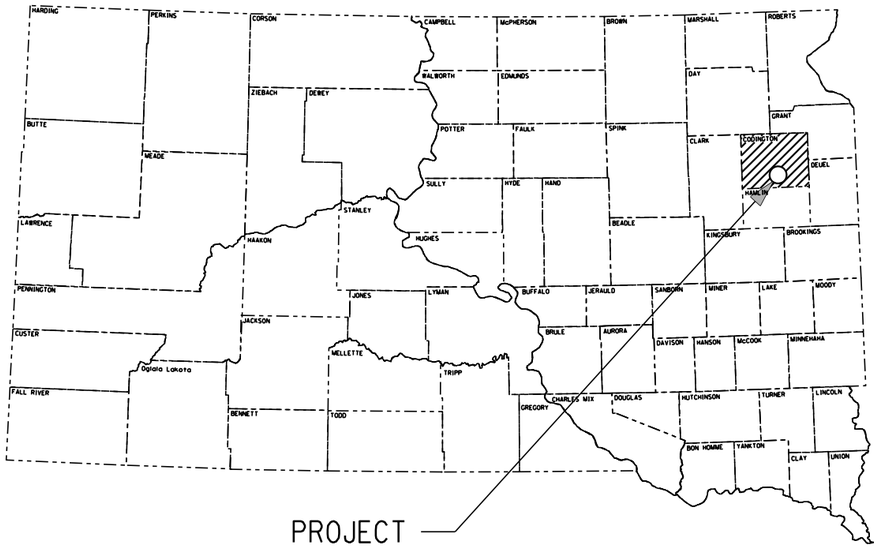



# STATE OF SOUTH DAKOTA
# DEPARTMENT OF TRANSPORTATION
## PLANS FOR PROPOSED

# PROJECT 000P-171
# US HIGHWAY 81 & 212
# CODINGTON COUNTY

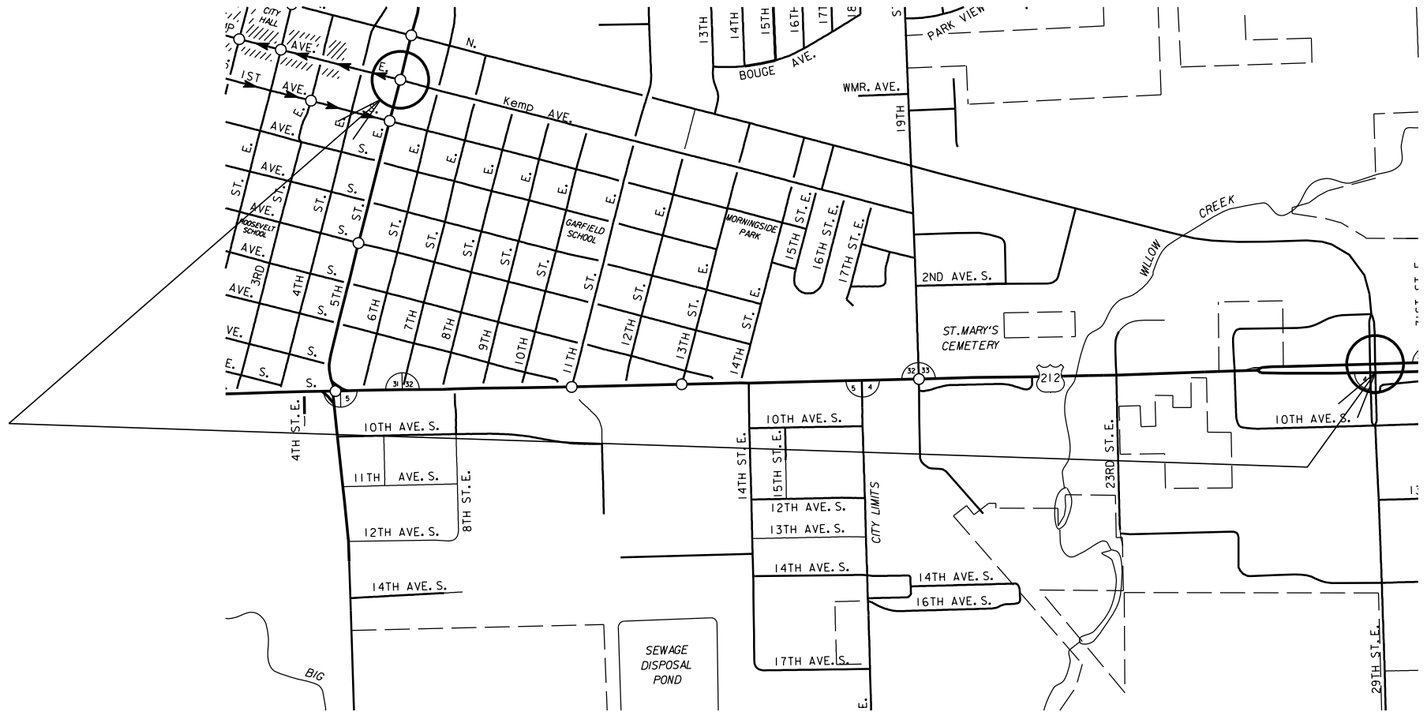
HAWK SIGNAL &
REINSTALL DETECTOR CABLE
PCN i5gc

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 1 | 12 |

Plotting Date: 11/04/2019

INDEX OF SECTIONS






DESIGN DESIGNATION
US81

| | |
|---|---|
| ADT (2018)) | 6207 |
| ADT (2038) | 8398 |
| DHV | 540 |
| D | 50% |
| T DHV | 8.7% |
| T ADT | 11.7% |
| V | 30mph |

DESIGN DESIGNATION
US212

| | |
|---|---|
| ADT (2018) | 8970 |
| ADT (2038) | 12136 |
| DHV | 942 |
| D | 50% |
| T DHV | 10.5% |
| T ADT | 11.7% |
| V | 45mph |

# ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 2 | 12 |

## NON-Section

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E1520 | Remove Signal Equipment | Lump Sum | LS |
| 634E0110 | Traffic Control Signs | 178.0 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0275 | Type 3 Barricade | 2 | Each |
| 634E0420 | Type C Advance Warning Arrow Board | 1 | Each |
| 635E4030 | 3 Section Vehicle Signal Head | 8 | Each |
| 635E5430 | Traffic Signal Controller | 1 | Each |
| 635E5880 | Accessible Pedestrian Signal | 4 | Each |
| 635E9620 | 4 Pair #16 AWG Copper Twisted Shielded Pair | 11,055 | 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 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) 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.

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 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 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.

