

STATE OF SOUTH DAKOTA  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED

**PROJECT 016 A-491**  
**US HIGHWAY 16A**  
**CUSTER COUNTY**  
 CROSSWALK - RECTANGULAR RAPID  
 FLASHING BEACONS  
 PCN i5TT

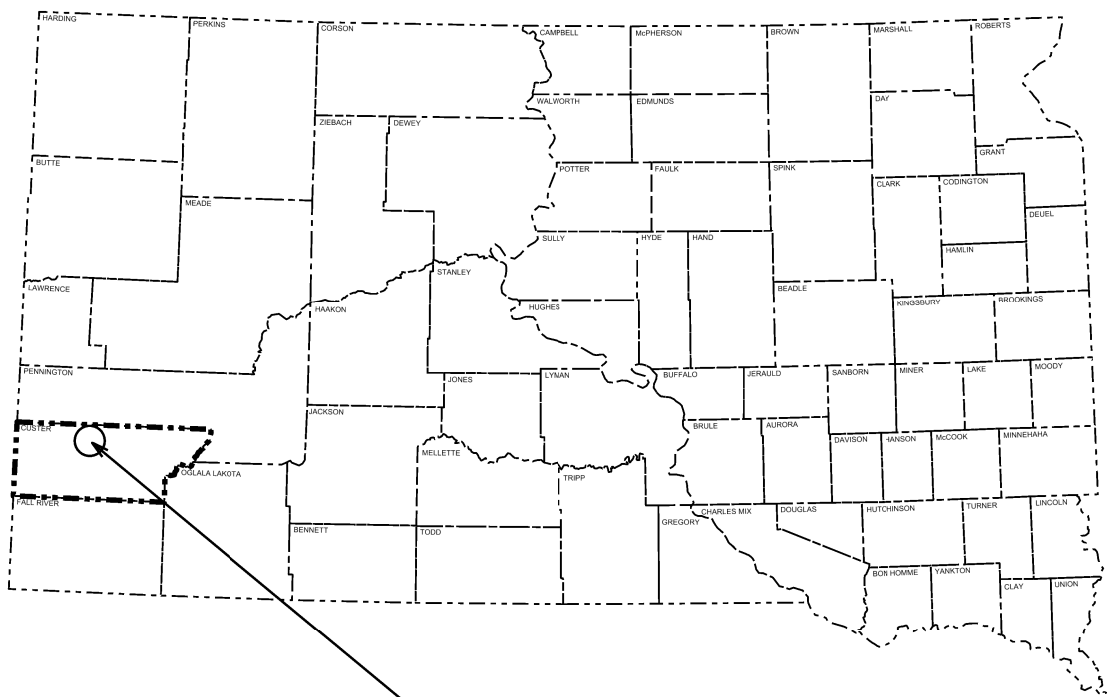
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016 A-491	1	13

Plotting Date: 11/12/2019

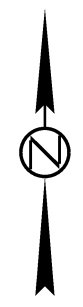
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Plot Scale - 1:200



**CUSTER**



**DESIGN DESIGNATION**

AADT (2018)	5204
AADT (2038)	6323
DHV	999
D	51%
DHV T%	4%
AADT T%	8%
V	35 mph

**STORM WATER PERMIT**  
 Not required

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**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0130	Remove Traffic Sign	2	Each
633E0030	Cold Applied Plastic Pavement Marking, 24"	54	Ft
633E5051	Surface Preparation for Pavement Marking	108	SqFt
634E0110	Traffic Control Signs	105.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0410	Type B Advance Warning Arrow Board	2	Each
635E2000	Pedestal Signal Pole	2	Each
635E5020	2' Diameter Footing	12.0	Ft
635E5301	Type 1 Electrical Junction Box	2	Each
635E5910	Pedestrian Push Button Pole	2	Each
635E5980	Rectangular Rapid Flashing Beacon System	1	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E8120	2" Rigid Conduit, Schedule 40	50	Ft
635E8220	2" Rigid Conduit, Schedule 80	70	Ft
635E9016	1/C #6 AWG Copper Wire	180	Ft
635E9502	2/C #14 AWG Copper Tray Cable, K2	88	Ft
635E9506	6/C #14 AWG Copper Tray Cable, K2	102	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 Section A - 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. 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: <http://www.sddot.com/resources/Manuals/EnvironProcManual.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 Office at 605-773-3098 or 605-773-4336 to determine

whether an environmental analysis and/or resource agency coordination is necessary.

**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 Environment 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 completely 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 of time 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: HISTORICAL PRESERVATION OFFICE CLEARANCES**

State Historical 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 of which the site is clearly outlined, site 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 will immediately cease, and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office 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.

### SCOPE OF WORK

The work on this project includes, but is not limited to, furnishing and installing new rectangular rapid flashing beacons, aluminum signs, pedestal poles, foundations, pedestrian push buttons and pedestrian push button poles; and associated electrical work.

### PERMANENT SIGNING

The Contractor will furnish all signs, posts, stiffeners, bases, hardware, equipment and labor for installation of permanent signs in size, type, and quantity as shown in these plans and/or as required by the Engineer.

The Contractor will stake the signs and the Engineer will verify the location prior to installation. The lateral distance from the roadway and the height of the sign will be established by the Contractor according to the sign detail in the plans and the MUTCD.

### REMOVE TRAFFIC SIGN

The 2 - Pedestrian Crossing Symbol (W 11-2) and the 2 - Downward Diagonal Arrow (W 16-7p) signs and existing posts at the Mickelson Trail crosswalk will be removed and will become the property of the Contractor. Payment for all existing signs to be removed will include all cost for labor and equipment necessary to remove and dispose of the signs and posts will be included in the contract unit price per each for Remove Traffic Signs.

### HARDWARE

Aluminum U-Channel stiffeners will be used on all standard highway signs 36" and greater in width and will conform to ASTM B221 Alloy 6063-T6 or 6061-T6. The U-Channel will be 2 inches in width and free of holes. The U-Channel stiffeners will also be used to connect various signs and perforated tube posts together so that an entire sign can be erected as a single installation. Stiffeners may be fastened to signs by use of 1/4" drive rivets with a minimum of one on each end and one centered between each post. Installation of the stiffeners will be incidental to other contract items.

### SUPPLYING AS BUILT PLANS

If the traffic signal systems are 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.

### 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 Project Engineer to determine modifications that will be necessary to avoid utility impacts.

### 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.

### PEDESTAL SIGNAL POLES

Pedestal signal poles may be aluminum. Aluminum poles will conform to the following requirements:

Aluminum will conform to ASTM B221, Alloy 6061, and Temper T6.

