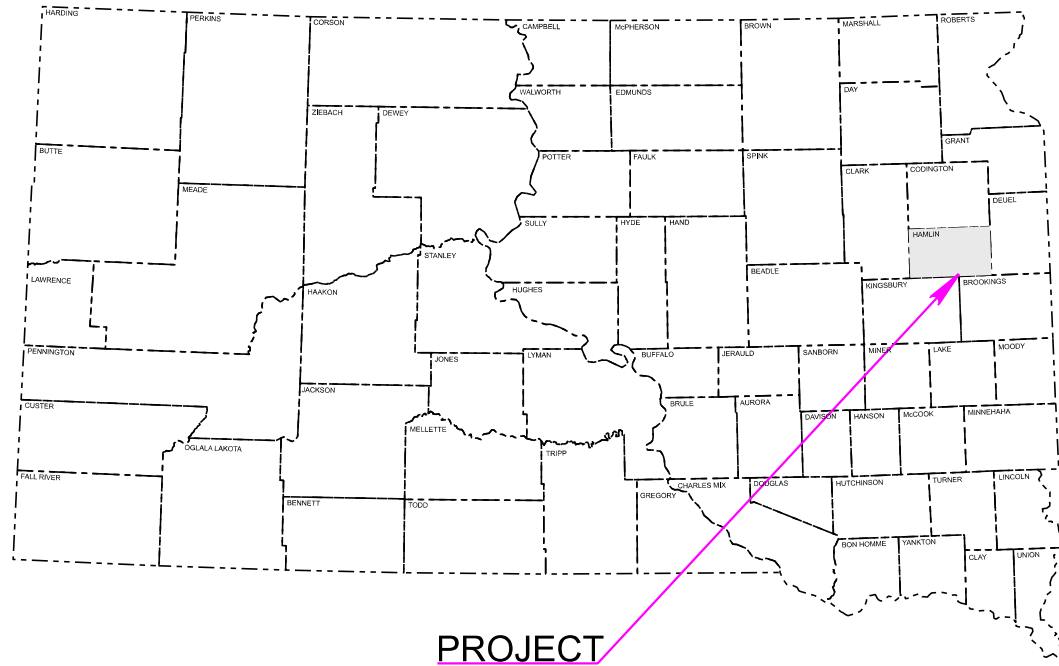


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT NH 0081(129)131
US HIGHWAY 81
HAMLIN COUNTY

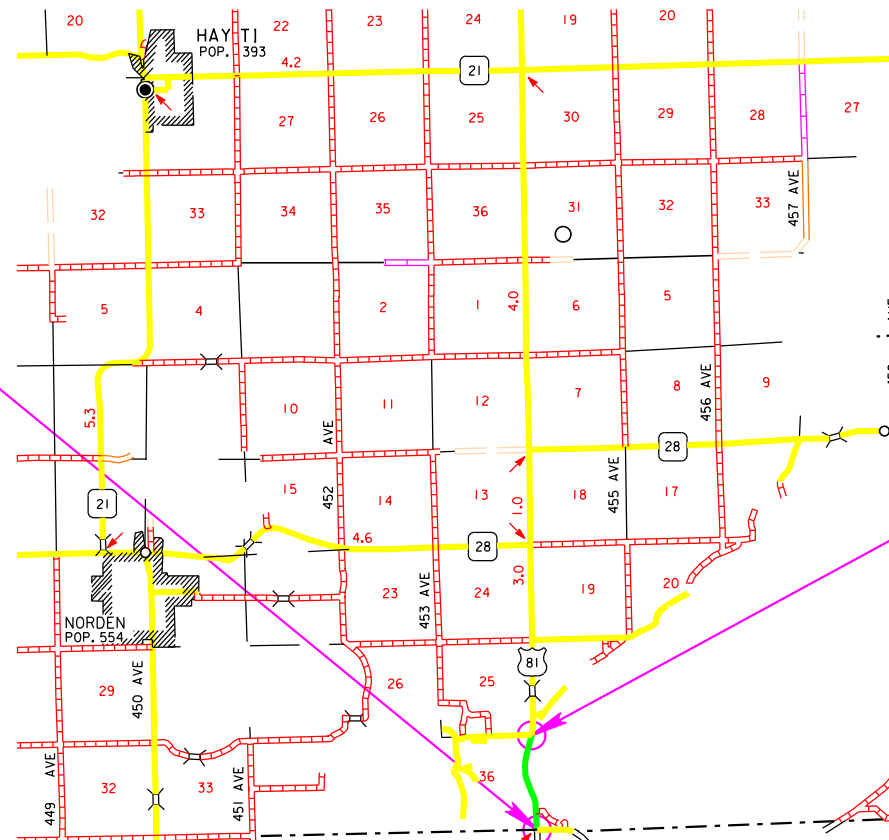
ROADWAY LIGHTING
PCN 09KF

INDEX OF SHEETS

- | | |
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| 1 | General Layout with Index |
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| 5-6 | Conduit and Cable Quantities |
| 7-9 | Alignment and Pole Location |
| 10-19 | Lighting Layout |
| 20-21 | Wiring Diagram |
| 22-28 | Standard Plates |



BEGIN NH 0081(129)131
MRM = 131.00 +0.700



END NH 0081(129)131
MRM = 132.00 +0.72

DESIGN DESIGNATION

AAADT (2023)	2,490
AAADT (2053)	4,130
DHV	855
D	50.0%
DHV T%	9.0%
AAADT T%	20.0%
V	40 mph

STORM WATER PERMIT

None Required

HAMLIN COUNTY

Gross Length	5,435 Feet	1.02 Miles
Length of Exception	0 Feet	0 Miles
Net Length	5,435 Feet	1.02 Miles

2

June 5, 2024

NONSECTION ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	100.0	Hour
634E0020	Pilot Car	50.0	Hour
634E0110	Traffic Control Signs	229.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	29	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	29	Each
635E5020	2' Diameter Footing	261.0	Ft
635E5301	Type 1 Electrical Junction Box	10	Each
635E5400	Electrical Service Cabinet	2	Each
635E8120	2" Rigid Conduit, Schedule 40	5,425	Ft
635E8220	2" Rigid Conduit, Schedule 80	865	Ft
635E9016	1/C #6 AWG Copper Wire	2,020	Ft
635E9018	1/C #8 AWG Copper Wire	17,090	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	1,885	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥ 140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:

< <https://sdleastwanted.sd.gov/maps/default.aspx> >


< [South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species: https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04) >

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

 Plotting Date: 03/21/2024	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	2 of 28

Action Taken/Required:

The DANR General Permit for Stormwater Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DANR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DANR letter of approval is received.

The Contractor must adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State."

The Contractor will complete the DANR Contractor Certification Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DANR.

The form can be found at:

<

https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPApp_endixCCA2018Fillable.pdf >

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SUPPLYING AS BUILT PLANS

If the roadway lighting system 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
 John.Less@state.sd.us

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

SEQUENCE OF OPERATIONS

Work will consist of adding roadway lighting and performing needed erosion control.

Revised 03/27/2024 by JLL

US Highway 81 traffic will be maintained through the construction zone during the entire project. Two-way traffic will be maintained using either Standard Plate 634.03, 634.23, or 634.53 as needed.

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

GENERAL TRAFFIC CONTROL

The Contractor will keep all businesses and residents informed of the progression and prosecution of work in areas that have a direct effect on their access.

Orange plastic safety fence will be provided to enclose any open excavation areas that are unsafe for pedestrian traffic. All related costs to furnish, place and maintain the plastic safety fence will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

Drums and/or Type 2 Barricades will be maintained to a minimum height of 3-ft above the road surface.

Locations of signs on traffic control layouts are diagrammatic. Non-fixed location signs may be mounted on portable supports.

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					229.6

Revised 03/27/2024 by JLL

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L1 - L29	2' - 6"	9' - 0"	2' - 2"	78' - 0"	12-#7 x 8' -6"

SUBSURFACE INFORMATION

Groundwater and caving soils are likely to be encountered during the installation of the cylindrical footings. Concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely caving may occur. If caving soils are encountered, it may be necessary to use casing or drilling fluids to maintain an open excavation. Casing will be of sufficient strength to withstand handling and installation procedures. Casing material may consist of Sonotube, corrugated metal pipe, PVC, smooth metal pipe or any other material as approved by the Engineer. Drilling fluids can be slurries as approved by the Engineer. Concrete placed through groundwater or drilling fluids will be tremied.

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.

INCIDENTAL WORK

Incidental work includes, but is not limited to, the restoration of all disturbed areas to the satisfaction of the Engineer.

Any existing pavements removed by the contractor will be replaced in kind or replaced as directed by the Engineer. All costs associated with the replacement of existing pavements will be incidental to the lump sum price for "Incidental Work".

LUMINAIRE POLES

Luminaire poles L1-L29 will have a mounting height of 50-feet with 8-foot arms.

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

LUMINAIRES

The lighting design used the following parameters to provide 1.0 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:	8 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	Varies
Luminaire Cycle Length:	200 Ft.
Configuration:	Staggered
Mounting Height:	50 Ft.
Arm Length	8 Ft.

The following luminaires meet the requirements for this design:

- a.) Cooper: VERD-M-CA4-190-740-U-T3-AP-PR7
- b.) AEL AUTOBAHN ATB0-P455-MVOLT-R3-P7

CONDUIT AND CABLE QUANTITIES



PROJECT
NH 0081(129)131

SECTION SHEET
Non 5 of 28

Plotting Date: 03/21/2024

Location to Location	Rigid Conduit		Copper Wire										Pole and Bracket Cable																
	Schedule 40		Schedule 80																										
	2"	Ft	2"	Ft	1/C #8 AWG Ft	1/C #6 AWG Ft									2/C #10 AWG Ft														
Lighting																													
Electric Service	JL5	25																											
JL5	L11	130																											
L11	JL4	210																											
JL4	L10			60																									
JL4	L9	215																											
L9	L8	220																											
L8	L7	210																											
L7	JL3	215																											
JL3	L6			60																									
JL3	L5	210																											
L5	JL2	215																											
JL2	L4			55																									
JL2	L3	210																											
L3	JL1	155																											
JL1	L2			95																									
JL1	L1			90																									
JL5	L12	110																											
L12	L13	175		50																									
L13	L14	245																											
Electric Service	JL7	25																											
JL7	L20	195																											
L20	L19	200																											
L19	JL6	220																											
JL6	L18			75																									
JL6	L17	200																											
L17	L16	210																											
L16	L15	225																											
JL7	L21			80																									
L21	L22	215																											
L22	L23	215																											
L23	JL8	215																											
JL8	L24			75																									
JL8	L25	210																											
L25	JL9	215																											
JL9	L26			75																									
JL9	L27	210																											
L27	JL10	215																											
JL10	L28			75																									
JL10	L29	110		75																									
Subtotal:		5,425		865																									

CONDUIT AND CABLE QUANTITIES



PROJECT
NH 0081(129)131

SECTION SHEET
Non 6 of 28

Plotting Date: 03/21/2024

Location to Location	Rigid Conduit		Copper Wire										Pole and Bracket Cable																	
	Schedule 40		Schedule 80		1/C #8 AWG		1/C #6 AWG		1/C #4 AWG		1/C #3 AWG		1/C #2 AWG		1/C #1 AWG		2/C #10 AWG		2/C #8 AWG		2/C #6 AWG		2/C #4 AWG		2/C #3 AWG		2/C #2 AWG		2/C #1 AWG	
	2"	Ft	2"	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	
L1																		65												
L2																		65												
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L27																		65												
L28																		65												
L29																		65												
Subtotal:		0		0						0	0							1,885												
Total:		5,425		865						17,090	2,020							1,885												



Type	Station	Alignment\Horizontal	Northing	Easting
POB	0		271977.373	2717136.282
		TL= 39.790		
PI	39.79	N5.130°W	272017.004	2717132.724
		TL= 39.843		
PI	79.633	N5.561°W	272056.659	2717128.863
		TL= 40.055		
PI	119.687	N5.305°W	272096.542	2717125.16
		TL= 39.976		
PI	159.663	N5.499°W	272136.334	2717121.329
		TL= 59.694		
PI	219.358	N5.730°W	272195.73	2717115.369
		TL= 59.996		
PI	279.354	N5.857°W	272255.413	2717109.247
		TL= 59.222		
PI	338.576	N5.513°W	272314.361	2717103.557
		TL= 51.225		
PI	389.801	N5.761°W	272365.327	2717098.415
		TL= 59.583		
PI	449.384	N5.704°W	272424.615	2717092.493
		TL= 40.107		
PI	489.49	N5.516°W	272464.536	2717088.638
		TL= 59.705		
PI	549.195	N5.841°W	272523.931	2717082.562
		TL= 39.828		
PI	589.024	N5.144°W	272563.599	2717078.991
		TL= 59.569		
PI	648.593	N5.916°W	272622.851	2717072.851
		TL= 59.904		
PI	708.497	N5.553°W	272682.474	2717067.054
		TL= 60.034		
PI	768.531	N5.884°W	272742.192	2717060.9
		TL= 59.975		
PI	828.506	N5.516°W	272801.889	2717055.135
		TL= 59.988		
PI	888.494	N5.781°W	272861.572	2717049.093
		TL= 59.684		
PI	948.178	N5.445°W	272920.987	2717043.43
		TL= 59.653		
PI	1007.831	N5.765°W	272980.338	2717037.438
		TL= 59.893		
PI	1067.725	N5.760°W	273039.929	2717031.427
		TL= 59.612		
PI	1127.337	N5.598°W	273099.257	2717025.612
		TL= 59.740		
PI	1187.077	N5.327°W	273158.739	2717020.066