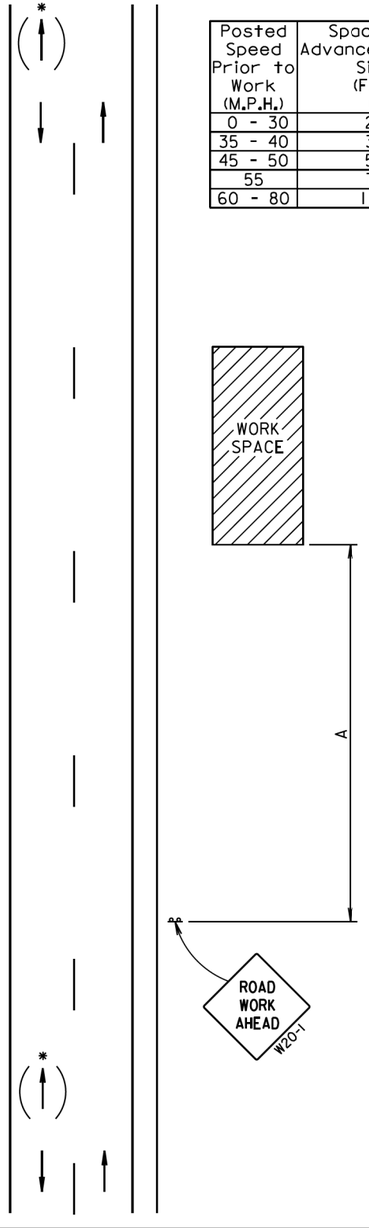
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

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.

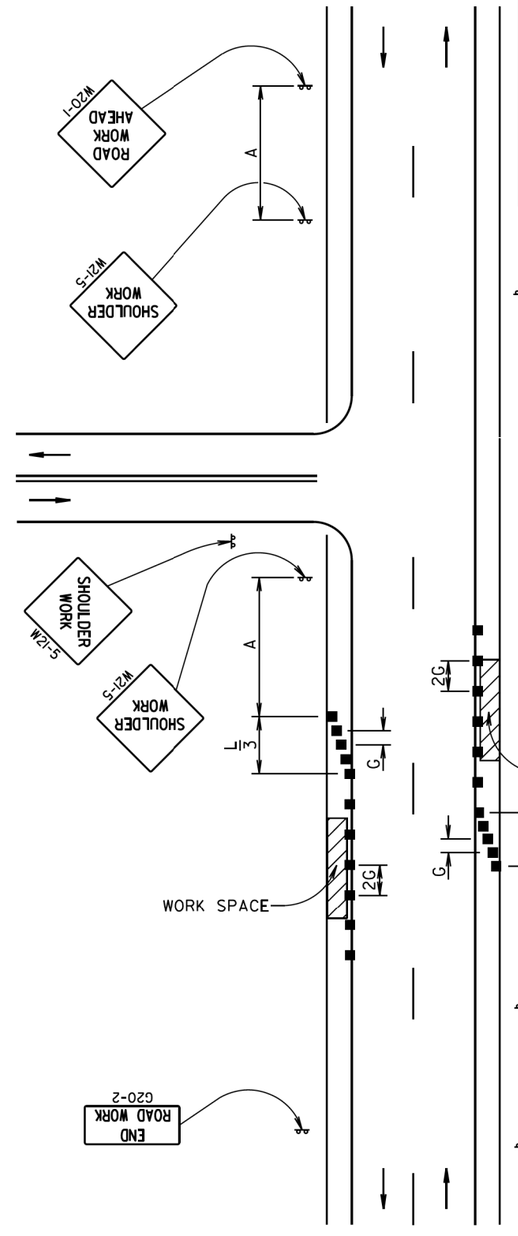
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.




| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (Feet) (A) |
|---|---|
| 0 - 30 | 200 |
| 35 - 40 | 350 |
| 45 - 50 | 500 |
| 55 | 750 |
| 60 - 80 | 1000 |

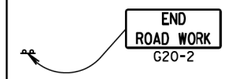
April 15, 2015

| | | | |
|---|---|---|---|
| Published Date: 4th Qtr. 2019 | SDDOT | GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER | PLATE NUMBER 634.01 |
| | | | Sheet 1 Of 1 |




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

■ Channelizing Device




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.

June 3, 2016

| | | | |
|---|---|---|---|
| Published Date: 4th Qtr. 2019 | SDDOT | GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS | PLATE NUMBER 634.03 |
| | | | Sheet 1 of 1 |

