

August 6, 2024

TO: Interested Bidders

**ADDENDUM 2**

RE: **IM 0907(93)310, Aurora County – PCN 09P1**  
**Road Closure Gates on I90 at Exit 310 (US281)**

The letting date has changed. The new letting date will be at **1:30 P.M. on Tuesday, August 13, 2024**. See below for details.

The following addenda to the contract proposal and plans will be inserted and made a part of your contract proposal and plans for the above referenced project:

**PROPOSAL**

Discard the DOT-123 Contract Proposal form and replace with the enclosed revised DOT-123 Contract Proposal form.

**PLANS**

Discard Sheets 2, 4, 18-21, 26-27, 39-40, 43-44 & 47-48 and replace with the enclosed revised Sheets 2, 4, 18-21, 26-27, 39-40, 43-44 & 47-48.

Quantities for items on the DOT-123 Contract Proposal form and quantities on Sheet 2 of the plans were revised according to the table below as shown for Sheet 2.

Other sheets in the plans were also revised as described in the table below.

Sheet	Revision	Date
2	Change to Quantities: -635E0050 Breakaway Base Luminaire Pole with Arm, 50' Mounting Height, increased 16 to 18 -635E5020 2' Diameter Footing increase 258 to 274 -635E5301 Type 1 Electrical Junction Box, increased from 15 to 17 -635E8120 2" Rigid Conduit, Schedule 40, increased 11175 to 11190 -635E8220 2" Rigid Conduit, Schedule 80, increased from 1290 to 1305 -635E9011 1/C #1 AWG Copper Wire, increased 9145 to 9165 -635E9010 1/C #0 AWG Copper Wire, increased from 6920 to 7000 -635E9020 1/C #10 AWG Copper Wire, increased from 19875 to 19975 -635E9710 2/C #10 AWG Copper Pole and Bracket Cable, decreased from 2990 to 2710	8-5-2024 - RR
4	Revised Plan note for "Luminaires", and "Table of Footing Data"	8-5-2024 - RR
18-19	Revised tables to reflect addition of Luminaire Poles L27 and L28	8-5-2024 - RR
20	Changes to plan Overview	8-5-2024 - RR
21	Revised EOQ table	8-5-2024 - RR
26,27,39,40	Changes to wire call outs, change of pole name labels, SGL1 and SGL4 changed from 50' twin arm pole to 40' single arm pole, Added Pole L27 and L28.	8-5-2024 - RR
43-44	Addition of poles to wiring diagrams, change of pole name labels	8-5-2024 - RR
47-48	Special Detail for Closure Gates changed to show single arm with 40' Mounting Height Poles	8-5-2024 - RR

Sealed bids will be received by the SDDOT through the US Postal Service at PO Box 1206 until **8:00 A.M. on Tuesday, August 13, 2024** or may be hand delivered (in person or by a package delivery service) to the Department of Transportation, Mitchell Regional Office located at 1300 S Ohlman St, Mitchell, SD 57301 until **1:30 P.M. on Tuesday, August 13, 2024**. Bid must be submitted in an envelope clearly indicating that the contents are a bid and the letting for which the bid applies.

Proposal and Plans (and Addenda, when applicable) can be accessed at the following link: <https://apps.sd.gov/HC65BidLetting/RegionDefault.aspx> Prior to submitting a bid, it is the bidder's responsibility to examine the project in accordance with Section 2.5 of the specifications. It is also the bidder's responsibility to acknowledge and account for any addenda issued prior to bid opening.

Very truly yours,

**DEPARTMENT OF TRANSPORTATION**

Travis Dressen, Region Engineer

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Monte Rice, Region Design Engineer

cc: Bennett – Construction and Maintenance  
Bartlett/Rapp - Road Design - Utilities  
B. Hoffman – Bid Letting  
R. Johnson/Paul/Kruger – Operations Support  
Hudecek – Certification  
Hansen – Civil Rights  
Reiss – Planning & Programs  
Peppel/Holthaus/Brandner – Mitchell Area  
Weisz – Operations  
Horstman – Materials  
Leiferman – Project Development

**SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION  
CONTRACT PROPOSAL**

DOT-123  
February 2021  
1 of 2  
Rev. 7/31/24 MR  
Rev. 8/6/24 MR

CODE	PROJECT			MAINT UNIT	CONTROL REFERENCE	AFE	FUNCTION	BEGIN MRM	END MRM
	PRE	ROUTE	AGR						
	IM	0907	93		310	09P1			

**CITY AND/OR COUNTY:** Aurora County

**BUDGET SOURCE:** Construction Program

**REGION MATERIALS CERTIFICATION REQUIRED:**  YES  NO **WIP #:** \_\_\_\_\_  
**CERTIFIED INSPECTORS/TESTERS REQUIRED:**  YES  NO  
**TO BE INSTALLED ON CM&P:**  YES  NO

**TYPE, PURPOSE AND LOCATION OF WORK:** Road Closure Gates & Lighting on I90 at Exit 310 (US281).

**ESTIMATE OF QUANTITIES AND COST**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
009E0010	Mobilization	Lump Sum	LS	Lump Sum	
009E1000	Incentive/Disincentive Pay	0	Day	\$1,500.00	\$0.00
250E0010	Incidental Work	Lump Sum	LS	Lump Sum	
632E0014	1.75' Diameter Breakaway Support Concrete Footing	76	Ft		
632E1235	W6x20 Steel Post	135.6	Ft		
632E1240	W8x18 Steel Post	82.9	Ft		
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	471.6	SqFt		
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	24	SqFt		
634E0110	Traffic Control Signs	250	SqFt		
634E0120	Traffic Control Miscellaneous	Lump Sum	LS	Lump Sum	
634E0275	Type 3 Barricade	1	Each		
634E0420	Type C Advance Warning Arrow Board	1	Each		
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	18	Each		
635E0150	Breakaway Base Luminaire Pole with Twin Arms, 50' Mounting Height	10	Each		
635E3700	Roadway Luminaire, LED with Photoelectric Cell	42	Each		
635E4010	1 Section Vehicle Signal Head	12	Each		
635E5020	2' Diameter Footing	274	Ft		
635E5301	Type 1 Electrical Junction Box	17	Each		
635E5400	Electrical Service Cabinet	2	Each		
635E8120	2" Rigid Conduit, Schedule 40	11190	Ft		
635E8220	2" Rigid Conduit, Schedule 80	1305	Ft		
635E9010	1/C #0 AWG Copper Wire	7000	Ft		
635E9011	1/C #1 AWG Copper Wire	9165	Ft		
635E9012	1/C #2 AWG Copper Wire	3800	Ft		
635E9018	1/C #8 AWG Copper Wire	10460	Ft		
635E9020	1/C #10 AWG Copper Wire	19975	Ft		
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	2710	Ft		
900E0045	Drop Arm Road Closure Gate	4	Each		
<b>TOTAL</b>					

**SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION  
CONTRACT PROPOSAL**

DOT-123  
February 2021  
2 of 2  
Rev. 7/31/24 MR  
Rev. 8/6/24 MR

CODE	PROJECT			MAINT UNIT	CONTROL REFERENCE	AFE	FUNCTION	BEGIN MRM	END MRM
	PRE	ROUTE	AGR						
	IM	0907	93		310	09P1			

**CONTRACTOR'S PROPOSAL STATEMENT**

The undersigned agrees to offer the labor and material in the quantities, at the unit price, for the purpose, in the place, and in accordance with attached provisions. The Contractor will provide services in compliance with the Americans with Disabilities Act of 1990 and any amendments.