Poles will be round with a minimum outside pole diameter of 4 inches, and the pole assembly will have a square, cast aluminum base with aluminum access door. The base will conform to the breakaway requirements of NCHRP 350 or MASH. A grounding lug will be provided in the base.

The pole to base connection will be a threaded connection; threads will be 8 TPI, NPT. A collar (integral or non-integral) to prevent wind-induced loosening of pole will be provided. All bolt and connection threads will be coated with a commercially available anti-seize compound intended for use in aluminum-to-aluminum and steel-to-aluminum connections.

The pole finish will either be brushed satin or spun. The top of the pole will be sealed by the traffic signal head mounting hardware or by an aluminum cap.

Measurement and payment for aluminum poles will be as specified in Specifications Section 635.

### RIGID GALVANIZED STEEL CONDUIT

The Contractor will install 2" Schedule 80 rigid steel conduit by boring the conduit under the existing roadway and 2" Schedule 40 rigid steel conduit will be bored under the existing Mickelson Trail as indicated on the plan sheets.

All costs for labor and material to install the rigid steel conduit will be incidental to the contract lump sum price for "Miscellaneous, Electrical."

### PEDESTRIAN PUSH BUTTON POLE

Pedestrian push button poles will be one of the following types, or an approved equal:

Product	Manufacturer
Crosswalk Pedestal CP6ACT4840TCSS	Frey Manufacturing Corp. Norwood, MN 55368-9675 Phone: 1-952-467-4402 <a href="http://www.freymfgcorp.com">www.freymfgcorp.com</a>
Ped Poles SP-3022-NY-SP0001	Pelco Products, Inc Edmond, OK 73013 Phone: 1-405-340-3434 <a href="http://www.pelcoinc.com">www.pelcoinc.com</a>

### TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
C1, C2	2' - 0"	6' - 0"	1' - 8"	44' - 3"	8-#7 x 5' - 6"

\* Footing depth will be below ground level.

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

### CONCRETE FOOTINGS

The exposed portion of concrete footings will be formed to provide a uniform diameter section and half-inch chamfer on the grout pad as shown on the footing details. The amount of exposed concrete footings, anchor bolts, or slip bases on the up-slope side of the footing will not be greater than 4 inches as shown on the footing details.

Excavation for footings will be accomplished from off the roadway and shoulders where feasible. The excavation areas will be covered if not filled by nightfall. Concrete will be placed within 24 hours of excavation.

### TYPE 1 ELECTRICAL JUNCTION BOX

Junction box - JB1 will be placed to intercept the existing 2" lighting system conduit as shown on the plans. The existing conduits will be located, exposed, and modified to properly enter the new junction box. The Contractor will disconnect, gently pull back the existing wires from the existing decorative light located at 8+86-35'Lt, splice on new wires for RRFB system, and reconnect wiring to the decorative light.

All costs associated with exposing the existing conduit, modifying the existing conduit and wiring, and placing the new junction box will be incidental to the contract unit price per each for "Type 1 Electrical Junction Box."

**RECTANGULAR RAPID FLASHING BEACON SYSTEM**

**This item will consist of the following:**

- Individual Rectangular Rapid Flashing Beacons (RRFB) as shown on the plans
- Pedestrian push buttons as shown on the plans
- 4 – Pedestrian crossing warning signs (W11-2) – Fluorescent yellow/green as shown on the plans
- 4 - Downward diagonal arrow plaques (W16-7P) – Fluorescent yellow/green as shown on the plans
- 2 - Push Button signs (R10-25) as shown on the plans
- Stepdown transformer
- All necessary electronic programming & flash units, hardware, and wiring to make the system operational

**1. Beacon Dimensions and Placement in Sign Assembly:**

Each individual (RRFB) will consist of two rectangular-shaped yellow indications, each with an LED-array-based light source. The size of each indication will be at least 5 inches wide by at least 2 inches high.

The two indications will be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of at least 7 inches, measured from the nearest edge of one indication to the nearest edge of the other indication.

The outside edges of the RRFB will not project beyond the outside edges of the crossing warning sign (W11-2).

Each RRFB will be located between, and immediately adjacent to, the bottom of the crossing warning sign (W11-2) and the top of the downward diagonal arrow plaque (W16-7P).

**2. Beacon Flashing Requirements:**

When actuated, the indications in each RRFB will flash in a rapidly flashing sequence. The RRFB will provide 75 flashing sequences per minute. During each 800-millisecond flashing sequence, the left and right RRFB indications will operate using the following sequence:

- The indication on the left-hand side will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 50 milliseconds.
- The indication on the right-hand side will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 50 milliseconds.
- The indication on the left-hand side will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 50 milliseconds.

- The indication on the right-hand side will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 50 milliseconds.
- Both indications will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 50 milliseconds.
- Both indications will be illuminated for approximately 50 milliseconds.
- Both indications will be dark for approximately 250 milliseconds.

The light intensity of the indications during daytime conditions will meet the minimum specifications for Class 1 yellow peak luminous intensity in the Society of Automotive Engineers (SAE) Standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

Each RRFB will be equipped with an automatic signal dimming device to reduce illumination levels during periods of reduced ambient light.

**3. Beacon Operation:**

Each RRFB will be normally dark, will initiate operation only upon pedestrian actuation, and will cease operation 30 seconds after the pedestrian actuation.

All RRFB indications will simultaneously commence operation and simultaneously cease operation.

The programmed operation period will be immediately initiated upon each pedestrian actuation, including when the actuation occurs while the RRFB are already flashing and when the actuation occurs immediately after the indications have ceased flashing.

A “Push Button to Turn on Warning Lights” (R10-25) sign will be installed adjacent to, or integral with, the pedestrian pushbutton.

A small light directed at and visible to pedestrians in the crosswalk will be installed integral to the RRFB or push button, to give confirmation that each beacon is in operation.

**4. Control Enclosure:**

All enclosures will be aluminum and comply with the requirements for NEMA 3R type.

All materials and installation costs necessary for the operation of each system will be incidental to the contract unit price per each for “Rectangular Rapid Flashing Beacon System.”

**COLD APPLIED PLASTIC PAVEMENT MARKING**

All materials will be applied as per the manufacturer’s recommendations.

Cold Applied Plastic Pavement Markings will be 3M Series 380 AW or an approved equal.

**SURFACE PREPARATION FOR PAVEMENT MARKING**

The Contractor will prepare the pavement surface prior to applying the durable pavement marking in accordance with the following.

In areas where the existing groove meets the required depth and existing markings are still in place, the Contractor will clean the existing groove without adding additional depth beyond the required depth for the new pavement marking, including reflective media as noted below.

Description	Specification	Tolerance
Depth of Groove	Marking Thickness <sup>1</sup> + 15 mils	+ 5 mils

<sup>1</sup> Marking thickness will include the thickness of marking material and reflective media.