PLOT SCALE - 1:200

PLOT NAME - 2

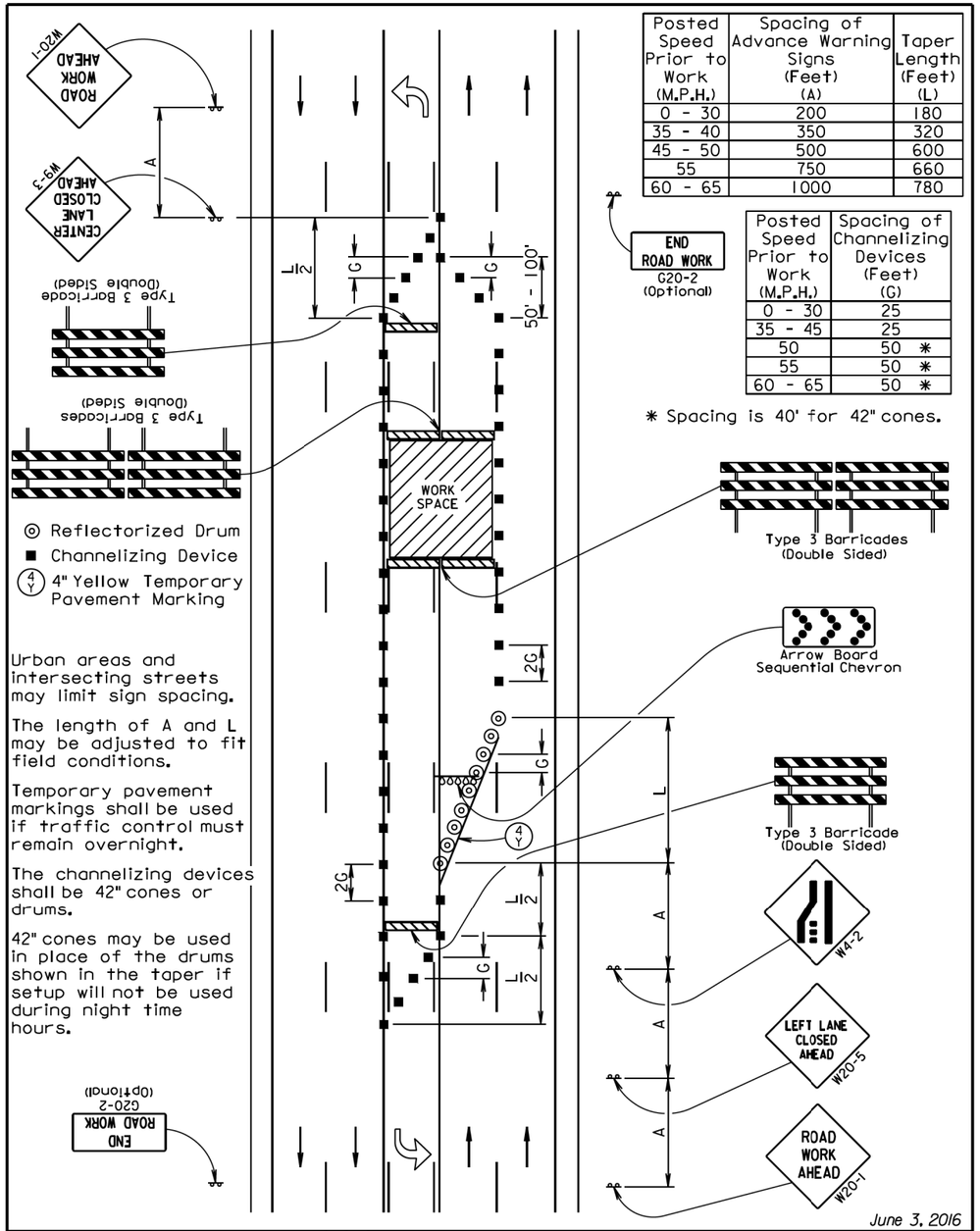
FILE - ...\TC\634.01 & 634.03.DGN

-PLOTTED FROM - TRAB17879

PLOT SCALE - 1:200

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 4 | 12 |

Plotting Date: 11/04/2019




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

| Posted Speed Prior to Work (M.P.H.) | Spacing of Channelizing Devices (Feet) (G) |
|---|---|
| 0 - 30 | 25 |
| 35 - 45 | 25 |
| 50 | 50 * |
| 55 | 50 * |
| 60 - 65 | 50 * |

* Spacing is 40' for 42" cones.

- ◎ Reflectorized Drum
- ■ Channelizing Device
- (4 Y) 4" Yellow Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

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

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

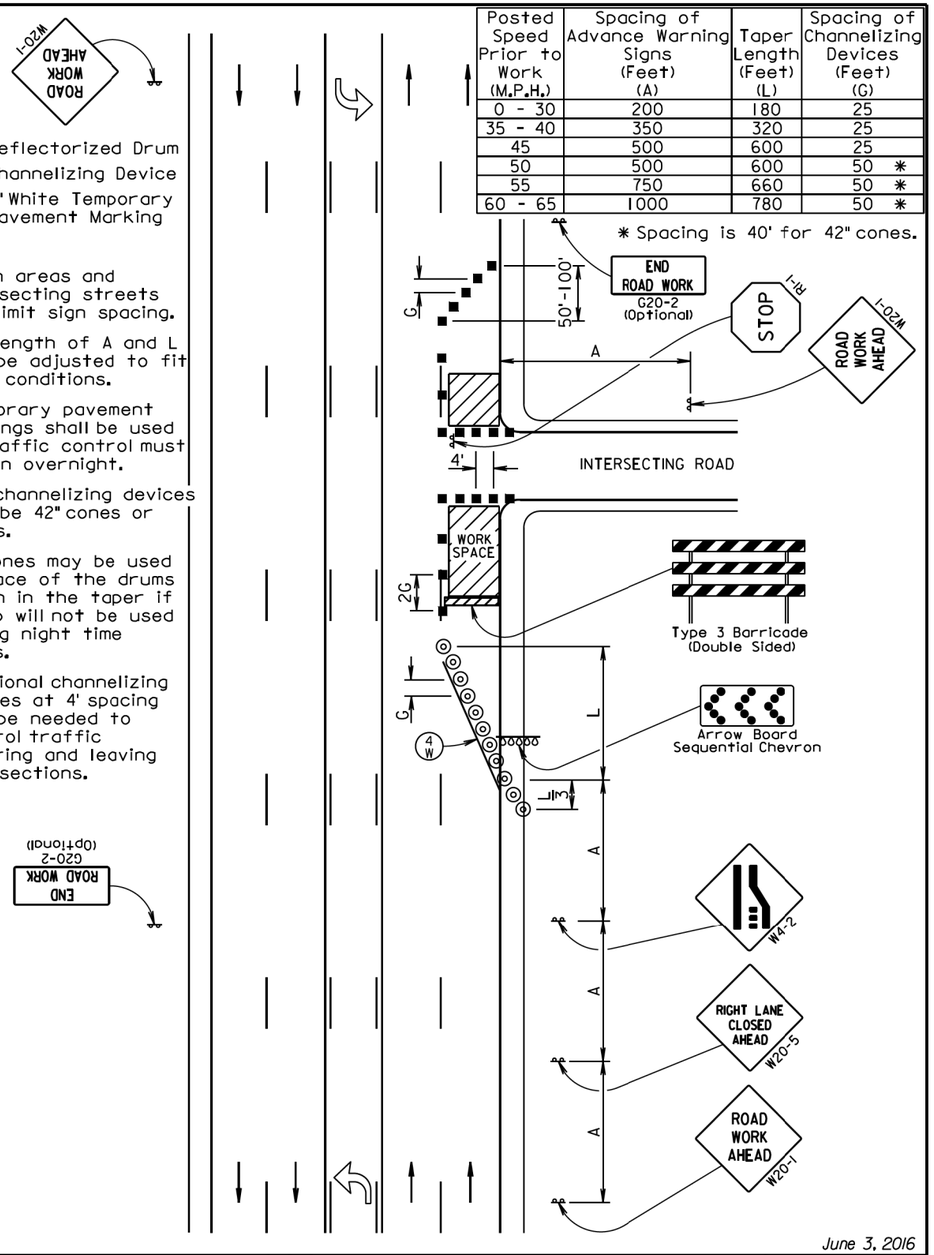
The channelizing devices shall be 42" cones or drums.

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

END ROAD WORK G20-2 (Optional)

June 3, 2016

| Published Date: 4th Qtr. 2019 | SDDOT | GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, INSIDE 2 LANES CLOSED | PLATE NUMBER 634.56 Sheet 1 of 1 |
|---|---|---|---|




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

* Spacing is 40' for 42" cones.

- ◎ Reflectorized Drum
- ■ Channelizing Device
- (4 W) 4" White Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

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

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

The channelizing devices shall be 42" cones or drums.

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

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.

END ROAD WORK G20-2 (Optional)

June 3, 2016

| Published Date: 4th Qtr. 2019 | SDDOT | GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, OUTSIDE LANE CLOSED | PLATE NUMBER 634.60 Sheet 1 of 1 |
|---|---|---|---|

## WORK DESCRIPTION

The project consists of two sections

Section 1- US81 & Kemp Ave – Work shall include install three section vehicle signal heads onto existing poles, replacing existing pedestrian buttons with ADA pedestrian buttons and install a new traffic signal controller unit.

Section 2 – US212 & 29th St SE. Work shall include removing existing twisted shielded pair cable to all of the loops and installing new twisted shielded pair cable to the loops.

## SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

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

Dan.martell@state.sd.us

## SIGNAL BACKPLATES

All new vehicle signal heads will have backplates with retroreflective border. The vehicle signal head backplates will have a factory applied 3-inch wide yellow retroreflective border. Sheeting for the border will be Type XI in conformance with ASTM D4956.

Signal backplates will extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides. The bottom of the backplate on vehicle signal faces mounted directly above pedestrian signal indications will be sized to permit the separate adjustment of the vehicle and pedestrian signal indication and may be less than 4 inches.

All costs involved with furnishing and installing backplates with retroreflective border for the new vehicle signal heads will be incidental to the contract unit price per each for “3 Section Vehicle Signal Head”,

## TRAFFIC SIGNAL CONTROLLER

The Contractor will furnish and install a new traffic signal controller into the traffic signal cabinet at US81 & Kamp Ave. The traffic signal controller shall be compatible with existing equipment used by the City of Watertown.

The Contractor is responsible for programming the controller with the signal timings provided in these plans.

All costs for the furnishing, installing and programming the controller will be incidental to the contract unit price per each for “Traffic Signal Controller”.

## DETECTOR LOOP WIRE SPLICING

Detector loop wire splices will be made using wire nuts over soldered connections and sealed in 3M Scotchcast 3570G-N connector sealing packs or an approved equal.

The drain wire of the TSP cable will be left unattached to the ground lug in the traffic signal controller.

## ACCESSIBLE PEDESTRIAN SIGNAL

The work will consist of furnishing and installing accessible pedestrian signals (APS). Each APS will consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a latching light emitting diode (LED) indicator light, a solid state electronic control board, a power supply, wiring, and all necessary mounting hardware. The operation and performance of the APS units will meet the requirements of MUTCD Sections 4E.08 to 4E.13. and the applicable sections of NEMA Standards Publication TS-2.

The APS units will operate using only 2 wires and be capable of supporting a minimum of 16 push button stations.

All mounting fasteners will be stainless steel; all threads will be coated with anti-seize compound meeting the requirements of USA Dept. of Defense specification MIL-PRF-907F.

The push button component of APS will meet the requirements of Section 985.1 S of the Specifications except that all housings and external hardware will be aluminum, powder coated yellow.

The APS control unit will include capability to monitor the push buttons and pedestrian signal head displays. Conflicts will cause the channel to be powered off.

The APS control unit will include capability to monitor communications with the push buttons. Communication faults will automatically reset the control unit.

Two licensed copies of any APS programming software will be furnished. All software programming, firmware updates, and audio message programming of the APS will be through USB port or Ethernet connection.

All costs for furnishing and installing the accessible pedestrian signal including labor, materials, and equipment, will be incidental to the contract unit price per each for “Accessible Pedestrian Signal”.

## TRAFFIC CONTROL SIGNS

Sufficient traffic control devices have been included in these plans to sign one workspace. If the Contractor elects to work on additional locations simultaneously, the cost for additional traffic control devices will be incidental to the contract unit price per square foot for “Traffic Control Signs”.

## GENERAL MAINTENANCE OF TRAFFIC

Work will be allowed only during daylight hours.

## SHEETING FOR TRAFFIC CONTROL SIGNS

All fluorescent orange background material on traffic control signs, all temporary delineators, and all temporary STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), and WRONG WAY (R5-1a) signs will conform to the requirements of ASTM D4956 Type IX or XI. All other traffic control signs and background colors will conform to the requirements of ASTM D4956 Type IV.

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 6 | 12 |

# ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

| | | CONVENTIONAL ROAD | | | | | |
|---|---|---|---|---|---|---|---|
| SIGN CODE | SIGN DESCRIPTION | NUMBER | SIGN SIZE | | | SQFT PER SIGN | SQFT |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 1 | 48" | x | 48" | 16.0 | 16.0 |
| W20-1 | ROAD WORK AHEAD | 4 | 48" | x | 48" | 16.0 | 64.0 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | 1 | 48" | x | 48" | 16.0 | 16.0 |
| W21-5 | SHOULDER WORK | 4 | 48" | x | 48" | 16.0 | 64.0 |
| G20-2 | END ROAD WORK | 4 | 36" | x | 18" | 4.5 | 18.0 |
| | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | | | | 178.0 |

