

# Green Sheet Materials

The "Submittals for Conditional Qualification – Controller Equipment" (commonly referred to as the Green Sheets) contain a list of materials and equipment that are normally tested for environmental and functional requirements (chamber testing) by the Traffic Signal Services Unit (TSSU). As per standard specification 00960.02, the contractor must submit three copies of the current version of the Green Sheets **prior to starting work**.

The Green Sheets are updated frequently by the Traffic Signal Standards Unit. Use the most current version that is in effect at the date of the bid let. Verify the date of the current version at the website below or contact the Traffic Signal Engineer: <http://www.oregon.gov/ODOT/HWY/TS/pages/signals.aspx>.

The inspector is responsible for:

- The conditional qualification of materials before they are installed. This is documented on the Green Sheet's "Initial Submittal" box for each material. **Exception: Write-in materials require conditional qualification by the TRAFFIC SIGNAL ENGINEER (NOT the Engineer of Record).**

TSSU or Agency Electricians are responsible for:

- The initial chamber testing acceptance of materials before they are installed. This is documented on the Green Sheet's "TSSU Initial Chamber Testing Acceptance" box for each material.
- Inspecting and accepting of the materials installed on the project. This is documented on the Green Sheet's "TSSU/Agency Electrician Inspected & Accepted" box for each material.

## Catalogue Cut Sheets/Write-in Materials

If the contractor proposes to use a material that is not listed in the Green Sheets (write-in material), the contractor shall submit a catalogue cut sheet for that material. The cut sheet shall identify the specific product intended to be used; manufacturer's name, identifying number, size, detailed scale drawings, wiring diagrams, etc. **Mail, Fax, or e-mail the Green Sheet for the material & the cut sheet(s) to the TRAFFIC SIGNAL ENGINEER (NOT the Engineer of Record) for conditional qualification of the material.**

**Read the instructions included in the Green Sheets carefully.  
They are up-to-date and always printed with the sheets.**

Contractor will check one box per sub-category

The material name

Example of Sub-category (332 cabinets)

**CONTROLLER CABINET**

**BRAND / MANUFACTURER                      MODEL**

	<b>BRAND / MANUFACTURER</b>	<b>MODEL</b>
<input type="checkbox"/>	<b>332 Cabinets</b>	
<input type="checkbox"/>	Safetran Brand by Econolite	332
<input type="checkbox"/>	McCain	332A
<input type="checkbox"/>	PSI (Phillips/Sisson Industries)	332
<input type="checkbox"/>	Siemens	332
<input type="checkbox"/>	<b>334 Cabinets</b>	
<input type="checkbox"/>	Safetran Brand by Econolite	334
<input type="checkbox"/>	McCain	334
<input type="checkbox"/>	<b>336 Cabinets</b>	
<input type="checkbox"/>	Safetran Brand by Econolite	336A
<input type="checkbox"/>	McCain	336a
<input type="checkbox"/>	<b>336S Cabinets</b>	
<input type="checkbox"/>	Safetran Brand by Econolite	336S
<input type="checkbox"/>	McCain	336s
<input type="checkbox"/>	<b>NONE ON THIS PROJECT</b>	

Contractor will check this box if material is NOT on project

REVISED 7/29/2013

Always check the revision date! Use the most current version (when the contract is awarded)

Contractor may also write-in materials proposed for installation based on the project plans and specs. **A catalogue cut sheet MUST be submitted for write-in materials.**

Complete this after contract is awarded and BEFORE work starts.

Inspector will review the material page. If it looks correct check "Conditionally Qualified" box. If it doesn't look correct check "returned" box and send back to contractor for correction.