**SUBSTANTIAL COMPLETION DATE** December 20, 2024

**PROPOSED START DATE** \_\_\_\_\_

**FIELD WORK COMPLETION DATE** June 27, 2025

**SIGNATURE** \_\_\_\_\_

**SUBSCRIBED AND SWORN TO BEFORE ME THE**

**PRINTED NAME** \_\_\_\_\_

**DAY OF** \_\_\_\_\_, 20\_\_

**COMPANY** \_\_\_\_\_

**NOTARY** \_\_\_\_\_

**STR. ADDRESS** \_\_\_\_\_

**My Commission Expires:**

**CITY, STATE, ZIP** \_\_\_\_\_

**PHONE NUMBER** \_\_\_\_\_

**DATE** \_\_\_\_\_ **(SEAL)**

**FEDERAL TAX ID NUMBER** \_\_\_\_\_

**TO BE FILLED OUT BY STATE PERSONNEL:**

The parties agree that the Department of Transportation may execute this contract by electronic signature.

**RECOMMENDED FOR APPROVAL:**

\_\_\_\_\_  
**CONSTRUCTION & MAINTENANCE ENGINEER** **DATE**

\_\_\_\_\_  
**AREA / REGION / OPS ENGINEER** **DATE**

\_\_\_\_\_  
**DIRECTOR OF OPERATIONS** **DATE**

\_\_\_\_\_  
**INTERNAL SERVICES / AUDITS** **DATE**

**ACCEPTED BY SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION**

**NAME** \_\_\_\_\_ **TITLE** \_\_\_\_\_ **DATE** \_\_\_\_\_

**IF FEDERAL FUNDS WILL BE EXPENDED UNDER THIS AGREEMENT, ACCEPTANCE BY PROJECT DEVELOPMENT IS REQUIRED**

\_\_\_\_\_  
**PROJECT DEVELOPMENT ENGINEER** **DATE**

**NONSECTION ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
632E0014	1.75' Diameter Breakaway Support Concrete Footing	76.0	Ft
632E1235	W6x20 Steel Post	135.6	Ft
632E1240	W8x18 Steel Post	82.9	Ft
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	471.6	SqFt
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	24.0	SqFt
634E0110	Traffic Control Signs	250.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	18	Each
635E0150	Breakaway Base Luminaire Pole with Twin Arms, 50' Mounting Height	10	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	42	Each
635E4010	1 Section Vehicle Signal Head	12	Each
635E5020	2' Diameter Footing	274.0	Ft
635E5301	Type 1 Electrical Junction Box	17	Each
635E5400	Electrical Service Cabinet	2	Each
635E8120	2" Rigid Conduit, Schedule 40	11,190	Ft
635E8220	2" Rigid Conduit, Schedule 80	1,305	Ft
635E9010	1/C #0 AWG Copper Wire	7,000	Ft
635E9011	1/C #1 AWG Copper Wire	9,165	Ft
635E9012	1/C #2 AWG Copper Wire	3,800	Ft
635E9018	1/C #8 AWG Copper Wire	10,460	Ft
635E9020	1/C #10 AWG Copper Wire	19,975	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	2,710	Ft
900E0045	Drop Arm Road Closure Gate	4	Each

**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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES**

**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://sdeastwanted.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.

**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.

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.

## 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.

## INCIDENTAL WORK

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

## LUMINAIRE POLES

Luminaire poles L6, L7, L13-L28 will have a mounting height of 50-feet with 6-foot arms.

Luminaire poles L1-L5, L8-L12, will have a mounting height of 50-feet with twin 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 1.1 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 6:1 (maximum to minimum maintained foot candles):

Pole Setback:	32' for Median I-90, 12' US281
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	40 Ft. for I90, 36' for US281
Configuration:	One-Sided/Staggered/Median
Mounting Height:	50 Ft.
Arm Length	Twin 8 Ft./Single 6 Ft.

The following luminaires, or an approved equivalent, will be used for luminaire poles L6, L7, L13-L28, SGL1-SGL4:

- a.) AEL Autobahn: ATBO-P455-MVOLT-R2-P7-PCLL
- b.) Cooper Lighting ARCH-L-PA3-190-740-U-T2R-PR7-LLPC
- c.) Solar Max SMX-177-WiE-NV-LL5-PH-4070-T212-P

The following luminaires, or an approved equivalent, will be used for luminaire poles L1-L5, L8-L12:

- a.) AEL Autobahn: ATB2-P603-MVOLT-R3-P7-PCLL
- b.) Cooper Lighting ARCH-L-PA3-230-740-U-T2U-PR7-LLPC
- c.) Solar Max SMX-230-WiE-NV-LL5-PH-4070-T302-P

## TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L6,L7, L13-L28	2' - 0"	8' - 0"	1' - 8"	54' - 9"	8-#7 x 7' - 6"
L1-L5, L8-L12	2' - 0"	9' - 0"	1' - 8"	60' - 0"	8-#7 x 8' - 6"
SGL1-SGL4	2' - 0"	10' - 0"	1' - 8"	65' - 3"	8-#7 x 9' - 6"

\* Footing depth will be below ground level.

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

## SUBSURFACE

Soils in the vicinity of the closure gates and luminaires consist of brown silt clay.

Footings installed along the interstate and ramps may encounter groundwater and caving soils below I90 ditch grade elevation.

Concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely that caving will 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 water or other slurries as approved by the Engineer. Concrete placed through drilling fluids will be tremied. If caving is not an issue but water is present, it will be removed prior to concrete placement, or the concrete 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.

## DROP ARM ROAD CLOSURE GATE

The Drop Arm Road Closure Gates will be located as shown in the plans. See Special Details for dimensions.


All steel channel, angle, and flat bar will be ASTM A36 steel.

The gate arm pivots, supports, and guides and all associated hardware will be galvanized in accordance with the Standard Specifications. All rough edges and burrs will be ground smooth prior to galvanizing.

Poles will be in accordance with the Standard Specifications for Luminaire Poles. The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

All lockable 3R NEMA enclosures will be keyed alike. Costs for lockable 3R NEMA enclosures and keys will be incidental to the contract unit price per each for "Drop Arm Road Closure Gate."

The gate arm will be fabricated from high strength rectangular fiberglass (1/8 inch thick) and ASTM 221 6061-T6 rectangular aluminum tubing.

	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	4 of 62

Plotting Date: 08/05/2024  
Revised 8-5-2024 - RR

Worm gear winch and cable will be Dutton-Lalson model WG2000 or an approved equivalent.

Gate warning lights will be LED. The light at the end of the arm will be steady burn. The other lights will flash at the rate required by the MUTCD. Spacing of the lights will vary based on arm length, the contractor is responsible for determining the spacing.

All costs associated with making the Drop Arm Road Closure Gates operational including but not limited to the pole, gate, switches, transformers, LED signal modules, all wiring in the gate arm, cube flasher units, cap flasher units, rigid steel conduit and miscellaneous hardware require to construct the drop arm road closure gate will all be incidental to the contract unit per each for "Drop Arm Road Closure Gate."