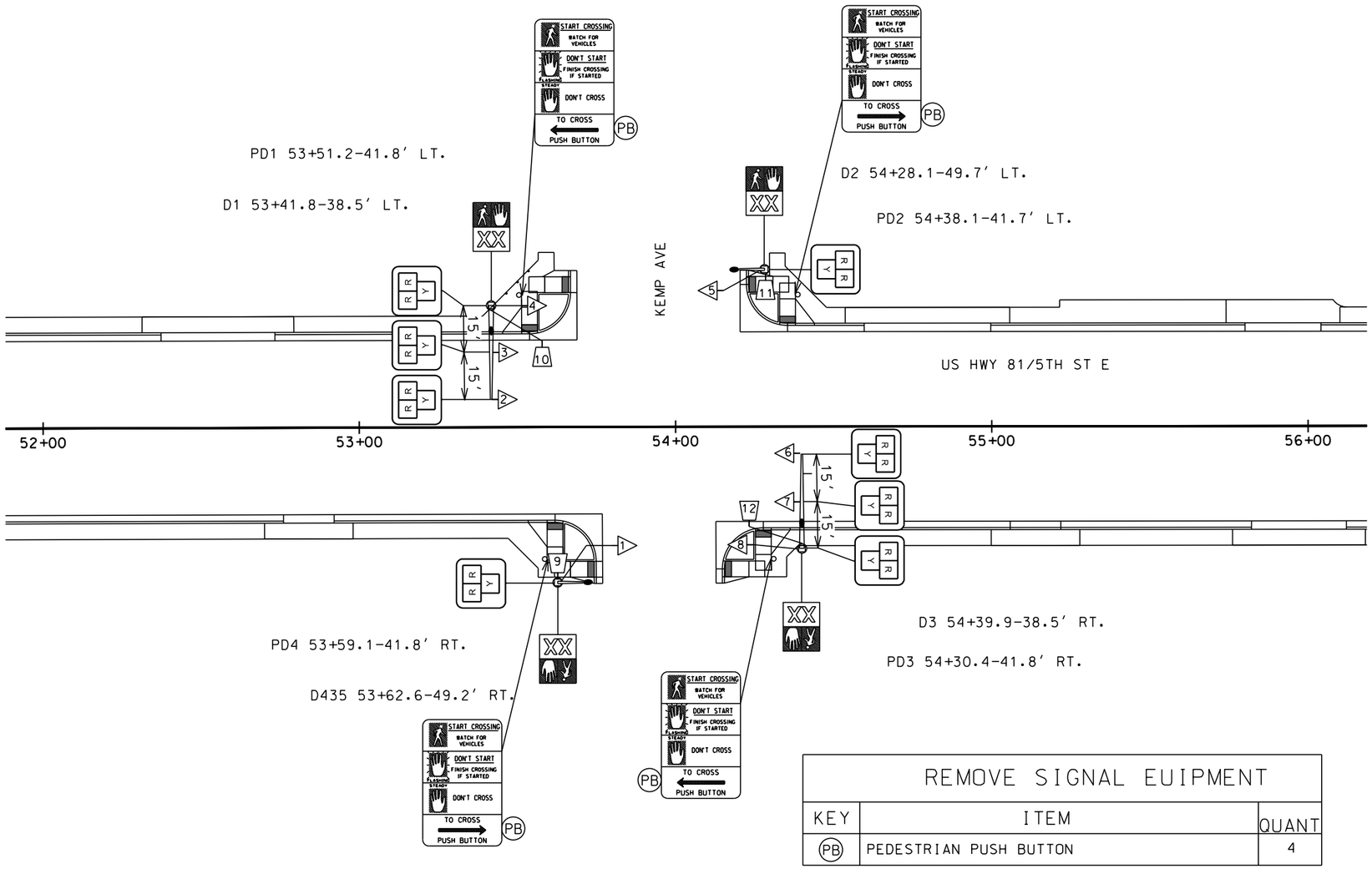
PLOT SCALE - 1:40

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 7 | 12 |
| Plotting Date: 11/05/2019 | | | |

# SIGNAL LAYOUT

## US HWY 81/5TH ST E & KEMP AVE

SCALE
1" = 40'




| Existing | | |
|---|---|---|
| KEY | ITEM | QUANT |
| ● | ROADWAY LUMINAIRE, 400W WITH P.E. (D1-D3,L35) | 4 |
| PB | PEDESTRIAN PUSH BUTTON | 4 |
| ○ | PEDESTRIAN PUSH BUTTON POLE (PD1-PD4) | 4 |
| | PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER (9-12) | 4 |
| | PEDESTRIAN CROSSING SIGN | 4 |
| | LUMINAIRE POLE (D2,D4) | 2 |
| | SIGNAL POLE WITH MAST ARM (D,D3) | 2 |

| ESTIMATE OF QUANTITIES | | | |
|---|---|---|---|
| KEY | ITEM | EST QUANT | UNIT |
| | 3 SECTION VEHICLE SIGNAL HEAD (1-8) | 8 | EACH |
| PB | ACCESSIBLE PEDESTRAIN SIGNAL | 4 | EACH |
| | REMOVE SIGNAL EQUIPMENT | LS | LUMP SUM |

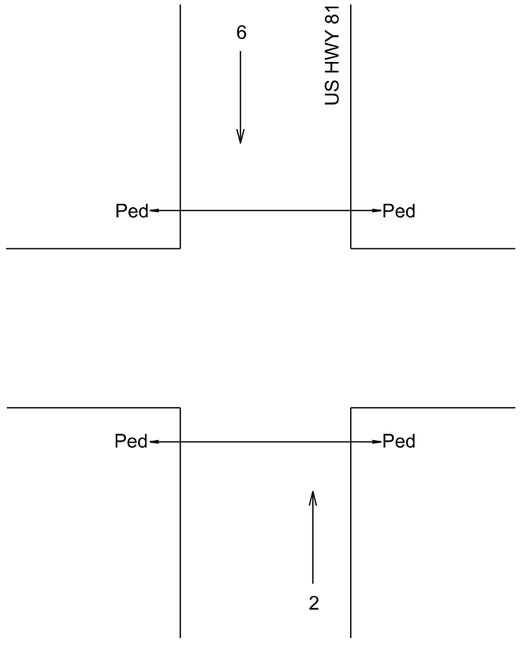
| REMOVE SIGNAL EUIPMENT | | |
|---|---|---|
| KEY | ITEM | QUANT |
| PB | PEDESTRIAN PUSH BUTTON | 4 |

PLOTTED FROM - TRAB17879
PLOT NAME - 4
FILE - ...\REGIONAL\PRJ\CONT15GC\054S.DGN

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 8 | 12 |
| Plotting Date: 11/04/2019 | | | |

# SIGNAL TIMING

## US HWY 81 and Kemp Ave  PEDESTRIAN CROSSING




| PHASING AND SEQUENCING | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| INTERVAL / SIGNAL HEAD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 1,2,3 | OFF | F/Y | Y | AR | R | R | F/R | OFF | |
| 4,5,6 | OFF | F/Y | Y | AR | R | R | F/R | OFF | |
| 7,8 | DW | DW | DW | DW | W | W | F DW | DW | |
| MOVEMENTS | 2&6 | | | | P4 | | | | |
| PHASES | ↓ | ↑ | | | ← | → | | | |

| CONTROLLER TIMINGS | | | |
|---|---|---|---|
| MOVEMENT | ←→ | ↓ | ↑ |
| PHASE | PED | 2 | 6 |
| FLASHING YELLOW | | 6 | 6 |
| STEADY YELLOW | | 4 | 4 |
| RED CLEARANCE | | 2 | 2 |
| WALK | 7 | | |
| PED CLEARANCE | 17 | | |

