

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0010(108)182	1	18

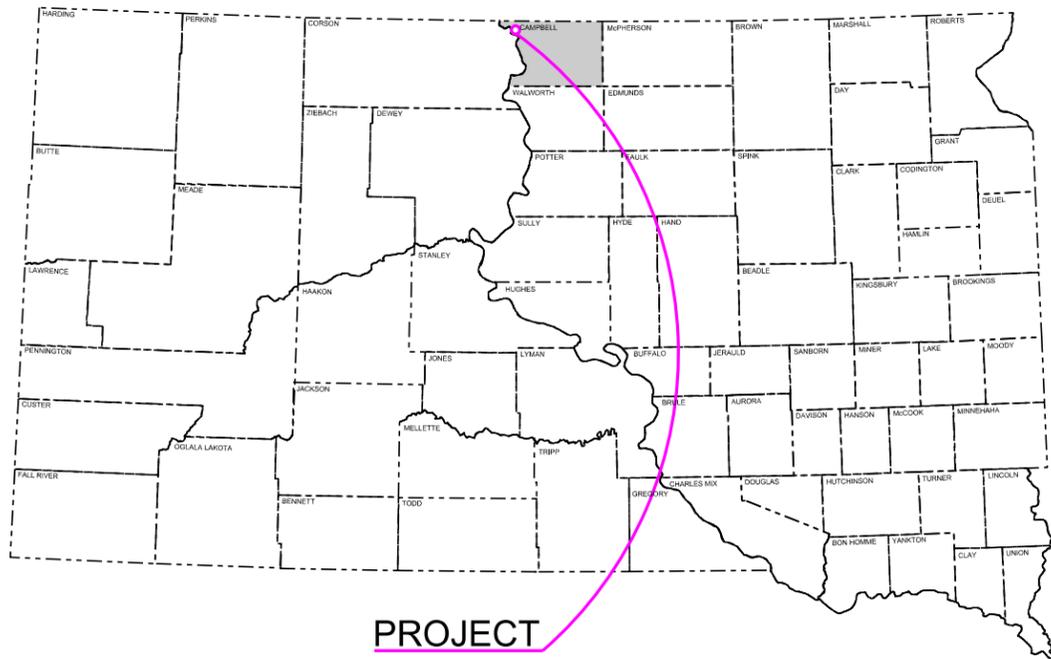
Plotting Date: 07/14/2015

**PROJECT P 0010(108)182**  
**SD HIGHWAY 10**  
**CAMPBELL COUNTY**

ROADWAY LIGHTING  
PCN 04FF

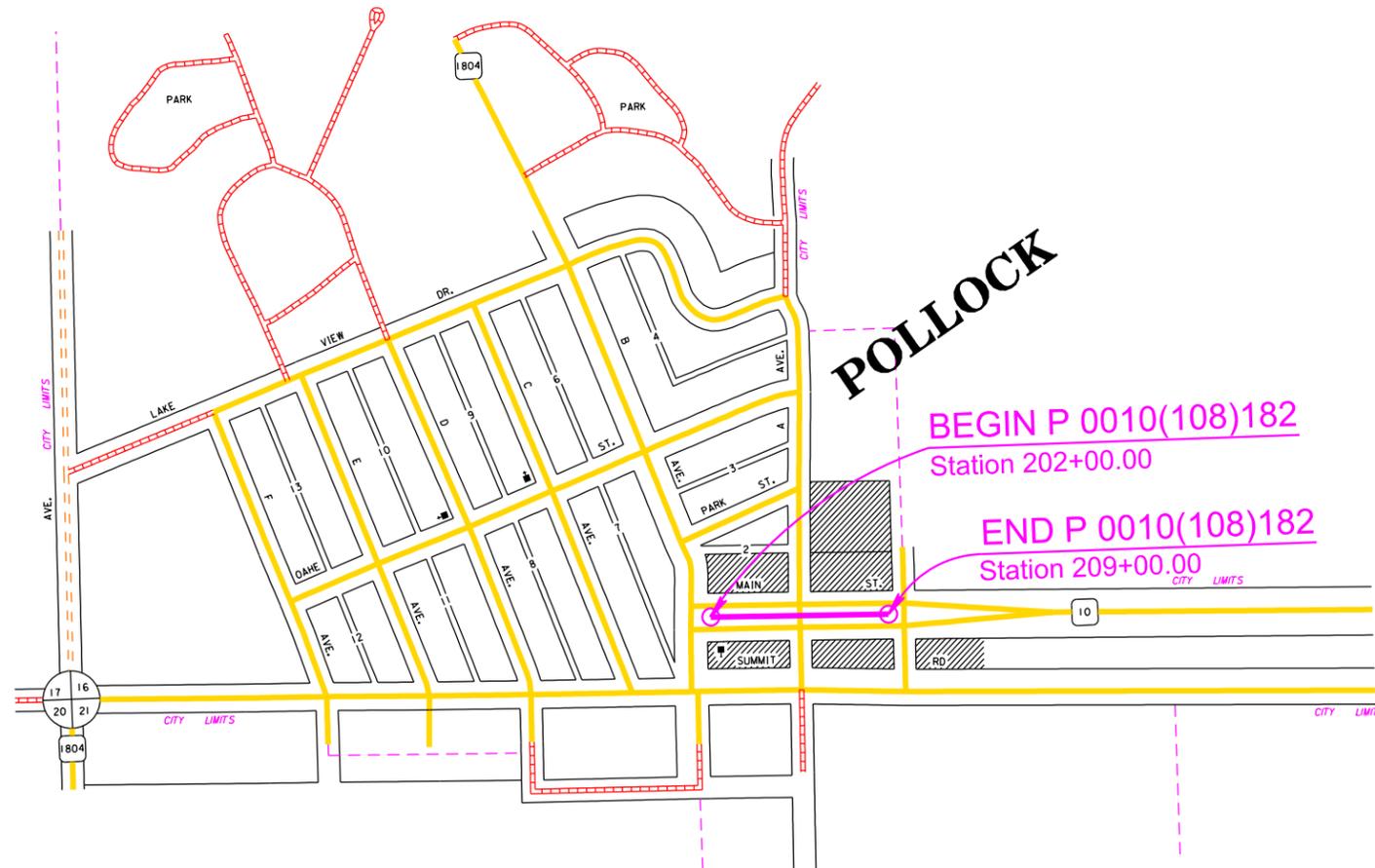
INDEX OF SHEETS

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PROJECT

R78W



DESIGN DESIGNATION

ADT (2014)	500
ADT (2035)	775
DHV	99.2
D	52
T DHV	7%
T ADT	15.4
V	30

STORM WATER PERMIT

None Required

5

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## ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1540	Remove Luminaire Pole Footing	12	Each
110E5020	Salvage Traffic Sign	9	Each
110E5100	Salvage Luminaire Pole	12	Each
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	301	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E0145	Breakaway Base Luminaire Pole with Twin Arms, 45' Mounting Height	4	Each
635E3340	Roadway Luminaire, 400 Watt with Photoelectric Cell	8	Each
635E5020	2' Diameter Footing	36.0	Ft
635E5302	Type 2 Electrical Junction Box	2	Each
635E5400	Electrical Service Cabinet	1	Each
635E8120	2" Rigid Conduit, Schedule 40	655	Ft
635E8220	2" Rigid Conduit, Schedule 80	155	Ft
635E9016	1/C #6 AWG Copper Wire	2,920	Ft
635E9024	1/C #14 AWG Copper Wire	300	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	480	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

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived 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. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

### COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

### COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall 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 State ROW.

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

The waste disposal site(s) shall 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 Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of 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 of time not to exceed the duration of the project. Prior to project completion, the waste shall 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) shall be incidental to the various contract items.

### COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

#### Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. 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; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on 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.

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The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order 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 staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

## SUPPLYING AS BUILT PLANS

If the traffic signal systems or roadway lighting systems are constructed differently than what is stated in the plans, the Contractor shall supply as built plans to the Engineer and a copy shall 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.

## INCIDENTAL WORK

Incidental work includes, but is not limited to, the restoration of all disturbed sidewalks, from joint to joint, at the locations where the existing luminaire poles are removed and to the satisfaction of the Engineer.

## SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor shall submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications or in Adobe PDF format.

Adobe PDF submittals shall be sent to the following email addresses:

[Norris.Leone@state.sd.us](mailto:Norris.Leone@state.sd.us)  
[Pete.Longman@state.sd.us](mailto:Pete.Longman@state.sd.us)

## SALVAGE LUMINAIRE POLE

Existing luminaire poles EL1-EL12 shall be salvaged and delivered to the City of Pollock by the Contractor. The Contractor shall notify the City 5 days before the delivery of the salvaged luminaire poles. The City contact is Brent Odde at (605) 848 1967.

All costs for work involved in the salvage and delivery of the existing luminaire poles shall be incidental to the contract unit price per each for "Salvage Luminaire Pole".

**REMOVE LUMINAIRE POLE FOOTING**

The footings of existing luminaire poles EL1-EL12 shall be removed by the Contractor to a minimum of 2' below the ground surface. Restoration of the disturbed area shall be to the satisfaction of the Engineer.

All costs for removing the footings of the existing luminaire poles shall be incidental to the contract unit price per each for "Remove Luminaire Pole Footing".

**POLES**

Luminaire poles shall have a 45 Ft. mounting height with 8 Ft. Twin Arms.

Luminaire poles shall be designed to accommodate two 2.5'x 5' banners with bottom of the banners set 20 feet above the bottom of the pole and two 3'x5' American Flags, 20' top of the flag to the bottom of the luminaire pole.

All poles shall have a convenience duplex festoon outlet receptacle (15 amp, 3 wire) suitable for outdoor use.

**LUMINAIRES**

The accepted design for the roadway luminaires 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:

- Setback: 0 Ft.
- Lamp Loss Factor (LLF): 0.7
- Width of Lighted Area: 47 Ft.
- Spacing: 270 Ft.
- Configuration: Twin Arm- Median Mounted
- Mounting Height: 45 Ft.
- Lamp: 400W HPS

The following luminaires meet the requirements for this design:

- a.) Hubbell: Test No. HP03019.IES High Pressure Sodium, Medium, semi-cutoff, Type III
- b.) Cooper Lighting: Test No. OVY40S3E High Pressure Sodium, Medium, semi-cutoff, Type III

Three copies of the isofootcandle charts and utilization curves shall be furnished to the Engineer for approval. The Contractor must get approval from the Engineer prior to installation of the luminaires.

The approved isofootcandle data for each case shall be used to determine the correct socket position at each site. Each luminaire shall be installed with its lamp socket in the proper position and in a level attitude.

**FOOTING DATA**

The subsurface soil along SD 10 through Pollock consists of a brown silt-clay from 0' – 4' overlying a brown sand-silt from 4' – 30'. Groundwater is not anticipated at the luminaire locations.

**TABLE OF FOOTING DATA**

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L1-L4	2' - 0"	9' - 0"	1' - 8"	60' - 0"	8-#7 x 8' - 6"

- \* Footing depth shall be below ground level.
- \*\* The size of all spirals shall be #3.