		TL= 59.974	N5.711°W		
PI	1247.05			273218.415	2717014.098
		TL= 59.552	N5.639°W		
PI	1306.603			273277.679	2717008.246
		TL= 59.770	N5.689°W		
PI	1366.373			273337.155	2717002.321
		TL= 59.745	N5.867°W		
PI	1426.118			273396.587	2716996.214
		TL= 59.741	N5.601°W		
PI	1485.859			273456.043	2716990.383
		TL= 59.719	N5.586°W		
PI	1545.578			273515.478	2716984.57
		TL= 60.029	N5.788°W		
PI	1605.607			273575.201	2716978.516
		TL= 59.481	N5.557°W		
PI	1665.087			273634.402	2716972.756
		TL= 80.011	N6.485°W		
PI	1745.098			273713.901	2716963.72
		TL= 59.950	N8.599°W		
PI	1805.048			273773.177	2716954.756
		TL= 59.900	N10.958°W		
PI	1864.948			273831.985	2716943.37
		TL= 59.569	N12.815°W		
PI	1924.517			273890.07	2716930.157
		TL= 60.172	N15.221°W		
PI	1984.689			273948.131	2716914.359
		TL= 59.953	N16.926°W		
PI	2044.642			274005.487	2716896.904
		TL= 70.391	N19.424°W		
PI	2115.034			274071.872	2716873.495
		TL= 59.215	N21.578°W		
PI	2174.249			274126.937	2716851.718
		TL= 60.351	N23.985°W		
PI	2234.6			274182.077	2716827.185
		TL= 61.157	N25.651°W		
PI	2295.757			274237.207	2716800.711
		TL= 61.016	N27.066°W		
PI	2356.773			274291.541	2716772.948
		TL= 61.462	N26.755°W		
PI	2418.235			274346.423	2716745.279
		TL= 60.690	N26.517°W		
PI	2478.925			274400.728	2716718.183
		TL= 61.077	N26.516°W		
PI	2540.002			274455.38	2716690.915
		TL= 61.098	N26.946°W		
PI	2601.1			274509.845	2716663.228
		TL= 61.530	N26.325°W		
PI	2662.63			274564.994	2716635.942
		TL= 59.673	N26.625°W		



PI	2722.303		274618.339	2716609.2
	TL= 3.205	N25.070°W		
PI	2725.508		274621.242	2716607.842
	TL= 58.234	N26.287°W		
PI	2783.742		274673.454	2716582.052
	TL= 61.171	N25.922°W		
PI	2844.913		274728.47	2716555.311
	TL= 60.367	N23.900°W		
PI	2905.28		274783.661	2716530.854
	TL= 60.382	N22.190°W		
PI	2965.662		274839.571	2716508.049
	TL= 60.625	N20.421°W		
PI	3026.287		274896.386	2716486.896
	TL= 59.678	N18.509°W		
PI	3085.965		274952.977	2716467.951
	TL= 59.880	N17.002°W		
PI	3145.845		275010.24	2716450.442
	TL= 60.996	N15.095°W		
PI	3206.84		275069.131	2716434.557
	TL= 62.357	N13.293°W		
PI	3269.197		275129.817	2716420.219
	TL= 61.305	N11.521°W		
PI	3330.502		275189.887	2716407.975
	TL= 60.217	N9.548°W		
PI	3390.72		275249.27	2716397.987
	TL= 60.428	N7.763°W		
PI	3451.147		275309.144	2716389.825
	TL= 61.567	N5.942°W		
PI	3512.714		275370.38	2716383.452
	TL= 60.267	N4.202°W		
PI	3572.981		275430.485	2716379.036
	TL= 60.632	N2.327°W		
PI	3633.613		275491.067	2716376.574
	TL= 61.299	N0.519°W		
PI	3694.912		275552.363	2716376.019
	TL= 61.541	N1.388°E		
PI	3756.453		275613.886	2716377.51
	TL= 61.157	N3.052°E		
PI	3817.609		275674.956	2716380.766
	TL= 60.820	N4.959°E		
PI	3878.429		275735.548	2716386.023
	TL= 60.096	N6.835°E		
PI	3938.525		275795.217	2716393.175
	TL= 60.398	N8.803°E		
PI	3998.923		275854.904	2716402.418
	TL= 60.871	N10.260°E		
PI	4059.795		275914.802	2716413.26
	TL= 60.102	N11.631°E		
PI	4119.897		275973.67	2716425.377

		TL= 59.827	N12.042°E	
PI	4179.724			276032.18
		TL= 59.486	N11.822°E	2716437.859
PI	4239.209			276090.404
		TL= 59.747	N11.886°E	2716450.046
PI	4298.956			276148.87
		TL= 60.430	N12.054°E	2716462.352
PI	4359.387			276207.968
		TL= 60.596	N12.067°E	2716474.972
PI	4419.983			276267.225
		TL= 60.875	N11.988°E	2716487.64
PI	4480.857			276326.772
		TL= 61.483	N12.036°E	2716500.284
PI	4542.34			276386.903
		TL= 61.028	N11.914°E	2716513.105
PI	4603.368			276446.616
		TL= 60.014	N12.102°E	2716525.704
PI	4663.381			276505.296
		TL= 61.282	N12.007°E	2716538.286
PI	4724.663			276565.237
		TL= 62.228	N12.118°E	2716551.034
PI	4786.891			276626.078
		TL= 59.842	N11.963°E	2716564.097
PI	4846.732			276684.62
		TL= 59.650	N12.063°E	2716576.501
PI	4906.382			276742.953
		TL= 60.168	N11.923°E	2716588.967
PI	4966.551			276801.823
		TL= 60.008	N12.021°E	2716601.398
PI	5026.558			276860.515
		TL= 59.632	N12.034°E	2716613.896
PI	5086.19			276918.836
		TL= 60.315	N12.136°E	2716626.329
PI	5146.505			276977.803
		TL= 59.782	N11.964°E	2716639.009
PI	5206.287			277036.286
		TL= 60.056	N12.028°E	2716651.402
PI	5266.343			277095.024
		TL= 59.858	N11.989°E	2716663.917
PI	5326.201			277153.576
		TL= 59.789	N12.057°E	2716676.351
PI	5385.99			277212.046
		TL= 59.885	N12.041°E	2716688.84
PI	5445.874			277270.613
		TL= 60.103	N12.112°E	2716701.333
PI	5505.977			277329.378
		TL= 59.515	N11.941°E	2716713.944
POE	5565.492			277387.605
				2716726.258

Geometry Point Report

Report Created: Wednesday, February 28, 2024
Time: 8:20:55 AM

Project: Default
Description:
Baseline (Active) Alignment:
File Name: U:\rd\prj\Ham109KF\dgn\09KF_TD.dgn
Last Revised: 2/28/2024 08:19:30
Input Grid Factor:

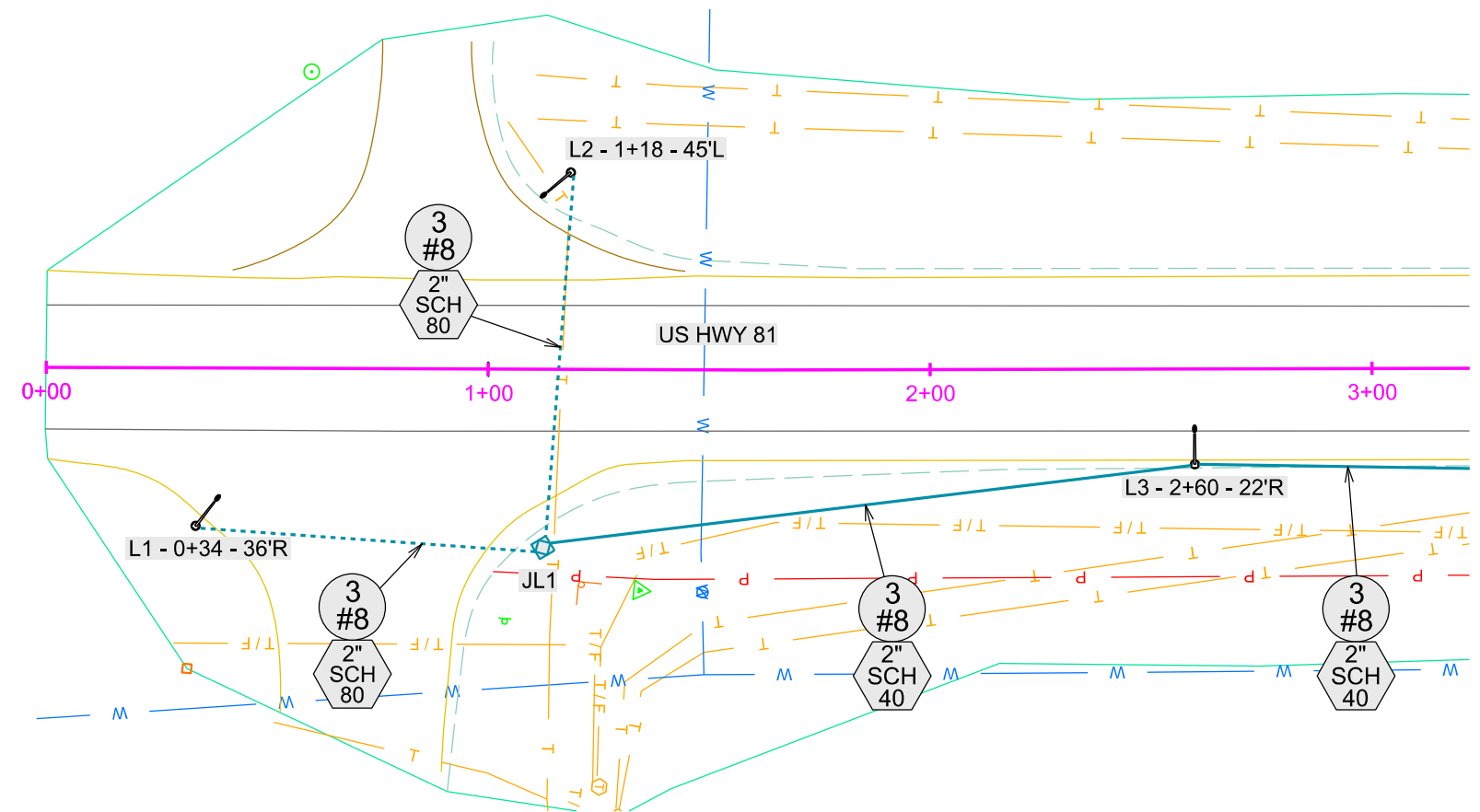
Note: All units in this report are in feet unless specified otherwise.