The cleaning will result in the existing pavement marking being adequately scuffed, abraded, and removed by light grinding or abrasive blasting or both to allow proper adhesion of the new durable pavement marking as per the manufacturer’s recommendations to comply with product warranties.

Existing grooves not meeting the required depth will be re-grooved to the required depth for the new pavement marking, including reflective media. Equipment for grooving will be capable of the following:

- Grooving the total width of the groove in one pass or uniform depths with multiple passes.
- Grooving without causing damage to the pavement joints or joint sealant material.
- Provide uniform alignment and depth.
- Moving continuously to permit a mobile traffic work operation.

All costs associated with cleaning of the existing groove, including re-grooving, if needed, will be included in the contract unit price per foot for “Surface Preparation for Pavement Marking”. Surface preparation will be measured as square feet.

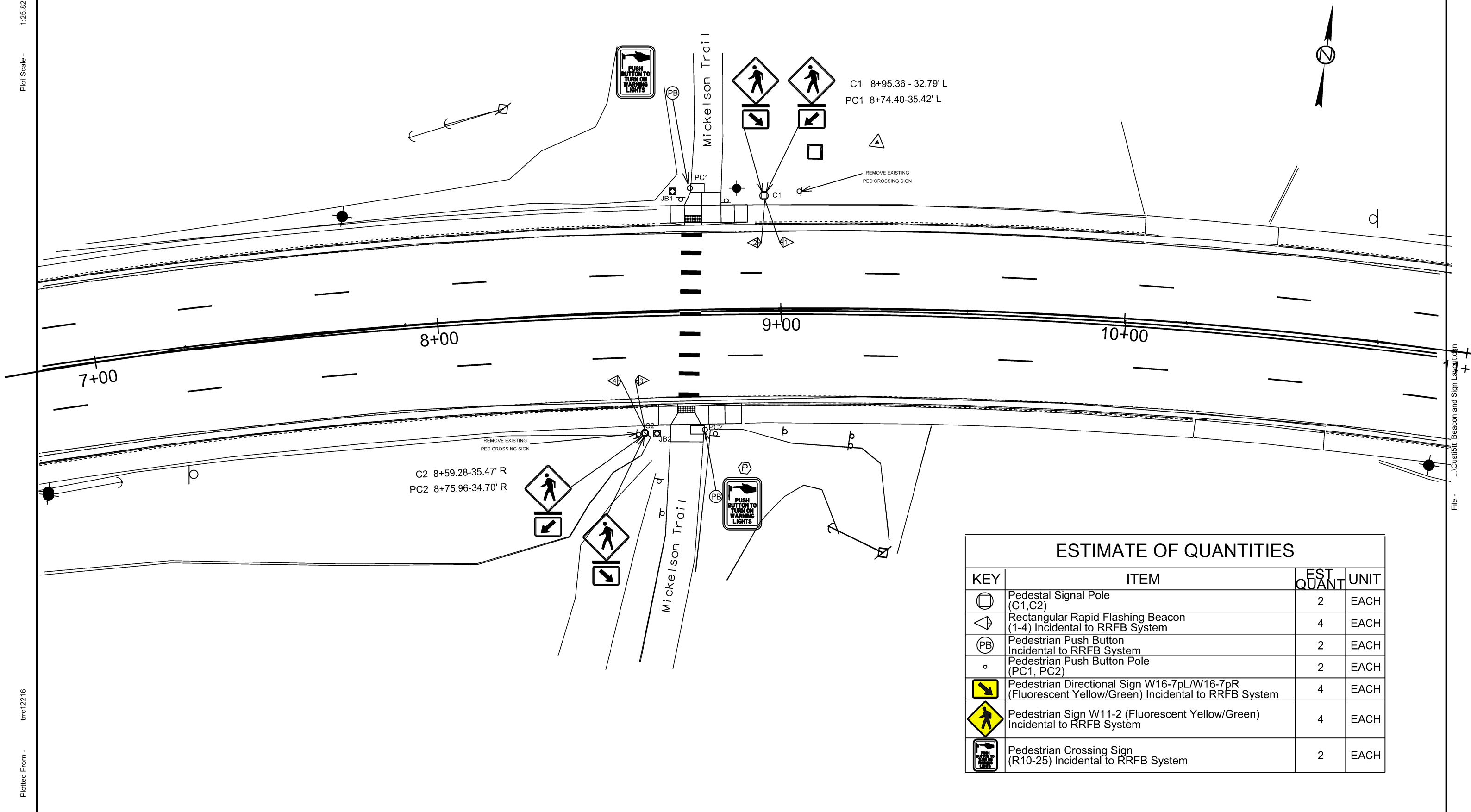


# RECTANGULAR RAPID FLASHING BEACONS & SIGNS LAYOUT

## US HWY 16A & MICKELSON TRAIL

Plot Scale - 1:25.8262

Plotted From - trrc12216



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Pedestal Signal Pole (C1,C2)	2	EACH
	Rectangular Rapid Flashing Beacon (1-4) Incidental to RRFB System	4	EACH
	Pedestrian Push Button Incidental to RRFB System	2	EACH
	Pedestrian Push Button Pole (PC1, PC2)	2	EACH
	Pedestrian Directional Sign W16-7pL/W16-7pR (Fluorescent Yellow/Green) Incidental to RRFB System	4	EACH
	Pedestrian Sign W11-2 (Fluorescent Yellow/Green) Incidental to RRFB System	4	EACH
	Pedestrian Crossing Sign (R10-25) Incidental to RRFB System	2	EACH

