



Blue Sheet Qualification/Specification Information

February 14, 2025



Oregon Department of Transportation
Delivery & Operations Division
Traffic Engineering Section

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Product Evaluation

This list contains the standards for all Blue Sheets products. It is intended to be used by:

- The manufacturer/supplier when submitting a product to ODOT for evaluation for use on future projects
- The contractor when submitting a write-in product on the Blue Sheets for evaluation for immediate use on a project under contract

Standards may be modified, added, or deleted at any time, so it is important to always download the most current copy from the website each time.

Product Evaluation for Immediate Use (Contractor Write-in Request)

The Contractor will submit the required documents as stated in the “To Request TRS Evaluation” listed for each product in this document. Typically only a Manufacturer’s product data sheet (cut sheet) showing compliance with the standards is required, but depending on the product, additional information may be required or requested, such as independent test results, installation instructions, samples, Material Safety Data Sheets, etc.

Note that write-in requests:

- may be added to the Blue Sheets for future use at the Traffic Standards Section (TRS) discretion
- may not be allowed for certain items and will be clearly marked as such

Product Evaluation for Future Use (Manufacturer/Supplier Request)

Product evaluation requests fall into two classes:

- EQUAL: products similar to products that are currently used by the Oregon Department of Transportation (ODOT) and have required standards listed in the Blue Sheets. The Manufacturer/Supplier will submit the required documents as stated in the “To Request TRS Evaluation”
- NEW: products not addressed by current specifications or standards. The Manufacturer/Supplier will submit the all relevant documentation on product.

Typically only a Manufacturer’s product data sheet (cut sheet) showing compliance with the standards is required, but depending on the product, additional information may be required or requested, such as independent test results, installation instructions, samples, Material Safety Data Sheets, etc.

Products will be evaluated by ODOT Traffic Engineers, Traffic Signal Technicians, and Electricians. The Manufacturer/Supplier will be notified of the final product status.

Product Status

1. **Qualified:** Product meets all applicable standards and is placed on the Blue Sheets
2. **Trial Use Only:** products will be allowed a trial installation on one project only, recommended for a demonstration project, or recommended as an experimental feature. They will be monitored during installation and for a limited performance period. The Traffic Standards Section (TRS) will locate an active or future ODOT project which will incorporate the product. This will typically be accomplished within one year of notice of “trial use only” status.
3. **Rejected:** product does not meet standards, has failed performance testing, or the requested product information is not provided within three (3) months of the request

Unsatisfactory Performance, at any time, will result in rejection of a product and removal from the Blue Sheets.

Temporary Features

Temporary Covers

Standard (Three Categories):	
Pushbutton	<ul style="list-style-type: none"> • Yellow prefabricated nylon bag • Fits over entire pushbutton and pushbutton sign • Durable material for securing the cover to the pushbutton • Is imprinted with "NOT IN SERVICE"
Pedestrian Signal	<ul style="list-style-type: none"> • Yellow prefabricated nylon bag • Completely cover pedestrian signal • Include a fine mesh insert for each signal indication for signal testing • Have integral elastic bands and clips to secure the covers to the signal • Text not allowed on the bag
Vehicle Signal	<ul style="list-style-type: none"> • Yellow prefabricated nylon bag • Completely cover visors and cover the backboard • Include a fine mesh insert for each signal indication for signal testing • Have integral elastic bands and clips to secure the covers to the signal • Text not allowed on the bag
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Temporary Meter Base Socket

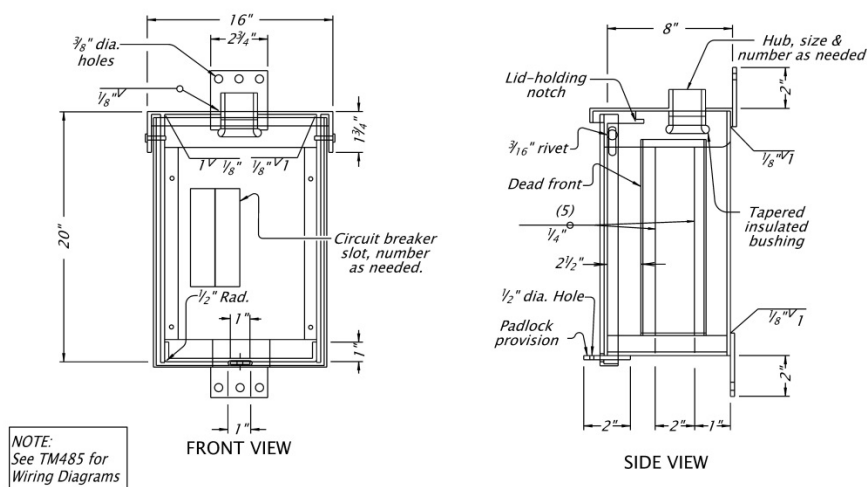
Standard:
<ul style="list-style-type: none"> • Compliance with UL 414 "Standard for Meter Sockets" • Compliance with ANSI C12.7 "American National Standard for Requirements for Watthour Meter Sockets" • Stainless steel or powder coated base (coated according to Section 00593 of the Oregon Standard Specifications for Construction) • Overhead surface mount application • UL Listed
To Request TRS Evaluation:
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Temporary Service Cabinet

Standard:

- Overhead surface mount application
- Construct cabinet from 14 gauge Type 304 stainless steel, or 10 gauge sheet steel
- Hot dip galvanize after fabrication according to 02530.70, or 8 gauge 5052 - H32 powder coated aluminum (coated according to Section 00593 of the Oregon Standard Specifications for Construction)
- Cabinets shall be weatherproof, NEMA type 3R rated
- The internal wiring of cabinets shall be done by a UL listed facility. Cabinets shall conform to one or more of the following standards where appropriate: UL 50 "Cabinets and Boxes", UL 67 "Panel Boards" or UL 869A "Service Equipment"
- Live parts exposed shall have a dead-front panel installed with cutouts for operating handles
- Dead-front panels up to and including 120 square inches in size shall have a minimum of three holding studs
- Install panels larger than 120 square inches in size using an adequate number of studs to maintain rigidity of the panel
- Construct the dead-front panels of stainless steel or galvanized steel and treat all cut galvanized steel edges with zinc-rich paint
- Prime galvanized steel dead-front panels with vinyl wash primer and finish with exterior polyurethane enamel. The finish color of galvanized steel shall be grey.
- Mounting pans or false backs are required for circuit breakers, contactors, relays, switches, transformers or other types of electrical equipment. They shall be securely mounted inside the cabinet.
- Provide each cabinet with a latching device for a standard Agency padlock
- Circuit Breakers –
 - Compliance with UL 489 "Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures"
 - UL listed
 - Of the rating specified on standard drawing TM485
 - Unenclosed, molded case bolt-on type with end conductor terminals, suitable for surface mounting in the cabinet on a false back or bracket

