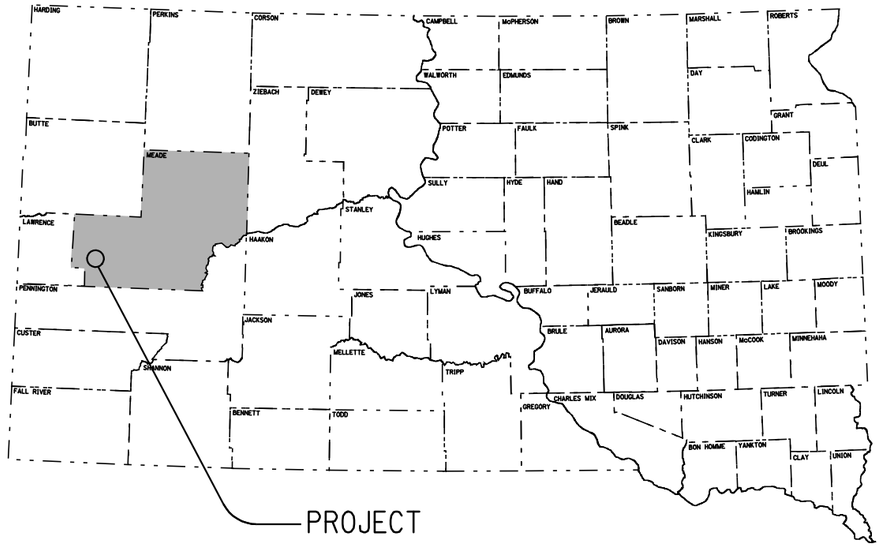


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 090E-451
INTERSTATE 90
MEADE COUNTY

INSTALL LED OPEN/CLOSED SIGN
FOR TILFORD WEIGH STATION

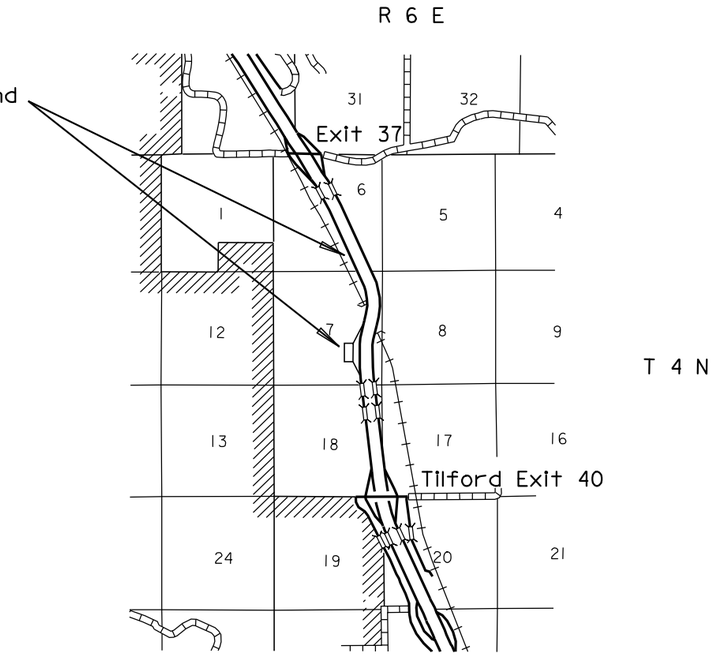
PCN I1PP

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090E-451	01	7

Plotting Date: 26-JAN-2010

INDEX OF SHEETS

PROJECT
MRM 38.25 to MRM 39.01 Eastbound



STORM WATER PERMIT
(None Required)

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
632E4500	Variable Message Sign System	1	Each
634E0100	Traffic Control	136	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SUPPLYING AS BUILT PLANS

The Contractor shall supply as built plans to the Engineer and the Rapid City Region Traffic Engineer. The as built plans shall include the details necessary for the modifications to existing wiring and conduit for the installation of a LED OPEN/CLOSED sign, operated with a power switch installed in the Tilford weigh station building. The as built plans shall be prepared and signed by an Electrical Professional Engineer registered in the state of South Dakota.

PRE-BID INSPECTION

The Contractor is encouraged to inspect the project site prior to preparing a bid. A pre-bid inspection will be held at the Tilford weigh station building on February 10, 2010 at 10:00 a.m. Mountain Time.