**Submit write-in materials and cut sheet to the Traffic Signal Engineer for approval.**

The "Chamber Testing Acceptance" is completed by TSSU after the materials are tested and before they are installed

**INITIAL SUBMITTAL**

**CONDITIONALLY QUALIFIED**

**RETURNED FOR CORRECTION**

Date \_\_\_\_\_

Name \_\_\_\_\_

CTSI Card# \_\_\_\_\_

**TSSU Initial Chamber Testing Acceptance**

Date \_\_\_\_\_

Name \_\_\_\_\_

Oregon BCD License # \_\_\_\_\_

**TSSU/Agency Electrician Inspected & Accepted**

Date \_\_\_\_\_

Name \_\_\_\_\_

Oregon BCD License # \_\_\_\_\_

The "Inspected & Accepted" is completed by TSSU or the Agency Electrician after the materials are tested and installed in the field

**DESCRIPTION:** 332S, 332 and 334 are ground mounted. 336s are pole mounted.

**USE:** Houses the equipment to run the traffic signal.

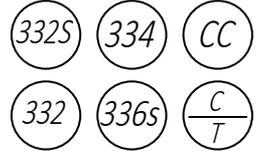
**Typical Sources of Info:**

Specs: 02925.40 & 02925.67(b)

Std. Dwg: TM482

Plan Sheets: YES

Additional Installation Info: pgs. 176 & 178



**332s Cabinet**



**Non-louvered door for back of cabinet**

**Note: Louvered door (front of the cabinet) shall be oriented as per the plan sheets.**

**DESCRIPTION:** Model 2070 standard. Model 170E may be used if shown in plans.

**USE:** The brains of the traffic signal.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: YES

Additional Installation Info: NO



**DESCRIPTION:** Model 210

**USE:** Monitors the green indications (vehicle) and walk indications (pedestrian) to ensure conflicting movements are not serviced at the same time. Also monitors voltages.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: NO

Additional Installation Info: NO



**DESCRIPTION:** Model 200

**USE:** Powers the signal and pedestrian indications in the field.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: Typically NO

Additional Installation Info: NO



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**DESCRIPTION:** Model 204

**USE:** Powers the signal indications when in flash mode.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: NO

Additional Installation Info: NO



**DESCRIPTION:** Model 222

**USE:** A device that is capable of detecting the changes in the electrical energy produced by a sensor. Detects the change in inductance when vehicles move over a loop detector and places a "call" into the controller.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: Typically NO

