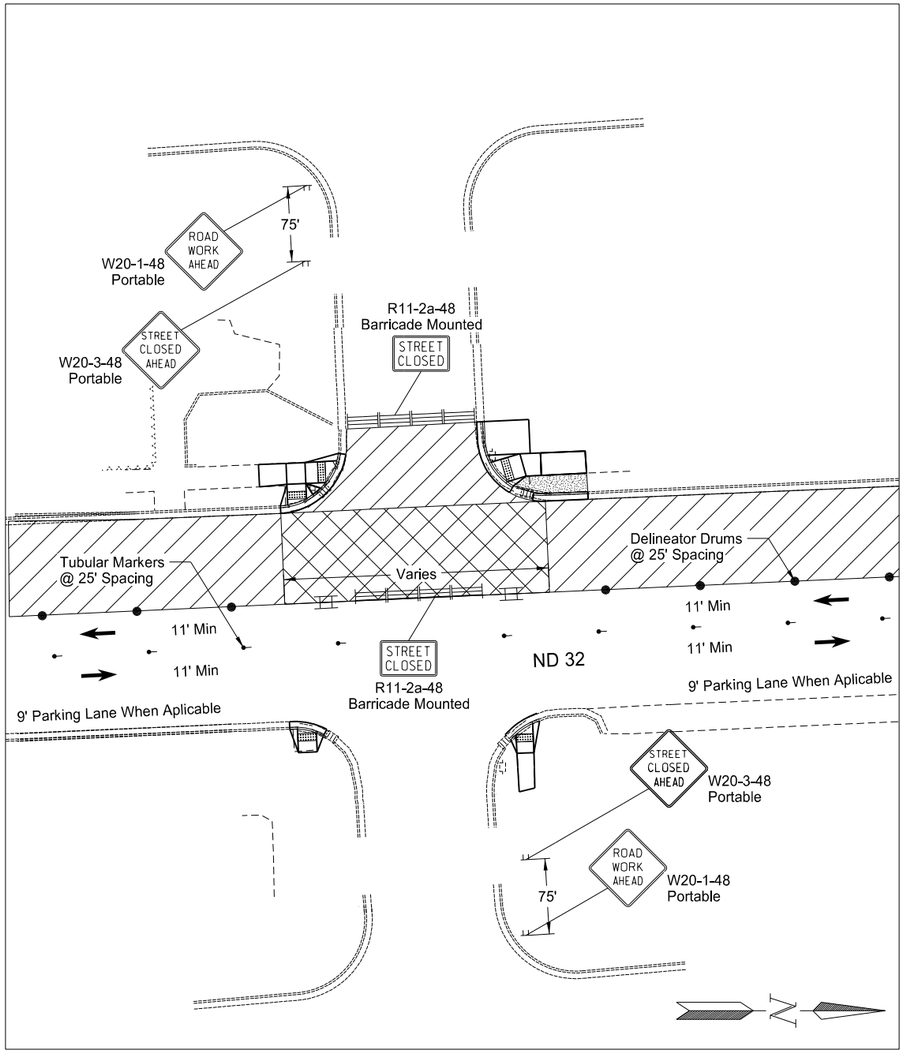
This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Work Zone Traffic Control

