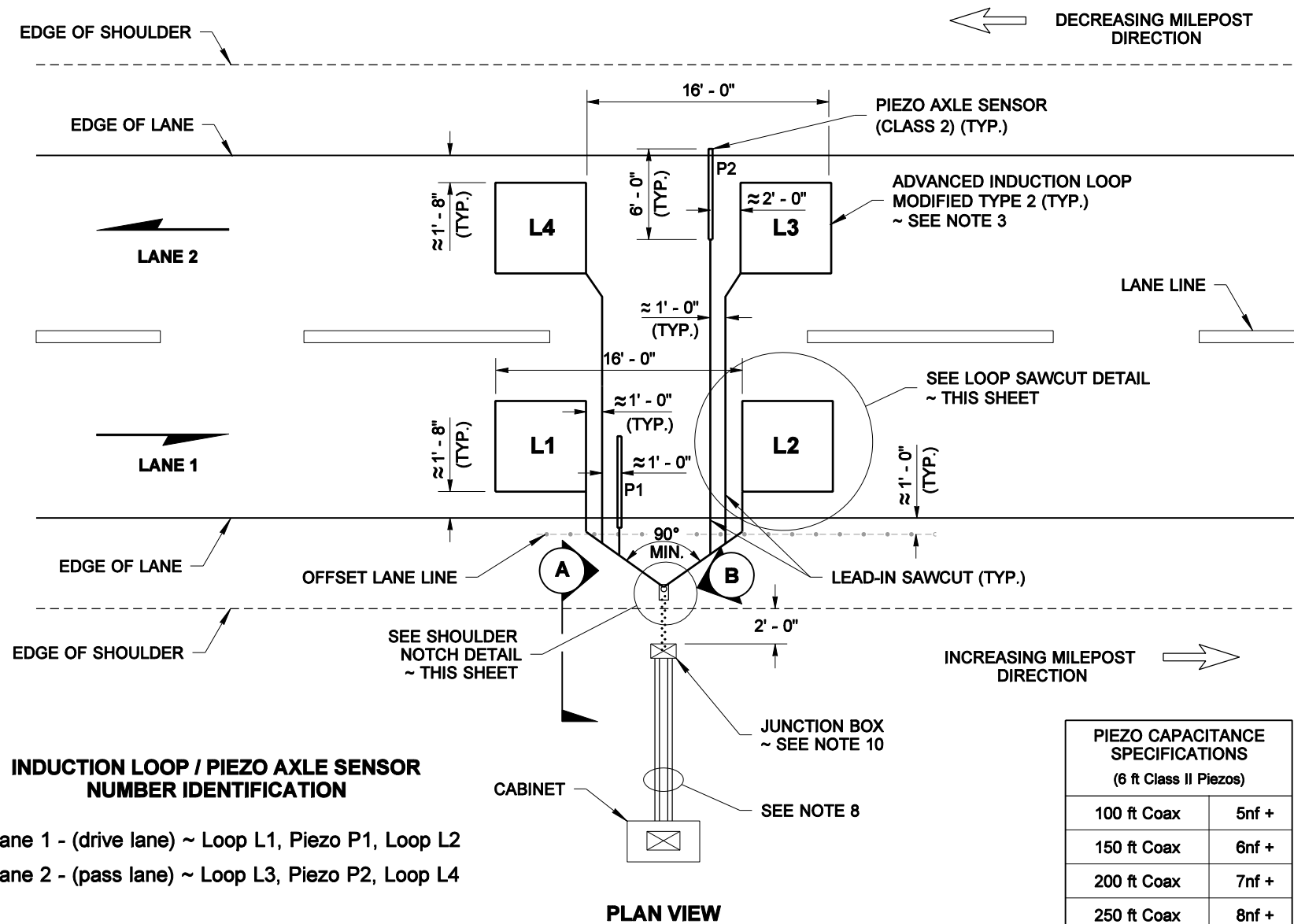


DRAWN BY: FERN LIDDELL

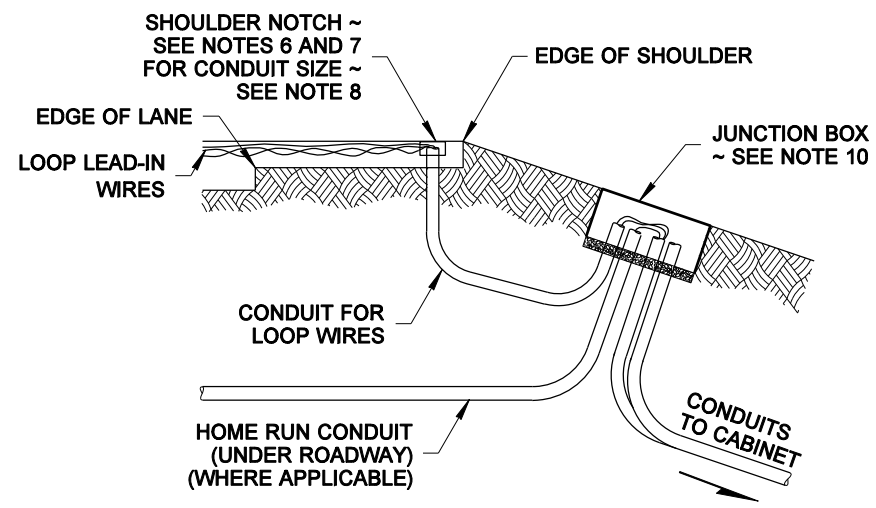


**PLAN VIEW**  
**TYPICAL 2 LANE PTR LAYOUT**

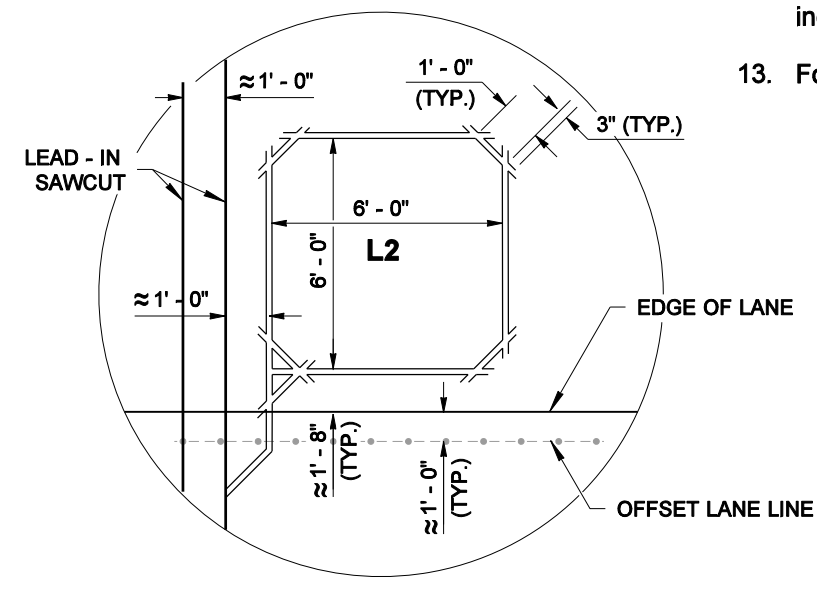
**INDUCTION LOOP / PIEZO AXLE SENSOR NUMBER IDENTIFICATION**  
 Lane 1 - (drive lane) ~ Loop L1, Piezo P1, Loop L2  
 Lane 2 - (pass lane) ~ Loop L3, Piezo P2, Loop L4

