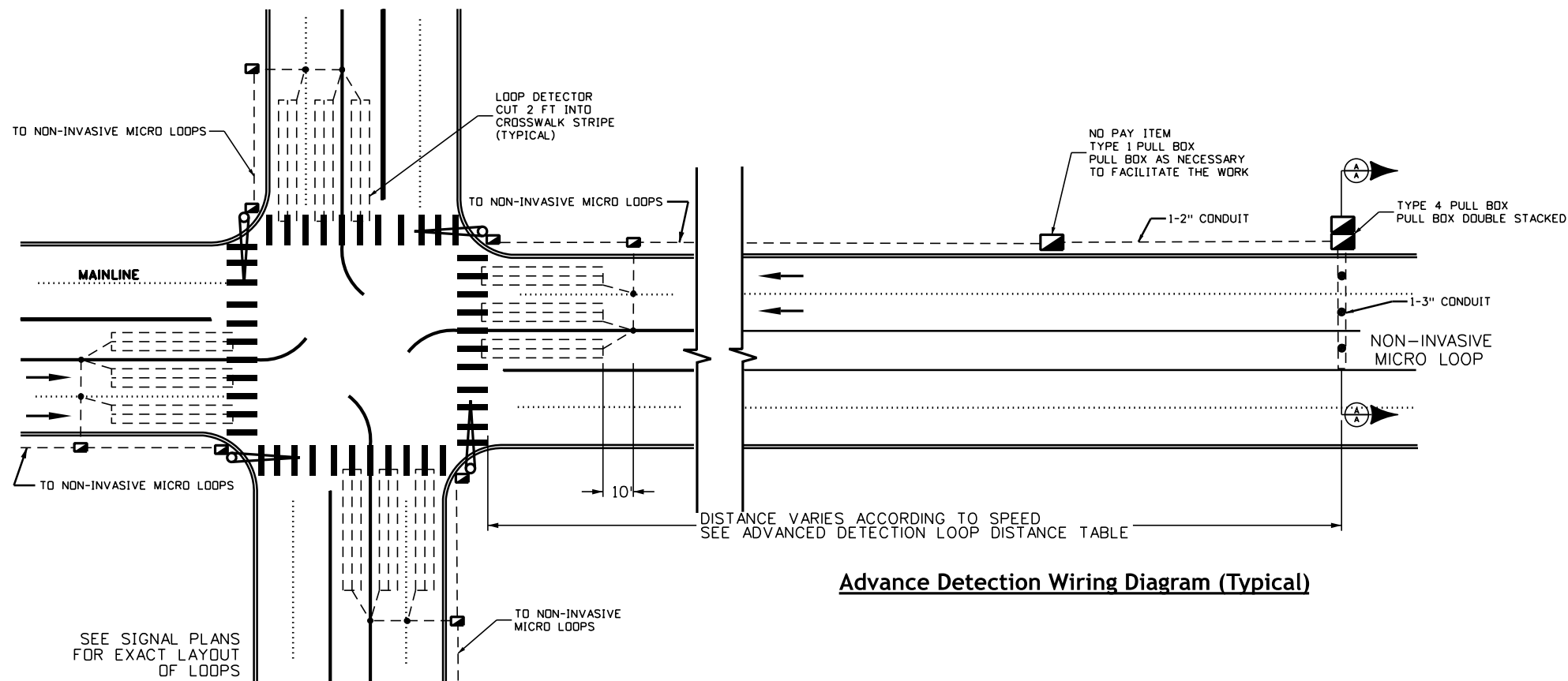
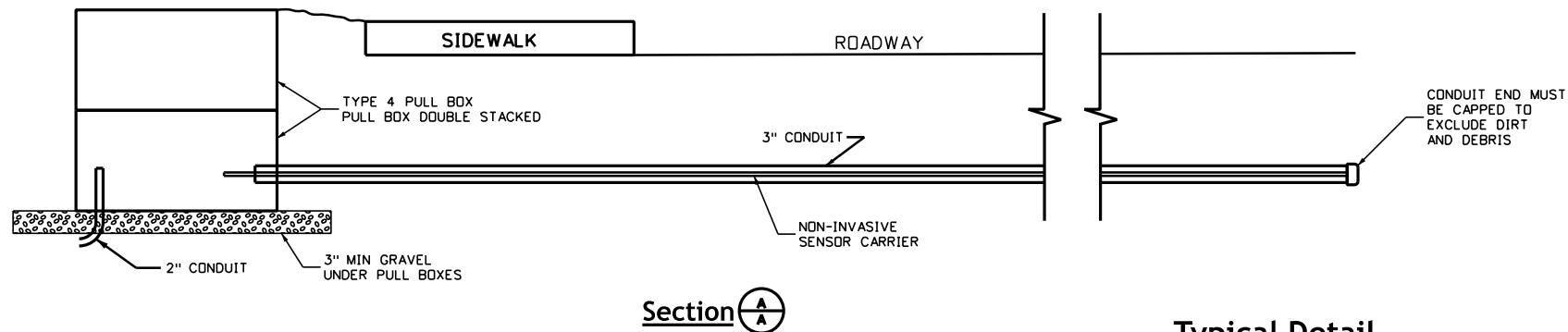




Advance Detection Wiring Diagram (Typical)

Intersection Detector Wiring Diagram (Typical)
(Not to scale)



Typical Detail
Non-Invasive Microdetector
(Dilemma Zone)

Advanced Detection Loop
Distance Table

APPROACH SPEED		DISTANCE FROM INTERSECTION
MPH	KM/HR	FEET
35	56	254
40	64	284
45	72	327
50	80	353
55	88	386

Legend

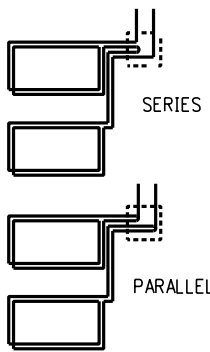
Controller and cabinet.....	☒
Electrical conduit and pull box.....	--- ☐ ---
Loop detector.....	[-----]
Pullbox (special).....	●
Micro detector.....	⊙

Notes

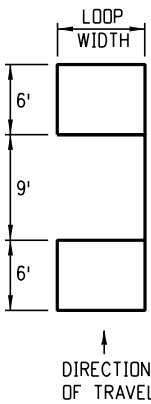
1. All pull boxes are not to be paid for seperately, but shall be included in the cost of the conduit. Except for where called out in the plans.
2. All pull boxes placed for the "Advanced Detection Wiring" shall be placed approximately every 100 feet and shall be included in the cost of the conduit.
3. For layout of loop detectors and conduit, the contractor shall notify CDOT Region Traffic Engineers, two working days in advance.
4. See plans for actual lane configurations.