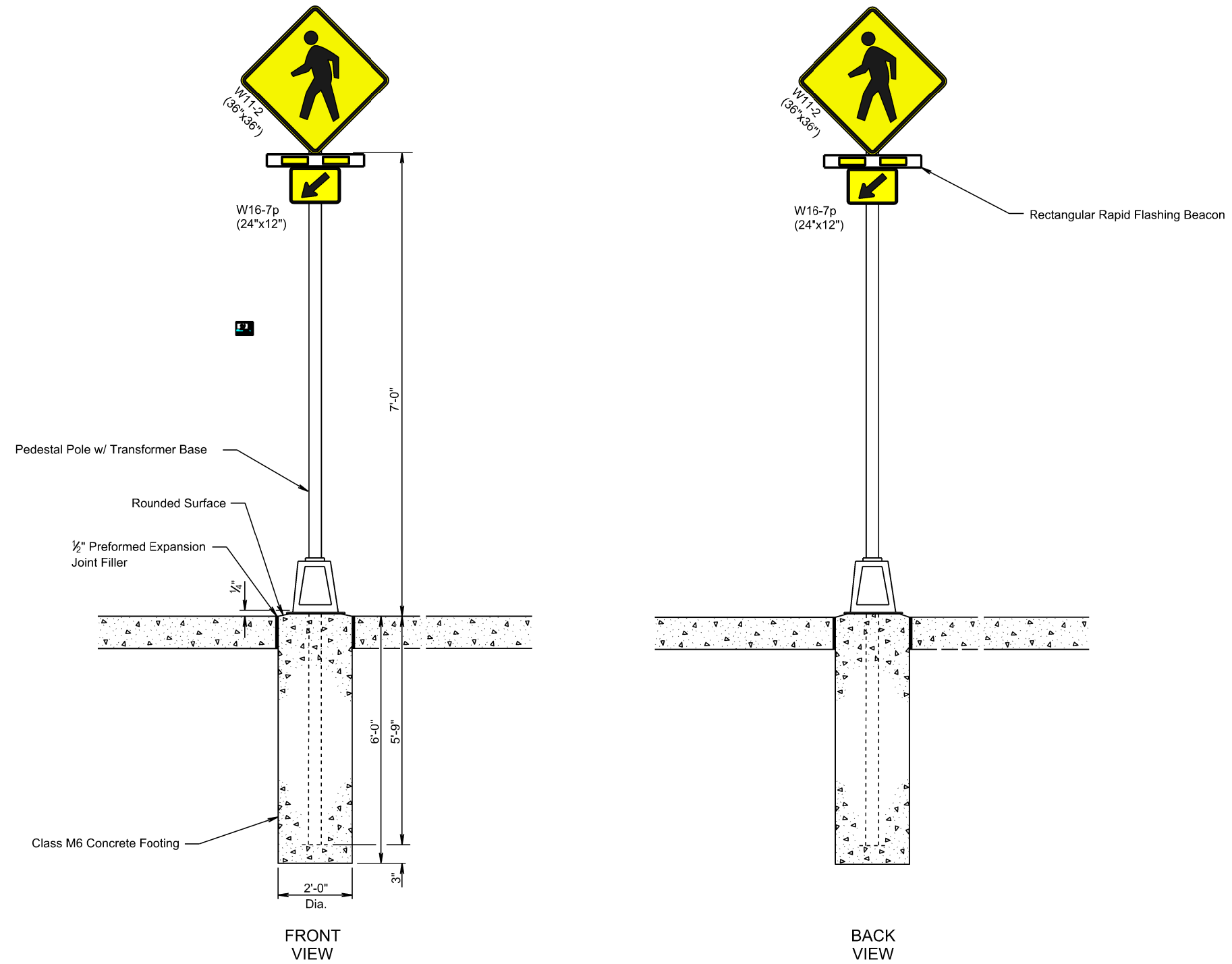
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016 A-491	7	13

Plotting Date: 11/12/2019

# SPECIAL DETAIL

## RECTANGULAR RAPID FLASHING BEACONS & SIGNS



Plot Scale - 1:200

Plotted From - trrs12216

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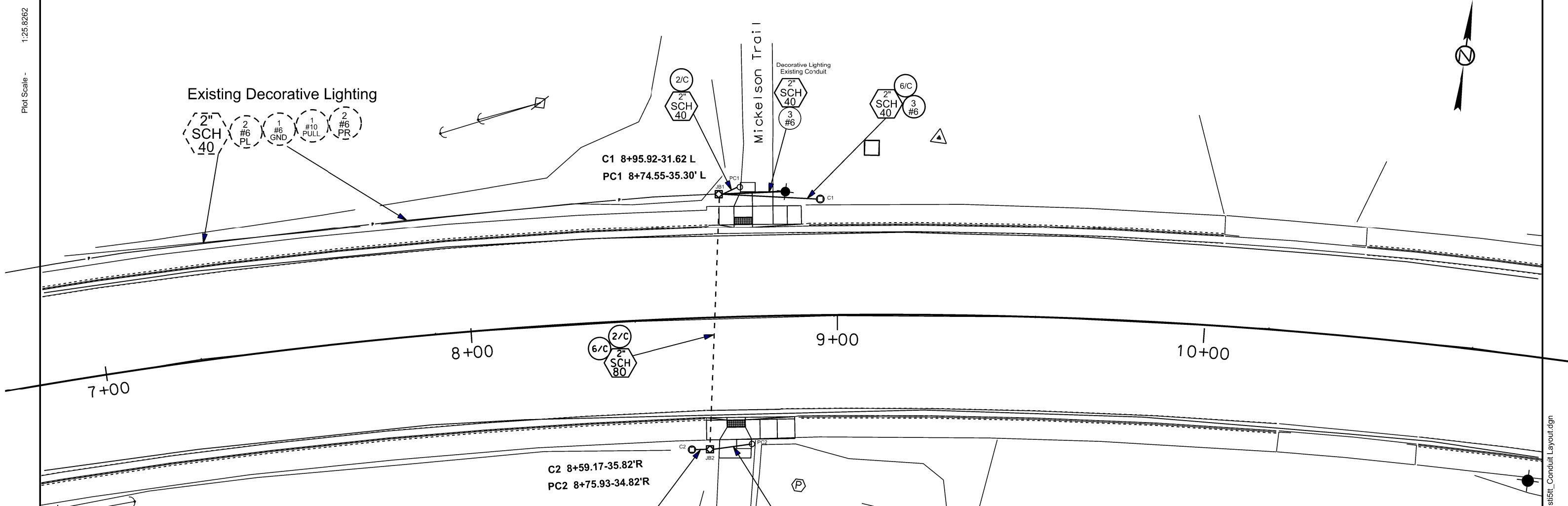
# CONDUIT LAYOUT

## US HWY 16A & MICKELSON TRAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016 A-491	8	13

Plotting Date: 11/12/2019

Plot Scale - 1:25.8262



**Note:**  
 Existing Decorative Lighting  
 2#6 PL = Power Wiring for Luminaires  
 1#6 GND = Ground Wire  
 1#10 PULL = Pull Wire  
 2#6 PR = Power Wiring for Receptacles

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
⊙	2' Diameter Footing (C1,C2)	2	FT
⊠	Type 1 Electrical Junction Box (JC1,JC2)	2	EACH
⊙	1/C #6 AWG Copper Wire	180	FT
⊙	2/C #14 AWG Copper Tray Cable, K2	88	FT
⊙	6/C #14 AWG Copper Tray Cable, K2	102	FT
⊠	2" Rigid Conduit, Schedule 40	50	FT
⊠	2" Rigid Conduit, Schedule 80	70	FT

