DESIGN OF BURIED PLANT - PHYSICAL CONSIDERATIONS

Purpose: This addendum is issued to supplement Section 640 with revised and new information relative to the design of Central Office Entrance Cables where neither a cable vault nor a splicing trough exists.

Additions: Add new Paragraphs 6.01, 6.02, 6.03, 6.04, 6.05, 6.06, 6.07, Figure 2, Table I and Table II.

6. CENTRAL OFFICE ENTRANCE CABLES

6.01 Entrance cables may be installed in the air, directly buried, or placed in underground conduit. The type of installation selected should depend on physical conditions and other circumstances. The engineer should prepare detailed plans for this construction. Where clearance and appearance conditions are not controlling factors, aerial type entries should be satisfactory. However, if an underground entrance is required, cable may be buried directly in the ground or placed in underground conduit.

6.02 Where direct burial entrance is preferable, cables manufactured to REA Specification PE-39, "Filled Telephone Cable", should be specified, unless the direct buried cable is to be pressurized, then cables manufactured to REA Specification PE-23 should be used for this application.

6.03 Where an underground conduit entrance is selected, non-pressurized entrance cables should meet REA Specification PE-39 and pressurized entrance cables should meet REA Specification PE-22.

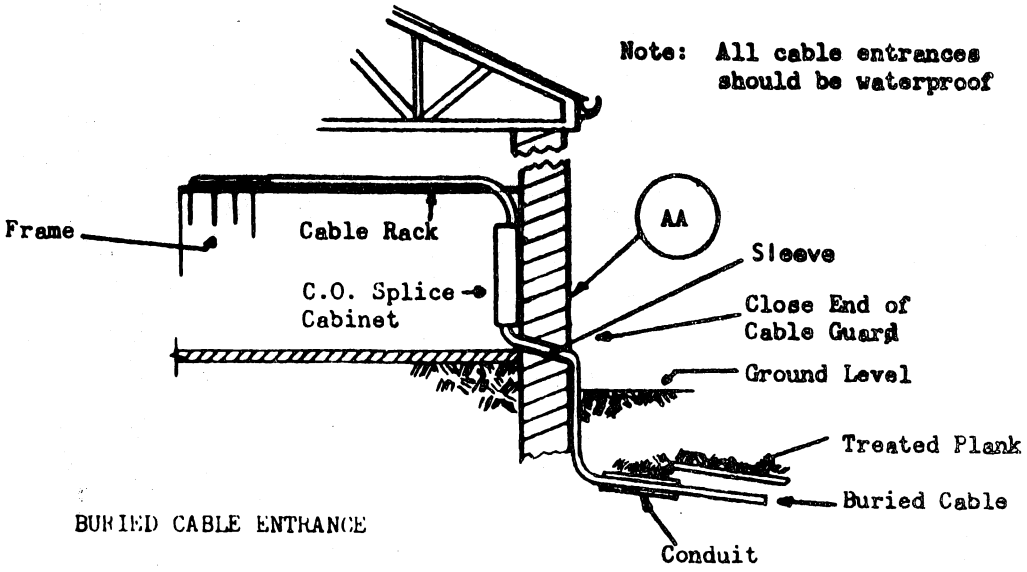
6.04 In the future, as a fire safety precaution, B type main distribution frames, which terminate the entrance cables on the vertically mounted protectors, should be spliced with PVC jacketed tip cables (refer to TE&CM 810, paragraph 2.4). These tip cables must also be spliced to the entrance cables, either in the splicing vault under the floor, or in a wall mounted metal cabinet. The engineer should select the method.

6.05 In the event that neither a cable vault nor a splicing trough exists, the new entrance cable should be routed to the building to enter at a point as close as practicable to the main frame. The entrance cable should enter through the wall into a cabinet mounted on the inside of the wall near the main frame. The entrance cable should be spliced within the cabinet to the PVC jacketed type tip cable which would be routed through the top of the cabinet and run directly overhead to the main frame. This type entrance is relatively inexpensive, provides good accessibility for checking shield bonding and makes it easy to bring in more cables in the future.

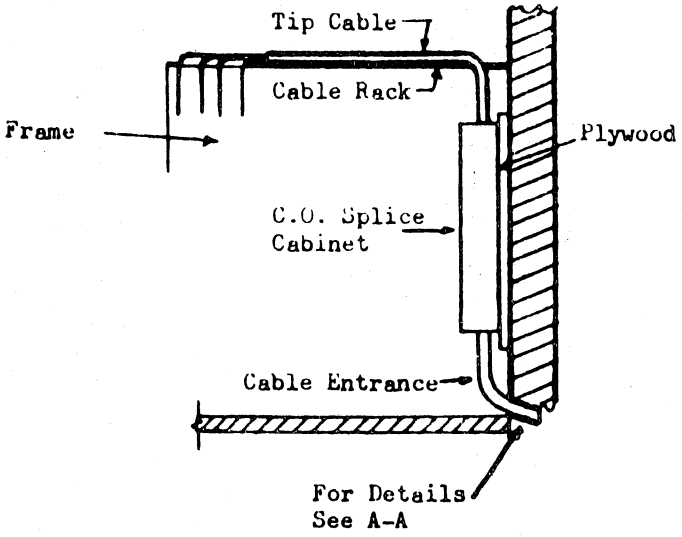
6.06 Where underground conduit entrances are planned, reference can be made to REA TE&CM 643 for details of such construction.