## SNOW GATE DIMENSIONS

Site Designation	Drop Arm Gate (EA)	Gate Arm Length (ft)
SGL1-SGL4	1	25

## YELLOW BEACONS ON I-90 WARNING SIGNS

Yellow beacons will be installed on top of the proposed "I-90 CLOSED WHEN FLASHING" signs. The flashing beacons on each sign will alternate as they flash. The Contractor will make all necessary connections to make the flashing beacon system operational.

All costs for the yellow beacons, conduit, and wire to be installed on the warning signs to make the yellow beacons fully functional will be incidental to the contract unit price per each for "1 Section Vehicle Signal Head". See Special Details for the conduit to be installed on the warning signs.

## NEW PERMANENT SIGNING

All signs will be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films.

All Flat Aluminum Signs, Nonremovable Copy High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type IV. All Flat Aluminum Signs, Nonremovable Copy Super/Very High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type XI.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware will be incidental to the contract unit price per square foot for "Flat Aluminum Sign, Nonremovable Copy High Intensity" or "Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity".



Location to Location	Rigid Conduit		Copper Wire					Pole and Bracket Cable	
	Schedule 40	Schedule 80	1/C	1/C	1/C	1/C	1/C	2/C	
	2"	2"	#10 AWG Ft	#8 AWG Ft	#2 AWG Ft	#1 AWG Ft	#0 AWG Ft	#10 AWG Ft	
<b>Lighting</b>									
L1 L2	245		760		760				
L2 L3	245		760		760				
L3 L4	245		760		760				
L4 L5	245		760		760				
L5 JL1	130		760		760				
JL1 L6		145		450					
JL1 JL10		90	280			280			
SGL1 JL10	15		50			50			
JL2 L17	565					1,750			
L17 JL3	120					375			
JL3 L18	60	105		510					
L18 L19	265			820					
JL3 JL4	55	60				310			
JL4 SGL3	130			405					
L16 JL4	120					375			
JL4 Elect. Service	115					355			
JL4 L16	15			50					
JL4 L15	260			805					
L15 L14	260			805					
L14 L13	260			805					
Elect. Service JL5	25			80		80			
JL5 L26	55			170		170			
L26 JL6	255			790		790			
JL6 L25		60		185					
JL6 L24	265			820		820			
L24 JL7	295			915		915			
JL7 L23		85		265					
L23 SGL2	160			495					
JL7 L21		170		525					
L21 L20	265			820					
JL7 L22	115			355		355			
L22 JL8	595					1,840			
JL8 L28	575					1,780			
SGL4 JL9		85	265		265				
JL9 L7		125		390					
JL9 L8	160		760		495				
L8 L9	245		760		760				
L9 L10	245		760		760				
L10 L11	245		760		760				
L11 L12	245		760		760				
JL10 L27		60				185			
L27 JL2	545					1,685			
L28 JL11		65				200			
JL11 SGL4	15		50			50			
<b>Subtotal:</b>	<b>7,655</b>	<b>1,050</b>	<b>8,245</b>	<b>10,460</b>	<b>3,800</b>	<b>9,165</b>	<b>7,000</b>		

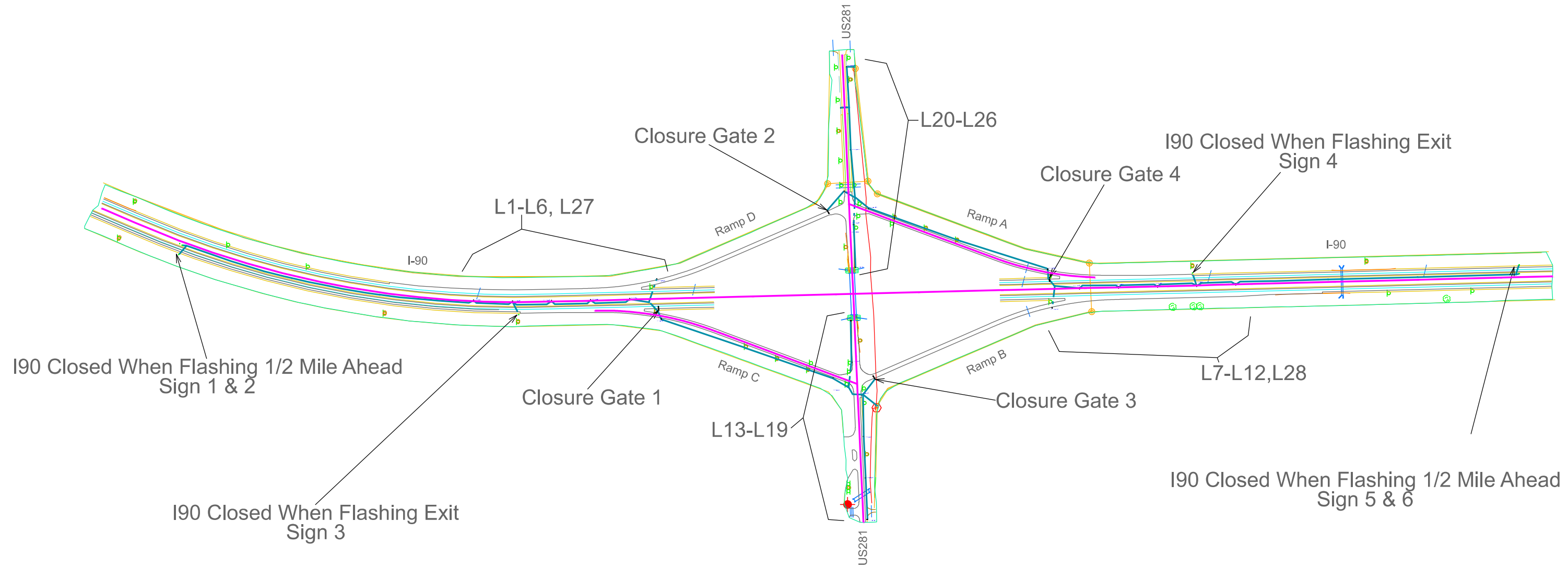


Location to Location	Rigid Conduit		Copper Wire					Pole and Bracket Cable			
	Schedule 40		Schedule 80		1/C #10 AWG Ft	1/C #8 AWG Ft	1/C #2 AWG Ft	1/C #1 AWG Ft	1/C #0 AWG Ft	2/C #10 AWG Ft	
	Ft	Ft									
<b>For Advance Signs</b>											
Sign 1	JS1		85								
Sign 2	JS1	40									
JS1	JS2	670									
JS2	JS5	540									
JS5	L1	545									
L2	Sign3		95								
L12	JS3	570									
JS3	JS6	545									
JS6	JS4	600									
JS4	Sign5	25									
JS4	Sign6		75								
<b>Luminaires</b>											
L1										130	
L2										130	
L3										130	
L4										130	
L5										130	
L6										65	
L7										65	
L8										130	
L9										130	
L10										130	
L11										130	
L12										130	
L13										65	
L14										65	
L15										65	
L16										65	
L17										65	
L18										65	
L19										65	
L20										65	
L21										65	
L22										65	
L23										65	
L24										65	
L25										65	
L26										65	
L27										65	
L28										65	
SGL1										60	
SGL2										60	
SGL3										60	
SGL4										60	
<b>Subtotal:</b>		3,535	255			11,730	0	0	0	0	2,710
<b>Total:</b>		11,190	1,305			19,975	10,460	3,800	9,165	7,000	2,710

