

PLOT SCALE - 1:15000

PLOTTED FROM - TRAB17882

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

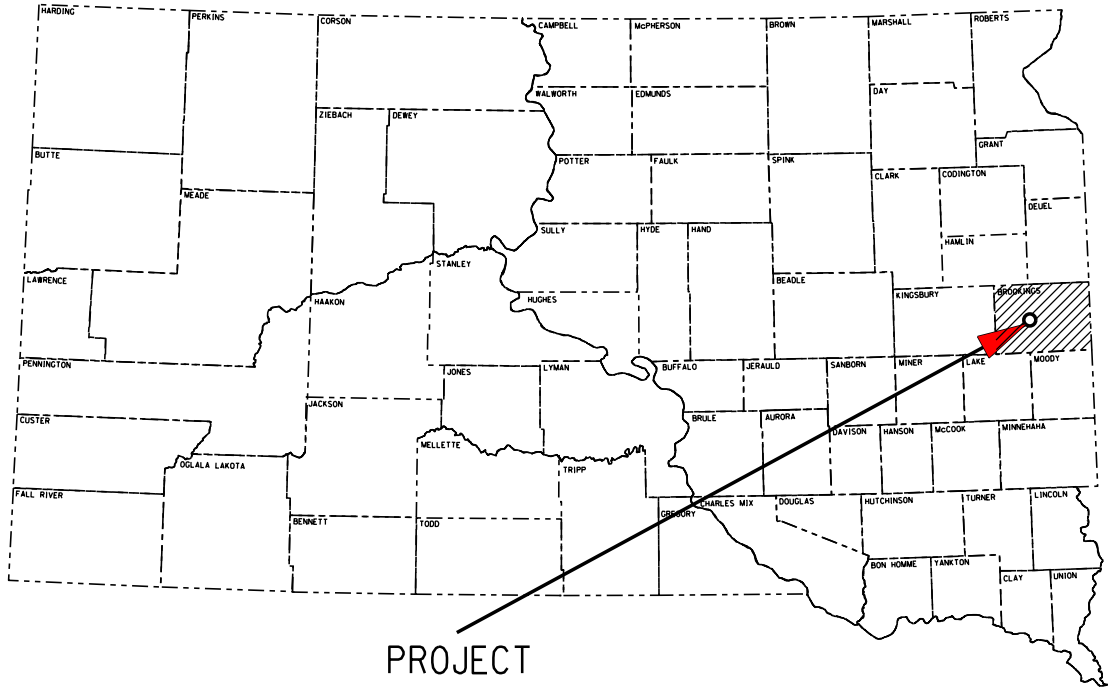
PROJECT 000P-171
U.S. HIGHWAY 14
BROOKINGS COUNTY

Roadway Lighting
PCN i7C0

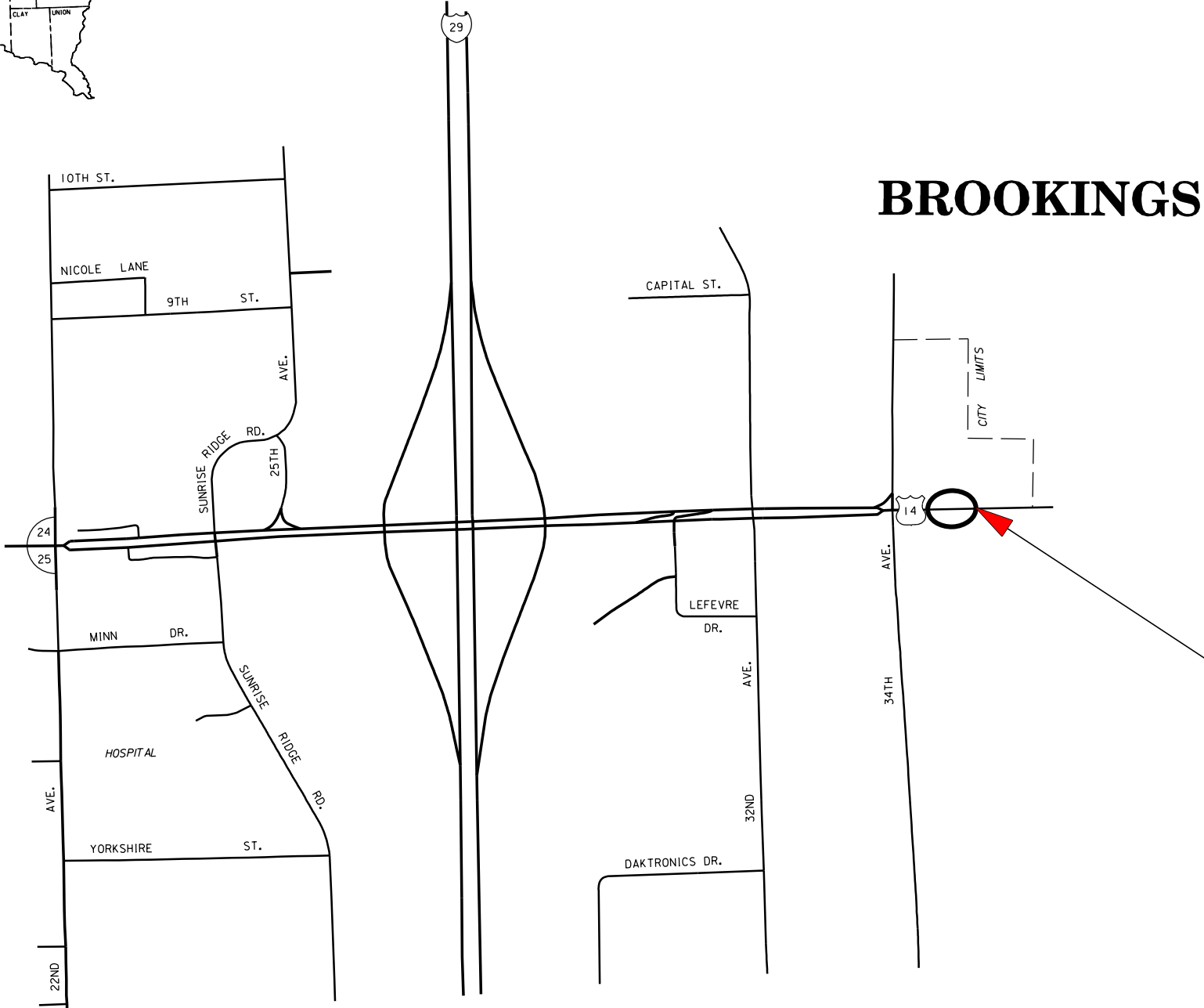
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-171	1	13
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PROJECT



BROOKINGS

PROJECT

DESIGN DESIGNATION

ADT (2024)	4664
ADT (2044)	7015
DHV	1063
D	51%
T DHV	13.7%
T ADT	8.94%
V	55 MPH

STORM WATER PERMIT
None Required

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

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BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	10.0	Hour
634E0110	Traffic Control Signs	144.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	3	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	3	Each
635E5020	2' Diameter Footing	27.0	Ft
635E5302	Type 2 Electrical Junction Box	1	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E8120	2" Rigid Conduit, Schedule 40	600	Ft
635E8220	2" Rigid Conduit, Schedule 80	75	Ft
635E9014	1/C #4 AWG Copper Wire	2,100	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	195	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 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 ($\geq 140^{\circ}\text{F}$) 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.

