

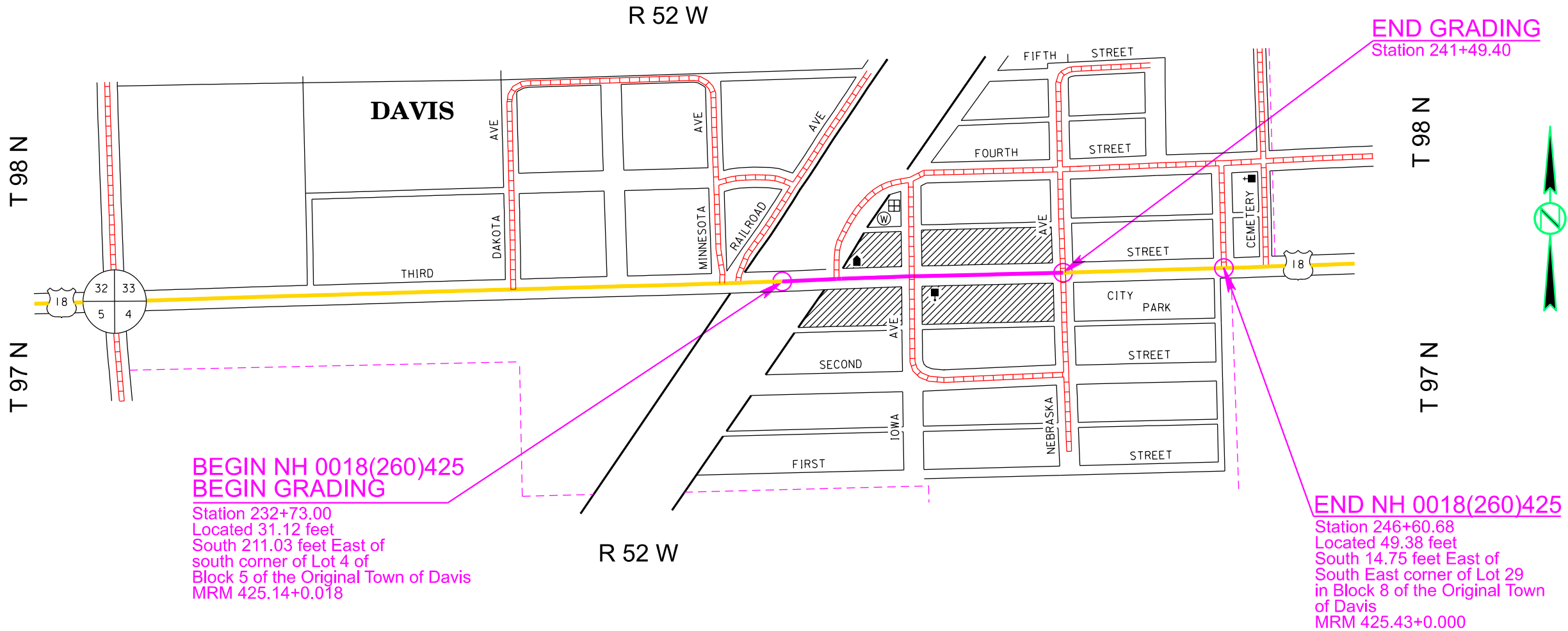
SECTION L: LIGHTING PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L1	L14

Plotting Date: 10/05/2026

INDEX OF SHEETS

L1	General Layout with Index
L2	Estimate with General Notes & Tables
L3	Conduit and Cable Quantities
L4-L9	Conduit Layouts
L10	Wiring Diagram
L11-L14	Standard Plates



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L2	L14

Plotting Date: 10/05/2026 Revised 04/14/2026 ED

SECTION L ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E0050	Breakaway Base Luminaire Pole with Arm, 50" Mounting Height	14	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	14	Each
635E5020	2" Diameter Footing	118.0	Ft
635E5301	Type 1 Electrical Junction Box	2	Each
635E5400	Electrical Service Cabinet	1	Each
635E8120	2" Rigid Conduit, Schedule 40	2,950	Ft
635E8220	2" Rigid Conduit, Schedule 80	680	Ft
635E9011	1/C #1 AWG Copper Wire	1,020	Ft
635E9012	1/C #2 AWG Copper Wire	7,305	Ft
635E9014	1/C #4 AWG Copper Wire	2,120	Ft
635E9016	1/C #6 AWG Copper Wire	3,115	Ft
635E9024	1/C #14 AWG Copper Wire	1,400	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	910	Ft

SUPPLYING AS BUILT PLANS

If the roadway lighting systems is constructed differently than what is stated in the plans, the Contractor will supply as built plans to the Engineer and a copy will be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

PDF submittals will be sent to the following email addresses:

Stacy.Bartlett@state.sd.us
Ryley.Rapp@state.sd.us
Evelyn.Dalldorf@state.sd.us

REMOVE LUMINAIRE POLE

The existing luminaire poles EL1-EL14 are owned by Southeastern Electric Cooperative. The Contractor will contact Southeastern Electric Cooperative at least two weeks prior to needing luminaire poles EL1-EL14 removed. The contact for Southeastern Electric Cooperative is Duane Pulse at (605) 421-9769, duane@southeastern.coop.