PLOT SCALE - 1:40

PLOT NAME - 5

FILE - ...\PRJ\CODN15GC\054TIME.DGN

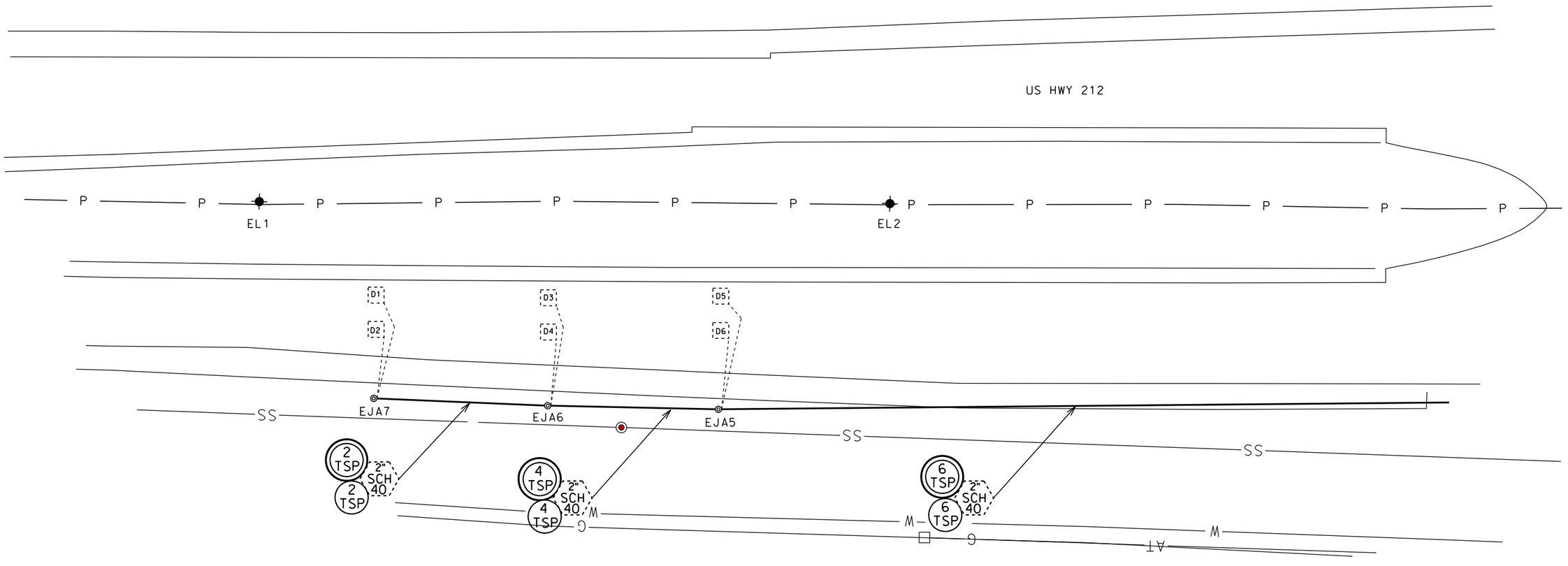
PLOTTED FROM - TRAB17879

# CONDUIT LAYOUT

## US HWY 212

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 9 | 12 |
| Plotting Date: 11/04/2019 | | | |

SCALE
1" = 40'




PLOT SCALE - 1:40

PLOTTED FROM - TRAB17879

PLOT NAME - 6

FILE - ...\PRJ\CDN15GC\CDN01AH\015C.DGN

# CONDUIT LAYOUT

## US HWY 212 & 29TH STREET EAST

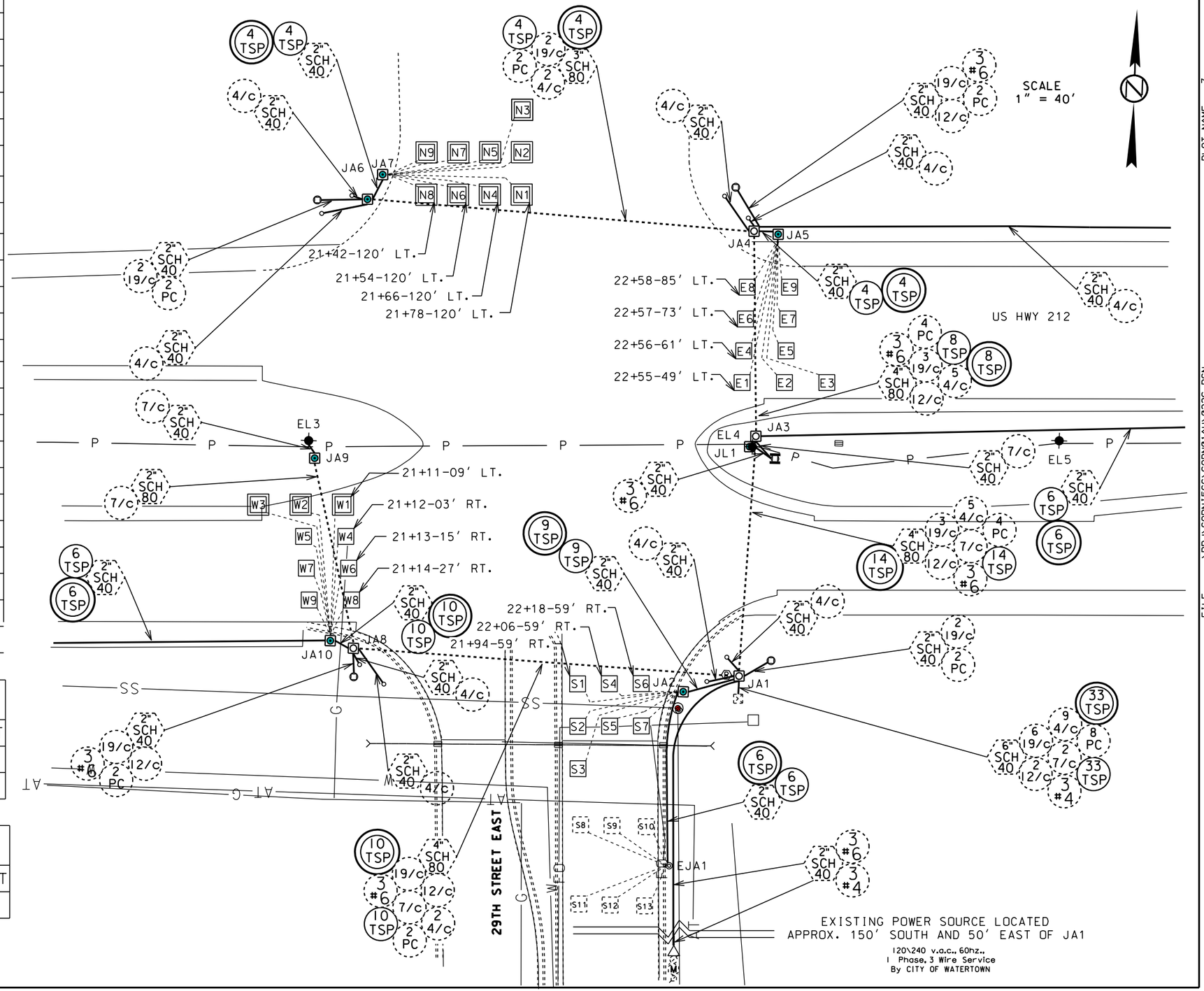
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 10 | 12 |

Plotting Date: 11/04/2019

| EXISTING ITEMS | |
|---|---|
| KEY | ITEM |
| | POWER POLE |
| | LUMINAIRE POLE (EL1-EL5) |
| | WOOD UTILITY POLE |
| | JUNCTION BOX |
| | DETECTOR LOOPS |
| | 2' DIAMETER FOOTING |
| | 3' DIAMETER FOOTING |
| | TRAFFIC SINGAL CONTROLLER |
| | 18" DIAMETER JUNCTION BOX (JA2,JA5-JA7,JA9,JA10) |
| | 24" DIAMETER JUNCTION BOX (JA1,JA3,JA4,JA8) |
| | PREFORMED DETECTOR LOOP (N1-N9,W1-W3) |
| | SAWED-IN DETECTOR LOOP (E1-E9,S1-S7,W4-W9) |
| RGSC | 2" RIGID GALVANIZED STEEL CONDUIT |
| 2 SCH 40 | 2" RIGID CONDUIT, SCHEDULE 40 |
| 6 SCH 40 | 6" RIGID CONDUIT, SCHEDULE 40 |
| 2 SCH 80 | 2" RIGID CONDUIT, SCHEDULE 80 |
| 3 SCH 80 | 3" RIGID CONDUIT, SCHEDULE 80 |
| 4 SCH 80 | 4" RIGID CONDUIT, SCHEDULE 80 |
| #4 | 1/C #4 AWG COPPER WIRE |
| #6 | 1/C #6 AWG COPPER WIRE |
| 4/c | 4/C #14 AWG COPPER TRAY CABLE, K2 |
| 7/c | 7/C #14 AWG COPPER TRAY CABLE, K2 |
| 12/c | 12/C #14 AWG COPPER TRAY CABLE, K2 |
| 19/c | 19/C #14 AWG COPPER TRAY CABLE, K2 |

