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

**PROJECT 081-171
 US HIGHWAY 81
 CODINGTON COUNTY**

Install Sawed In Traffic Signal Detector Loops

PCN 12e6

WATERTOWN

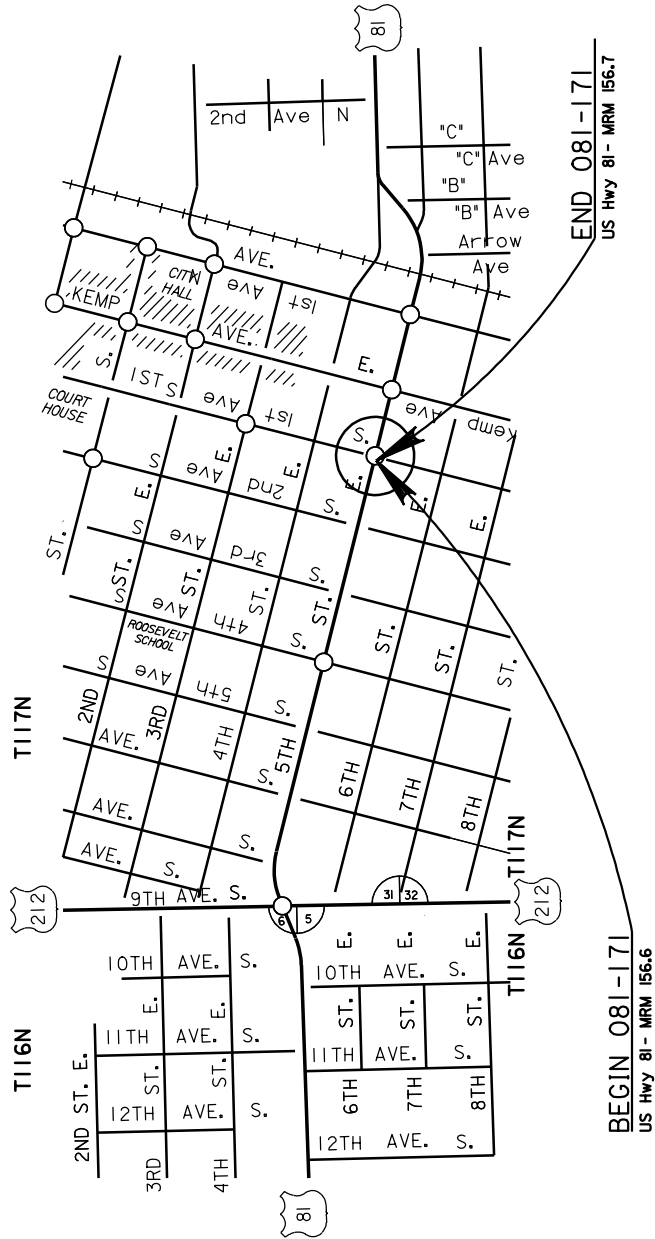


TABLE OF QUANTITIES

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|----------------------------|--------------------------------|-----------------|-------------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 250E0010 | Incidental Work | Lump Sum | LS |
| 634E0100 | Traffic Control | 398 | Unit |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 635E5540 | Sawed-In Detector Loop | 2 | Each |

SPECIFICATIONS

South Dakota Department of Transportation Standard Specifications for Roads and Bridges, 2004 Edition, Required provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

GENERAL NOTES

Work includes, but is not limited to;

Installing sawed in detector loops e6 and e7 into asphalt concrete roadway as shown in the plans, and

Installing the homerun twisted shielded pair detector loop wires from sawed in detector loops into junction box JC2, and

Disconnect existing preformed detector loops E6 and E7 in junction box JC2, and

Connecting the new sawed in detector loop wires in junction box JC2 to the existing detector loop wires (TSP) that lead to Traffic signal Controller in Junction box JC2.

INCIDENTAL WORK

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

GENERAL MAINTENANCE OF TRAFFIC

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

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.

The west bound lane of 1ST Ave SE shall be closed to traffic during Installation of the new sawed in detector loops.

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.