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Created By: AVU						Standard Sheet No. 1 of 8
Last Modification Date: 07/01/26						Project Sheet Number:
Last Modified By: GLY					Issued by the Traffic Safety & Engineering Services: July 01, 2026	
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English						

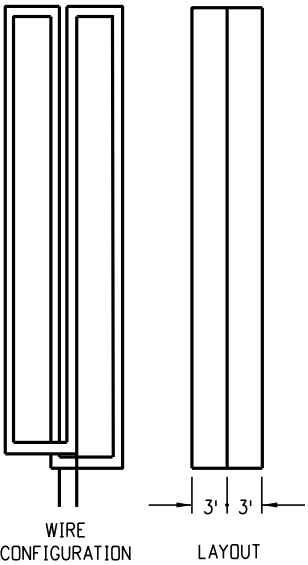
Wire Configuration



Layout



Standard Loop



Quadrapole Loop

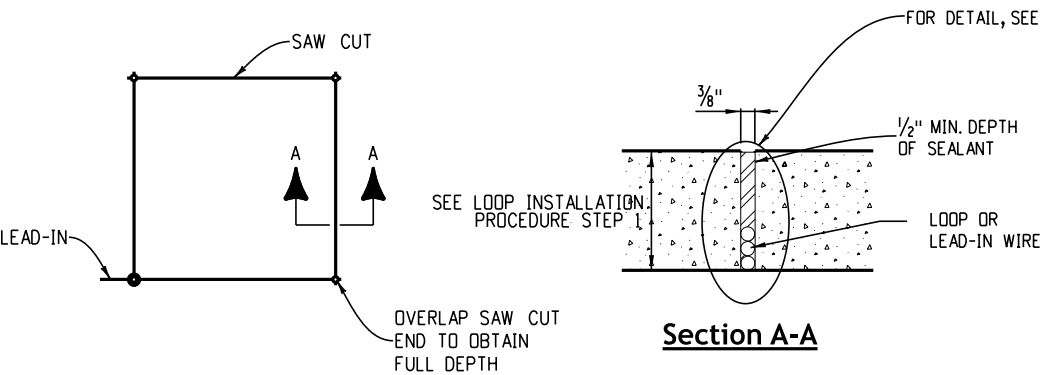
Standard Loop - Wiring and Connection Table

NO. OF LOOPS	WIDTH OF LOOP (FEET)									
	6	8	10	12	14	16	18	20	24-36	40+
1	4	3	3	3	3	3	3	3	2	2
2	3S	3S	3S	3P	2S	2S	2S	2S	2S	2P
3	3S	3S	2S	2S	3SP	3SP	3SP	3SP	2SP	2P
4	3SP	3SP	3SP	2SP	3SP	3SP	3SP	2SP	2SP	2SP

Turns per loop and type connection
(S = series, P = parallel)

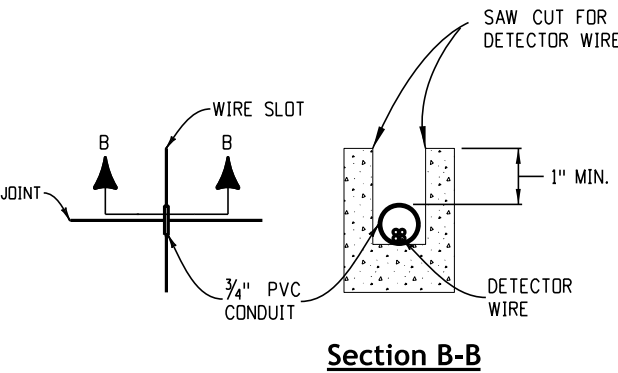
Loop Installation Procedure

1. Cut slots in pavement to 3 inch minimum depth (4 inch minimum for ramp meters).
2. Clean and dry slots with oil-free compressed air.
3. One continuous length of 14/IC, RHW, USE, XLPE, RHWN or THW wire shall be used for each loop from signal base or pull box around the loop with the number of turns specified and back to the signal base or pull box. Loop wire shall be duct type.
4. Splice lead-in in first pull box on the side of the roadway.
5. Use a blunt, non-metallic instrument to push wire into slot. Do not coil leads.
6. Connect detector and test loop.
7. Install loops before final lif of asphalt on mill and fill projects.
8. Seal slots as specified.



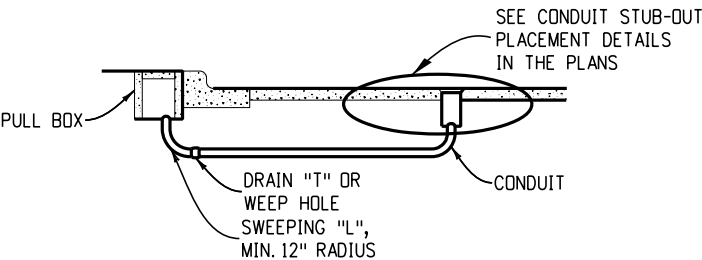
**Vehicle Detector Loop
Saw Cut Details**

(For use with vinyl tubing encased
loop detector wire)



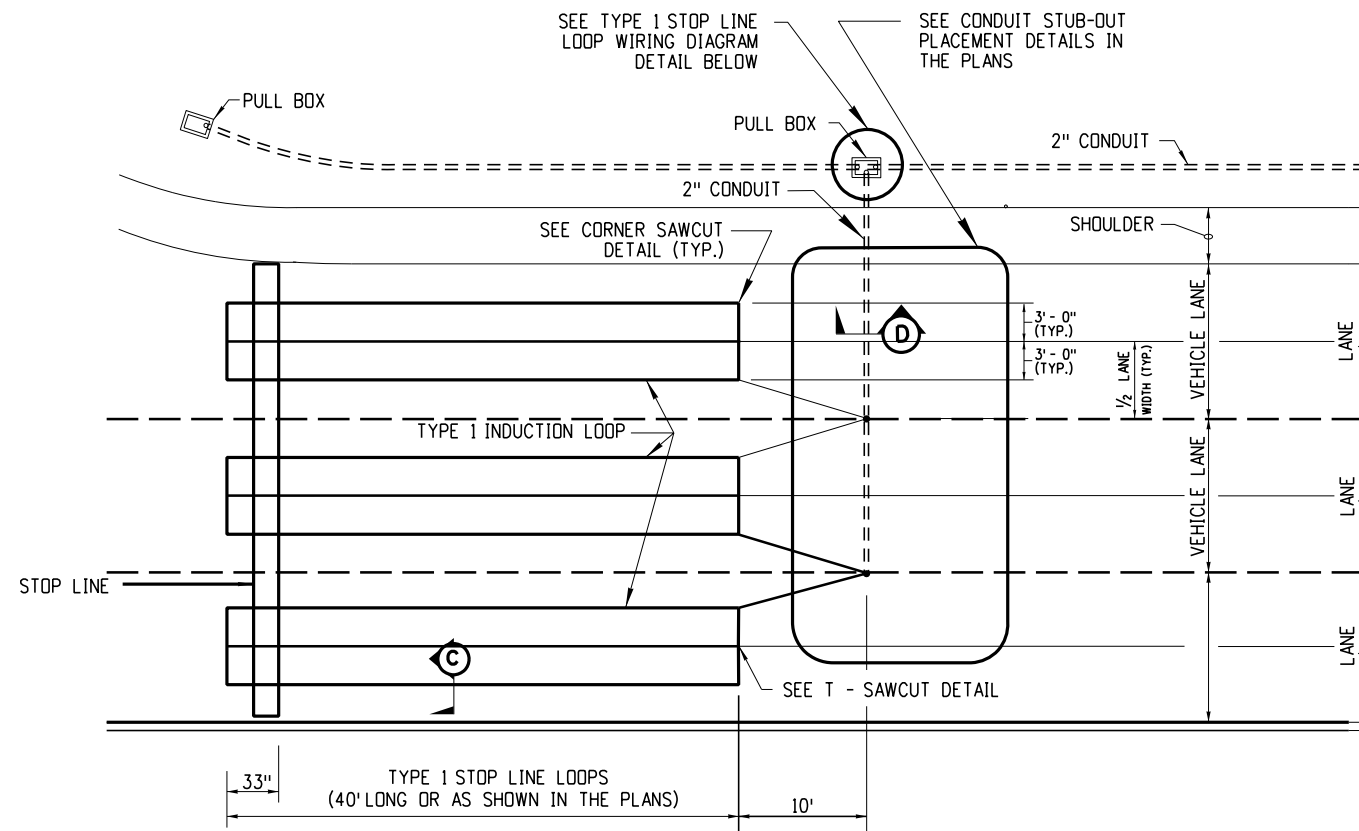
**Detector Wire Across
Bridge Joints**

Quadrapole loops shall be of the size shown
unless otherwise on the plans.