Drawing:



TEMPORARY SERVICE CABINET

- Includes circuit breakers, contactors, test switches, neutral and ground bars as shown in standard drawing TM485

To Request TRS Evaluation:

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Temporary Terminal Cabinet (External)

Standard:
<ul style="list-style-type: none"> Constructed of 1/8 inch stainless galvanized steel or powder coated aluminum (coated according to Section 00593 of the Oregon Standard Specifications for Construction) Allow for installation of terminal blocks Weatherproof fittings at the bottom
Drawing:
<ul style="list-style-type: none"> Meet requirements of standard drawing TM454
To Request TRS Evaluation:
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Temporary Precast 332S Foundation

Standard:
<ul style="list-style-type: none"> Constructed of precast concrete, polymer concrete, polymer, or fiberglass Skid resistant surface 88 inches x 46 inches minimum Fit the base dimensions of a model 332, 332S, 334 or 340 controller cabinet Minimum 1.6 square foot opening for conduit entrance and ground rod
Drawing:
<p>Technical drawing of a Temporary Precast 332S Foundation. The drawing shows a rectangular foundation with overall dimensions of 7'-4" by 46". The front face has a 15" high opening (11" x 21" nominal) for a ground rod. The ground rod is labeled "Ground Rod" and is secured with "1/2"-13 UNC Inserts". The foundation has a 28" high section and an 18" high section. The top of the foundation has three vertical sections with dimensions: 2'-3" (4 1/2" wide), 2'-1" (2" wide), and 2'-3" (4 1/2" wide). Arrows indicate "Front" and "Rear" directions.</p>
Note: Additional details for installing the controller cabinet on this foundation are shown in standard drawing TM454.
To Request TRS Evaluation:
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Temporary Spanwire Equipment

Cable Tie

Standard:
<ul style="list-style-type: none">• Compliance with UL 62275 “Cable Management Systems – Cable Ties for Electrical Installations”• UL recognized• Heavy-duty UV resistant black plastic or nylon• Self-locking straps approximately 5/16 inch in width• Serrated gripping surfaces through a binding buckle• Minimum tensile strength shall be 45 pounds
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Messenger Cable

Standard:
<ul style="list-style-type: none">• Galvanized steel seven-strand• Compliance with ASTM A 475 “Standard Specification for Zinc-Coated Steel Wire Strand”• Utility grade• Class A coating• 3/8 inch diameter• 11,500 lb break strength
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Tether Cable

Standard:
<ul style="list-style-type: none">• Galvanized steel seven-strand• ¼ inch diameter• Compliance with ASTM A 475 “Standard Specification for Zinc-Coated Steel Wire Strand”• Common grade• Class A coating• 1900 lb break strength
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Stabilizer Cable

Standard:
<ul style="list-style-type: none">• Galvanized steel seven-strand• ¼ inch diameter• Compliance with ASTM A 475 “Standard Specification for Zinc-Coated Steel Wire Strand”• Common grade• Class A coating• 1900 lb break strength
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Eyebolt

Standard:
<ul style="list-style-type: none">• Hot dip galvanized steel• Compliance with ASTM A307 “Standard Specification for Carbon Steel Bolts, Studs , and Threaded Rod 60000 PSI Tensile Strength”• Oval eyebolts• ½ inch (for tether cable attachment) or ¾ inch diameter (for messenger or tether cable attachment)• Minimum tensile strength of 20,050 lbs
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

S-Hook

Standard:
<ul style="list-style-type: none">• This is a state-furnished item only. Contact TSSU to obtain S-hook on project.
To Request TRS Evaluation:
<ul style="list-style-type: none">• N/A

Turnbuckle

Standard:
<ul style="list-style-type: none">• Hot dip galvanized steel• Compliance with Federal Specifications FF-T-791b, Type 1, Form 1, class 4• Minimum working load of 2200 lbs• 6 inch take-up minimum• ½ inch diameter
Drawing:
<ul style="list-style-type: none">• Requirements as shown in Standard Drawing TM452
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Strandvise

Standard:
<ul style="list-style-type: none">• Hot dip galvanized steel• 3/8 inch strand (for messenger cable) or ¼ inch strand (for tether cable)• Universal Grade (for messenger cable) or All Grades (for tether cable)• Rated to hold minimum 90% of the rated break strength of the strand used
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Spanwire Hanger

Standard:
<ul style="list-style-type: none">• Cast bronze• Attaches to the messenger cable with two “U” bolts• A wire outlet body with a clevis pin through adjustable slot• All fasteners shall be type 304/316 stainless steel• All fasteners shall have either square or hex heads• Paint the mounting hardware with two coats of zinc-rich aluminum paint• Includes 1 ½” galvanized Rigid Metallic Conduit (length as required to achieve proper mounting height)<ul style="list-style-type: none">• Compliance with UL 6 “Electrical Rigid Metal Conduit-Steel”• UL listed and labeled• Galvanized rigid metal manufactured of mild steel
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Tether Clamp

Standard:
<ul style="list-style-type: none">• Fitting on bottom of span mounted signal or sign• 1½ inch galvanized steel pipe or galvanized metal conduit with plate welded on bottom• Tether wire keeper bolted to plate• Hot dip galvanized after fabrication• All fasteners type 304/316 stainless steel
Drawing:
<ul style="list-style-type: none">• Meet requirements shown on Standard Drawing TM456
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Tri-Stud Adaptor

Standard:
<ul style="list-style-type: none">• Cast aluminum with steel insert• Powder coated black (coated according to Section 00593 of the Oregon Standard Specifications for Construction)• Three bolts, split washers, nylon insert lock-nuts of stainless steel with 2 stainless steel backing washers
Drawing:
<ul style="list-style-type: none">• Meet requirements shown on Standard Drawing TM456
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Poles and Pedestals