**NOTES**

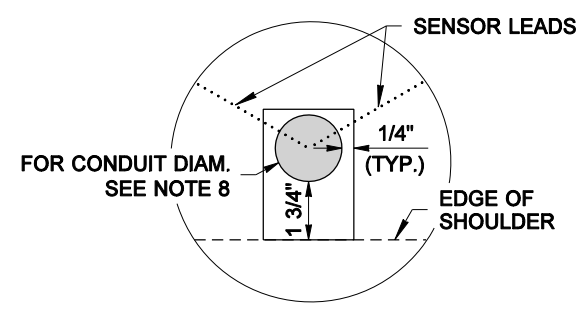
1. See **Standard Plan J-50.30** for Piezo axle sensor General Installation instructions, and Modified Type 2 Loop wiring details.
2. The contractor shall notify the Statewide Travel and Collision Data Office (STCDO) (formerly TDO) a minimum of five working days prior to the scheduled site installation. An inspector from the WSDOT STCDO shall be on site for all phases of installation.
3. The loop inductance of two loops within the same lane shall be within 20 micro henries of each other. all piezo ohms readings shall be O/L from shield to center conductor. See piezo specifications for piezo capacitance readings.
4. The loops and axle sensors shall be cut in the final lift of asphalt after lane striping is completed. All PTR loops shall be spaced @16 ft. leading edge to leading edge.
5. For concrete pavement lanes with asphalt shoulders, install all of the piezo sensors and splices in the concrete lane. Also, for concrete lanes, install the loops 4" and 6" away from the expansion joints.
6. The shoulder notch length along the roadway shall be 4" or the conduit diameter plus 2" or whichever is larger. The shoulder notch width perpendicular to the roadway shall be the conduit size plus 1/4".
7. After all sensor leads are installed, seal the end of the conduit with conduit sealant. Use asphalt cold-patch to fill notch unless otherwise specified in the contract.
8. Use Schedule 40 PVC conduit from the Junction box to the Cabinet. Where there are 2 to 4 lanes, use one 1 1/4" min. conduit for each direction of travel. Where there are 5 lanes in either direction of travel, use one 2" min. conduit in each direction. Where there are 6 or more lanes in either direction, use one 3" min. conduit for each direction.
9. Use Schedule 80 PVC, HDPE, or steel conduit under the roadway. For conduit installation see **Standard Specification 8-20.3(5)**.
10. Junction boxes installed in the paved shoulder or median shall be a Heavy Duty Junction box. If box is installed in unpaved shoulder, use type 1 or 2. See **Standard Plan J-40.10** for size and type. See **Standard Specification 9.29.2(1)B**. for further information.
11. All loop wire, loop leads, and piezo leads shall be labeled with colored electrical tape at all Junction Boxes, Pull Boxes and Cabinets, according to the Color Code Identification Chart. For Wire Color Code Detail see **Standard Plan J-50.30**.
12. Cabinet can be placed on either side of road depending on terrain/slope, etc. It does not have to be placed on increasing milepost side of the roadway.
13. For 6 - lane layouts and above, see Contract.