Point	Feature	Description	Northing	Easting	Elevation
L01	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272014.498	2717168.707	
L02	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272091.226	2717080.809	
L03	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272238.184	2717132.823	
L04	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272435.242	2717069.066	
L05	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272646.584	2717096.773	
L06	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	272843.033	2717027.815	
L07	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	273054.520	2717056.207	
L08	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	273253.620	2717036.614	
L09	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	273462.480	2717015.855	
L10	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	273659.528	2716948.482	
L11	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	273868.107	2716961.873	
L12	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	274074.536	2716897.046	
L13	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	274215.362	2716777.577	
L14	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	274426.872	2716675.753	
L15	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	274620.235	2716634.390	
L16	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	274814.845	2716545.949	
L17	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275005.432	2716483.790	
L18	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275184.684	2716373.274	
L19	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275399.357	2716406.906	
L20	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275588.388	2716402.473	
L21	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275793.730	2716358.357	
L22	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	275996.031	2716388.117	
L23	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	276195.126	2716437.847	
L24	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	276383.025	2716538.734	
L25	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	276595.570	2716522.963	
L26	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	276783.953	2716624.119	
L27	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	276996.615	2716608.320	
L28	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	277184.835	2716709.746	
L29	Point\Traffic\Lighting\P_Luminaire 8'	Luminaire Pole w/ 8' arm	277373.336	2716682.486	

LIGHTING LAYOUT US HWY 81

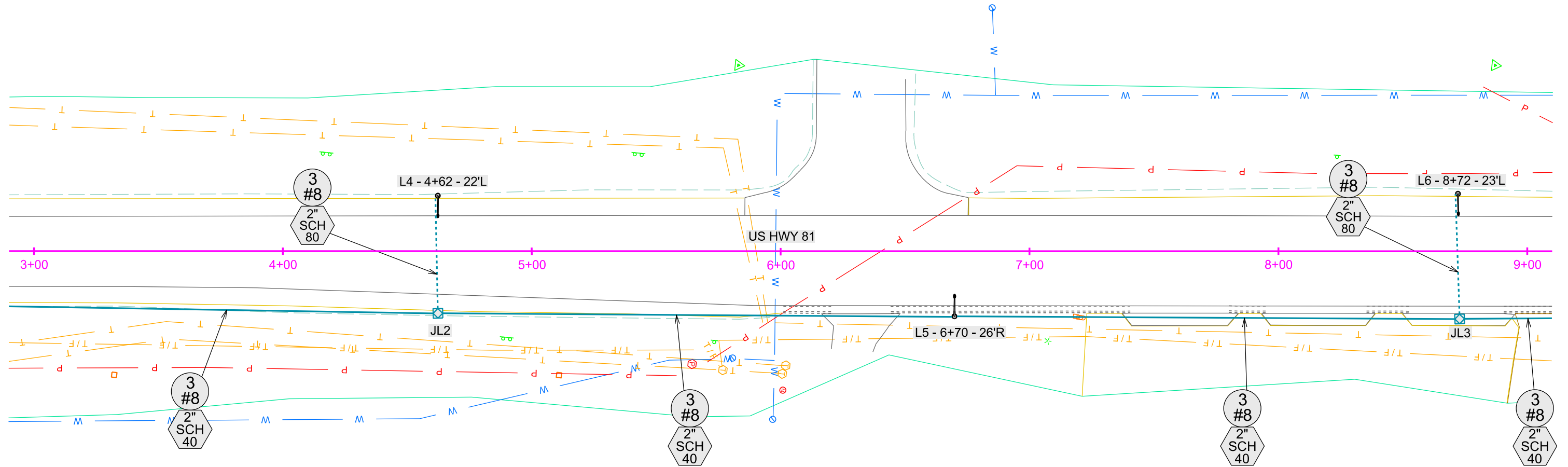


ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Breakaway Base Luminaire Pole w/8' Arm 50' Mounting Height (L1-L29)	29	EACH
	Roadway Luminaire, LED with P.E. (L1-L29)	29	EACH
	2' Diameter Footing (L1-L29)	261	FT
	Type 1 Electrical Junction Box (JL1-JL10)	10	EACH
	Electrical Service Cabinet	2	EACH
	Galvanized Steel Utility Pole Not a Bid Item	2	EACH
	Meter Socket Not a Bid Item	2	EACH
	2" Rigid Conduit, Schedule 40	5,425	FT
	2" Rigid Conduit, Schedule 80	865	FT
	1/C #6 AWG Copper Wire	2,020	FT
	1/C #8 AWG Copper Wire	17,090	FT
	2/C #10 AWG Copper Pole & Bracket Cable	1,885	FT



LIGHTING LAYOUT US HWY 81

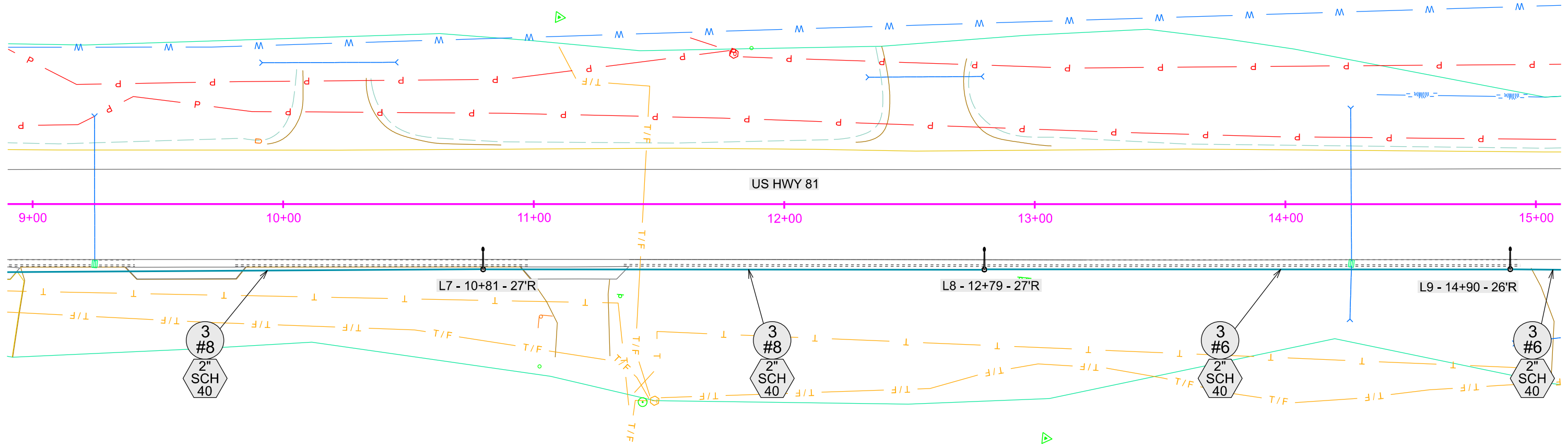
SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	11 of 28
Plotting Date: 03/21/2024			



LIGHTING LAYOUT

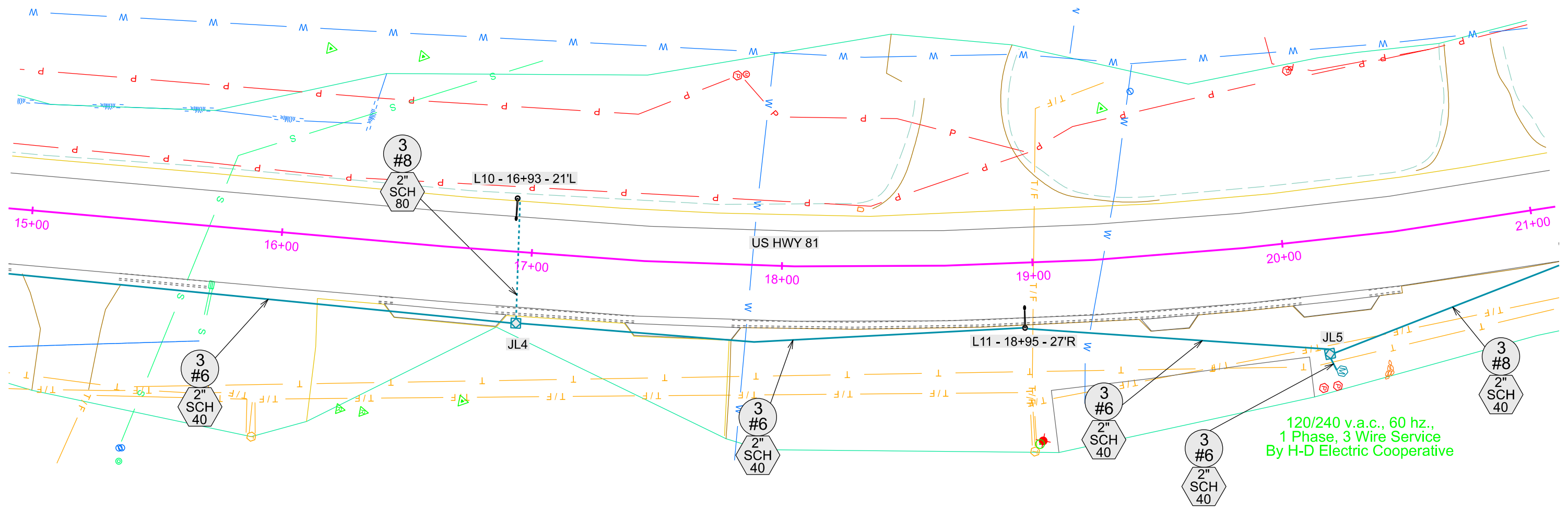
US HWY 81

SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	12 of 28
Plotting Date: 03/21/2024			



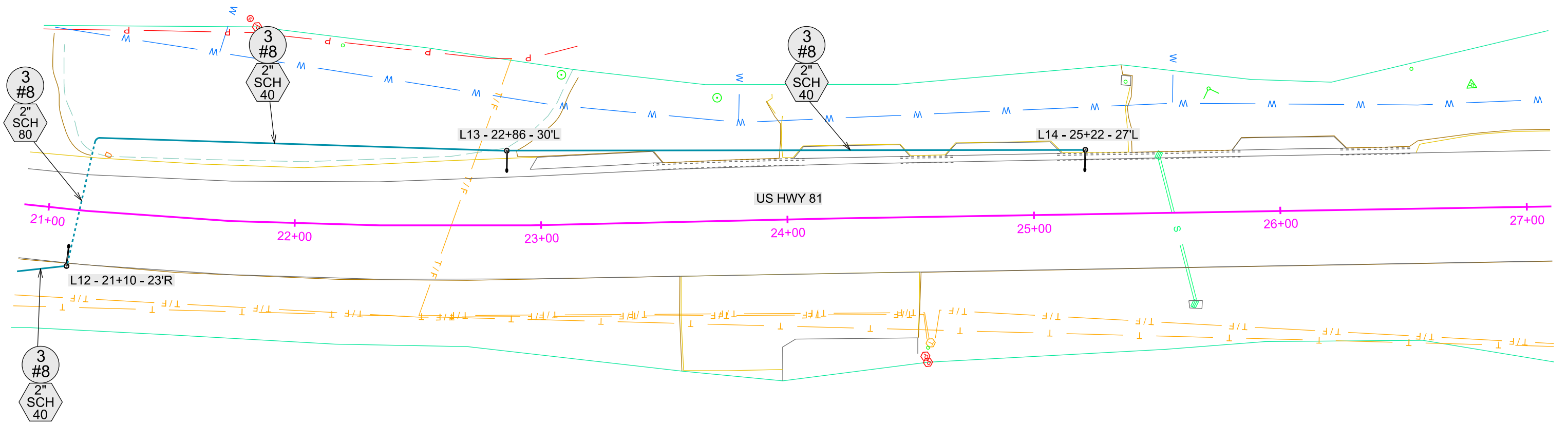
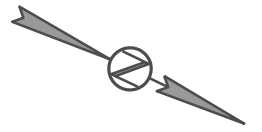
LIGHTING LAYOUT US HWY 81

SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	13 of 28
Plotting Date: 03/21/2024			



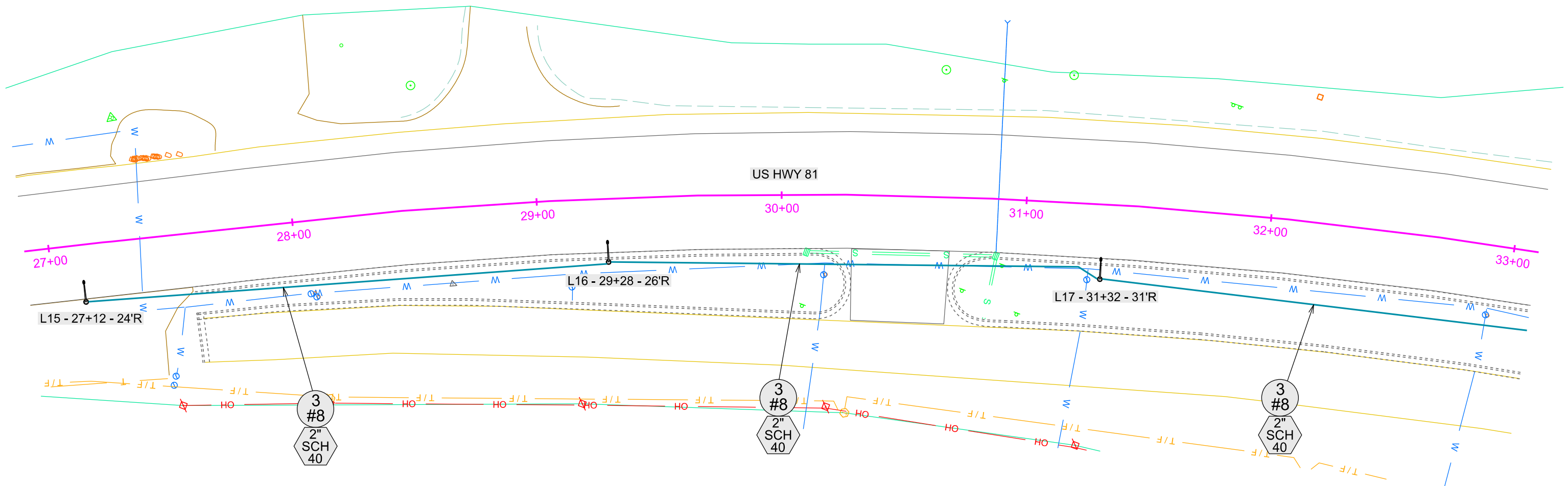
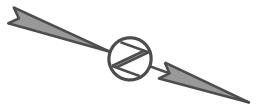
LIGHTING LAYOUT US HWY 81

SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	14 of 28
Plotting Date: 03/21/2024			



LIGHTING LAYOUT US HWY 81

SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	15 of 28
Plotting Date: 03/21/2024			

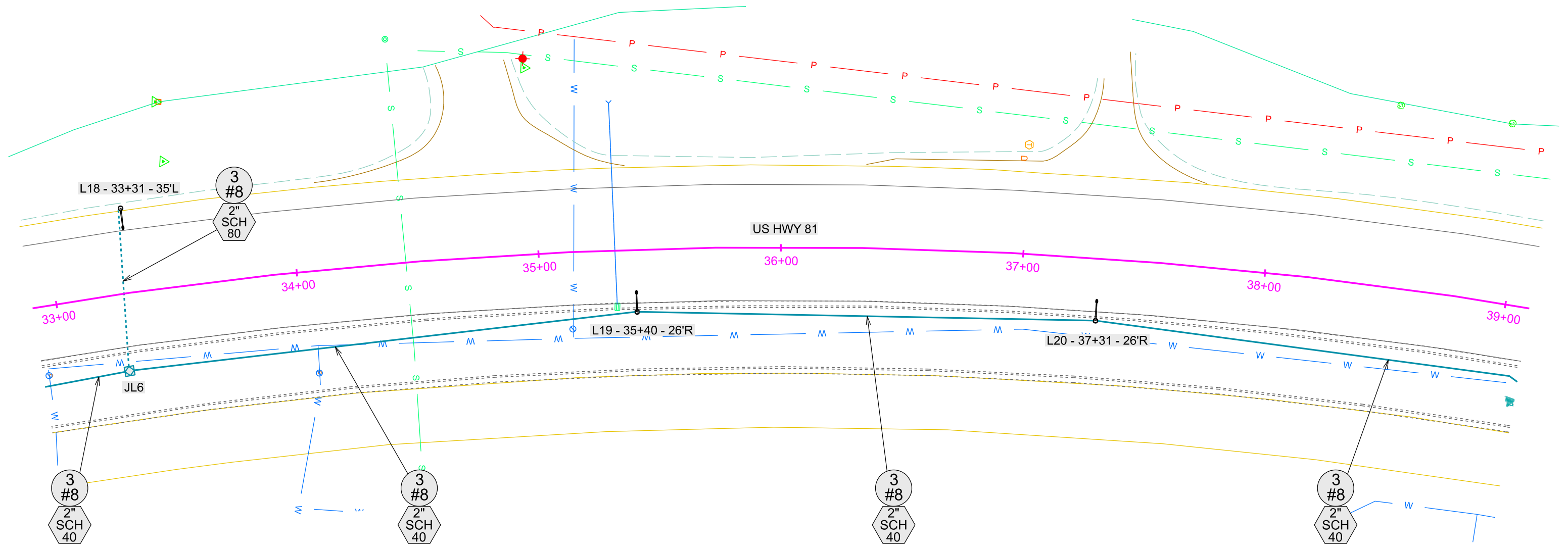


LIGHTING LAYOUT US HWY 81



PROJECT	SECTION	SHEET
NH 0081(129)131	Non	16 of 28

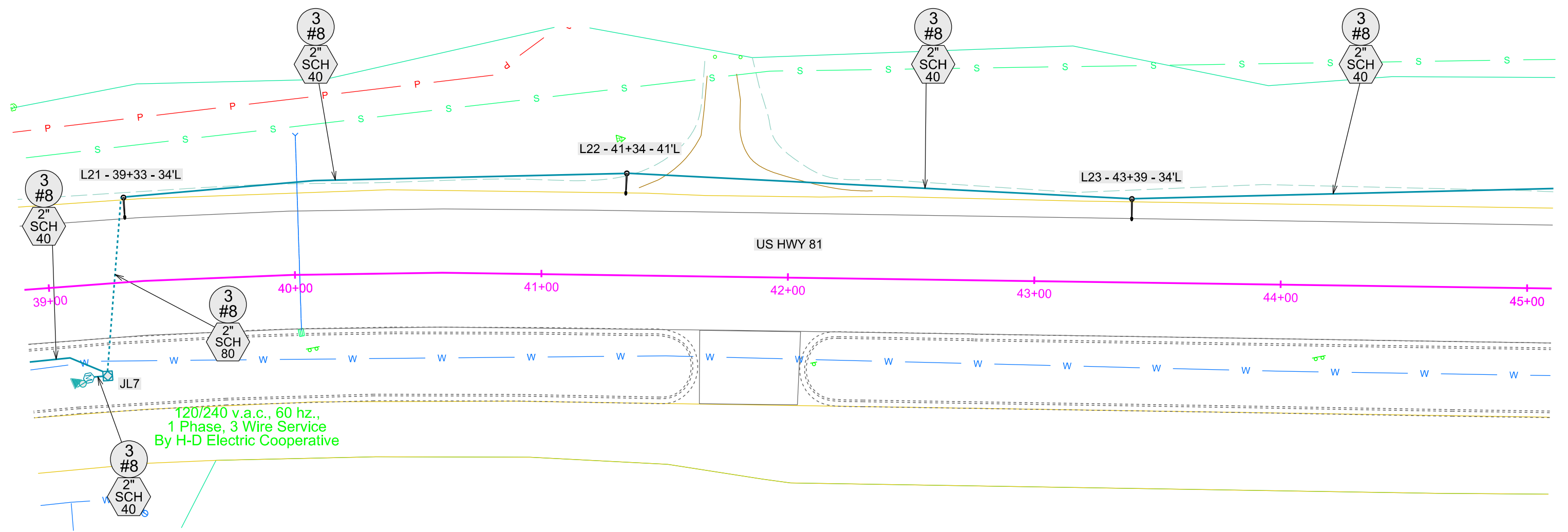
Plotting Date: 03/21/2024



LIGHTING LAYOUT

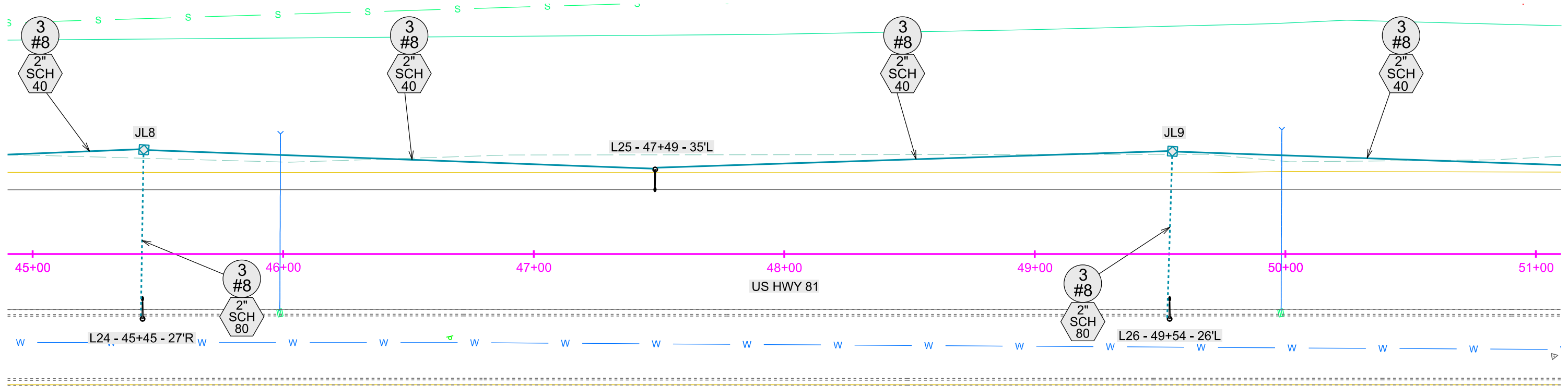
US HWY 81

SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	17 of 28
Plotting Date: 03/21/2024			



LIGHTING LAYOUT US HWY 81

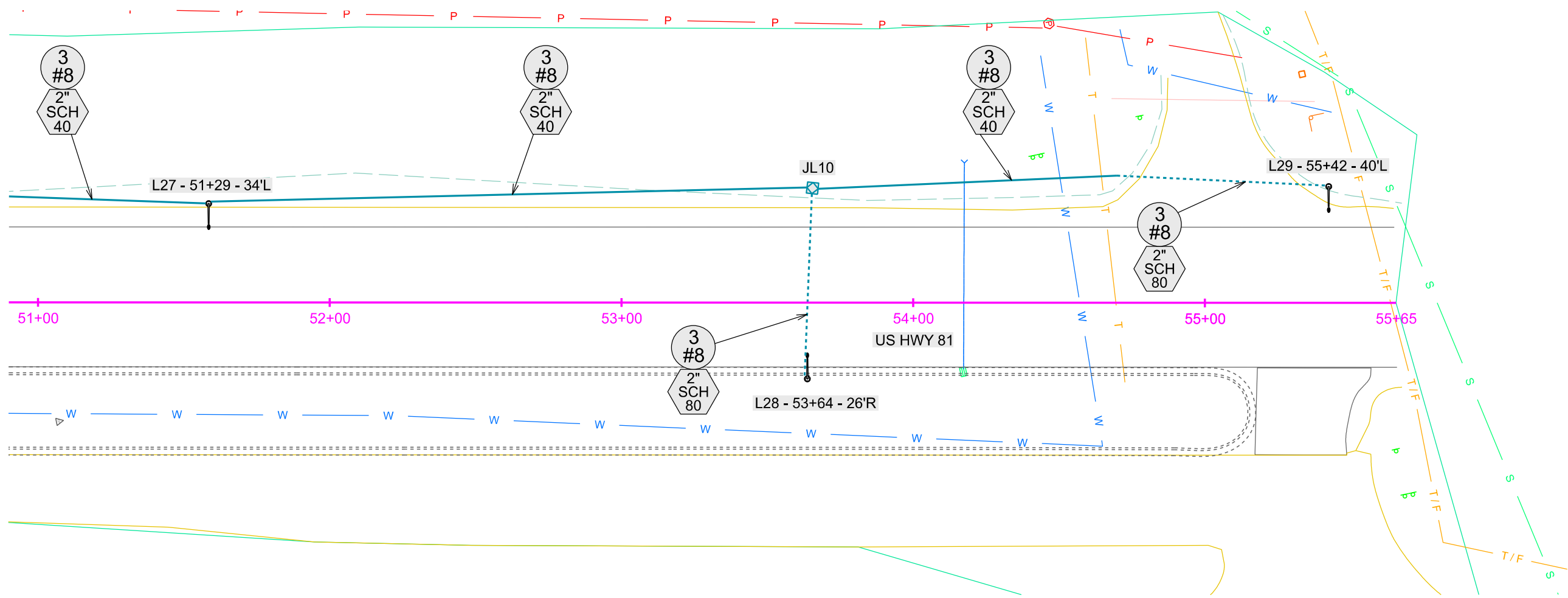
SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	18 of 28
Plotting Date: 03/21/2024			



