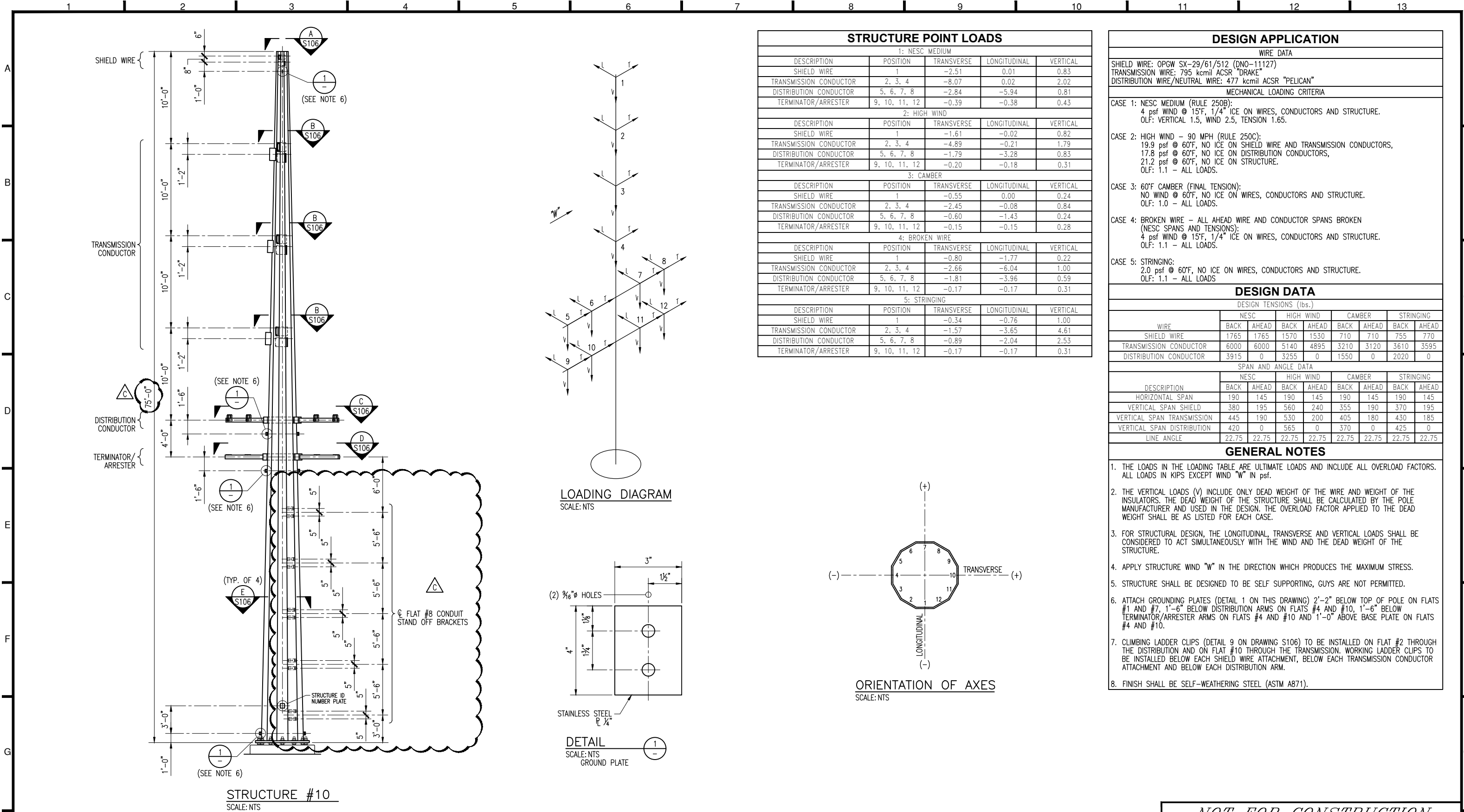




STRUCTURE POINT LOADS				
1: NESC MEDIUM				
DESCRIPTION	POSITION	TRANSVERSE	LONGITUDINAL	VERTICAL
SHIELD WIRE	1	-2.51	0.01	0.83
TRANSMISSION CONDUCTOR	2, 3, 4	-8.07	0.02	2.02
DISTRIBUTION CONDUCTOR	5, 6, 7, 8	-2.84	-5.94	0.81
TERMINATOR/ARRESTER	9, 10, 11, 12	-0.39	-0.38	0.43
2: HIGH WIND				
DESCRIPTION	POSITION	TRANSVERSE	LONGITUDINAL	VERTICAL
SHIELD WIRE	1	-1.61	-0.02	0.82
TRANSMISSION CONDUCTOR	2, 3, 4	-4.89	-0.21	1.79
DISTRIBUTION CONDUCTOR	5, 6, 7, 8	-1.79	-3.28	0.83
TERMINATOR/ARRESTER	9, 10, 11, 12	-0.20	-0.18	0.31
3: CAMBER				
DESCRIPTION	POSITION	TRANSVERSE	LONGITUDINAL	VERTICAL
SHIELD WIRE	1	-0.55	0.00	0.24
TRANSMISSION CONDUCTOR	2, 3, 4	-2.45	-0.08	0.84
DISTRIBUTION CONDUCTOR	5, 6, 7, 8	-0.60	-1.43	0.24
TERMINATOR/ARRESTER	9, 10, 11, 12	-0.15	-0.15	0.28
4: BROKEN WIRE				
DESCRIPTION	POSITION	TRANSVERSE	LONGITUDINAL	VERTICAL
SHIELD WIRE	1	-0.80	-1.77	0.22
TRANSMISSION CONDUCTOR	2, 3, 4	-2.66	-6.04	1.00
DISTRIBUTION CONDUCTOR	5, 6, 7, 8	-1.81	-3.96	0.59
TERMINATOR/ARRESTER	9, 10, 11, 12	-0.17	-0.17	0.31
5: STRINGING				
DESCRIPTION	POSITION	TRANSVERSE	LONGITUDINAL	VERTICAL
SHIELD WIRE	1	-0.34	-0.76	1.00
TRANSMISSION CONDUCTOR	2, 3, 4	-1.57	-3.65	4.61
DISTRIBUTION CONDUCTOR	5, 6, 7, 8	-0.89	-2.04	2.53
TERMINATOR/ARRESTER	9, 10, 11, 12	-0.17	-0.17	0.31

DESIGN APPLICATION									
WIRE DATA									
SHIELD WIRE: OPGW SX-29/61/512 (DNO-11127)									
TRANSMISSION WIRE: 795 kcmil ACSR "DRAKE"									
DISTRIBUTION WIRE/NEUTRAL WIRE: 477 kcmil ACSR "PELICAN"									
MECHANICAL LOADING CRITERIA									
CASE 1: NESC MEDIUM (RULE 250B): 4 psf WIND @ 15°F, 1/4" ICE ON WIRES, CONDUCTORS AND STRUCTURE. OLF: VERTICAL 1.5, WIND 2.5, TENSION 1.65.									
CASE 2: HIGH WIND - 90 MPH (RULE 250C): 19.9 psf @ 60°F, NO ICE ON SHIELD WIRE AND TRANSMISSION CONDUCTORS, 17.8 psf @ 60°F, NO ICE ON DISTRIBUTION CONDUCTORS, 21.2 psf @ 60°F, NO ICE ON STRUCTURE. OLF: 1.1 - ALL LOADS.									
CASE 3: 60°F CAMBER (FINAL TENSION): NO WIND @ 60°F, NO ICE ON WIRES, CONDUCTORS AND STRUCTURE. OLF: 1.0 - ALL LOADS.									
CASE 4: BROKEN WIRE - ALL AHEAD WIRE AND CONDUCTOR SPANS BROKEN (NESC SPANS AND TENSIONS): 4 psf WIND @ 15°F, 1/4" ICE ON WIRES, CONDUCTORS AND STRUCTURE. OLF: 1.1 - ALL LOADS.									
CASE 5: STRINGING: 2.0 psf @ 60°F, NO ICE ON WIRES, CONDUCTORS AND STRUCTURE. OLF: 1.1 - ALL LOADS									
DESIGN DATA									
DESIGN TENSIONS (lbs.)									
WIRE	NESC		HIGH WIND		CAMBER		STRINGING		
	BACK	AHEAD	BACK	AHEAD	BACK	AHEAD	BACK	AHEAD	
SHIELD WIRE	1765	1765	1570	1530	710	710	755	770	
TRANSMISSION CONDUCTOR	6000	6000	5140	4895	3210	3120	3610	3595	
DISTRIBUTION CONDUCTOR	3915	0	3255	0	1550	0	2020	0	
SPAN AND ANGLE DATA									
DESCRIPTION	NESC		HIGH WIND		CAMBER		STRINGING		
	BACK	AHEAD	BACK	AHEAD	BACK	AHEAD	BACK	AHEAD	
HORIZONTAL SPAN	190	145	190	145	190	145	190	145	
VERTICAL SPAN SHIELD	380	195	560	240	355	190	370	195	
VERTICAL SPAN TRANSMISSION	445	190	530	200	405	180	430	185	
VERTICAL SPAN DISTRIBUTION	420	0	565	0	370	0	425	0	
LINE ANGLE	22.75	22.75	22.75	22.75	22.75	22.75	22.75	22.75	
GENERAL NOTES									
1. THE LOADS IN THE LOADING TABLE ARE ULTIMATE LOADS AND INCLUDE ALL OVERLOAD FACTORS. ALL LOADS IN KIPS EXCEPT WIND "W" IN psf.									
2. THE VERTICAL LOADS (V) INCLUDE ONLY DEAD WEIGHT OF THE WIRE AND WEIGHT OF THE INSULATORS. THE DEAD WEIGHT OF THE STRUCTURE SHALL BE CALCULATED BY THE POLE MANUFACTURER AND USED IN THE DESIGN. THE OVERLOAD FACTOR APPLIED TO THE DEAD WEIGHT SHALL BE AS LISTED FOR EACH CASE.									
3. FOR STRUCTURAL DESIGN, THE LONGITUDINAL, TRANSVERSE AND VERTICAL LOADS SHALL BE CONSIDERED TO ACT SIMULTANEOUSLY WITH THE WIND AND THE DEAD WEIGHT OF THE STRUCTURE.									
4. APPLY STRUCTURE WIND "W" IN THE DIRECTION WHICH PRODUCES THE MAXIMUM STRESS.									
5. STRUCTURE SHALL BE DESIGNED TO BE SELF SUPPORTING, GUYS ARE NOT PERMITTED.									
6. ATTACH GROUNDING PLATES (DETAIL 1 ON THIS DRAWING) 2'-2" BELOW TOP OF POLE ON FLATS #1 AND #7, 1'-6" BELOW DISTRIBUTION ARMS ON FLATS #4 AND #10, 1'-6" BELOW TERMINATOR/ARRESTER ARMS ON FLATS #4 AND #10 AND 1'-0" ABOVE BASE PLATE ON FLATS #4 AND #10.									
7. CLIMBING LADDER CLIPS (DETAIL 9 ON DRAWING S106) TO BE INSTALLED ON FLAT #2 THROUGH THE DISTRIBUTION AND ON FLAT #10 THROUGH THE TRANSMISSION. WORKING LADDER CLIPS TO BE INSTALLED BELOW EACH SHIELD WIRE ATTACHMENT, BELOW EACH TRANSMISSION CONDUCTOR ATTACHMENT AND BELOW EACH DISTRIBUTION ARM.									
8. FINISH SHALL BE SELF-WEATHERING STEEL (ASTM A871).									

REVISION				REFERENCE DRAWING				NUMBER			
No.	DATE	BY	APP								
B	12/12/24	KAC	ML	60% REVIEW - REVISED POLE HEIGHT							
A	08/23/24	BDP	ML	60% REVIEW							
NOT FOR CONSTRUCTION											
WASHINGTON CITY											
MAIN ST. TAP - -GRAPEVINE SUBSTATION											
138KV TRANSMISSION LINE											
STRUCTURE #10 - DESIGN DATA											
SCALE: NTS				DRAWING No.				REVISION			
Project No.				071-081-S105				B			