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.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

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 100 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.

The Contractor is responsible 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
Evelyn.Dalldorf@state.sd.us

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 L3 to L5 will have a mounting height of 50 feet with 8 feet arms.

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

LUMINAIRES

The accepted design for the roadway luminaires L3-L5 shall provide 1.2 and greater average maintained foot-candles and a uniformity ratio (average maintained to minimum maintained foot-candles) of 3:1 and less using the following parameters:

Pole Setback:	14 feet
Lamp Loss Factor (LLF):	0.7
Width of Lighted Area:	64 feet
Luminaire Cycle Length:	185 feet
Configuration:	Staggered
Mounting Height:	50 feet
Lamp:	LED

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

- a.)Cooper Streetworks Archeon Large
ARCH-L-PA3-160-740-U-T2R-AP-LLPC-PR7
- b.)American Electric Lighting
Autobahn ATB0-P454-MVOLT-R2-P7-PCLL

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L3-L5	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.

SUBSURFACE

Groundwater will be encountered at ditch grade elevation, approximately 4 feet below the ground surface.

Concrete placement operations should immediately follow excavation procedures. The longer the excavations are left open, the more likely 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.

MISCELLANEOUS, ELECTRICAL

The Contractor will splice the new wires for pole L3 to L5 into the existing lighting system wiring at EJB8. All costs for labor and material to splice into the existing roadway lighting system will be incidental to the contract lump sum price for "Miscellaneous, Electrical".

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.

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.

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GENERAL TRAFFIC CONTROL

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.

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.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

It is required that the flaggers be able to communicate with one another. If emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movements. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

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SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE				
		NUMBER	SIGN SIZE			SQFT
W20-1	ROAD WORK AHEAD	2	48"	x	48"	16.0
W20-4	ONE LANE ROAD AHEAD	2	48"	x	48"	16.0
W20-7	FLAGGER (symbol)	2	48"	x	48"	16.0
W21-5	SHOULDER WORK	2	48"	x	48"	16.0
G20-2	END ROAD WORK	2	48"	x	24"	8.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT				144.0

PLOT SCALE - 1"=40'

PLOTTED FROM - TRAB17882

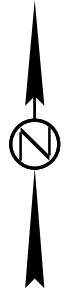
CONDUIT LAYOUT

US HWY 14/6TH STREET

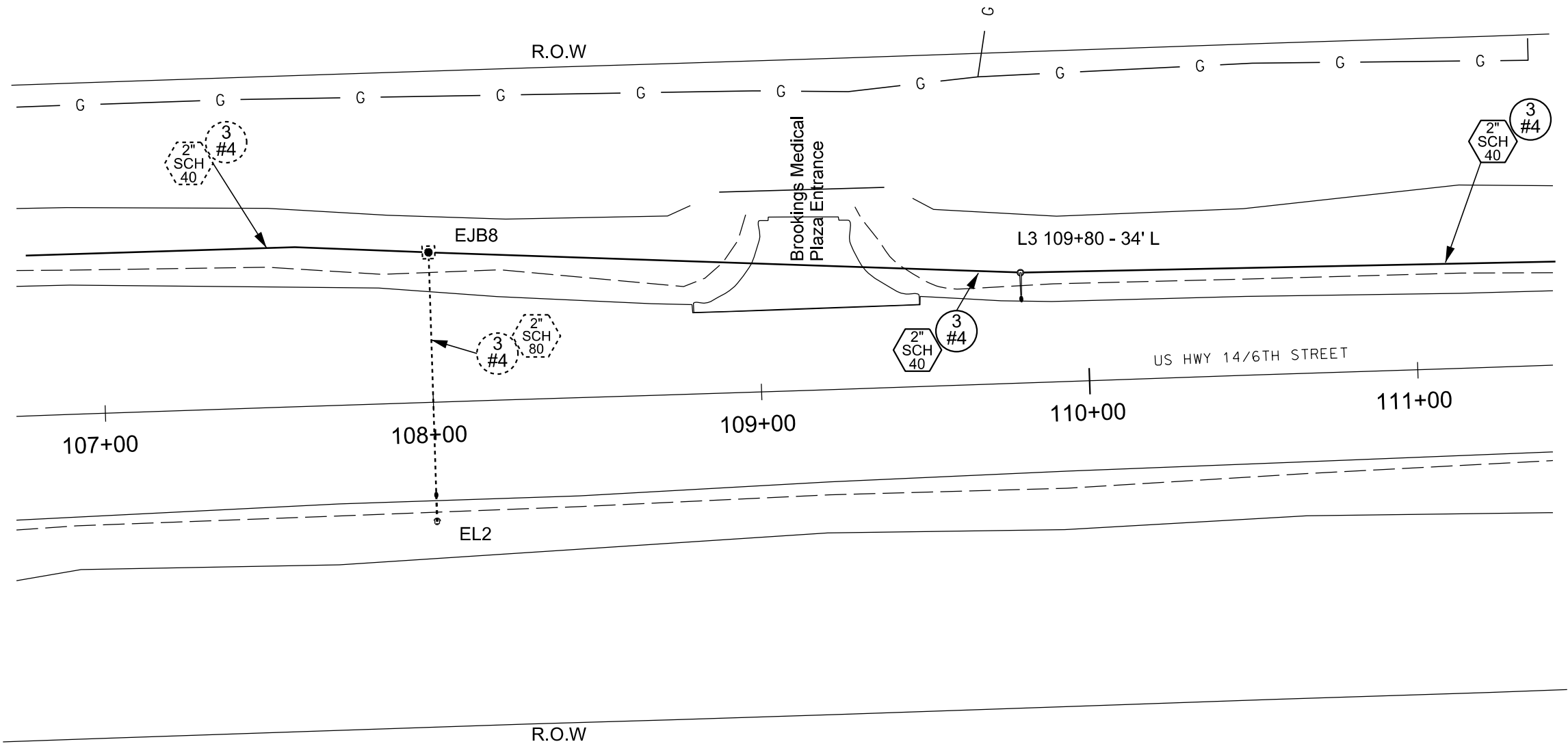
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ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Breakaway Base Luminaire Pole w/8' Arm 50' Mounting Height (L3 - L5)	3	EACH
	Roadway Luminaire, LED with P.E. (L3 - L5)	3	EACH
	2' Diameter Footing (L3-L5)	27	FT
	Type 2 Electrical Junction Box (JB9)	1	EACH
	2" Rigid Conduit, Schedule 40	600	FT
	2" Rigid Conduit, Schedule 80	75	FT
	1/C #4 AWG Copper Wire	2100	FT
	2/C #10 AWG Copper Pole & Bracket Cable	195	FT