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

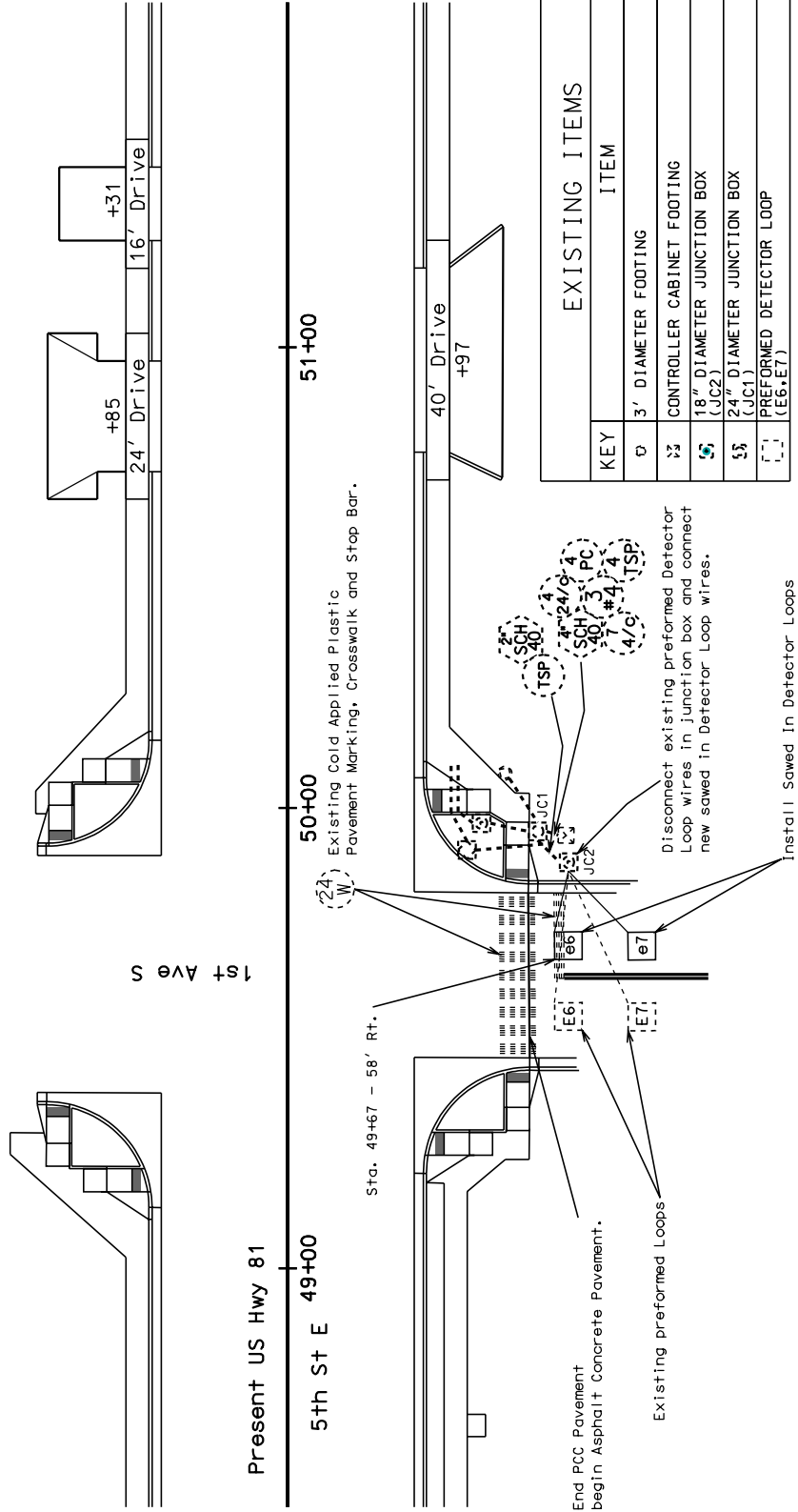
Work will be allowed only during daylight hours.

