

## CHAPTER 2 – STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

### STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

The contractor is required to comply with the following contract documents when bidding on and constructing a traffic control signal system or lighting system:

- MnDOT Standard Specifications for Construction (hereinafter Spec Book)
- Contract proposal including special provisions
- Supplemental specifications
- The plan
- Standard plates
- Temporary Traffic Control Field Manual

**THE LETTERS “I” AND “O” ARE NOT USED IN THE SPEC BOOK OR THE SPECIAL PROVISIONS. AS A RESULT THE WORD “BLANK” FOLLOWS THE LETTER IN BOTH CASES.**

The first three documents are discussed in Chapter 2. The remaining documents are covered in other chapters.

### 2.1 MnDOT Standard Specifications for Construction

The MnDOT Standard Specifications for Construction is a collection of provisions and requirements pertaining to the performance of work and materials. The Spec Book contains three divisions:

1. Division I – General Requirements and Covenants
2. Division II – Construction Details
3. Division III - Materials

#### 2.1.1 DIVISION I – GENERAL REQUIREMENTS AND COVENANTS

Each Division I specification number begins with “1” (1101 - 1911). Note that each section of Division I is given a numeric series. For example, “Control of Work” is the 1500 series (1501 - 1517). Division I is divided into nine (9) sections, including “Definition of Terms” and “Control of Work”, both of which are presented below.



Figure 2-1: Spec Book

#### Definition of Terms (1103)

Examples from “Definition of Terms” (1101-1103) are presented in Terms Figure below.

##### ENGINEER.

A **Department** engineer authorized as the Department’s representative responsible for the engineering supervision of the **work** and delegated with those duties and authorities defined in the **contract**. The **contract** may redefine the Engineer as a specific Department engineer (i.e. Concrete Engineer, Bridge Engineer, Materials Engineer, Traffic Engineer, Roadway Engineer, etc.)” with jurisdiction over the engineering details of specific construction items; however, the **Engineer** is the main point of contact for the **Contractor** and should receive copies of all correspondence between the Contractor and other Department representatives.

##### INSPECTOR.

The **Engineer's** authorized representative assigned to make detailed inspections of **Contract work**.

Figure 2-2: Definition of Terms

### **Control of Work (1500)**

An example within Control of Work (1501-1517) is Specification 1504 – Coordination of Contract Documents. Specification 1504 states the following:

A requirement appearing in one of the Contract documents is as binding as though the requirement appears in all. If discrepancies exist between the Contract documents, the following order of precedence applies:

1. Addenda
2. Special Provisions
3. Project Specific Plan Sheets
4. Supplemental Specifications
5. Standard Plan Sheets and Standard Plates
6. Standard Specifications

*Figure 2-3: Specification 1504*

### **2.1.2 DIVISION II – CONSTRUCTION DETAILS**

Each Division II specification number begins with “2” (2021 - 2582) and as in Division I, each section is given a numeric series. Division II is divided into six sections:

1. General (2021 - 2051)
2. Grading (2101 - 2131)
3. Base Construction (2201- 2232)
4. Pavement Construction (2301 - 2360)
5. Bridges and Structures (2401 - 2481)
6. Miscellaneous (2501 - 2582)
  - a. 2545 Lighting Systems
  - b. 2550 Traffic Management System
  - c. 2565 Traffic Control Signals

The Miscellaneous Construction section contains 2545 - Lighting Systems and 2565 - Traffic Control Signals. Each section is broken down similarly. A detailed discussion of Specification 2565 is presented below.

MnDOT 2565 is divided into the following sections:

1. 2565.1 Description
2. 2565.2 Materials
3. 2565.3 Construction Requirements
4. 2565.4 Method of Measurement
5. 2565.5 Basis of Payment

**Description of Work (2565.1A)**

Within 2565.1 Description, the section describes the required work and other types of systems governed by these specifications. Note that within the Spec Book page, there are vertical lines along the left margin.

