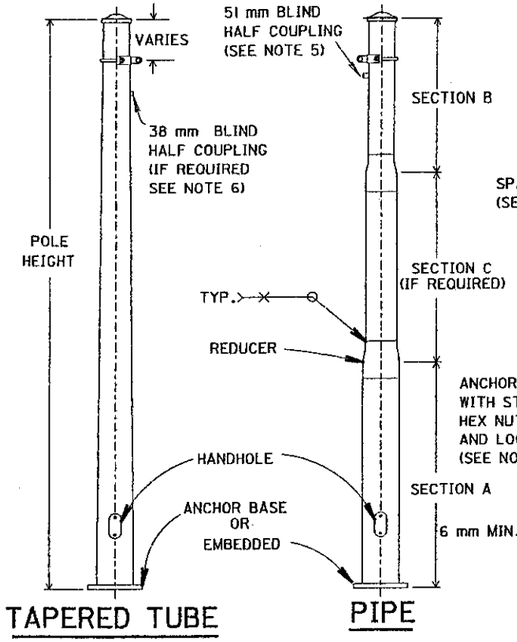
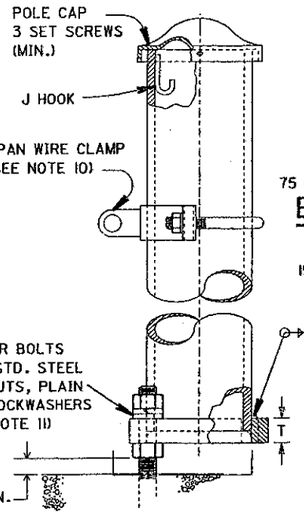
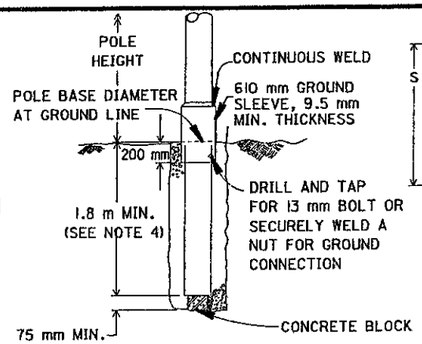