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# PAVEMENT MARKING LAYOUT

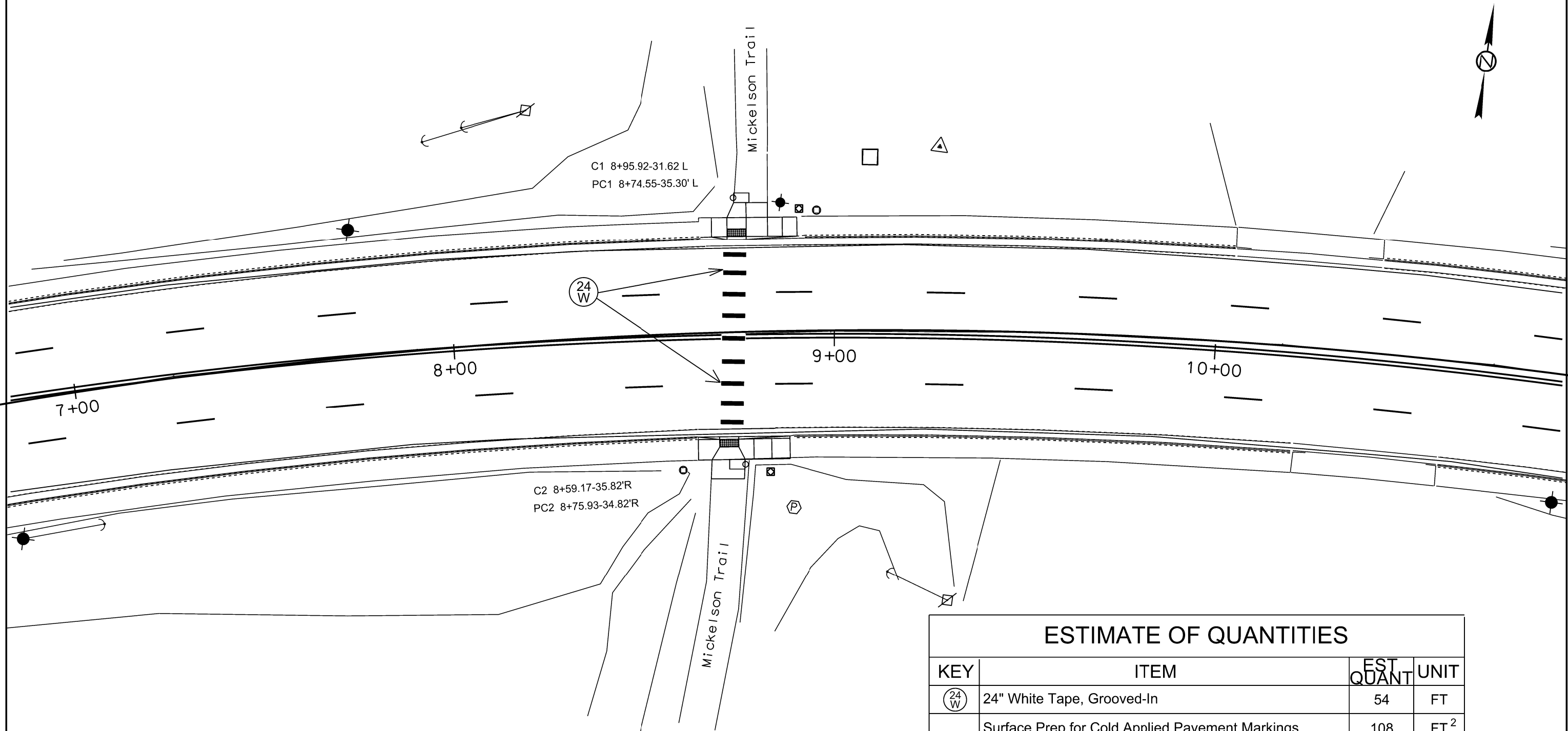
US HWY 16A & MICKELSON TRAIL

STATE OF SOUTH DAKOTA	PROJECT 016 A-491	SHEET 9	TOTAL SHEETS 13
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Plotting Date: 11/12/2019

Plot Scale - 1:25.8262

Plotted From - trrc12216



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
(24 W)	24" White Tape, Grooved-In	54	FT
	Surface Prep for Cold Applied Pavement Markings	108	FT <sup>2</sup>