EXISTING EQUIPMENT	
KEY	ITEM
	Breakaway Base Luminaire Pole w/8' Arm 50' Mounting Height (EL2)
	Roadway Luminaire, 400w with P.E. (EL2)
	Electrical Junction Box (EJB8)
	2" Rigid Conduit, Schedule 40
	2" Rigid Conduit, Schedule 80
	1/C #4 AWG Copper Wire



SCALE
1" = 40'



PLOT NAME - 1

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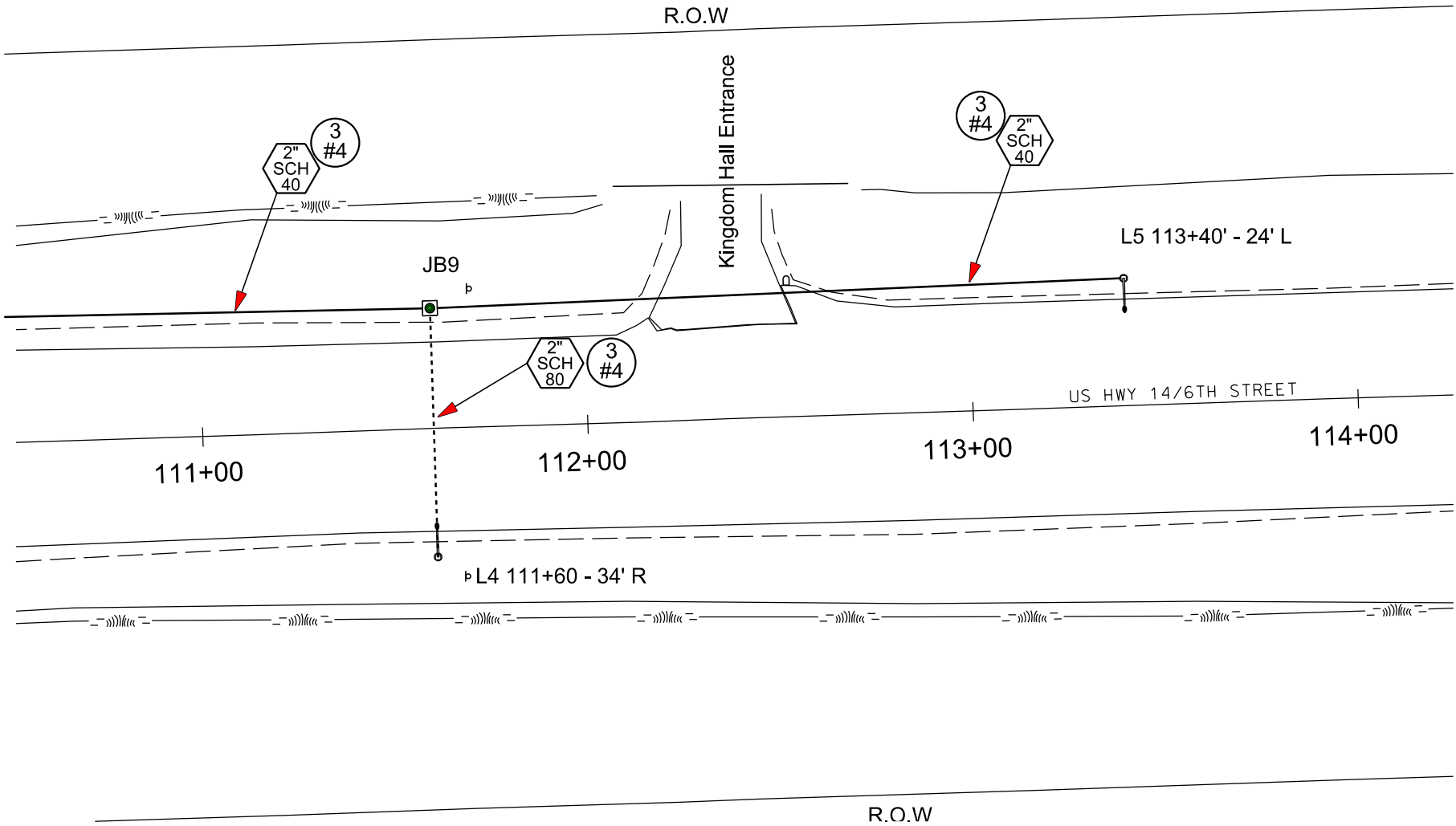
PLOT SCALE - 1"=40'

PLOTTED FROM - TRAB17882

CONDUIT LAYOUT

US HWY 14/6TH STREET

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SCALE
1" = 40'

PLOT NAME - 3

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PLOT SCALE - 1"=40'

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WIRING DIAGRAM

US HWY 14 / 6TH STREET

LEGEND:

FUSE: 6 amp. Non-Time Delay
or
2 8/10 amp. Dual Element

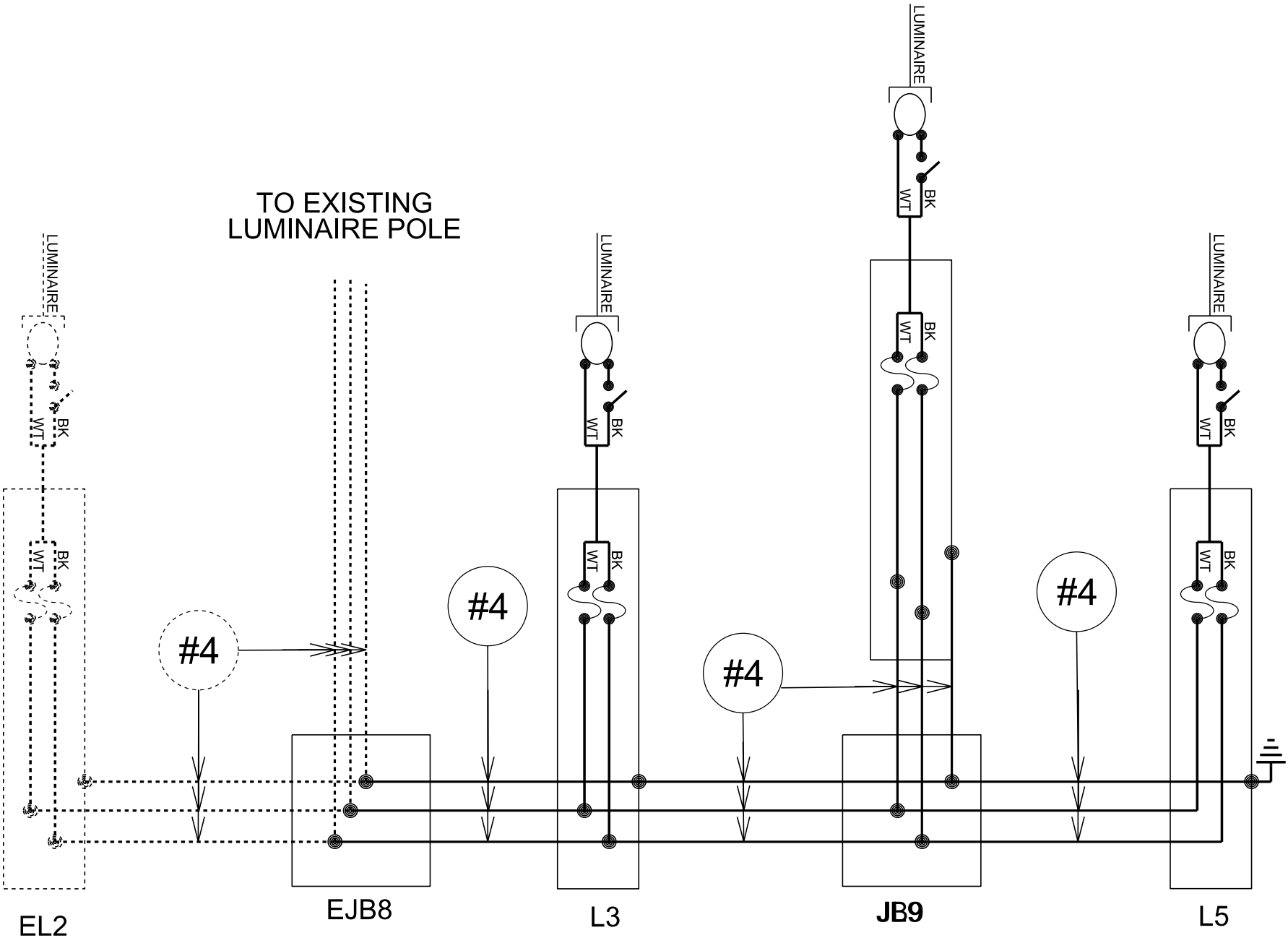
LUMINAIRE: LED

Photoelectric Cell

Existing
FUSE: 6 amp. Non-Time Delay
or
2 8/10 amp. Dual Element

Existing
LUMINAIRE: 400 watt High Pressure
Sodium Lamp

Photoelectric Cell

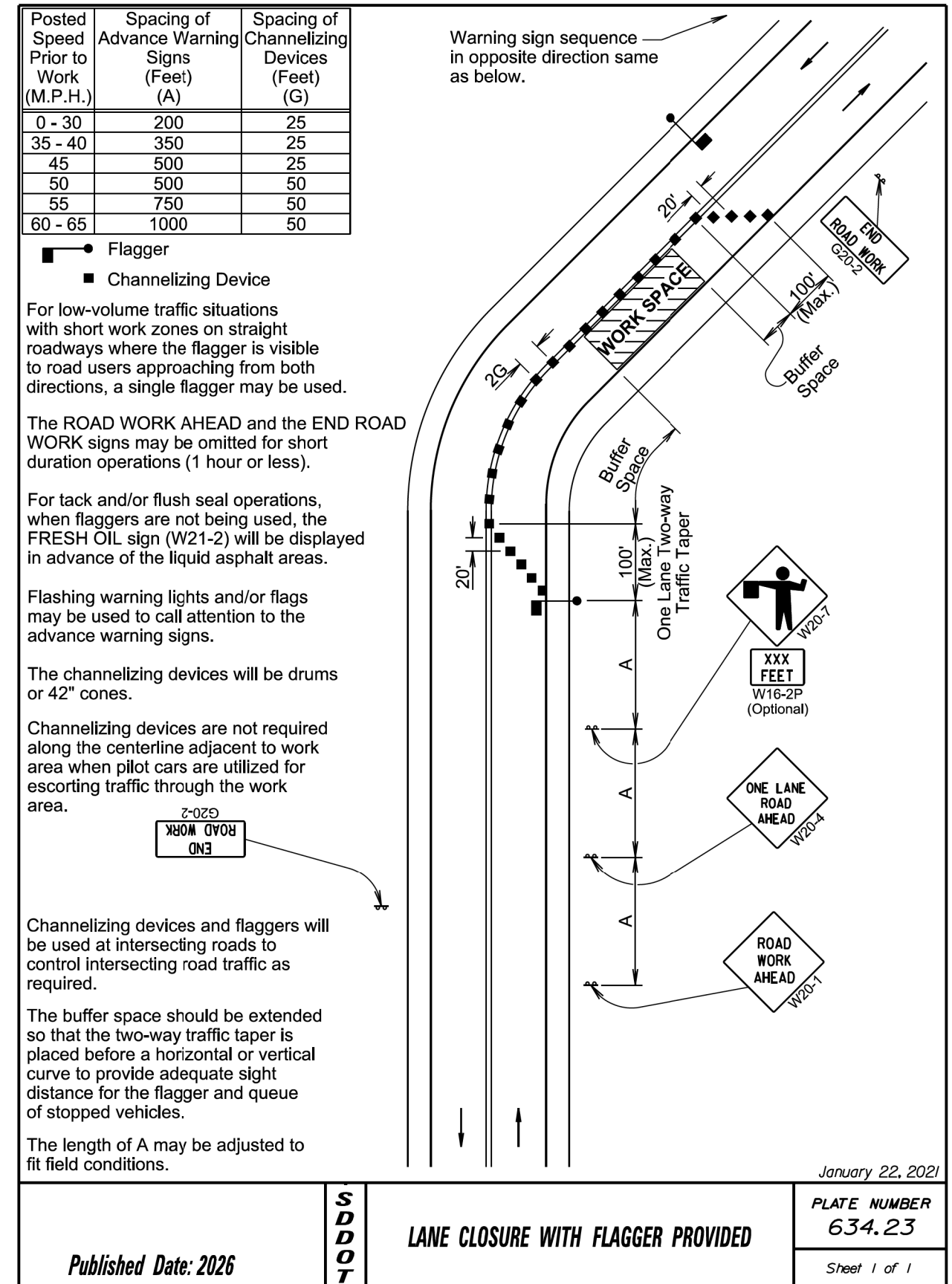
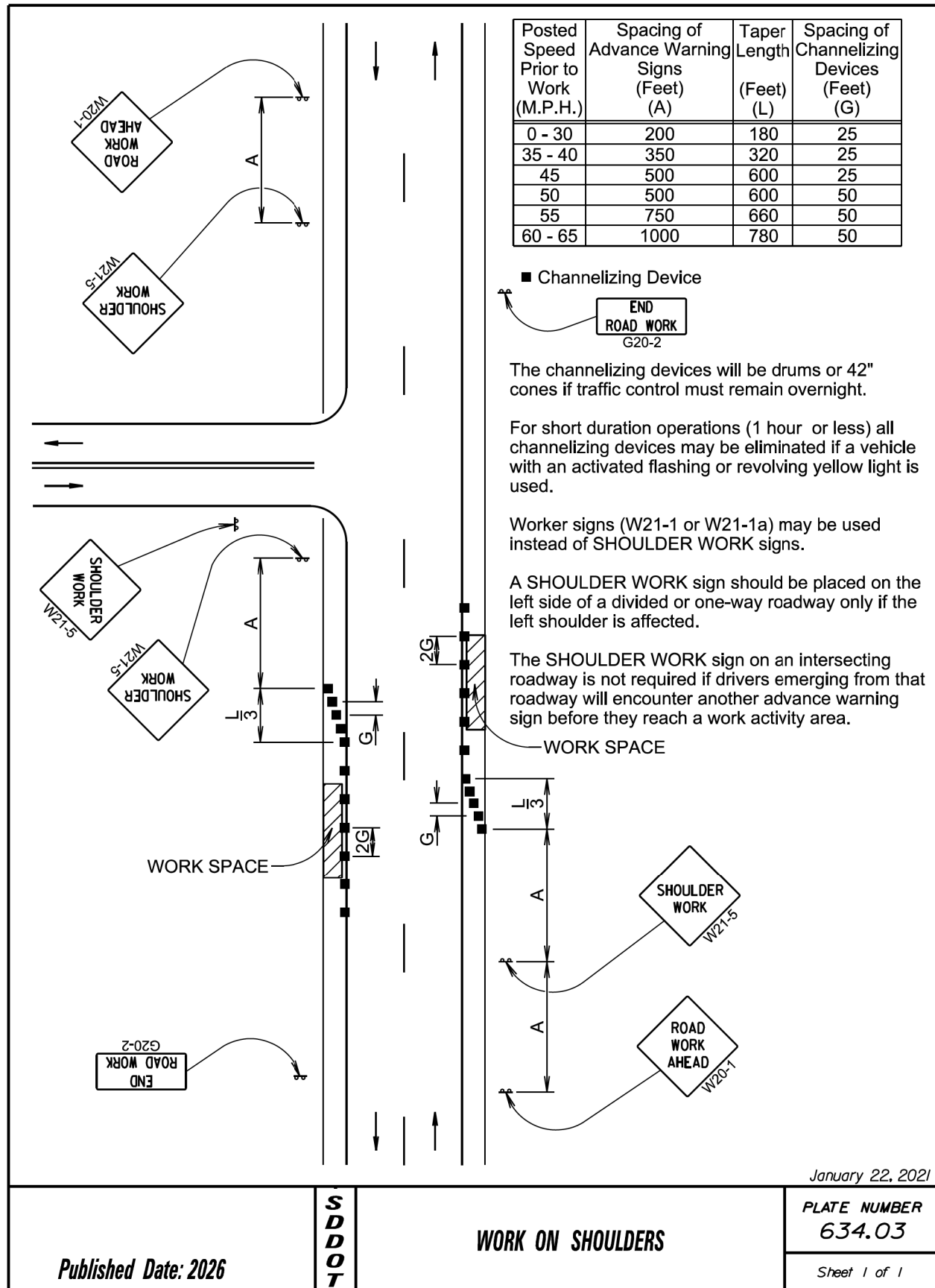