All costs associated with coordinating with Southeastern Electric Cooperative to remove the existing luminaire poles EL1-EL14 will be incidental to the contract price each for "Breakaway Base Luminaire Pole with Arm, 50' Mounting Height".

LUMINAIRE POLES

Luminaire poles L1-L14 will have a mounting height of 50' with 6' arms.

The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

Luminaire poles L6-L11 will be designed to include loadings created by banners that are 30" wide by 80" long, mounted 15' from the top of footing to the bottom of the banner and will be able to support holiday decorations that weigh 30-lbs and are 6' x 6'. The bottom of the decorations will be 15' from the top of the footing.

Luminaire poles L6-L11 will have a convenience duplex festoon outlet receptacle (15-amp, 3 wire) suitable for outdoor use. Festoon will be placed 90° counterclockwise to the pole arm.

LUMINAIRES

The lighting design for L1-L5 and L12-L14 used the following parameters to provide 0.8 and greater average maintained foot-candles and uniformity ratios of 4:1 (average maintained to minimum maintained foot-candles) and 6:1 (maximum to minimum maintained foot candles):

Pole Setback: 8'
Lamp Loss Factor (LLF): 0.8
Width of Lighted Area: 44'
Luminaire Cycle Length: 255'
Configuration: One-Sided
Mounting Height: 50'
Arm Length 6'

The following luminaires, or an approved equal, will be used for this project:

- a.) American Electric Lighting: ATB0-P455-MVOLT-R2-P7
b.) Cooper: ARCH-L-PA3-160-740-U-T2R-AP-PR7

The lighting design for L6-L11 used the following parameters to provide 1.2 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 5:1 (maximum to minimum maintained foot candles):

Pole Setback: 6.5'
Lamp Loss Factor (LLF): 0.8
Width of Lighted Area: 44'
Luminaire Cycle Length: 200'
Configuration: One-Sided
Mounting Height: 50'
Arm Length 6'

The following luminaires, or an approved equal, will be used for this project:

- a.) American Electric Lighting: ATB0-P455-MVOLT-R2-P7-PCLL
b.) Cooper: ARCH-L-PA3-160-740-U-T2R-AP-PR7-LLPC

SUBSURFACE

Soils along the project corridor primarily consist of brown to gray clay silt.

Groundwater was encountered at a depth of 10.0' during the soils investigation conducted in November & December 2022.

During construction of the cylindrical footings, concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely caving will occur. Operations should be sequenced so that concrete placement operations closely follow excavations procedures but at a minimum placed the same working day.

Concrete will not be dropped through standing water. If water is present in the excavation, it will be removed prior to concrete placement, or the concrete will be tremied.

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L1-L5, L12-L14	2' - 0"	8' - 0"	1' - 8"	54' - 9"	8-#7 x 7' - 6"
L6-L11	2' - 0"	9' - 0"	1' - 8"	60' - 0"	8-#7 x 8' - 6"

* Footing depth will be below ground level.

** The size of all spirals will be #3.

ELECTRICAL SERVICE CABINET

An externally mounted receptacle and accompanying enclosure will not be required at electrical service cabinets.

The Contractor will be responsible for coordinating the installation of the electrical services and connection to the electrical service. The Contractor will contact Southeastern Electric Cooperative at least 2 weeks prior to needing the electrical service installed. The contact for Southeastern Electric Cooperative is Duane Pulse at (605) 421-9769, duane@southeastern.coop.

All cost for contacting the utility company and coordinating the electrical service installations and all hookup fees will be incidental to the contract unit price per each for "Electrical Service Cabinet."

WIRE SPLICING FOR LIGHTING

All wire splices for lighting will be made using TE Connectivity GTAP connectors, NSI Industries Polaris Blue connectors, or an approved equal.

