

Section 1200

Traffic Signals

1201.0 DESCRIPTION

Traffic signal installation shall be performed in accordance with the provisions of the latest published edition of the MnDOT Standard Specifications, except as modified herein.

1202.0 MATERIALS

All materials used in this work shall be new and conform to the requirements for class, kind, size and materials as specified below. All materials permanently incorporated in the work shall be made in the United States of America. The Contractor shall submit in writing a list of materials showing the manufacturer's designation of all materials. This list must be approved by the Engineer.

1202.1 PAINTING

Existing Signal System

a) Painting

Paint all items, except the traffic signal cabinet and signal service cabinet, of the revised signal system in accordance with the applicable provisions of MnDOT 2565.3X, as directed by the Engineer; and as follows:

b) Surface Preparation

Prepare all surfaces prior to painting in accordance with the applicable provisions of MnDOT 2478; as directed by the Engineer; and as follows:

1. The Engineer may require limited scraping of flaking or peeling paint where necessary. Sandblasting or power sanding is not permitted.

If it is necessary to remove small amounts of loose and blistered paint, collect the paint scrapings in accordance with the Occupational Safety & Health Administration (OSHA) and the Minnesota Pollution Control Agency (MPCA) hazardous waste rules.

If the total amount of paint scrapings is less than 3% of a 5-gallon pail (approximately 2-1/3 cups), the pail will be considered empty and the Contractor may dispose of the paint scrapings as solid waste.

If the total amount of paint scrapings is in excess of 3% of a 5-gallon pail (approximately 2-1/3 cups), then the paint scrapings need to be disposed of as hazardous waste. Please provide the manifest and approval for disposal from the landfill to the Engineer. The City will not release payment for this bid item until the proper documentation is submitted showing that the material was disposed of properly.

Roughen old glossy paint to ensure adhesion of the primer paint.

After removal of any loose paint (if required), thoroughly clean (using detergent and a pressure washer method) all items (to be prime-painted or

finish-painted) of loose rust, grease, and salts to the satisfaction of the Engineer.

All cleaning operations shall be coordinated with the Engineer to ensure proper inspection.

2. Ensure all metal surfaces are completely dry before application of the primer and/or paint.
3. Obtain Engineer approval of all surface preparation prior to the application of primer and paint.
4. Prime Painting and Finish Painting Coats:

Prime-paint the mast arm poles and transformer bases before the application of the finish coat paint with a surface-tolerant primer compatible with the finish coat paint.

Apply the primer paint according to the manufacturer's written directions.

Apply the finish coat paint in accordance with the manufacturer's written directions.

Apply two coats of the paint and colors as follows:

The paint color of all NEW mast arm pole standards, bases, and mast arms shall be **SEMI-BLACK** and shall match the color and finish of the existing signal components directed to be painted SEMI-BLACK in the field.

Contractor shall submit color samples to Owner for review and approval.

MnDOT-approved traffic signal paints are listed on MnDOT's Approved/Qualified Products List for Signals:

<http://www.mrr.dot.state.mn.us/materials/materials.asp>

Do not field paint the traffic signal cabinets or signal service cabinets.

New Signal System

Galvanized Mast Arm Pole Standards

Paint galvanized mast arm pole standards in accordance with the provisions of MnDOT 2565.3X, and as specified herein.

When the contract requires painted mast arm pole standards, the pole manufacturer shall follow the procedure outlined below:

- a) Surface clean by the solvent cleaning method and surface prepare by sweep blasting.
- b) Coat all sweep blasted galvanized steel with the subsequent coat(s) within the time frame defined in ASTM D 6386, Sect. 5.4.1, or within the same 8-hour shift, maintaining manufacturer-defined control and environmental conditions. The Manufacturer's Quality Control (QC) personnel shall document that all parameters were followed.

c) Apply all coating material in accordance with the contract documents and the manufacturer's Product Data Sheet (PDS) and application guides for the material and system specified.

d) Coating material(s) shall meet the requirements of 3520. The color of the intermediate coat shall present a distinct contrast from other applied coatings.

e) Perform Quality Control Inspections of all coated products by using an observer with normal color vision, in a "well lighted" area, during each coating phase and prior to final acceptance.