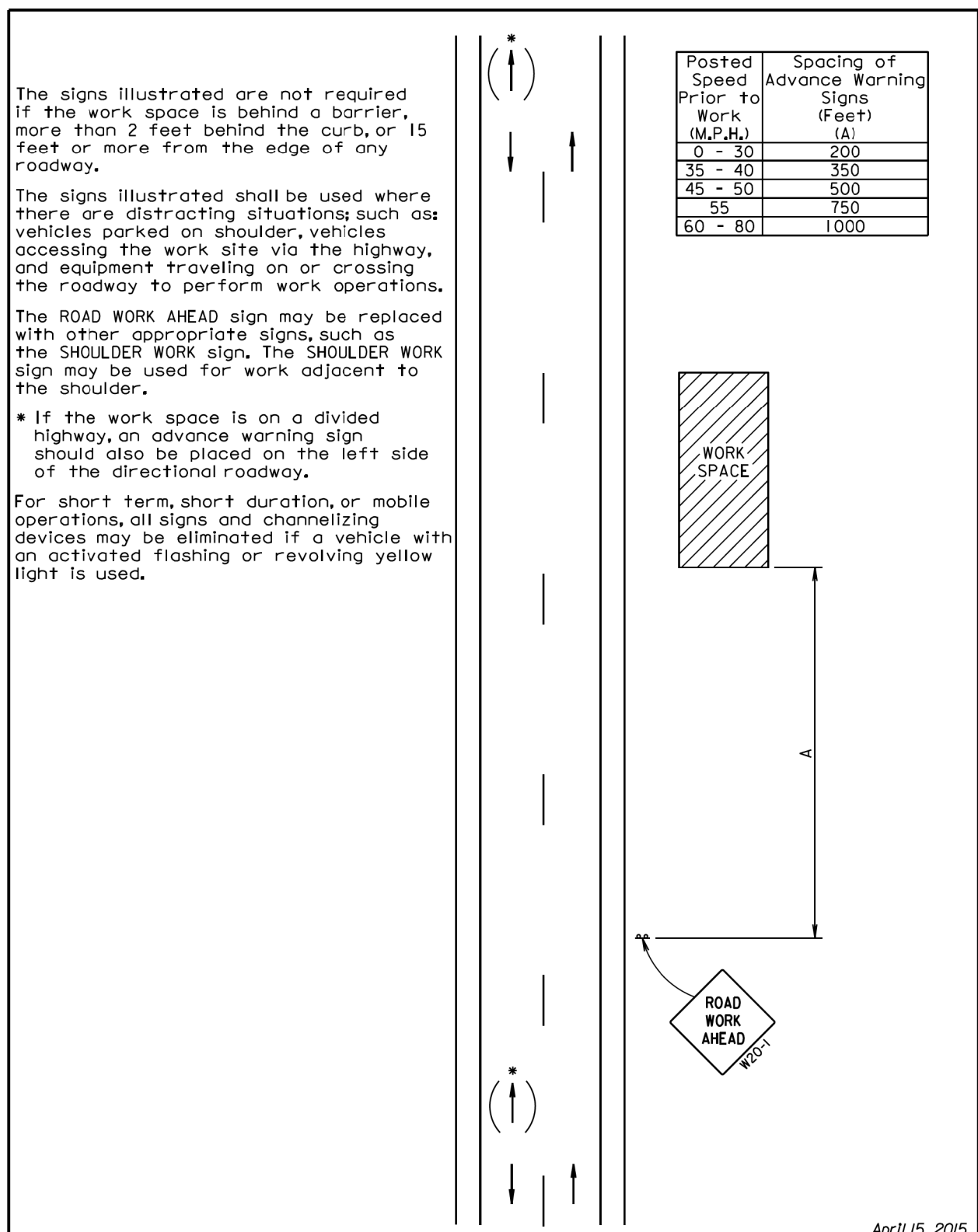
**Notes:**

Crosswalk markings shall be 2'x6' grooved in white tape. The crosswalk markings will be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings will be from 2' to 5'.

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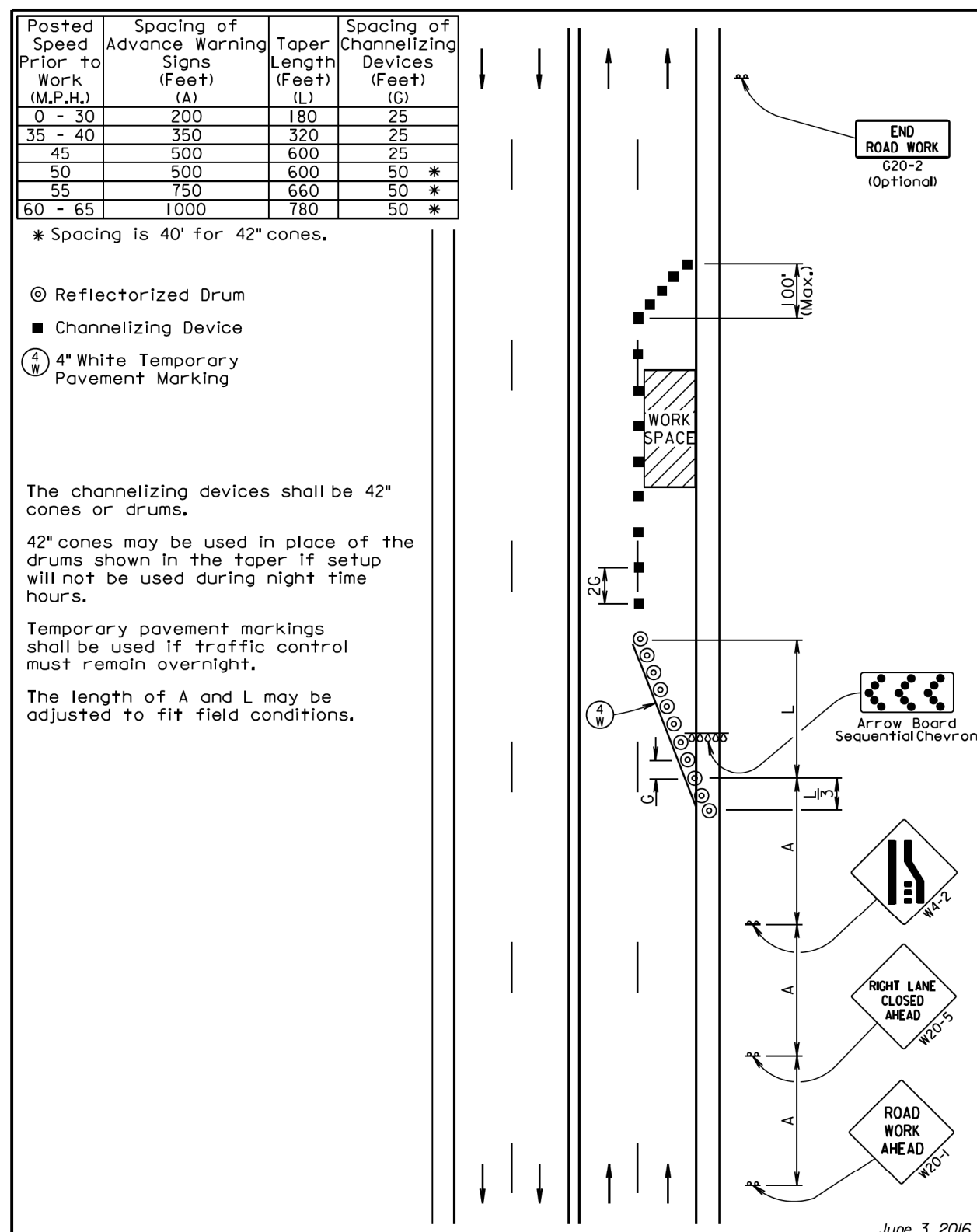
Plotting Date: 11/12/2019

PLOT SCALE - 1:200



<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER</b>	PLATE NUMBER <b>634.01</b>
	<i>Published Date: 4th Qtr. 2019</i>	Sheet 1 of 1

PLOT NAME - 6

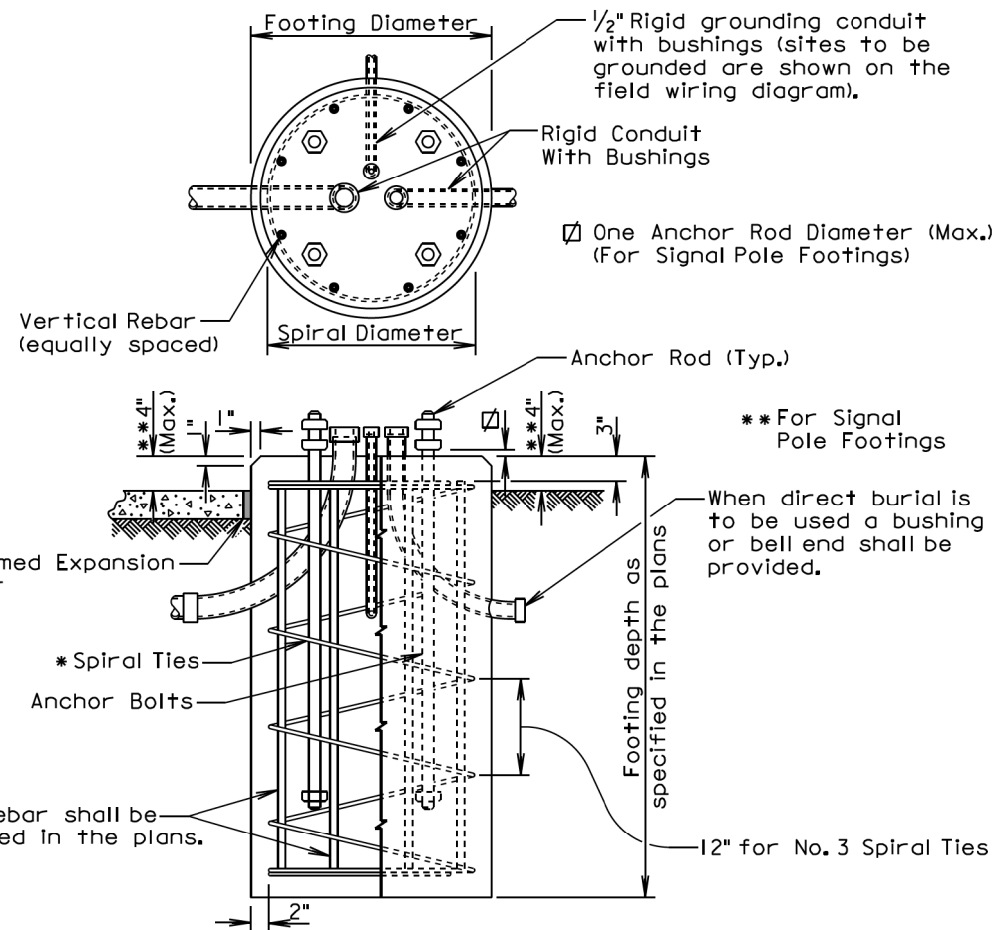


<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED</b>	PLATE NUMBER <b>634.47</b>
	<i>Published Date: 4th Qtr. 2019</i>	Sheet 1 of 1

-PLOTTED FROM - TRRC12216

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Plotting Date: 11/12/2019



**GENERAL NOTES:**

\* 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 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 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.

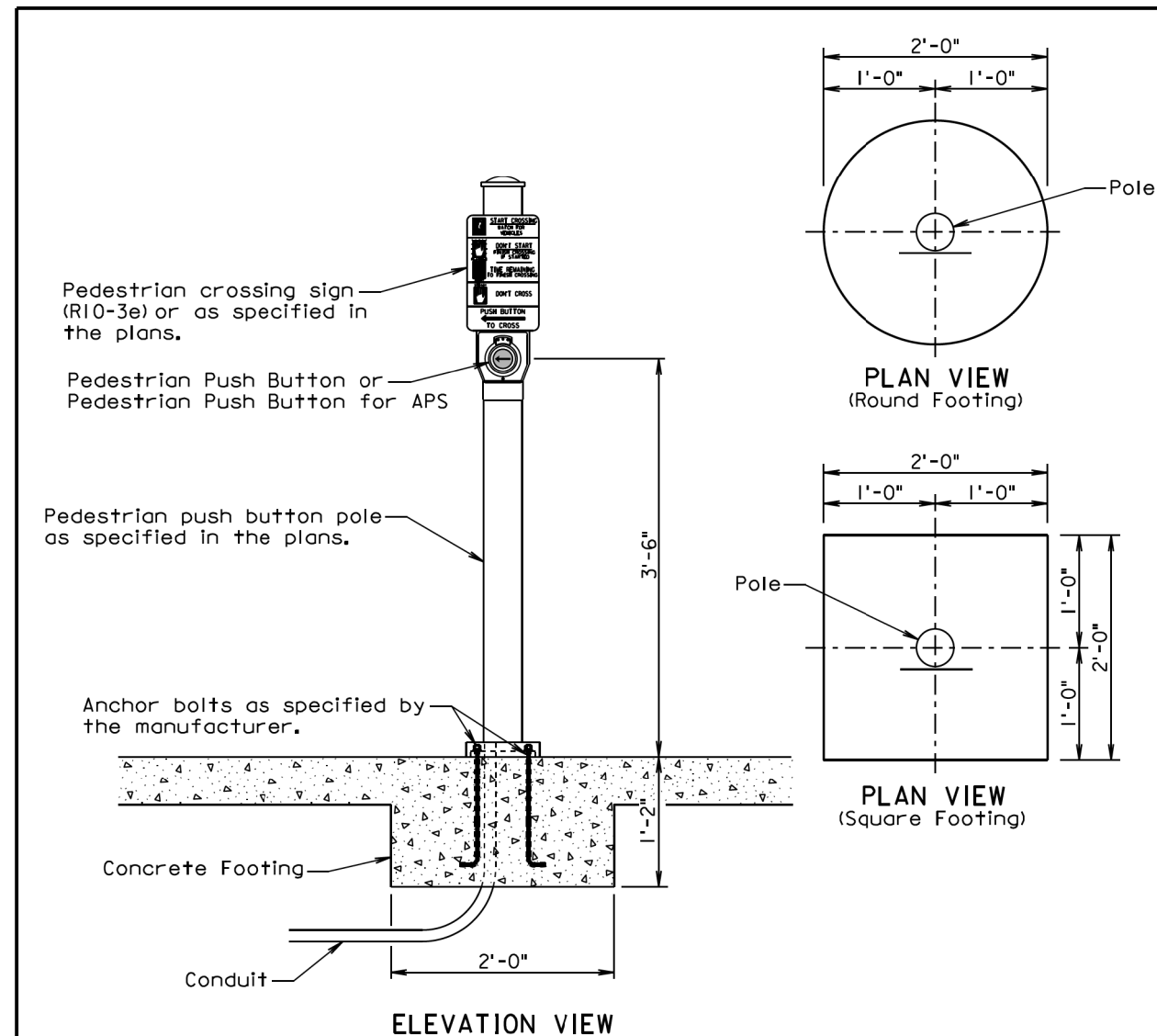
Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).

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.

June 26, 2015

<b>S D D O T</b>	<b>POLE FOOTING</b>	PLATE NUMBER <b>635.55</b>
	Published Date: 4th Qtr. 2019	Sheet 1 of 1



**GENERAL NOTES:**

The pedestrian push button pole shall be as specified in the plans.

The Contractor shall install either the round or the square concrete footing. For informational purpose, the quantity of concrete for one footing is 0.14 cubic yards for the round footing and 0.17 cubic yards for the square footing.

The concrete for the footing shall be class M6 concrete.