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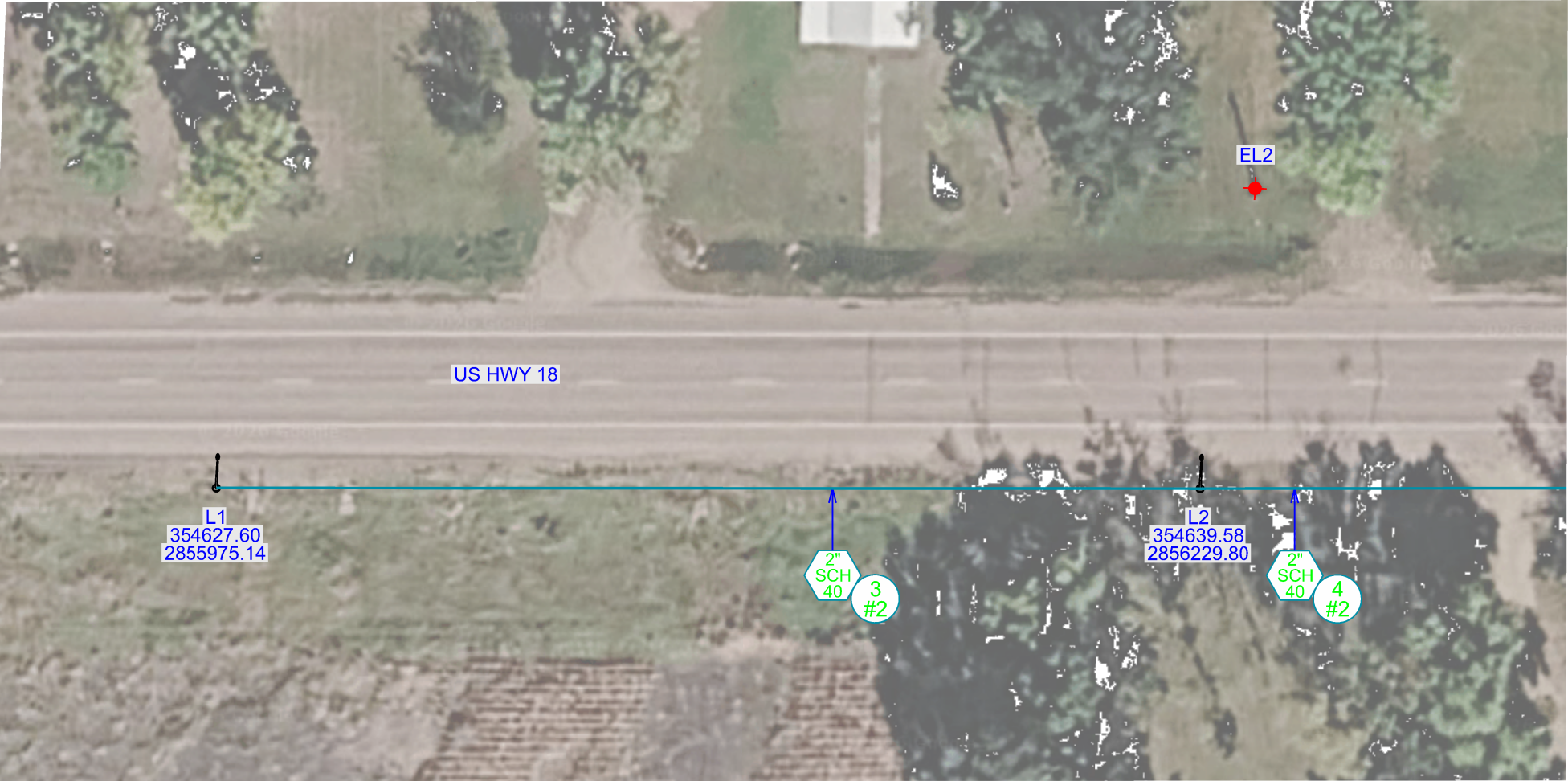
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ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Remove Existing Luminaire Pole (EL1-EL14) Not a Bid Item	14	EACH
	Breakaway Base Luminaire Pole w/6' Arm 50' Mounting Height (L1-L14)	14	EACH
	Roadway Luminaire, LED with Photoelectric Cell (L1-L14)	14	EACH
	2' Diameter Footing (L1-L14)	118	FT
	Type 1 Electrical Junction Box (JL1-JL2)	2	EACH
	Electrical Service Cabinet (M1)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH



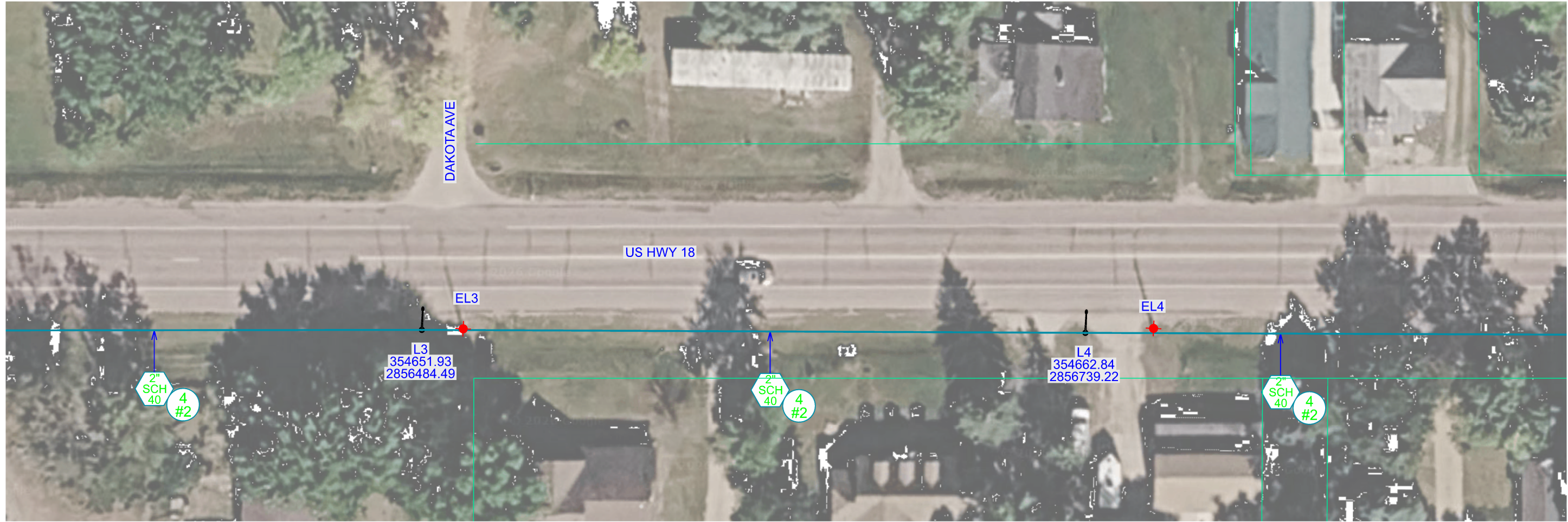
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CONDUIT LAYOUT

US HWY 18

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L5	L14

Plotting Date: 10/05/2026



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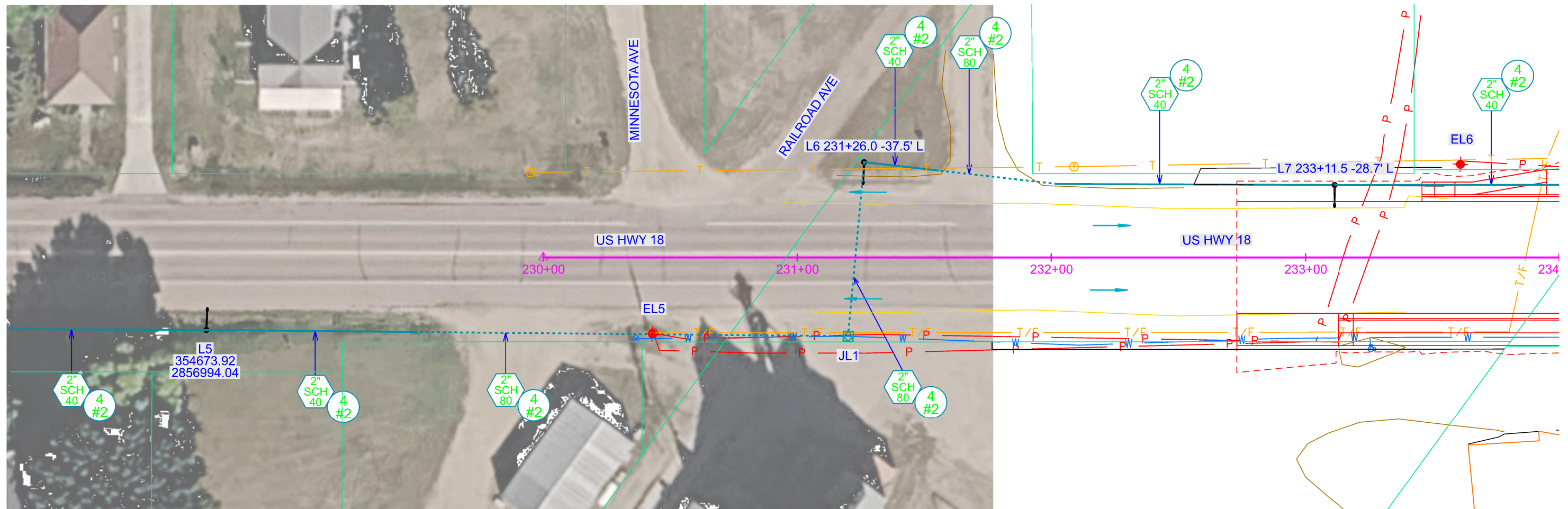
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CONDUIT LAYOUT