Additional Installation Info: NO



**DESCRIPTION:** Model 242 (24 VDC pedestrian push button) and Model 252 (120 VAC railroad preemption).

**USE:** Detects when a pedestrian pushes a button or when a train is approaching and puts a “call” into the controller.

### Typical Sources of Info:

Specs: 02925.42

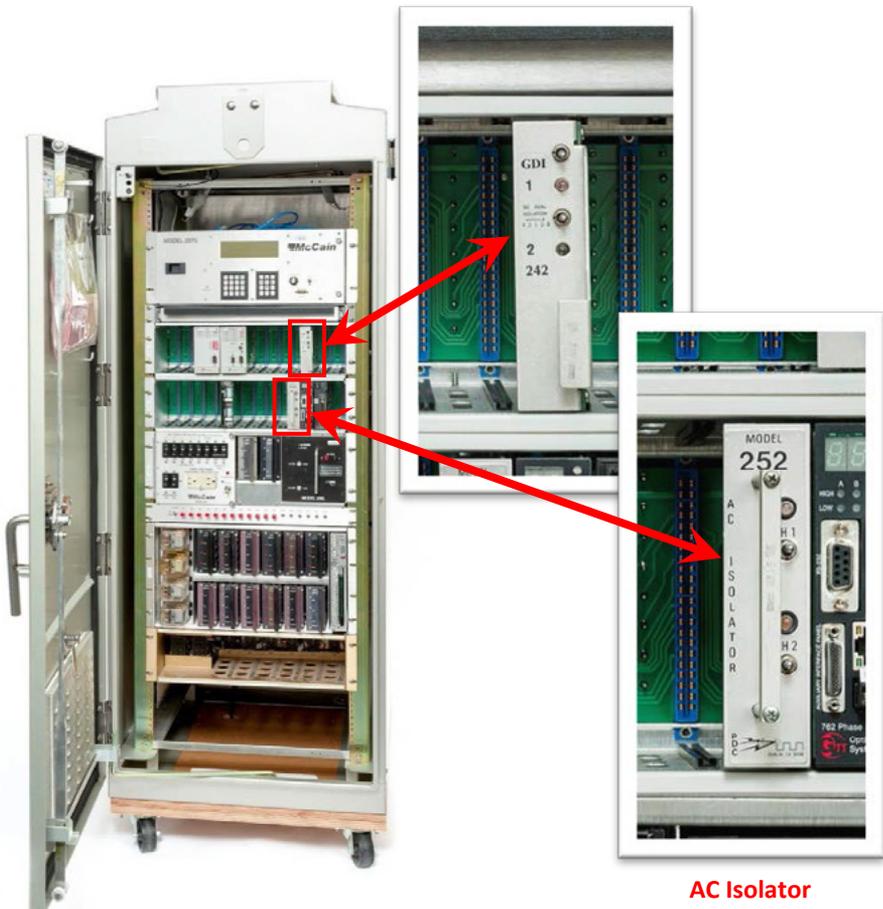
Std. Dwg: NO

Plan Sheets: NO

Additional Installation Info: NO

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DC Isolator



AC Isolator

**DESCRIPTION:** Model 400 and stand-alone.

**USE:** Provides communications between traffic signals and/or to the central traffic signal operations office.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: Typically NO

Additional Installation Info: NO



Located behind controller panel



Stand alone: located on top of controller

**DESCRIPTION:** Model 430

**USE:** Switches the power from the load switches (normal operation) to the flashers (flash operation).

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: NO

Additional Installation Info: NO



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**DESCRIPTION:** Mounting assembly with a din rail.

**USE:** Used to mount communication equipment inside the controller cabinet.

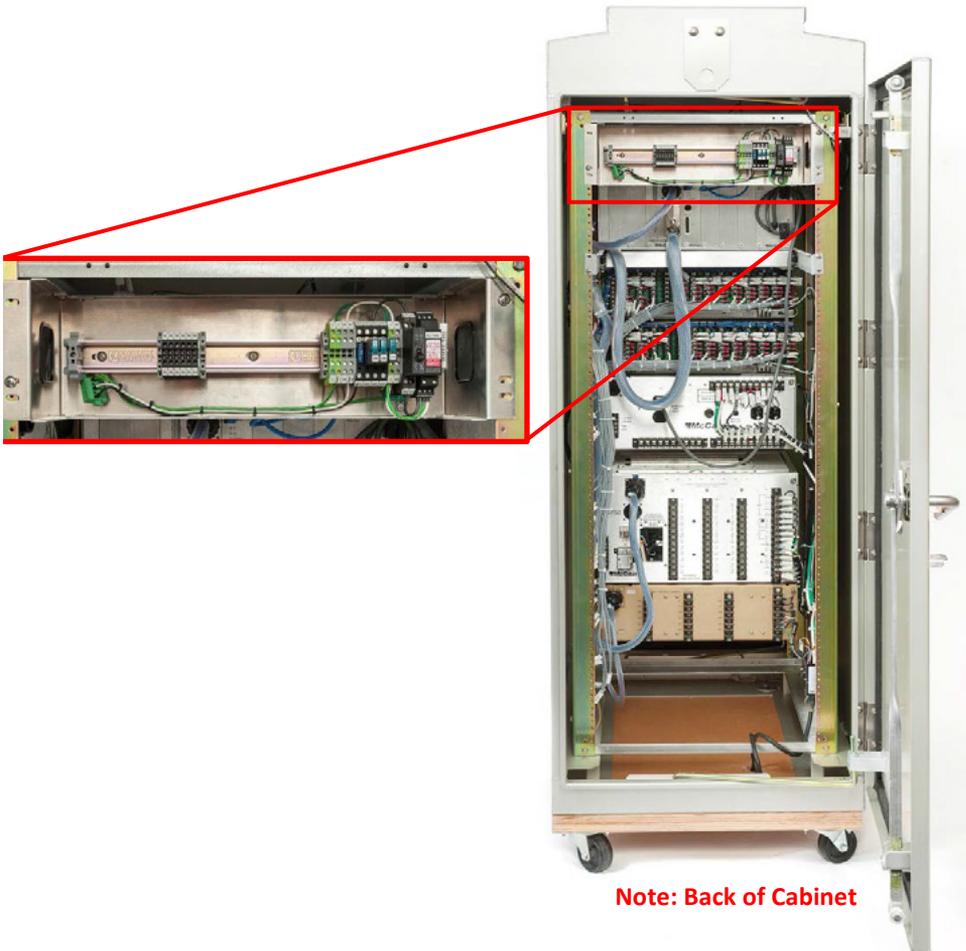
**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: YES