ITEMIZED LIST FOR TRAFFIC CONTROL

| SIGN CODE | SIGN SIZE | DESCRIPTION | NUMBER REQUIRED | UNITS PER SIGN | UNITS |
|-------------|-----------|---|--------------------|-------------------|-------|
| R11-2 | 48" x 30" | ROAD CLOSED | 1 | 27 | 27 |
| W20-1 | 48" x 48" | ROAD WORK ##### FT. OR AHEAD | 6 | 34 | 204 |
| W20-3 | 48" x 48" | ROAD CLOSED ##### FT. OR AHEAD | 3 | 34 | 102 |
| ***** | ***** | TYPE III BARRICADE - 8 FT. DOUBLE SIDED | 1 | 56 | 56 |
| TOTAL UNITS | | | | | 389 |

SAWED IN LOOP LAYOUT

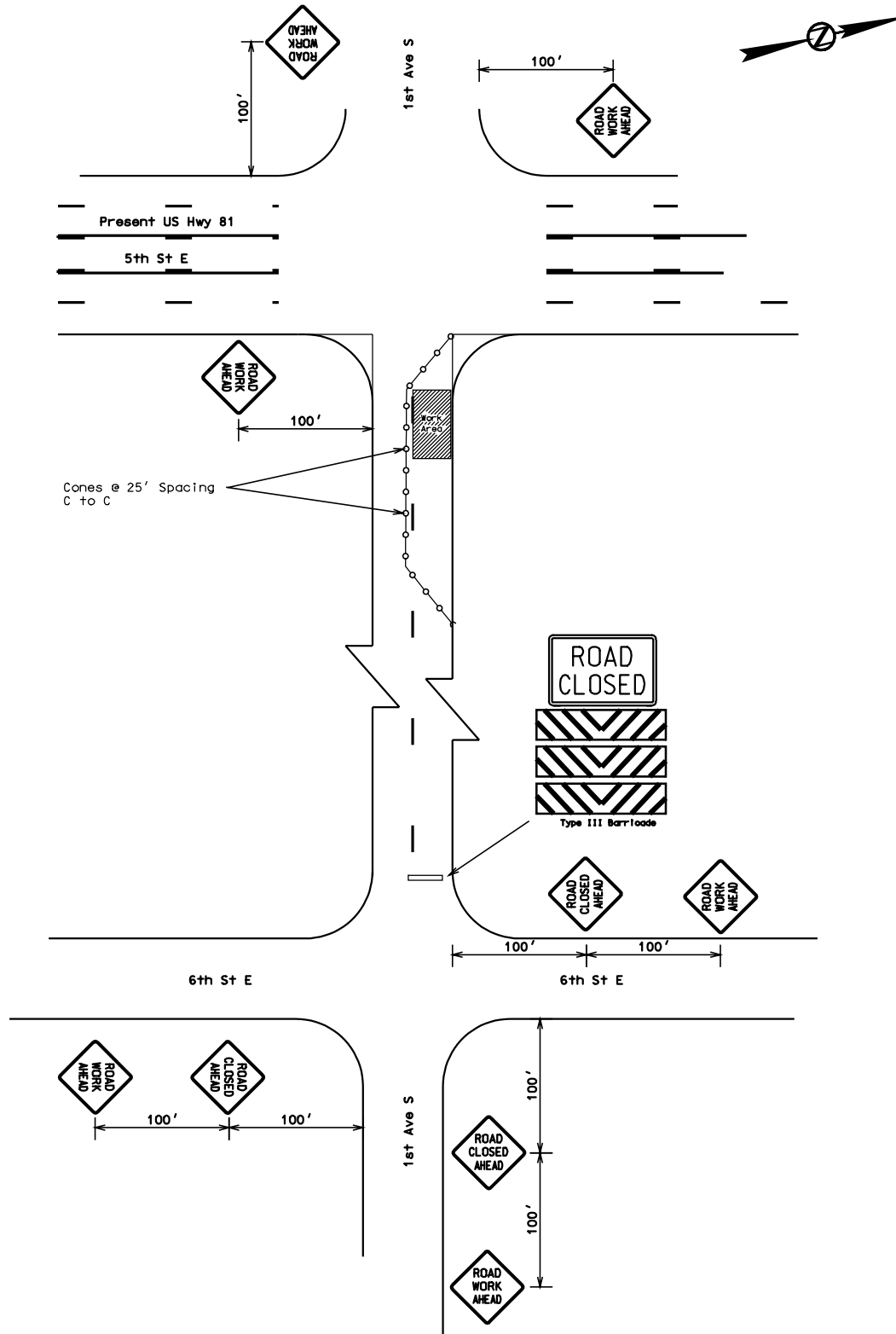
US HWY 81/5TH ST E & 1ST AVE S

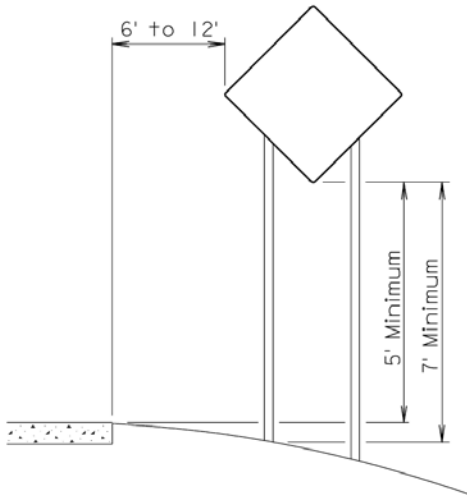


| EXISTING ITEMS | |