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| <p><b>2565 TRAFFIC CONTROL SIGNALS</b></p> <p><b>2565.1 DESCRIPTION</b></p> <p><b>A General</b></p> <p>This work consists of providing and installing materials and electrical equipment, or installing Department-provided materials and electrical equipment, or both to provide a complete, operating traffic control signal system.</p> <p>This work also consists of providing the following as specified in the Contract:</p> <ul style="list-style-type: none"> <li>(1) Revised traffic control signal systems,</li> <li>(2) Wood pole span wire traffic control signal systems,</li> <li>(3) Automatic Traffic Recorder (ATR) systems,</li> <li>(4) Temporary bridge signal systems,</li> <li>(5) Conduit systems,</li> <li>(6) Detection systems,</li> <li>(7) Materials for future signal systems,</li> <li>(8) Interconnect systems,</li> <li>(9) Flasher systems, and</li> <li>(10) Emergency Vehicle Pre-emption (EVP) systems or a combination.</li> </ul> |
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Figure 2-4: 2565 Description of Work

These lines show what content has changed between the 2016 version of the Spec Book and the 2018 version.

**Qualifications of Workers (2545.1.B and 2565.1.B)**

This specification requires MnDOT Signal and Lighting Technician Certification for all contractors, supervisors, or foremen actively involved on the job site with the field installation of the traffic control signal systems and lighting systems.

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| <p><b>B Qualifications of Workers</b></p> <p>The provisions of 1802 are hereby supplemented with the following:</p> <p>Signal and Lighting Certification: When the Contractor is working on Traffic Signal System(s) or Lighting System(s), provide at least one Contractor employee on the site who is MnDOT Signal and Lighting Certified to perform or directly supervise the installation and testing of any MnDOT Traffic Signal System or Lighting System.</p> <p>MnDOT's Office of Traffic, Safety, and Technology (OTST) provides Signal and Lighting Certification. For information contact OTST at phone number (651) 234-7055.</p> |
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Figure 2-5: 2565 Qualification of Workers

The language within this specification also requires certified contractor personnel to be on the project work site at all times to perform or directly supervise the installation of a lighting system or traffic control signal system.

**Definitions (2565.1.C)**

This section covers specific definitions of terms. These terms required clarification to help avoid confusion during project planning, design, and construction.

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| <p><b>C Definitions</b></p> <p>Refer to the ITE, the MN MUTCD, 1102, "Abbreviations," and 1103, "Definitions," for the definitions of words and phrases pertaining to traffic control signal systems and related work. Refer to NEMA Standards Publication for "Traffic Control Systems" for the definitions of words and phrases in conjunction with traffic control signal control equipment and controller units.</p> <p>Refer to the NEC, Article 100 for the definition of the term "Listed."</p> <p>Refer to the NEC, Article 100 for the definition of the term "Labeled."</p> <p>Use a National Recognized Testing Laboratory (NRTL) as defined by the U.S. Department of Labor. Ensure the testing laboratory is listed by OSHA in its scope of recognition for the tests conducted as required by this section.</p> <p>Use the definitions in these Standard Specifications unless otherwise defined in other Contract Documents.</p> <p><b>Bell End</b><br/>The end of a piece of rigid PVC conduit that flares out to allow connection of an additional piece of conduit.</p> <p><b>Cut Sheet, Catalog Sheet, or Specification Sheet</b><br/>A document showing a finished product including part numbers and an ordering matrix if required.</p> <p><b>End Bell</b><br/>The rigid PVC conduit fitting that is glued on at the end of a conduit to protect the conductors during pulling operations.</p> |
|--|

Figure 2-6: 2565 Definitions

**Construction Requirements (2565.3)**

Specification 2565 presents the requirements of the actual construction of a traffic control signal system. It should be noted that some of these specifications refer to other specifications in other sections of the Spec Book. For example, “Permits and Inspections” refers to MnDOT 1702 (Permits, Licenses, and Taxes).

This type of referral is found throughout the Spec Book and on applicable detail drawings, standard plates, etc.

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| <p><b>2565.3 CONSTRUCTION REQUIREMENTS</b></p> <p><b>A General</b></p> <p>The locations shown on the Plans for component parts having X and Y coordinates are exact locations. Obtain the Engineer's approval before making modifications to these locations. Component part locations which have no X and Y coordinates supplied on the Plan are approximate. The Engineer will establish the exact locations of component parts including pedestrian curb ramps.</p> <p>Keep highways, streets, and roads open to traffic during construction in accordance with 1404, "Maintenance of Traffic." Protect openings or uncompleted work that may cause a hazard to vehicle or pedestrian traffic in accordance with 1707, "Public Convenience and Safety."</p> |
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Figure 2-7: 2565.3 Construction Requirements

**Method of Measurement (2565.4)**

Section 2565.4 explains how the components of a traffic control signal system will be measured for payment.