NOTE:
All circuits will be bonded in accordance
with the NATIONAL ELECTRICAL CODE.
Quantities for bonding conductors are not
included in these plans.

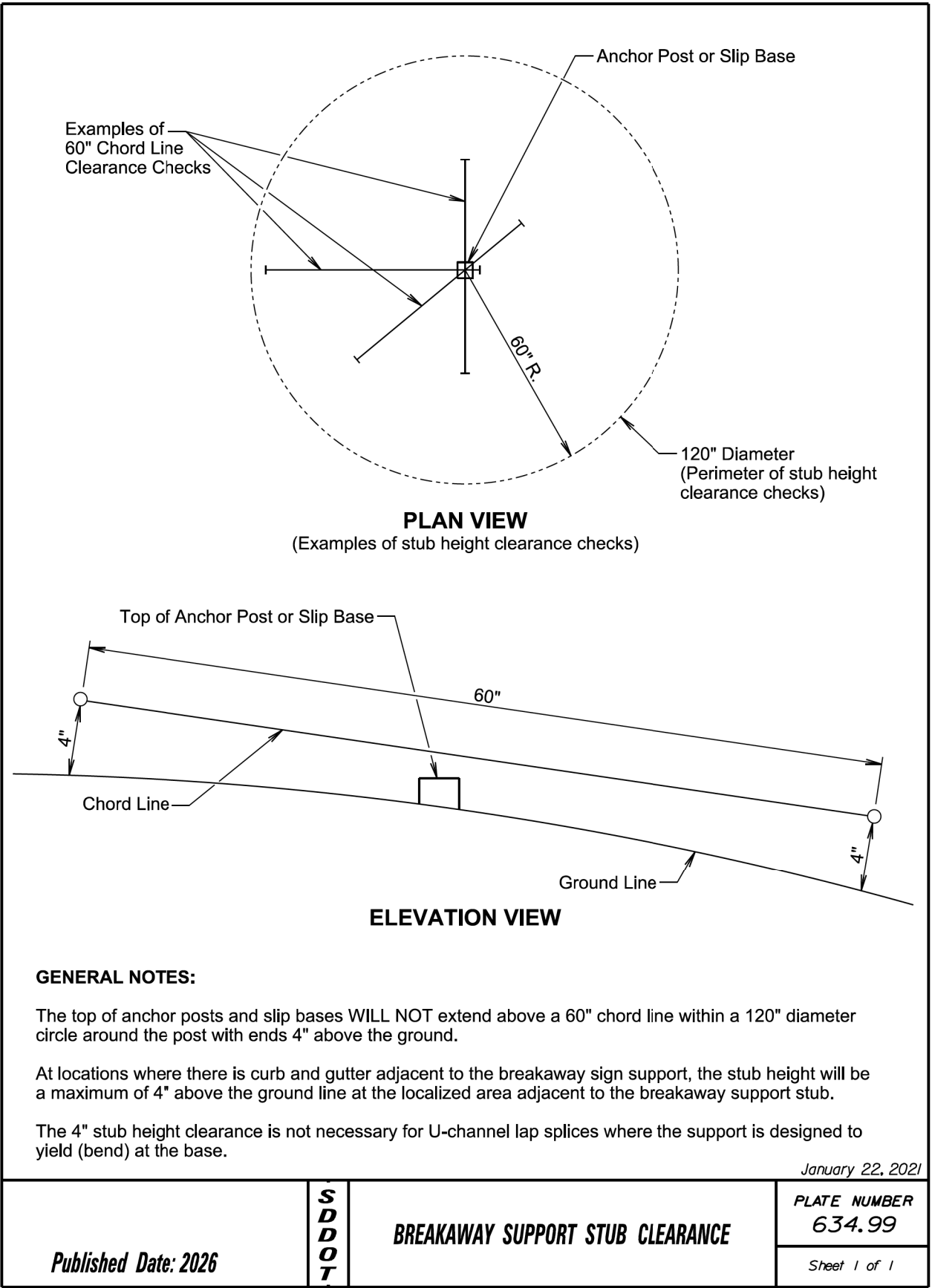
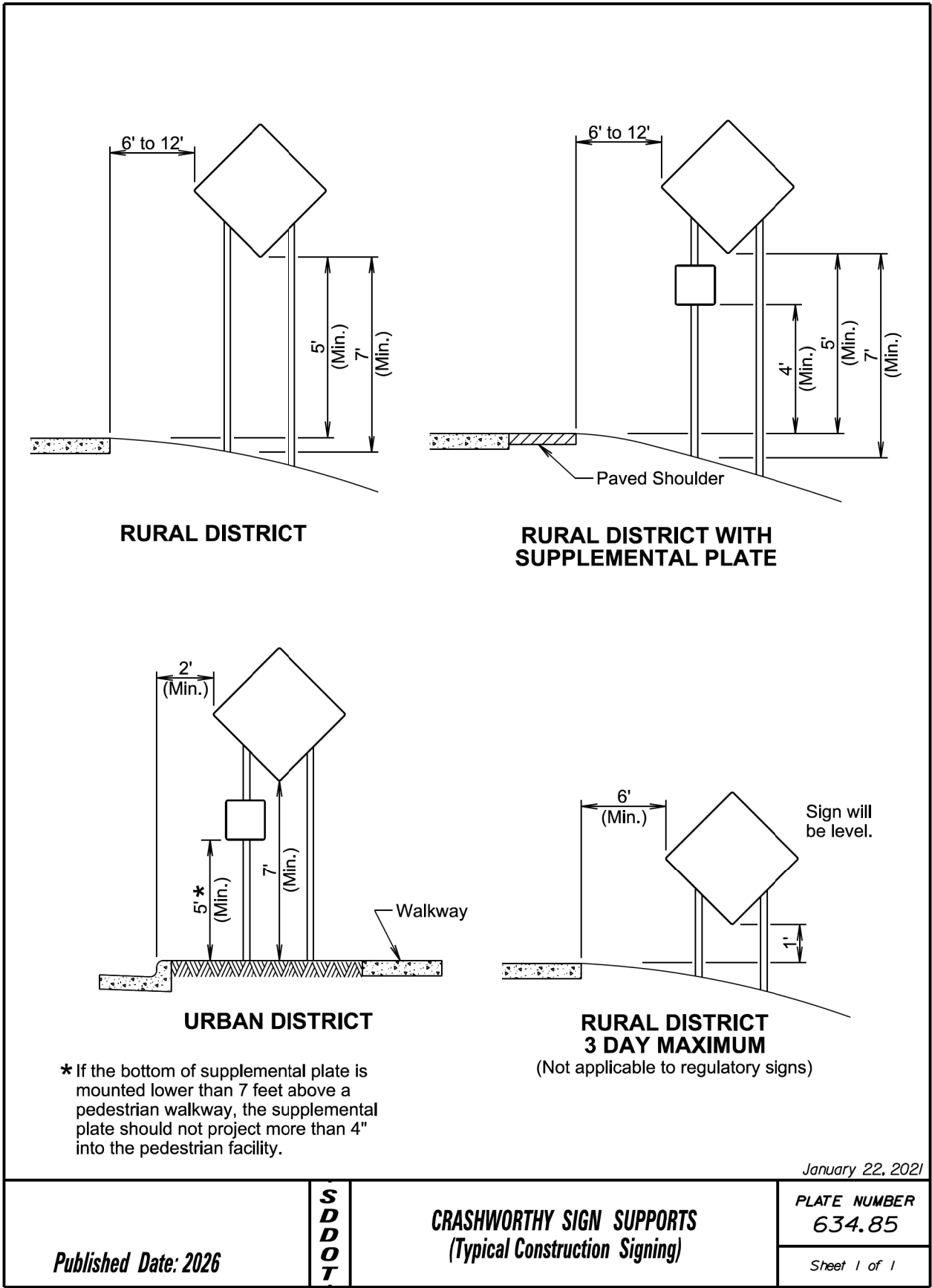