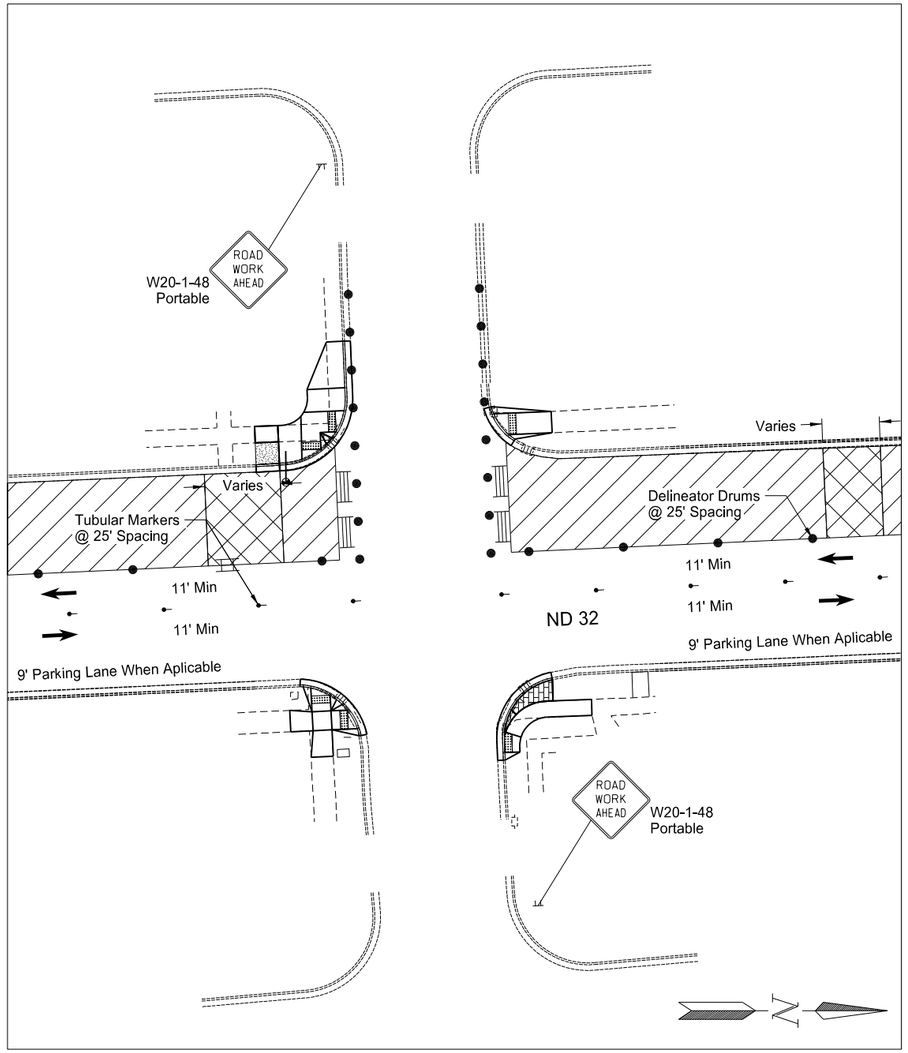
General Lane Clousure Layout

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	11



Intersection Closure



Lane Closure Through Intersection

LEGEND

- Work Area
- Lane Closure
- Type 3 Barricade
- Delineator Drum
- Tubular Marker
- Stackable Vertical Panel

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Note: When Utility Replacement required may reduce down to two 10' lanes.

Work Zone Traffic Control

Miscellaneous Layouts

ND 32 - W Jct 13 N to Riverside Dr Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	12

12th Ave

11th Ave

Site 1

Site 2

Site 3

Pedestrian Channelization

1901 1902 1903 1904 1905 1906 1907 1908

ND 32

LEGEND

- Sidewalk Barricade
- Delineator Drum
- Temp Non Skid Surface
- Pedestrian Detour Route
- Open Pedestrian Crossing

Site 2

10th Ave

9th Ave

Site 4

Site 5

Site 6

Site 7

SIDEWALK CLOSED CROSS HERE R9-11-24

1908 1909 1910 1911 1912 1913 1914

ND 32

SIDEWALK CLOSED CROSS HERE R9-11-24

Site 4

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Pedestrian Detour

Sites 2 & 4

ND 32 - W Jct 13 N to Riverside Dr Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	13

10th Ave
9th Ave
8th Ave
7th Ave
ND 32
Site 4
Site 5
Site 6
Site 7
Site 8
Site 9
Site 10
SIDEWALK CLOSED CROSS HERE R9-11-24
SIDEWALK CLOSED R9-9-24
Temp Curb Ramp
Remove & Reset Sign if necessary
Temp Non Skid Protection
Temp Curb Ramps
Super 8
Bremer Bank

