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SPECIAL PROVISIONS

DIVISION "SS"

SS-1 (1802) QUALIFICATION OF WORKERS

The provisions of 1802 are hereby supplemented with the following:

Signal and Lighting Certification will be required for all Contractors, Supervisors or Foreman involved in the field installation of the Traffic Signal and/or Lighting portion of this Project. Signal and Lighting Certification, Level II, is available through the Mn/DOT Technical Certification Program. Questions regarding certification or past certification may be directed to the Technical Certification Specialist at telephone (651) 297-7195.

SS-2 (2565) TRAFFIC CONTROL SIGNALS

The traffic control signal system(s) shall comprise all of the work shown on the respective plan sheets for each system, complete, in place, and in operation, all in accordance with the **2005 Edition** of the Minnesota Department of Transportation "Standard Specifications for Construction", and all supplements thereto except as shown and noted in the Plans and modified in these Special Provisions.

SS-2.1 Traffic Signal Control Cables and Conductors

Traffic signal control cables shall be installed as a continuous run without splices from the detector to the controller except where the cabling shown in the Plans specify a splice. All required splices shall be 3M Splice Kit or approved equal, and shall be waterproof. All cable installed in conduit shall be pulled by hand. Not less than 3 feet of slack shall be left of each cable in each hand hole, pull box, or pedestal base through which a run of cable passes, except that a minimum of slack cable and conductors for detector loop lead-ins shall be left in the hand holes through which they pass to prevent the formation of secondary loops.

Conductors installed in saw cuts for detector loops shall be 1/C No. 12 Stranded Cross Linked Polyethylene Type XHHW. The detector loop wire shall be labeled Type XHHW. The connection between the conductors forming the loop and the 2/C No. 12 shielded cable shall be spliced with a 3M Splice Kit or approved equal, and shall be tied at the top of the hand hole.

SS-2.2 Loop Detector Lead-in Cable

Loop detector lead-in cable shall be in accordance with the provisions of 3815C4, except for the jacketing material. The jacketing material shall be in accordance with the following.

The conductor assembly shall be covered with a continuous layer of black jacketing grade, high molecular weight, low density polyethylene material having a minimum average thickness of 30 Mils. The jacketing material shall meet the requirements of ASTM Designation D-1248, Type I, Class C, Grade 5, J-3 latest revision.

SS-2.3

Detector Loops

Detector loops shall be installed in saw cuts in the pavement in accordance with the provisions of 2565.3G and Standard Plate 8130D except as may be shown in the Plans or modified herein. Loop conductors shall be 1/C No. 12 Stranded Crosslinked Polyethylene Type XHHW. Loop wire shall be labeled Type XHHW. Loops shall be formed with the number of turns recommended by the manufacturer of the detector unit, with two turns a minimum. Loop lead-out wires shall be twisted not less than three turns per foot, and taped to remain a close fitting pair. One inch rigid steel conduit and bushings shall be provided from face of curb or front edge of gutter into the adjacent hand hole to form the wireway for the twisted loop leads. Loop connections and lead-in cable shall be as specified in Signal Control Cables and Conductors of these Special Provisions.

Preformed Non-Metallic Conduit (NMC) detector loops shall be installed as shown in the detail provided in the Plans and in accordance with the provisions of 2565.3G.

Loop conductors shall be installed in saw cuts to point of entrance into the rigid steel access conduit.

Loop conductors in concrete pavement should not cross transverse joints to the conduit leadins and enter the hand holes through separate leadin conduits unless otherwise permitted by the Engineer.

Loop conductors shall not be placed in pavement joints, or run off the end of slab, and shall not cross from (to) bituminous pavement to (from) portland cement concrete pavements.

Layout of the loops shall be such as to cross the minimum number of joints, cracks, or pavement edges. Positioning of the loops and lead-ins shall be field adjusted to be consistent with the above requirements.

Insulation resistance of each loop to ground shall be not less than 200 megohms.

Joint sleeve installation shall be made with ½ inch flexible PVC jackets embedded and sealed with duct seal and the remainder of the joint filled with a flexible sealant. Not less than 1 inch cover shall be provided over the joint sleeve.

Loop detector saw cuts in concrete pavement shall be filled with an epoxy material as approved by and to the satisfaction of the Engineer. Saw cuts in

bituminous pavement shall be filled with an asphaltic roofing cement, or cold pour asphaltic joint sealer as approved by and to the satisfaction of the Engineer.

If spalling or settlement of the fill material occurs, the saw cuts shall be refilled to completely seal the void.

Asphaltic roofing cement shall be "Leek-Proof" as manufactured by Leek-Proof, Inc., Chicago, Illinois; "Black Jack Roof Cement" as manufactured by Handi-Products, Cleveland, Ohio; "E-Z Stick Shingle Seal" as manufactured by Handi-Products, Cleveland, Ohio; or an approved equal. "3M Detector Loop Sealant" or "Goldflex Loop Seal-ant" may be used in lieu of epoxy for sealant in concrete pavement.

The Contractor shall furnish to the Engineer, in triplicate, a signed and dated "Loop Detector Test Report" for each loop detector and lead-in cable system furnished and installed as part of this Contract in accordance with the provisions of 2565.3G3.

Payment at the Contract unit price per each for Item 2565.602 "Saw Cut Loop Detector 6' x 6'" shall be compensation in full for furnishing and installing loop detectors as specified herein and in the Plans.

SS-2.4

Locating

From start of construction and until time the traffic signal system is placed in operation in its final configuration as shown in the plans, the Contractor shall be responsible for locating both the new and existing traffic signal system in accordance with the Minnesota State Statute 216D "Gopher State One Call". All locating shall be incidental work and no direct compensation will be made therefor.