INCIDENTAL WORK

- Remove existing OPEN/CLOSED Sign and any necessary hardware, wiring, etc. The existing sign and any unneeded parts shall be disposed of by the Contractor.

- Furnish and install a new LED OPEN/CLOSED Sign on the existing sign supports located at MRM 38.25 (Sta. 283+60). New mounting hardware shall be furnished and installed by the Contractor. The mounting hardware shall be corrosion resistant and meet the minimum requirements set forth by the sign manufacturer.

- The LED OPEN/CLOSED sign shall be controlled with a power switch installed in the weigh station building. The Contractor shall determine the best route for the switch wire cable. All wiring shall be installed in conduit.

- The Contractor shall furnish and install all necessary wiring, additional conduit and additional junction boxes for the power switch installation. All work associated with the power switch to control the OPEN/CLOSED sign shall be in compliance with the applicable specifications of Sec. 635 of the Standard Specifications for Roads and Bridges.

- The Contractor shall remove the splice at the circuit breaker and furnish and install an appropriately sized circuit breaker, so the existing #2 conductor can be installed directly into the circuit breaker.

- The LED OPEN/CLOSED sign shall be earth grounded in accordance with the National Electrical Code.

VARIABLE MESSAGE "OPEN/CLOSED" SIGN SYSTEM

The sign shall meet the minimum requirements of the MUTCD, 2009 Edition, Changeable Message Signs Section 2L.

The sign system shall not require any moving parts to display images and the message shall be controlled with a power switch installed in the weigh station building.

The sign system shall use 30° LED technology.

The characters shall be upper-case letters 18" tall and white in color.

The sign shall only display "OPEN" or "CLOSED".

The sign shall be connected to the existing 120 VAC power.

The sign shall be capable of operating in ambient temperatures between -20 degrees F to 130 degrees F.

A photocell auto-dimming device shall be installed to automatically adjust the character brightness dependent on outside light conditions.

A sunshade visor shall be installed along the top of the sign.

The sign shall be visible from ½ mile during night and day conditions. The message on the sign shall be legible from a minimum distance of 600 feet for nighttime conditions and 800 feet for normal daylight conditions.

The display system shall be housed in a metal corrosion resistant weatherproof enclosure with a polycarbonate UV protected front face that can withstand 80 mile per hour winds.

The sign shall be compliant with current NEMA and UL Standards.

The sign shall be obtained from one of the following companies:

- Transportation Technologies, Inc.
  4395 Iroquois Ave.
  Erie, Pennsylvania
  Toll Free: (888) 811-7010
  Facsimile: (888) 836-8401
  sales@transportation-tech.com
  www.transporation-tech.com

- International Road Dynamics Inc.
  702-43rd Street East
  Saskatoon, Sk.
  Canada S7K 3T9
  Phone: (306) 653-6627
  Fax: (306) 242-5599
  www.irdinc.com
  info@irdinc.com

- Data Display USA
  5004 Veterans Memorial Highway
  Holbrook, NY 11741
  Phone: (631) 218-2130 ext.26
  Fax: (631) 218-2140
  www.datadisplayusa.com

ADJUST EXISTING SIGN HEIGHT

The Contractor shall provide DOT Maintenance forces a minimum 2 week notice to adjust the existing sign height, so that the new LED OPEN/CLOSED sign meets the minimum 5' height above edge of shoulder dimension detailed in these plans.

MANUALS

A manual for the LED OPEN/CLOSED sign shall be supplied to the Rapid City Region Traffic Engineer and Sergeant Scott Brown. The manual shall include operation, service and repair information as well as an illustrated parts list. Manuals shall be delivered with the sign.

MAINTENANCE OF TRAFFIC

Traffic control shall at all times be maintained in accordance with applicable MUTCD Standards, Section 634 of the Standard Specifications and these plans.

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

Storage of vehicles, materials, and equipment shall be not closer than 30' from the edge of the driving lane. 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.

All work shall be conducted so that there is no disruption to the weigh station operations. The Contractor shall contact Sergeant Scott Brown, (605) 347-2671 and (605) 391-4990 at least 2 weeks prior to starting the work to inform him of the upcoming work activities.

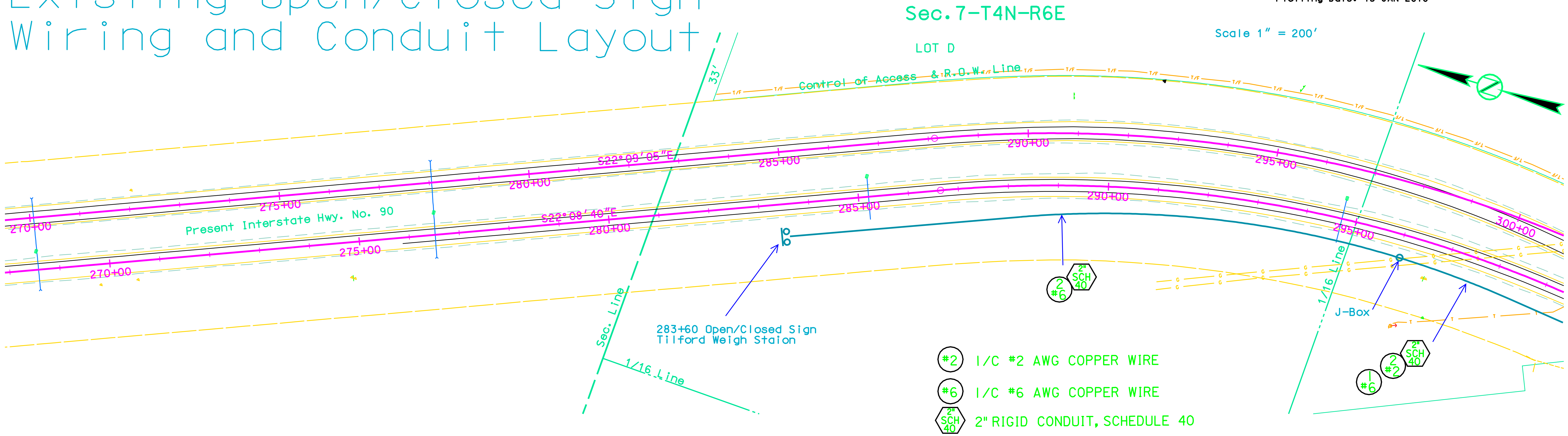
TABLE OF TRAFFIC CONTROL

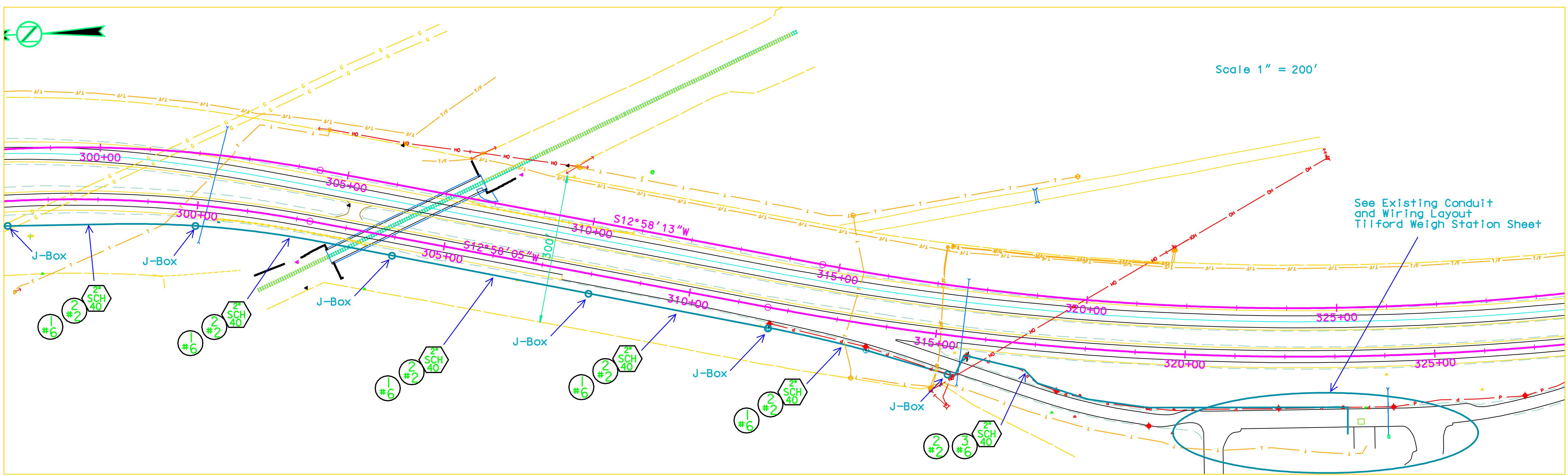
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
				TOTAL UNITS	**136**

Existing Open/Closed Sign Wiring and Conduit Layout

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090E-451	03	7

Plotting Date: 15-JAN-2010





STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090E-451	04	7

Plotting Date: 26-JAN-2010

EXISTING CONDUIT AND WIRING LAYOUT

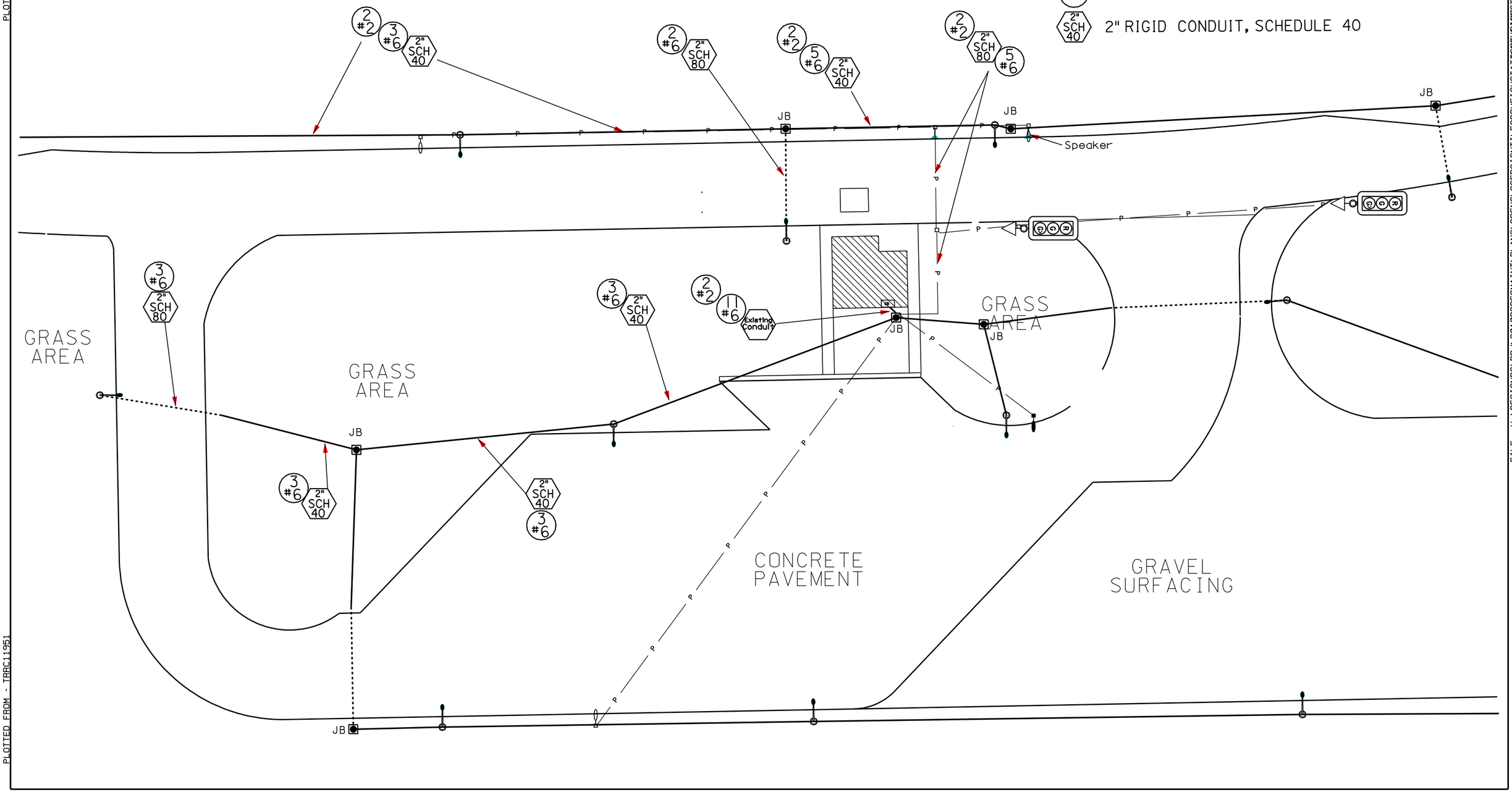
TILFORD WEIGH STATION

#2 I/C #2 AWG COPPER WIRE

#6 I/C #6 AWG COPPER WIRE

2" SCH 40 2" RIGID CONDUIT, SCHEDULE 40

SCALE 1" = 40'



PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - TRRC11951

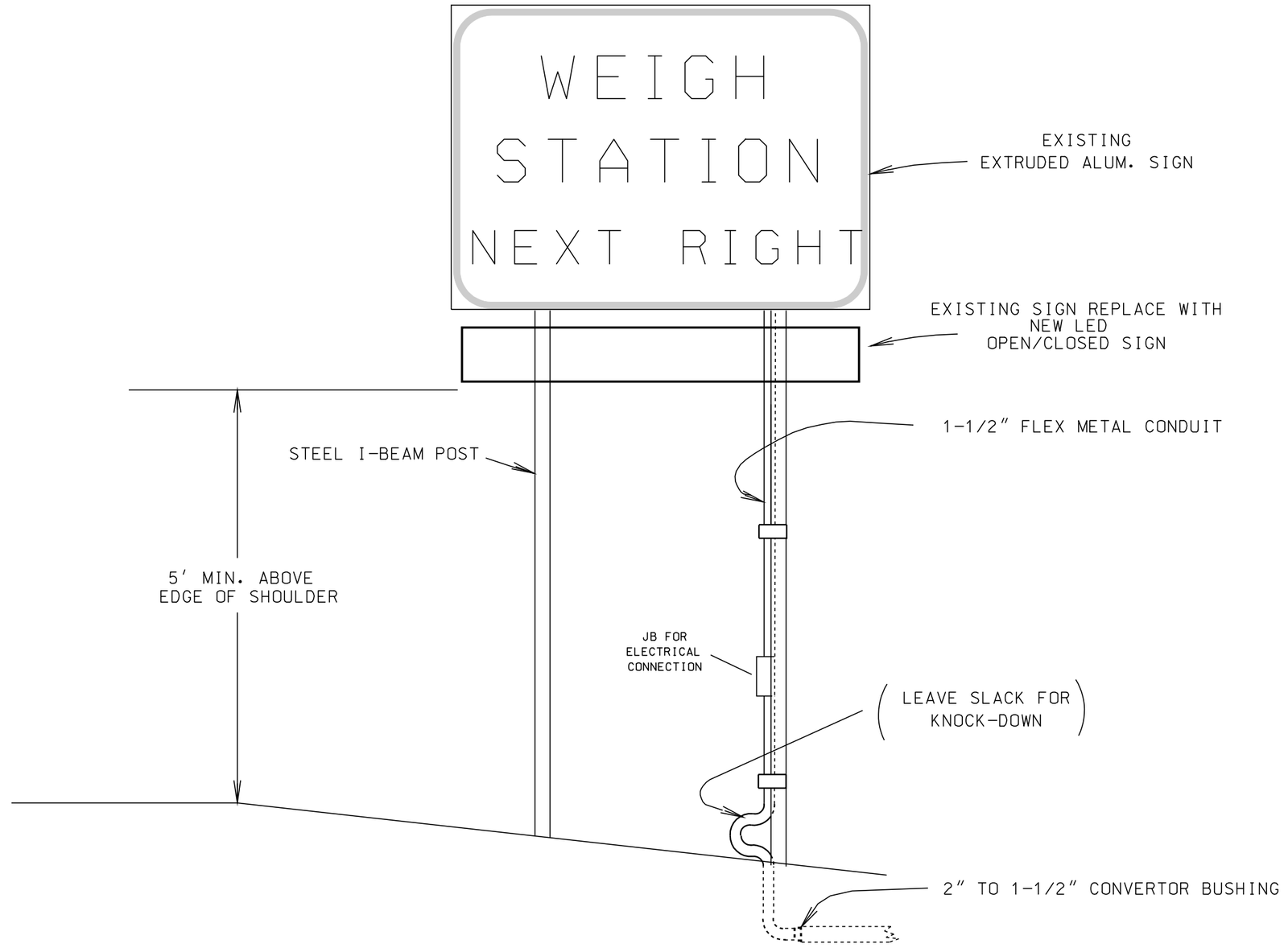
FILE - U:\REGIONRC\PRJ\2010RCREGMAINT\PLANS\OPENCLOSEDSIGNTILFORDWEIGHSTATION\TILFORDWEIGHSTATION_LAYOUT.DGN

PLOT SCALE - 200.000000:1.000000

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	090E-451	05	7

Plotting Date: 26-JAN-2010

EXISTING SIGN CONDUIT DETAILS



PLOTTED FROM - TRRC11951

FILE - U:\REGIONRC\PRJ\2010RCREGMAINT\PLANS\OPENCLOSEDSIGNTILFORDWEIGHSTATION25SIGN.DGN

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.

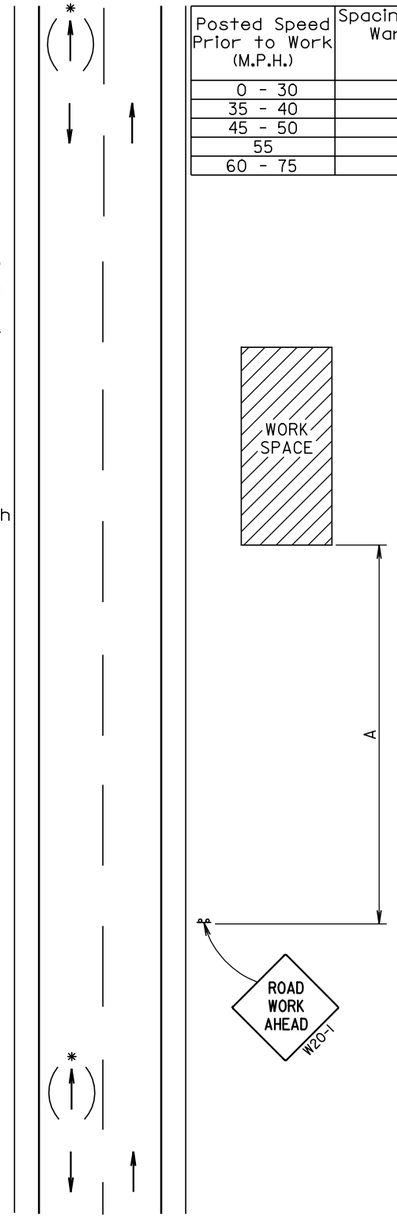
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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 - 75	1000



July 1, 2005

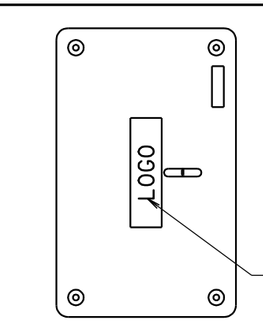
Published Date: 1st Qtr. 2010

SDDOT

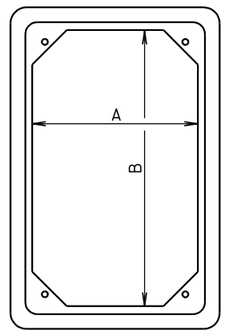
GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

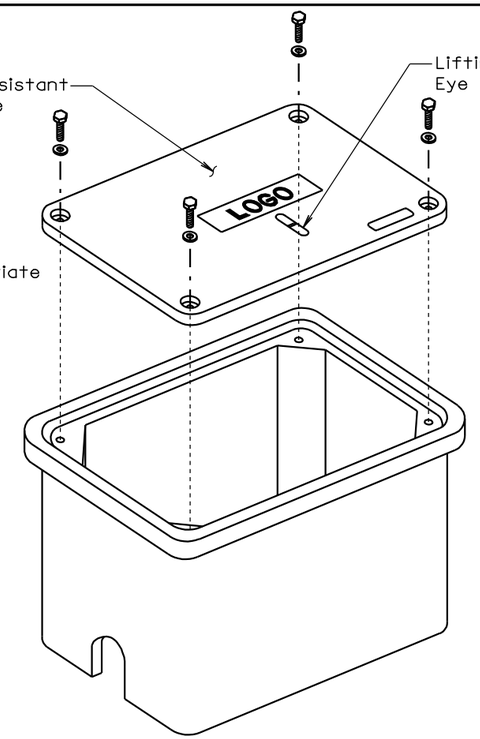
Sheet 1 of 1



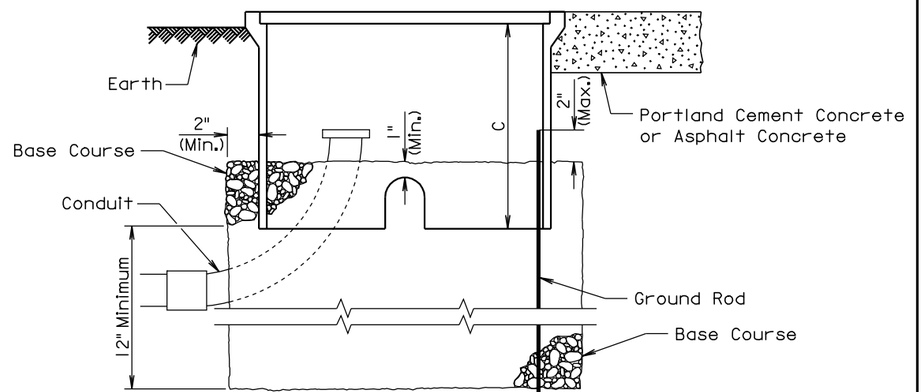
TOP VIEW
(Cover)



TOP VIEW
(Box)



ISOMETRIC VIEW
(Box and Cover)



SIDE VIEW
(Electrical Junction Box Installation Details)

December 23, 2009

Published Date: 1st Qtr. 2010

SDDOT

ELECTRICAL JUNCTION BOXES
TYPE 1 THROUGH TYPE 4

PLATE NUMBER 635.65

Sheet 1 of 2

Username - trrcil95i

ELECTRICAL JUNCTION BOX

TYPE	DESCRIPTION	DIMENSIONS		
		A	B	C
1	Open Bottom with Gasket	12"-15"	12"-15"	12" (Min.)
2	Open Bottom with Gasket	11"-15"	18"-21"	12" (Min.)
3	Open Bottom with Gasket	13"-15"	24"-28"	12" (Min.)
4	Open Bottom with Gasket	36"-40"	48"-52"	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".

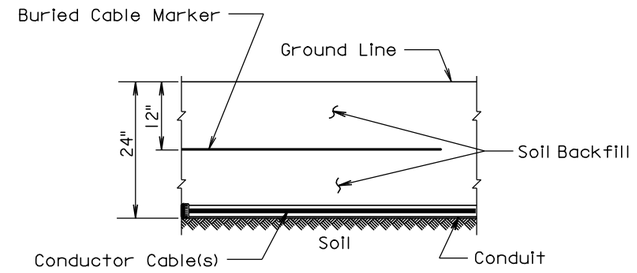
Grounding of the junction box shall be in accordance with section 635.3 B of the Standard Specifications and the ground rod shall extend above the base course a maximum of two inches.

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 22 2007.

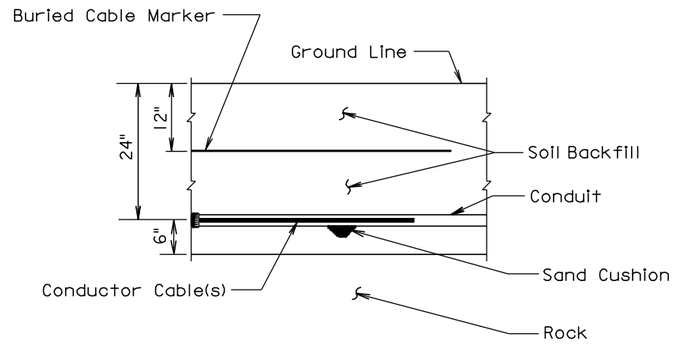
The electrical junction boxes shall be UL listed.

December 23, 2009

Published Date: 1st Qtr. 2010	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker 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

Published Date: 1st Qtr. 2010	SDDOT	CONDUIT INSTALLATION	PLATE NUMBER 635.76
			Sheet 1 of 1