

Transportation Systems Technician (TST)

2011 Exam Reference Materials

February 10, 2011

The references below were used to create the 2011 Transportation Systems Technician (TST) promotional exams, and are made available to help candidates prepare for the exam. Most of these references will be provided during the actual exam, with the exception of items 5a, 6a, and 7. These materials are available on-line by using the links provided or through your regional organization. Items with an asterisk* indicate a change in the reference from last year's (2010) reference materials.

Exam topic categories with references for study:

1. National Electric Code (NEC)
 - a. NEC 2008 Edition (NFPA 70). (Available in each region)
2. Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition
 - a. [MUTCD Part 4: Highway Traffic Signals](#)
 - b. [MUTCD Part 8: Traffic Controls for Highway-Rail Grade Crossings](#)
3. Electrical WAC/ RCW
 - a. [WAC 296-46B](#) (Electrical Safety Standards, Admin, and Installation), Oct 31, 2009.
 - b. * [RCW 19.28](#) (Electricians and Electrical Installations), July 26, 2009
4. Standard Plans, Specifications, and Contract Plans
 - a. * [Standard Plans \(M 21-01\), J-Drawings](#) (J-1f thru J-90.20-00), August 2, 2010 (List Below)
 - b. * [Standard Specifications](#) (M 41-10) 2010 Edition, Parts 8.20 and 9.29
 - c. [Contract Plans](#)
5. Safety: [First Aid, Electrical, WSDOT Procedures, Work zone, and Digging](#)
 - a. First Aid: Medic First Aid Basic CPR, AED, and First Aid for Adults Student Guide: Employees receive this booklet in the WSDOT first aid training course (APS)
 - b. Electrical: *[General Safety and Health Standards, WAC 296-24, Part L Electrical, Current Version](#)
 - c. WSDOT Procedures: *[WSDOT Safety Procedures and Guidelines](#) July 2010, [Ch. 4,6,9 & 10](#).
 - d. Work Zone: [Work Zone Traffic Control Guidelines](#) (M 54-44.03), September 2009
 - e. Digging: [Washington Utilities Coordinating Council \(WUCC\) Digging Guidelines](#)
6. Electrical and Electronic Theory and Calculations
 - a. [LabVolt Training System and Student Guides Basic Principles of Electricity and Electronics](#) (Available in region/ Not provided during exam)
 - b. [Formula Sheet](#)
7. Equipment (Operation, Maintenance, Troubleshooting, and Testing).
 - a. Technical references are available in each region and are not provided during the exam. Some questions do not have a specific reference and are derived from technical knowledge and hands-on job experience.
 - b. TST B and C level questions are specific to each discipline i.e. (Electronics, Electrical, Bridges, Tunnels, Facilities, TDO, or Electrical Inspector).
 - c. TST D level equipment questions are derived from all disciplines.

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Section J Illumination, Signals, and ITS (Updated 8/2/2010)

view	dnld	J-1f	Timber Light Standards	6/23/00	
view	dnld	J-3	Type A, B, and C Service Lighting Details	8/1/97	2 sheets
view	dnld	J-3b	Service Cabinet Type B Modified (0 - 200 Amp Type, 120/240 Single Phase)	3/4/05	2 sheets
view	dnld	J-3c	Service Cabinet Type D (0 - 200 Amp Type, 120/240 Single Phase)	6/24/02	
view	dnld	J-3d	Service Cabinet Type E (0 - 200 Amp Type, 240/480 Single Phase)	11/5/03	
view	dnld	J-7c	Strain Pole Standards Type IV and V	6/19/98	
view	dnld	J-8a	Type 1 Induction Loop	5/20/04	
view	dnld	J-8b	Type 2 Induction Loop	5/20/04	2 sheets
view	dnld	J-8c	Type 3 Induction Loop	5/20/04	3 sheets
view	dnld	J-8d	Induction Loop Details	5/20/04	2 sheets
view	dnld	J-9a	Typical Grounding Details	4/24/98	
view	dnld	J-10	Electrical Conduit Placement	7/18/97	
view	dnld	J-10.10-00	Cabinet Orientation, Conduit Layout and Foundation Detail	6/16/10	5 sheets
view	dnld	J-11b	Heavy Duty Junction Box, Types 4, 5, & 6	9/2/05	2 sheets
view	dnld	J-12	Sign Post-Mounted Junction Box	2/10/09	2 sheets
view	dnld	J-15.15-00	Span Wire Installation	6/16/10	
view	dnld	J-16b	Conduit Installation in Traffic Barrier on Retaining Wall	2/10/09	
view	dnld	J-16c	Conduit Installation in Single Slope Concrete Barrier	2/10/09	
view	dnld	J-18	Permanent Traffic Recorder Site Installations	2/10/09	2 sheets
view	dnld	J-19	Weigh-In-Motion Site Installation	2/10/09	
view	dnld	J-20	Permanent Traffic Recorder and Weigh-In-Motion Details	9/2/05	3 sheets
view		J-20.10-00	Pedestrian Push Button Post and Foundation	10/14/09	2 sheets