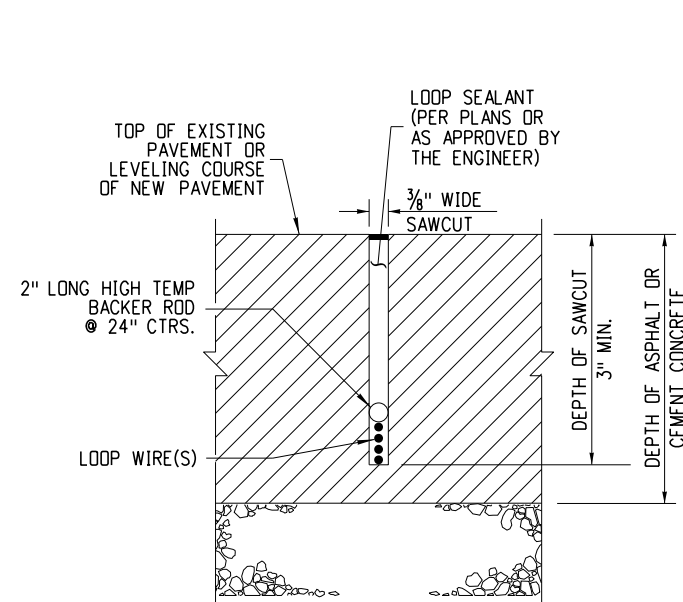


Loop Detector Lead-In

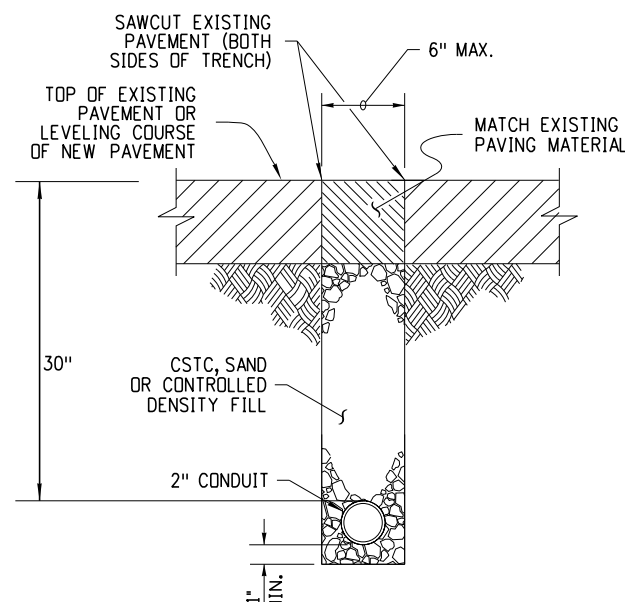
Computer File Information				Sheet Revisions		<
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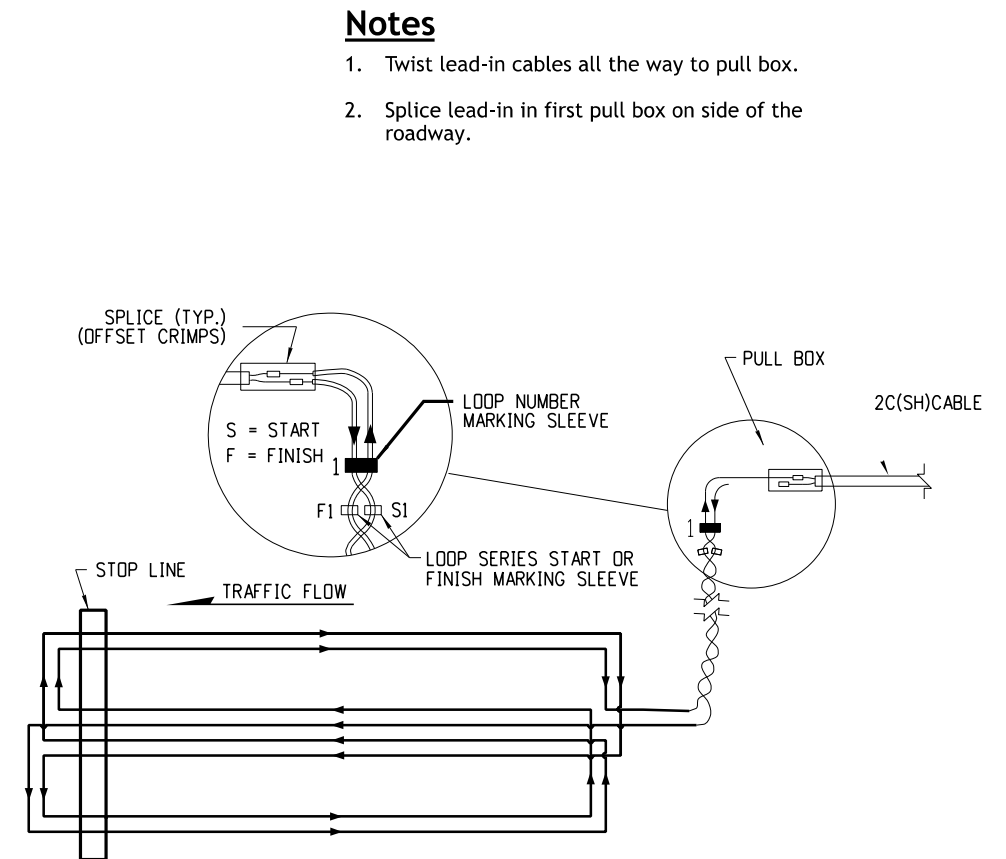
Type 1 Stop Line Loops - Plan View



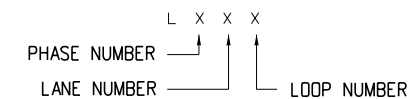
Section C-C



Section D-D

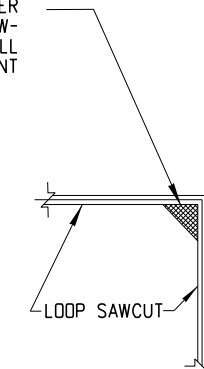


Type 1 Stop Line Loop Wiring Diagram



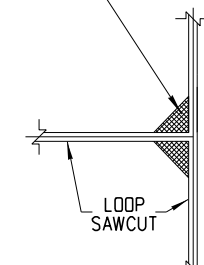
Loop Number Marking Detail

CHISEL OUT 1/8" TO 1/2" CORNER REMOVE PAVEMENT TO SAWCUT DEPTH AND FILL WITH SEALANT



Corner Sawcut Detail

CHISEL OUT 1/8" TO 1/2" CORNER REMOVE PAVEMENT TO SAWCUT DEPTH AND FILL WITH SEALANT (TYP.)