**UTILITIES**

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

Utilities are not planned to be affected on this project. 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 shall contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

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**SEQUENCE OF OPERATIONS**

The Contractor shall submit a proposed sequence of operations for the Engineer's review and approval at least two weeks prior to the preconstruction meeting.

Traffic shall be maintained through the project at ALL times.

Accommodations must be made to provide access for pedestrian traffic to all business.

The Contractor must stage work to keep sidewalk open on one side of the street.

The Contractor may perform work on the roadway during daylight hours only, unless additional hours are approved by the Engineer.

**GENERAL MAINTENANCE OF TRAFFIC**

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

Certified flaggers properly attired and preceded by FLAGGER symbol signs, will be required where work activity and/or equipment present a hazard to the workers, a hazard to through traffic, or encroaches into a driving lane.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

A temporary Stop Sign will need to be placed at Sta. 202+12 in the median, until a permanent sign is installed. Permanent signs will be installed by State Forces.

**GENERAL MAINTENANCE OF TRAFFIC(Continued)**

All non-fixed location signs may be mounted on portable supports. The portable supports shall be constructed to yield upon impact to minimize hazards to motorists, and shall be of proper height. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall meet the minimum mounting heights of 5 foot for rural areas and 7 foot for urban areas.

The Contractor shall provide documentation that all breakaway sign supports comply with NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Erect only those signs that are applicable to the work in progress. When the Contractor is working at specific work spaces within the project, only those traffic control devices applicable to that operation should be displayed. Non-applicable signs and/or devices shall be removed from view by the Contractor and stored a minimum of 30 feet from the driving lanes during periods of inactivity. All costs to do this work shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

A shadow vehicle, equipped with flashing amber light and a ROAD MACHINERY AHEAD sign prominently displayed, shall be used in advance of landscaping, clean up, and other mobile work activities. Highway equipment working within traffic or adjacent to traffic shall, at all times, display a flashing or revolving amber light to warn the traveling public. The Contractor shall maintain the driving surface on the project to eliminate hazards to the traveling public. The driving surface is defined as both Driving Lanes along with both outside shoulders on the project.

The cost for additional signs shall be paid for at the contract unit price per square foot for "Traffic Control Signs". Additional Flagger hours shall be paid for at the contract unit price per hour for "Flagging". The cost of additional channeling devices shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

Traffic Control signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

**TRAFFIC CONTROL**

The Contractor shall designate an employee to be responsible for the maintenance of traffic. The Engineer must approve the employee selected. The name and phone number of person(s) shall be provided to the SD Department of Transportation (773-5294), SD Highway Patrol (Pierre State Radio (773-3536)), Mobridge Dispatch (845-5000), and Campbell County Sheriff Department (955-3355).

Channelizing devices in a series shall be of the same type. Channelizing drums shall be of a two part construction with breakaway bases.

All traffic control devices shall be in "like new" condition.

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**SIGN TABULATION**

**ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	1	30" x 30"	6	6
R8-3	NO PARKING (symbol)	6	24" x 24"	4	24
R9-9	SIDEWALK CLOSED	4	24" x 12"	2	8
R9-10	SIDEWALK CLOSED w ith ARROW (L or R) USE OTHER SIDE	4	24" x 12"	2	8
R9-11	SIDEWALK CLOSED AHEAD w ith ARROW (L or R) CROSS HERE	4	24" x 18"	3	12
W20-1	ROAD WORK AHEAD	7	48" x 48"	16	112
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	7	36" x 18"	5	35
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>301</b>

**SALVAGE TRAFFIC SIGN**

All existing traffic control signs that are mounted on the existing luminaire poles shall be dismantled and delivered to the SDDOT Maintenance Yard in Herreid. The Contractor shall notify the Engineer two days prior to time of delivery to the Maintenance Yard so correct placement for storage and inventory of materials can be made upon receipt.

All bolts, nuts, and washers shall be placed in individual 5-gallon pails.

All cost for labor and equipment necessary to remove, dismantle, and deliver signs shall be incidental to the contract unit price per each for "Salvage Traffic Sign".

# TABLE OF CONDUIT AND CABLE QUANTITIES

Location to Location	Rigid Conduit		Copper Wire		Pole and Bracket Cable																
	Schedule 40	Schedule 80	1/C #6 AWG Ft	1/C #14 AWG Ft		2/C #10 AWG Ft															
	2" Ft	2" Ft																			
SERVICE CABINET	JL1	45		190																	
JL1	JL2		85	355																	
JL2	L2	65		270																	
L2	L1	230		715																	
JL2	L3	90	70	660																	
L3	L4	235		730																	
LUMINAIRE POLES	L1			75	120																
LUMINAIRE POLES	L2			75	120																
LUMINAIRE POLES	L3			75	120																
LUMINAIRE POLES	L4			75	120																
<b>Total:</b>		665	155	2,920	300	480															

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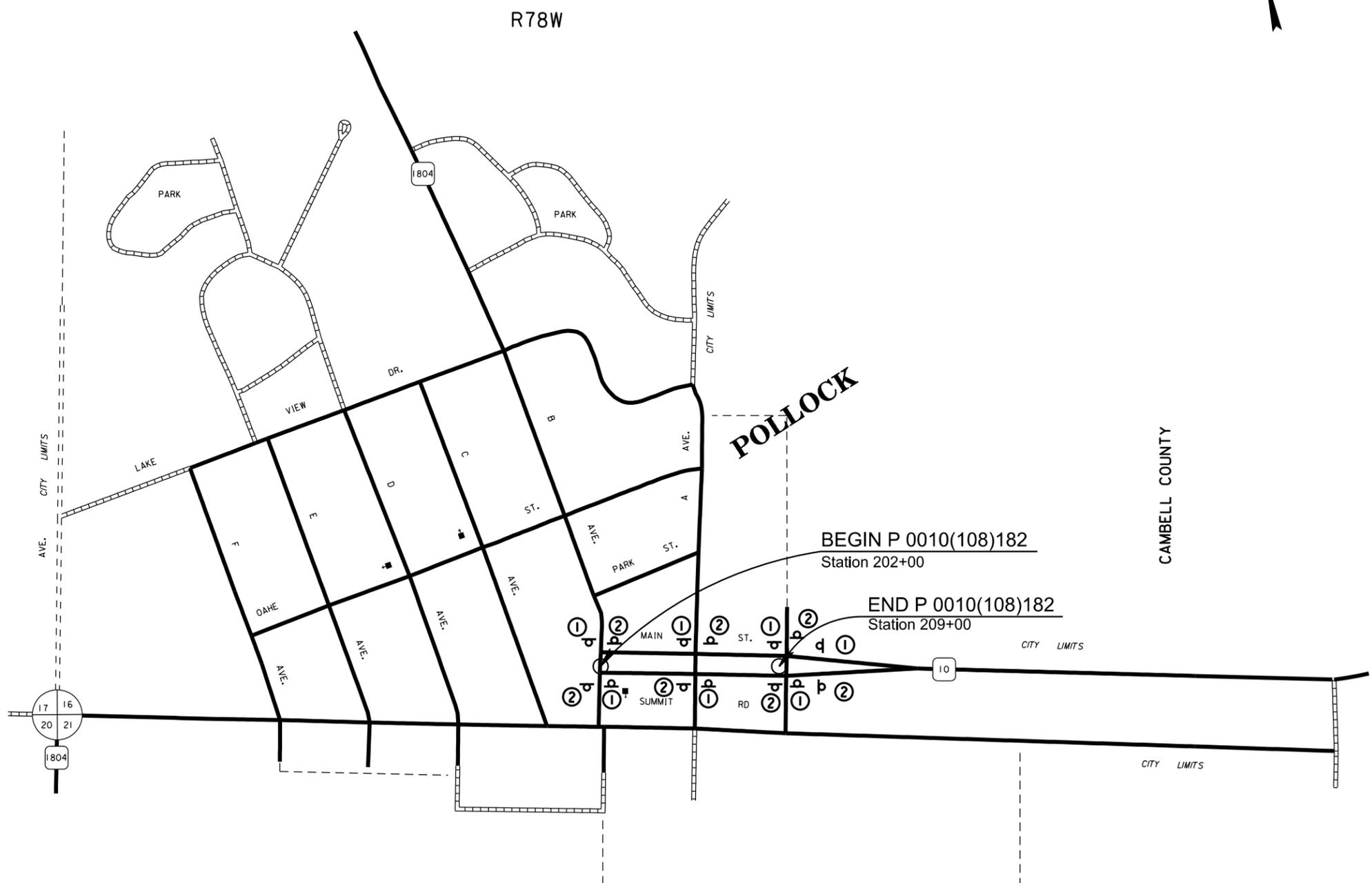
# FIXED LOCATION SIGN LAYOUT



**LEGEND:**

① ROAD WORK AHEAD  
W20-1 (48"x48")

② END ROAD WORK  
G20-2 (36"x18")



Notes:

Sign locations will be verified in the field by the Engineer prior to installation.

Some fixed location signs may need to be mounted on temporary supports due to site conditions. Verify each location with the Engineer prior to installation.

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# EXISTING TOPOGRAPHY SYMBOLOGY AND LEGEND

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Anchor		Hedge		Shrub Tree	
Antenna		Highway R.O.W. Marker		Sidewalk	
Approach		Interstate Close Gate		Sign Face	
Assumed Corner		Iron Pin		Sign Post	
Azimuth Marker		Irrigation Ditch		Slough Or Marsh	
BBQ Grill/ Fireplace		Lake Edge		Spring	
Bearing Tree		Lawn Sprinkler		Stream Gauge	
Bench Mark		Mailbox		Street Marker	
Box Culvert		Manhole Electric		Subsurface Utility Exploration Test Hole	
Bridge		Manhole Gas		Telephone Fiber Optics	
Brush		Manhole Misc		Telephone Junction Box	
Buildings		Manhole Sanitary Sewer		Telephone Pole	
Bulk Tank		Manhole Storm Sewer		Television Cable Jct Box	
Cattle Guard		Manhole Telephone		Television Tower	
Cemetery		Manhole Water		Test Wells/Bore Holes	
Centerline		Merry-Go-Round		Traffic Signal	
Cistern		Microwave Radio Tower		Trash Barrel	
Clothes Line		Misc. Line		Tree Belt	
Commercial Sign Double Face		Misc. Property Corner		Tree Coniferous	
Commercial Sign One Post		Misc. Post		Tree Deciduous	
Commercial Sign Overhead		Overhang Or Encroachment		Tree Stumps	
Commercial Sign Two Post		Overhead Utility Line		Triangulation Station	
Concrete Symbol		Parking Meter		Underground Electric Line	
Creek Edge		Pipe With End Section		Underground Gas Line	
Curb/Gutter		Pipe With Headwall		Underground High Pressure Gas Line	
Curb		Pipe Without End Section		Underground Sanitary Sewer	
Dam Grade/Dike/Levee		Playground Slide		Underground Storm Sewer	
Deck Edge		Playground Swing		Underground Tank	
Ditch Block		Power And Light Pole		Underground Telephone Line	
Doorway Threshold		Power And Telephone Pole		Underground Television Cable	
Drainage Profile		Power Meter		Underground Water Line	
Drop Inlet		Power Pole		Warning Sign One Post	
Edge Of Asphalt		Power Pole And Transformer		Warning Sign Two Post	
Edge Of Concrete		Power Tower Structure		Water Fountain	
Edge Of Gravel		Propane Tank		Water Hydrant	
Edge Of Other		Property Pipe		Water Hydrant	
Edge Of Shoulder		Property Pipe With Cap		Water Meter	
Elec. Trans./Power Jct. Box		Property Stone		Water Tower	
Fence Barbwire		Public Telephone		Water Valve	
Fence Chainlink		Railroad Crossing Signal		Water Well	
Fence Electric		Railroad Milepost Marker		Weir Rock	
Fence Misc.		Railroad Profile		Windmill	
Fence Rock		Railroad R.O.W. Marker		Wingwall	
Fence Snow		Railroad Signs		Witness Corner	
Fence Wood		Railroad Switch			
Fence Woven		Railroad Track		State and National Line	
Fire Hydrant		Railroad Trestle		County Line	
Flag Pole		Rebar		Section Line	
Flower Bed		Rebar With Cap		Quarter Line	
Gas Valve Or Meter		Reference Mark		Sixteenth Line	
Gas Pump Island		Regulatory Sign One Post		Property Line	
Grain Bin		Regulatory Sign Two Post		Construction Line	
Guardrail		Retaining Wall		R. O. W. Line	
Guide Sign One Post		Riprap		New R. O. W. Line	
Guide Sign Two Post		River Edge		Cut and Fill Limits	
Gutter		Rock And Wire Baskets		Control of Access	
Guy Pole		Rockpiles		New Control of Access	
Haystack		Satellite Dish		Proposed ROW (After Property Disposal)	
		Septic Tank			