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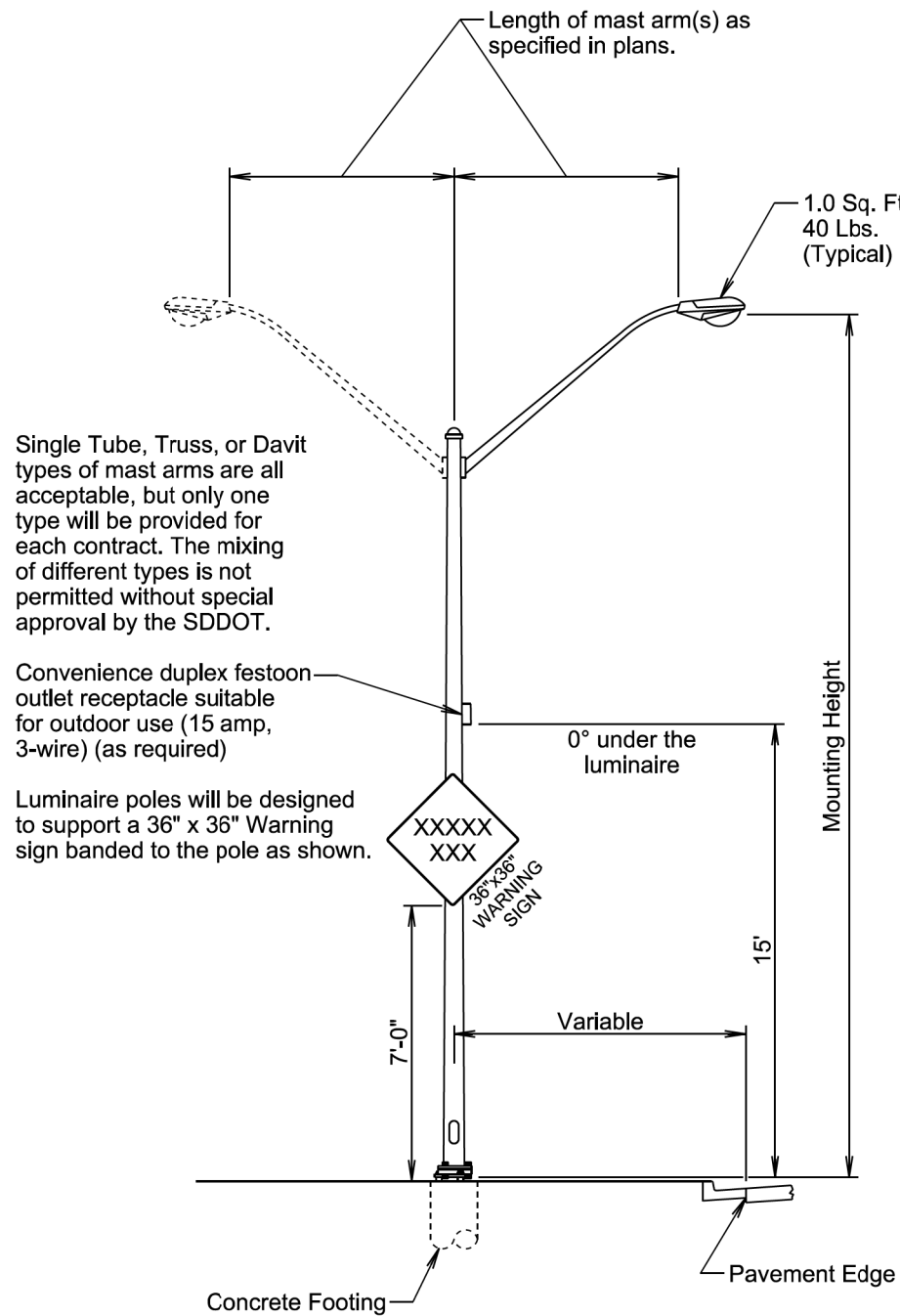
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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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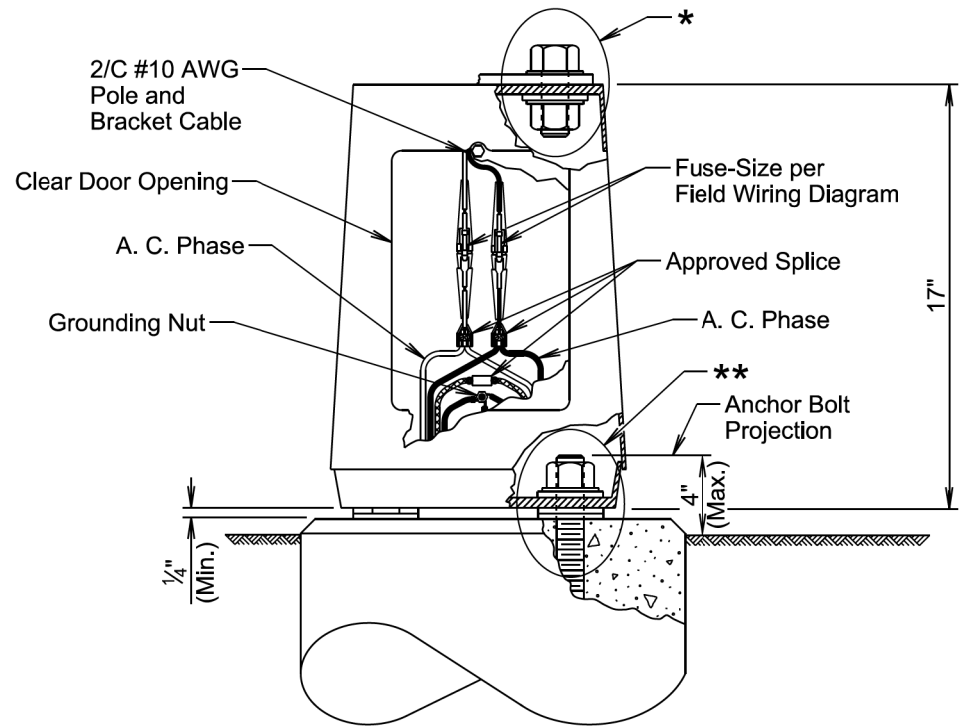