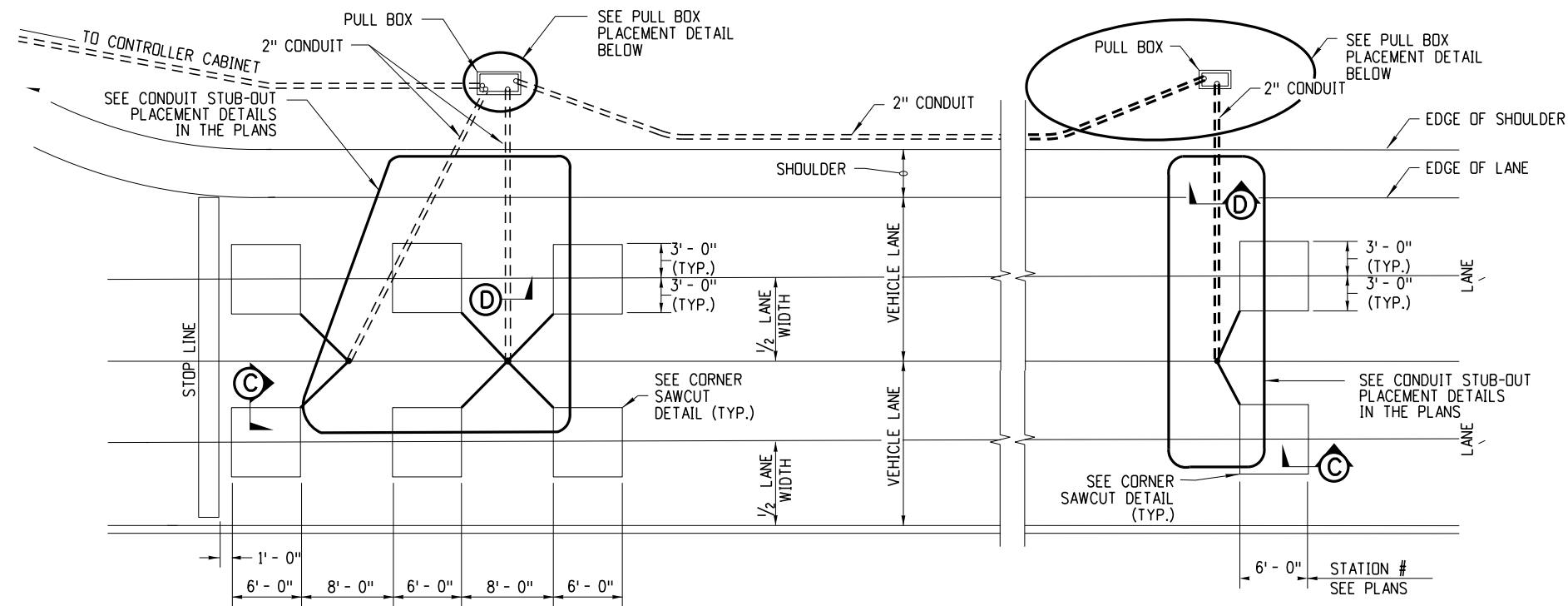
T - Sawcut Detail

Type 1 Induction Loop

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Created By: KEN						Standard Sheet No. 3 of 8
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Last Modified By: GLY						
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English						