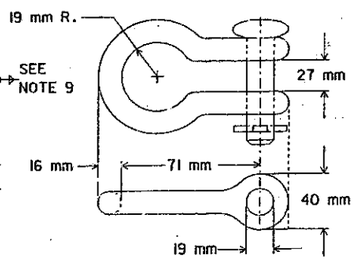
TAPERED TUBE PIPE



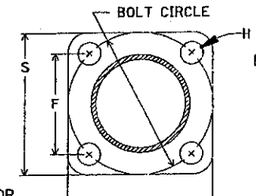
POLE DETAILS



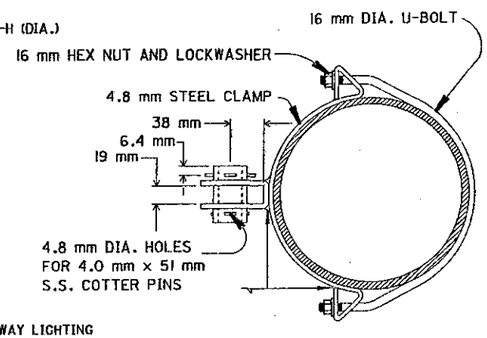
EMBEDDED POLE DETAILS

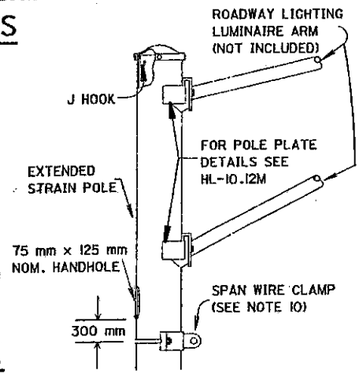


ANCHOR TYPE SHACKLE

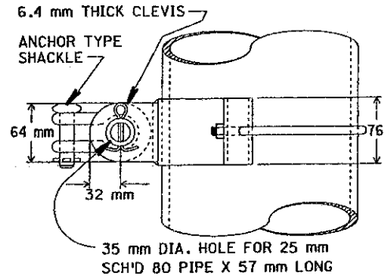


BASE PLATE





COMBINATION POLE



SPAN WIRE CLAMP

NOTES

1. TAPERED TUBE SHALL BE STEEL WITH A MINIMUM OF 379.2 MPa YIELD STRESS AFTER GALVANIZING.
2. PIPE SHALL BE ASTM A36M STEEL WITH A MINIMUM OF 248.2 MPa YIELD STRESS AFTER GALVANIZING.
3. PIPE SHALL BE GRADE X52 STEEL OF THE AMERICAN PETROLEUM INSTITUTE STANDARD 5LX, WITH A MINIMUM OF 358.2 MPa YIELD STRESS AFTER GALVANIZING.
4. THE EMBEDDED PORTION OF THE POLE MAY BE EXTENDED TO WITHIN 75 mm OF THE FOUNDATION BOTTOM IN LIEU OF PROVIDING REINFORCING STEEL AS SHOWN ON TC-21.20M. THE BASE DIAMETER IS THE POLE AT THE GROUND LINE.
5. SIGNAL CABLE ENTRANCE SHALL BE A 51 mm BLIND HALF COUPLING PROVIDED IN EACH POLE.
6. SERVICE WIRE ENTRANCE SHALL BE A 38 mm BLIND HALF COUPLING, WHEN REQUIRED BY THE PLANS. ORIENTATION AND HEIGHT SHALL BE AS REQUIRED BY THE PLANS.
7. SPAN WIRE CLAMP SHALL BE GALVANIZED STEEL, CAPABLE OF RESISTING A LOAD OF 5670 KILOGRAMS MINIMUM WITHOUT PERMANENT DISTORTION.
8. FOR FOUNDATION DETAILS, SEE DRAWING TC-21.20M.
9. THE BASE PLATE SHALL BE WELDED TO TWO PLY POLES WITH AWS PREQUALIFIED WELDS IN CONFORMANCE WITH 730.04.
10. ALTERNATE MESSENGER WIRE ASSEMBLY (WRAPPING) AS SHOWN ON TC-17.10M OR TC-84.20M MAY BE USED IN LIEU OF THE SPAN WIRE CLAMP.
11. A MINIMUM OF ONE FULL BOLT THREAD SHALL REMAIN ABOVE THE ANCHOR NUT.
12. ALL UNUSED COUPLINGS SHALL BE PROVIDED WITH A REMOVABLE GALVANIZED CAST IRON PLUG.
13. DESIGNS 1 THRU 5 SHALL BE ASTM A595M STEEL WITH A MINIMUM OF 379.2 MPa YIELD STRENGTH AFTER GALVANIZING. DESIGNS 6 THRU 12 SHALL BE ASTM A572M GRADE 65 STEEL WITH A MINIMUM OF 447.8 MPa YIELD STRENGTH AFTER GALVANIZING.
14. FOR CONSTRUCTION DETAILS AND LOCATION OF HANDHOLES, SEE DRAWING TC-22.10M.

ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.

* DIAMETER EQUAL TO ABUTTING PIPE.

