NOTES:

1. All materials and construction shall conform to the requirements of the Specifications. However, these T.S. Drawing requirements supersede any other requirements specified in the original 2009 Specification or any subsequent version (store or standard) which was not specifically revised to include advancements specified in these drawings.

2. All new signals, except the programmed visibility and pedestrian signals, installed at intersections or interchanges shall be of the same manufacturer. Vehicle traffic signal face assemblies shall be bagged in an approved fashion if installed prior to turn-on or if they are left off (dormant) for any length of time.

3. Only those signal sections and LED traffic signal modules that have been approved shall be used. All signals (balls, arrows, bi-modal arrows, program visibility, and pedestrian) shall be fully tested prior to installation.

4. All signals shall meet or exceed the applicable requirements of MUTCD and ITE Equipment and Material Standards. The ball indications shall conform to the 2005 ITE Vehicle Traffic Control Signal Heads - Light Emitting Diode Circular Signal Supplement (VTCSS-LED). The arrow indications shall conform to the 2008 ITE Vehicle Traffic Control Signal Heads - Light Emitting Diode Vehicle Arrow Traffic Signal Supplement. See T.S. 8-7, sheet 1 and 2 for additional LED ball, arrow and pedestrian signal requirements. Additionally the LED ball, arrow and pedestrian modules (or units) shall be certified or listed and permanent labeled on the back of each module as meeting the applicable ITE specification per a third party verification program (eg. Intertek, ETL or E99).

5. Due to Arizona hot desert climate, it is desirable to have signal indications that have a maximum intensity of 81 degrees C (168 degrees F) temperature, instead of the standard 74 degrees C (165 degrees F) temperature. Therefore, this is not required if the signal indication is of the option of the manufacturer. All signals shall be certified or listed for load switch and contactor monitor compatibility (per ITE specification technical note No. 3). A list of compatible load switches or contactors may be obtained from the manufacturer.

6. All red and green LED traffic signal units shall conform to the applicable requirements of the Energy Policy Act of 2005 (EPA/2005), specific electrical usage requirements as defined per the table shown on this sheet. All units shall be ENERGY STAR qualified and the manufacturer shall adhere to the applicable ENERGY STAR partnership agreement requirements for traffic signals.

7. All plastics shall be UV Stabilized and shall be rated for a minimum 5-year outdoor service life. They shall not embrittle, crack, cloud, glass or yellow within that time frame. Lenses shall be hard coated for enhanced durability.

8. All LED modules shall include a continuous neoprene type gasket which shall assure a weather and dust proof seal between the unit and the section door.

9. The units shall be designed to reduce the chance of sun phantom. This includes having a lens design (for pixilated units) or an optical assembly design (incandescent bulb or non-pixilated illumination units) that is specifically configured and tested to prevent or minimize the occurrence of sun phantom.

10. All arrow lenses shall be semi-directional. A label on the back of the signal module shall state that.

11. All signal (ball, arrow and program visibility) indications shall also be physically and optically suitable for small wire applications, as required by T.S. 9-5 series.

12. The units shall be rated to operate at 120 VAC. The minimum wire size for wiring shall be 14 AWG with copper conductors.

13. The traffic signal housing, visor and backplate shall have at least one year warranty against defects in materials and workmanship. The LED traffic signal units shall have a minimum of 5-year warranty. Both warranties shall be full replacement. Upon project completion all warranties shall be assigned to the Department or the municipality (as applicable). The longer warranty shall be based on the material used by the manufacturer.

Not to Scale