NOTES:

1. All materials and constitution shall conform to the requirements of the standard specifications

2. See T.S. 1 Series for pull box and pull box installation details. Use a heavy duty pull box with a concrete collar unless specified otherwise.

3. The Engineer may adjust the distance between the pull box and the edge of pavement base on field conditions. Unless otherwise noted on the plans.

4. Offset pull boxes as necessary to avoid drainage areas; pull boxes shall not be placed in ditches.

5. For lanes wider than 12 feet, the contractor shall install loops wider than 9 feet per the following formula: Loop Width = Lane Width minus 3 feet.

6. Unless otherwise indicated on the project plans, loops shall be install immediately below the final surface or riding course. (T.S. 6-1 and T.S. 6-2 only)

7. Contact MPD Traffic Monitoring Section, at (602) 712-8585. Detector loop saw cutting and installation shall be subjected to full-time inspection by the Engineer. Detector loops that are not inspected full-time may not be eligible for payment. Therefore, the contractor shall coordinate with the Engineer at least 72 hours in advance to schedule oversight.

8. The contractor shall install the loops, sawcut all Piezo sensor channels and Coax lead-in to pull box; See T.S. 6-4 Sheet 3 of 5. The Department will install the Piezo sensor and grout only, the contractor shall install the Coax pre-attached lead-in cable without splices to the cabinet. The contractor is also responsible for sealing all Piezo sensor lead-in channels from sensor to pull box.

9. Prior to cutting and coring, the contractor shall meet with the Engineer and determine the final loop layouts. Upon completion of this meeting the contractor shall measure out and mark the proposed lead-in and loop locations with white, silver or black spray paint or chalk. Marked lines shall be straight and exact to the loop locations and sizes as show on the plans. Locations shall be adjusted as directed by the Engineer. Marks not to be used shall be removed or obscured in an acceptable fashion. The exact marking color and material used shall be approved by the Engineer. However, paint should not be used on the finished pavement or riding surface.

10. The saw cuts slots and the drilled cores shall be completely cleaned with clean water and blown dry by means of an air stream free of oil or water. Excess material created by sawing and coring shall be removed from the roadway and disposed of in a manner which is acceptable to the Engineer. All cuts and cores and slots shall be closely inspected for jagged edges or protrusions prior to the placement of the wire. All jagged edges and protrusions shall be grounded or re-cut and cleaned again.

11. Saw cut sealant for Piezo sensors (between the sensors and edges of pavement) and the loops in ACP pavement shall be sealed with an approved pre-mix emulsified crack filler sealant per the Standard Specifications. Sealant in concrete pavement or top/topmost ACP course shall be elastomeric-premix loop sealant, hot rubber sealant (ACP only) or an approved two-part epoxy loop sealant.

12. The wire shall be placed as far down in the saw cut as possible and in such a manner that the tube or insulation is not damaged. The bend in the wire at any one point shall not exceed 90 degrees. The wire shall be held in place during installation by strips of polyethylene (PE) foam sealant backer rods two inches in length, placed approximately every two feet closer spacing is to be used if need be. Wires crossing pavement joints or larger pavement cracks shall be protected with plastic sleeving extending a minimum of four inches either side of the joint or crack. Slots crossing joints or cracks are to be widened and deepened as necessary to accommodate the bridging sleeve.

13. Each loop shall use stranded copper #14 AWG HDPE polyethylene insulated conductor conforming to IMSA 51-7, "Traffic Signal Cable". Each loop shall consist of 3 turns of wire and shall be a continuous run from the loop to the loop detector stub out. The 2 loop lead-in wires from the loop to the pull box shall be twisted together with a minimum of 2 turns per foot.

14. The contractor shall patch the existing pavement with an approved material (UPM or equal) in an acceptable manner. The patch shall be least ¼" higher than the existing pavement or compacted flush if approved by the Engineer.

15. The contractor shall backfill the underground components with excavated material and compact the material in accordance with the Standard Specifications. Material not reused shall be disposed of by the contractor in an approved fashion.

16. See other sheets within this drawing series for other details and requirements.

17. All loop wire, shield cable and sealant shall be inspected and approved for use by the Engineer.

18. All loop wire shall be twisted at a minimum rate of two turns per foot from the loop back to the pull box. The maximum number of turns in a foot shall not exceed five. The start (or leading) and finish (or lagging) wire for each loop shall be permanently labeled in the pull box. The label shall also include note of the lane position, use and phase.

19. The loops shall be wired per the winding pattern and number of turns specified. A wooden paddle or similar blunt object shall be used to install and seat loop wires in slots. The contractor shall take the necesary time to work the loop wire into all slots so it lays flat and is secure.

20. All loops in ACP pavement shall be sealed with an approved pre-mix emulsified crack filler sealant. All loops in concrete pavement or finish AC course pavement shall be sealed with an approved hot rubber sealant or a two-part epoxy or similar sealant. Sealants shall be used in a manner that is consistent with the manufacturer's instructions, these drawings and the specifications. The sealant shall seal the loop wire and fill the slot accordingly without gaps or voide and to the specified minimum cover.

NOT TO SCALE

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	DETECTOR LOOPS AND PIEZOELECTRIC SENSOR DETAILS	DRAWING NO. T.S. 6-4	
		SHEET NO. 1 OF 5	

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2			
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