Use Plan Sheet Library [Detail IS-1](#) in lieu of this Standard Plan

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view	dnld	J-20.15-00	Breakaway Pedestrian Push Button Post (PPB)	10/14/09	
view	dnld	J-20.16-00	Pedestrian Signal Standard Details	10/14/09	
view	dnld	J-20.20-00	Pedestrian Signal Standard Electrical Details	10/14/09	
view	dnld	J-20.26-00	Pedestrian Push Button (PPB) Details	10/14/09	
view	dnld	J-21.10-01	Type PS, Type 1 RM and FB Signal Standard Foundation Details	6/3/10	2 sheets
view	dnld	J-21.15-00	Type 1 Signal Standard Details	10/14/09	
view	dnld	J-21.16-00	Flashing Beacon Type 1 Signal Standard Details	10/14/09	
view	dnld	J-21.17-00	Flashing Beacon Type 1 Signal Standard Electrical Details	10/14/09	
view	dnld	J-21.20-00	Type 1 Signal Standard Electrical Details	10/14/09	
view	dnld	J-22.15-00	Ramp Meter Signal Standard Details	10/14/09	
view	dnld	J-22.16-01	Ramp Meter Signal Standard Electrical Details	6/3/10	
view	dnld	J-26.10-00	Signal Standard Foundation Plan	6/16/10	
view	dnld	J-26.15-00	Signal Standard Foundation Placement	6/16/10	3 sheets
view	dnld	J-28.10-00	Steel Light Standards	8/7/07	2 sheets
view	dnld	J-28.22-00	Steel Light Standards Placement (Slip Base)	8/7/07	2 sheets
view	dnld	J-28.24-00	Steel Light Standards Placement (Fixed Base)	8/7/07	
view	dnld	J-28.26-01	Steel Light Standards Placement (Miscellaneous)	12/2/08	
view	dnld	J-28.30-01	Steel Light Standards Foundation Types A & B	10/14/09	2 sheets
view	dnld	J-28.40-01	Steel Light Standards Base Mounting	10/14/09	
view	dnld	J-28.42-00	Steel Light Standard Anchor/Slip Plate for Slip Base	8/7/07	
view	dnld	J-28.45-00	Steel Light Standard Elbow Mounting on Bridge & Retaining Wall	8/7/07	

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view	dnld	J-28.50-01	Steel Light Standard Pole Base and Hand Hole Detail	6/16/10	
view	dnld	J-28.60-00	Steel Light Standard Barrier Mounted Base	8/7/07	
view	dnld	J-28.70-00	Steel Light Standard Wiring Details	8/7/07	
view	dnld	J-40.10-01	Locking Lid Standard Junction Box Types 1 & 2	10/14/09	2 sheets
view	dnld	J-40.30-01	Locking Lid Standard Duty Junction Box Type 8	6/3/10	2 sheets
view	dnld	J-40.36-00	Nema 4X Non Adjustable Junction Box	6/3/10	
view	dnld	J-40.37-00	Nema 3R Adjustable Junction Box	6/3/10	2 sheets
view	dnld	J-60.13-00	Stainless Steel Channel	6/16/10	
view	dnld	J-60.14-00	Stainless Steel Channel Mounting Details on Column or Pole	6/16/10	
view	dnld	J-75.10-00	Signal Head Mounting Details Pole and Post Top Mountings	2/10/09	
view	dnld	J-75.20-00	Signal Head Mounting Details Mast Arm and Span Wire Mountings	2/10/09	
view	dnld	J-75.30-00	Miscellaneous Signal Details	2/10/09	
view	dnld	J-75.40-00	Overhead Sign Electrical Details (Monotube Structure)	10/14/09	
view	dnld	J-75.45-00	Overhead Sign Electrical Details (Truss Structure)	10/14/09	
view	dnld	J-90.10-00	Pull Box	2/10/09	2 sheets
view	dnld	J-90.20-00	Cable Vault	2/10/09	2 sheets