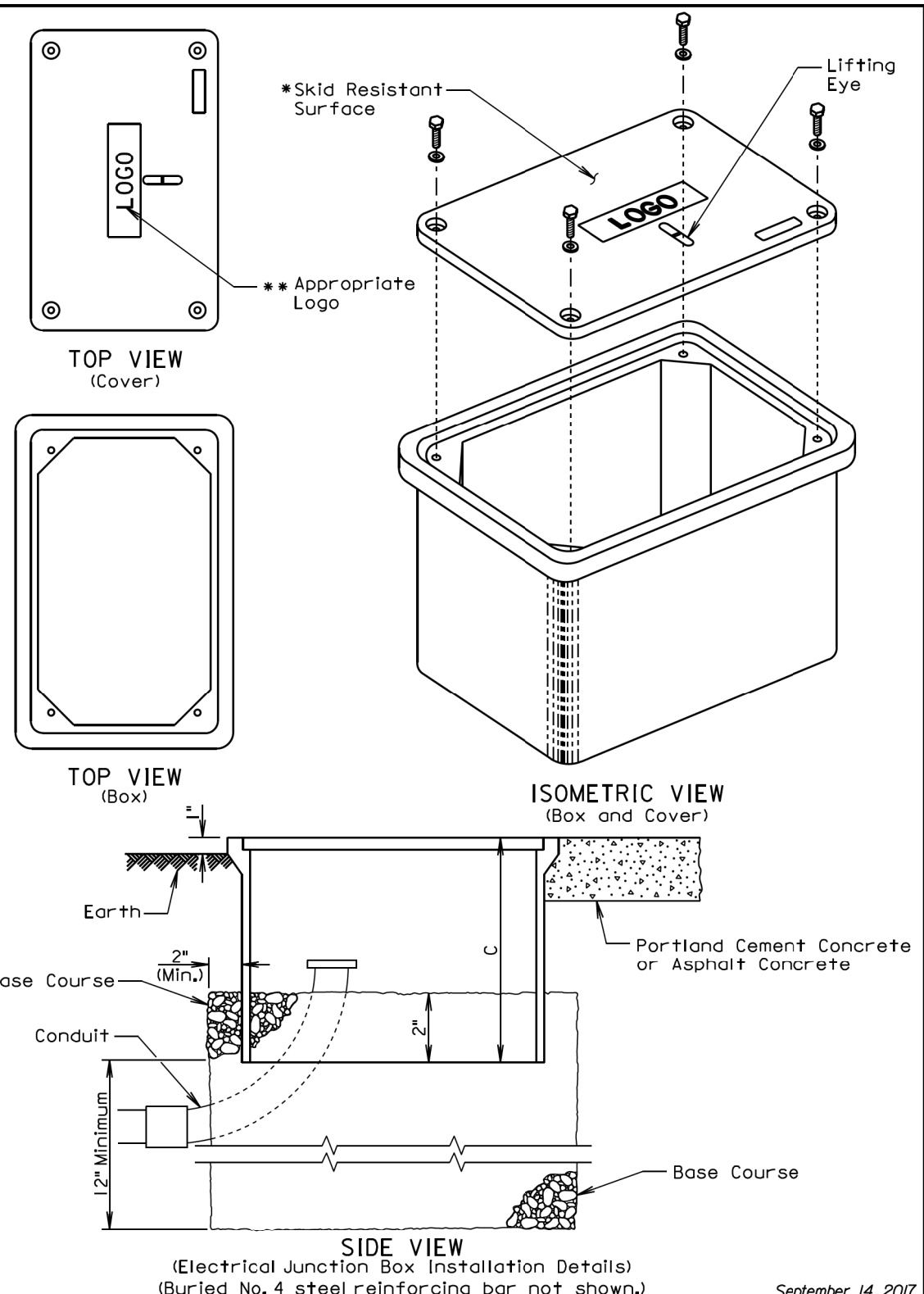
All costs for furnishing and installing the concrete footing shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

All costs for furnishing and installing the pedestrian push button pole including labor, equipment, and materials including the pole, cap, and the conduit in the footing shall be incidental to the contract unit price per each for "Pedestrian Push Button Pole".

September 14, 2016

<b>S D D O T</b>	<b>PEDESTRIAN PUSH BUTTON POLE</b>	PLATE NUMBER <b>635.57</b>
	Published Date: 4th Qtr. 2019	Sheet 1 of 1

Plotting Date: 11/12/2019



September 14, 2017  
(Buried No. 4 steel reinforcing bar not shown.)

**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"
4	Open Bottom with Gasket	30"x48"	24"

**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 F609.

\*\* 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.

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

September 14, 2017

<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER <b>635.65</b>
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<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER <b>635.65</b>
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PLOT SCALE - 1:200

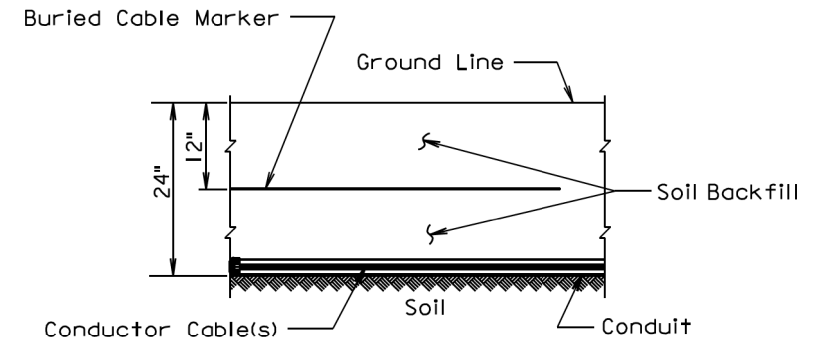
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PLOT NAME - 8

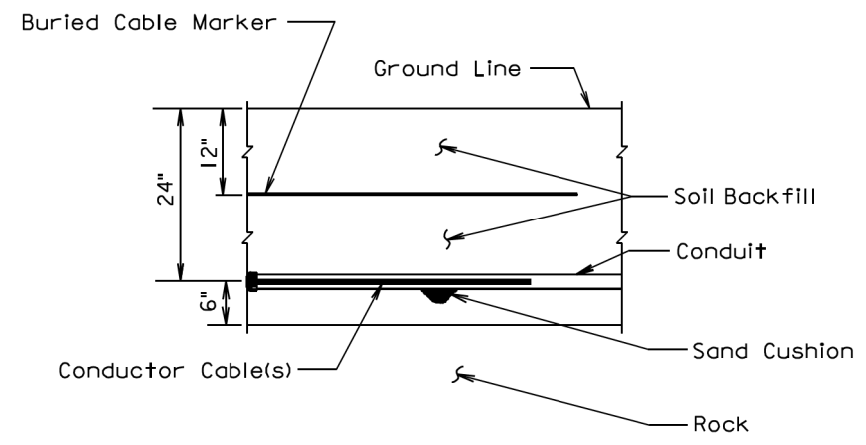
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016 A-491	13	13

Plotting Date: 11/12/2019



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: 4th Qtr. 2019