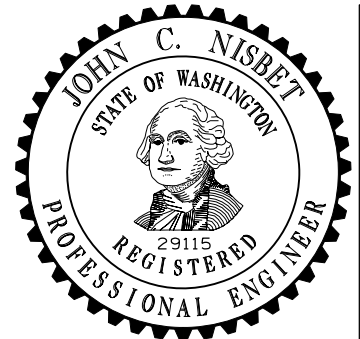
**SECTION A**



**LOOP SAW CUT DETAIL**



**SHOULDER NOTCH DETAIL B**



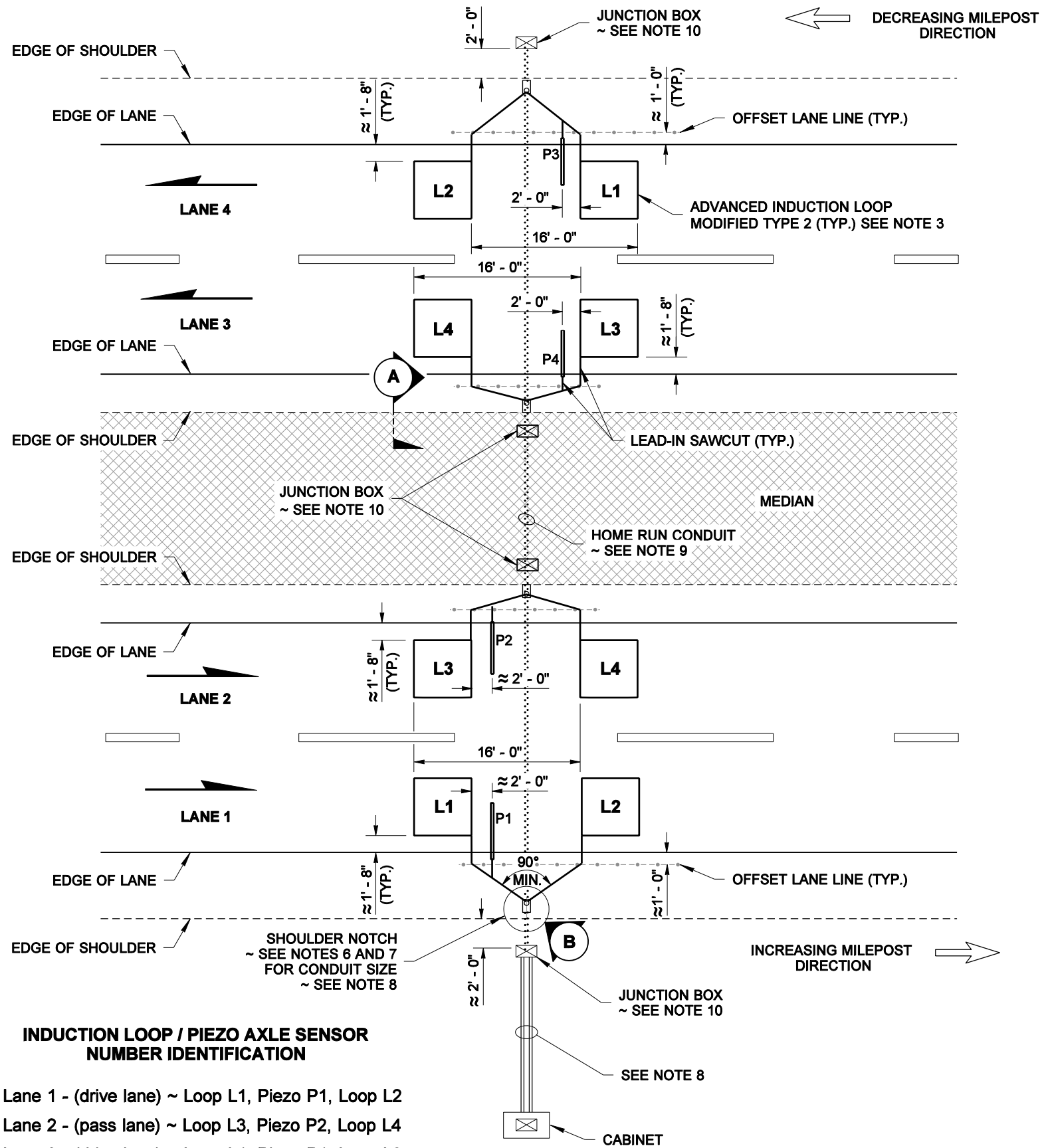
NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT UNLESS IT IS SIGNED AND SEALED BY THE ENGINEER AND APPROVED FOR PUBLICATION. THE ENGINEER SHALL PROVIDE HIS OR HER OWN FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**PERMANENT TRAFFIC RECORDER INSTALLATIONS**  
**STANDARD PLAN J-50.20-00**

SHEET 1 OF 3 SHEETS

APPROVED FOR PUBLICATION  
**Pasco Bakotich III** 06-03-11  
 STATE DESIGN ENGINEER DATE  
 Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

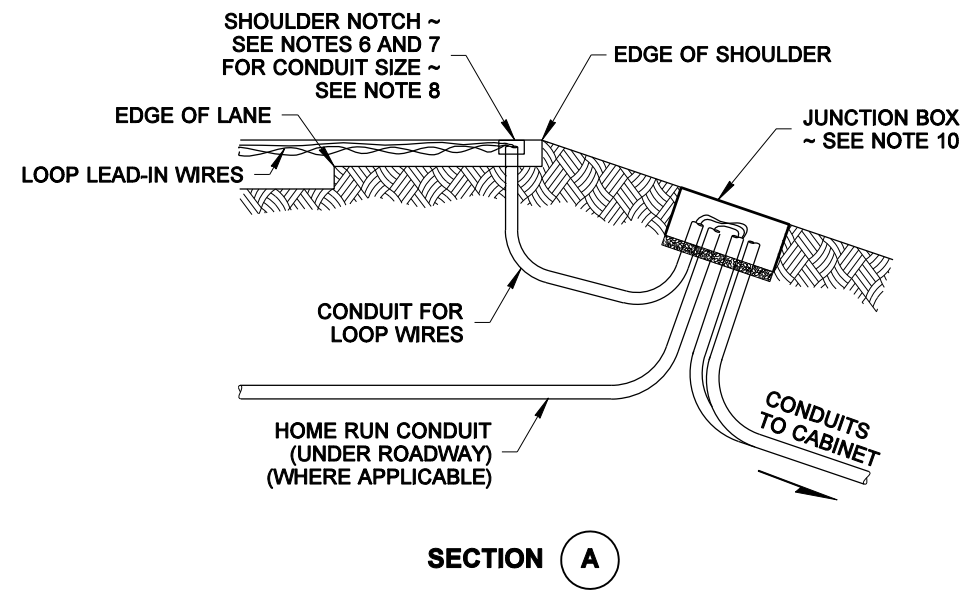


**INDUCTION LOOP / PIEZO AXLE SENSOR NUMBER IDENTIFICATION**

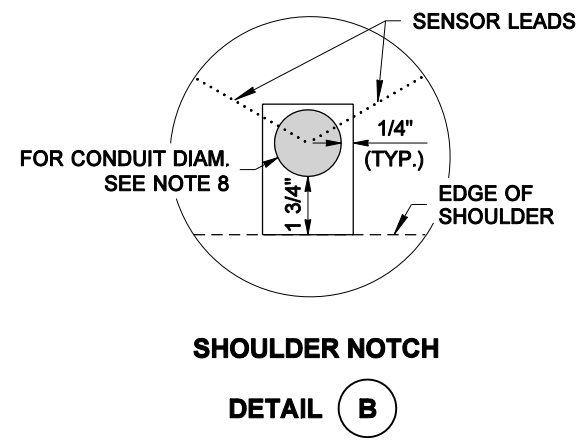
Lane 1 - (drive lane) ~ Loop L1, Piezo P1, Loop L2  
 Lane 2 - (pass lane) ~ Loop L3, Piezo P2, Loop L4  
 Lane 3 - (drive lane) ~ Loop L1, Piezo P1, Loop L2  
 Lane 4 - (pass lane) ~ Loop L3, Piezo P2, Loop L4

**PLAN VIEW**

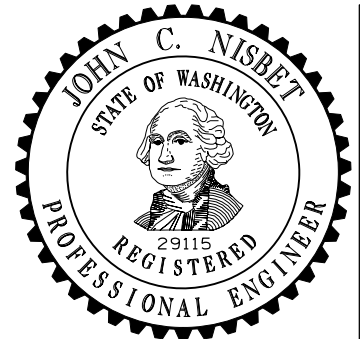
**TYPICAL 4 LANE PTR LAYOUT WITH MEDIAN**



**SECTION A**



**SHOULDER NOTCH  
DETAIL B**



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT UNLESS IT IS APPROVED AND SEALED BY THE ENGINEER WHO HAS PREPARED OR CAUSED TO BE PREPARED. THE ENGINEER HAS APPROVED THE ORIGINAL AS SHOWN ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**PERMANENT TRAFFIC RECORDER INSTALLATIONS  
STANDARD PLAN J-50.20-00**

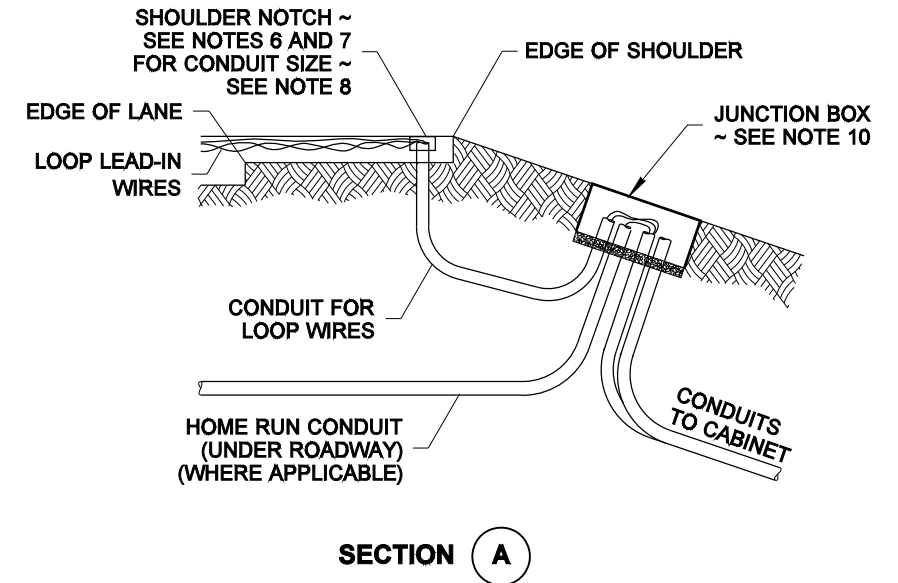
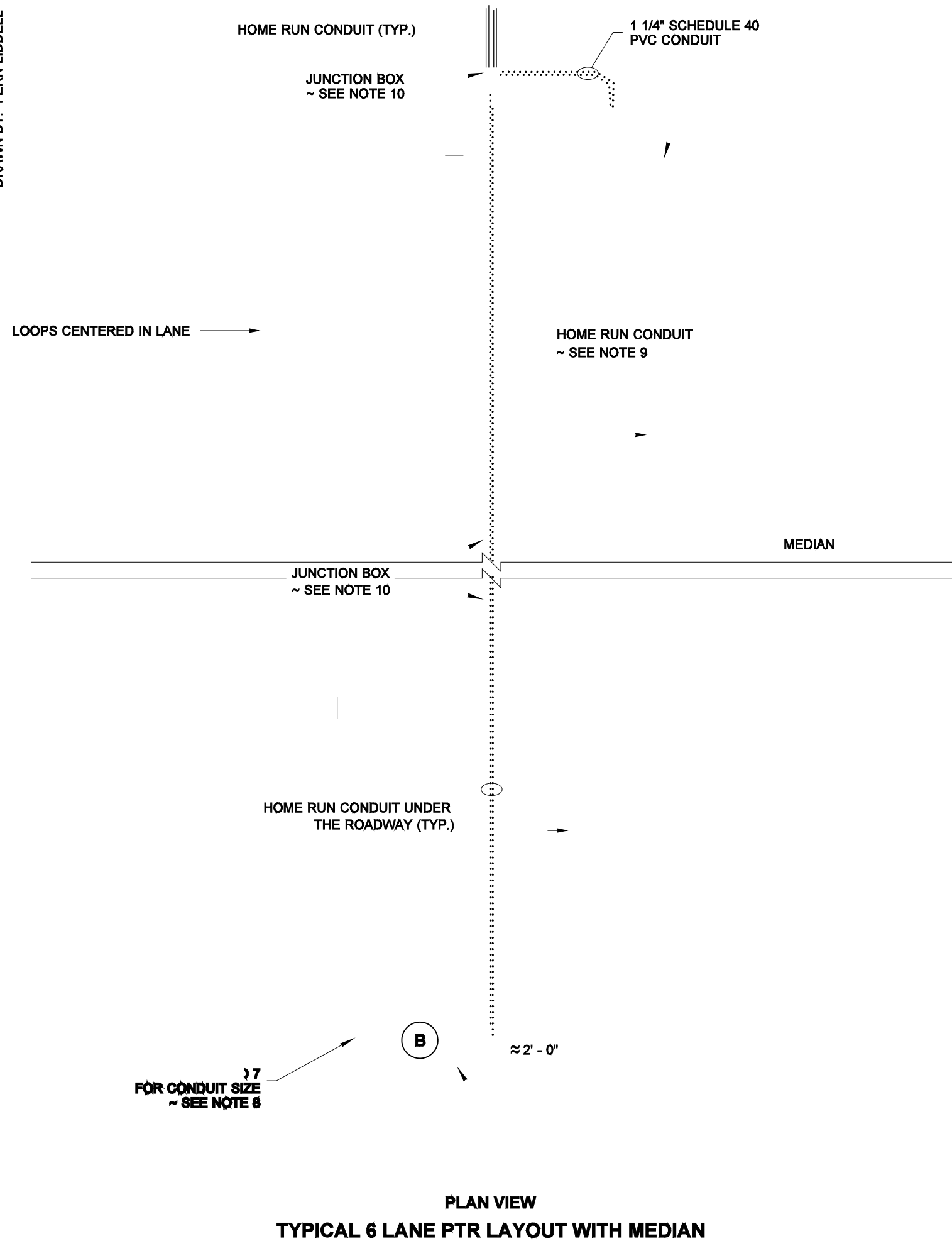
SHEET 2 OF 3 SHEETS