LIGHTING LAYOUT US HWY 81

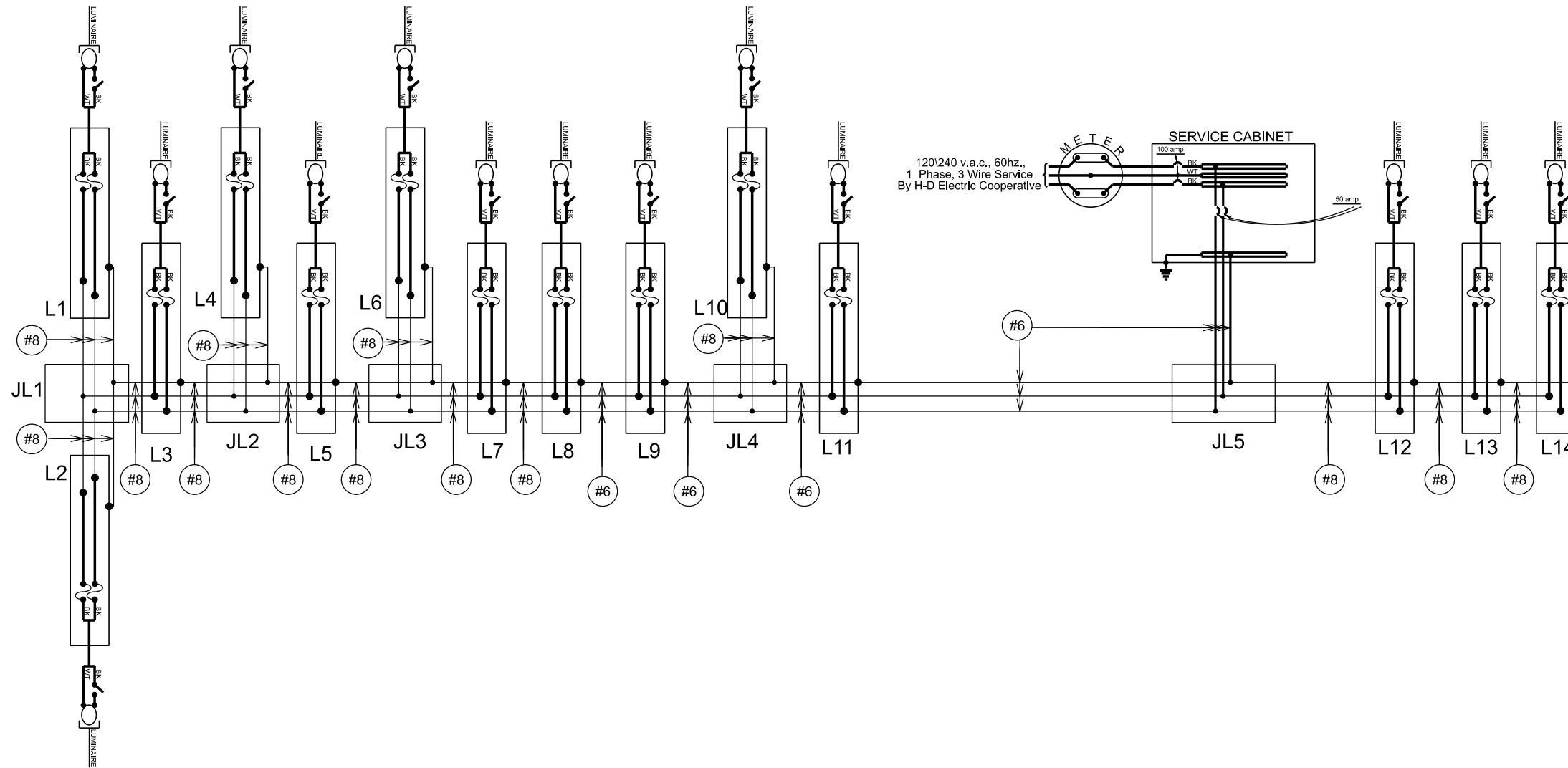
SD DOT	PROJECT	SECTION	SHEET
	NH 0081(129)131	Non	19 of 28

Plotting Date: 03/21/2024



WIRING DIAGRAM

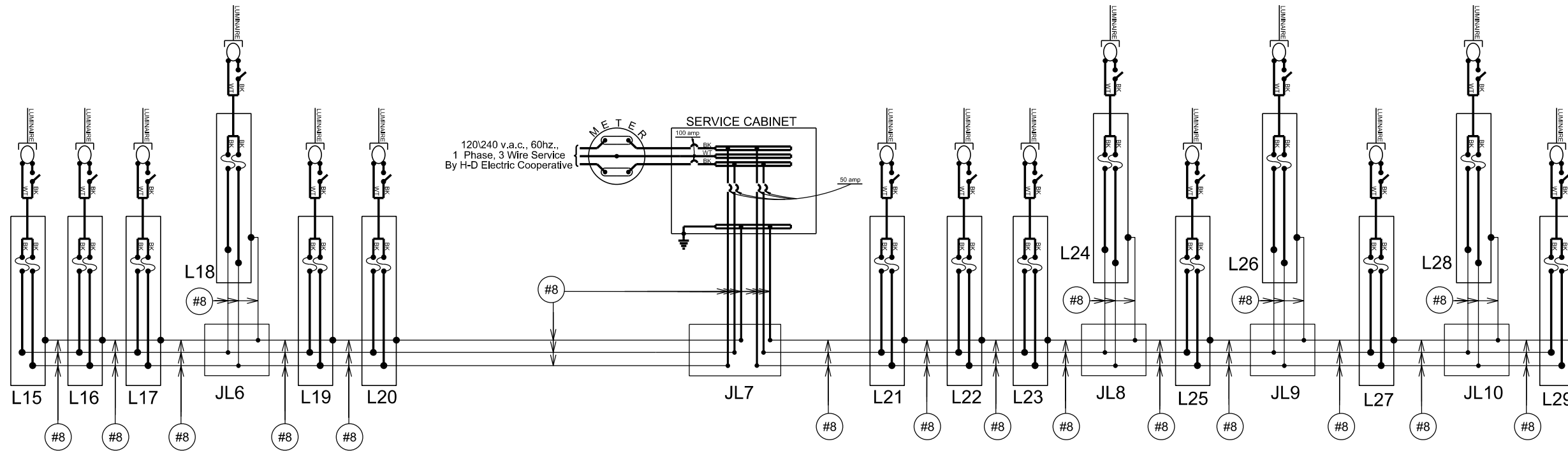
	PROJECT	SECTION SHEET
	NH 0081(129)131	Non 20 of 28
Plotting Date: 03/21/2024		






- LEGEND:**
- FUSE: 10 amp.
 - LUMINAIRE: LED
 - PHOTOCELL
(Typical of all)

NOTE:
 All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE. Quantities for bonding conductors are not included in these plans.

WIRING DIAGRAM



LEGEND:

-  FUSE: 10 amp.
-  LUMINAIRE: LED
-  PHOTOCELL
(Typical of all)

NOTE:

All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE. Quantities for bonding conductors are not included in these plans.

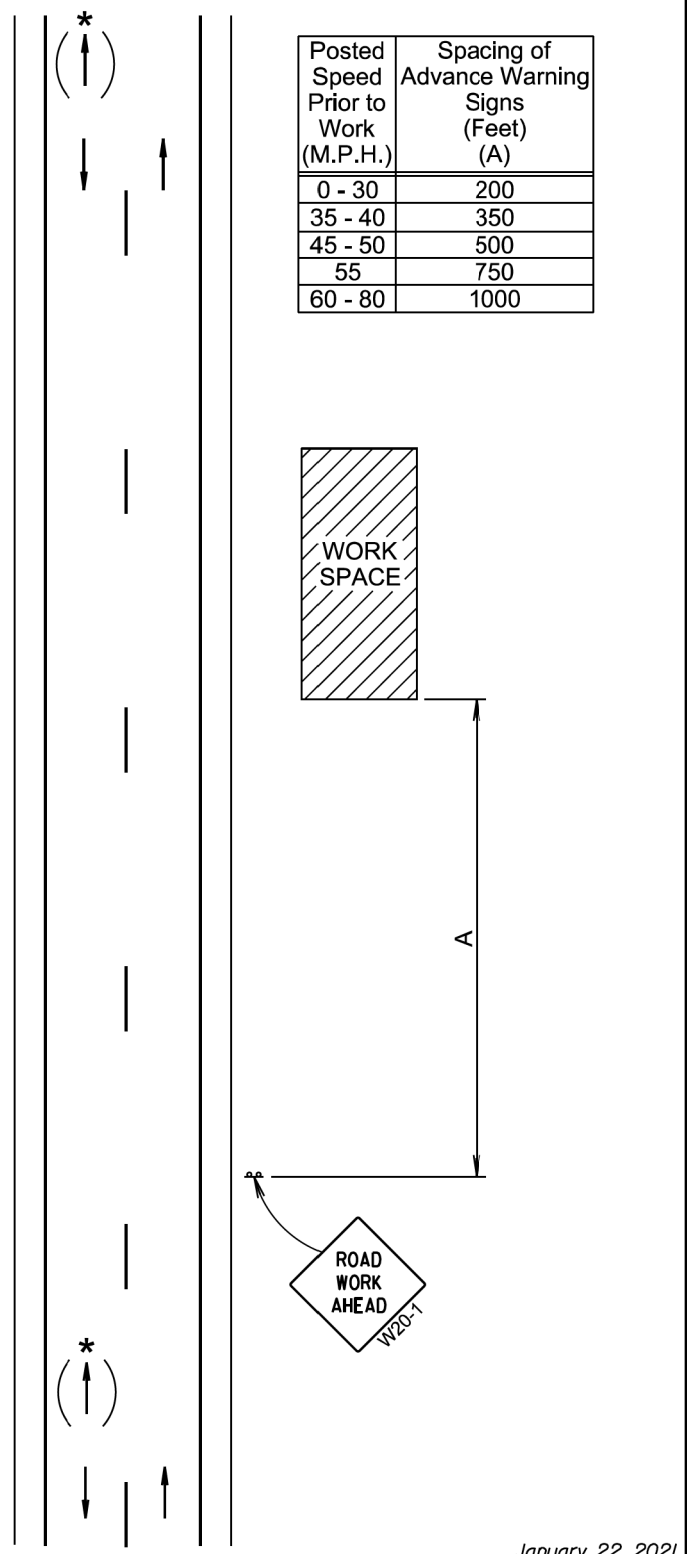
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



January 22, 2021

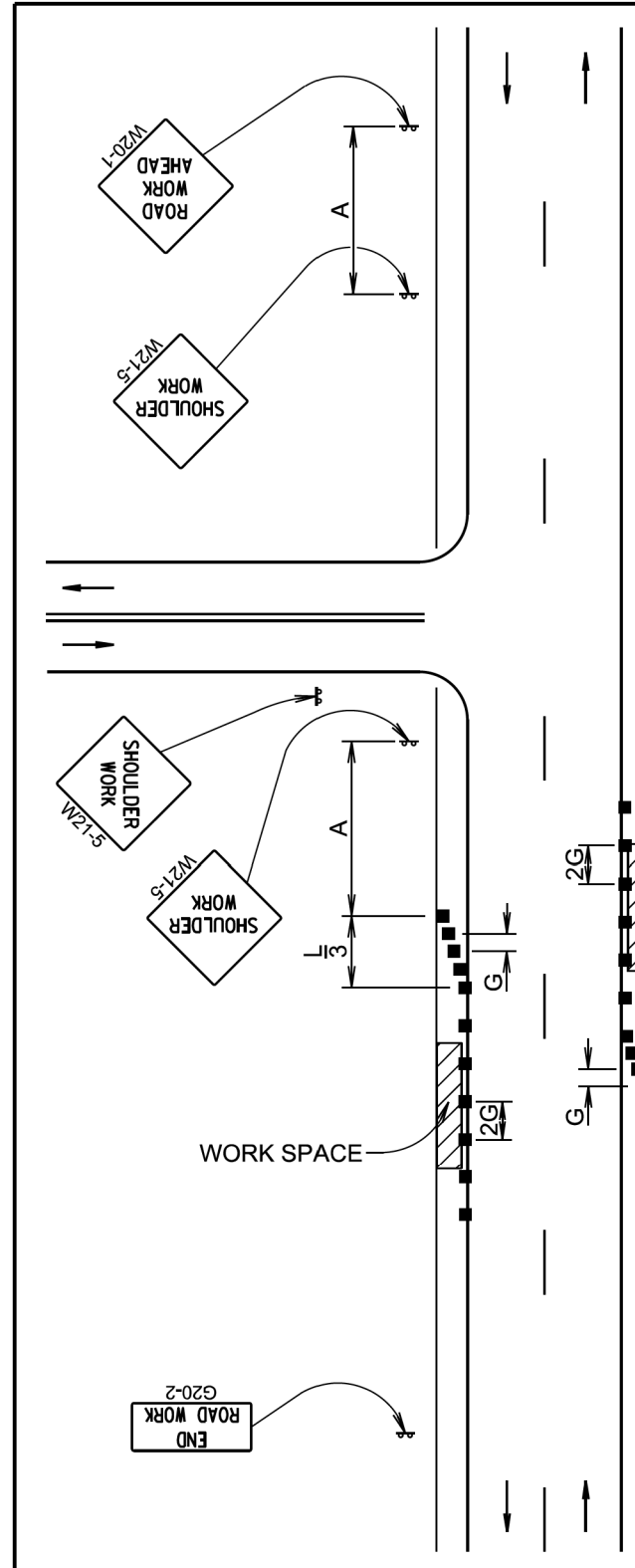
Published Date: 2024

SD DOT

WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK G20-2

The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

Published Date: 2024

SD DOT

WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

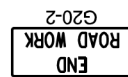
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices will be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