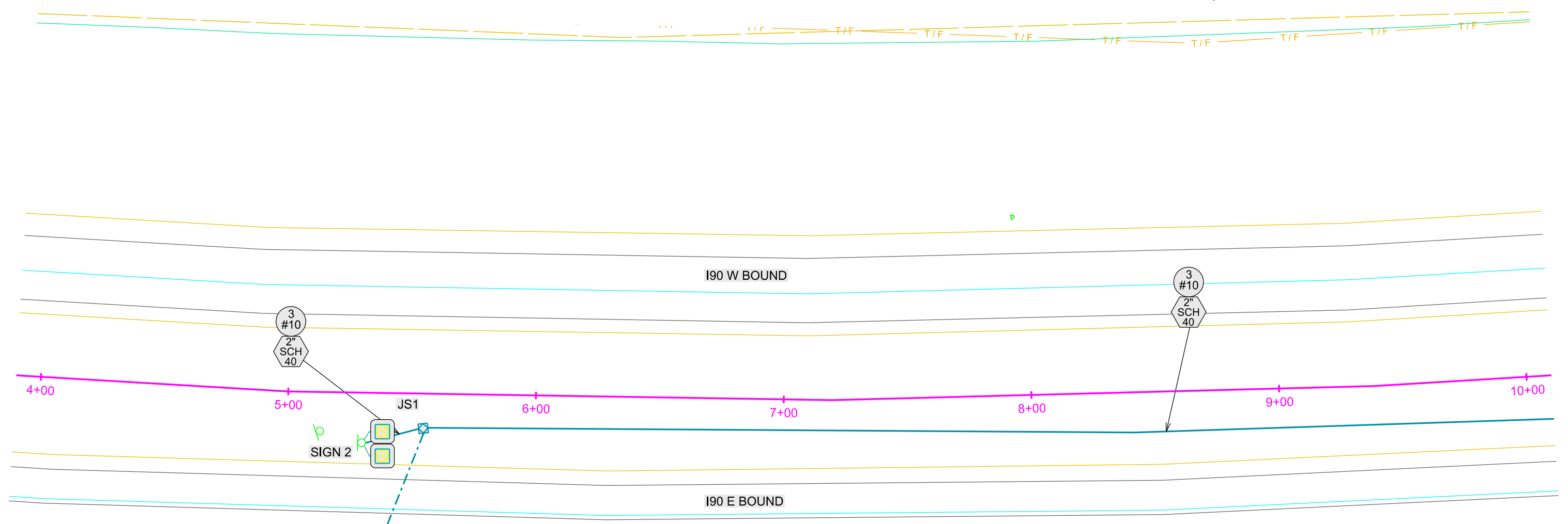
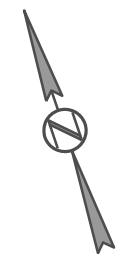


# OVERVIEW I90 & US HWY 281

SD DOT	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	20 of 62
Plotting Date: 08/05/2024			
Revised 8-5-2024 - RR			



# CONDUIT LAYOUT I90



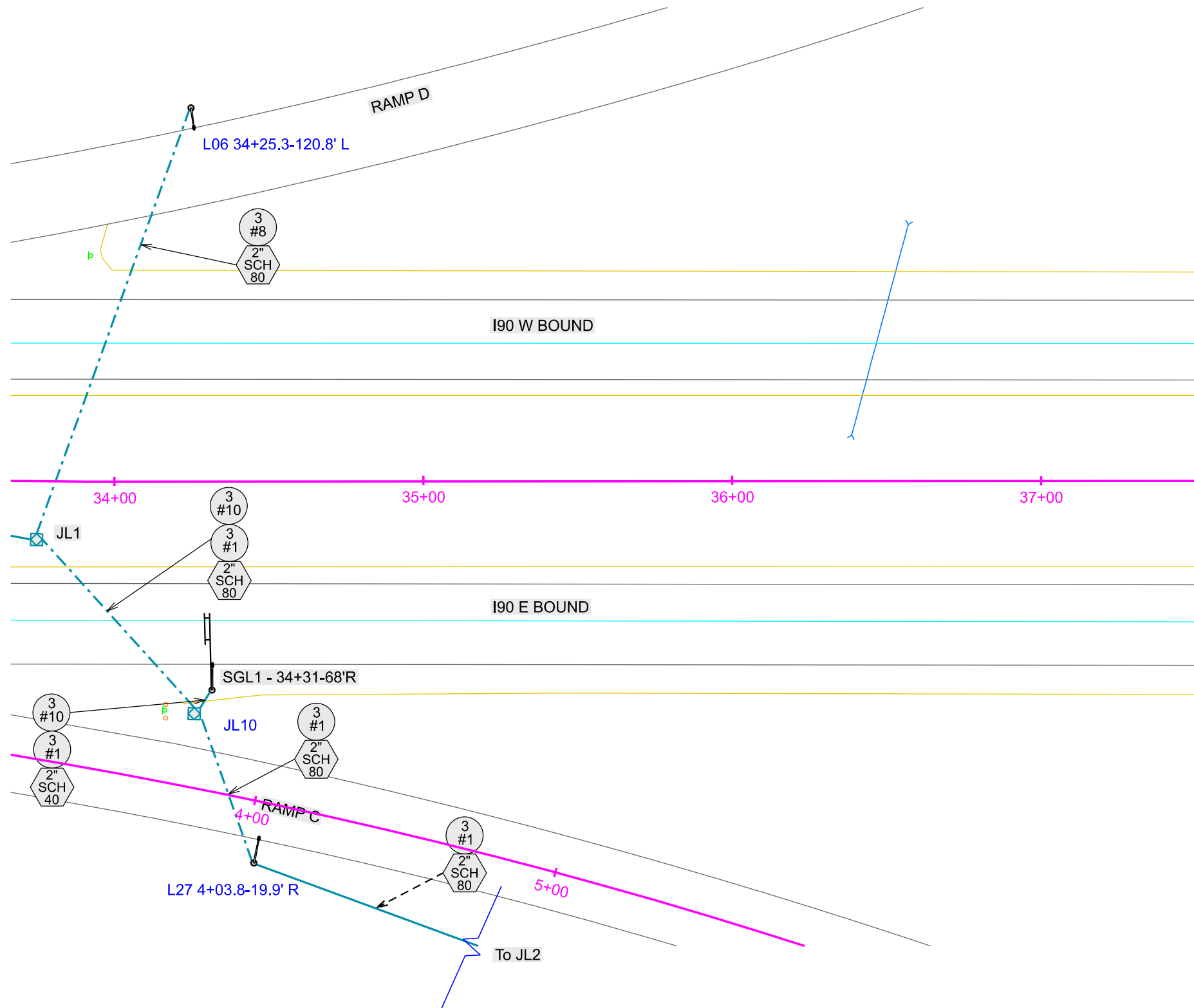
ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Breakaway Base Luminaire Pole w/6' Arm 50' Mounting Height (L6, L7, L13-L28)	18	EACH
	Breakaway Base Luminaire Pole w/8' Twin Arm 50' Mounting Height (L1-L5, L8-L12)	10	EACH
	Drop Arm Closure Gate w/6' Luminaire Arm, 40' Mounting Height, and 25' Drop Arm Closure Gate (SGL1-SGL4)	4	EACH
	Roadway Luminaire, LED with Photocell (L1-L28, SGL1-SGL4)	42	EACH
	2' Diameter Footing (L1-L30, SGL1-SGL4)	274	EACH
	Type 1 Electrical Junction Box (JL1-JL11, JS1-JS6)	17	EACH
	Electrical Service Cabinet	2	EACH
	Galvanized Steel Utility Pole Not a Bid Item	2	EACH
	Meter Socket Not a Bid Item	2	EACH

