**TWISTED PAIR AND LOOP LEAD-IN INSTALLATION WITH CURB & GUTTER**

**ALTERNATIVE 1**
Drill a hole through the curb at the point where the required saw-cut depth is obtained just prior to cutting the top inside edge of the curb. Slide a section of flexible conduit into the hole, into the top hole from the back side of the curb but not within 2" of the top of the hole. The conduit shall fit snugly within the drilled hole. Insert the conduit up to the level of the curb. A nonmetallic material should be used to prevent excessive loop sealant from entering the flexible conduit.

**ALTERNATIVE 2**
Drill a hole 1/2 to 1" larger in diameter than the rigid conduit to be used through the roadway asphalt (or concrete) surface and base at an appropriate angle to intercept the trench or pull box hole. Place a predetermined length of rigid conduit in the hole and drive the conduit into the trench or hole. Install a molded bushing (nonmetallic) on the roadway end of the rigid conduit. The top of the rigid conduit shall be approximately 2" below the roadway surface. Fill the top of the hole with loop sealant to the level of the curb surface. The department angle of the conduit from the roadway shall be 30° to 45°.

**Note #8**
See general notes.

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**TWISTED PAIR AND LOOP LEAD-IN INSTALLATION WITHOUT CURB & GUTTER**

**Cut A Slot In The Edge Of The Roadway Of Sufficient Size And Depth To Snugly Place The End Of The Flexible Conduit.** The end of the conduit shall be at least 12" into the roadway and approximately 2" below the top of the roadway surface. The departure angle of the conduit from the roadway shall be 30° to 45°.

**NOTE:**
Other alternatives may be approved by the State Traffic Operations Engineer.
Loop conductors must follow saw-cut to bottom forming slack section at joint.

Notes:
1. The "number of turns" indicated at the specified point on the loop refers to the number of passes of loop wires which are placed in the saw-cut forming the complete loop.
2. Loop types or details not drawn to scale.
3. Loop Types are centered in a single lane except Type E which is centered on two lanes.
4. The number of individual loops in the Type G loop may vary up to a maximum of four (4).
5. Lead-in may be connected to either end of loop.
6. The leading edge of loop Types A,C,D,& F may extend past the stop line a maximum of 10'. The length of these loops may be extended to a maximum of 60'. Each intersection should be individually designed and if the modifications noted above is required it must be noted or detailed in the plans.
7. Loop lead-in wires should not be installed in the same pull box with signal power cable.