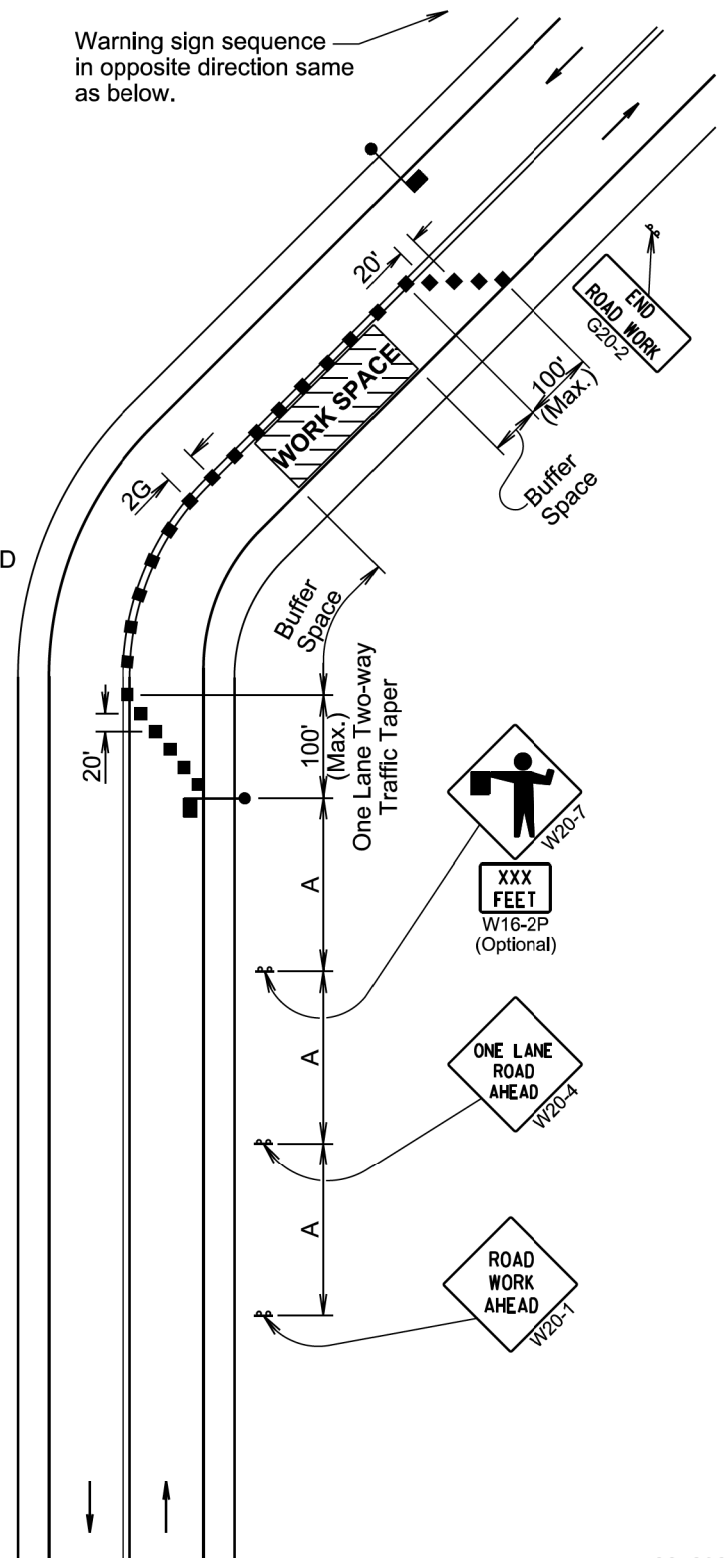


Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

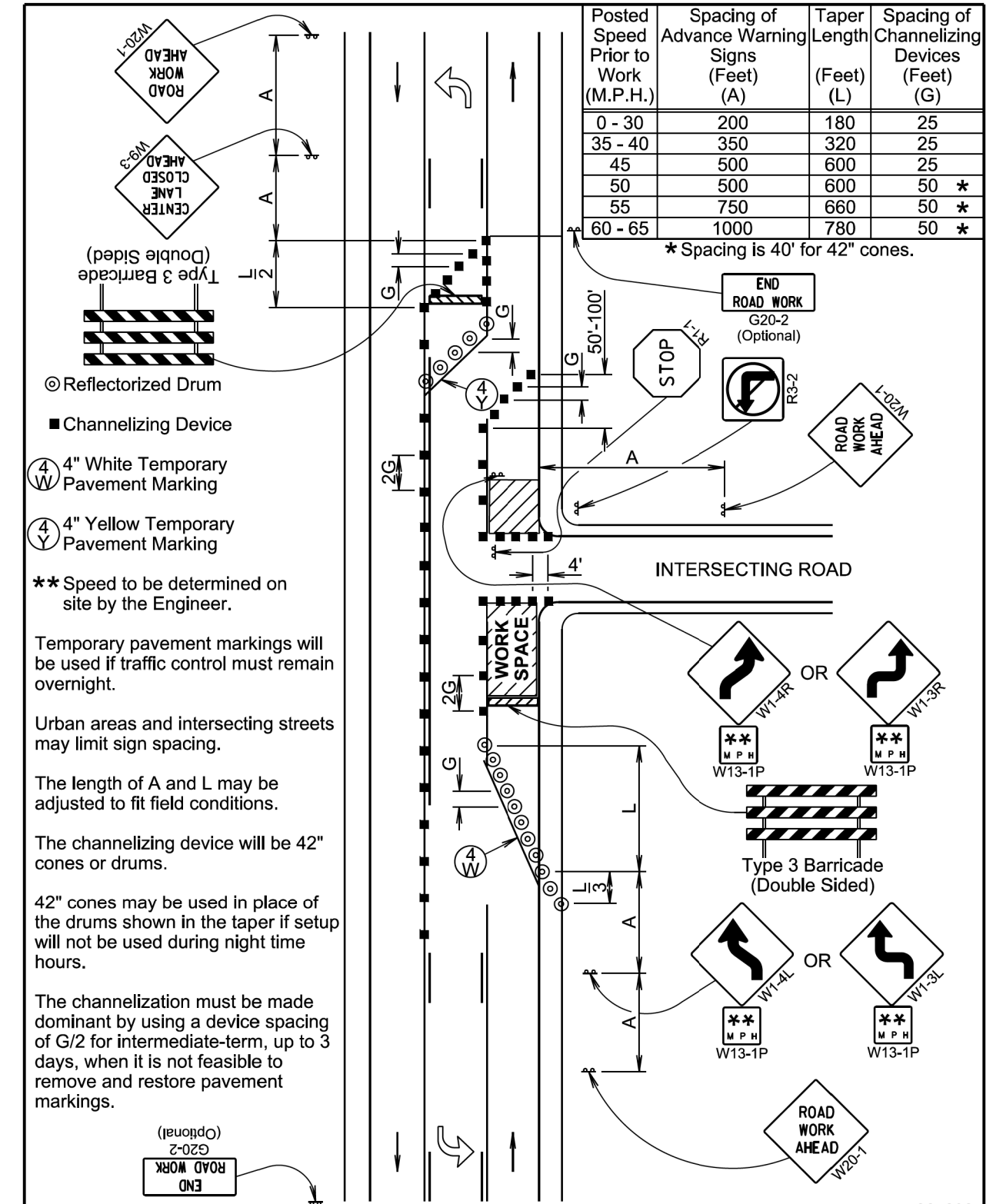
The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



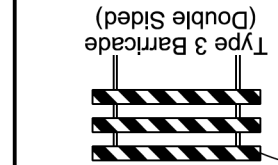
January 22, 2021

Published Date: 2024	SD DOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.



- Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking
- ④ 4" Yellow Temporary Pavement Marking

** Speed to be determined on site by the Engineer.

Temporary pavement markings will be used if traffic control must remain overnight.

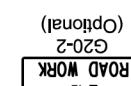
Urban areas and intersecting streets may limit sign spacing.

The length of A and L may be adjusted to fit field conditions.

The channelizing device will be 42" cones or drums.

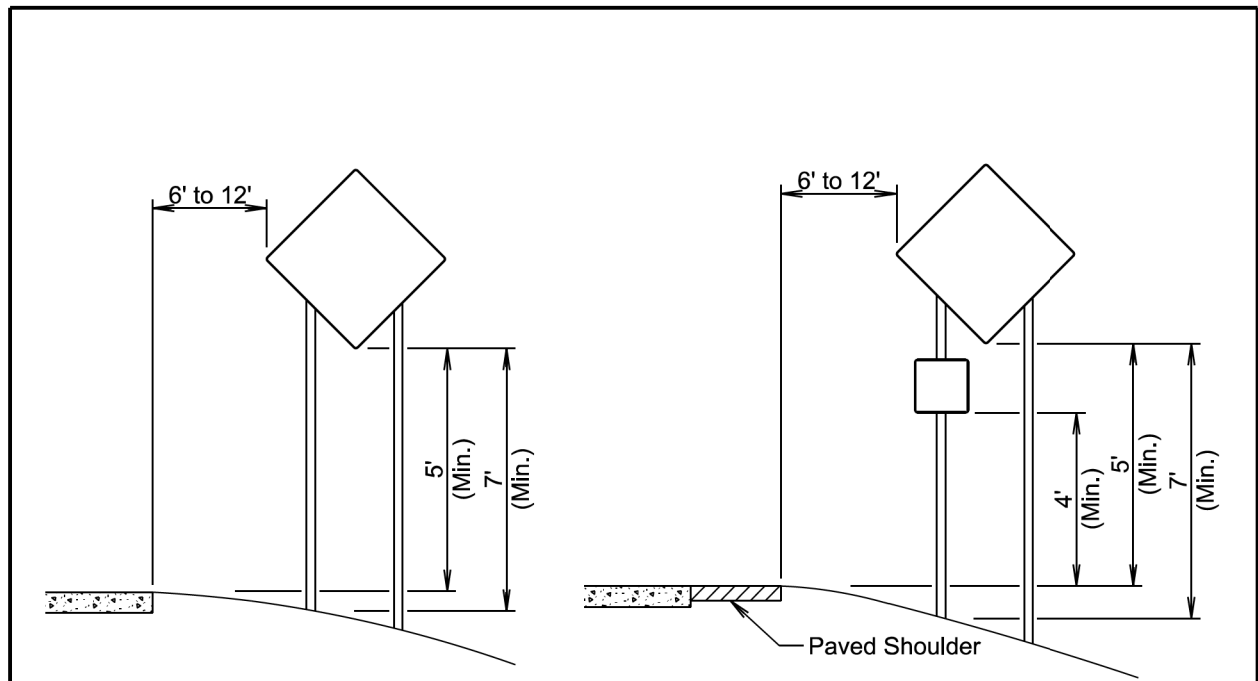
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

The channelization must be made dominant by using a device spacing of G/2 for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings.



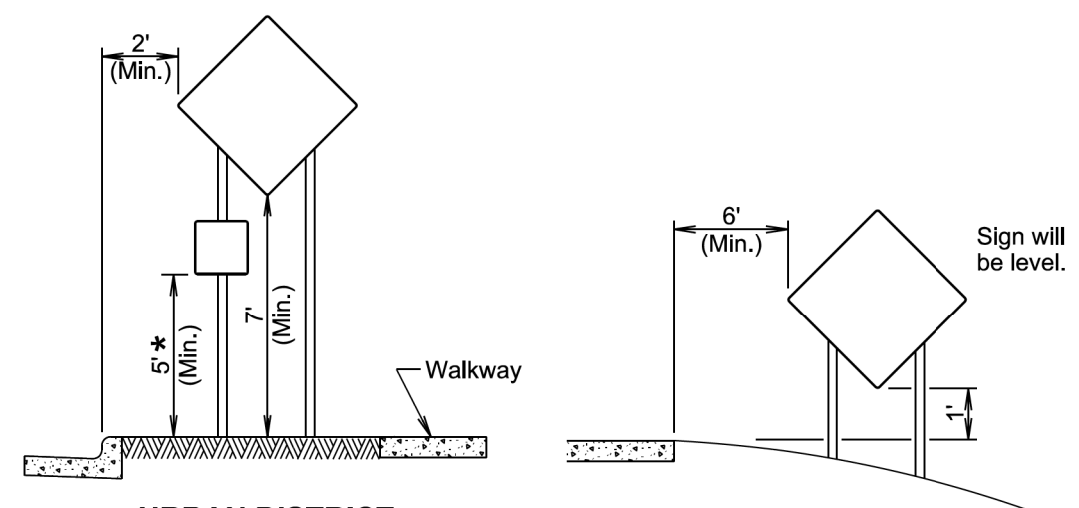
January 22, 2021

Published Date: 2024	SD DOT	3-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.53
			Sheet 1 of 1