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| <p><b>2565.4 METHOD OF MEASUREMENT</b></p> <p>The Engineer will measure the new <i>Traffic Control Signal System</i> as an integral unit complete in place and operating. The complete installation at one intersection is considered as one unit.</p> |
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Figure 2-8: 2565.4 Method of Measurement

**Basis of Payment (2565.5)**

Section 2565.5 explains how traffic control signal systems are paid for.

The sections of 2545 (Lighting Systems) that differ from 2565 (Traffic Control Signals) are in the “Method of Measurement” and “Basis of Payment” sections. Lighting systems will be paid for as a complete system (Lump Sum) or as individual components (Itemized).

| The Engineer will measure the new <i>Traffic Control Signal System</i> as an integral unit complete in place and operating. The complete installation at one intersection is considered as one unit. |                                     |          |
|--|-------------------------------------|----------|
| <b>2565.5 BASIS OF PAYMENT</b>   |                                     |          |
| The Department will pay for new traffic control signal systems on the basis of the following schedule:   |                                     |          |
| Item No.   | Item                                | Unit     |
| 2565.501   | Emergency Vehicle Preemption System | lump sum |
| 2565.501   | Traffic Control Interconnect        | lump sum |
| 2565.502   | APS Push Button Station             | each     |
| 2565.502   | APS Push Button and Sign            | each     |
| 2565.502   | APS Cabinet Control Unit            | each     |
| 2565.502   | APS Pole Mounting Adaptor           | each     |
| 2565.502   | APS Push Button Mounting Spacers    | each     |
| 2565.516   | Traffic Control Signal System       | system   |

Figure 2-9: 2565.5 Basis of Payment

The Spec Book lists both “complete systems” and individual system components. The following is an example of how 2545 lists items as individual components:

**2.1.3 DIVISION III - MATERIALS**

Division III specification numbers begin with “3” (3101 - 3973) and as in Divisions I and II, each section is given a numeric series. This Division is divided into eighteen sections. MnDOT 2545 and 2565 cross-reference various sections of this Division. The most commonly referenced sections for traffic control signals and lighting systems are sections 3801 through 3850 (Electrical Systems Materials).

There are a number of instances where documents will refer the contractor to other areas within the Spec Book. An example of this is the Pole and Mast Arm Standard Plate 8123.

In the “NOTES” section on Standard Plate 8123, the Standard Plate refers the contractor to Specification 2471 Structural Metals, which specifies the requirements for fabrication of the pole and mast arm.

**POLE AND MAST ARM**

**NOTES:**

MATERIAL: HIGH STRENGTH, LOW ALLOY STEEL SPEC. 3310 50,000 PSI MINIMUM YIELD.

GALVANIZED STRUCTURAL STEEL AS PER SPEC. 3394 AFTER FABRICATION. GALVANIZE ALL HARDWARE AS PER SPEC. 3392. PROVIDE VENT HOLES FOR GALVANIZING.

VERTICAL POST AND MAST ARM ELEMENTS SHALL BE OCTAGONAL TUBE, FABRICATED BY LONGITUDINAL SEAM WELDING WITH 60% PENETRATION.

EACH MAST ARM POLE STANDARD CONSTRUCTED IN ACCORDANCE WITH THIS SPECIFICATION SHALL BE IDENTIFIED BY THE MARKING "PA85, PA90 OR PA100" IMPRINTED INTO THE VERTICAL POST SHAFT APPROXIMATELY 6 FEET ABOVE THE BOTTOM OF THE TRANSFORMER BASE ON THE ZERO-DEGREE FACE WITH RESPECT TO THE TRAFFIC SIGNAL TRUSS-TYPE MAST ARM. THE IMPRINTED "PA85, PA90 OR PA100" SHALL BE CLEARLY LEGIBLE AFTER GALVANIZATION.

THE BASE LINE OR TOP OF FOUNDATION IS ESTABLISHED AT TOP OF THE FINISHED PAVEMENT BENEATH THE OUTER END OF THE MAST ARM.

SEE SPEC. 1605 FOR SUBSTITUTION OF MATERIALS.

SEE SPEC. 2471 FOR FABRICATION REQUIREMENTS.

THE MOUNTING HEIGHTS OF LUMINAIRES ARE MEASURED FROM THE BASELINE, WHICH PROVIDE MOUNTING HEIGHTS OF 30' TO 50'.

⑥ DIMENSION MEASURED OUTSIDE POINT TO OUTSIDE POINT THROUGH OCTAGON CENTER. ADJUST POLE WITH LEVELING NUTS SO THAT THE POLE IS VERTICAL.