US HWY 18

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L6	L14

Plotting Date: 10/05/2026



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CONDUIT LAYOUT

US HWY 18

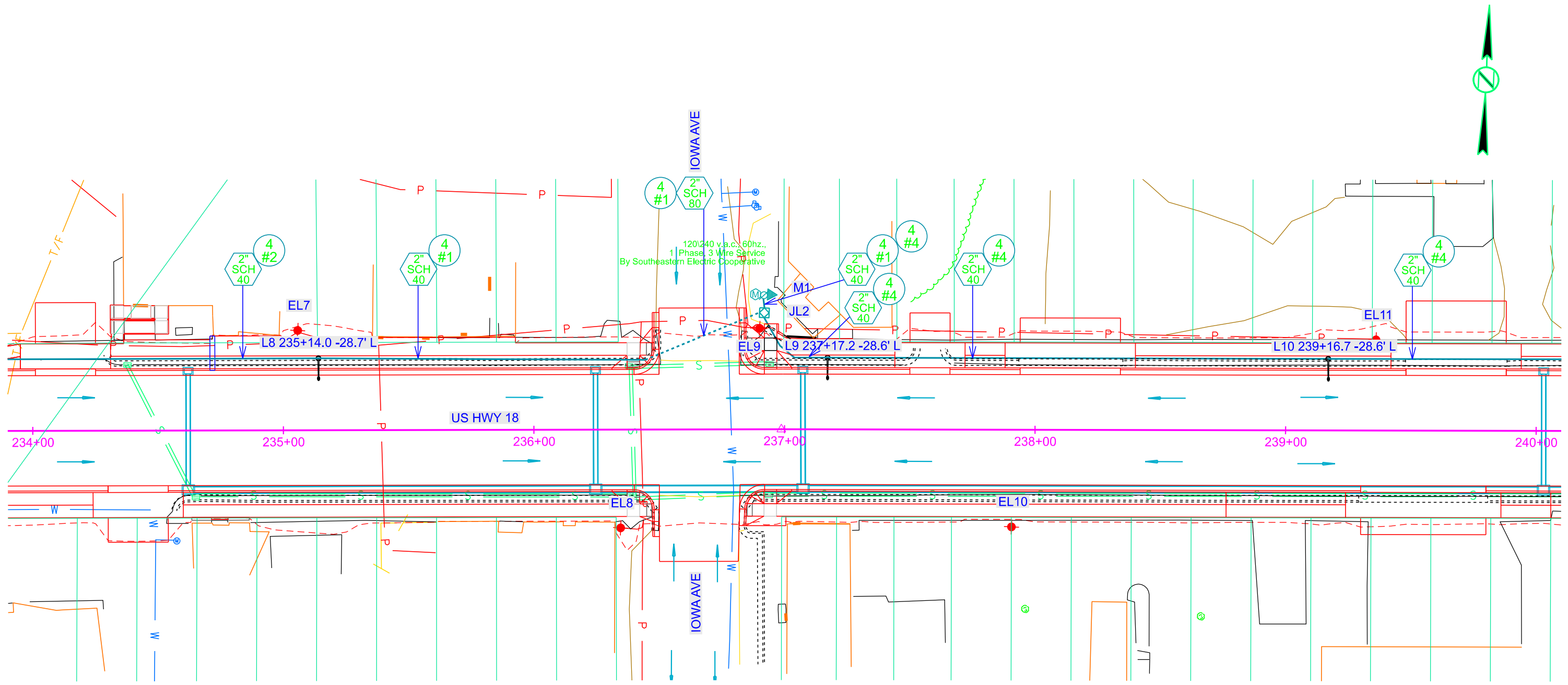
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	NH 0018(260)425	L7	L14