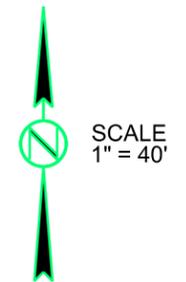
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# CONDUIT LAYOUT

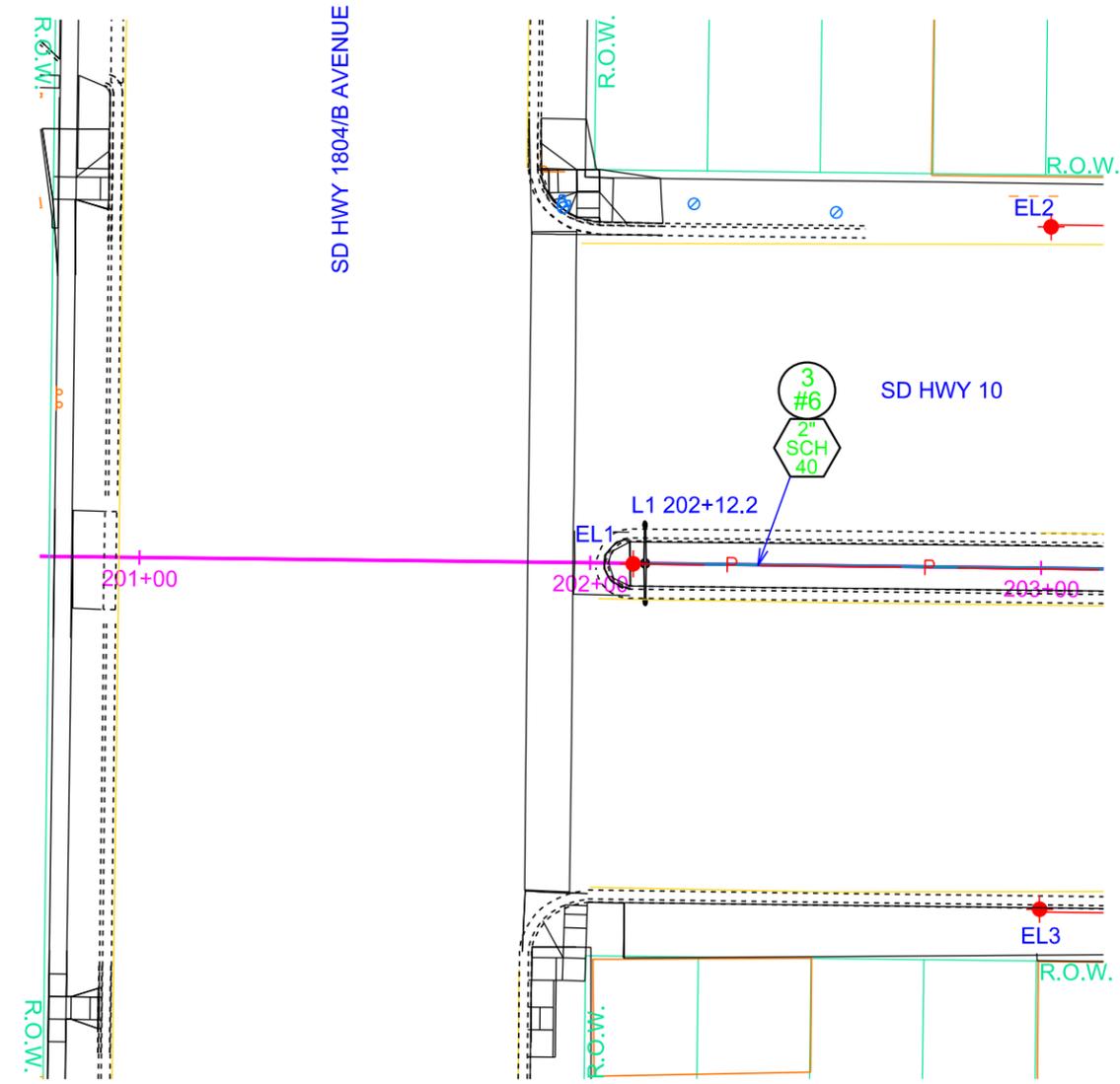
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ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	REMOVE LUMINAIRE POLE FOOTING (EL1-EL12)	12	EACH
	SALVAGE LUMINAIRE POLE (EL1-EL12)	12	EACH
—●—	BREAKAWAY BASE LUMINAIRE POLE W/TWIN 8' ARMS 45' MT HT (L1-L4)	4	EACH
	2' DIAMETER FOOTING (L1-L4)	36	FT
□	TYPE 2 ELECTRICAL JUNCTION BOX (JL1-JL2)	2	EACH
▲	ELECTRICAL SERVICE CABINET	1	EACH
Ⓜ	METER SOCKET NOT A BID ITEM	1	EACH
◇ SCH 40	2" RIGID CONDUIT, SCHEDULE 40	665	FT
◇ SCH 80	2" RIGID CONDUIT, SCHEDULE 80	155	FT
○ #6	1/C #6 AWG COPPER WIRE	2,920	FT
○ #14	1/C #14 AWG COPPER WIRE	300	FT
	2/C #10 AWG COPPER POLE & BRACKET CABLE	480	FT



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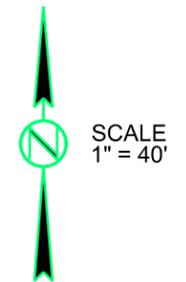
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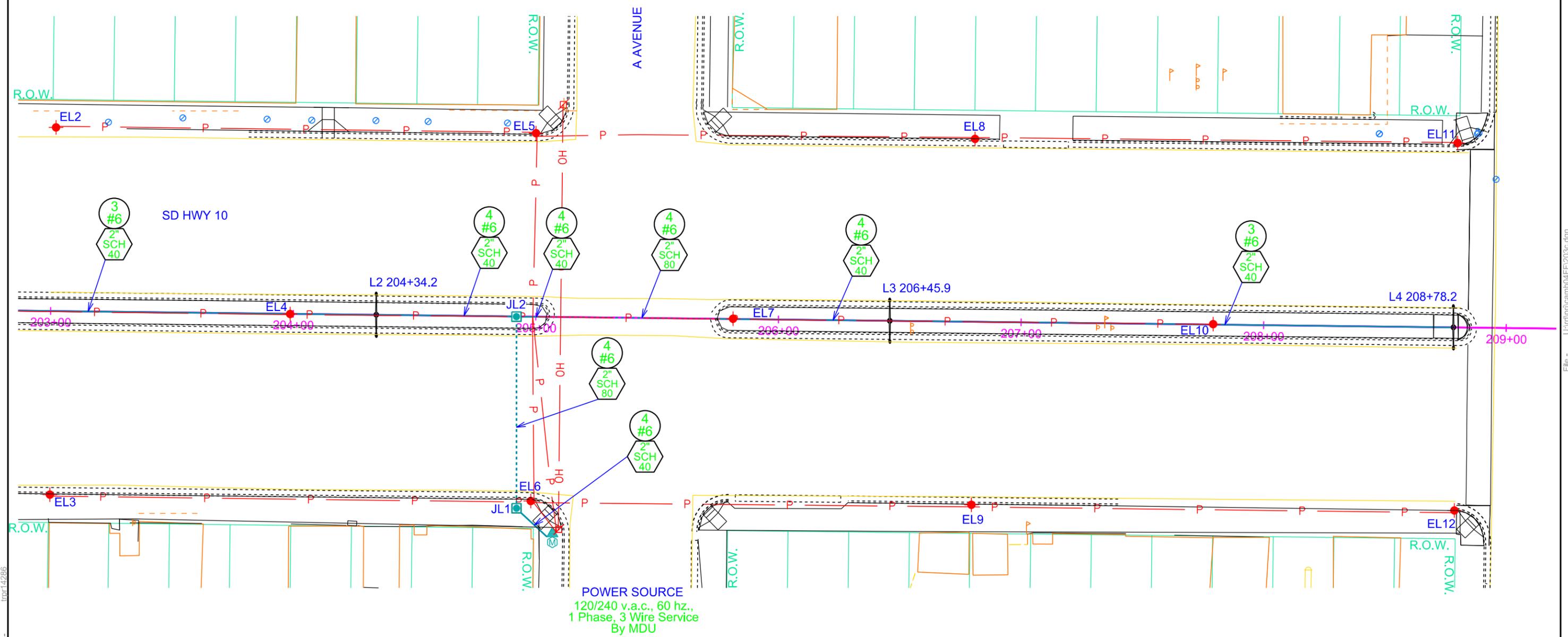
# CONDUIT LAYOUT