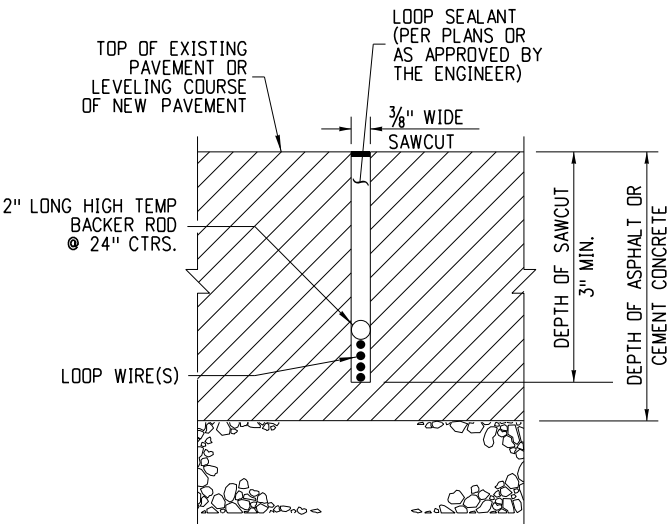
Notes

1. All of the loop lead-in wires shall return to the pull box.

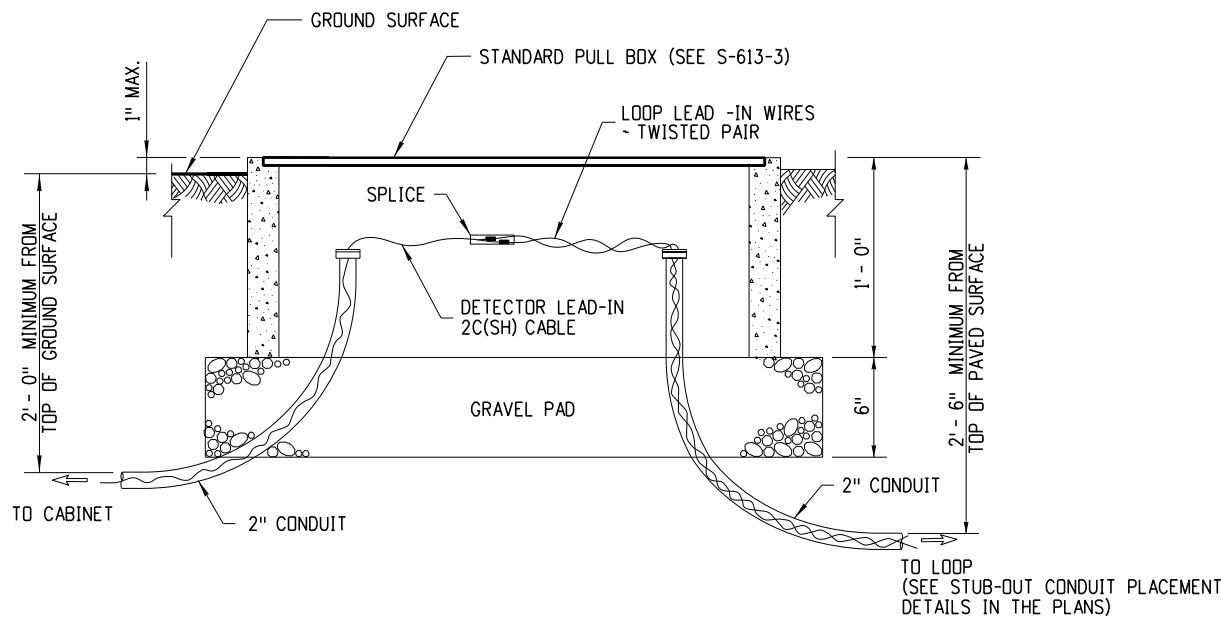


Type 2 Stop Line Loops

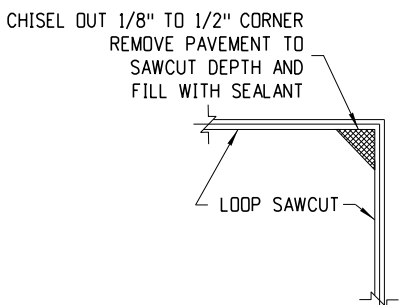
Type 2 Advance Loops



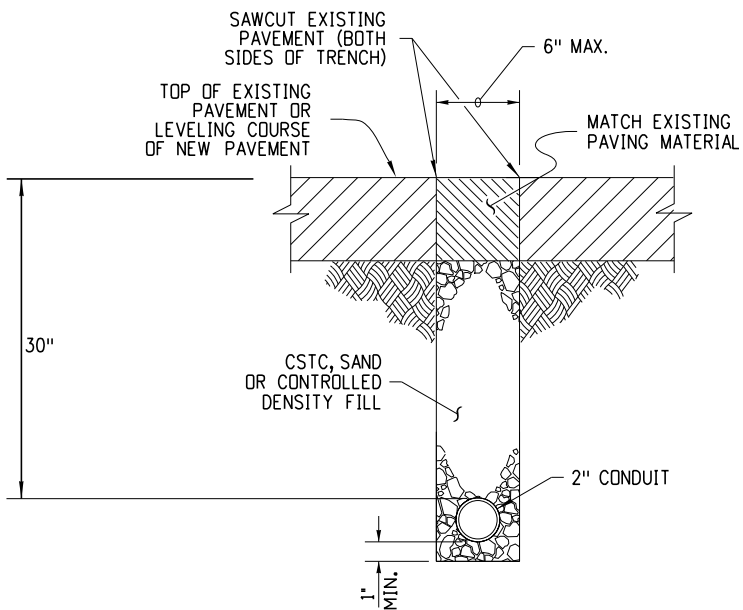
Section C-C



Pull Box Placement Detail



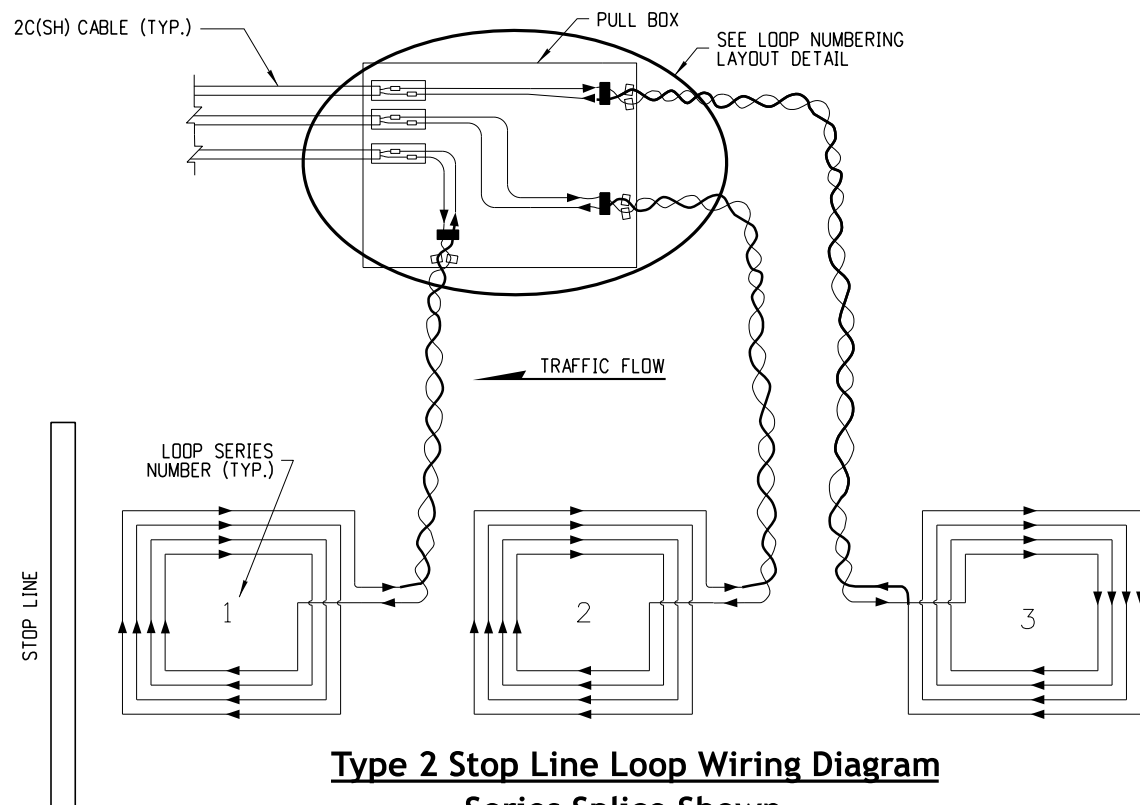
Corner Sawcut Detail



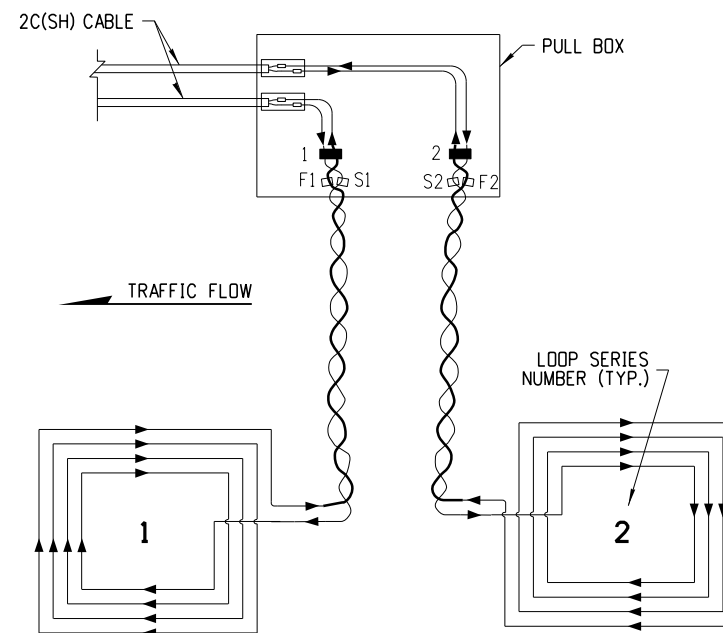
Section D-D

Type 2 Induction Loops (For conventional highways)

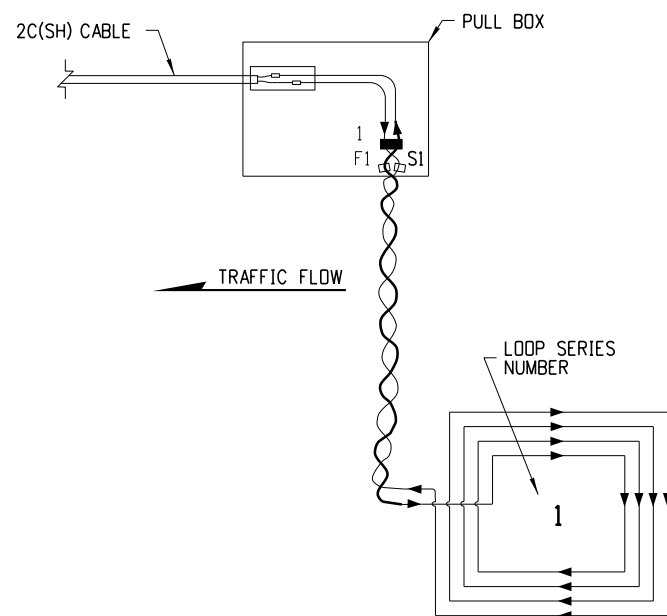
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Created By: KEN						Standard Sheet No. 4 of 8	
Last Modification Date: 07/01/26						Project Sheet Number:	
Last Modified By: GLY							
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English							



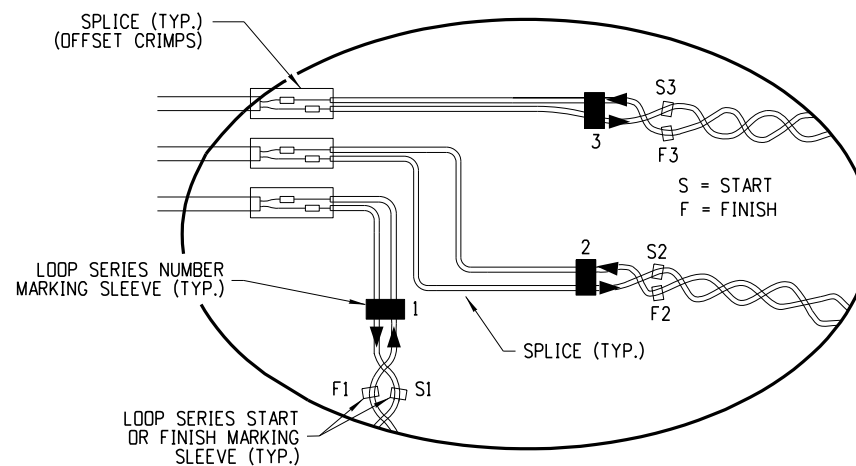
Type 2 Stop Line Loop Wiring Diagram
Series Splice Shown