Plotting Date: 10/05/2026

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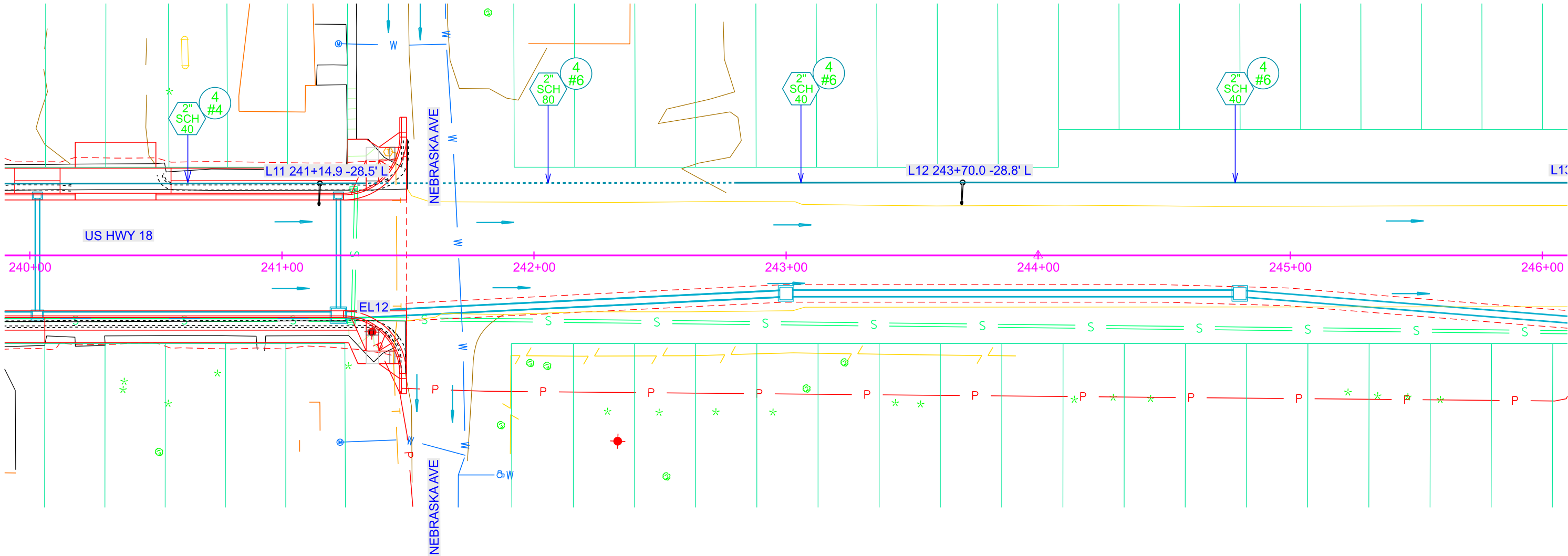


CONDUIT LAYOUT

US HWY 18

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L8	L14

Plotting Date: 10/05/2026



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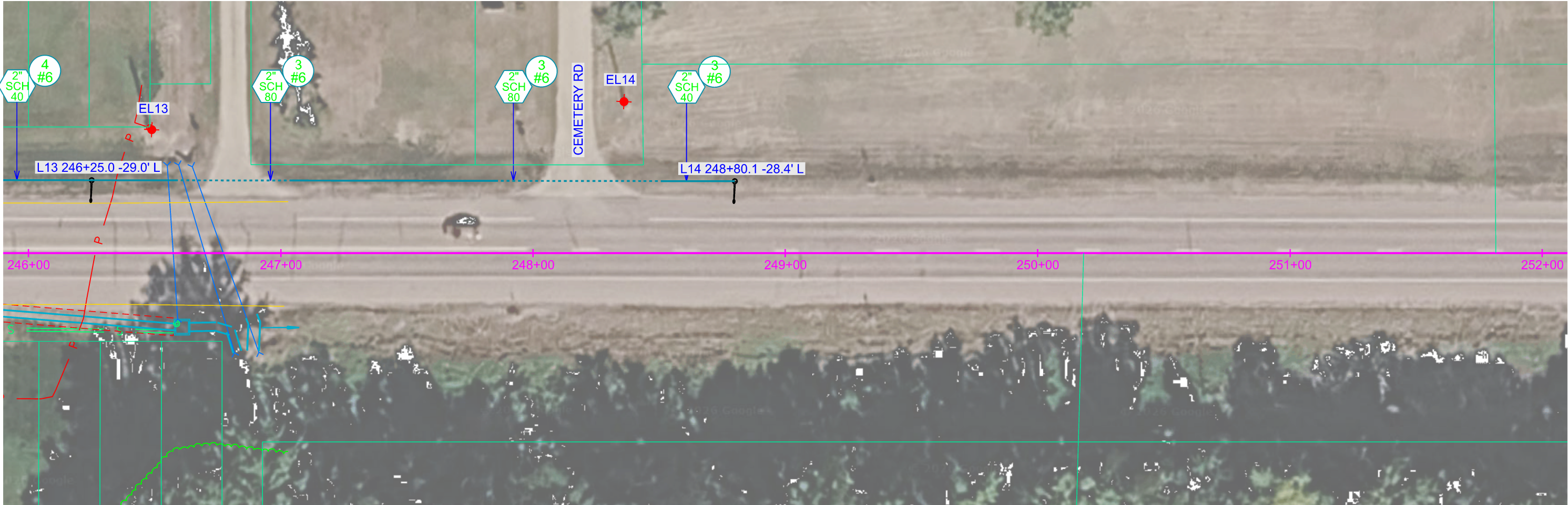
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CONDUIT LAYOUT