## SD HWY 10

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# WIRING DIAGRAM

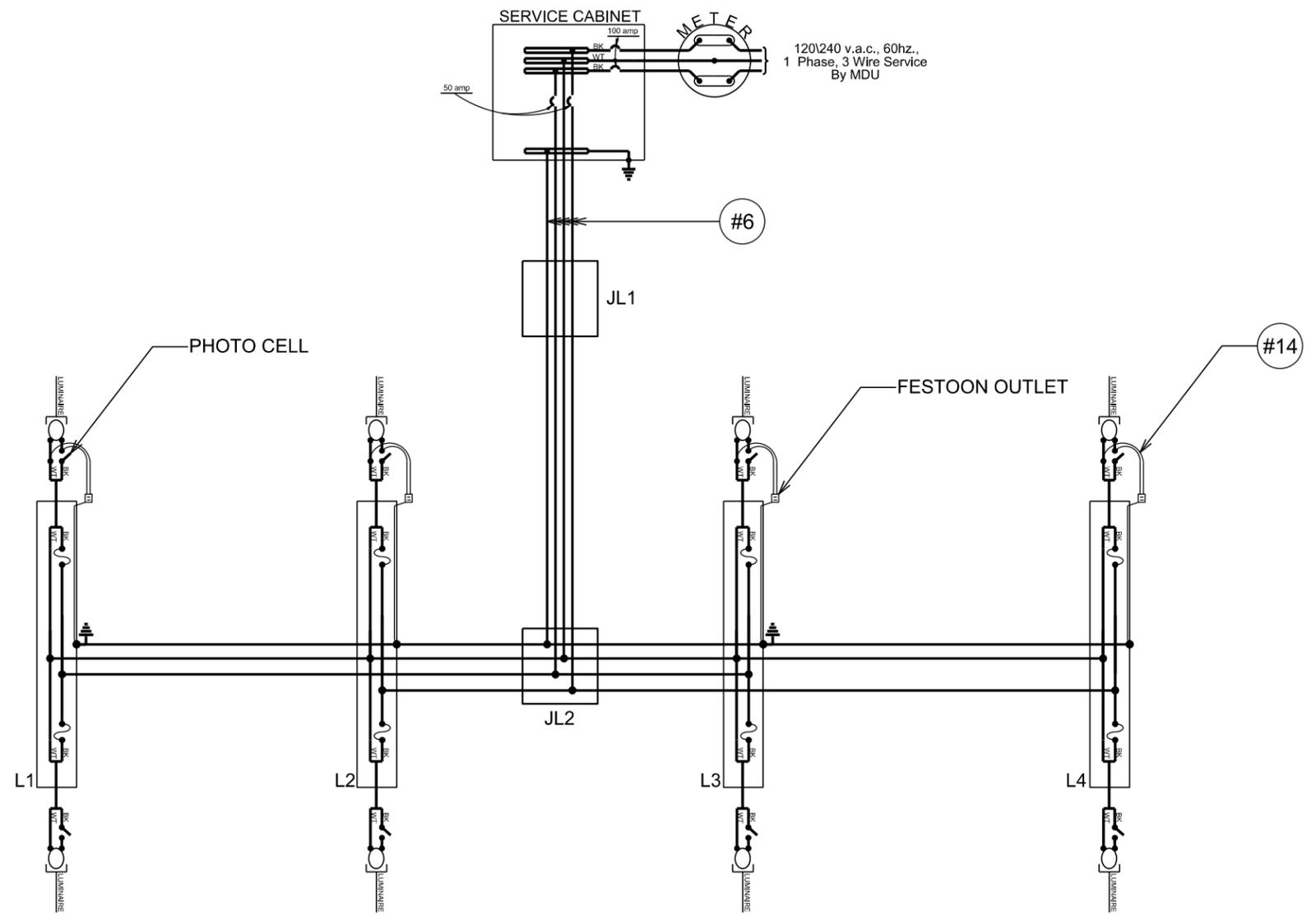
## SD HWY 10

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

- LEGEND:**
- ○ FUSE: 8 amp. Non-Time Delay  
or  
3 1/2 amp. Dual Element
  - LUMINAIRE: 400 watt High Pressure Sodium Lamp



Plot Scale - 1:40

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Plot Scale - 1:200

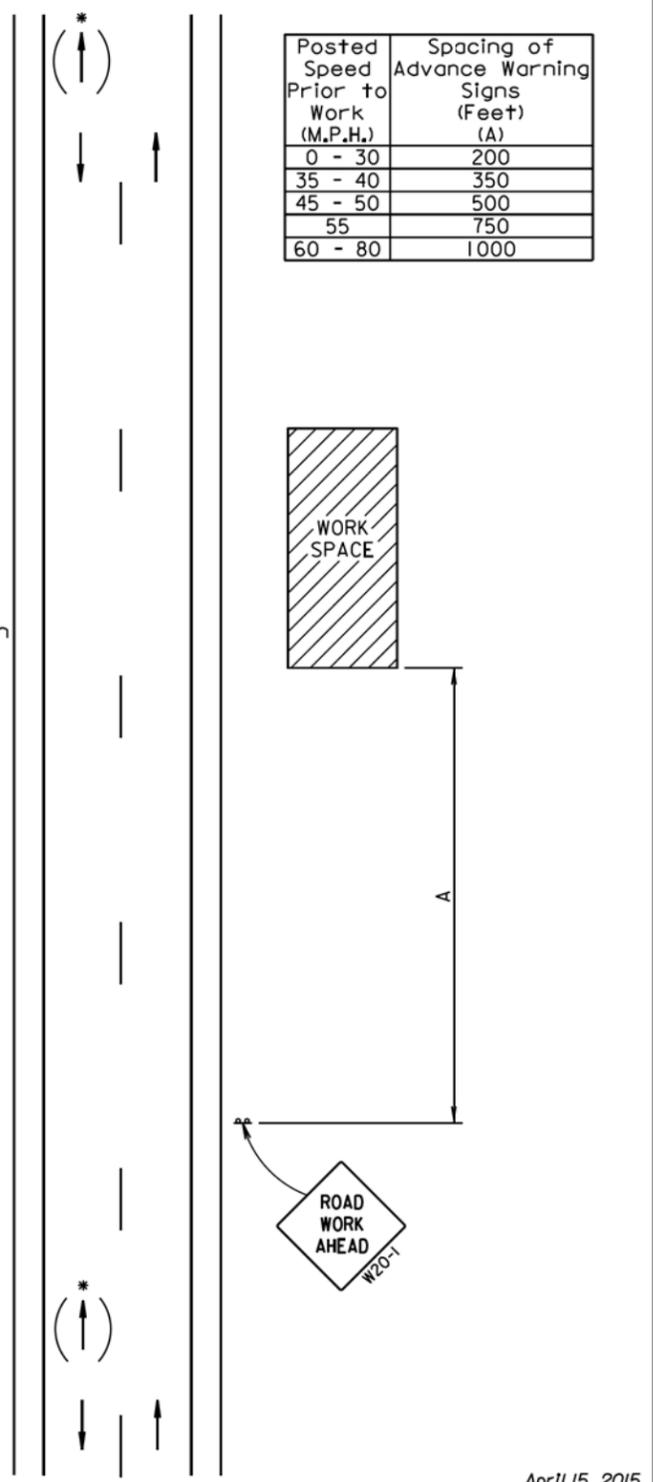
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall 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.

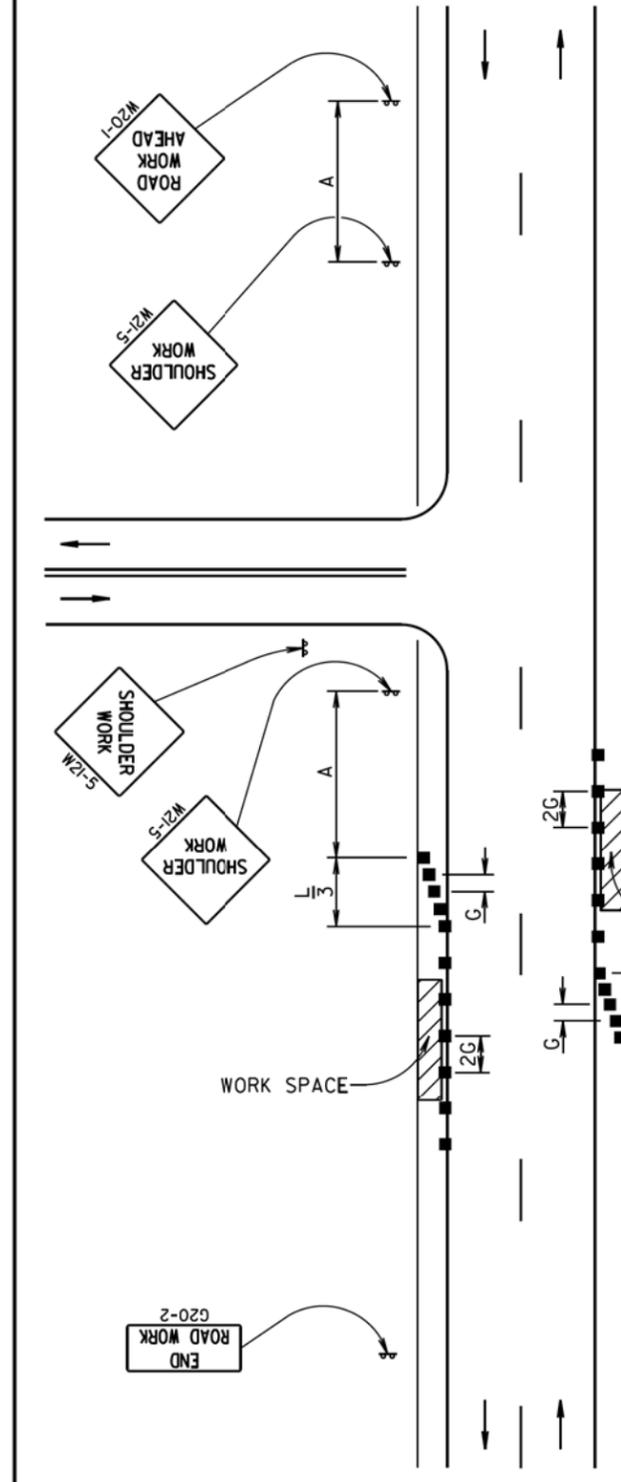
\* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

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.



April 15, 2015

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER</b>	PLATE NUMBER <b>634.01</b>
	Published Date: 2nd Qtr. 2015	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 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

**END ROAD WORK G20-2**

The channelizing devices shall 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.

September 22, 2014

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS</b>	PLATE NUMBER <b>634.03</b>
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1

- Plotted From - tpr14286

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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 - 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) shall 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 shall be drums or 42" cones.