Additional Installation Info: NO



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**Note: Back of Cabinet**

**DESCRIPTION:** Several models acceptable for use.

**USE:** Detects an emergency vehicle (that is using a preemption emitter in their vehicle) and puts a “call” into the controller.

### Typical Sources of Info:

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: Typically NO

Additional Installation Info: NO



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**DESCRIPTION:** Several models acceptable for use. Either one barrel or two barrels (as detailed on the plans), typically only assigned to a single channel (two barrel models can be assigned to two separate channels).

**USE:** Detects an emergency vehicle (that is using a preemption emitter in their vehicle) which is recognized by the preemption interface in the cabinet.

**Typical Sources of Info:**

Specs: 00990.46

Std. Dwg: TM465

Plan Sheets: YES

Additional Installation Info: pg. 170



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**DESCRIPTION:** Model 412

**USE:** To keep accurate time in the traffic signal controller. Accurate time is critical when the traffic signal is interconnected with other signals and/or operates in time-of-day, day-of-week plans.

### Typical Sources of Info:

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: YES

Additional Installation Info: NO



**Mounted outside,  
on top of cabinet**



**Mounted inside,  
in back of cabinet**



**Note: Back of Cabinet**

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**DESCRIPTION:** Camera mounted to mast arm or luminaire arm. Green sheet item includes all specified components in the controller cabinet and wiring.

**USE:** Alternative detection mode for vehicles.

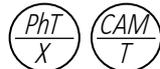
### Typical Sources of Info:

Specs: NO

Std. Dwg: NO

Plan Sheets: YES (green sheet listed systems only)

Additional Installation Info: NO



**DESCRIPTION:** Audio unit mounted near signal head and/or pushbutton.

**USE:** Provides sight impaired pedestrians' audible information regarding the pedestrian phases.

**Typical Sources of Info:**

Specs: 00990.42(h) specials only  
Std. Dwg: NO  
Plan Sheets: YES  
Additional Installation Info: NO



**Unit mounted on ped head**



**Unit contained within pushbutton frame**



**Back**

**Front**

**DESCRIPTION:** Model FXM1000/CE

**USE:** Provides power to the traffic signal when commercial power is out.

**Typical Sources of Info:**

Specs: 02925.42

Std. Dwg: NO

Plan Sheets: YES

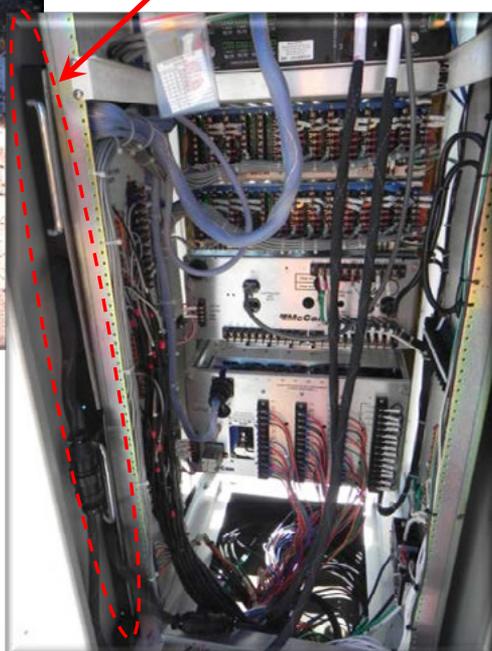
Additional Installation Info: NO



**Stand-alone system**



**332S Integrated system**



**DESCRIPTION:**

- Solar Powered 24/7 Flashing Beacon System
- School Zone & Actuated Solar Flashing Beacon Systems
- RRFB (Rapid Rectangular Flashing Beacon) Systems

**USE:** To provide emphasis of a sign or indicate when the sign restrictions are active (e.g. school zone).

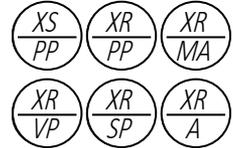
**Typical Sources of Info:**

Specs: NO

Std. Dwg: NO

Plan Sheets: YES (Green sheet listed systems only)

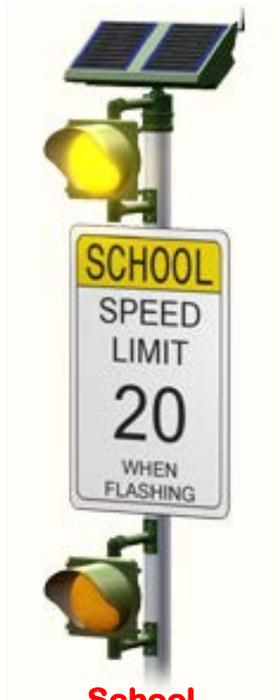
Additional Installation Info: NO



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**24/7**



**School Zone**



**RRFB**

**DESCRIPTION:** A factory terminated patch panel that eliminates the need for field terminations in controller cabinet.

**USE:** to connect the fiber optic wiring from the junction box to the controller cabinet.

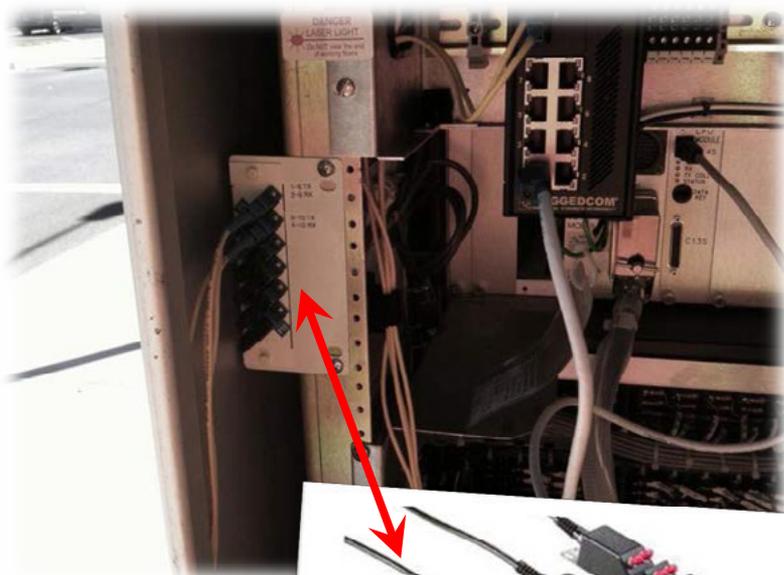
**Typical Sources of Info:**

Specs: See ITS special provisions

Std. Dwg: NO

Plan Sheets: NO

Additional Installation Info: NO



**Note: Back of Cabinet**

**DESCRIPTION:** Radar unit mounted to mast arm or luminaire arm. Green sheet item includes all specified components in the controller cabinet and wiring.

**USE:** Alternative detection mode for vehicles.

**Typical Sources of Info:**

Specs: NO

Std. Dwg: NO

Plan Sheets: YES (green sheet listed systems only)

Additional Installation Info: NO