LEGEND
- Sidewalk Barricade
- Delineator Drum
- Temp Non Skid Surface
- Pedestrian Detour Route
- Open Pedestrian Crossing

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/26/19 and the original document is stored at the North Dakota Department of Transportation

Pedestrian Detour

Sites 7 & 9

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	14

7th Ave

6th Ave

SIDEWALK CLOSED CROSS HERE R9-11-24

Bremer Bank

Site 11

Site 12

SIDEWALK CLOSED R9-9-24

Site 13

SIDEWALK CLOSED CROSS HERE R9-11-24

Subway

Site 14

1921 1922 1923 1924 1925 1926 1927 1928

ND 32

Senior Center

Otter Tail Power Company

Site 13

LEGEND

- Sidewalk Barricade
- Delineator Drum
- Temp Non Skid Surface
- Pedestrian Detour Route
- Open Pedestrian Crossing

ND 27
5th Ave W

Sec 11
T-134-N
R-56-W

Sec 2
T-134-N
R-56-W

4th Ave

SIDEWALK CLOSED CROSS HERE R9-11-24

Subway

SIDEWALK CLOSED R9-9-24

Coml

Site 15

SIDEWALK CLOSED CROSS HERE R9-11-24

Thrifty White Pharmacy

Site 17

Fantasy Furniture

Site 14

Site 16

1927 1928 1929 1930 1931 1932

ND 32

SIDEWALK CLOSED R9-9-24

Municipal

Thirft Store

Casual Living

Site 15

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Pedestrian Detour

Sites 13 & 15

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

11/21/2019 4:46:42 PM jesse.ellefson U:\PROJECTS\20952\Design\Plan\199WZ_014.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	199	15

ND 27
5th Ave W

Sec 11
T-134-N
R-56-W

Sec 2
T-134-N
R-56-W

4th Ave

3rd Ave

2nd Ave

Coml

Thrifty White Pharmacy

Fantasy Furniture

Municipal

Thirft Store

Casual Living

Lisbon School Bus Terminal

Razor's Edge

Welton Tire Service

ND 32

Site 15

Site 16

Site 17

Site 18

Site 19

Site 20

SIDEWALK CLOSED
CROSS HERE
R9-11-24

SIDEWALK CLOSED
R9-9-24

LEGEND

- Sidewalk Barricade
- Delineator Drum
- Temp Non Skid Surface
- Pedestrian Detour Route
- Open Pedestrian Crossing

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Pedestrian Detour

Sites 17 & 19

ND 32 - W Jct 13 N to Riverside Dr
Lisbon

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-032(042)021	199	16

Sec 2

2nd Ave

Site 20

SIDEWALK CLOSED CROSS HERE
R9-11-24

Site 21

Site 22

SIDEWALK CLOSED CROSS HERE
R9-11-24

Site 23

1939 1940 1942 1943 1944 1945 1946 194

ND 32

Welton Tire Service

1st Ave

LEGEND

- Sidewalk Barricade
- Pedestrian Detour Route
- Delineator Drum
- Open Pedestrian Crossing
- Temp Non Skid Surface

Sites 21-22

Site 23

Sec 2
T-134-N
R-56-W

Temp Non Skid Protection

Pedestrian Channelization

1944 1945 1946 1947 1948 1949 1950

ND 32

This document was originally issued and sealed by Kevin J. Knott, Registration Number PE- 5679 , on 11/21/19 and the original document is stored at the North Dakota Department of Transportation