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



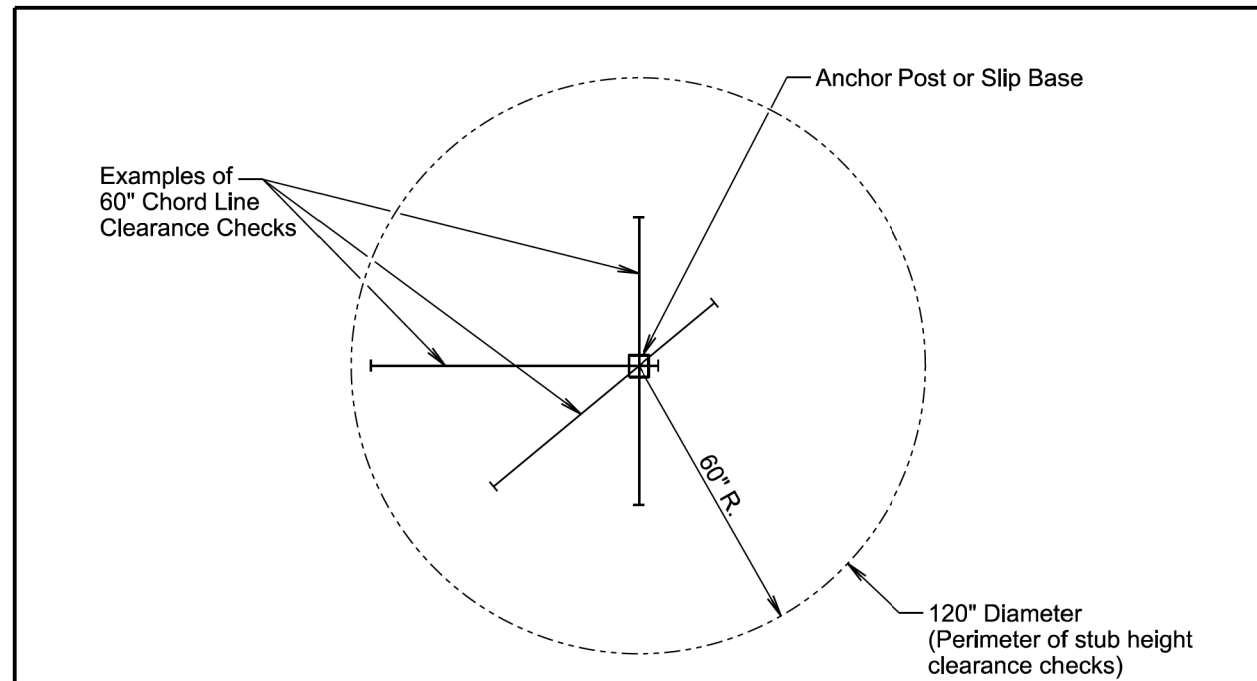
URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

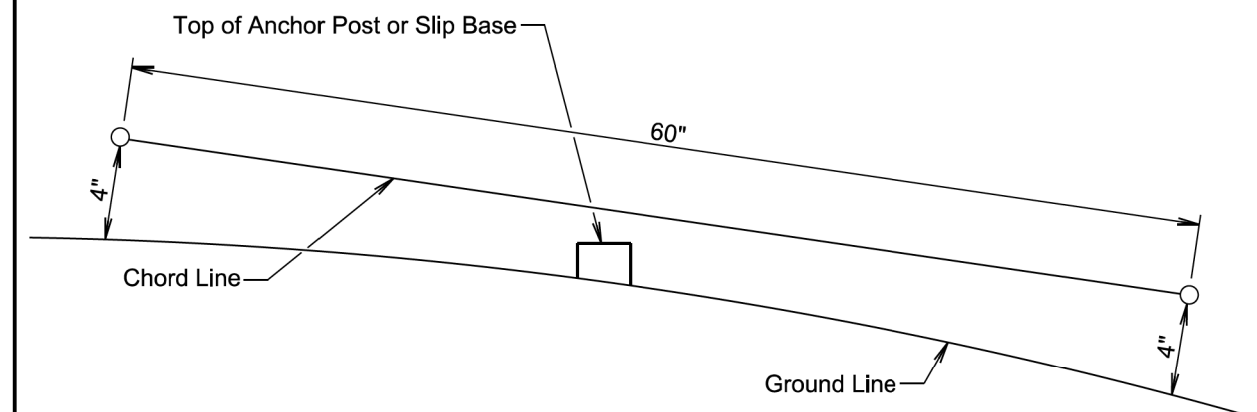
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	SD DOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



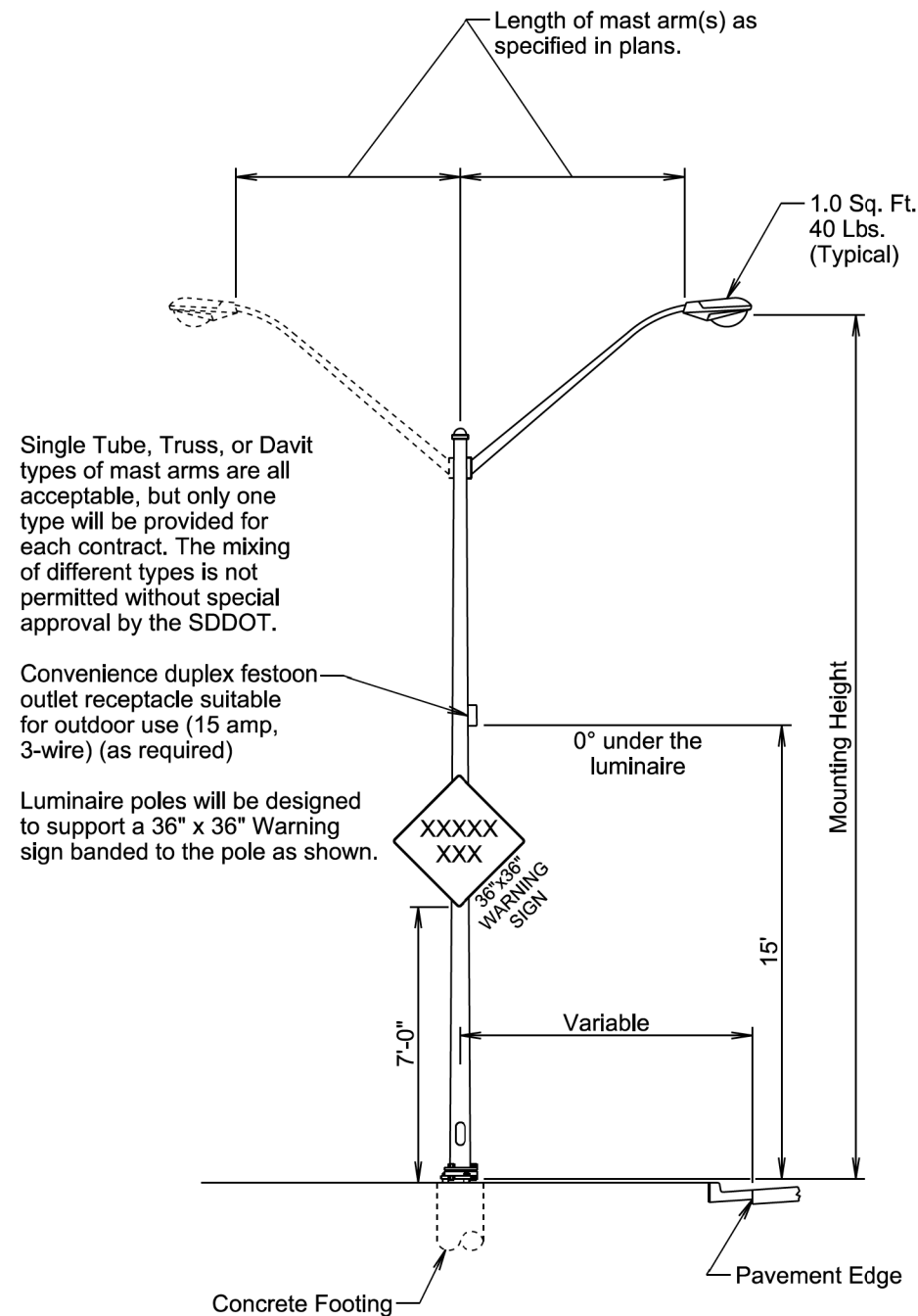
ELEVATION VIEW

GENERAL NOTES:

- The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.
- At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.
- The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

Published Date: 2024	SD DOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



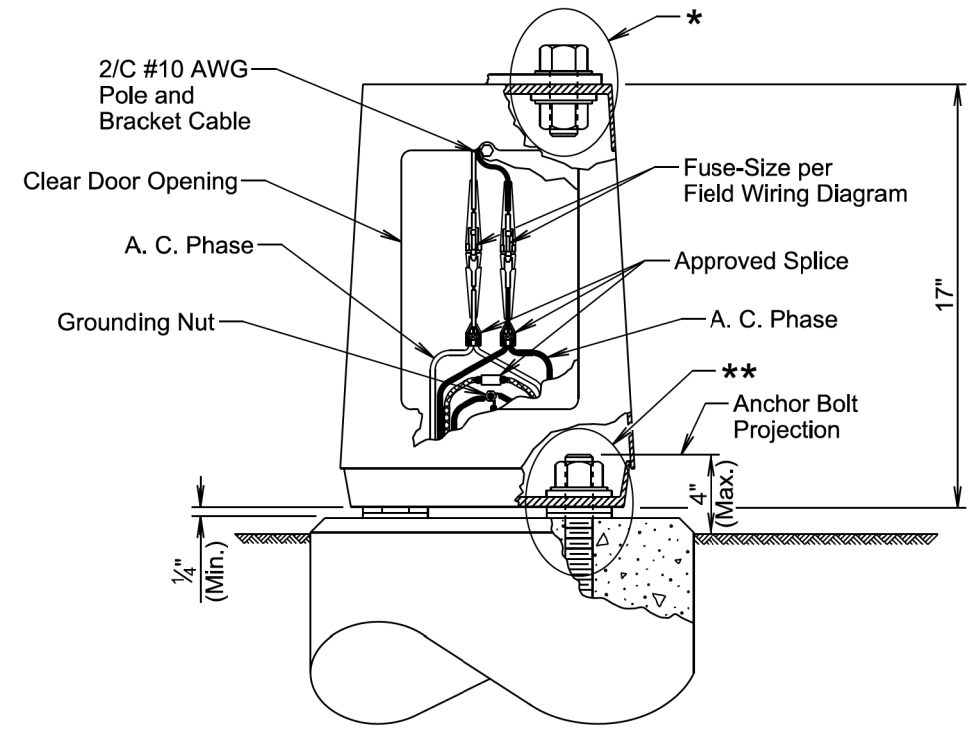
Single Tube, Truss, or Davit types of mast arms are all acceptable, but only one type will be provided for each contract. The mixing of different types is not permitted without special approval by the SDDOT.

Convenience duplex festoon outlet receptacle suitable for outdoor use (15 amp, 3-wire) (as required)

Luminaire poles will be designed to support a 36" x 36" Warning sign banded to the pole as shown.

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S D D O T	STEEL ROADWAY LUMINAIRE POLE WITH MAST ARM(S)	PLATE NUMBER 635.01
		Sheet 1 of 1
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GENERAL NOTES:

Base details are provided for example only and are not intended to be a complete design.

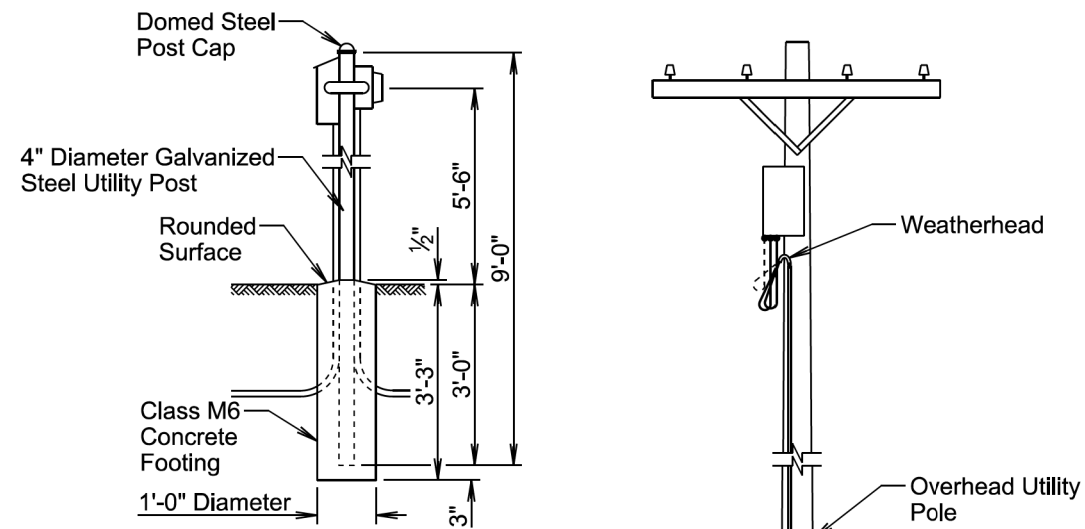
Fused connectors will be breakaway type.