|----------------|----------------------------------|
| KEY | ITEM |
| Ø | 3' DIAMETER FOOTING |
| ⌘ | CONTROLLER CABINET FOOTING |
| ⌘ | 18" DIAMETER JUNCTION BOX (JC2) |
| ⌘ | 24" DIAMETER JUNCTION BOX (JC1) |
| ⌘ | PREFORMED DETECTOR LOOP (E6, E7) |

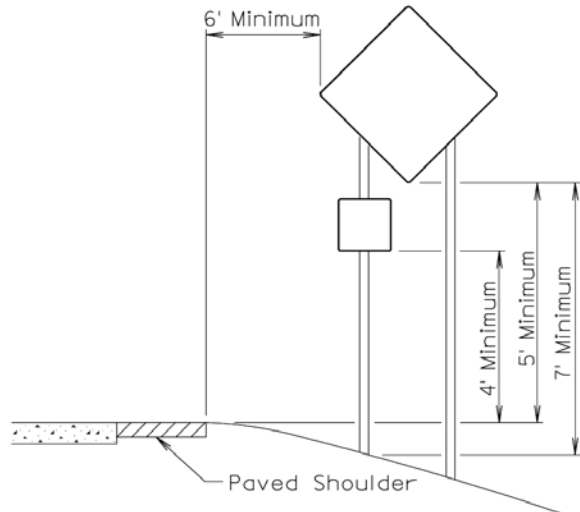
| ESTIMATE OF QUANTITIES | | | |
|------------------------|---------------------------------|-----------|------|
| KEY | ITEM | EST QUANT | UNIT |
| ⌘ | SAWED IN DETECTOR LOOP (e6, e7) | 2 | EACH |

Traffic Control Layout Detail

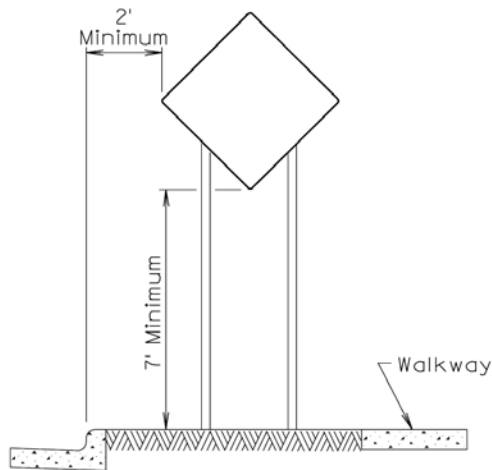




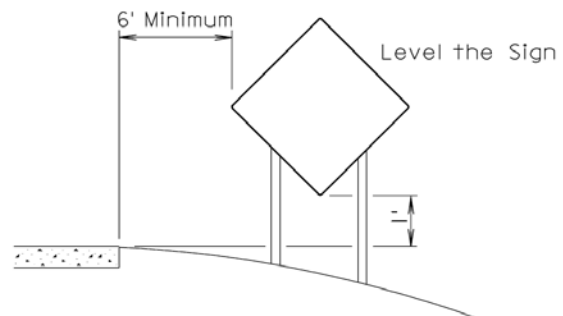
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011