Chase Nipple

Standard:
<ul style="list-style-type: none">• Galvanized Steel• 1 inch diameter (for wire entrances on mast arm or pole)• 2 ½ inch diameter (for terminal cabinet)• Note: Chase nipple used for pushbuttons is manufacturer supplied with the pushbutton• UL Listed
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pipe Plug

Standard:
<ul style="list-style-type: none">• Hexagon head, countersunk• 304/316 stainless steel or galvanized steel• 1 inch diameter maximum size
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pedestal

Standard:
<ul style="list-style-type: none">• Frangible type• Cast aluminum• Includes a removable access plate• Threaded connection to accept a 4 inch diameter nominal steel pipe• Bolts, nuts and washers shall conform to 02560.20 and shall be galvanized according to 02560.40• Compliance with NCHRP 350 or MASH and FHWA approved
Drawing:
<ul style="list-style-type: none">• Meet requirements shown in standard drawing TM457
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Conduits and Appurtenances

Conduit

Non-Metallic Standard (Four Categories):	
PVC	<ul style="list-style-type: none"> • Compliance with Article 352 of the NEC • Compliance with UL 651 “Standard for Schedule 40, 80 Type EB and A Rigid PVC Conduit and Fittings” • Heavy wall, extruded, rigid polyvinyl chloride (PVC) schedule 40 • UL listed and labeled • Includes coupling designed for below ground, direct buried
Liquid-Tight Flexible	<ul style="list-style-type: none"> • Compliance with Article 356 of the NEC • Compliance with UL 1660 “Liquid-Tight Flexible Non-metallic Conduit” • UL listed and labeled
High Density Polyethylene (HDPE)	<ul style="list-style-type: none"> • Compliance with Article 353 of the NEC • Compliance with UL 651A “Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit” • UL listed and labeled • (Schedule 40) equivalent minimum • Conduit shall lay flat when unwound • Includes coupling designed for below ground, direct buried
Fiberglass	<ul style="list-style-type: none"> • Compliance with Article 355 of the NEC • Compliance with UL 2420 “Belowground Reinforced Thermosetting Resin Conduit (RTRC) and fittings” • UL listed and labeled • Schedule 40 • Includes coupling designed for below ground, direct buried
HDPE Microduct (for ITS fiber optic only)	<ul style="list-style-type: none"> • Compliance with ITS special provisions (00987)
Metallic Standard (Two Categories):	
Rigid Metal	<ul style="list-style-type: none"> • Compliance with UL 6 “Electrical Rigid Metal Conduit-Steel” • UL listed and labeled • Galvanized rigid metal manufactured of mild steel • Includes coupling designed for below ground, direct buried
Liquid-Tight Flexible Metal	<ul style="list-style-type: none"> • Compliance with UL 360 “Standard for Liquid-Tight Flexible Metal Conduit” • UL listed and labeled
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above 	

Conduit Bushing

Non-Metallic Standard:	
<ul style="list-style-type: none"> • Compliance with NEMA TC-3 "Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing" • UL listed • PVC push on end bell style 	
Metallic Standard (Two Categories):	
Metallic bushings with bond	<ul style="list-style-type: none"> • Compliance with UL 514B "Conduit, Tubing, and Cable Fittings" • Compliance with UL 467 "Grounding and Bonding Equipment" • UL Listed • Galvanized steel or die cast zinc • Insulated throat • Bonding lug • 304/316 stainless steel lug screw with square or hex head
Metallic bushings without bond	<ul style="list-style-type: none"> • Compliance with UL 514B "Conduit, Tubing, and Cable Fittings" • Galvanized steel or die cast zinc • Insulated throat
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Conduit Plug

Standard:
<ul style="list-style-type: none"> • Compliance with ASTM D3575 "Standard Test Methods for Flexible Cellular Materials made from Olefin Polymers" • Compliance with ASTM D4819 "Specification for Flexible Cellular Materials Made From Polyolefin Plastics" • Designed to keep dust and debris out of conduit • Closed cell polyethylene material • Preformed sections (Spray foam not allowed) • Plug length of 3 inch and a plug diameter 1/2 inch larger than the conduit diameter being plugged • Shall be non-gassing
To Request TRS Evaluation:
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Condulet (Conduit Body)

Standard:
<ul style="list-style-type: none">• Compliance with UL 514B “Conduit, Tubing, and Cable Fittings”• Compliance with NEMA Standard 250, Type 3R Enclosure Rating• Hot-dip galvanized malleable iron• Corrosion resistant cover• Moisture proof gasket
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Conduit Hub

Standard:
<ul style="list-style-type: none">• Compliance with UL 514B “Conduit, Tubing, and Cable Fittings”• UL Listed• Nylon insulated steel or hot-dip galvanized malleable iron• Screw-on style• Neoprene "O" ring to provide a watertight threaded hub into enclosures
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Expansion Fitting

Non-metallic Standard:
<ul style="list-style-type: none">• Compliance with Article 355.44 of the NEC• Fiberglass expansion joint compatible with schedule 40 Fiberglass conduit meeting UL 2420 “Belowground Reinforced Thermosetting Resin Conduit (RTRC) and fittings” requirements• UL listed• The expansion fitting shall permit a 4 inch conduit movement minimum
Metallic Standard:
<ul style="list-style-type: none">• Compliance with UL 467 “Grounding and Bonding Equipment”• Compliance with UL 514B “Conduit, Tubing, and Cable Fittings”• Weatherproof, hot dip galvanized malleable iron head and body• Provide expansion for galvanized conduit with a bond, either internally or with an external jumper• UL listed• The expansion fitting shall permit a 4 inch conduit movement minimum
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Weatherhead

Standard:
<ul style="list-style-type: none">• Project specific as required by the power company. See electrical permit.
To Request TRS Evaluation:
<ul style="list-style-type: none">• N/A

Pull Line

Standard:
<ul style="list-style-type: none">• Polyethylene or polypropylene pull rope• 1,200 pound minimum break strength• Resistant to mildew and rot
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Underground Warning Tape

Standard:
<ul style="list-style-type: none">• Red polyethylene film• 6 inches wide• 4 mils thick minimum• Imprinted with the following or similar legend: "CAUTION CAUTION CAUTION BURIED ELECTRIC LINE"
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Junction Box

Junction Box/Hand Hole (Concrete and Hybrid)

Standard:
<ul style="list-style-type: none">• Rated Tier 22 for the box and Tier 15 for the lid according to ANSI/SCTE 77-2010• Boxes and covers shall be constructed of precast concrete, polymer concrete, polymer, or fiberglass• Open bottom, water meter type boxes• Polymer material shall consist of aggregate bonded with a polyester resin and reinforced with fiberglass strands• Materials shall be resistant to temperature extremes and ultraviolet light exposure• The box and cover shall be gray in color• Covers shall have a skid-resistant surface, and bolt to the junction box with stainless steel hex-head bolts• Covers shall be recessed and fit the box so that when the cover is set in the box, the top of the cover shall be even with the top of the box• Covers shall have the legend "SIGNALS", "STREET LIGHTING", etc. stamped or embossed on the cover as appropriate. Letter size shall be no smaller than 1/16 of the box width.
Drawing:
<ul style="list-style-type: none">• Meet the dimension requirements shown in Standard Drawing TM472 (note TM472 is replaced by TM702 effective 6-1-2025)
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above• Independent test results showing compliance with ANSI/SCTE 77-2010

Miscellaneous Mountings

Radio Mount

Standard:
<ul style="list-style-type: none">• Attaches to a pole and accepts one 1½ inch tube to mount a radio• See vehicle signal bracket, but without the tube and arms
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Video Detection Mount

Standard:
<ul style="list-style-type: none">• One piece with 23 inch tube• Capable of mounting on vertical pole, mast arm or luminaire arm
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Cables, Wires, Grounding/Bonding & Appurtenances

Bond Wire

Standard:
<ul style="list-style-type: none">• Compliance with ASTM B3 “Standard Specification for Soft or Annealed Copper Wire• Compliance with ASTM B8 “Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium Hard, or Soft”• Compliance with ASTM B33 “Standard for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes”• Minimum size of No. 6 AWG• Bare stranded copper wire (for use outside of conduits) or insulated stranded copper wire UL listed as THWN (for use inside of conduits)• Insulation color shall be green
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Ground Rod

Standard:
<ul style="list-style-type: none">• Compliance with UL 467 “Grounding and Bonding Equipment”• Copper coated steel rod• 5/8 inch diameter• 8 to 10 feet long• Bronze grounding wire clamp• UL listed
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Ground Rod Clamp

Standard:
<ul style="list-style-type: none">• Bronze• Hex head bolts• UL listed for direct burial• Accommodate No. 6 AWG stranded wire
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above

Control Cable

Standard:
<ul style="list-style-type: none">• Multi-conductor cable with assorted individual stranded copper wires• Compliance with IMSA 19-1 or IMSA 20-1• Outside jacket insulation shall be black in color• UL Listed
Drawing:
<ul style="list-style-type: none">• Individual stranded copper wires shall meet color code on standard drawing TM470
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Industrial Ethernet Cable

Standard:
<ul style="list-style-type: none">• Water block/direct burial rated, shielded enhanced• Category-6 cable• 24 AWG solid bare copper conductors• PE inner jacket• Overall shield• Sunlight and oil resistant PE jacket• Terminate cable with factory installed RJ-45 connectors
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Interconnect Cable

Standard:
<ul style="list-style-type: none">• Compliance with REA specifications PE-38 or PE-39 (water block, underground) cable• No. 19 AWG stranded or solid individual conductors• The cable shall contain 6 (or more) number of wire pairs
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

TFFN Wire (Tracer/Locate Wire)

Standard:
<ul style="list-style-type: none">• Insulated stranded copper wire rated for 194 °F operation in dry locations and be UL listed as TFFN• No. 16 AWG• Orange with blue tracer
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

THWN Wire

Standard:
<ul style="list-style-type: none">• Apply wire color coding mechanically, with striping clearly visible the entire length• Color coding of traffic signal circuits shall conform to the wiring color code shown in DET4406• Insulated stranded copper wire with PVC insulation and nylon jacket be UL listed as THWN
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

XHHW Wire

Standard:
<ul style="list-style-type: none">• Apply wire color coding mechanically, with striping clearly visible the entire length• Insulated stranded copper wire with cross linked polyethylene insulation be UL listed as XHHW
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Strain Relief

Standard:
<ul style="list-style-type: none">• Single Eye• Tin coated bronze wire• Mesh grip
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pedestrian Equipment

Pedestrian Signal

Standard:
<ul style="list-style-type: none">Acceptable Material Types:<ol style="list-style-type: none">One-piece die-cast aluminum alloy housing and sealed door. Powder coated flat black to meet Federal Standard 595b-37038 (dull black) according to Section 00593 of the Oregon Standard Specifications For Construction.PolycarbonateThe housings, including doors and hoods, shall have a smooth homogeneous black finishAll parts shall be clean, smooth, and free from flaws, cracks, blow holes, and other imperfectionsAll fasteners not specifically noted as hot-dip galvanized shall be Type 304 or 316 stainless steel installed with anti-seize compoundAll fasteners shall have either square or hex headsprovides a dustproof and weatherproof enclosureAllow easy access for maintenance of the interior components with the door openInclude a hex head pipe plug with 1/4 inch drain hole drilled in the bottom of the plug when pedestrian signal heads are not utilizing the bottom opening for mountingInclude terminal blocks to accommodate wire terminationsone-piece z-crate or egg crate type polycarbonate plastic visorInclude vertical (or angled) and horizontal members spaced to provide the required shielding and strength. Be held securely to the door assembly.The mounting shall be designed to use either a bracket assembly or a clamshell mounting
To Request TRS Evaluation:
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pedestrian Signal Mount

Standard:
<ul style="list-style-type: none">3 position terminal blockTwo-piece, cast aluminum alloy assemblyPowder coated flat black to meet Federal Standard 595b-37038 (dull black) (coated according to Section 00593 of the Oregon Standard Specifications For Construction)Closed cell neoprene gasket to complete a rain tight fit
Drawing:
<ul style="list-style-type: none">Meet requirements as shown in standard drawing TM467
To Request TRS Evaluation:
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

LED Module (Pedestrian Signal)

Standard:

- LED filled hand/man style
- Flange mount
- Compliance with Institute of Transportation Engineers (ITE) specifications for LED Pedestrian Signals
- Compatible with all other controller equipment
- 16 inch by 18 inch module
- LED overlaid filled countdown style. Overlaid filled hand/man on the left with countdown on the right.
- Countdown only in the flashing don't walk interval

To Request TRS Evaluation:

Note: Due to testing requirement timelines, no write-in products are allowed for projects under contract – only prequalified products already listed on the blue sheets will be approved for use for projects under contract):

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above
- Installation Instructions
- Independent test results showing compliance with the standards listed above. Test results required from a Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Department of Labor Occupational Safety & Health Administration (OSHA) and ODOT:
See <http://www.osha.gov/dts/otpc/nrtl/index.html#nrtls> for OSHA recognized NRTLs.

See Intertek Testing Services NA, Inc. (ITSNA)

[http://www.intertek-](http://www.intertek-etlsemko.com/portal/page/cust_portal/ITK_PGR/DOCUMENTS_PROD_PG/LED_Directory_Traffic_Signal_Modules_Certified_Products.pdf)

[etlsemko.com/portal/page/cust_portal/ITK_PGR/DOCUMENTS_PROD_PG/LED_Directory_Traffic_Signal_Modules_Certified_Products.pdf](http://www.intertek-etlsemko.com/portal/page/cust_portal/ITK_PGR/DOCUMENTS_PROD_PG/LED_Directory_Traffic_Signal_Modules_Certified_Products.pdf)

Pushbutton

Standard:
<ul style="list-style-type: none">• Free of levers, handles, or toggle switches externally or internally• Direct contact type• Push button contacts:<ul style="list-style-type: none">○ Entirely insulated from the housings and operating buttons○ Normally open○ Closed only when push buttons are operated by pressure○ Restored immediately to the normal open position when pressure is released• External Button:<ul style="list-style-type: none">○ Constructed of durable materials able to withstand the typical abuse inflicted by the general public○ Removable from the housing with simple tools○ At least 2 inches in diameter○ Operate a momentary contact switch by direct contact○ Contain a guard completely encircling the push button, and extending far enough to prevent prying under the push button○ Resistant to damage associated to striking it with an object other than the hand
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pushbutton Mount

Standard:
<ul style="list-style-type: none">• Includes 9 inch x 12 inch sign• Accommodates a 2 inch pushbutton• Aluminum black powder coating to meet Federal Standard 595b-37038 (dull black) (coated according to Section 00593 of the Oregon Standard Specifications For Construction)• Stainless Steel Mounting hardware• Includes an extension bracket option that allows for proper mounting on small diameter poles (pedestrian pedestals) or to extend button to comply with ADA reach requirements
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Vehicle Signal Equipment

Vehicle Signal Housing

Standard:

- Acceptable Material Types:
 1. Die-cast aluminum alloy 3003-H16 (ASTM B 209) nominal thickness 16 gauge. Powder coated flat black to meet Federal Standard 595b-37038 (dull black) according to Section 00593 of the Oregon Standard Specifications For Construction.
 2. Polycarbonate
- Shall be of the one-section expandable type
- Shall be of one-piece construction adjustable through 360 degrees about a vertical axis
- The design shall be such that at any time and without the use of other than simple tools, it shall be possible to convert any housing into a one-, two-, three-, four- or five-section housing by the addition or subtraction of housing sections
- The entire housing shall be made dust and water resistant with a gasket on each door
- Vehicle signal heads not utilizing the bottom opening for mounting shall have a screw hole plug installed and shall have a 1/4 inch drain hole drilled in the bottom of the plug
- All fasteners not specifically noted as hot-dip galvanized shall be Type 304 or 316 stainless steel installed with anti-seize compound, except for brass terminal screws
- All fasteners shall have either square or hex heads
- Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees
- Smooth homogeneous black finish

To Request TRS Evaluation:

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Vehicle Signal Backboard

Standard:
<ul style="list-style-type: none">• Acceptable Material Types:<ol style="list-style-type: none">1. Sheet aluminum alloy 3003-H14 (ASTM B 209) nominal thickness 14 gauge. Powder coated flat black to meet Federal Standard 595b-37038 (dull black) according to Section 00593 of the Oregon Standard Specifications For Construction.2. Polycarbonate• Dimensions shall fit the signal head housings used, with no gap between backboard and housing• Include all of the necessary mounting hardware for completing the installation• Have louvers (aluminum material only)• Dimensions shall fit the signal head housings used, with no gap between backboard and housing• Include all of the necessary mounting hardware for completing the installation• Smooth homogeneous black finish
Drawing:
<ul style="list-style-type: none">• Meet applicable requirements shown in TM460
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Vehicle Signal Visor

Standard (Two Categories):	
Standard	<ul style="list-style-type: none"> Acceptable Material Types: <ol style="list-style-type: none"> Sheet aluminum alloy 3003-H16 (ASTM B 209) nominal thickness 16 gauge. Powder coated flat black to meet Federal Standard 595b-37038 (dull black) according to Section 00593 of the Oregon Standard Specifications For Construction. polycarbonate One-piece construction Attach to the signal housing doors with Type 304 or 316 stainless steel screws 12 inch diameter 9½ inch long tunnel style Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees Smooth homogeneous black finish
Cut Off	<ul style="list-style-type: none"> Acceptable Material Types: <ol style="list-style-type: none"> Sheet aluminum alloy 3003-H16 (ASTM B 209) nominal thickness 16 gauge. Powder coated flat black to meet Federal Standard 595b-37038 (dull black) according to Section 00593 of the Oregon Standard Specifications For Construction. Polycarbonate One-piece construction Attach to the signal housing doors with Type 304 or 316 stainless steel screws 12 inch diameter 18 inch long 45 degree angle Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees Smooth homogenous black finish
To Request TRS Evaluation:	
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

LED Module (Vehicle Signal)

Standard:
<p>Standards:</p> <ul style="list-style-type: none"> • Clear lenses • 12 inch diameter • Flange mount type • Be constructed with no more than 20 LEDs • Fit modules into all types of traffic signal heads without the need to modify the head • Compliance with Institute of Transportation Engineers (ITE) specifications for LED Traffic Signals
Drawing:
<ul style="list-style-type: none"> • Red, Yellow, or Green Ball or Arrow LED configuration as shown in standard drawing TM460
To Request TRS Evaluation:
<p>Note: Due to testing requirement timelines, no write-in products are allowed for projects under contract – only prequalified products already listed on the blue sheets will be approved for use for projects under contract:</p> <ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above • Installation Instructions • Independent test results showing compliance with the standards listed above. Test results required from a Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Department of Labor Occupational Safety & Health Administration (OSHA) and ODOT: See http://www.osha.gov/dts/otpc/nrtl/index.html#nrtls for OSHA recognized NRTLs. See Intertek Testing Services NA, Inc. (ITSNA) http://www.intertek-etlsemko.com/portal/page/cust_portal/ITK_PGR/DOCUMENTS_PROD_PG/LED_Directory_Traffic_Signal_Modules_Certified_Products.pdf If the LED module is not listed or tested by an ODOT recognized NRTL or is not listed in the California Department of Transportation (Caltrans) APL list, then the LED module will not be considered for Blue Sheet listing. See Caltrans APL: http://www.dot.ca.gov/hq/esc/approved_products_list/pdf/APL.pdf

Vehicle Signal Bracket

Standard (Two Categories):	
Standard (used for large poles & mast arms)	<ul style="list-style-type: none"> extruded aluminum assembly that is adjustable full length support of a vehicle signal on a mast arm or pole Attached by stainless steel cables A safety cable shall be supplied to capture the appurtenance in the event of a failure of the mounting bracket
Side Pole Mount (used for 4 inch diameter poles)	<ul style="list-style-type: none"> 3/8 inch Stainless steel "U" Bolt
Drawing:	
<ul style="list-style-type: none"> Meet requirements of standard drawing TM462 	
To Request TRS Evaluation:	
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Louver

Standard:
<ul style="list-style-type: none"> Geometrically programmed louvers Capable of x degree range view cut off
To Request TRS Evaluation:
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Tattletale Light

Standard:
<ul style="list-style-type: none"> Housing of power coated aluminum, stainless steel 304/316, or UV stable polymer LED display must be able to be aimed for a specific viewing angle (360 degree visibility is not permitted) 2 inch diameter LED display White LEDs Minimum of 6 feet of factory wire All nuts, bolts, and washers shall be 304/316 stainless steel Can be mounted on an 1 ½ inch diameter conduit/tube (for signals mounted with an adjustable bracket assembly or span wire mount) or directly into bottom signal housing (for signals mounted with a plumbizer)
Drawing:
<ul style="list-style-type: none"> Meet requirements of standard detail DET4400
To Request TRS Evaluation:
<ul style="list-style-type: none"> Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Loop Detection

Loop Feeder Cable

Standard:	
<ul style="list-style-type: none"> • Compliance with IMSA 50-2 "Polyethylene Insulated, Polyethylene Jacketed, loop detector lead-in cable" • No. 14 AWG (standard application) or No. 18 AWG (retro-fit application) conductor size • UL Listed 	
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Loop Wire

Standard:	
<ul style="list-style-type: none"> • Compliance with IMSA Specification No. 51-7 "Cross linked polyethylene insulated loosely encased in a polyvinyl chloride or a polyethylene tube loop detector wire" • Wire and tube must be labeled • No 14 AWG size conductor 	
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Loop Splice

Standard (Two Categories):	
Two Piece Enclosure	<ul style="list-style-type: none"> • Two piece plastic enclosure flooded with silicon grease • Includes silicon grease filled wire connectors conforming to UL 486D "Sealed Wire Connector Systems" • Handles No. 14 through No. 18 AWG wire sizes • Meets requirements of Standard detail DET4428
Silicone wire connectors	<ul style="list-style-type: none"> • Silicon grease filled wire connectors conforming to UL 486D "Sealed Wire Connector Systems" • Handles No. 14 through No. 18 AWG wire sizes
To Request TRS Evaluation:	
<ul style="list-style-type: none"> • Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above 	

Illumination

In-line Fuse Holder

Standard:
<ul style="list-style-type: none">• Rated for 30 A at 600 V• Designed to hold a 13/32 inch by 1 1/2 inch 10 A KTK type fuse• In-line fuse connectors to be used on single phase 120/240 V and 240/480V lighting circuits shall be designed for two-pole fusing so both poles disconnect simultaneously from both legs of the line side• The case shall be rigid plastic with a threaded coupling for joining the two halves• When threaded together, the two halves shall completely enclose the fuse and exert pressure against a neoprene "O" ring to provide a waterproof seal• The load side holder shall hold the fuse securely in place, so when the two halves are disconnected, the load side holder will retain the fuse• The line side contact point shall be spring- loaded to provide pressure between the fuse and the contact points• Wire terminals shall be set screw type rated for copper wire
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

TC Cable

Standard:
<ul style="list-style-type: none">• Type TC cable in compliance with UL 1227 "Electrical Power and Control Cables"• 3 conductors• No. 10 AWG XHHW conductors• Overall PVC jacket• UL listed
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Photocontrol Electronic Relay

Standard:

- Attach to a three-pole locking receptacle by a twisting motion
- Built-in surge protective device for protection from induced high voltages and follow-through currents
- Meet or exceed the requirements of ASNI C136.10 "Roadway and Area Lighting Equipment – Locking Type Photocontrol Devices and Mating Receptacles – Physical and Electrical Interchangeability and Testing"
- Factory set turn-on lights shall be 1.4 foot-candle \pm 0.2 foot-candle at 120V AC
- Factory set turn-on shall lights shall be 1.4 foot-candle \pm 0.03 foot-candle at 240V AC
- Maximum off-to-on ratio shall be 1.5:1
- Shall be a cadmium-sulfide photocell encapsulated for humidity protection or a silicon junction type photo-transistor
- Designed for dual voltage operation of 105V – 285V, 60Hz
- Power consumption less than 1W
- Shall be capable of controlling a minimum mercury vapor, fluorescent or incandescent lamp load of 1000W
- Minimum operating temperature range of -40 degrees to 150 degrees Fahrenheit
- Provide a time delay circuit to prevent false turn-offs by transient light conditions
- Provide a fail-safe circuit for the lighting load to remain on or become energized if any functional failure of the photoelectric cell occurs

To Request TRS Evaluation:

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

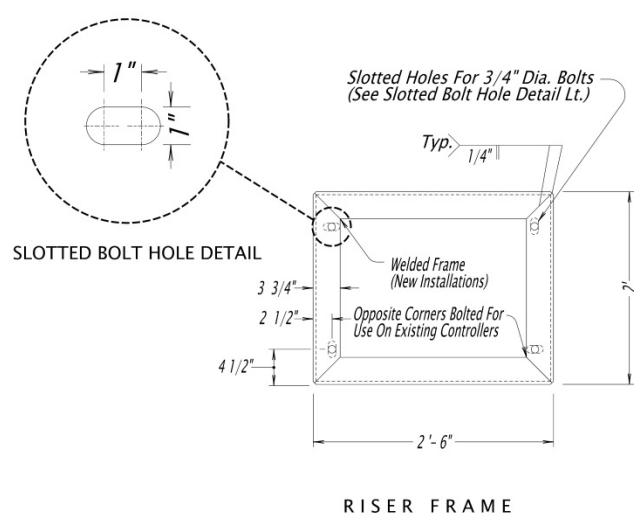
Cabinets & Appurtenances

Riser Frame

Standard:

- Aluminum (Alloy 5052-H32 or 6061-T6) framework of 1/4 inch channel or 1/8 inch sheet stock
- One piece welded construction (for new installations) or two-piece bolt together (for retrofit)
- Anodized after fabrication
- Match the profile of the 332S cabinet bottom
- 8 inches tall

Drawing:



To Request TRS Evaluation:

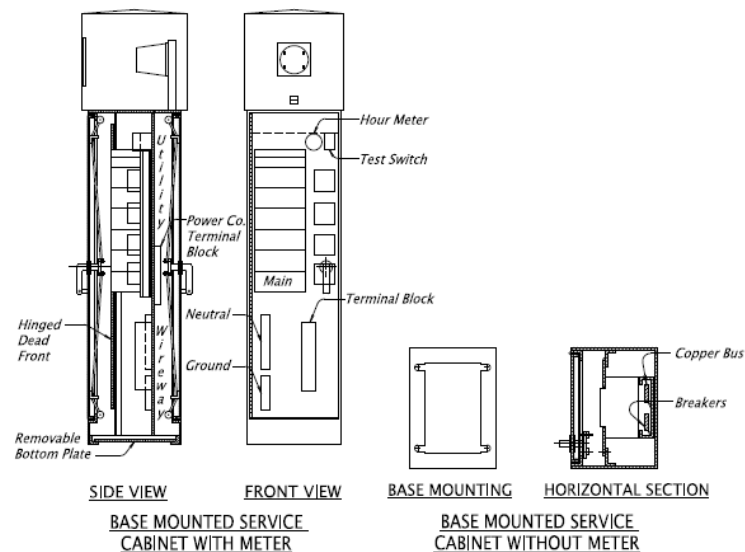
- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Base Mounted Service Cabinet

Standard:

- Base mounted service cabinet with integral meter base
- Construct cabinet from 14 gauge Type 304 stainless steel, or 10 gauge sheet steel
- Hot dip galvanize after fabrication according to 02530.70, or 8 gauge 5052 - H32 powder coated aluminum (coated according to Section 00593 of the Oregon Standard Specifications for Construction)
- Cabinets shall be weatherproof, NEMA type 3R rated
- The internal wiring of cabinets shall be done by a UL listed facility. Cabinets shall conform to one or more of the following standards where appropriate: UL 50 "Cabinets and Boxes", UL 67 "Panel Boards" or UL 869A "Service Equipment".
- Live parts exposed shall have a dead-front panel installed with cutouts for operating handles
- Dead-front panels up to and including 120 square inches in size shall have a minimum of three holding studs
- Install panels larger than 120 square inches in size using an adequate number of studs to maintain rigidity of the panel
- Construct the dead-front panels of stainless steel or galvanized steel and treat all cut galvanized steel edges with zinc-rich paint
- Prime galvanized steel dead-front panels with vinyl wash primer and finish with exterior polyurethane enamel. The finish color of galvanized steel shall be grey.
- Mounting pans or false backs are required for circuit breakers, contactors, relays, switches, transformers or other types of electrical equipment. They shall be securely mounted inside the cabinet.
- Provide each cabinet with a latching device for a standard Agency padlock
- Circuit Breakers –
 - Compliance with UL 489 "Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures"
 - UL listed
 - Of the rating specified on standard drawing TM485
 - Unenclosed, molded case bolt-on type with end conductor terminals, suitable for surface mounting in the cabinet on a false back or bracket

Drawing:



- Includes circuit breakers, contactors, test switches, neutral and ground bars as shown in standard drawing TM485

To Request TRS Evaluation:

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Terminal Block

Standard:
<ul style="list-style-type: none">• 600 volt rated• Solderless connections• Tubular clamp fit inside RTC or TC mounting locations• Sized for wire being terminated• Channel mount assembly• UL recognized
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