APPROVED FOR PUBLICATION

**Pasco Bakotich III** 06-03-11  
 STATE DESIGN ENGINEER DATE

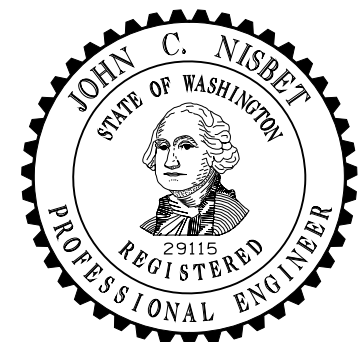
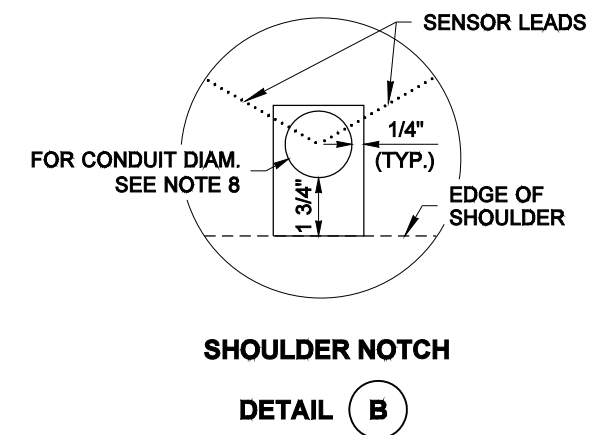
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



**INDUCTION LOOP / PIEZO AXLE SENSOR  
NUMBER IDENTIFICATION**

- |   |   |
|---|---|
| Lane 1 - (drive lane) ~ Loop L1, Piezo P1, Loop L6  | Lane 1 - (drive lane) ~ Loop L1, Piezo P1, Loop L2  |
| Lane 2 - (center lane) ~ Loop L3, Piezo P2, Loop L4 | Lane 2 - (center lane) ~ Loop L3, Piezo P2, Loop L4 |
| Lane 3 - (drive lane) ~ Loop L1, Piezo P1, Loop L2  | Lane 3 - (center lane) ~ Loop L1, Piezo P1, Loop L6 |



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT UNTIL IT IS SIGNED AND SEALED BY THE ENGINEER WHO PREPARED OR APPROVED IT. THIS PLAN IS FILED AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.