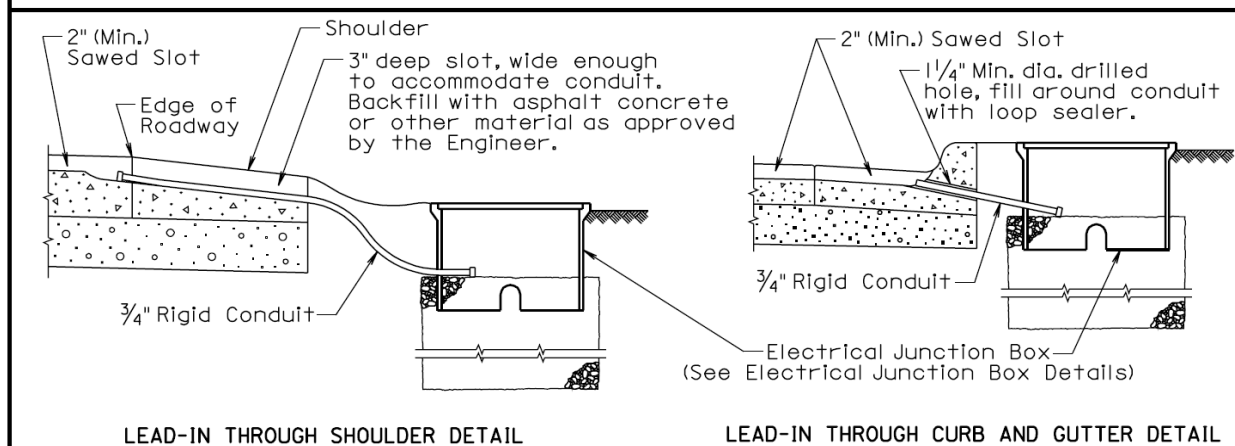
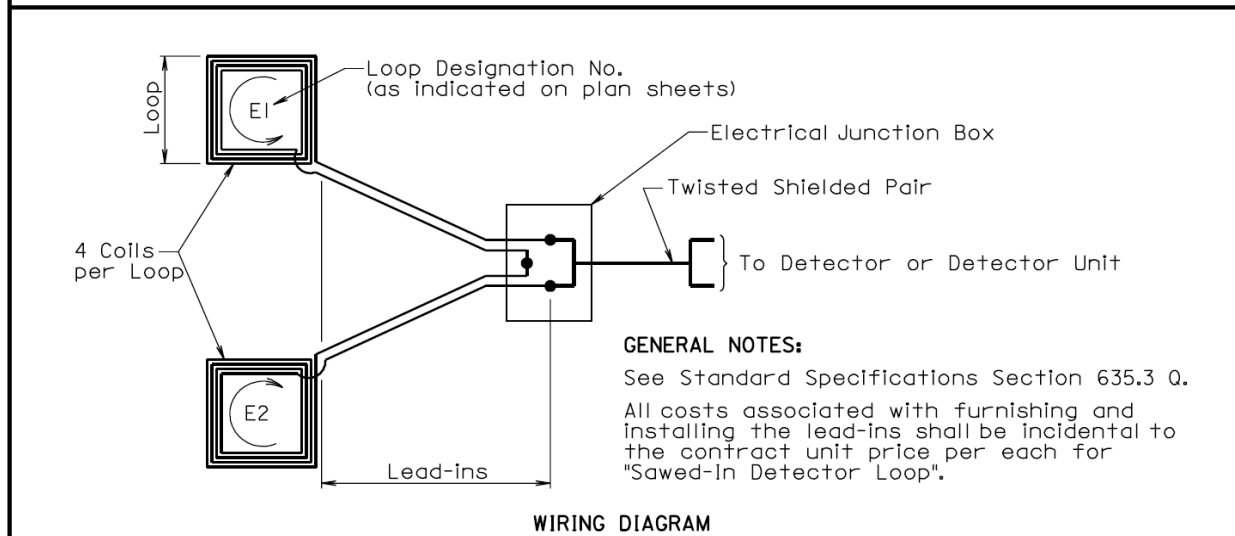
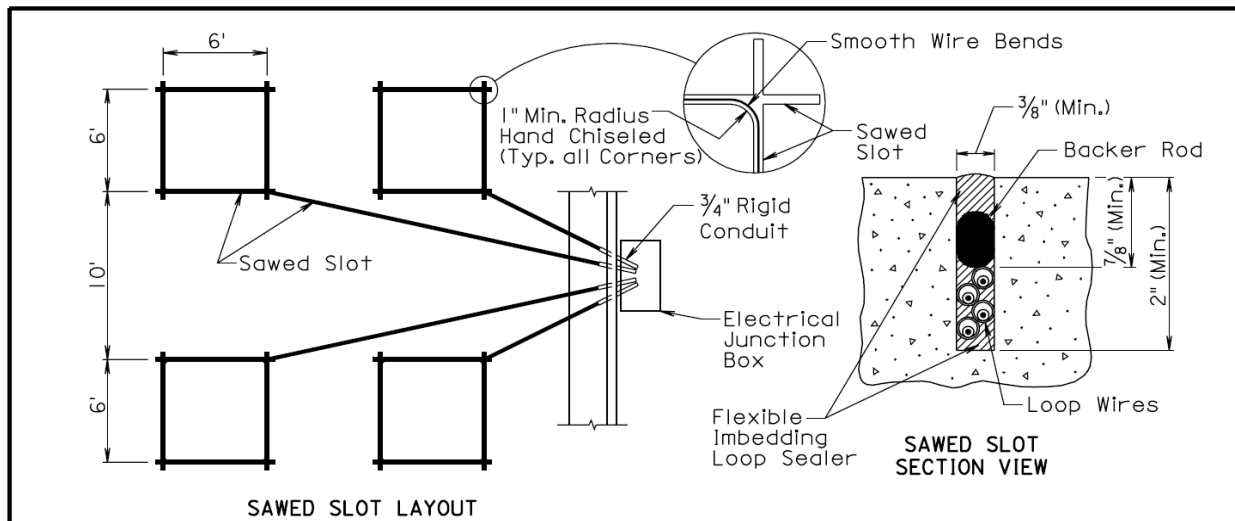
Published Date: 3rd Qtr. 2011