ESTIMATE OF QUANTITIES (Continued)			
KEY	ITEM	EST QUANT	UNIT
	2" Rigid Conduit, Schedule 40	11,190	FT
	2" Rigid Conduit, Schedule 80	1,305	FT
	1/C #10 AWG Copper Wire	19,975	FT
	1/C #8 AWG Copper Wire	10460	FT
	1/C #2 AWG Copper Wire	3800	FT
	1/C #1 AWG Copper Wire	9,165	FT
	1/C #0 AWG Copper Wire	7,000	FT
	2/C #10 AWG Copper Pole & Bracket Cable	2,710	FT
	1 Section Vehicle Signal Head	12	EACH

# CONDUIT LAYOUT 190

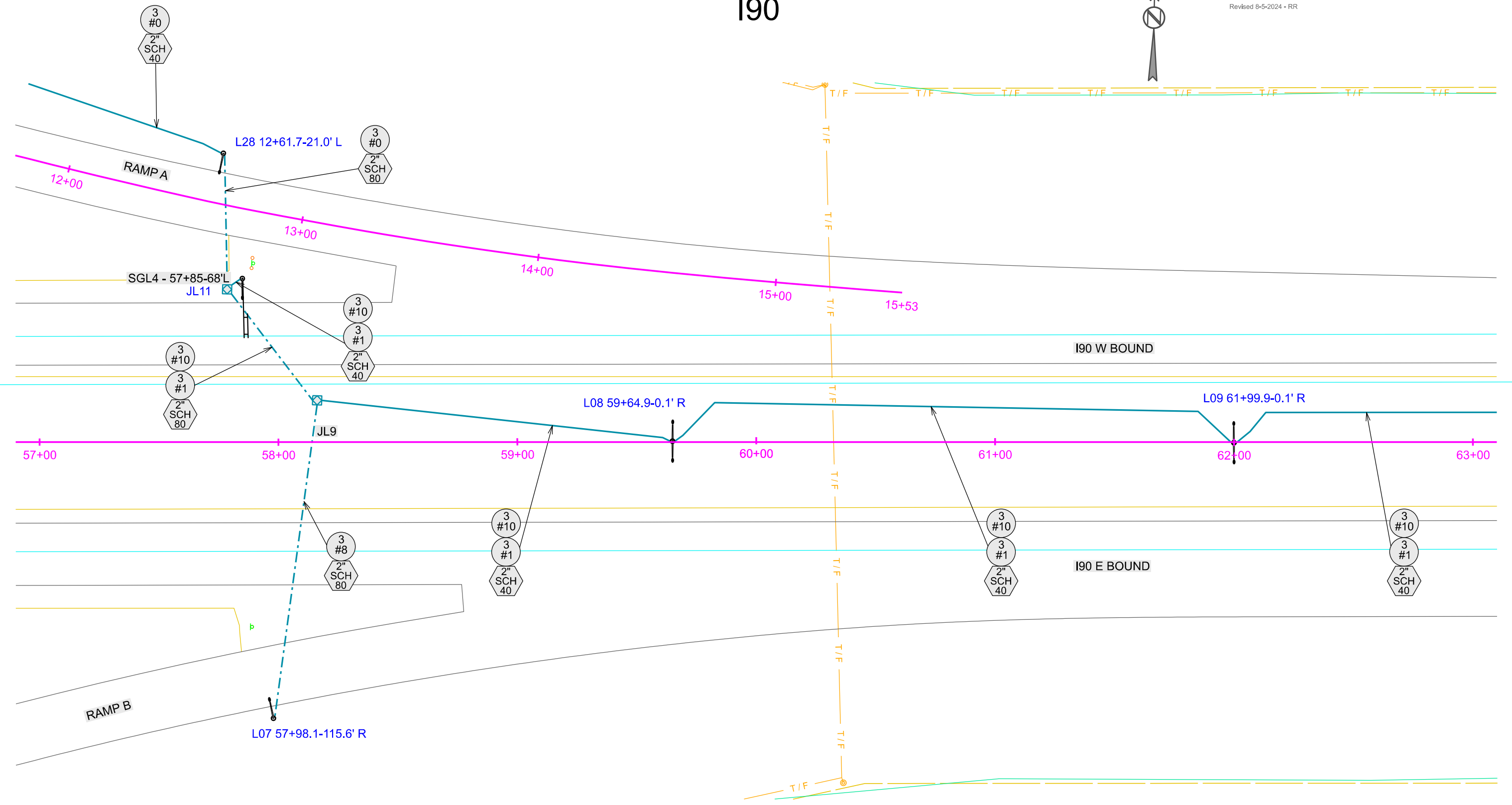
SD DOT	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	26 of 62

Plotting Date: 08/05/2024  
Revised 8-5-2024 - RR



# CONDUIT LAYOUT I90

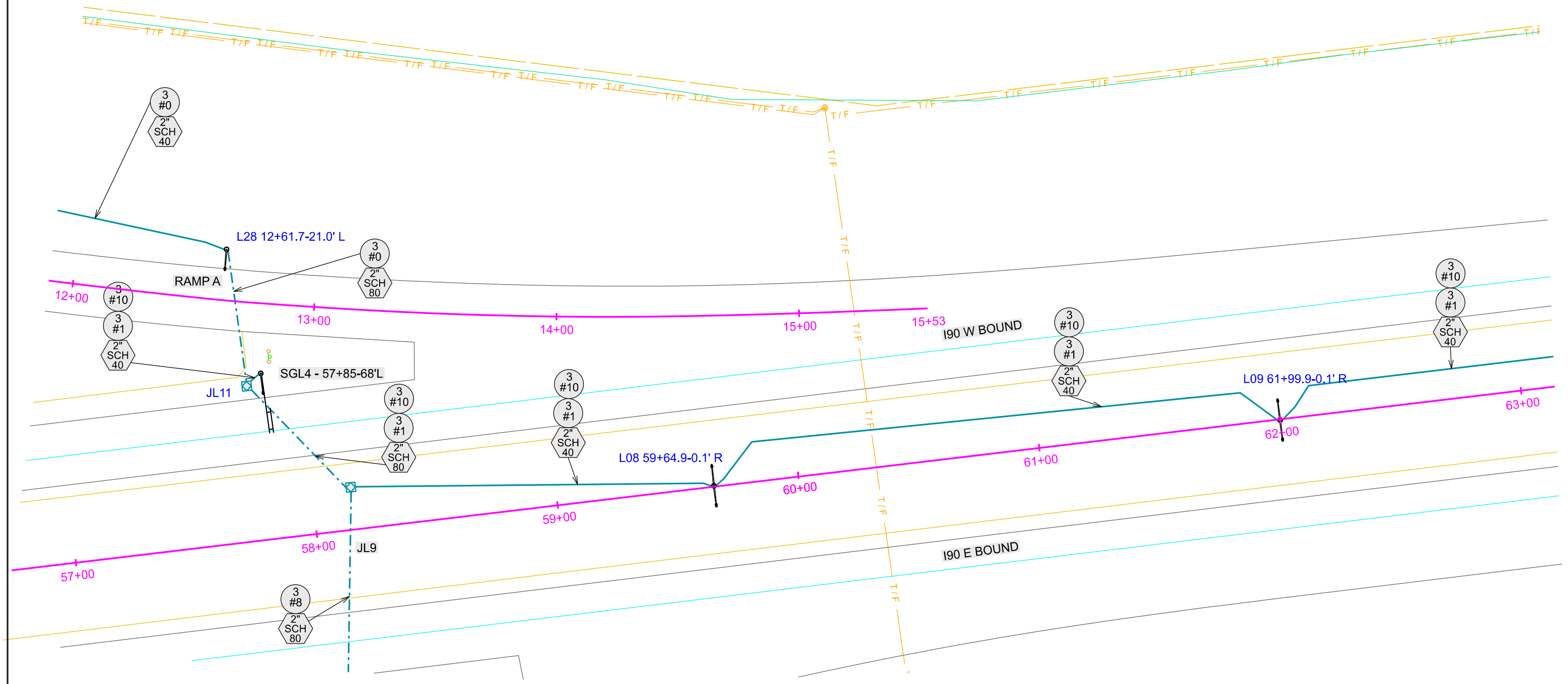
	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	27 of 62
Plotting Date: 08/05/2024 Revised 8-5-2024 - RR			