"Well-lighted" is defined as a minimum of 50-foot candles of artificial light or natural daylight. Use a light meter with readings in foot candles to verify the adequacy of the lighting.

The paint color of all NEW mast arm pole standards, bases, and mast arms shall be **SEMI-BLACK** and shall match the color and finish of the existing signal components directed to be painted SEMI-BLACK in the field.

Contractor shall submit color samples to owner for review and approval.

1202.2 SIGNAL SERVICE CABINET

The Contractor shall furnish and install the service cabinet. The service cabinet shall be manufactured by Traffic Control Corporation in accordance with Hennepin County standards. The Contractor shall install the service cabinet and make it operational. The Contractor shall coordinate with Xcel Energy to provide power to the signal system.

The manufacturer or manufacturer's representative shall approve all items and ensure that all items are compatible with each other for the signal systems. The manufacturer or manufacturer's representative shall be onsite at the signal system turn-on, make the system operational, and resolve any issues with the system.

1202.3 SIGNAL CONTROLLER CABINET

The Contractor shall furnish and install the controller cabinet. The service cabinet shall be manufactured by Traffic Control Corporation in accordance with Hennepin County standards. The Contractor shall install the controller cabinet and make it operational. The Contractor shall coordinate with Xcel Energy on providing power to the signal system.

The Contractor shall furnish and install all components to produce a fully operational signal system, including a traffic signal controller in accordance with Hennepin County standards. This shall include the programming of signal controllers with provided signal timings for the signal system. This shall be incidental to the Traffic Control Signal System and/or Revise Signal System pay item.

1202.4 VIDEO DETECTION

The Contractor shall furnish and install video detection equipment, including cameras, cables, connectors, mounting brackets and all related hardware, software, and testing equipment to make the video system operational. All equipment necessary in each controller cabinet to operate each video detection system shall be attained through Traffic Control Corporation and manufactured and installed in accordance with Hennepin County standards. Video detection devices shall be Autoscope Vision as manufactured by Econolite Control Products Inc.

1203.0 CONSTRUCTION REQUIREMENTS

1203.1 SIGNAL CONTROLLER CABINET

Provide and install all additional materials and electrical equipment for a complete operating traffic control signal cabinet installation (which includes, but is not limited to):

1. A cabinet concrete foundation as part of the equipment pad concrete foundation using Contractor-provided anchor rods, nuts, and washers.
2. Bonding and grounding materials and connections.
3. Make all field conductor connections in each traffic control signal cabinet as directed by the Engineer to make each traffic control signal system fully operational.

1203.2 VIDEO DETECTION

The Contractor shall install the cameras at the location shown in the plans or as directed by the Engineer; in accordance with the manufacturer's guidelines; and to the satisfaction of the Engineer. The Contractor shall provide proof of qualification to install the video detection system. If the Contractor is not qualified to install the video detection system, they shall make arrangements to have video system equipment manufacturer-approved personnel present for video equipment and camera installation and also present at the time of signal activation.

Video camera mounting on traffic signal mast arms, when identified in the plans or directed by the Engineer, shall be in accordance with the following:

1. The Contractor shall furnish and install mast arm mounting hardware and materials as recommended by the camera manufacturer and in compliance with Hennepin County standards. This shall include the installation of a riser arm to elevate the video detection device from the mast arm.
2. The corresponding camera cables shall be labeled as V-1, V-2, V-3, V-4 and as indicated in the Plan.
3. The cameras shall be aimed and secured in an aimed position by the Contractor and aimed so that the field of view is as directed by the Engineer.

1204.0 BASIS OF PAYMENT

All work under this section, including removing and salvaging, or disposing of the existing traffic control signal system; providing and installing materials and electrical equipment; and installing City of St. Louis Park provided materials, all to provide a complete operating full-actuated traffic control signal system in the special provisions and in the plans will be measured as an integral unit and paid for as specified in MnDOT 2565.4 and MnDOT 2565.5 respectively for Item No. 2565.516 (TRAFFIC CONTROL SIGNAL SYSTEM) and Item No. 2565.616 (REVISE SIGNAL SYSTEM) at the Contract price per system, which price will be compensation in full for all costs incidental thereto.

The Engineer will provide the general supervision and direction of this project.