⑦ VERTICAL BRACES SHALL BE SPACED AT 5' INTERVALS. MINIMUM SECTION FOR VERTICAL BRACE SHALL BE 1" SCHEDULE 40 PIPE WITH ALLOWABLE STRESS OF 42000 PSI. PIPE ENDS SHALL BE FLATTENED TO A MAXIMUM THICKNESS OF 1" PERPENDICULAR TO THE MAST ARM AXIS.

⑧ ALL ARMS SHALL BE SUPPLIED IN FIVE-FOOT INCREMENTS OF LENGTH.

⑨ ONE MID-MAST ARM MOUNT SHALL BE PLACED AT 11' FROM THE END FOR 30', 35' AND 40' LENGTH MAST ARMS. TWO MID MAST ARM MOUNTS SHALL BE PLACED AT 11' AND 23' FROM THE END FOR 45', 50' AND 55' LENGTH MAST ARMS. ALL MID-MAST ARMS SHALL BE CAPPED AND GALVANIZED. KEEP UNUSED MID-MAST ARM MOUNTS CAPPED AND GALVANIZED.

|   |                                |                           |
|---|--------------------------------|---------------------------|
| <b>DESCRIPTION</b>                          | <b>SPECIFICATION REFERENCE</b> | <b>STANDARD PLATE NO.</b> |
| <b>MAST ARM MOUNTS ASSEMBLY (SEE NOTES)</b> | 2565                           | <b>8123G</b>              |
|   |                                | 1 OF 2                    |

Figure 2-10: Specification Cross Referencing

## 2.2 Contract Proposal

### 2.2.1 CONTRACT PROPOSAL CONTENT

Each project has a proposal. The following information is printed on the front cover of the proposal:

- Name and address of the contractor awarded the contract
- State project number
- Governing specifications
- Contract number
- Location of work
- Starting and completion dates

On the back cover of the proposal additional information is printed. These include bid amount, signatures, etc.

The following list includes items contained within the proposal:

- Addendums
- Notice to bidders
- Drawings and details
- Special provisions by Division: Division S, Division SS, Division SL, etc.
- Attachments
- Schedule of prices

### 2.2.2 SPECIAL PROVISIONS

Special provisions are additions and revisions to the Spec Book covering conditions unique to an individual project. Special provisions are just that “special provisions.” If an item is properly specified in the Spec Book, plans, Standard Plate, or other contract document, then it is not to be duplicated in the special provisions.

In the proposal, the special provisions for traffic control signal systems are located in Division SS. Special provisions for lighting systems are located in Division SL. Division SS and Division SL may contain two or more sections. For example:

#### SIGNALS

SS-1 Traffic Control Signals  
 SS-2 Traffic Control Interconnection

*... and so on.*

#### LIGHTING

SL-1 Removing Miscellaneous Structures  
 SL-2 Lighting Systems

*... and so on*

Each section of Division SS and Division SL is setup in a format similar to the Spec Book format. Look at Division SS (Traffic Control Signal Systems) as an example:

- SS-2.1 General Section
- SS-2.2 Materials Section
- SS-2.3 Construction Requirements
- SS-2.4 Measurement and Payment

Division SS may include detail drawings that are pertinent to the specific project. This same format is used for other types of Division SS systems such as Revise Traffic Control Signal System, Flashing Beacon System, and Loop Detector Replacement.

MnDOT has developed an Approved/Qualified Products List (APL) for most signal and lighting components. The Spec Book and in some cases the special provisions will refer contractors to MnDOT’s APL for those materials.

The following is a closer look at a typical set of special provisions for a typical traffic control signal system.

**Traffic Control Signals (SS-2)**

The description paragraph describes the work, the location, and the rules, which govern the work.

**SS-2 (2565) Traffic Control Signals**

**This work shall consist of furnishing and installing materials and electrical equipment and installing Department furnished materials as specified herein, all to provide two complete operating new hardwire interconnected coordinated full-traffic-actuated traffic control signal systems.**

- 1. SYSTEM “A” --- At the intersection of Prairie Center Drive and Technology Drive in Eden Prairie, Hennepin County, and**
- 2. SYSTEM “B” --- At the intersection of T.H. 212 (South Ramp) and West 78<sup>th</sup> Street in Eden Prairie, Hennepin County**

**--- in accordance with the applicable provisions of MnDOT 2565; with the current edition of the National Electrical Code; with the plan and as follows;**

Figure 2-11: SS-2 Traffic Control Signals Special Provisions

**General (SS-2.1)**

If the Department is furnishing to the contractor any signal components, a list of the material to be furnished would be included in this section. This section also includes a list of the material that the contractor is required to furnish and install in order to complete the installation of the Department furnished material. It also indicates the requirements of the contractor for picking up the Department furnished materials.