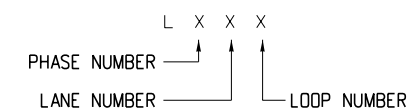
Type 2 Sampling Loop Wiring Diagram
Series Splice Shown



Type 2 Advance Loop Wiring Diagram



Loop Numbering Layout Detail



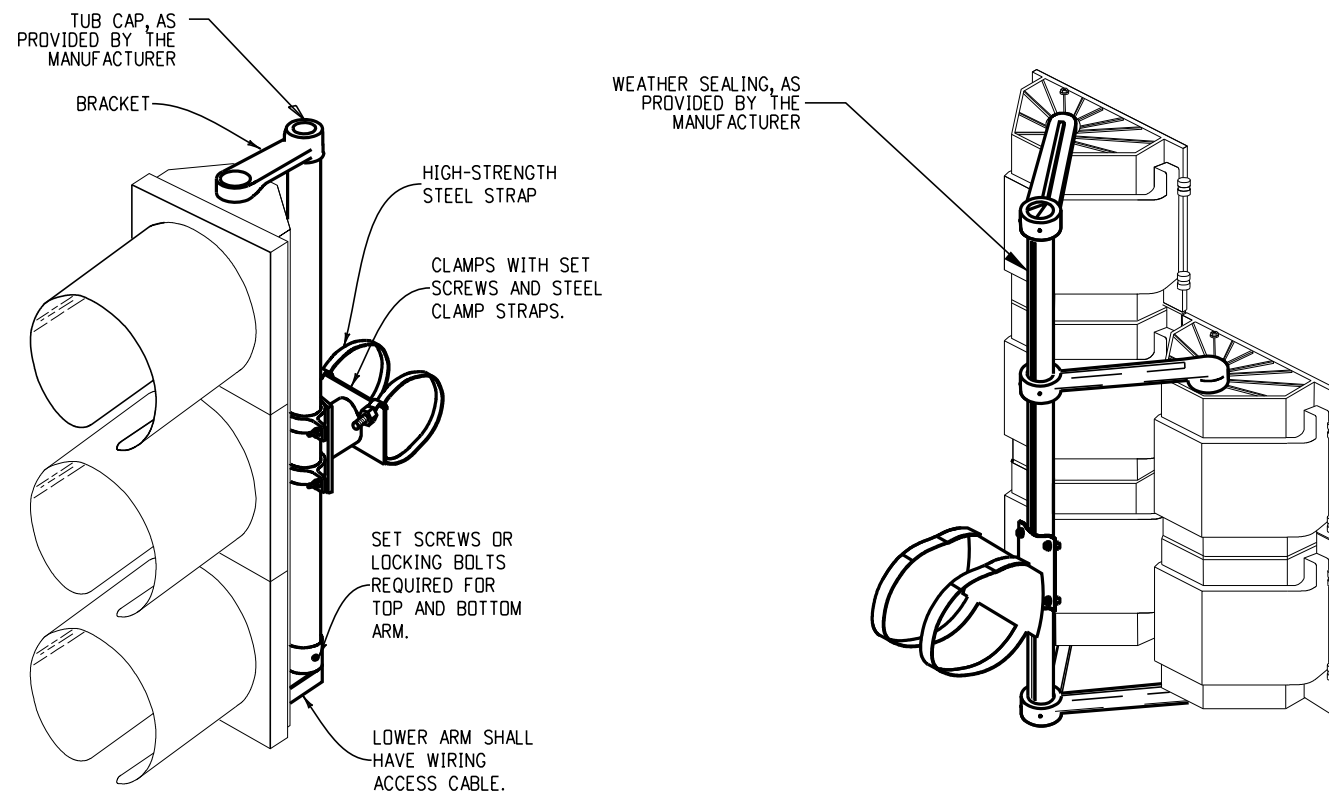
Loop Number Marking Detail

Notes

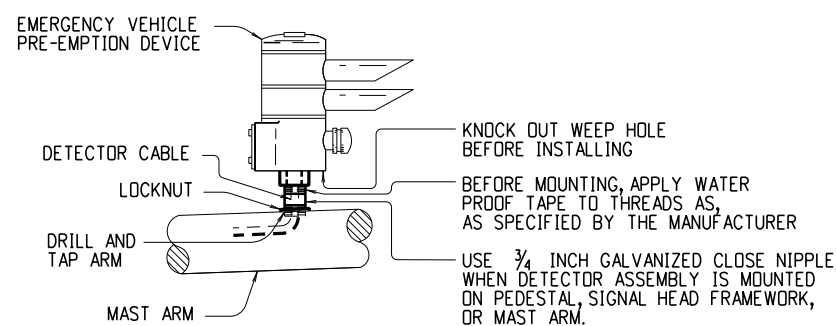
1. For wiring and conduit layout, see conduit stub-out placement detail in plans.
2. Splice lead-in in first pull box on the side of the roadway.

Type 2 Induction Loop

Computer File Information			Sheet Revisions		Colorado Department of Transportation Traffic Safety & Engineering Services 2829 West Howard Place Denver, CO 80204 EB	Traffic Loop and Miscellaneous Signal Details		Standard Plan No.	
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Created By: KEN									
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Last Modified By: GLY								Standard Sheet No. 5 of 8	
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English								Project Sheet Number:	



Astro-Type Mounting Bracket



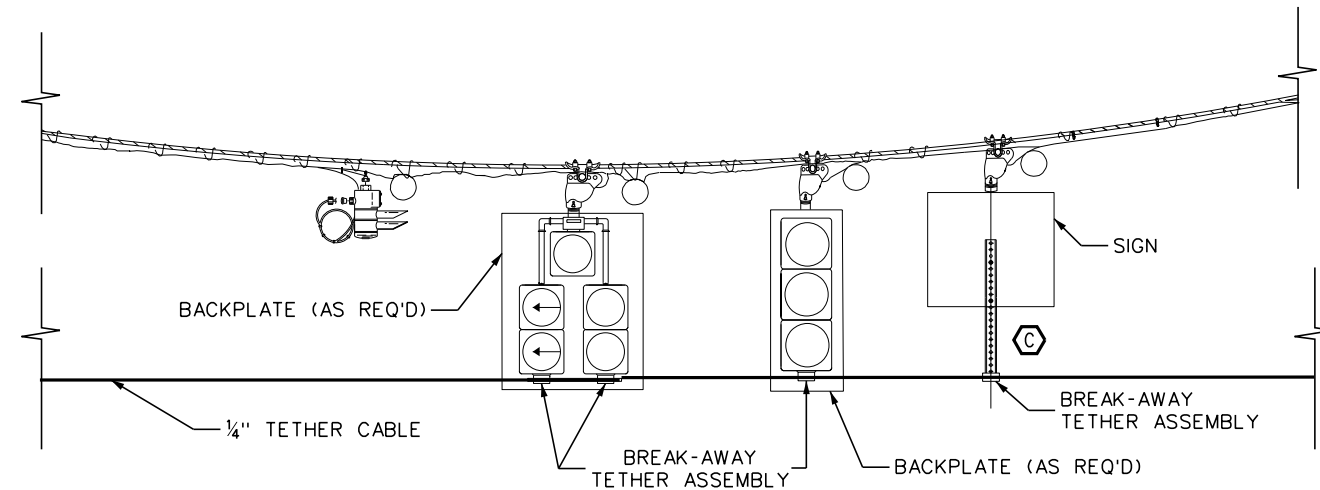
**Emergency Vehicle Pre-Emption Device
Mounting Detail**