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CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

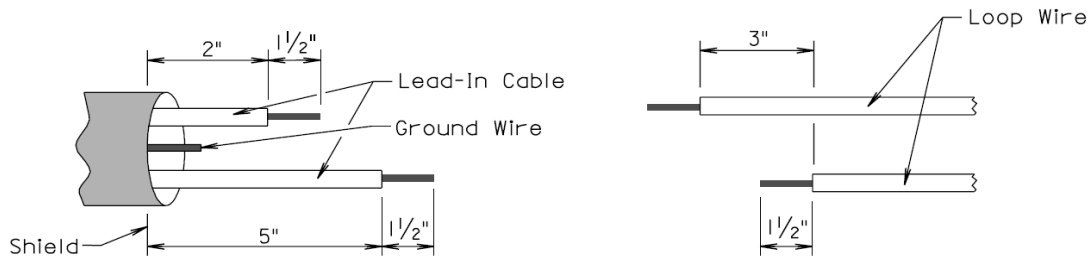
PLATE NUMBER
634.85

Sheet 1 of 1



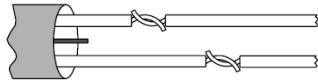
| | | | |
|---|---|--------------------------------------|---|
| <p><i>Published Date: 3rd Qtr. 2011</i></p> | <p>S D D O T</p> | <p>SAWED-IN DETECTOR LOOP</p> | <p>February 14, 2011</p> <p>PLATE NUMBER 635.71</p> <p>Sheet 1 of 1</p> |
|---|---|--------------------------------------|---|

Step 1. Strip loop wires and lead-in cable.

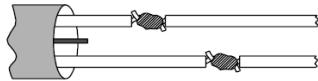


Step 2. Connect and solder.

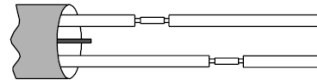
Twist bare conductors together



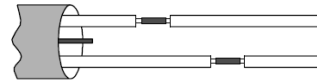
and solder with 60/40 (tin/lead) resin solder



Crimp bare conductors together with an uninsulated butt connector



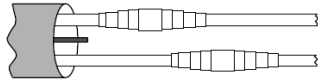
and solder with 60/40 (tin/lead) resin solder



OR

Step 3. Insulate each solder joint separately.

Electrical Tape



Shrink Tube



OR

Step 4. Environmentally seal total splice against weather, moisture and abrasion. Methods for environmentally sealing the splice include heat-shrinkable tubing, special sealing kits, special forms to be filled by sealant, and tape and coating.



June 20, 2000

Published Date: 3rd Qtr. 2011

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DETECTOR LOOP WIRE SPLICING

**PLATE NUMBER
635.77**

Sheet 1 of 1