US HWY 18

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L9	L14

Plotting Date: 10/05/2026



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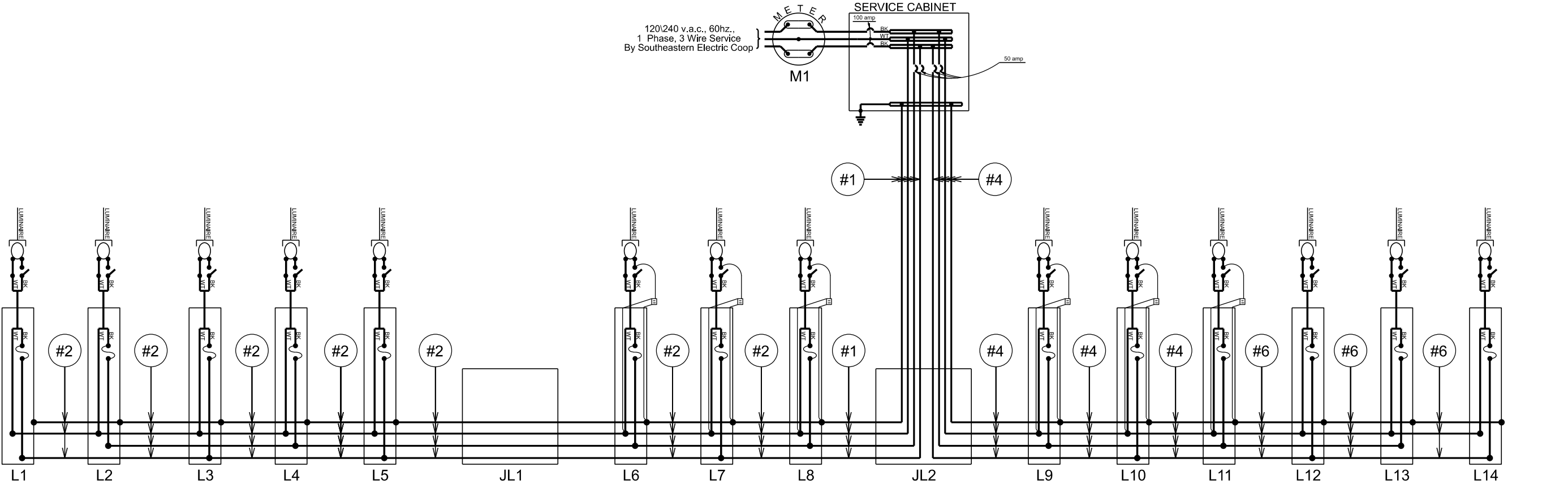
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WIRING DIAGRAM

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L10	L14

Plotting Date: 10/05/2026

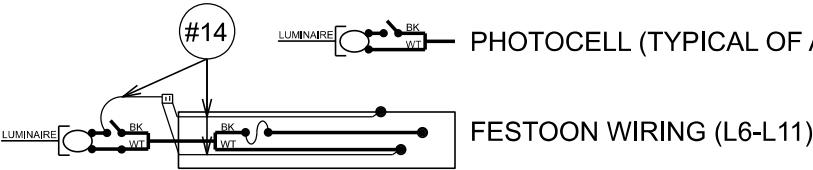


LEGEND:

FUSE: 10 amp.