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Published Date: 2026	S D D O T	STEEL ROADWAY LUMINAIRE POLE WITH MAST ARM(S)	PLATE NUMBER 635.01
			Sheet 1 of 1



GENERAL NOTES:

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

Fused connectors will be breakaway type.

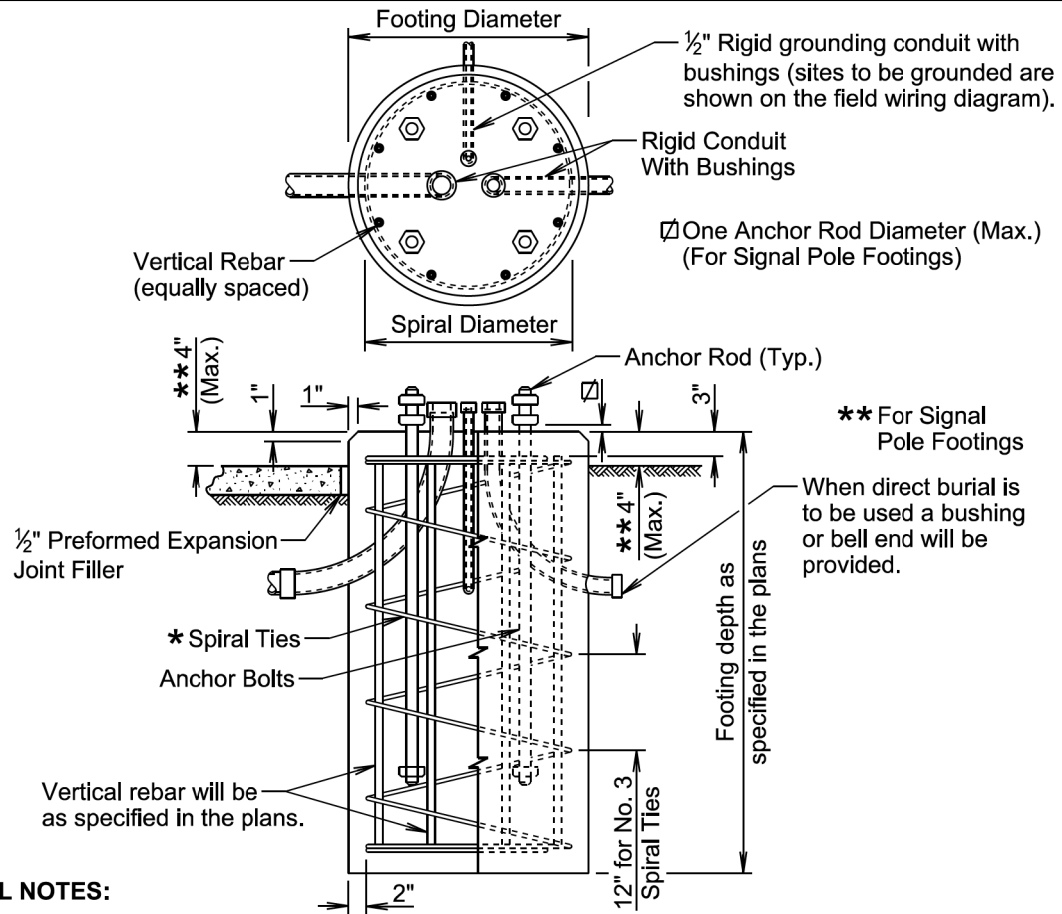
* Hardware connecting the pole to the base will be installed in accordance with the manufacturer's recommendation.