| ESTIMATE OF QUANTITIES | | | |
|---|---|---|---|
| KEY | ITEM | EST | UNIT |
| | REMOVE SIGNAL EQUIPMENT | LS | LS |
| TSP | #16 AWG TWISTED SHIELDED PAIR | 11,055 | FT |

| REMOVE SIGNAL EQUIPMENT | | | |
|---|---|---|---|
| KEY | ITEM | EST | UNIT |
| TSP | #16 AWG TWISTED SHIELDED PAIR | 11,055 | FT |




PLOT SCALE - 1:40

PLOTTED FROM - TRAB17879

PLOT NAME - 7

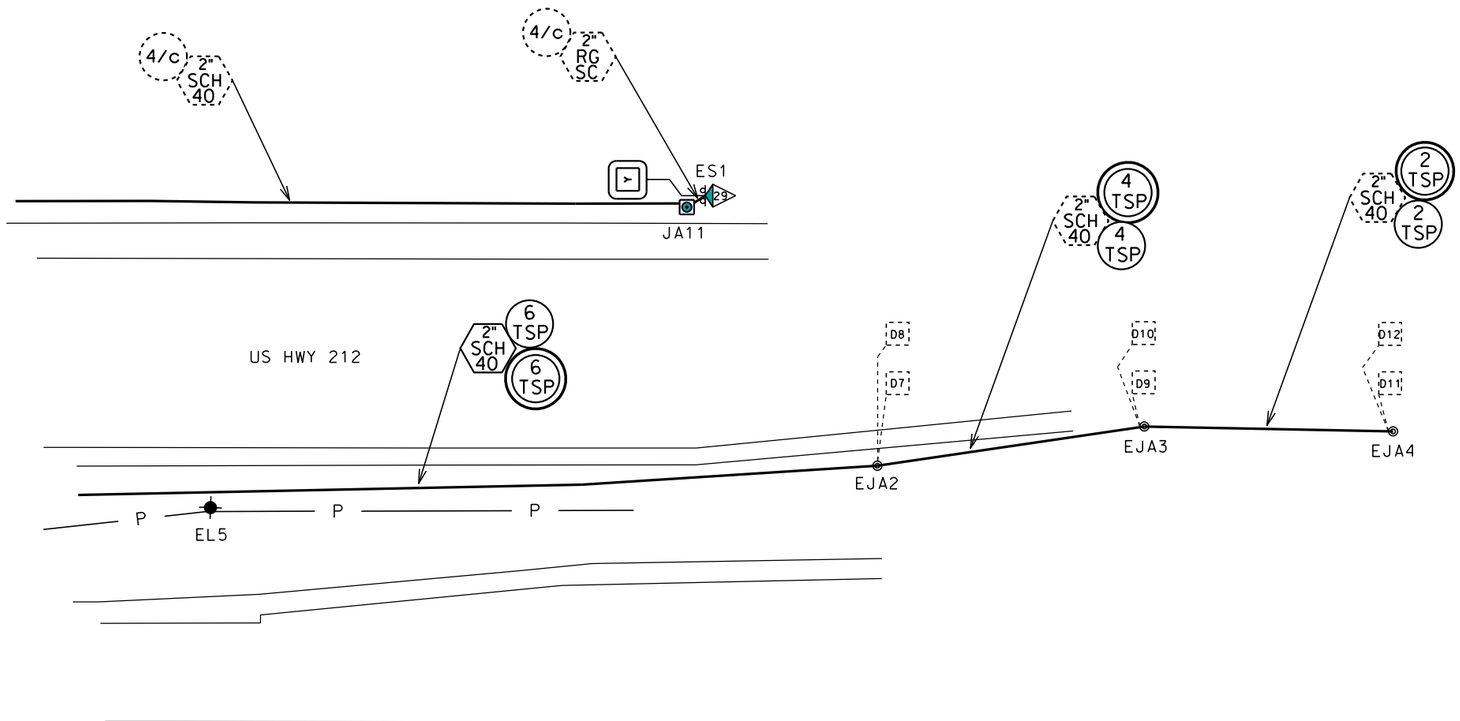
FILE - ...\PRJ\CODN156C\CODN01AHV022C.DGN

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | 000P-171 | 11 | 12 |
| Plotting Date: 11/04/2019 | | | |

# CONDUIT LAYOUT

## US HWY 212

SCALE
1" = 40'