DESIGN NO.	POLE HEIGHT (meters)	TAPERED TUBE BASE MOMENT AT YIELD (kN·m)	TAPERED (NOTE 1)		TAPERED (NOTE 13)			A 36 PIPE (NOTE 2)					API GRADE X52 PIPE (NOTE 3)					ANCHOR BASE					ANCHOR BOLT	
			BASE DIA.	MIN. WALL THICKNESS	BASE DIA.	MIN. WALL THICKNESS	NO. OF SIDES	SECTION	DIA.	LENGTH (meters)	WALL THICKNESS	REDUCER TYPE *	SECTION	DIA.	LENGTH (meters)	WALL THICKNESS	REDUCER TYPE *	BOLT CIRCLE	F	S	T	H	DIA.	LENGTH (meters)
1	6.1	53.6	178	6.07	178	6.07	NA	B	127	3.0	7.92	SCH.80	B	127	3.0	5.56	SCH.80	254	179	267	32	41	32	1.1
								A	152	3.0	12.70		A	152	3.0	7.92								
2	7.3	90.9	229	6.07	229	6.07	NA	B	152	3.7	9.53	SCH.80	B	152	3.7	6.35	SCH.40	318	225	324	38	48	38	1.4
								A	203	3.7	12.70		A	203	3.7	8.18								
3	7.9	113.1	254	6.07	254	6.07	NA	B	203	4.0	7.04	SCH.30	B	203	4.0	4.78	SCH.40	343	243	359	38	48	38	1.4
								A	254	4.0	9.27		A	254	4.0	6.35								
4	7.9	137.0	279	6.07	279	6.07	NA	B	203	4.0	7.92	SCH.40	B	203	4.0	5.16	SCH.40	381	270	397	51	54	44	2.1
								A	254	4.0	12.27		A	254	4.0	7.09								
5	9.1	164.1	305	6.07	305	6.07	NA	B	203	2.7	5.16	SCH.20	B	203	2.7	4.78	SCH.40	406	287	432	51	54	44	2.1
								C	254	3.0	7.80	SCH.30	C	254	3.0	5.16	SCH.40							
								A	305	3.4	9.53		A	305	3.4	6.35								
6	9.1	202.0	305	7.59	305	6.35	10	B	203	2.4	5.56	SCH.20	B	203	3.0	4.78	SCH.40	406	287	432	51	54	44	2.1
								C	254	3.0	9.27	SCH.40	C	254	3.0	7.09	SCH.40							
								A	305	3.7	12.70		A	305	3.0	7.92								
7	9.1	238.7	330	7.59	330	6.35	12	B	203	3.0	9.53	SCH.60	B	203	3.0	6.35	SCH.40	457	324	470	51	60	51	2.3
								C	254	3.0	12.70	SCH.60	C	254	3.0	8.74	SCH.40							
								A	305	3.0	14.27		A	305	3.0	9.53								
8	9.1	279.3	356	7.59	381	5.56	14	B	203	2.7	9.53	SCH.60	B	203	3.0	7.04	SCH.80	508	359	521	51	60	51	2.3
								C	254	3.0	14.27	SCH.80	C	254	3.0	11.13	SCH.80							
								A	305	3.4	17.48		A	305	3.0	11.13								
9	9.1	309.2	305	12.14 (2 PLY)	375	6.35	14	B	203	2.4	10.31	SCH.60	B	203	3.0	7.92	SCH.80	559	394	584	64	60	51	2.3
								C	254	3.0	15.09	SCH.80	C	254	3.0	11.13	SCH.80							
								A	305	3.7	19.05		A	305	3.0	12.70								
10	9.8	366.1	330	12.14 (2 PLY)	406	6.35	16	B	203	2.4	10.31	SCH.60	B	203	2.4	6.35	SCH.80	559	394	584	64	67	57	2.3
								C	254	3.4	18.26	SCH.100	C	254	3.7	12.70	SCH.80							
								A	305	4.0	25.40		A	305	3.7	14.27								
11	9.8	428.5	356	12.14 (2 PLY)	394	7.95	14	B	203	2.7	14.27	SCH.100	B	203	2.4	7.92	SCH.80	559	394	584	64	67	57	2.3
								C	254	3.4	25.40	SCH.40	C	254	3.7	15.09	SCH.80							
								A	305	3.7	28.58		A	305	3.7	17.48								
12	9.8	522.1	356	15.19 (2 PLY)	438	7.95	16	B	254	2.7	11.13	SCH.60	B	254	2.4	6.35	SCH.80	597	422	622	64	73	64	2.9
								C	305	3.4	19.05	SCH.100	C	305	3.7	12.70	SCH.80							
								A	356	3.7	27.79		A	356	3.7	17.48								

metric units

OFFICE OF TRAFFIC ENGINEERING
DIVISION OF ENGINEERING POLICY
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

DATE
11-24-93
12-10-96

STRAIN POLE DETAILS

STANDARD CONSTRUCTION DRAWING TC-81.10M

APPROVED _____ ADMINISTRATOR