MnDOT provides traffic control signal cabinets, the controller, and other equipment needed to operate the signal (and non-intrusive detection units for temporary traffic control signal



Figure 2-12: Traffic Control Signal Cabinet and Signal Service Backup (SSB) Cabinet

systems). At times, other items will be furnished and they will be described in the special provisions for each individual project.

All Department furnished materials shall be requested by the contractor at least thirty (30) normal working days in advance of the time the contractor needs them on the project.

It is the contractor’s responsibility to deliver components that need to be installed within the Department furnished traffic control signal cabinet to MnDOT Electrical Services Section (ESS) at least thirty (30) normal working days in advance of when the Department furnished traffic control signal cabinet is required to be on the job site.

To obtain Department furnished material, the contractor must provide ESS with the T.E. number for this project. The T.E. number is located in this section of the special provisions and in the plan (See Chapter 4). The T.E. number must be marked on the container of any components required to be delivered to ESS.

Other items that may be included in this section are:

- Notes to bidders
- Special insurance language for projects involving Hennepin County
- Information dealing with any agreements with cities or counties

**Materials (SS-2.2)**

This section covers any special provisions that deal with materials. For example:

**Conduit**

On most MnDOT projects, the contractor may have the option of using schedule 80 rigid polyvinyl chloride (PVC), high-density polyethylene (HDPE), or rigid steel conduit (RSC). The specific requirements for conduit are included in the contract documents.

Bridges now require PVC coated, urethane lined RSC.

**LED Roadway Luminaires 40 Foot Mounting Height**

Provide and install MnDOT approved LED roadway luminaires for mounting at 40 feet as specified herein and in the plan.

**Accessible Pedestrian Signals (APS) Pushbutton Bases**

MnDOT has specific APS pedestrian station requirements. The materials and requirements for the new pedestrian station are in the Spec Book and are shown on the detail supplied with each traffic control signal plan.

**SS-2.2 MATERIALS**

**2.2.1 Department Provided Materials**

The Department provides to the Contractor (at no expense to the Contractor) the following materials and electrical equipment for the Contractor to install:

1. One (1) traffic control signal cabinet each complete with actuated controller unit and all required signal control equipment.
2. Four (4) sets of anchor rods, nuts, and washers to mount the Department provided traffic control signal cabinet (one set = one anchor rod, nut, and washer).
3. One (1) 4-section rubber gasket to be installed between the bottom of each traffic control signal cabinet and the concrete foundation.
4. Warning stickers on new sign panels shall be in accordance with 2564.3 H. The quantity required must be coordinated with the Engineer.

*Figure 2-13: Required Materials*

**Rodent Intrusion Barrier in Pole Bases**

MnDOT requires rodent intrusion barrier be installed in pole bases.



Figure 2-14: Stainless Steel Woven Wire Cloth and Rodent Intrusion Guard

**Service Equipment**

MnDOT traffic control signal system projects require a signal service cabinet type SSB. SSB cabinets are specified with or without the actual battery backup system and batteries on a per intersection basis.

Be sure to check the SSB cabinet requirements shown on the plan or detailed in special provisions for each intersection.

Special provisions and the Spec Book refer the contractor to the APL for signals for SSB cabinets. Both versions of signal service cabinets type SSB are listed.



Figure 2-15: Service Equipment

**Pavement Markings**

Some MnDOT Districts require pavement markings to be furnished and installed as part of the traffic control signal system construction. If this is the case, the requirements are specified in this section of the special provisions and a number of attachments are included within the contract proposal.



Figure 2-16: Pavement Marking

### **Mast Arm Signs**

If the contract requires the contractor to furnish and install mast arm mounted signs, most requirements are contained in the plan and Spec Book, however, the Minnesota Standard Signs Manual Detail 105A has additional installation requirements.

### **Construction Requirements (SS-2.3)**

Construction requirements may be presented in the special provisions when required.

### **Conduit Placement**

In addition to the language in the Spec Book, some MnDOT districts may have additional requirements for conduit placement. They are included in the special provisions.

### **Equipment Pads**

Installation requirements for equipment pads are detailed in contract documents.

### **Loop Detector Installation**

The special provisions or the plan will refer the contractor to the standard plates for all installation requirements for saw cut loop detectors or loop detectors in preformed rigid PVC conduit.

The contract documents will refer the contractor to MnDOT's APL for the approved loop detector splice kits and loop detector sealant material to be used.



*Figure 2-17: Loop Detector Installation*

### **Removals**

When an existing traffic control signal system is to be removed, the removal requirements are specified in the special provisions. The special provisions also specify where salvaged equipment is to be delivered.

**Measurement and Payment (SS-2.4)**

The special provisions will specify the methods of measuring and paying for contract items.

For example:

|          |                                     |
|----------|-------------------------------------|
| 2565.516 | Traffic Control Signal System       |
| 2565.501 | Traffic Control Interconnect        |
| 2565.501 | Emergency Vehicle Preemption System |

**SS-2.4**

**MEASUREMENT AND PAYMENT**

Removing and salvaging, or disposing of the existing traffic control signal system; furnishing and installing materials and electrical equipment; and installing Department furnished materials as specified herein, all to provide a complete operating new full-traffic-actuated traffic control signal system at the intersection of T.H 100 (Ford Parkway) and Elm Street in Eagan, Dakota County as contained in these 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).

Figure 2-18: Measurement and Payment Special Provision

**Traffic Control Interconnect (SS-3)**

If the project requires that traffic control signal systems be interconnected, some requirements are specified in the special provisions. This item will be paid for as a separate pay item and the requirements will be a separate SS Section from the actual traffic control signal system.

These are some “samples” of items that will be included in a typical set of special provisions for a traffic control signal system. Each project is unique and will require additional items not listed here. New technology, changes to the Spec Book, etc. will also be included within the special provisions.

It is very important that contractors and agency inspectors are aware of what is contained in both the traffic control signal system and lighting system special provisions for each individual project.

### 2.2.3 ADDENDUMS

At times, it may become necessary to provide additional information, corrections, additions, or deletions to the special provisions, plans, and/or Spec Book after the project is advertised and put on sale, but before the actual letting of the project. This information is provided to bidders by creating an “Addendum.”

An “Addendum” is defined as:

*“A supplement to the proposal package covering additions, corrections, or changes in the bidding conditions for the advertised work that is issued by the Department to prospective bidders before the date and time for opening proposals.”*

Addendums are found in the front portion of the contract proposal.

### 2.2.4 SHOP DRAWINGS (2545.2.A.7)

The contractor must provide to the engineer shop drawings as specified in the contract documents. Shop drawings must be reviewed and signed off by the appropriate MnDOT personnel prior to the contractor procuring the material unless otherwise specified in the contract.

#### **A.7 Shop Drawing Submittals**

Prepare shop drawing submittals in accordance with 1502 for all products not on MnDOT’s Approved/Qualified Products List (APL).

Submit products showing compliance with contract documents. Review shop drawings for accuracy, completeness, and compliance with contract documents prior to submittal.

*Figure 2-19: Shop Drawing Submittal Requirement*

### 2.2.5 MNDOT APPROVED PRODUCTS MATERIALS LIST (2545.2A.8)

The contractor must provide to the engineer an Approved Products Material List. Products included must be from MnDOT's APL only.

#### **A.8 MnDOT Approved Products Materials List**

Before performing the Work, submit to the Engineer, in accordance with 1502, a Signals and Lighting product materials list of the products selected from MnDOT's Approved/Qualified Products List to be used on the Project for Signals and Lighting. Ensure the products selected meet the requirements of this section. For MnDOT's approved products, see MnDOT's Approved/Qualified Products website.

In the Signals and Lighting product materials list submitted to the Engineer, provide the following information:  
(1) Title the document —MnDOT's Approved/Qualified Products List for Signals and Lighting, centered at the top of the document.

(2) Directly under the title include the Trunk Highway, County, and State Project number.

(3) For each product listed from MnDOT's Approved/Qualified Products List, provide a separate line that includes the following:

(3.1) Name of the manufacturer,

(3.2) Name of the product,

(3.3) Catalog number, and

(3.4) Quantity ordered for the project.

This submittal and the Engineer's review of the submitted list do not relieve the responsibility for providing products that comply with MnDOT's Approved/Qualified Products List.

Figure 2-20: Approved Products Materials List

## 2.3 Chapter 2 Resources

- MnDOT Standard Specifications for Construction
- Standard plates
- Temporary Traffic Control Field Manual
- Minnesota Standard Signs Manual
- Special provisions (SS/SL)
- Signal and lighting sample plan sheets

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