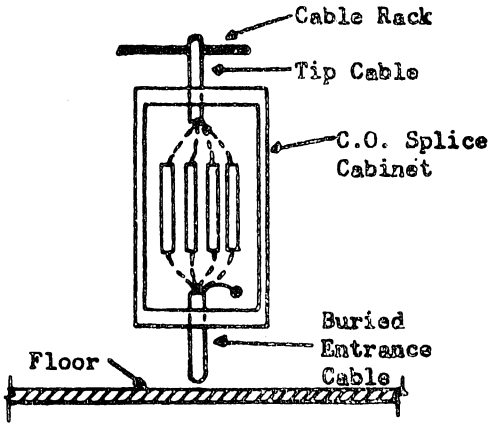
6.07 For description of the assembly unit covering the central office cable entrance, refer to the appropriate specifications in the REA Form 511.

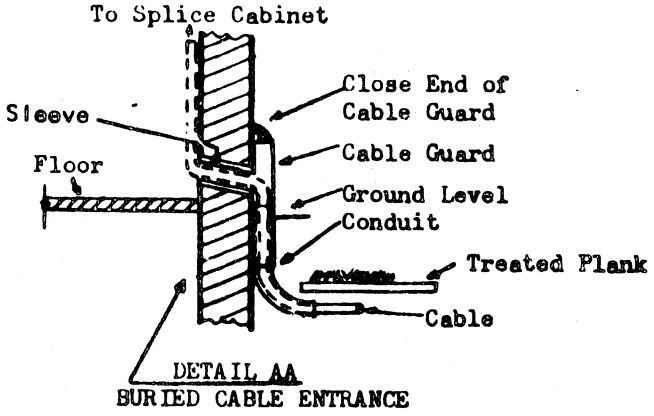
CENTRAL OFFICE BURIED CABLE ENTRANCE



BURIED CABLE ENTRANCE







BURIED CABLE ENTRANCE

SLEEVES
Sleeve or hole in wall shall be of proper size as needed to accommodate cable. See Table I for size and diameter of cables.
Entrance above ground place sleeve, or cut hole to take cable
Sleeve may be of galvanized pipe, plastic duct, clay duct or sewer tile.

Figure 2

PLASTIC SHEATHED AND PLASTIC INSULATED CABLES (AIR CORE)*

Number of Pairs	Approx. Diameter and Weight per Unit Length								Approx. Reel Length			
	26 Gauge		24 Gauge		22 Gauge		19 Gauge		26 Gauge	24 Gauge	22 Gauge	19 Gauge
	in.	lb/ft	in.	lb/ft	in.	lb/ft	in.	lb/ft	FEET	FEET	FEET	FEET
6	--	--	0.37	0.055	0.40	0.073	0.51	0.11	---	5000	5000	2500
12	--	--	0.44	0.086	0.49	0.11	0.62	0.18	---	10000	10000	2500
18	--	--	0.47	0.11	0.56	0.15	0.73	0.26	---	10000	10000	2500
25	0.46	0.098	0.53	0.14	0.63	0.20	0.82	0.34	10000	5000	5000	2500
50	0.57	0.16	0.68	0.24	0.80	0.34	1.12	0.63	10000	5000	5000	2500
75	0.65	0.22	0.77	0.33	0.94	0.50	1.29	0.90	5000	5000	5000	2500
100	0.72	0.28	0.85	0.42	1.07	0.61	1.47	1.18	5000	5000	2500	1200
150	0.86	0.41	1.03	0.60	1.28	0.92	1.80	1.75	5000	2500	2500	1200
200	0.96	0.52	1.21	0.82	1.45	1.22	2.03	2.26	2500	2500	1200	1200
300	1.13	0.75	1.43	1.14	1.74	1.78	2.47	3.42	2500	2500	1200	1200
400	1.26	0.97	1.59	1.49	1.98	2.32	2.82	4.47	1200	1200	1200	1200
600	1.52	1.42	1.93	2.20	2.44	3.49	--	--	1200	1200	1200	--
900	1.83	2.04	2.37	3.29	--	--	--	--	1200	1200	--	--
1200	2.13	2.74	2.86	4.42	--	--	--	--	1200	1200	--	--
1500	2.36	3.36	2.95	5.42	--	--	--	--	1200	1200	--	--
1800	2.56	4.01	3.19	6.46	--	--	--	--	1200	750	--	--
	cm.	kg/m	cm.	kg/m	cm.	kg/m	cm.	kg/m	METERS	METERS	METERS	METERS
6	--	--	0.94	0.08	1.02	0.11	1.30	0.16	--	1524	1524	762
12	--	--	1.12	0.13	1.24	0.16	1.57	0.27	--	3048	3048	762
18	--	--	1.19	0.16	1.42	0.22	1.85	0.39	--	3048	3048	762
25	1.17	0.15	1.35	0.21	1.60	0.30	2.08	0.51	3048	1524	1524	762
50	1.45	0.24	1.73	0.36	2.03	0.51	2.79	0.94	3048	1524	1524	762
75	1.65	0.38	1.96	0.49	2.39	0.74	3.28	1.34	1524	1524	1524	762
100	1.83	0.42	2.16	0.63	2.72	0.91	3.73	1.76	1524	1524	762	366
150	2.18	0.61	2.62	0.89	3.25	1.37	4.57	2.60	1524	762	762	366
200	2.44	0.77	3.07	1.22	3.68	1.82	5.16	3.36	762	762	366	366
300	2.87	1.12	3.63	1.70	4.42	2.65	6.27	5.09	762	762	366	366
400	3.20	1.44	4.04	2.22	5.03	3.45	7.16	6.65	366	366	366	366
600	3.86	2.11	4.90	3.27	6.20	5.19	--	--	366	366	366	--
900	4.65	3.04	6.02	4.90	--	--	--	--	366	366	--	--
1200	5.41	4.08	7.26	6.58	--	--	--	--	366	366	--	--
1500	5.99	5.00	7.49	8.07	--	--	--	--	366	366	--	--
1800	6.50	5.97	8.10	9.61	--	--	--	--	366	229	--	--