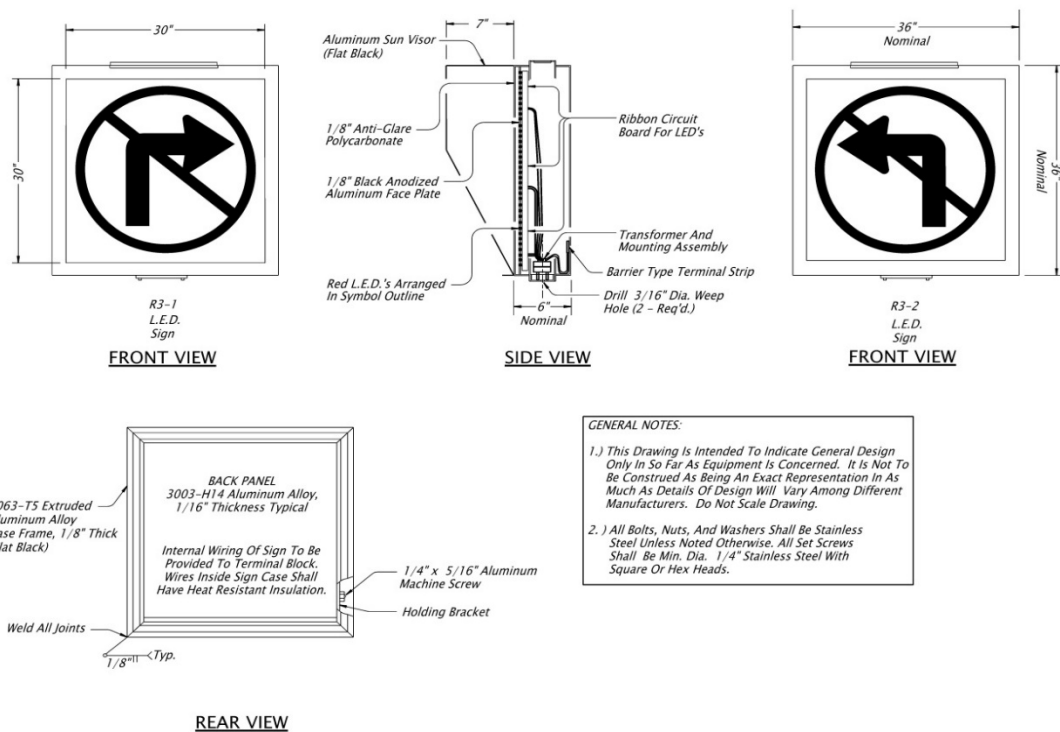
Signs

PTR (Part Time Restriction) Sign

Standard:

- Flat black painted, aluminum alloy case
- LED illuminated legend
- Single phase, predetermined sign legend in compliance with the Federal "Standard Highway Signs and Markings" book
- Sign size 30 x 30 inch (retro-fits only) or 36 x 36 inch (standard)
- Compliance with MUTCD section 2L.03 and 2L.04 for LED visibility, legibility, and design
- Able to mount to signal appurtenances with an adjustable vehicle signal bracket

Drawing:



To Request TRS Evaluation:

Note – due to testing requirement timelines, no write-in products are allowed for projects under contract – only prequalified products already listed on the blue sheets will be approved for use for projects under contract):

- Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above
- Submit 1 sample for testing
- Installation instructions

Sign Bracket

Standard (Two Categories):	
Type A (for Span Wire)	<ul style="list-style-type: none">Aluminum assembly
Type B (for poles & mast arms)	<ul style="list-style-type: none">Aluminum assemblyA safety cable shall be supplied to capture the appurtenance in the event of a failure of the mounting bracket
Drawing:	
<ul style="list-style-type: none">Meet requirements shown in Standard Drawing TM456 (type A) and standard drawing TM462 (type B)	
To Request TRS Evaluation:	
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above	

Materials That Are Rarely or No Longer Used For Traffic Signal Installations

Conduit Plug (Clay/Putty Device)

Standard:
<ul style="list-style-type: none">• Designed to keep dust and debris out of conduit• Non-hardening sealant material that can be reused and remolded• Adheres to rigid metal or rigid non-metallic conduit• Non-corrosive, non-toxic, and no asbestos• UL Listed or Recognized
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Junction Box (Cast Iron)

Standard:
<ul style="list-style-type: none">• Rated for AASHTO H-20 highway loading• Construct boxes of cast iron or 1/8 inch nominal welded sheet steel• Make covers from reinforced non-slip steel plate• Hot-dip galvanize boxes and covers after fabrication according to AASHTO M 232 (ASTM A 153)• Each box shall have a cover gasket that will, with cover in place, form a NEMA 4 watertight fit• Provide covers with stainless steel hex- head cap screws• Recess screw heads in the cover• Recessed covers shall fit the box so that when the cover is set in the box, the top of the cover shall be even with the top of the box, with not more than a 1/8 inch gap between any part of the top edge of the cover and the inside lip edge of the box• Covers shall have the legend "SIGNALS", "STREET LIGHTING", etc. stamped or embossed on the cover as appropriate. Letter size shall be no smaller than 1/16 of the box width.• Surface-mounted boxes shall have overlapping covers• Flush-mounted boxes shall be outside-flanged with recessed, checkered steel covers• UL listed
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above• Independent test results showing compliance with AASHTO H-20 loading

Pedestal (Vehicle)

Standard:
<ul style="list-style-type: none">Transformer base shall be constructed to bolt to shaft flangesCast aluminumBases shall be square with rounded corners, tapered from the base to the top and approximately 20 inches in heightIncludes a removable access plateIncludes a 4 inch diameter galvanized steel pipe with welded base plateBolts, nuts and washers shall conform to 02560.20 and shall be galvanized according to 02560.40Compliance with NCHRP 350 or MASH and FHWA approved
Drawing:
<ul style="list-style-type: none">Meet requirements shown in standard drawing TM457 prior to Dec. 1, 2022
To Request TRS Evaluation:
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Preformed Vehicle Detector Loop

Standard:
<ul style="list-style-type: none">No. 14, No. 16, or No. 18 TFFN or XHHW wire encased in either Schedule 40 PVC or rubber hydraulic hose filled totally with loop sealantEach loop can be fabricated to custom dimensions (i.e. size, number of turns, and lead-in length)
Drawing:
<ul style="list-style-type: none">Meet requirements of standard detail DET4435
To Request TRS Evaluation:
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Programmed Vehicle Signal

Standard:
<ul style="list-style-type: none">Meet requirements of standard vehicle signalPermit selective programming of the visibility zone of the projected indication anywhere within 15 degrees of the optical axis of each signal section
To Request TRS Evaluation:
<ul style="list-style-type: none">Manufacturer's product data sheet (cut-sheet) showing compliance with standards listed above

Pushbutton Mount (H-Frame)

Standard:
<ul style="list-style-type: none">• One-piece assembly of extruded aluminum containing the push button• Signs placed directly on the H-frame extrusion• Sign background of two coats of white enamel with black silk-screened legend conforming to “Standard Highway Signs”• An outlet in the back of the housing for rigid conduit• ¼ inch diameter drain hole in the bottom• Includes an extension bracket option to extend button to comply with ADA reach requirements
To Request TRS Evaluation:
<ul style="list-style-type: none">• Manufacturer’s product data sheet (cut-sheet) showing compliance with standards listed above