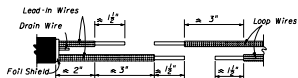


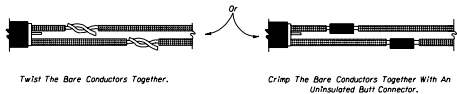
DETAILS FOR SPlicing LOOP WIRE TO LEAD-IN WIRE

STEP 1



Strip Loop And Lead-In Cable Conductors. If Heat Shrinkable Silicone Lined, Cross Linked Polyethylene Insulating Tubing Is To Be Used, Slip Tubing Over Lead-In Cable And Individual Conductors.

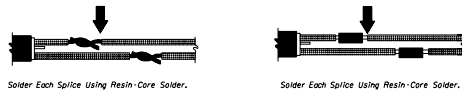
STEP 2



Twist The Bare Conductors Together.

Crimp The Bare Conductors Together With An Uninsulated Butt Connector.

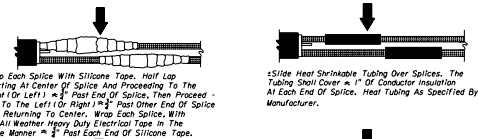
STEP 3



Solder Each Splice Using Resin-Core Solder.

Solder Each Splice Using Resin-Core Solder.

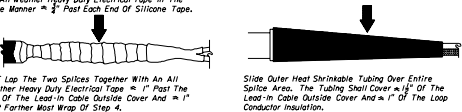
STEP 4



Wrap Each Splice With Silicone Tape. Half Lap Starting At Center Of Splice And Proceeding To The Right (Or Left) $\approx \frac{3}{4}$ " Past End Of Splice, Then Proceeding To The Left (Or Right) $\approx \frac{3}{4}$ " Past Other End Of Splice And Returning To Center. Wrap Each Splice With An All Weather Heavy Duty Electrical Tape In The Same Manner $\approx \frac{3}{4}$ " Past Each End Of Silicone Tape.

Slide Heat Shrinkable Tubing Over Splices. The Tubing Shall Cover $\approx 1"$ Of Conductor Insulation At Each End Of Splice. Heat Tubing As Specified By Manufacturer.

STEP 5



Half Lap The Two Splices Together With An All Weather Heavy Duty Electrical Tape $\approx 1"$ Past The End Of The Lead-In Cable Outside Cover And $\approx 1"$ Past Farther Most Wrap Of Step 4.

Slide Outer Heat Shrinkable Tubing Over Entire Splice Area. The Tubing Shall Cover $\approx 1 \frac{1}{2}"$ Of The Lead-In Cable Outside Cover And $\approx 1"$ Of The Loop Conductor Insulation.

GENERAL NOTES

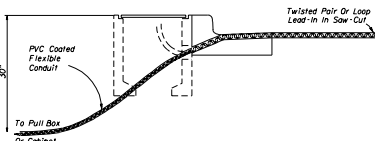
- If the loop lead-in is 75' or less from the edge of the loop to the detector or controller cabinet, continue the twisted pair to the cabinet. If the loop lead-in is greater than 75' continue the twisted pair to the specified pull box, splice to shielded lead-in wire and continue to the detector or controller cabinet.
- The width of all saw cuts shall be sufficient to allow unforced placement of loop wires or lead-in cables into the saw cut. The depth of all saw cuts, except across expansion joints, shall be 3" standard with a maximum of 4".

- On resurfacing or new roadway construction projects, the loop wires and lead-in cables may be installed in the asphalt structural course prior to the placement of the final asphalt wearing course. The loop wires and lead-in cables shall be placed in a saw cut in the structural course. The depth of the cables below the top of the final surface shall comply with note 2.
- A nonmetallic hold down material shall be used to secure loop wires and lead-ins to the bottom of saw-cuts. Hold down material shall be placed of approximately 12" intervals around loops and 24" intervals on lead-ins.
- The minimum distance between the twisted pairs of loop lead-in wire is 6" from the loop to 12" from the pavement edge or curb.

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

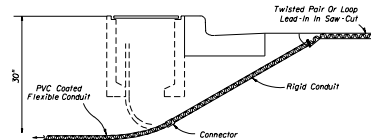
ALTERNATIVE 1

Drill A Hole Through The Curb At The Point Which The Required Saw-Cut Depth Is Obtained Just Prior To Cutting The Top Inside Edge Of The Curb. Slice A Section Of Flexible Conduit At Least 6" Into The Hole From The Back Side Of The Curb But Not Within 2" Of The Top Of The Hole. The Conduit Shall Fit Snug Within The Drilled Hole. Fill The Top Of The Hole With Loop Sealant To The Level Of The Curb Surface. A Nonmetallic Material Should Be Used To Prevent Excessive Loop Sealant From Entering The Flexible Conduit.



ALTERNATIVE 2

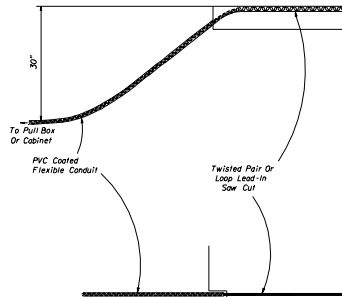
Drill A Hole $\frac{1}{2}$ " To 1" Larger In Diameter Than The Rigid Conduit To Be Used Through The Roadway Asphalt (Or Concrete) Surface And Base At An Appropriate Angle To Intersect The Trench Or Pull Box Hole. Place A Predetermined Length Of Rigid Conduit In The Hole And Drive The Conduit Into The 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 Hole With Loop Sealant To The Level Of The Roadway Surface. A Nonmetallic Material Should Be Used To Prevent Excessive Loop Sealant From Entering The Rigid Conduit.



Note
Other alternatives may be approved by the State Traffic Operations Engineer

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 6" Into The Roadway And 2" Below The Top Of The Roadway Surface. The Departure Angle Of The Conduit From The Roadway Shall Be 30° To 45°.



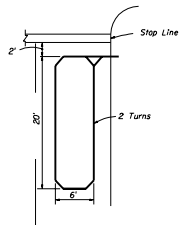
Note
Other alternatives may be approved by the State Traffic Operations Engineer

- Splice Connections in pull boxes may be made with U.L. listed, watertight, insulated connectors in lieu of the details above. The lead-in cable insulation shall be sealed using electrical tape or heat shrinkable tubing (refer to step 5 above). The seal shall extend approximately 1" either side of the lead-in cable outer cover.

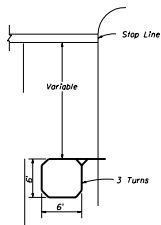
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

VEHICLE LOOP INSTALLATION DETAILS

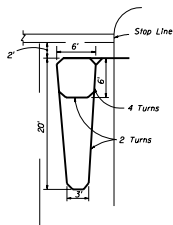
Revised By	Name	Date	Approved By
			<i>Charles A. Scott</i>
Drawn By			STATE TRAFFIC DESIGN
Checked By			SCALE: 1" = 10'
			00 1 of 2 (1778)



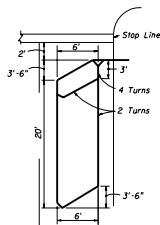
TYPE A



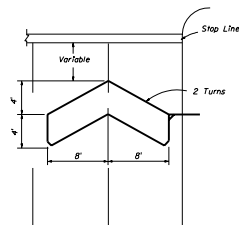
TYPE B



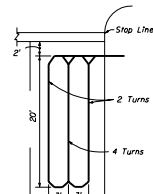
TYPE C



TYPE D

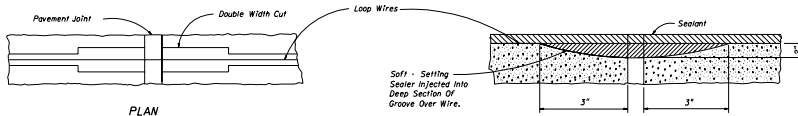


TYPE E



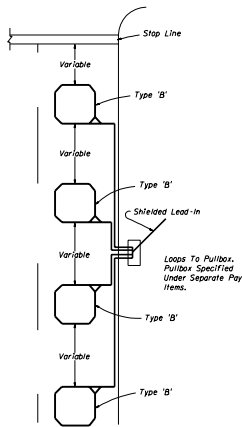
TYPE F

Note: Loop conductors must follow saw-cut to bottom forming stack section of joint.

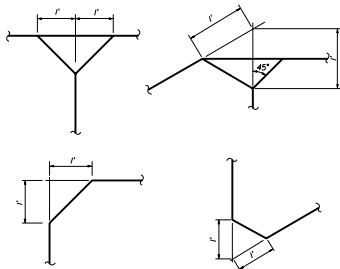


PLAN

CONCRETE PAVEMENT EXPANSION JOINTS VERTICAL SECTION



TYPE G



LOOP CORNER AND LEAD-IN DETAILS

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.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

VEHICLE LOOP
INSTALLATION DETAILS

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	APPROVED BY	SCALE	PROJECT NO.
				<i>Clark A. Scott</i>		
				STATE TRAFFIC ENGINEER		
				00	2 of 2	17781