* Hardware connecting the pole to the base will be installed in accordance with the manufacturer's recommendation.

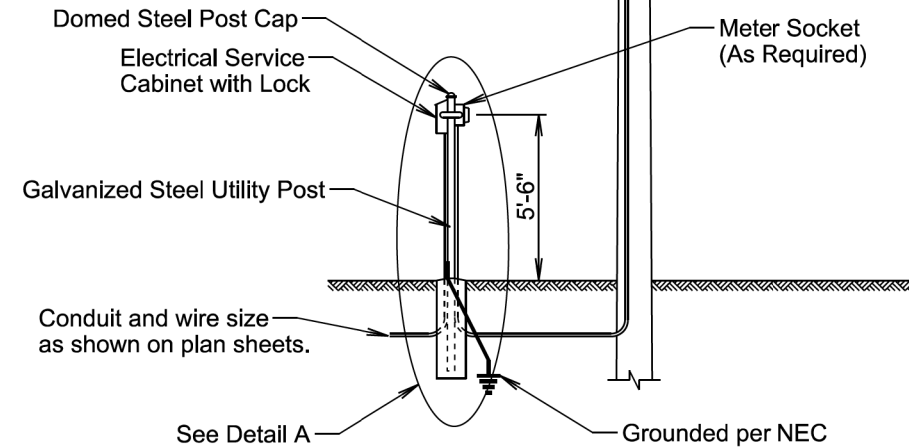
** Hardware connecting the base to the footing will be installed in accordance with the manufacturer's recommendation. The Contractor will install leveling devices in accordance with the manufacturer's recommendation if shimming is necessary to install the light poles plumb and level. The washers and shims will be installed around the anchor bolts.

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S D D O T	ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE	PLATE NUMBER 635.21
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DETAIL A



ELEVATION VIEW

GENERAL NOTES:

The service cabinet will include an externally mounted 15A receptacle outlet. The receptacle will be housed in a lockable NEMA 3R enclosure. The Contractor will furnish a lock and keys to the Engineer as directed.

The concrete for the post footing will be class M6 concrete.

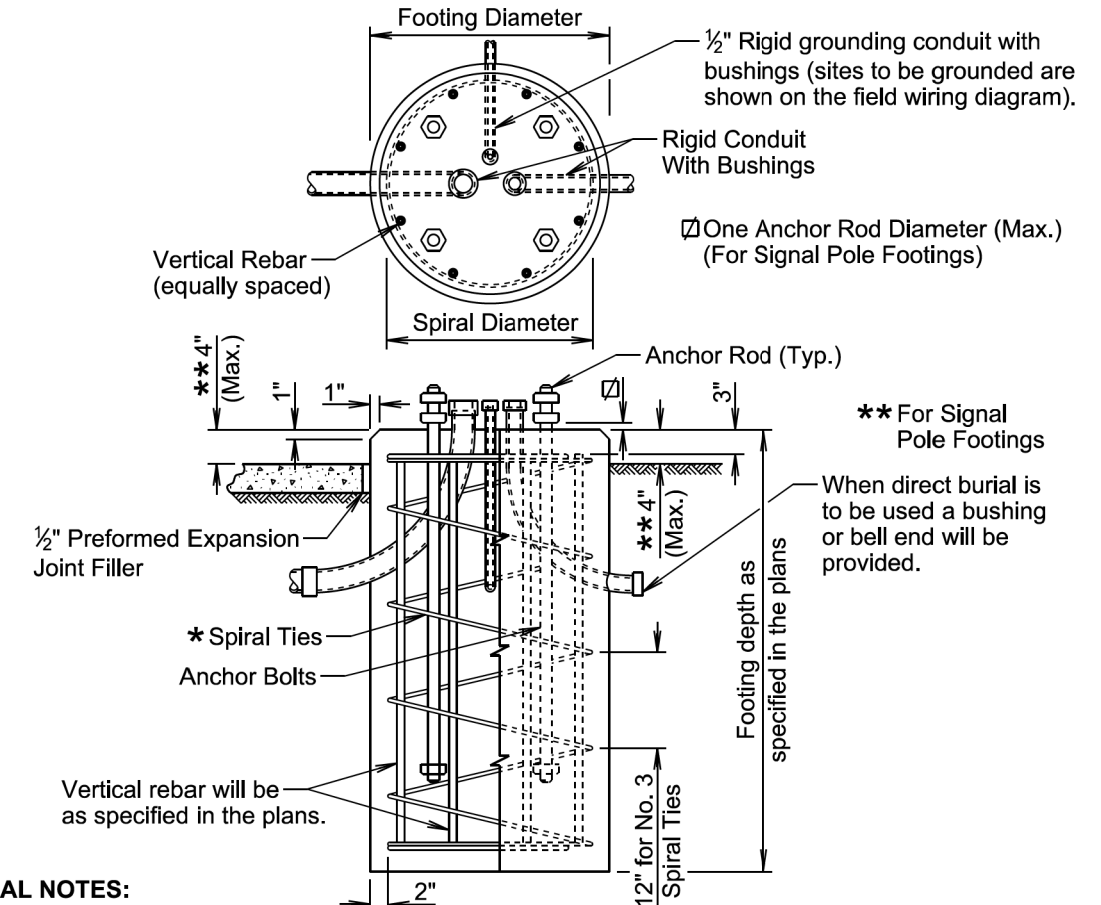
The 4" diameter galvanized steel utility post will be 9' long and will be in conformance with AASHTO Standard Specifications M181. The post will be Type 1 and either Grade 1 or Grade 2. The domed steel post cap will be in conformance with AASHTO Standard Specifications M181 and will be Type 1.

The Contractor will contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket if required, conduit, and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet".

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Published Date: 2024	SD DOT	GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE	PLATE NUMBER 635.35
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GENERAL NOTES:

* Circular ties may be used in lieu of the spiral ties. The No. 3 ties will be spaced 12 inches apart except for the top two which will be spaced 6 inches apart. The ties will be lapped 18 inches and the laps will be staggered around the cage.

Spiral ties will have 1-1/2 extra turns at each end.

See Section 985 of the Specifications for footing materials.

Conduits and bushings may project 2 1/2 inches to 6 inches above footing for fixed base poles but will not project above the slip plane or fracture plane for breakaway poles.

Conduits will be sealed water-tight during all phases of construction until poles are in place.

The anchor rods will fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.

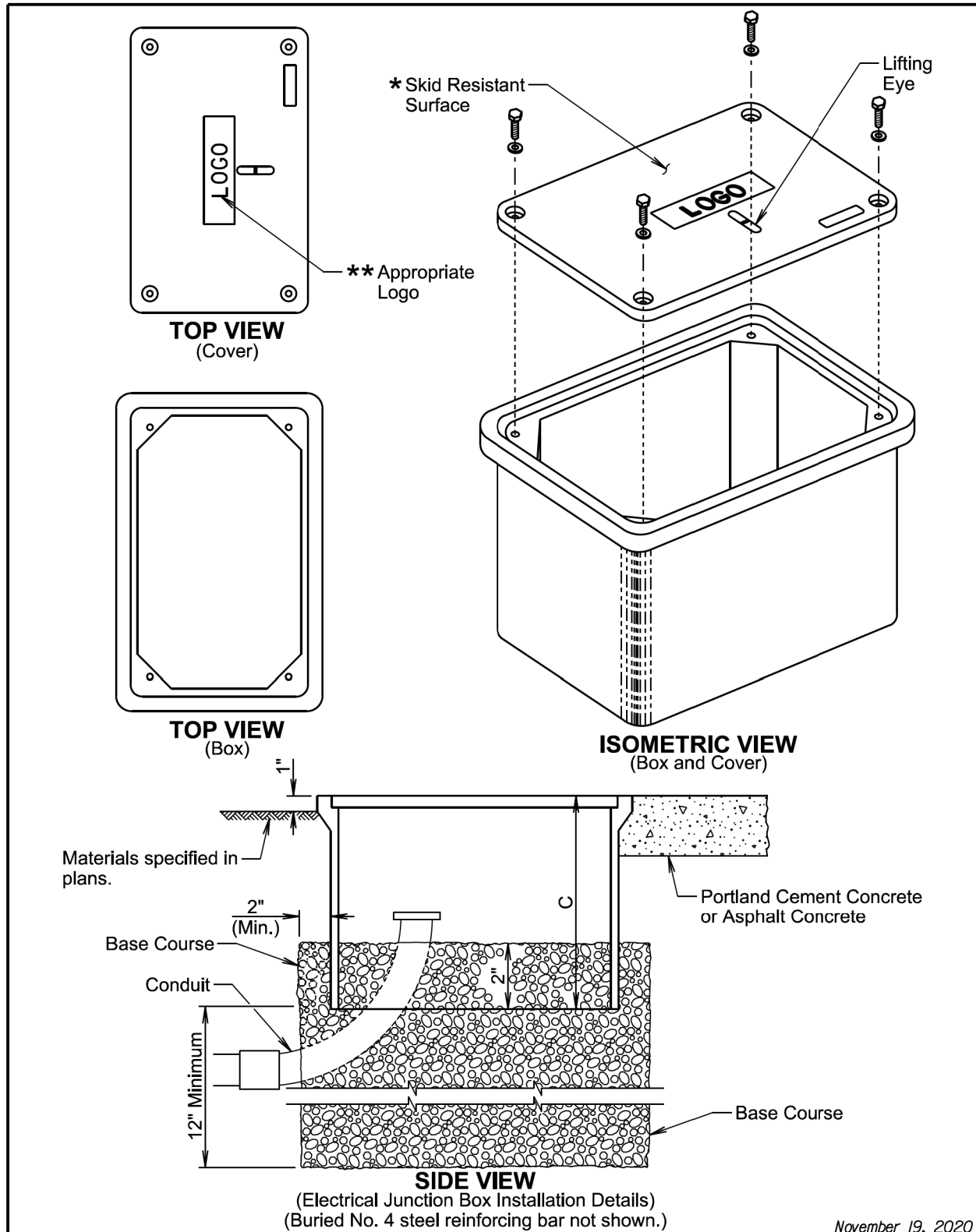
Costs of conduit and conduit bushings shown on footing detail will be incidental to the footing bid item(s).

The pole will not be installed until the concrete has attained design strength (4000 psi).

The contour of the area surrounding the breakaway pole will be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

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Published Date: 2024	SD DOT	POLE FOOTING	PLATE NUMBER 635.55
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Published Date: 2024	SD DOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

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.

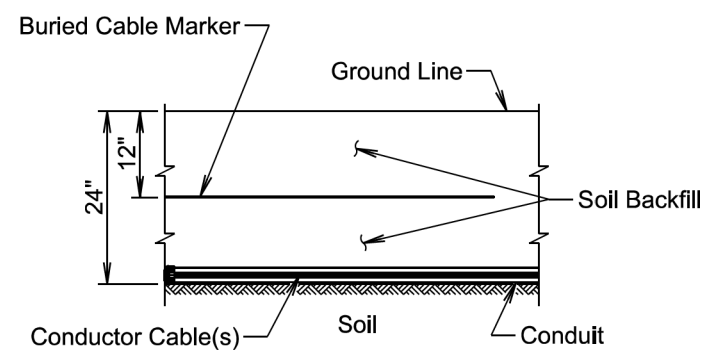
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE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

The electrical junction boxes will be UL listed.

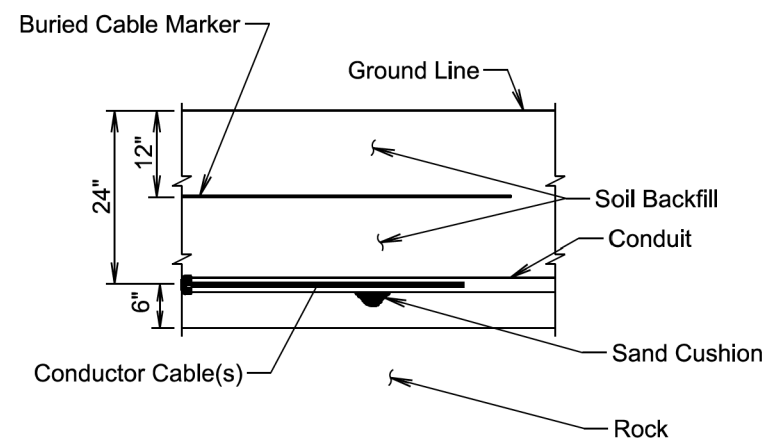
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for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

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Published Date: 2024	SD DOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
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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.

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SD DOT	CONDUIT INSTALLATION	PLATE NUMBER 635.76
		Sheet 1 of 1

Published Date: 2024