*Shield: .008 inch coated aluminum

TABLE I

CABLE SIZES, WEIGHTS AND REEL LENGTHS PE-39

PLASTIC SHEATHED AND PLASTIC INSULATED CABLE (FILLED CORE)*

Number of Pairs	Approx. Diameter and Weight Per Unit Length								Approx. Reel Length			
	26 Gauge		24 Gauge		22 Gauge		19 Gauge		26 Gauge	24 Gauge	22 Gauge	19 Gauge
	in.	lb/ft	in.	lb/ft	in.	lb/ft	in.	lb/ft	FEET	FEET	FEET	FEET
6	--	--	0.41	0.078	0.44	0.092	0.51	0.15	--	5000	5000	5000
12	--	--	0.49	0.11	0.54	0.14	0.71	0.25	--	5000	5000	5000
18	--	--	0.53	0.14	0.63	0.20	0.82	0.35	--	5000	5000	2500
25	0.50	0.12	0.61	0.18	0.70	0.26	0.92	0.47	5000	5000	5000	2500
50	0.62	0.20	0.76	0.32	0.90	0.45	1.29	0.87	5000	5000	5000	2500
75	0.70	0.23	0.88	0.43	1.09	0.66	1.57	1.30	5000	5000	5000	2500
100	0.77	0.34	0.99	0.56	1.22	0.84	1.73	1.63	5000	2500	2500	2500
150	0.93	0.50	1.19	0.81	1.48	1.25	2.09	2.42	2500	2500	2500	1250
200	1.08	0.67	1.44	1.42	1.66	1.61	2.37	3.20	2500	2500	2500	1250
300	1.26	0.93	1.62	1.55	2.01	2.37	2.79	4.60	1250	2500	2500	1250
400	1.43	1.22	1.86	2.04	2.30	3.18	--	--	1250	1250	1250	--
600	1.74	1.81	2.29	3.06	2.81	4.63	--	--	1250	1250	1250	--
900	2.05	2.61	2.75	4.49	--	--	--	--	1250	1200	--	--
1200	2.34	3.42	--	--	--	--	--	--	1250	--	--	--
	cm.	kg/m	cm.	kg/m	cm.	kg/m	cm.	kg/m	METERS	METERS	METERS	METERS
6	--	--	1.04	0.12	1.12	0.14	1.30	0.22	--	1524	1524	1524
12	--	--	1.24	0.16	1.37	0.21	1.80	0.37	--	1524	1524	1524
18	--	--	1.35	0.21	1.60	0.30	2.08	0.52	--	1524	1524	762
25	1.27	0.18	1.55	0.27	1.78	0.39	2.34	0.70	1524	1524	1524	762
50	1.57	0.30	1.93	0.48	2.29	0.67	3.28	1.29	1524	1524	1524	762
75	1.78	0.34	2.24	0.64	2.77	0.98	3.99	1.93	1524	1524	1524	762
100	1.96	0.51	2.51	0.83	3.10	1.25	4.39	2.43	1524	762	762	762
150	2.36	0.74	3.02	1.21	3.76	1.86	5.31	3.60	762	762	762	381
200	2.74	1.00	3.66	2.11	4.22	2.40	6.02	4.76	762	762	762	381
300	3.20	1.38	4.11	2.31	5.11	3.53	7.09	6.85	381	762	762	381
400	3.63	1.82	4.72	3.04	5.84	4.73	--	--	381	381	381	--
600	4.42	2.69	5.82	4.55	7.14	6.89	--	--	381	381	381	--
900	5.21	3.88	6.99	6.68	--	--	--	--	381	366	--	--
1200	5.94	5.09	--	--	--	--	--	--	381	--	--	--

*Shield: .008 inch coated aluminum

TABLE II