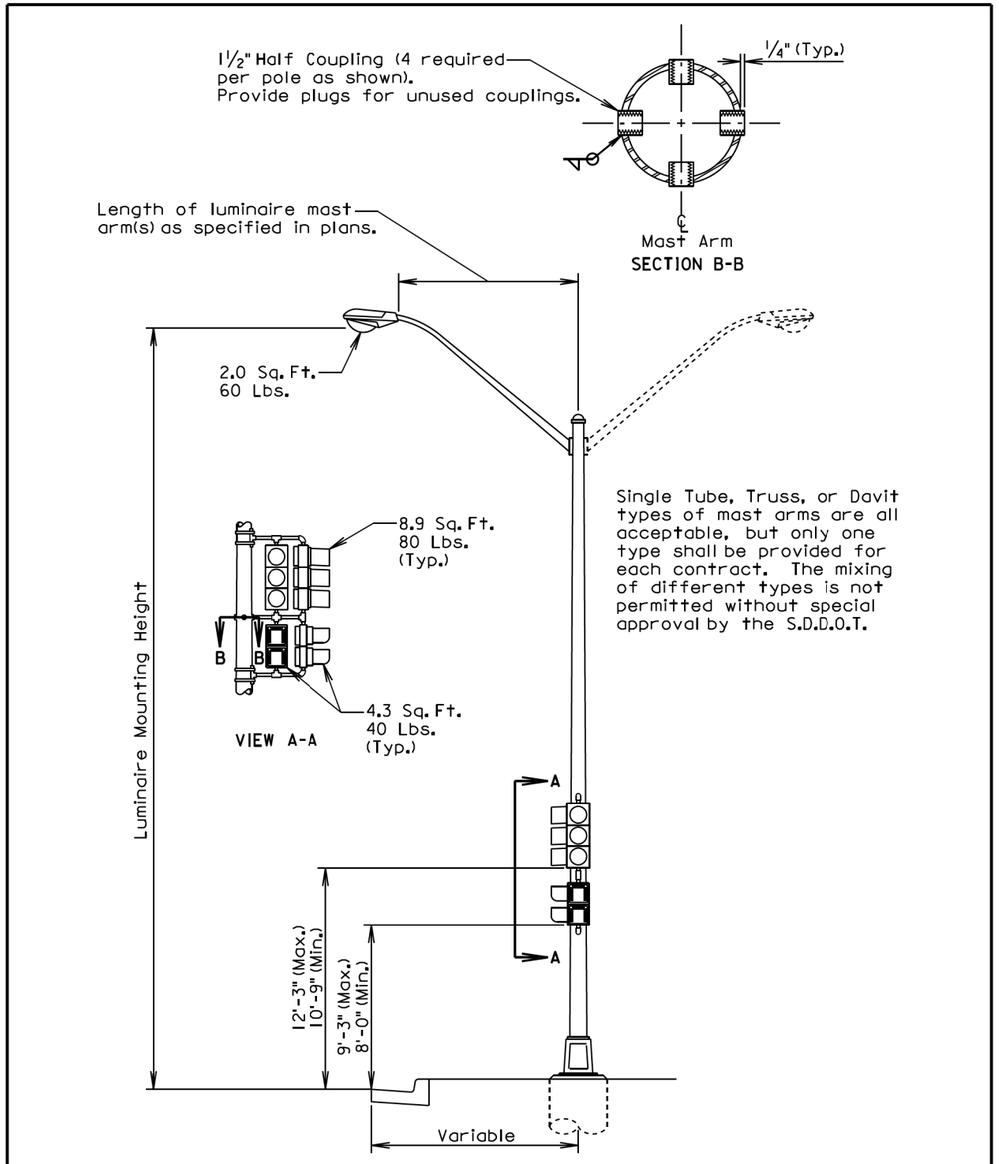



PLOT SCALE - 1:40

PLOT NAME - 8

FILE - ...\PRJ\CONDN15GC\CONDN01AH\024C.DGN

PLOTTED FROM - TRAB17879

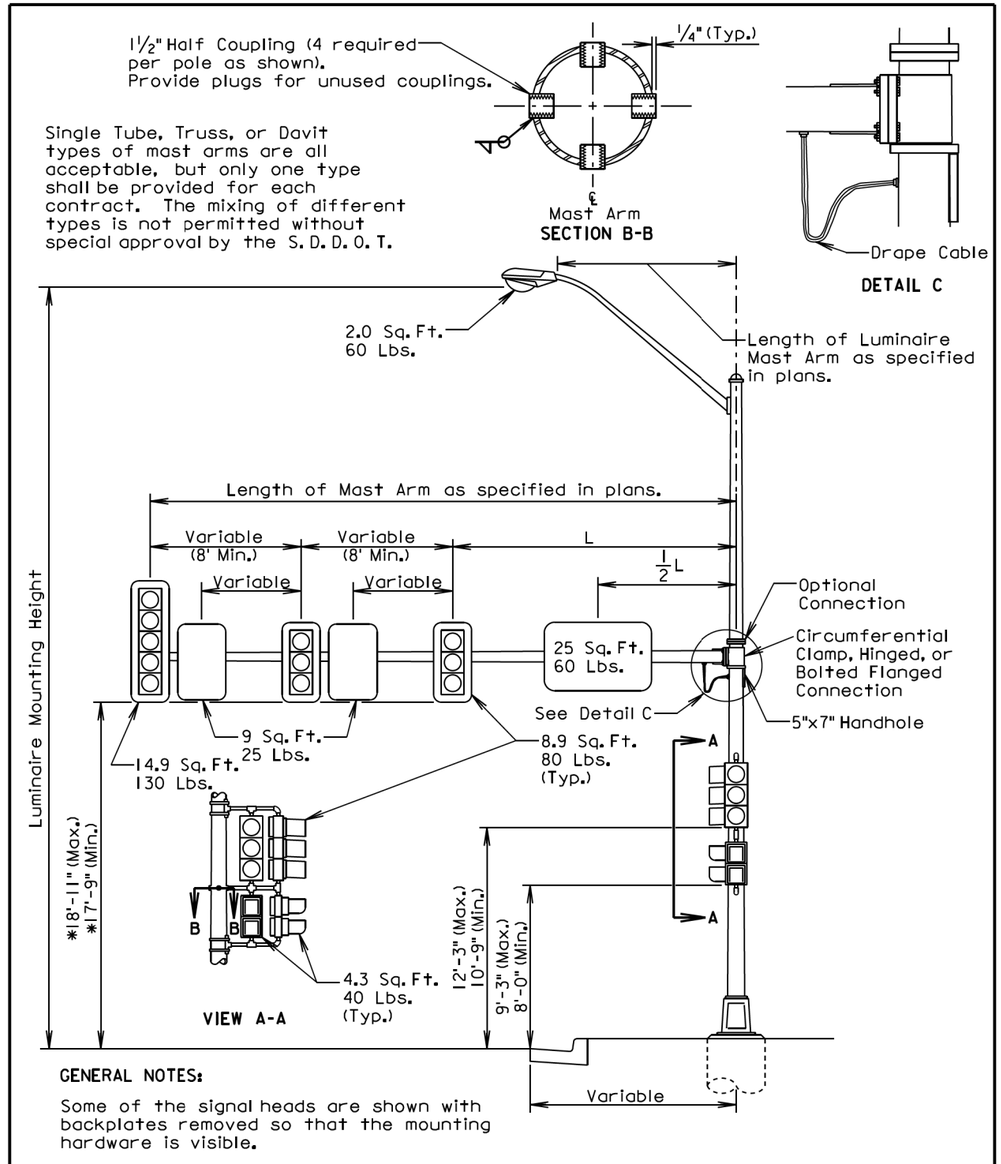



**GENERAL NOTE:**

The signal heads are shown with backplates removed so that the mounting hardware is visible.

*October 15, 2007*

| Published Date: 4th Qtr. 2019 | SDDOT | ROADWAY LUMINAIRE POLE (SIGNALS BANDED TO LUMINAIRE POLE) | PLATE NUMBER 635.06 Sheet 1 of 1 |
|---|---|---|---|




**GENERAL NOTES:**

Some of the signal heads are shown with backplates removed so that the mounting hardware is visible.

* The signal height allowances shown above are based on a horizontal distance greater than 53' between the signals and stop line. For horizontal distance of 53' and less between the signals and the stop line, the height allowances shall be as specified in Section 4D.15 of the MUTCD.

*December 23, 2008*

| Published Date: 4th Qtr. 2019 | SDDOT | SIGNAL POLE (WITH MAST ARM AND LUMINAIRE EXTENSION) | PLATE NUMBER 635.32 Sheet 1 of 1 |
|---|---|---|---|