** 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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Published Date: 2026	S D D O T	ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE	PLATE NUMBER 635.21
			Sheet 1 of 1

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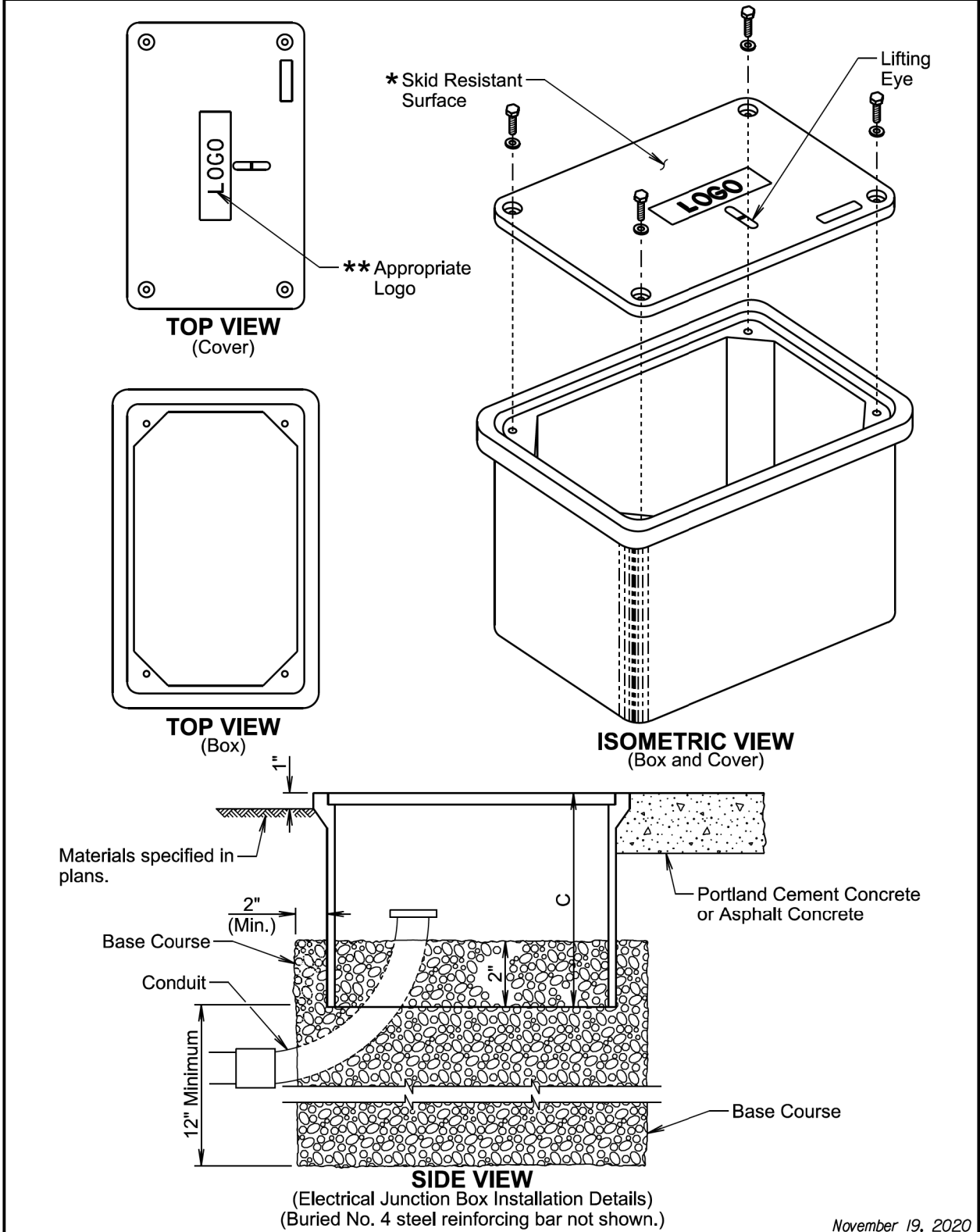


GENERAL NOTES:

- * 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: 2026	S D D O T	POLE FOOTING	PLATE NUMBER 635.55
			Sheet 1 of 1



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Published Date: 2026	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

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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.

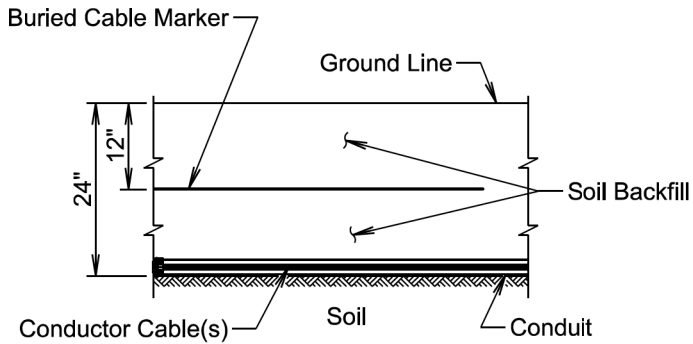
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE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

The electrical junction boxes will be UL listed.

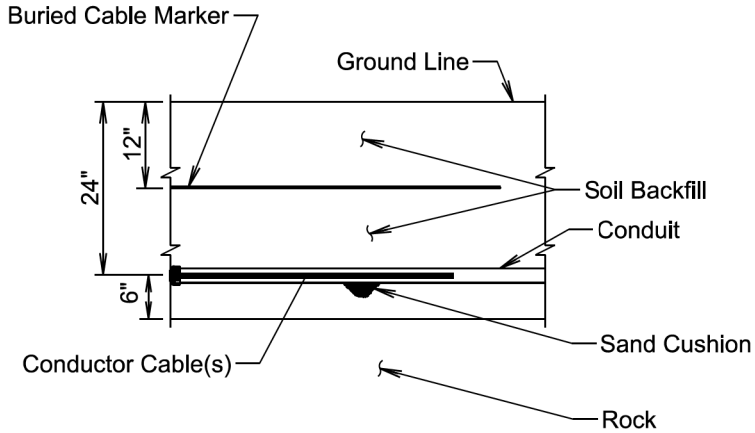
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for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

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<i>Published Date: 2026</i>	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



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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<i>Published Date: 2026</i>	S D D O T	CONDUIT INSTALLATION	PLATE NUMBER 635.76
			Sheet 1 of 1