


QUESTIONS & ANSWERS #1

TRAFFIC SIGNAL UPDATE PROJECT CIP NO. 17058 HSIPL 5242 (034)

Q.1.1. This project is per 2023 Caltrans Specs. According to Caltrans spec 87-1.03F (1) General – if new conductors/cables are added to an existing conduit – the contractor must remove the content, clean conduit and pull old/new simultaneously. Will the City allow the contractor to slip the new conductors into existing conduits or will the contractor be required to follow 87-1.03F(1)?

A.1.1. The City could consider an alternate mean and method not listed on the project special provisions as long as it meets and ensures equivalent work quality. That being said, it is important for the contractor to note that if fitting a new cable through the existing conduit is not possible for any reason, the Contractor will be asked to follow Caltrans Specifications Section 87-1.03F(1) at NO additional cost to the City.

Q.1.2. Plan Sheet SIC-5 – Contractor is directed to install (4) 1” SDR 11 into (1) 4” SDR 9 or 11. When referencing conduit a 1” – we are discussing the inner diameter of the pipe, this does not take into consideration the conduit wall thickness. The average outer diameter of a 1” SDR 11 is 1.315. Therefore, the sleeve must be upgrade to at least a 6” (**Size 5 ½” is not manufactured in SDR 9 or 11**) to accommodate (4) 1” SDR 11. (see below chart of pipe for reference)



IPS Size	Avg. OD	SDR	7	7.3	9	11	13.5
		PSI	335	320	250	200	160
3/4	1.05	Min Wall	0.150	-	0.117	0.095	0.079
		Avg ID	0.732	-	0.802	0.849	0.885
		Weight p/ft	0.180	-	0.150	0.120	0.100
1	1.315	Min Wall	0.188	0.180	0.146	0.120	0.097
		Avg ID	0.916	0.933	1.005	1.061	1.109
		Weight p/ft	0.288	0.278	0.230	0.200	0.160

A.1.2.
 For an innerduct with an outside diameter OD of 1.315” the area is 1.36 square inch, or 5.44 square inch for all 4 innerducts.
 The area for a 4” conduit with an inner diameter of 3.633” is 10.37 square inch.
 Therefore, this should leave plenty of room for the 4-1” innerducts to be inside a 4” Conduit.
 Please also see image below for a scaled drawing of the innerducts as listed above.

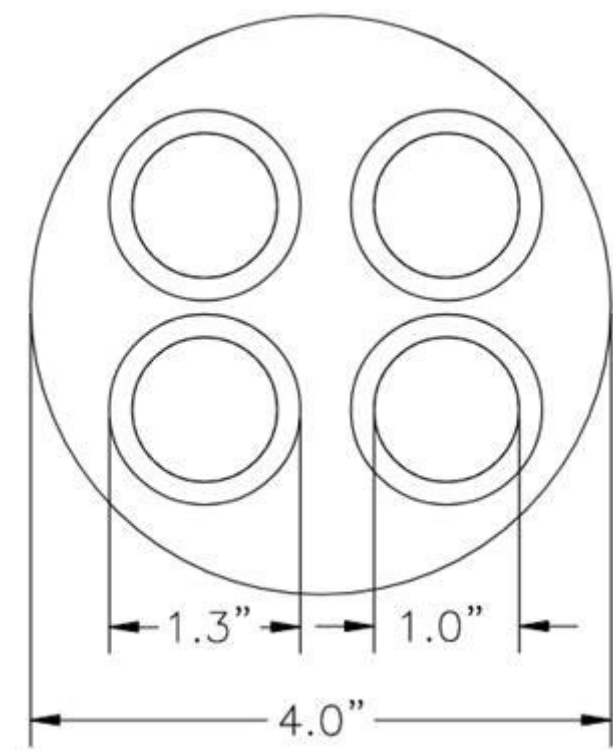
Please note the following IMPORTANT items from 2023 Caltrans Specifications Section 86-1.02B(1):
 Innerduct must be:

1. **HDPE tubing**
2. **Nominal 1 inch inside diameter, with a minimum Standard Dimension Ratio (SDR) rating of 11.**
3. **Continuous without splices or joints.**
4. **Ribbed inside and ribbed outside when used inside a conduit.**
6. **Unique color throughout the entire length of the conduit segment.**
7. **Shipped and stored on a reel, covered to protect colors from UV deterioration. The reel must be marked with:**
 - 7.1. Manufacturer's name.
 - 7.2. Contract number.
 - 7.3. Size and length of the innerduct.

High density polyethylene for innerduct must:

- 1. Comply with ASTM D3485, D3035, D2239, and D2447, and NEMA TC7 and TC2**
- 2. Have a minimum tensile yield strength of 3,300 psi under ASTM D638**
- 3. Have a density of 59.6187 lb/ft³ ± 0.3121 lb/ft³ under ASTM D1505**

Please note that these requirements are part of other requirements listed in the Project Special Provisions and Plans. This response is just meant to highlight important items for the proposed innerducts.



Please Note: The deadline to submit questions and/or inquiries was 5 p.m. Pacific Time, Tuesday March 26, 2024, as shown on SECTION 00020 INVITATION TO BID.

The City will not answer any further questions until the Bid Opening and the Contract Award as noted in the Project Special Provisions.