# CONDUIT LAYOUT I90 RAMP A

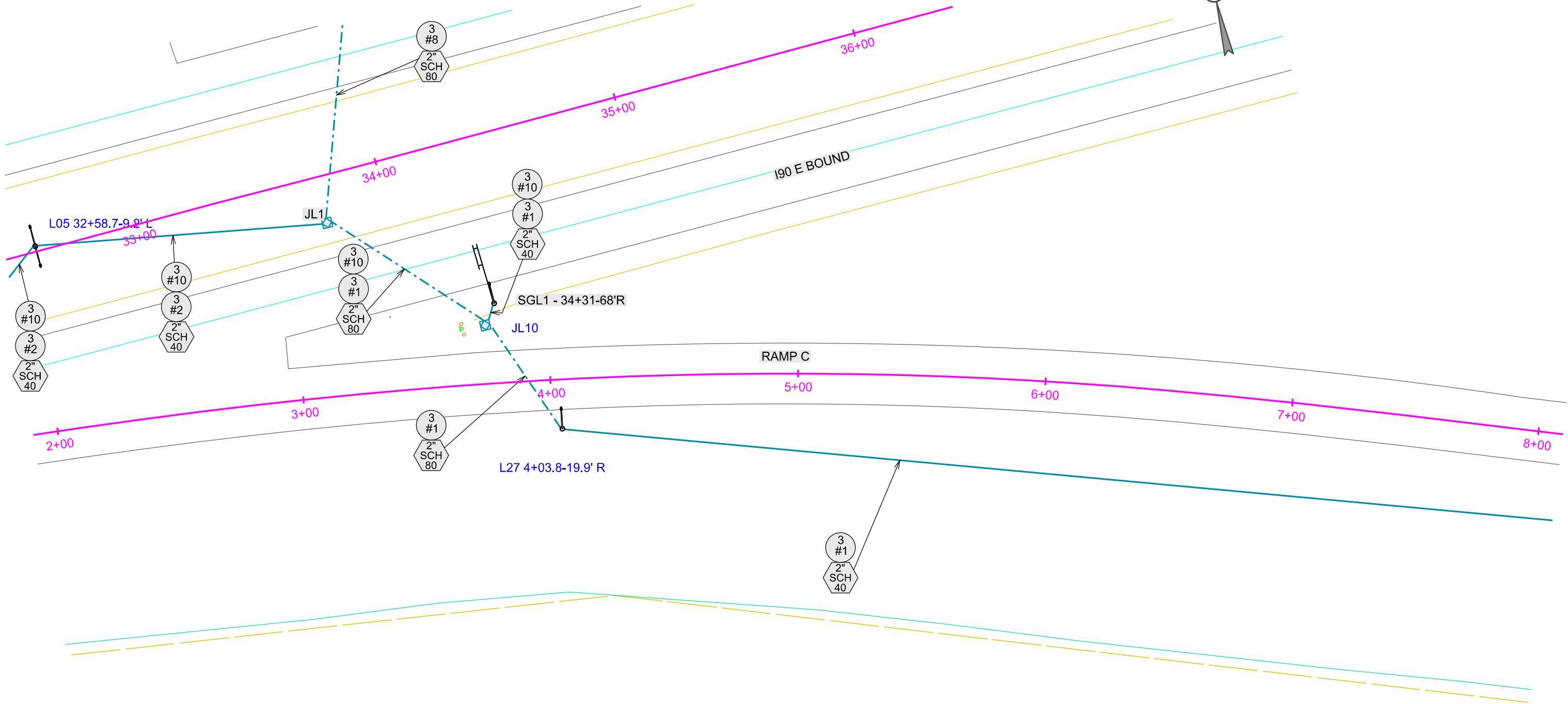


	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	39 of 62
Plotting Date: 08/05/2024 Revised 8-5-2024 - RR			



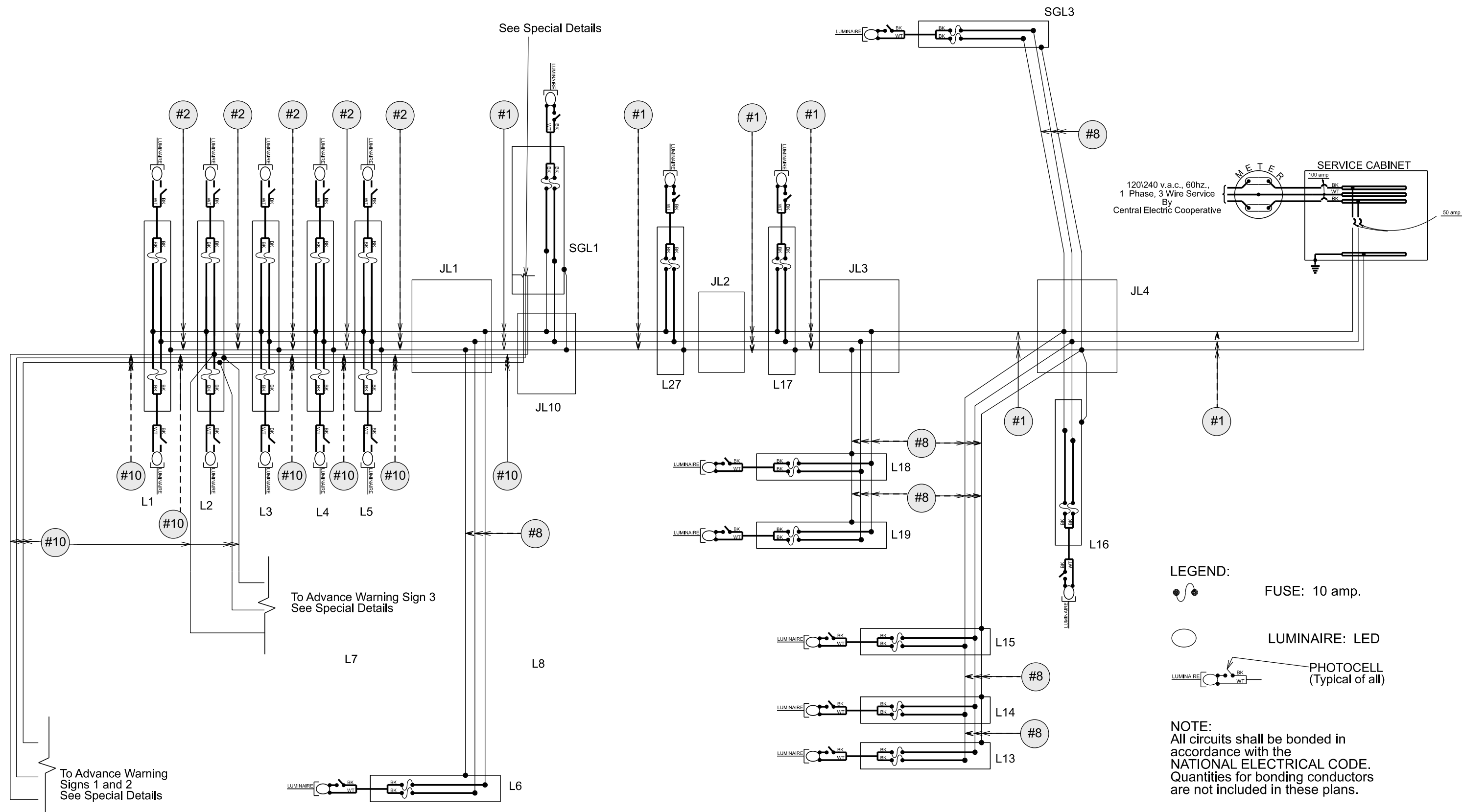
# CONDUIT LAYOUT I90 RAMP C



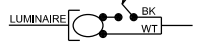
SD DOT	PROJECT	SECTION	SHEET
	IM 0907(93)310	Non	40 of 62
Plotting Date: 08/05/2024		Revised 8-5-2024 - RR	



# WIRING DIAGRAM

Plotting Date: 08/05/2024  
Revised 8-5-2024 - RR

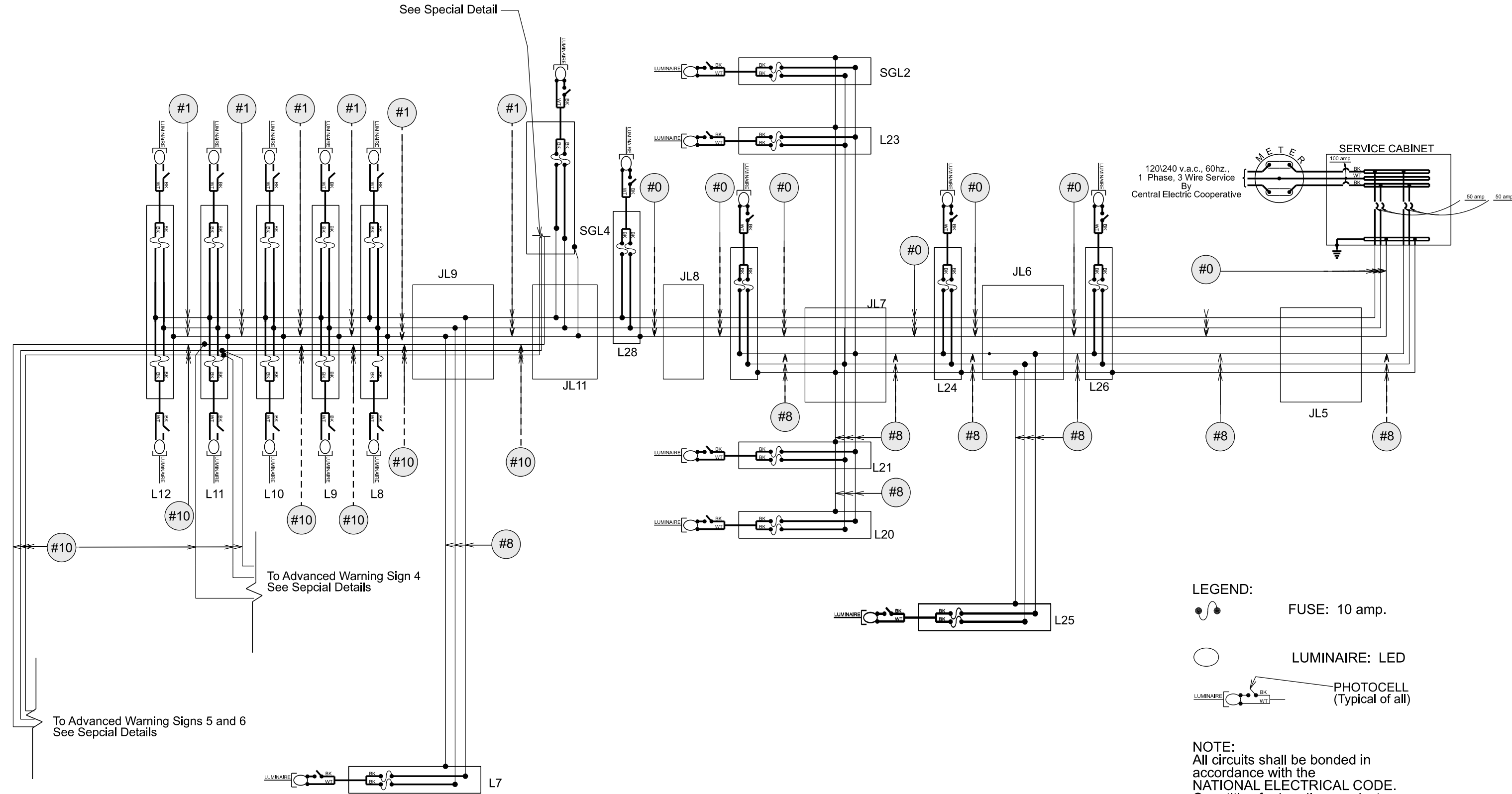


- LEGEND:**
-  FUSE: 10 amp.
  -  LUMINAIRE: LED
  -  PHOTOCELL (Typical of all)