Pedestrian Detour

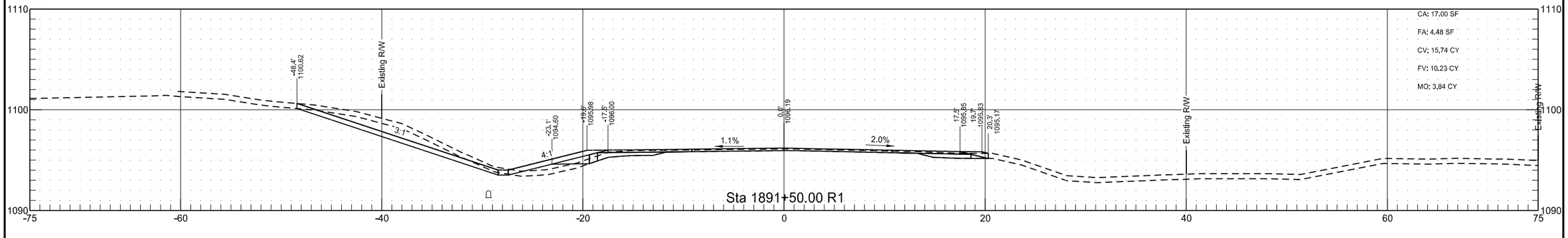
Sites 21 - 23

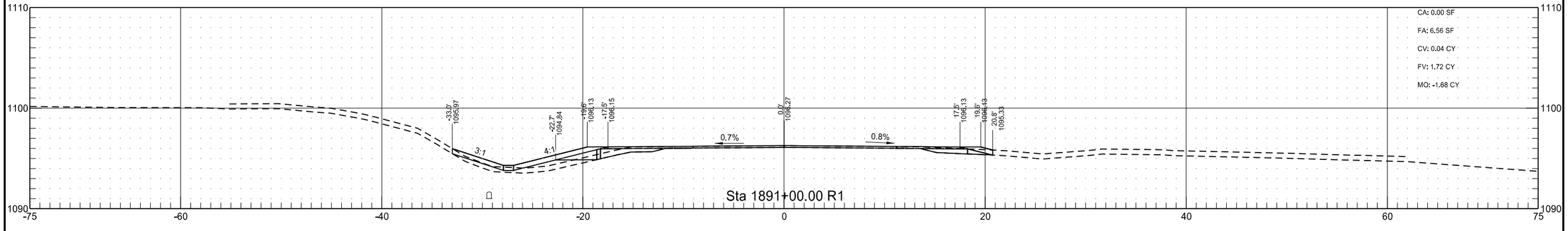
ND 32 - W Jct 13 N to Riverside Dr
Lisbon

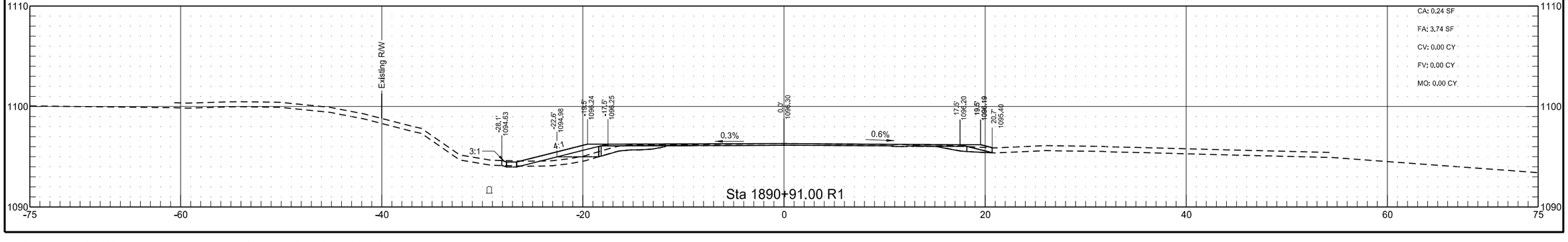
Site 23

11/21/2019 4:46:44 PM jesse.ellefson U:\PROJECTS\20952\Design\Plan\199WZ_016.dgn

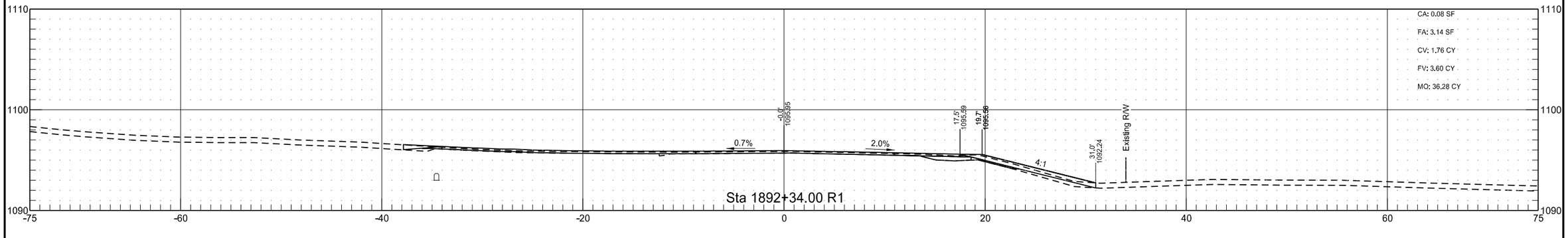
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	1

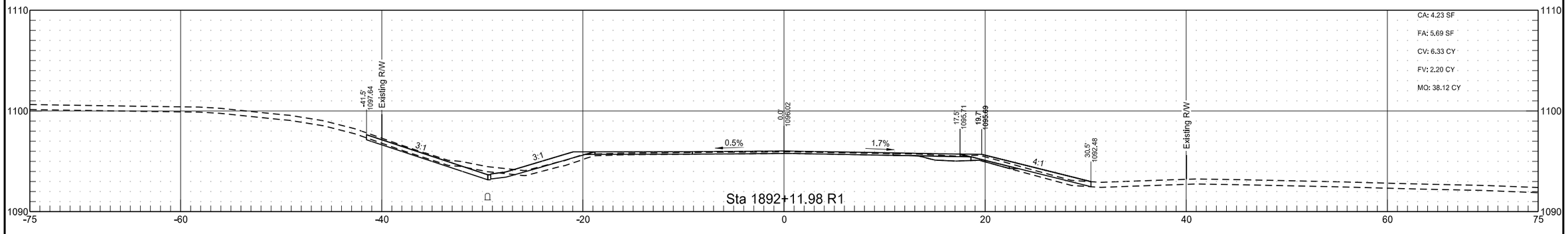


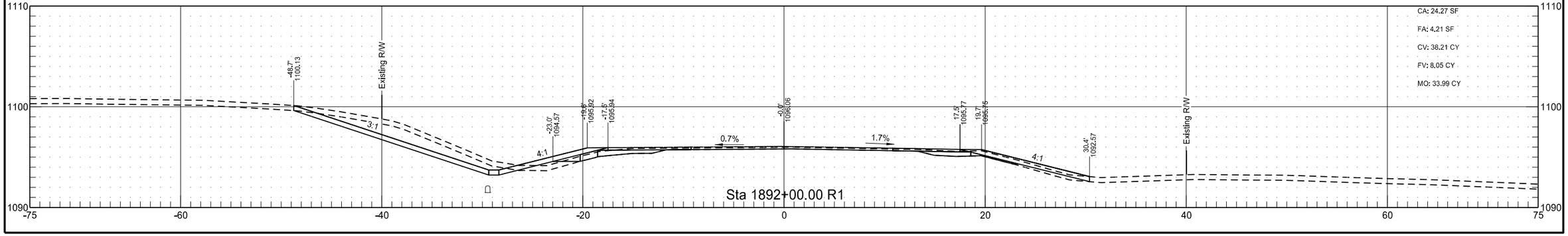




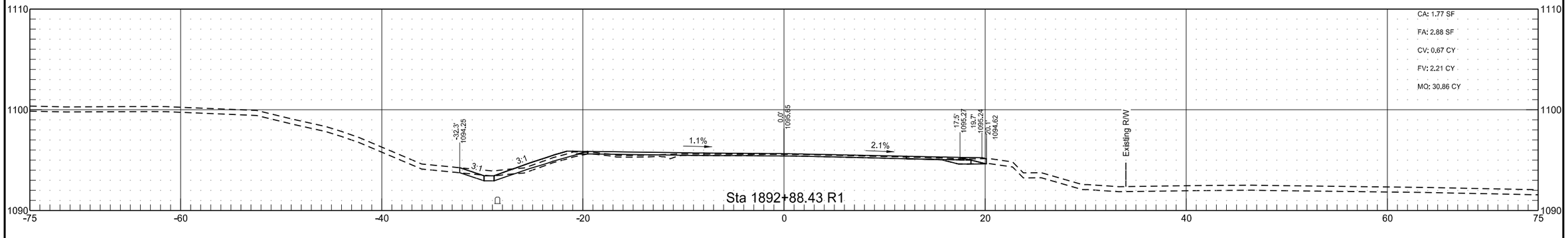
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	2

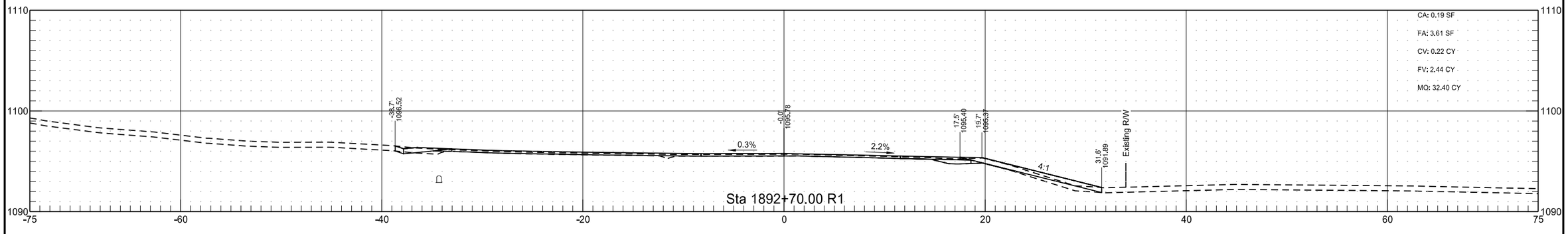


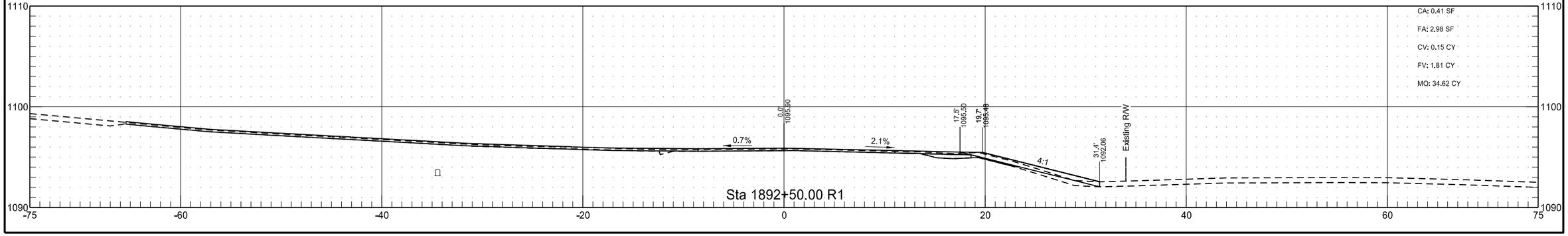




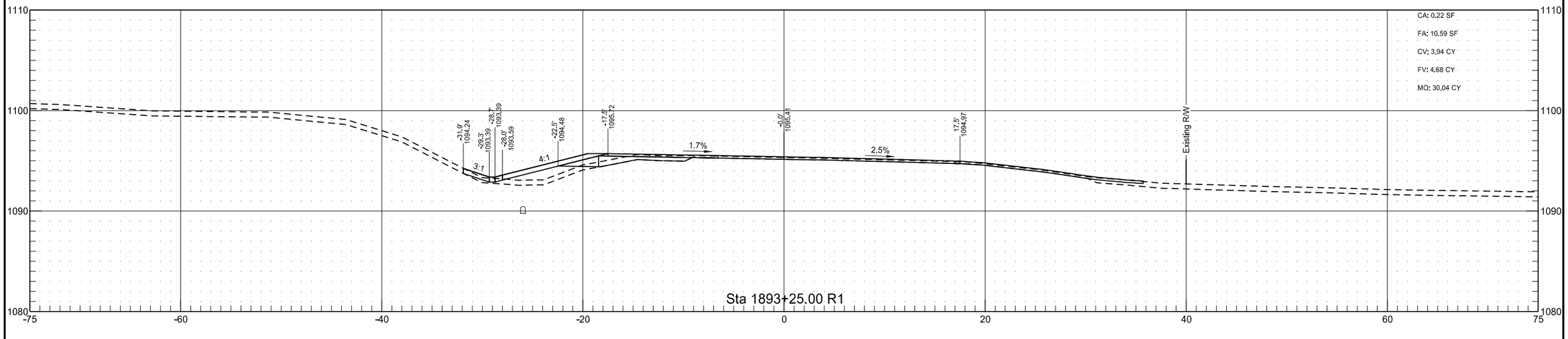
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	3

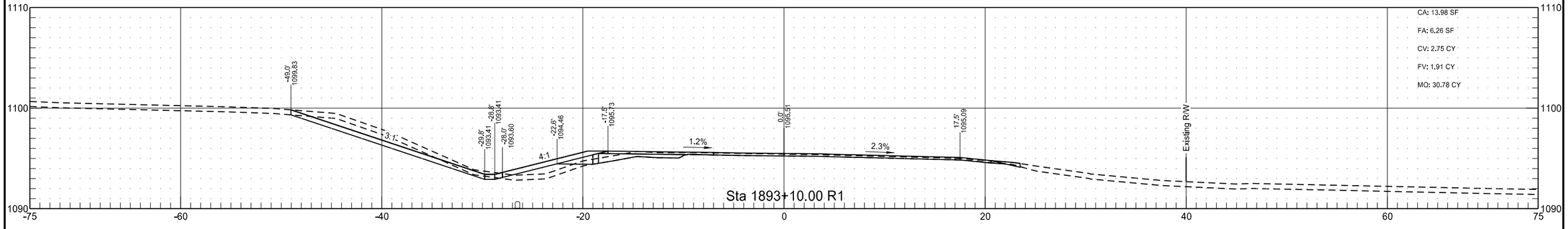


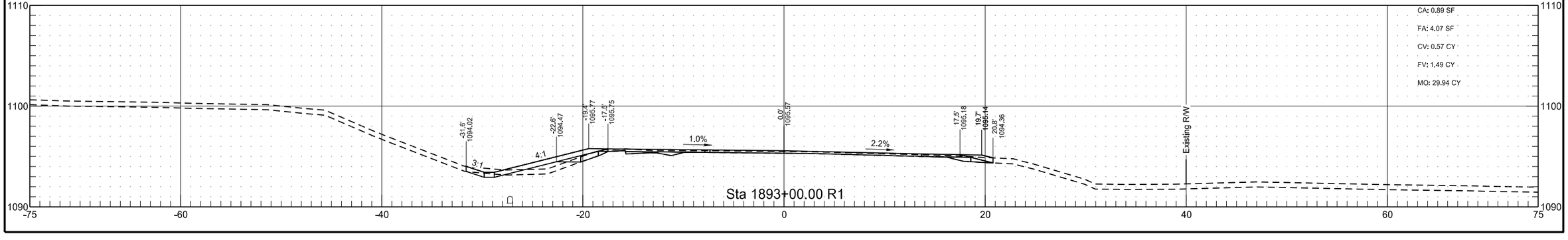




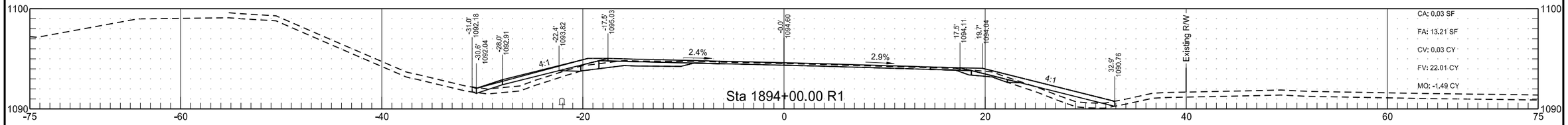
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	4

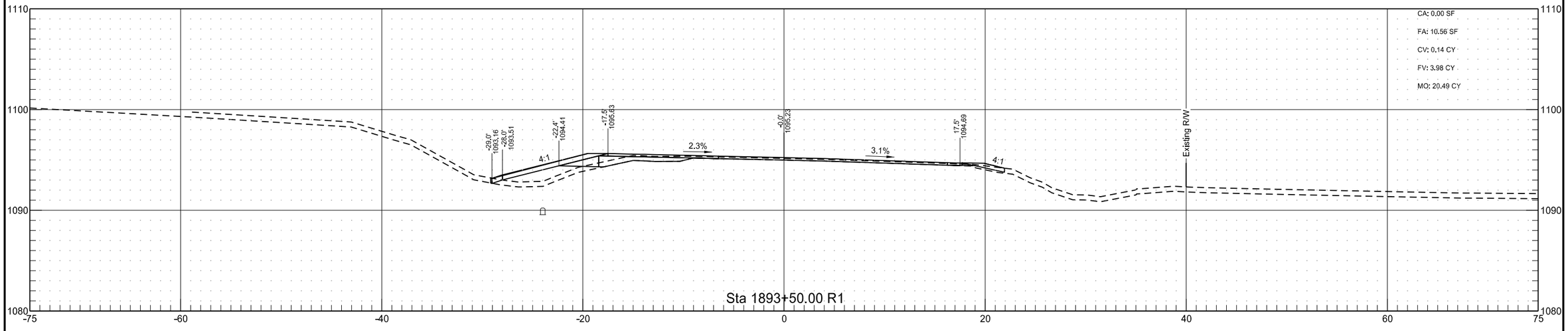


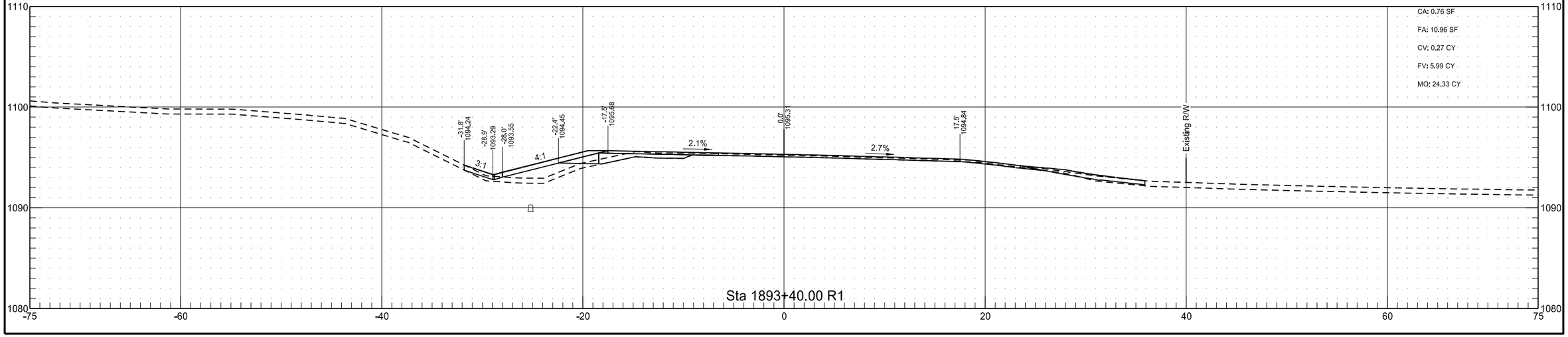




	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	5







	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-032(042)021	200	6