Notes

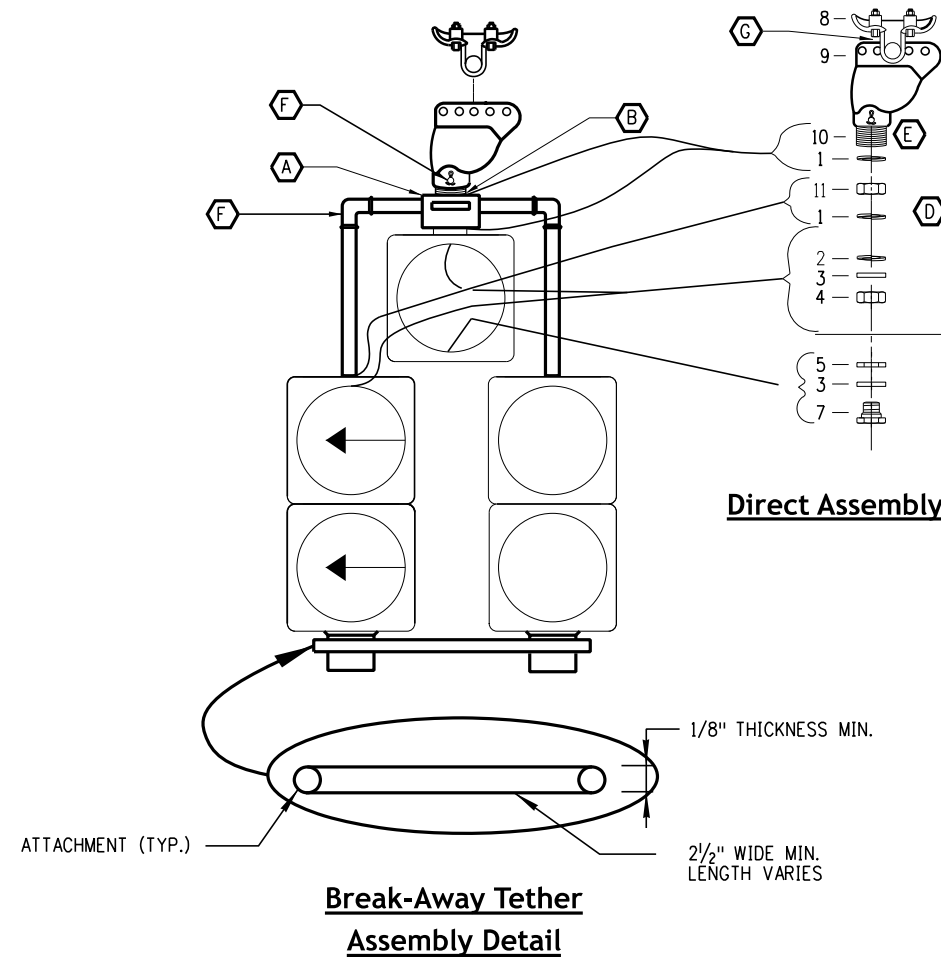
1. Signal head configurations shall be as shown on plans.
2. Install mounting brackets according to the manufacturer's instructions.
3. Use Astro-type mounting brackets for mounting except for lighted signs, on mast arms, see Standard Plan S-614-20, using 3/4 inch wide banding.
4. Lighted street name signs shall utilize Astro-type designed for the required design loading and be free-swinging to reduce wind loading effect.
5. The gasket inside the top head mount should be inside the head.
6. The inside of the visor is to be powder coated black mounting brackets overhead signs.
7. Cable support bracket and safety cable from mast arm to head shall be provided.

Mast-Arm Mounting Brackets

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Created By: KEN						Standard Sheet No. 6 of 8
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Last Modified By: GLY					Issued by the Traffic Safety & Engineering Services: July 01, 2026	
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English						

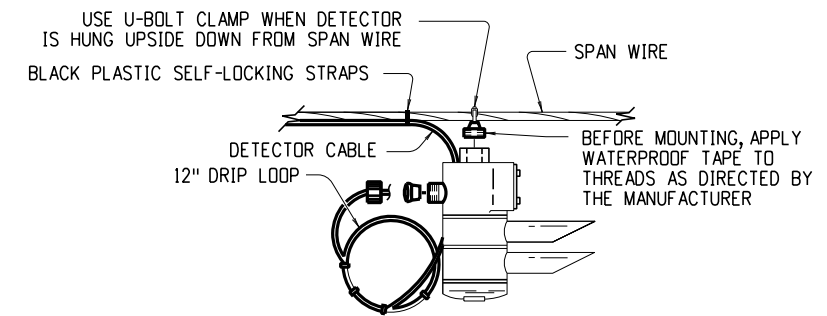


**Span Wire Hanger
Assembly Detail for
Traffic Signals**



Direct Assembly Detail

**Break-Away Tether
Assembly Detail**



**Span Wire Mounting Detail
for Emergency Vehicle Pre-Emption Device**

Legend

- A** Top bracket center hub shall be minimum 3.5 inch square and 3 inches deep or equal volume. Serration cast in hub, tabbed or serrated locking, openings shall be threaded.
- B** Nipple length depends on span height.
- C** Sign support bracket assembly shall utilize span wire clamp adjustment and be adjustable to accommodate varying span height. Tether support bar shall be attached to the sign using a minimum of two (2), 5/16 inch bolts, spaced a minimum of 6 inches apart.
- D** Apply silicone caulk between or around serrated locking and housing.
- E** All thread
- F** Setscrew (square or allen) on all fittings.
- G** Install stainless steel washer on the inside of the cotter pin. Cotter pin and washer shall be on the side of the hanger away from the signal cables.

Item Description for Assembly Detail

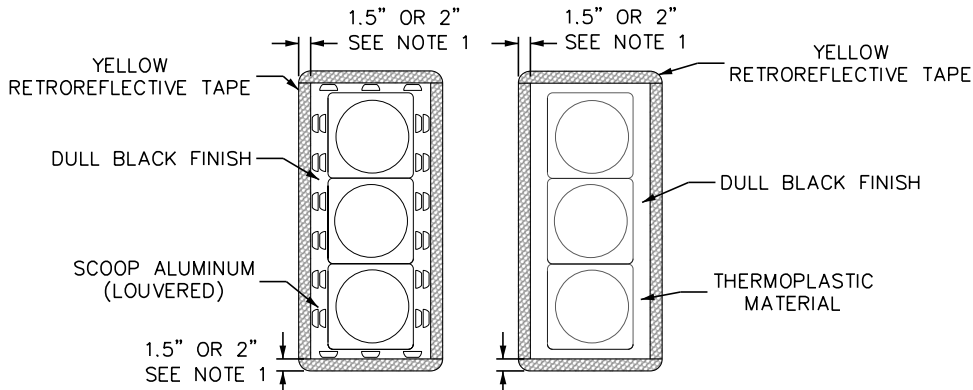
- 1 - Serrated tabbed locking, aluminum (tab must be full width of ring)
- 2 - Gasket, neoprene
- 3 - Washer, steel
- 4 - Hex nut, steel
- 5 - Conduit locknut, steel
- 6 - Bushing plastic (only in junction box or nipped down traffic signal)
- 7 - Octagonal cap, aluminum
- 8 - Span wire clamp
- 9 - Wire outlet body, steel, female only
- 10 - Nipple, steel
- 11 - Hex nut, steel, notched with setscrews