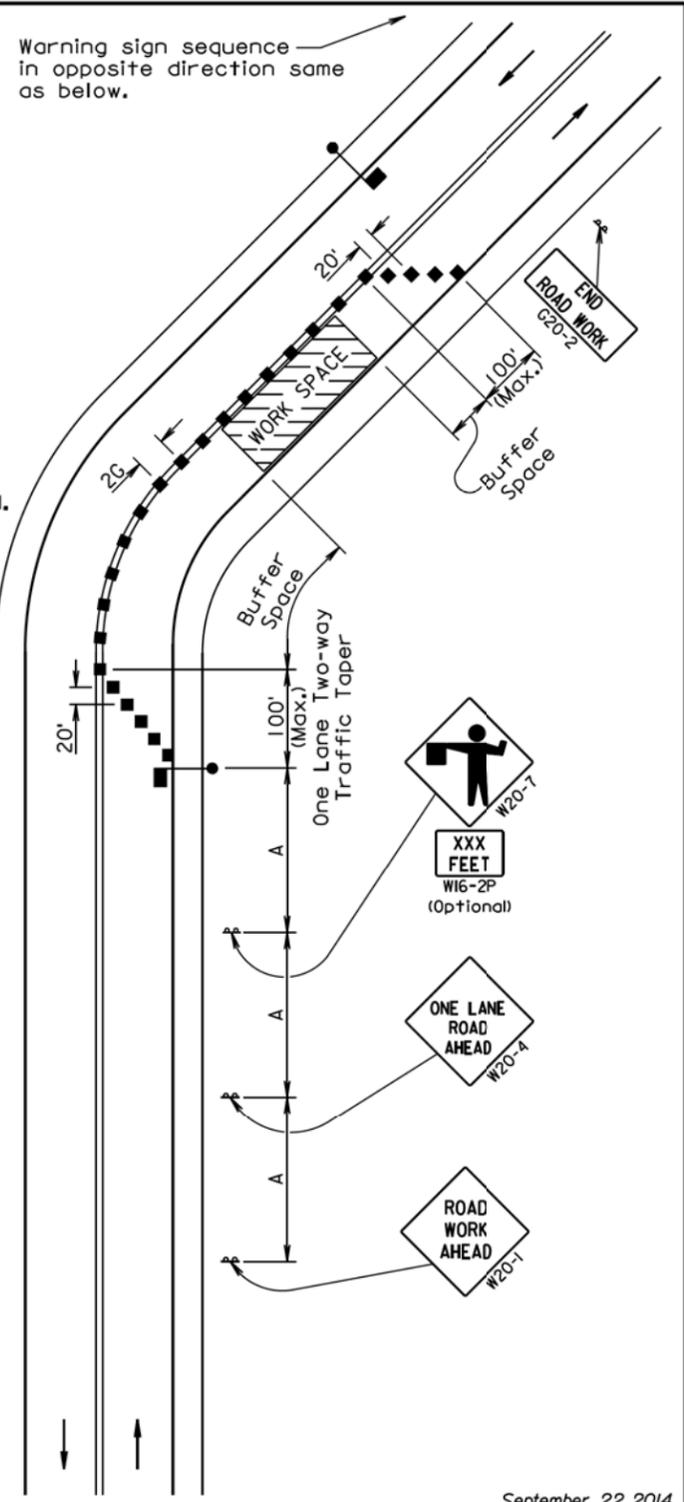
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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

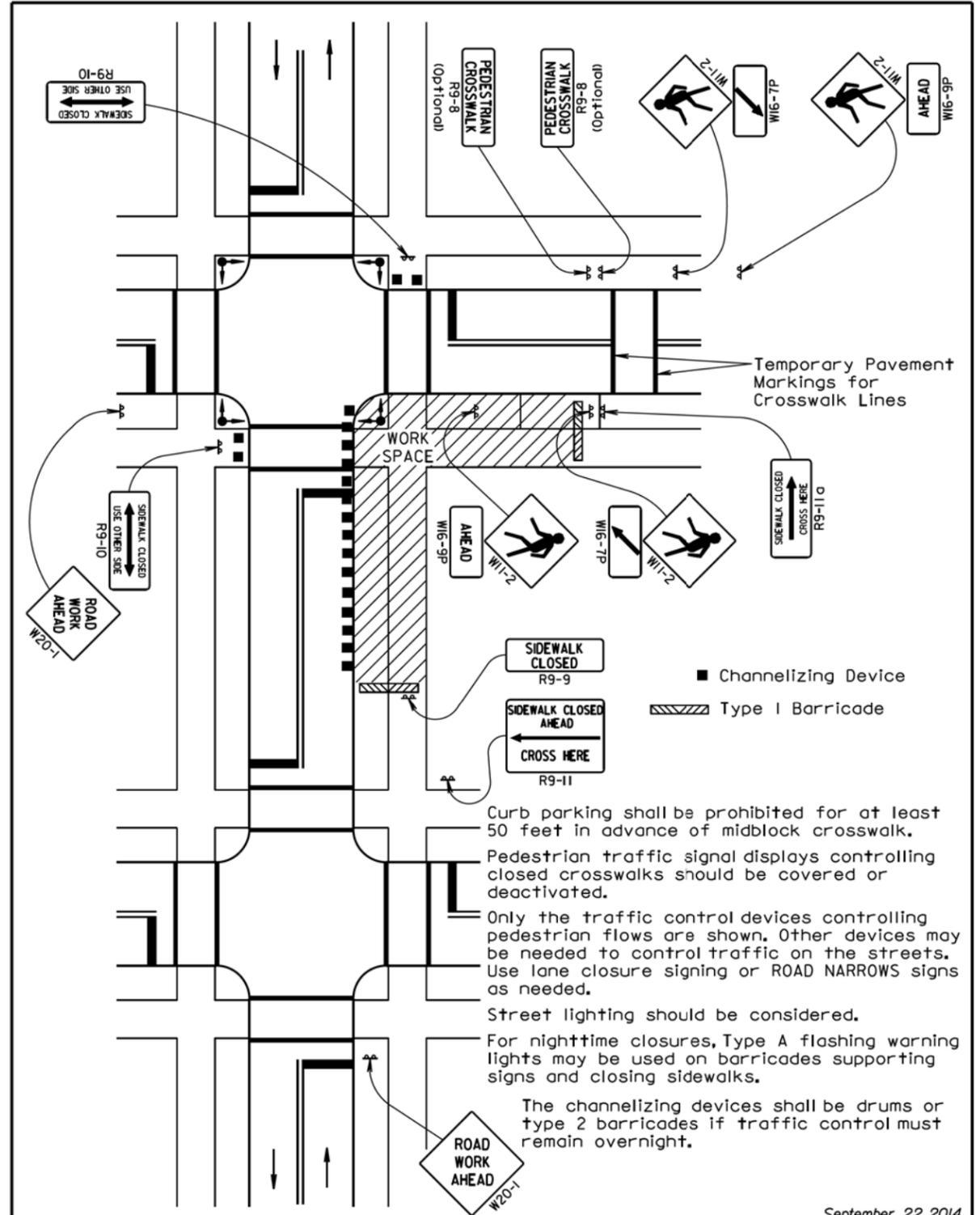
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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



September 22, 2014

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED</b>	PLATE NUMBER <b>634.23</b>
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1



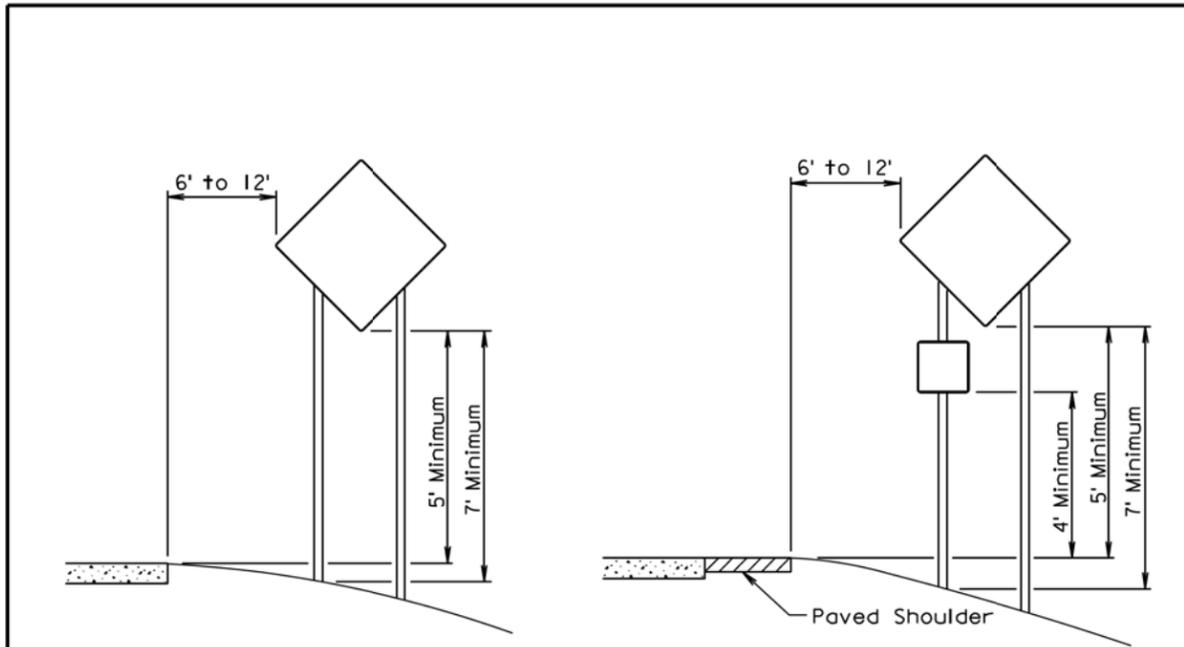
September 22, 2014

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES SIDEWALK CLOSURES AND PEDESTRIAN DETOURS</b>	PLATE NUMBER <b>634.33</b>
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1

Plot Scale - 1:200

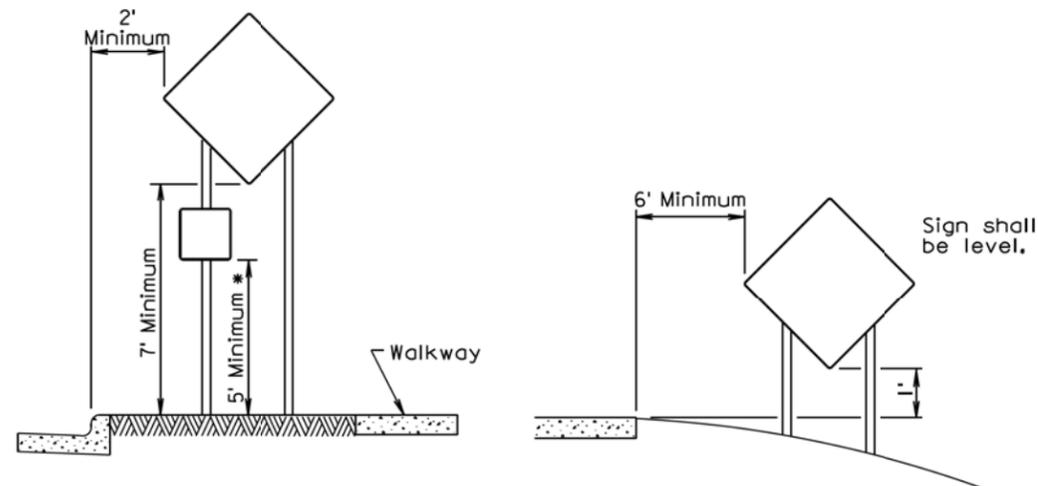
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RURAL DISTRICT

RURAL DISTRICT WITH  
SUPPLEMENTAL PLATE



URBAN DISTRICT

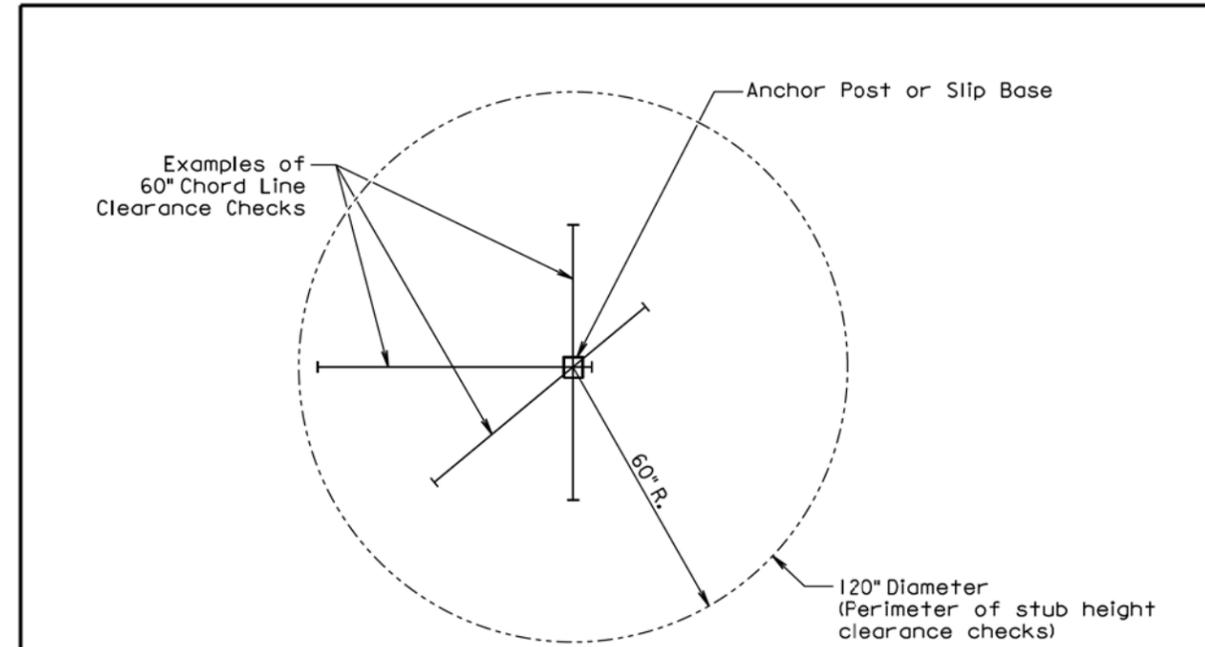
RURAL DISTRICT  
3 DAY MAXIMUM

\* 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.

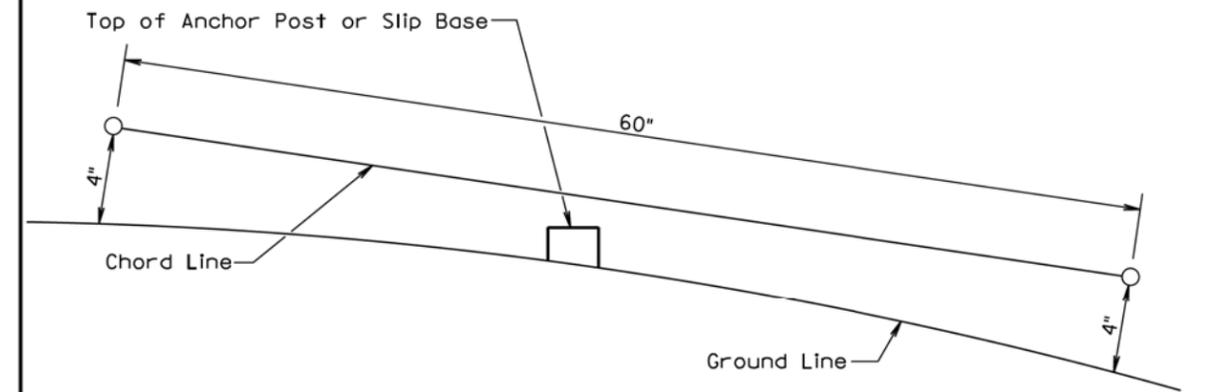
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 2nd Qtr. 2015	S D D O T	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 SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

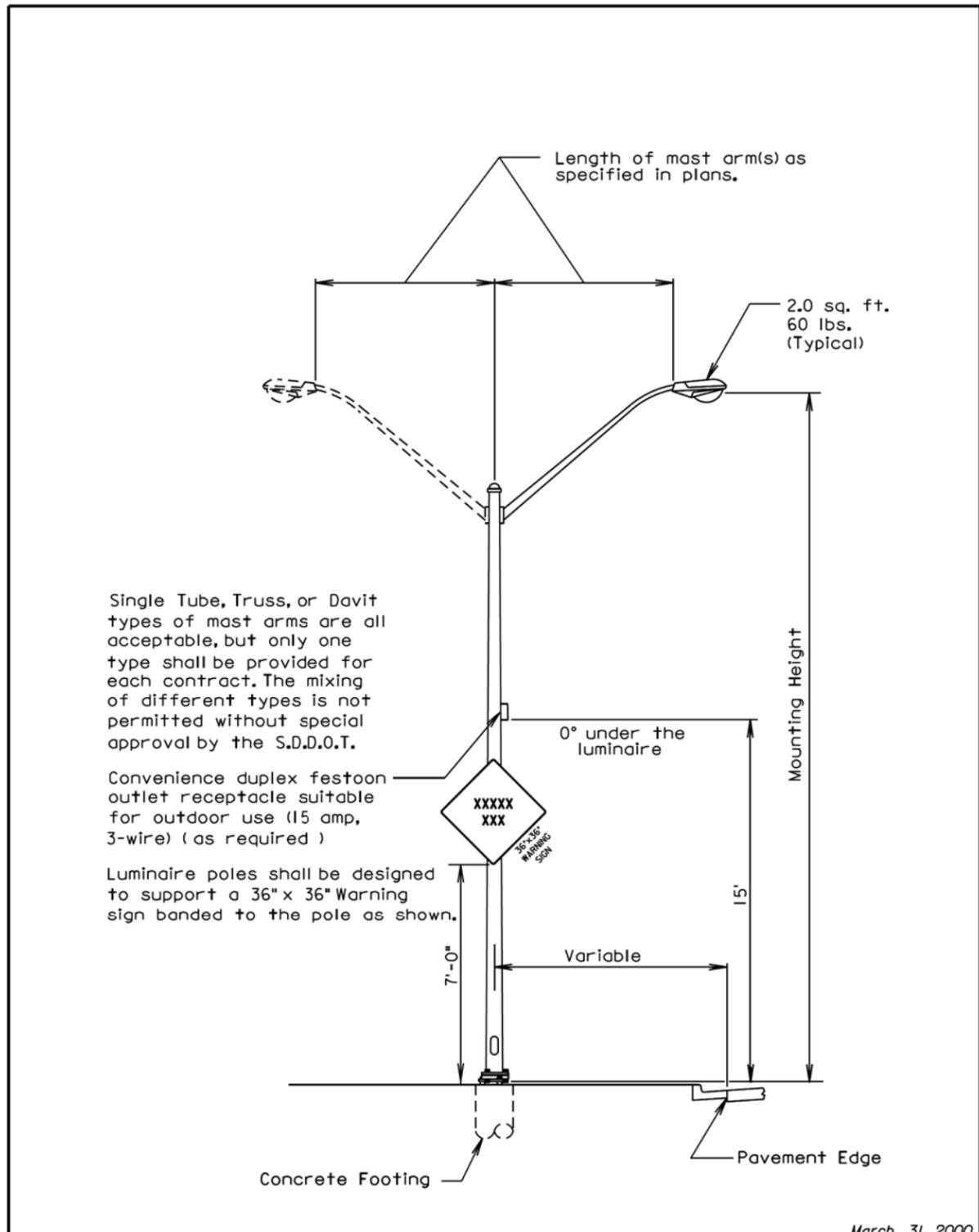
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2015	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

Plot Scale - 1:200



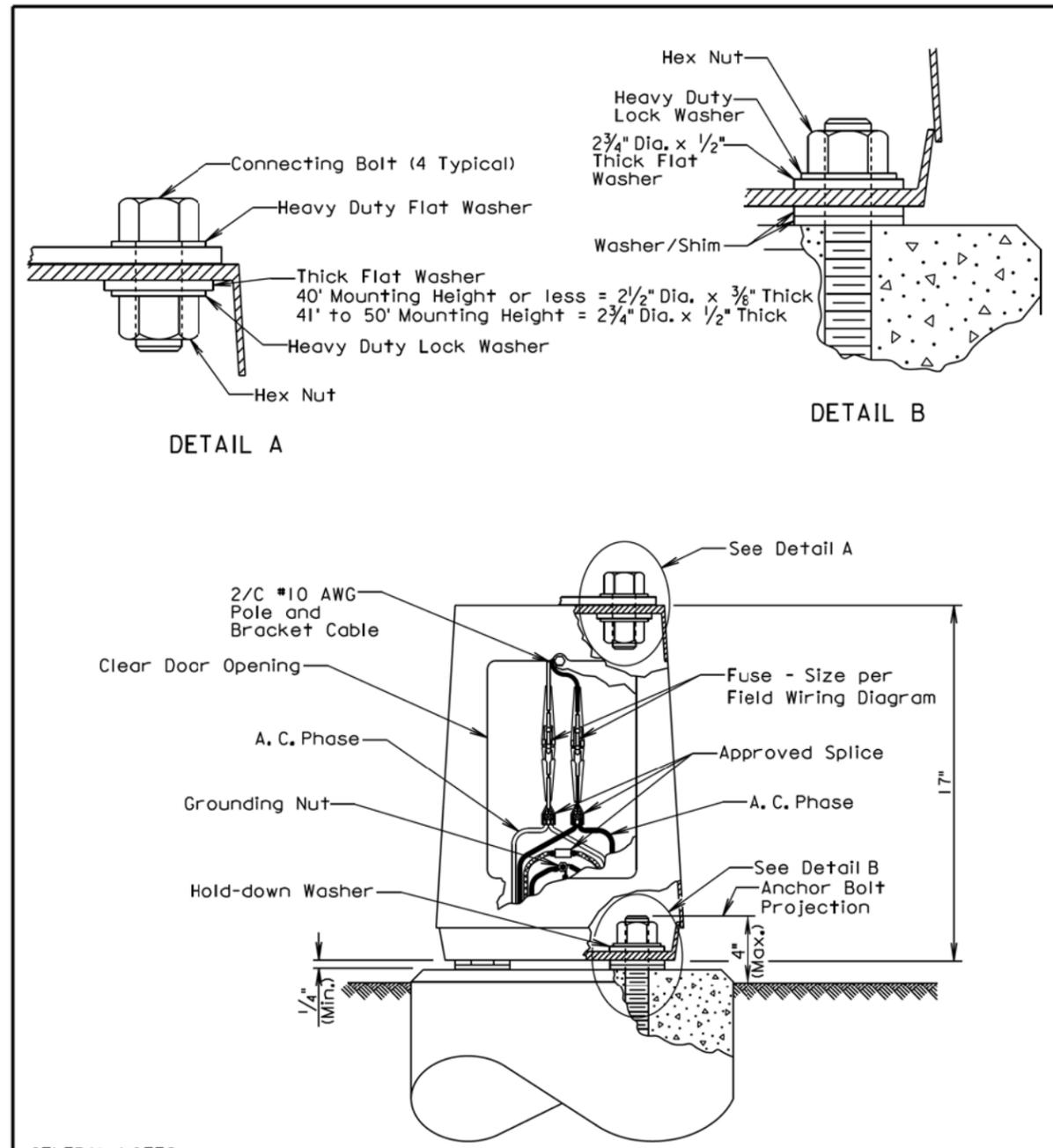
Single Tube, Truss, or Davit types of mast arms are all acceptable, but only one type shall be provided for each contract. The mixing of different types is not permitted without special approval by the S.D.D.O.T.

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

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

March 31, 2000

<b>S D D O T</b>	<b>STEEL ROADWAY LUMINAIRE POLE WITH MAST ARM(S)</b>	PLATE NUMBER 635.01
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1



**GENERAL NOTES:**

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

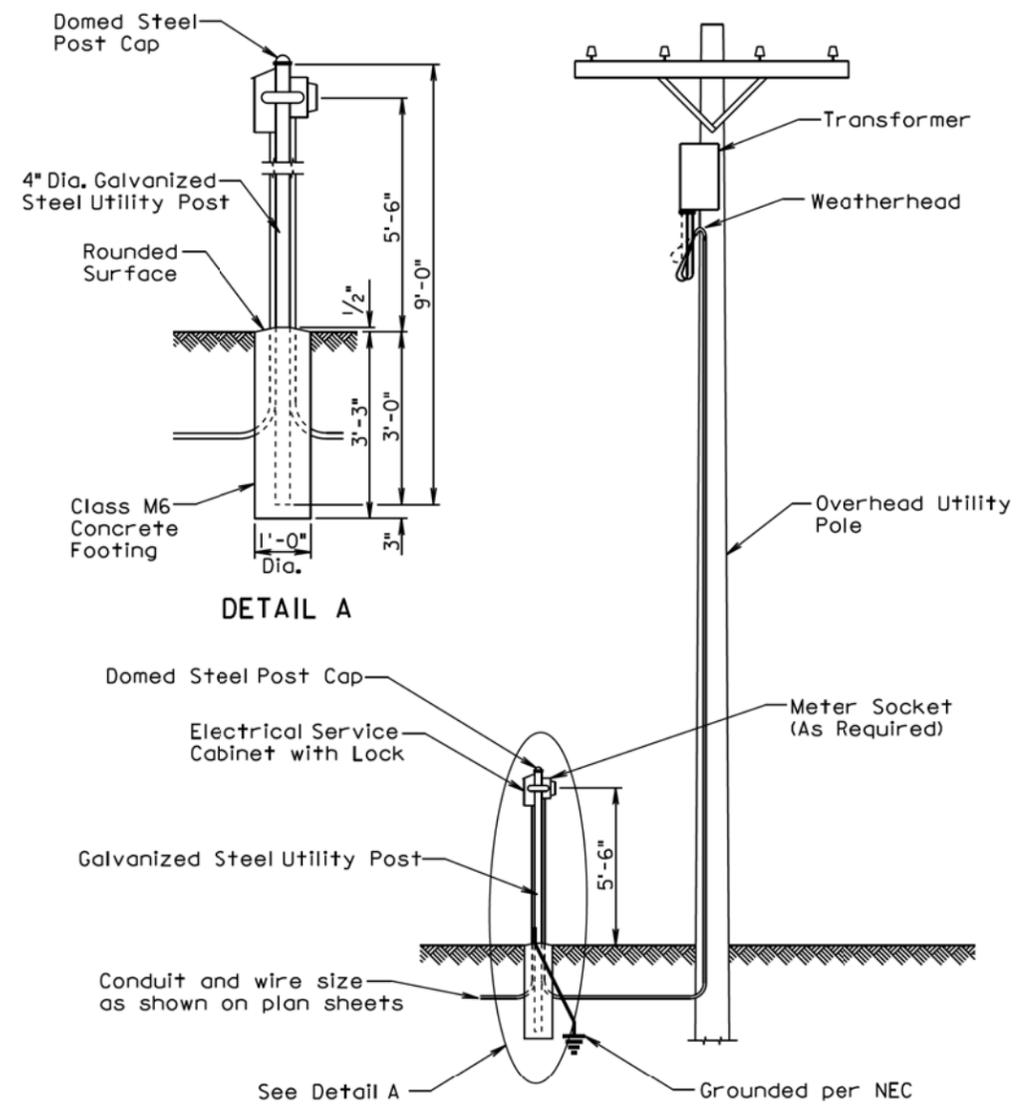
The Contractor shall install "U" shaped shims or round flat washers if shimming is necessary to install the light poles plumb and level. The washers and shims shall be installed around the anchor bolts.

June 26, 2013

<b>S D D O T</b>	<b>ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE</b>	PLATE NUMBER 635.21
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1

- Plotted From - tpr14286

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**GENERAL NOTES:**

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

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

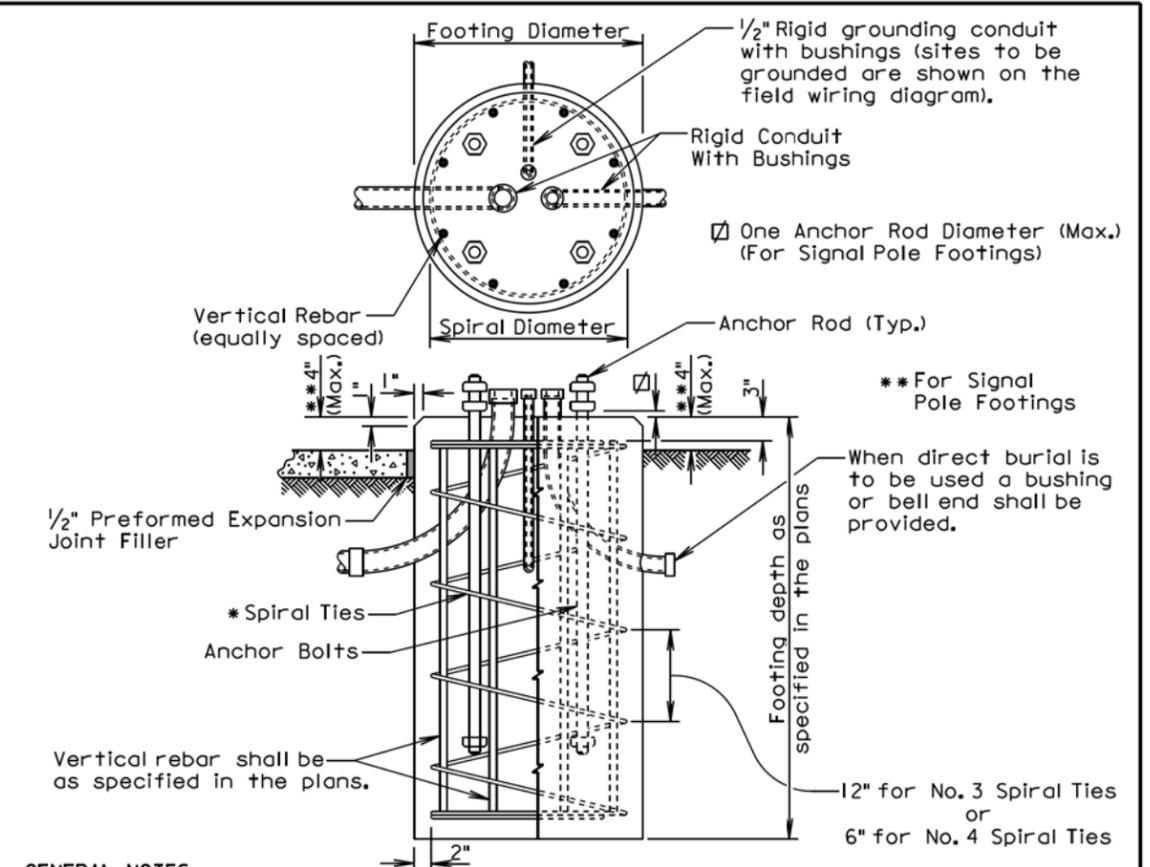
The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

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, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

June 26, 2006

<b>S D D O T</b>	<b>GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE</b>	PLATE NUMBER <b>635.35</b>
		Sheet 1 of 1

Published Date: 2nd Qtr. 2015



**GENERAL NOTES:**

\* The tie sizes are specified in the plans. Circular ties may be used in lieu of the spiral ties. The No. 3 ties shall be spaced 12 inches apart except for the top two which shall be spaced 6 inches apart. The No. 4 ties shall be spaced 6 inches apart except for the top two which shall be spaced 3 inches apart. The ties shall be lapped 18 inches and the laps shall be staggered around the cage.

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

See section 985 of the Standard Specifications for footing materials.

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

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

The anchor rods shall 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 shall be incidental to the footing bid item(s).

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

The contour of the area surrounding the breakaway pole shall 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.

September 6, 2013

<b>S D D O T</b>	<b>POLE FOOTING</b>	PLATE NUMBER <b>635.55</b>
		Sheet 1 of 1

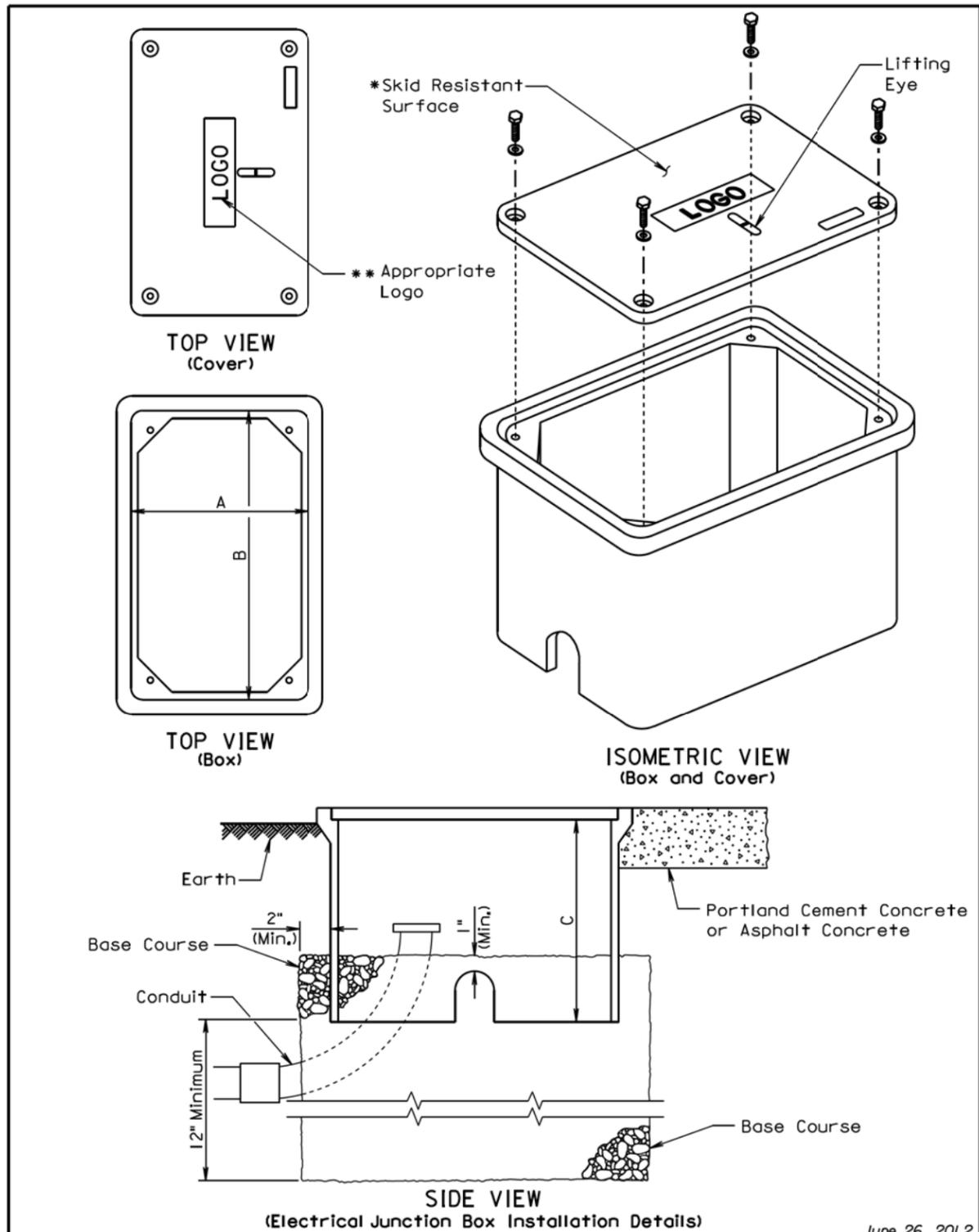
Published Date: 2nd Qtr. 2015

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Plot Scale - 1:200



June 26, 2012

<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER 635.65
		Sheet 1 of 2

Published Date: 2nd Qtr. 2015

**ELECTRICAL JUNCTION BOX**

TYPE	DESCRIPTION	DIMENSIONS		
		A	B	C
1	Open Bottom with Gasket	11"-15"	18"-21"	18" (Min.)
2	Open Bottom with Gasket	13"-18"	23"-28"	18" (Min.)
3	Open Bottom with Gasket	17"-22"	24"-30"	18" (Min.)
4	Open Bottom with Gasket	28"-33"	36"-48"	24" (Min.)

**GENERAL NOTES:**

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

The cover shall have a lifting eye.

\*The surface of the cover shall have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F 609.

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

The electrical junction boxes shall 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 the electrical junction boxes shall be Tier 8 of ANSI/SCTE 77 2007.

The electrical junction boxes shall be UL listed.

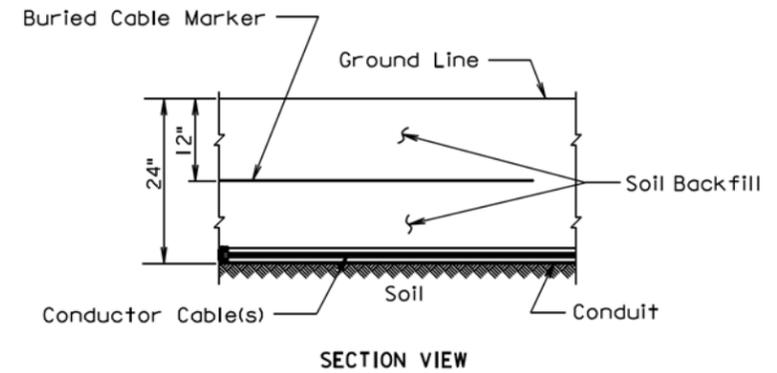
June 26, 2012

<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER 635.65
		Sheet 2 of 2

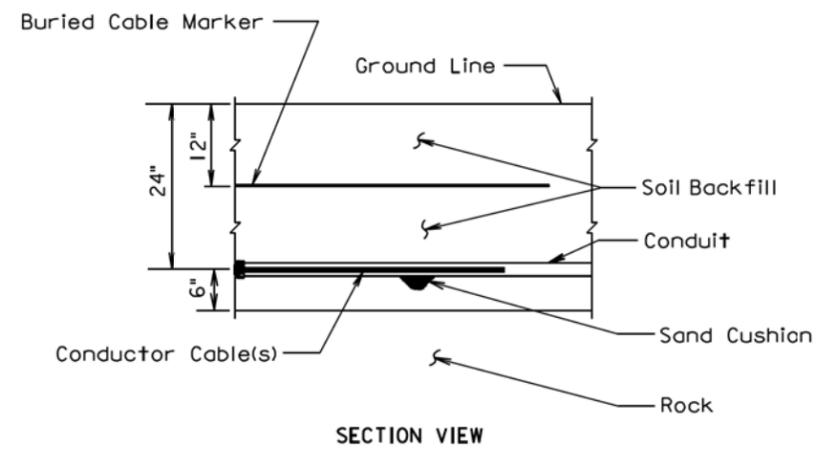
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SECTION VIEW



SECTION VIEW

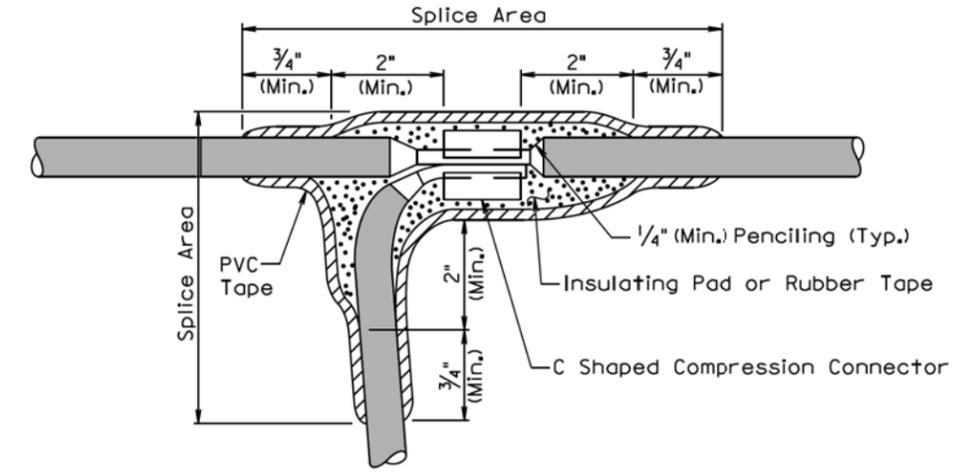
**GENERAL NOTE:**

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall 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 shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

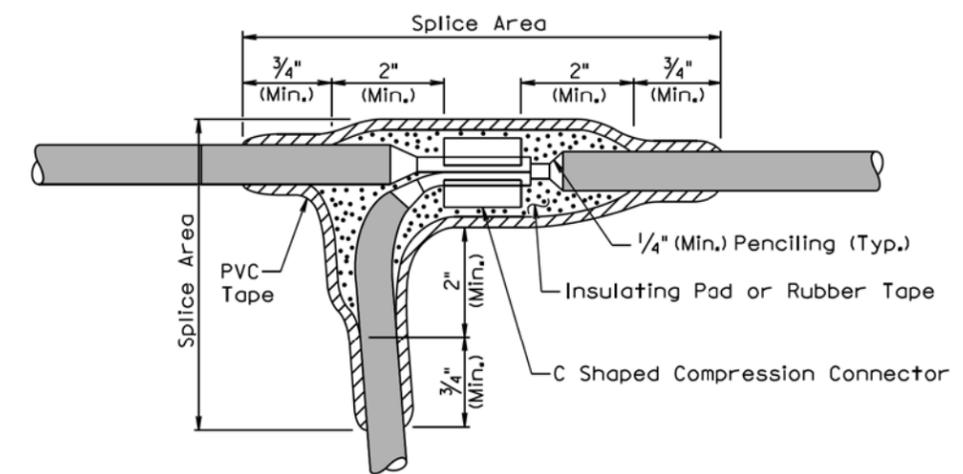
March 31, 2000

<b>S D D O T</b>	<b>CONDUIT INSTALLATION</b>	PLATE NUMBER <b>635.76</b>
		Sheet 1 of 1

Published Date: 2nd Qtr. 2015



**TYPE C SPLICE**  
(Between 1 free end and 1 through conductor)



**TYPE T SPLICE**  
(For 3 free ends)

February 14, 2010

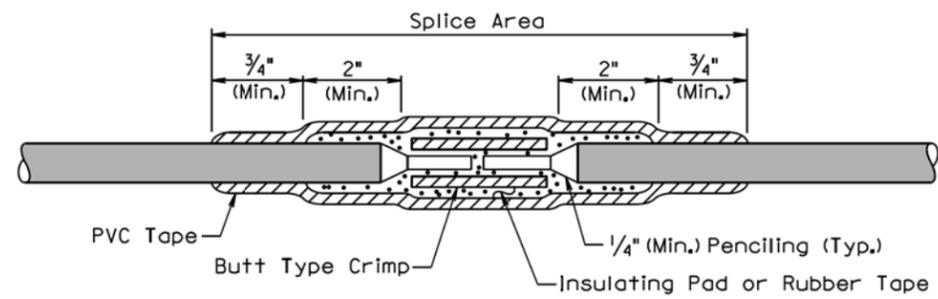
<b>S D D O T</b>	<b>WIRE SPlicing FOR LIGHTING (LOW VOLTAGE CIRCUITS (0 to 600 V))</b>	PLATE NUMBER <b>635.80</b>
		Sheet 1 of 2

Published Date: 2nd Qtr. 2015

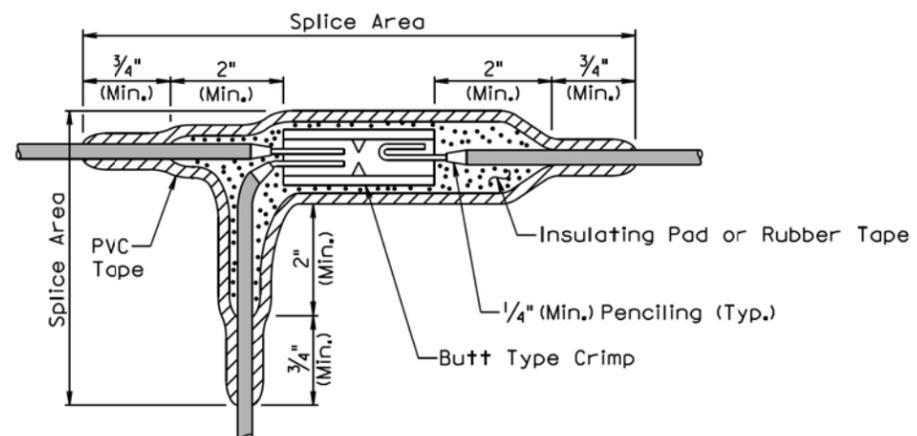
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**TYPE S SPLICE**  
(Between 2 free ends)



**TYPE ST SPLICE**  
(For 3 free ends)

**GENERAL NOTES:**

The splice shall be environmentally sealed for protection from weather, moisture, and abrasion in accordance with the method stated below.

The rubber tapes shall be rolled after application.

**Method for insulating splice area:**

1. The splice area shall be completely covered with electrical insulating coating and dried.
2. Apply two layers of 1/8" minimum thickness electrical insulating pad or two layers of half lapped synthetic oil resistant self fusing rubber tape.
3. Three layers of half lapped polyvinyl chloride tape shall be applied.
4. The entire splice area shall be covered with electrical insulating coating and dried.

February 14, 2010

Published Date: 2nd Qtr. 2015	S D D O T	WIRE SPlicing FOR LIGHTING (LOW VOLTAGE CIRCUITS (0 to 600 V))	PLATE NUMBER 635.80
			Sheet 2 of 2