LUMINAIRE: LED

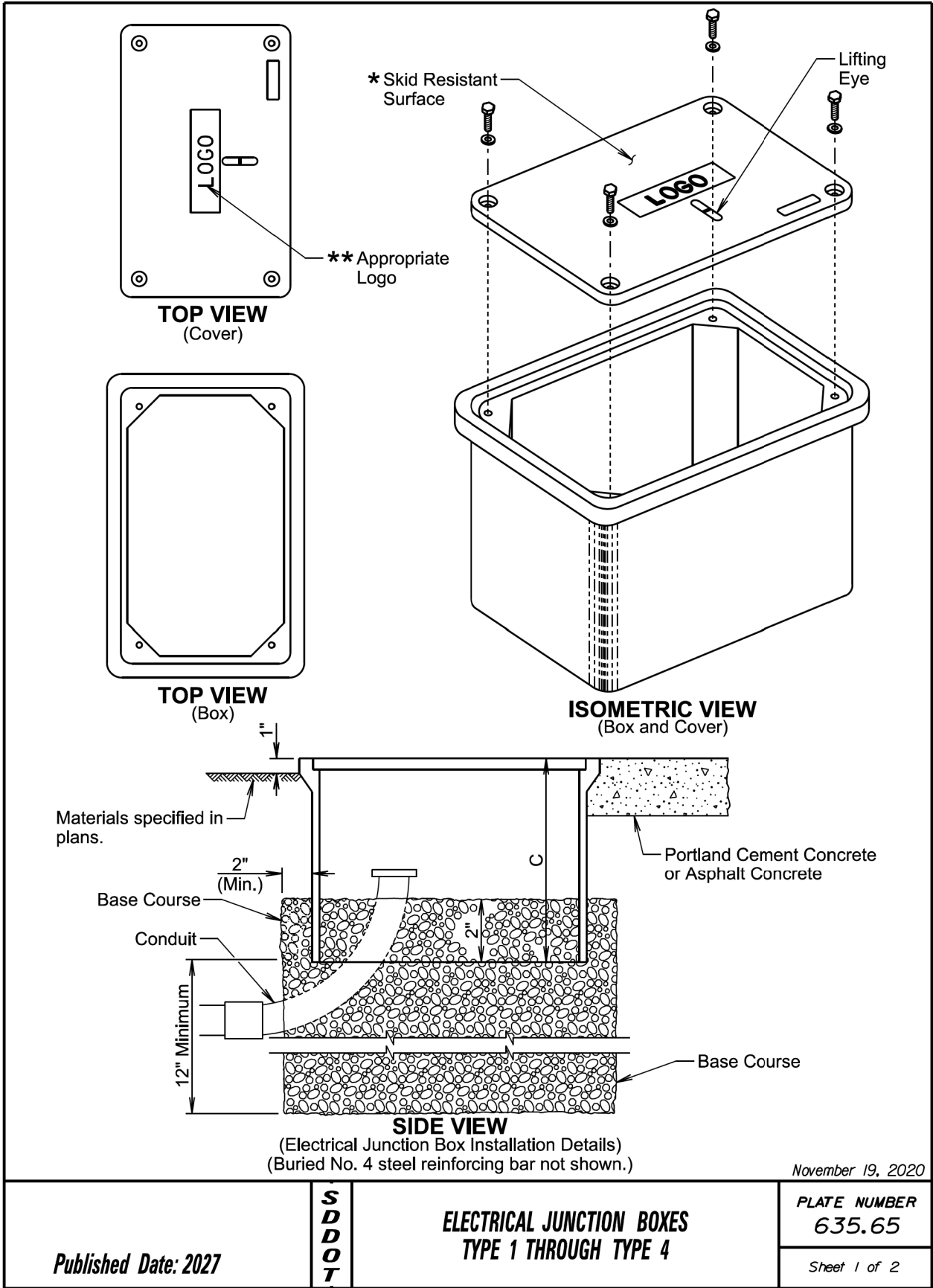
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L13	L14

Plotting Date: 10/05/2026



ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

* The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

** The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

The electrical junction boxes will be UL listed.

For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

November 19, 2020

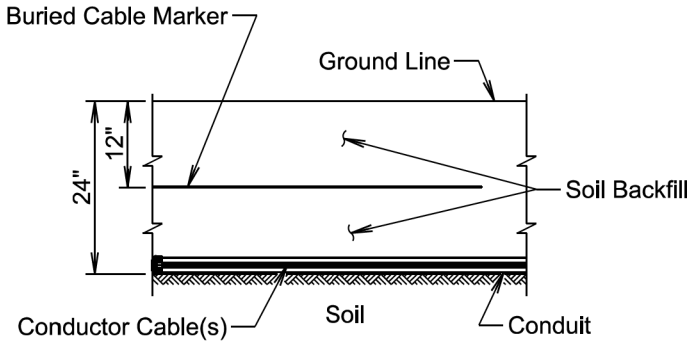
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			Sheet 2 of 2

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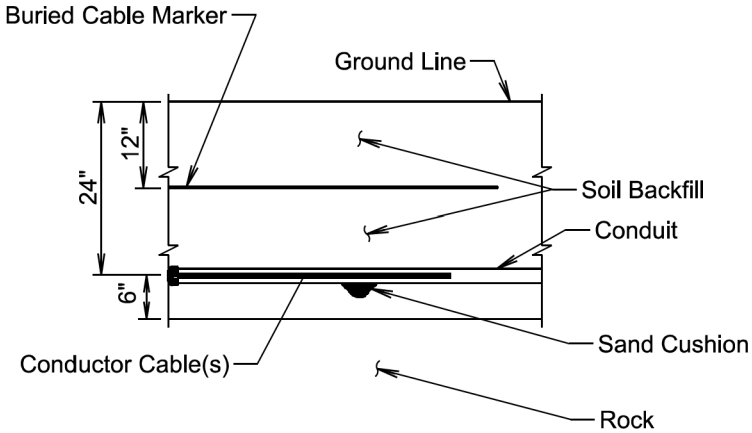
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(260)425	L14	L14

Plotting Date: 10/05/2026



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker will be plastic, approximately 6" wide, and will be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker will have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below will be printed in a contrasting color on the cable marker. The Buried Cable Marker will be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker will be incidental to the contract unit price per foot for the bid item used for the electrical conductor.

November 19, 2022

<i>Published Date: 2027</i>	S D D O T	CONDUIT INSTALLATION	<i>PLATE NUMBER</i> 635.76
			<i>Sheet 1 of 1</i>

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