**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

Plotting Date: 08/05/2024  
Revised 8-5-2024 - RR

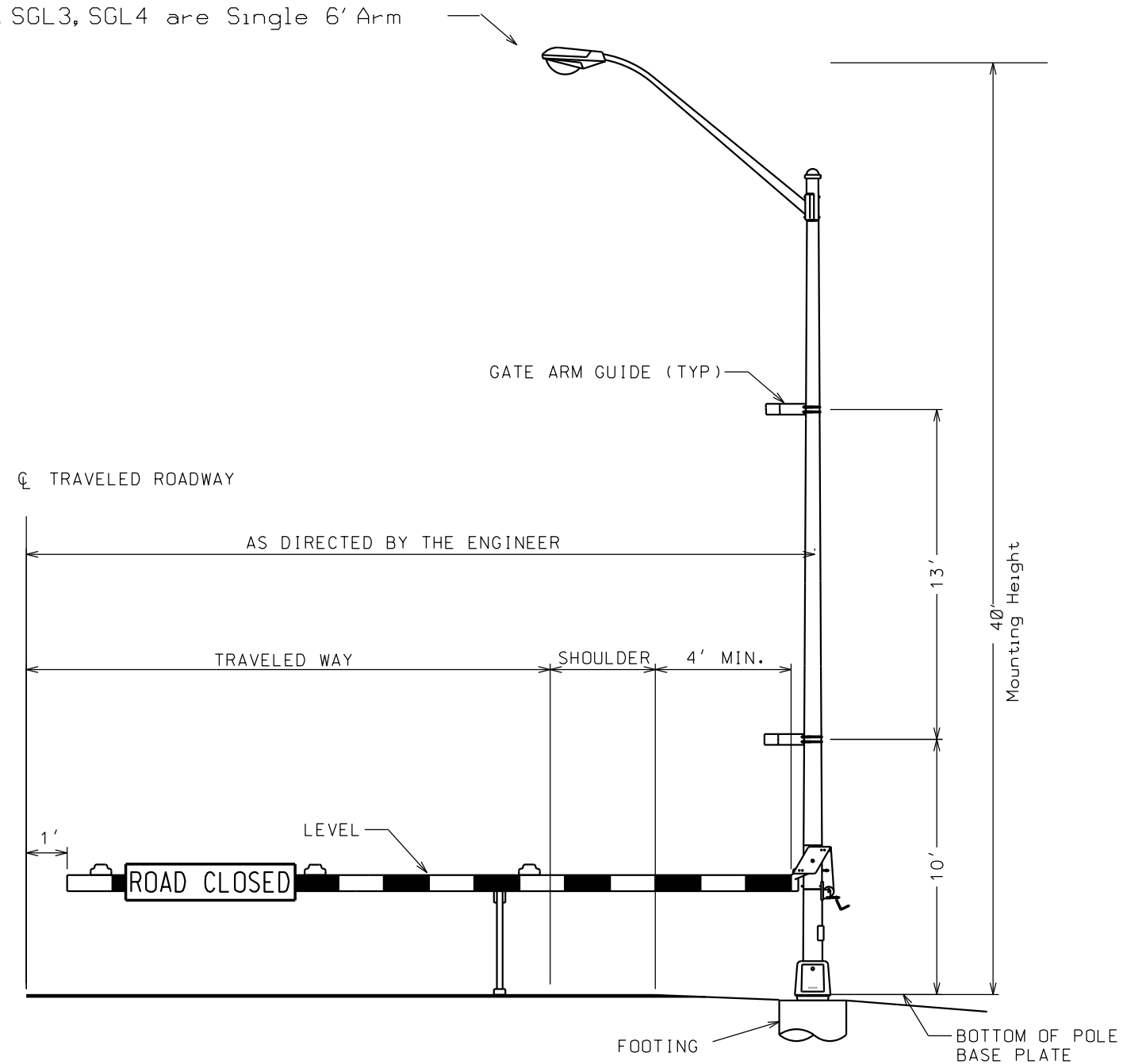


- LEGEND:**
- FUSE: 10 amp.
  - LUMINAIRE: LED
  - PHOTOCELL (Typical of all)

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



Note SGL1, SGL2, SGL3, SGL4 are Single 6' Arm  
Luminaire Poles

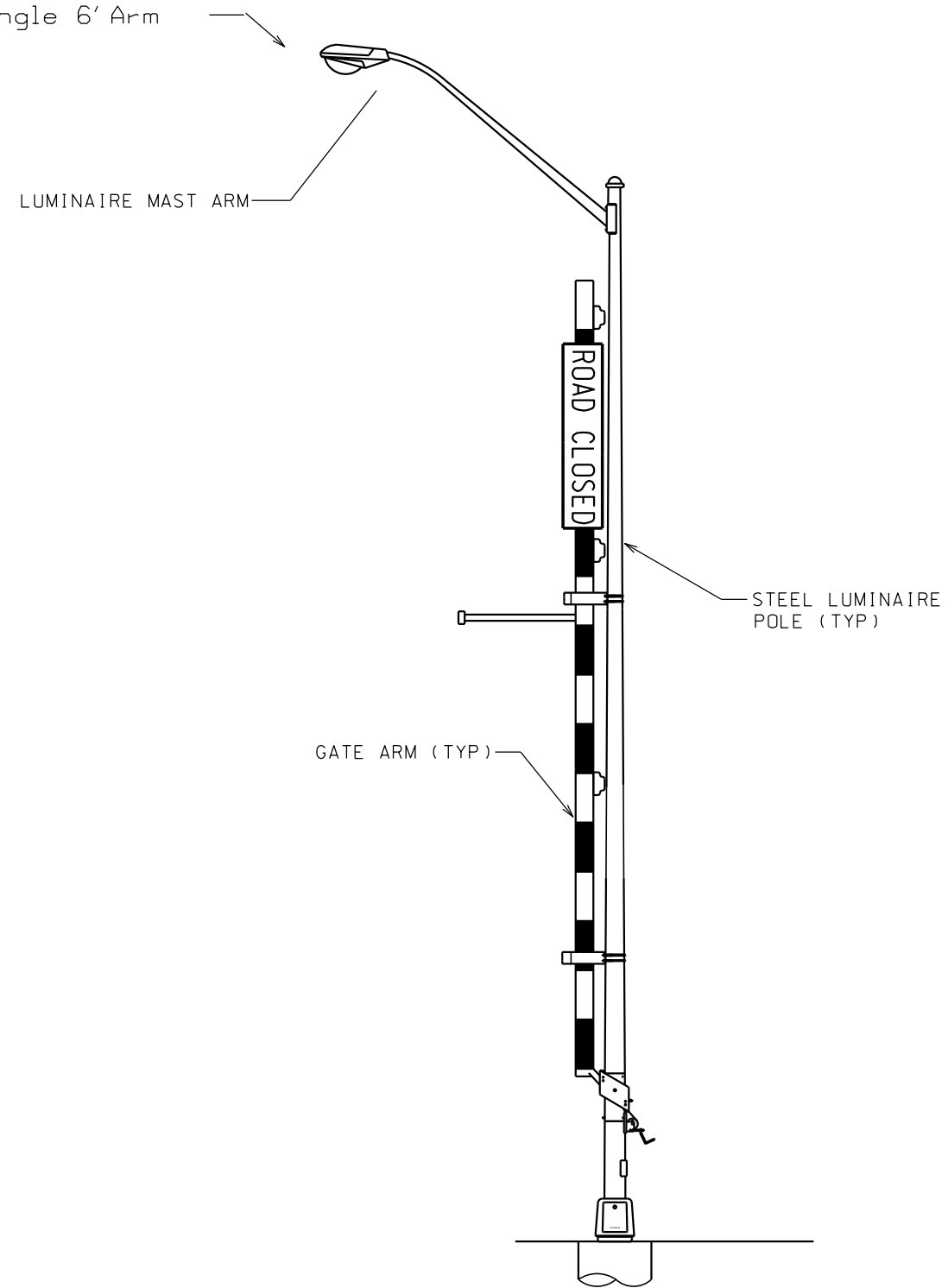


TOTAL WEIGHT OF THE LUMINAIRE POLE, LUMINAIRE,  
AND HARDWARE FOR THE ROAD CLOSURE GATE SHALL  
NOT EXCEED 1,000 POUNDS

NOTE: PLACE THE R11-2 SPECIAL "ROAD CLOSED" SIGN  
ON CENTER OF THE THROUGH LANE.  
ATTACHMENT TO ARM SHALL BE AS RECOMMENDED  
BY ARM MANUFACTURER.

TYPICAL LOWERED POSITION

Note SGL1, SGL2, SGL3, SGL4 are Single 6' Arm  
 Luminaire Poles



TYPICAL RAISED POSITION