Span Wire Mounting Bracket Details

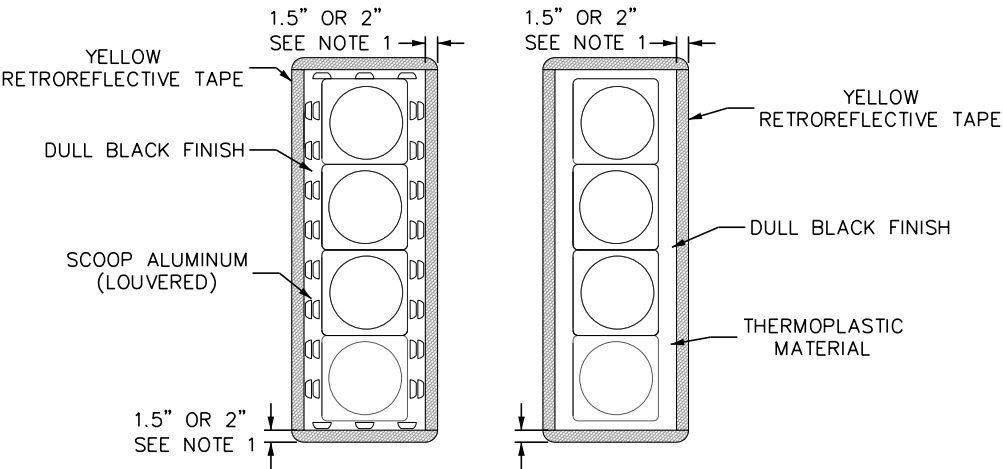
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Creation Date: 07/14/12			Date:	Comments			S-614-43	
Created By: KEN							Standard Sheet No. 7 of 8	
Last Modification Date: 07/01/26								
Last Modified By: GLY								
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English								Issued by the Traffic Safety & Engineering Services: July 01, 2026

Notes

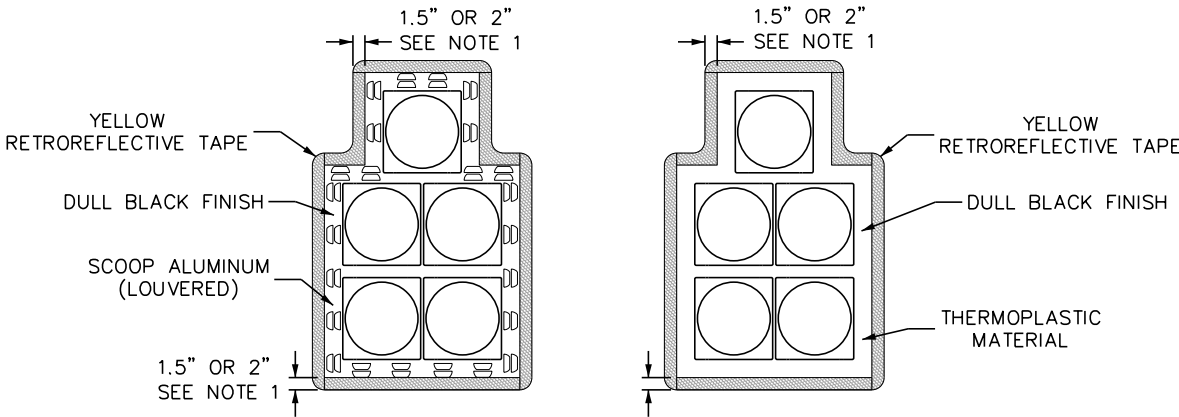
- 1. Retroreflective borders shall be 1.5 or 2 inches in thickness as shown in the project plans.
- 2. Traffic signal equipment shall obtain approval from the Engineer prior to ordering.
- 3. Retroreflective tape shall meet or exceed ASTM D4956 Type XI requirements.
- 4. Traffic signal backplates shall be installed at the locations shown in the project plans.
- 5. Traffic signal ball cap visors shall be installed with an identical color to the existing visors.
- 6. Traffic signal backplates may be field modified to fit to existing traffic signal heads.



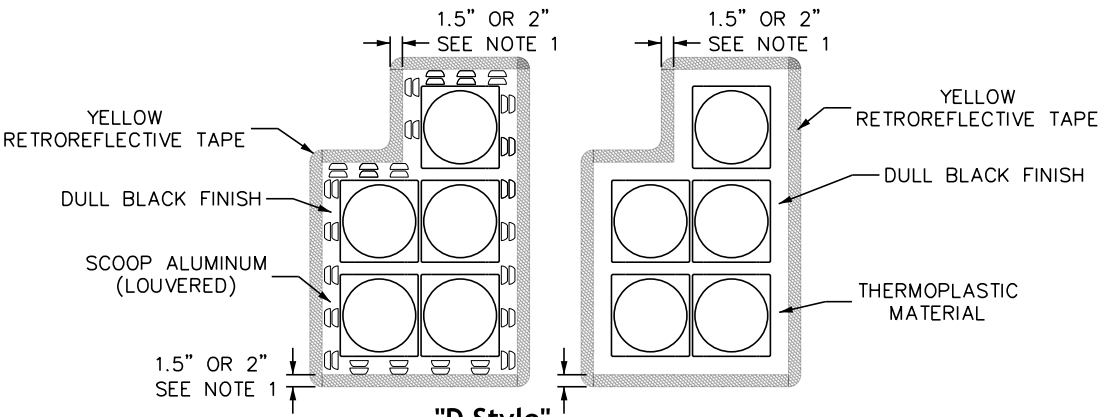
Three-Section Backplate
with Retroreflective Borders



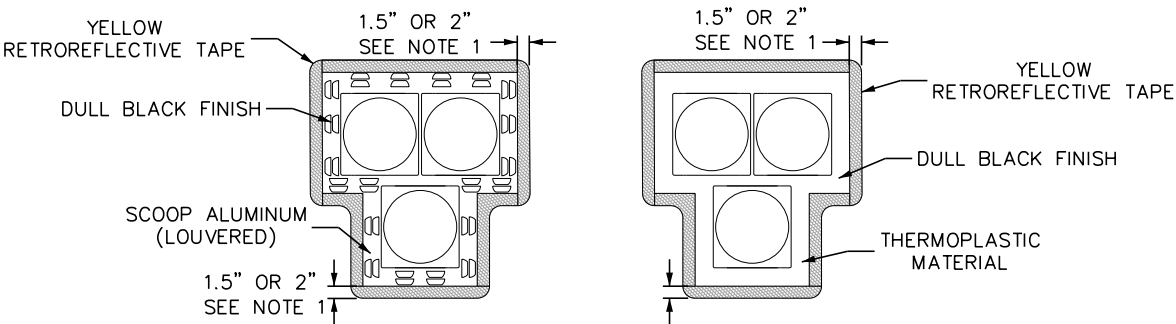
Four-Section Backplate
with Retroreflective Borders



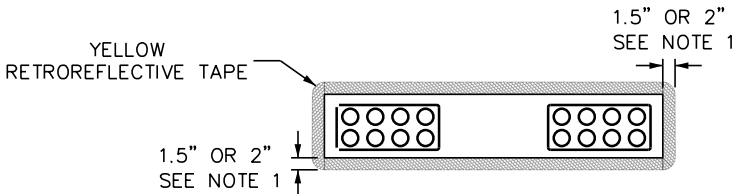
"Doghouse"
Five-Section Backplate
with Retroreflective Borders



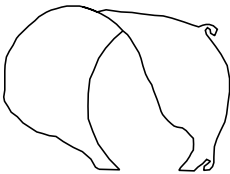
"D Style"
Five-Section Backplate
with Retroreflective Borders



Pedestrian Hybrid Beacon Backplate
with Retroreflective Borders

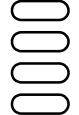


Rectangular Rapid Flashing Beacon
with Retroreflective Borders



Traffic Signal Ball Cap Visor

Typical Installation
Backplates with Retroreflective Borders

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Last Modification Date: 07/01/26		Last Modified By: GLY				Standard Sheet No. 8 of 8		
CAD Ver.: ORD 10.12 Scale: Not to Scale Units: English						Issued by the Traffic Safety & Engineering Services: July 01, 2026		Project Sheet Number: