



EA 500 Pole-Mounted Weather Monitoring Station

RCMS Code: BA

Description	EA 500		— •
	SI #	Code	
Weather Station			
Complete wildfire weather station with fuel temperature and moisture with cellular communication	8004599	A	
Complete wildfire weather station with fuel temperature and moisture with satellite communication	8004600	B	
Complete wildfire weather station with cellular communication	8004601	C	
Complete wildfire weather station with satellite communication	8004602	D	
Cellular communication fuel temperature accessories			
Fuel moisture wood dowel (replacement)	8004603	E	
Fuel temperature stick (replacement)	8004604	F	
Wind speed/direction sensor with cable	8005993	G	
HD Alpine propeller, coated and ice phobic	8005994	H	
Temperature/RH sensor with 30-foot sensor cable	8005995	I	
Rain gauge, weather station with cable	8005996	J	
Fuel moisture sensor with 50-foot sensor cable	8005997	K	
Fuel temperature sensor with 50-foot cable	8005998	L	
Shield, solar radiation, temp/RH sensor	8006074	M	
Sensor, temperature/RH with no sensor cable	8006076	N	
Panel, solar, 20 watt with 15' cable	8006195	O	
Panel, solar, 65 watt with 15' cable	8006367	P	

Scope

Pole-mounted weather monitoring stations are utilized to provide the company with data on local weather conditions to aid in operational decision-making.

These weather stations are installed on company transmission or distribution poles and transmit data to a weather monitoring service utilizing cellular or satellite services. Satellite service shall only be utilized if cellular service is not available at the installation location. The stations are powered by a solar panel and battery installed in the control box.

General

Installation of weather stations shall be coordinated with the weather station equipment provider / monitoring service to ensure data provided by the station is incorporated into the monitoring program. The specific weather station monitoring equipment is provided by the weather monitoring service provider. Equipment arm, streetlight mast, grounding, and miscellaneous mounting hardware and installation of the station are provided by the company. The weather monitoring service provider shall coordinate and provide ongoing cellular or satellite communication services.

EA 500 Pole-Mounted Weather Monitoring Station

Weather stations shall be located to provide data representative of the immediate area weather conditions. Locations shielded from wind or precipitation shall be avoided. Certain installations may be designated for installation of ground-mounted fuel moisture and temperature monitoring devices. Locations selected shall minimize the probability of theft or damage of these devices.

Newer models have antenna located inside the box and there are no external antenna to install on the arm.

Figure 1 and Figure 2 show typical installations of a weather station without fuel monitoring devices.

Figure 3 shows typical fuel monitoring devices.



Figure 1—Typical Weather Station Installation on Mast Arm



Figure 2—Typical Weather Station Installation on Equipment Arm



Figure 3—Typical Fuel Monitoring Device

Installation

Weather stations and supporting equipment shall be installed on company transmission or distribution poles as specified.

The solar panel shall be oriented in a general southerly direction to maximize energy absorption. The cellular / satellite antennae shall be oriented to obtain maximum signal strength.

When a streetlight mast arm is used, instrument cables from the equipment mounted on the streetlight mast shall be run inside the streetlight mast to the control box.

For stations where fuel moisture and temperature monitoring equipment is to be installed, the monitoring devices shall be placed in an unobtrusive location in the general vicinity of the pole base that is representative of local ground and vegetation cover. The cable from the monitor shall be direct buried.

Use ½-inch mold (SI# 6137806) with staples (SI# 6470603) over sensor cable from ground up to the mast to protect it from damage and be in compliance with codes. If it is difficult to bury the sensor cable, use a 2-inch split PVC conduit, SI# 1006049, to cover it.

Clearances

Distances shown in Figures 5 through 9 are required by GO-95 and NESC and must be followed. Any deviation from such clearances are not allowed. In California GO-95, Rule 94.4E requires a 24-inch separation from pole center to antenna.

All installations require a grounding system to bond devices. If there is no grounding available, ensure it is added during the installation.

On a unigrounded system where no system neutral is available, contact the area engineer for correct grounding, based on the possibility of arresters on that pole.

Maintenance

Weather stations require periodic maintenance: Wind speed / temperature and relative humidity gauges shall be calibrated annually. Batteries located inside the control box shall be replaced on a three-year cycle or as needed. For stations equipped with fuel temperature and moisture sensors, the wood dowels mounted on the sensors shall be replaced annually.

No.	SI#	Description
1	8004599	Complete wildfire weather station with fuel and cell phone communication
2	8004600	Complete wildfire weather station with fuel and satellite communication
3	8004601	Complete wildfire weather station for areas with cell phone communication
4	8004602	Complete wildfire weather station for areas with satellite communication
5	8004603	Fuel moisture wood dowel (replacement)
6	8004604	Fuel temperature stick (replacement)
7	1008030	ARM,MAST,ST LT,6'SPAN,32"RISE,2.5"DIA, AL
7	7999763	BRACKET,EQUIPMENT,10',FBRGL,UNDERBUILD
8	6211106	BOLT,MACH,5/8" X 12",XARM,GALV
9	6269104	WASHER,SQ,CURVED,2.25"X2.25",11/16" HOLE
10	6279707	WASHER,SPRING,5/8",DOUBLE HELIX
11	6459804	SCREW,LAG,1/2" X 4-1/2",PILOT POINT
12	6137806	MOLDING,GRD,1/2" X 3/16" X 8',PLSTC,#6
13	6470603	STAPLE,GRD,MOLDING,1/2"X2",PVC MOLDING
14	4634903	CONN,C-TAP,CU,#6SOL-#4STR,#6SOL/STR,COMP
15	1700250	BRACKET, CONDUIT, EXTENSION
16	1006049	CONDUIT, PVC, 2", SPLIT DUCT, 10'

Figure 4 provides a visual aid of additional required hardware not available in the system. This hardware can be obtained from a local hardware store. Each of the three brackets require two sets of bolts.

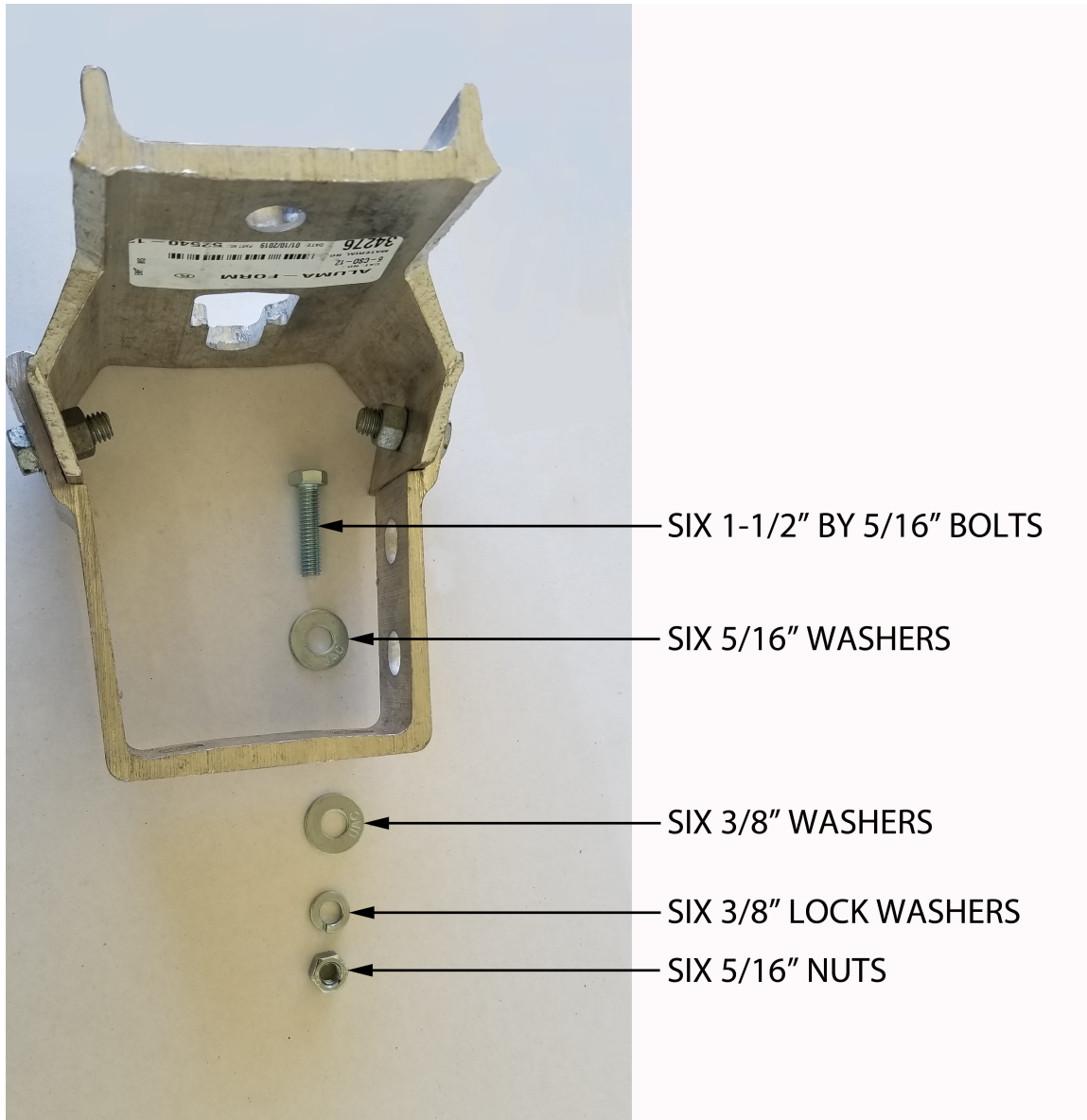


Figure 4—Additional Required Hardware

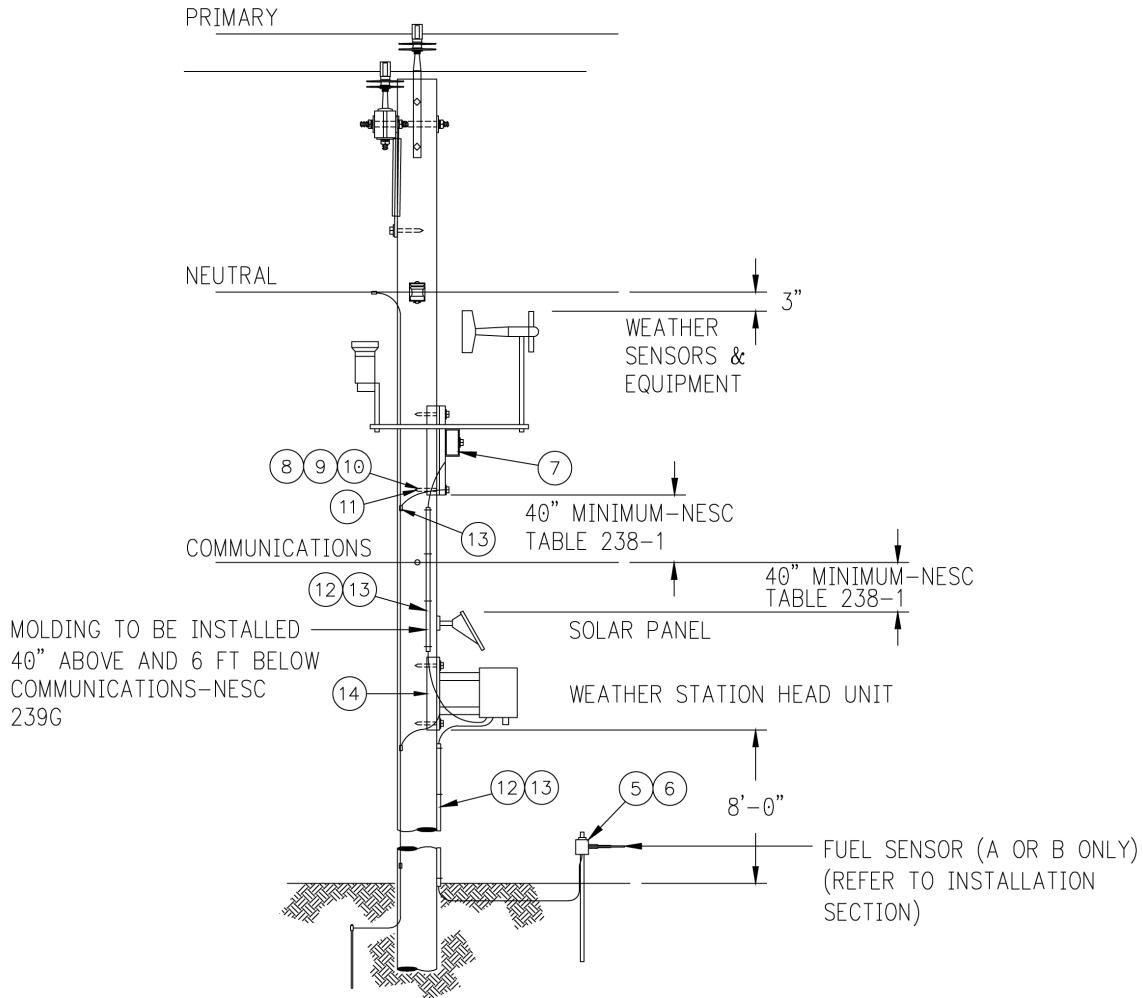


Figure 5—Weather Station, Below Neutral, Mast Arm (Equipment Arm, Inset)

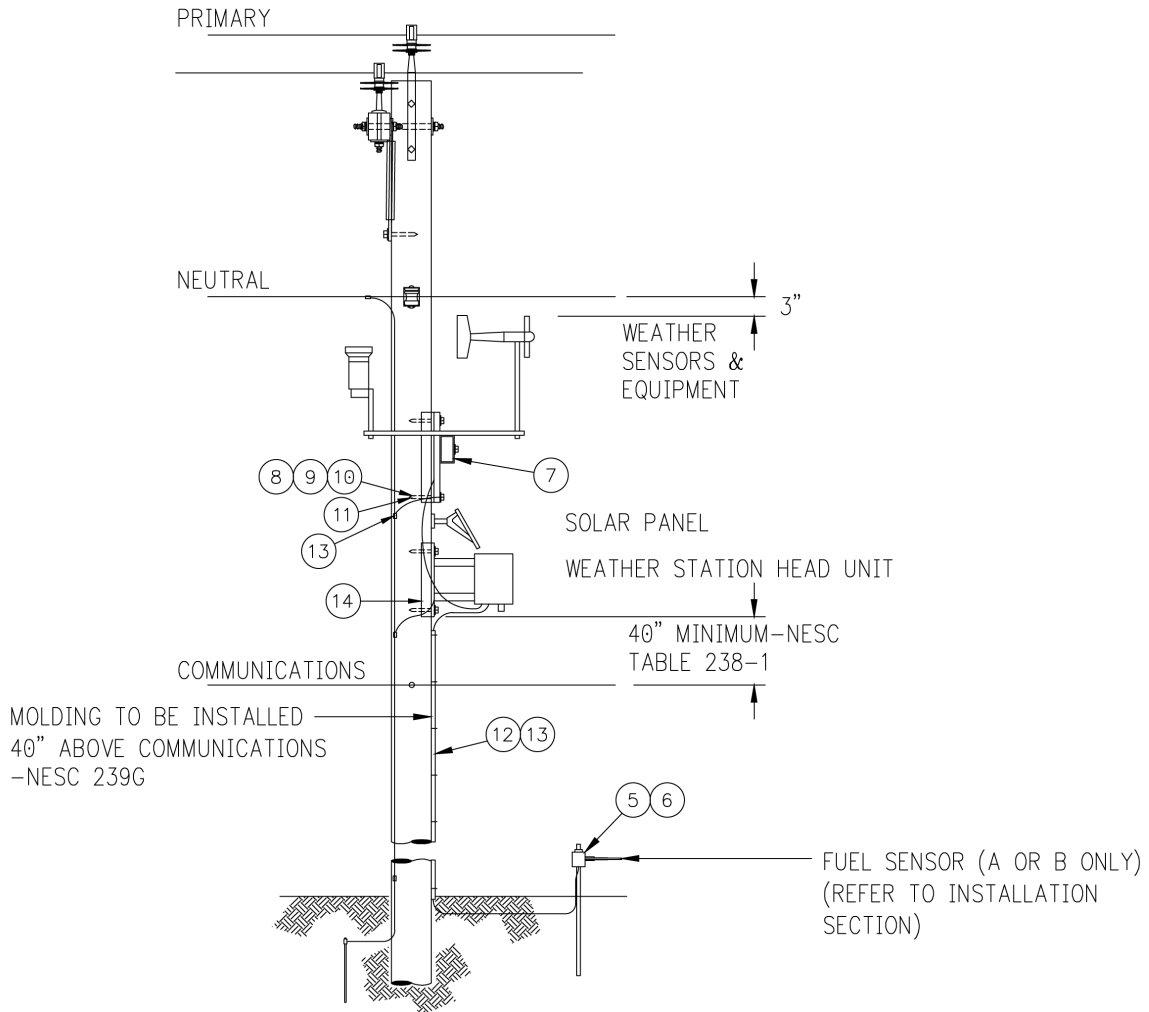


Figure 6—Weather Station and Collector, Below Neutral (Equipment Arm, Inset)

EA 500 Pole-Mounted Weather Monitoring Station

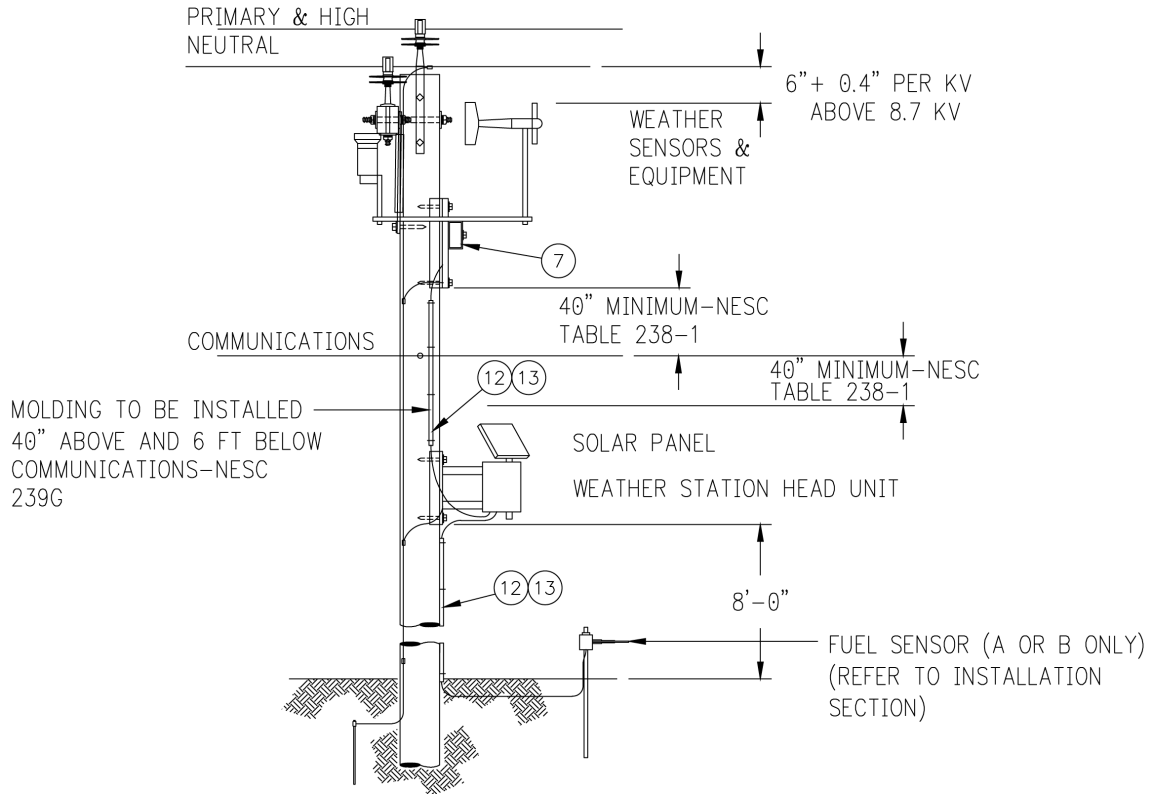


Figure 7—Weather Station, Primary and High Neutral (Equipment Arm, Inset)

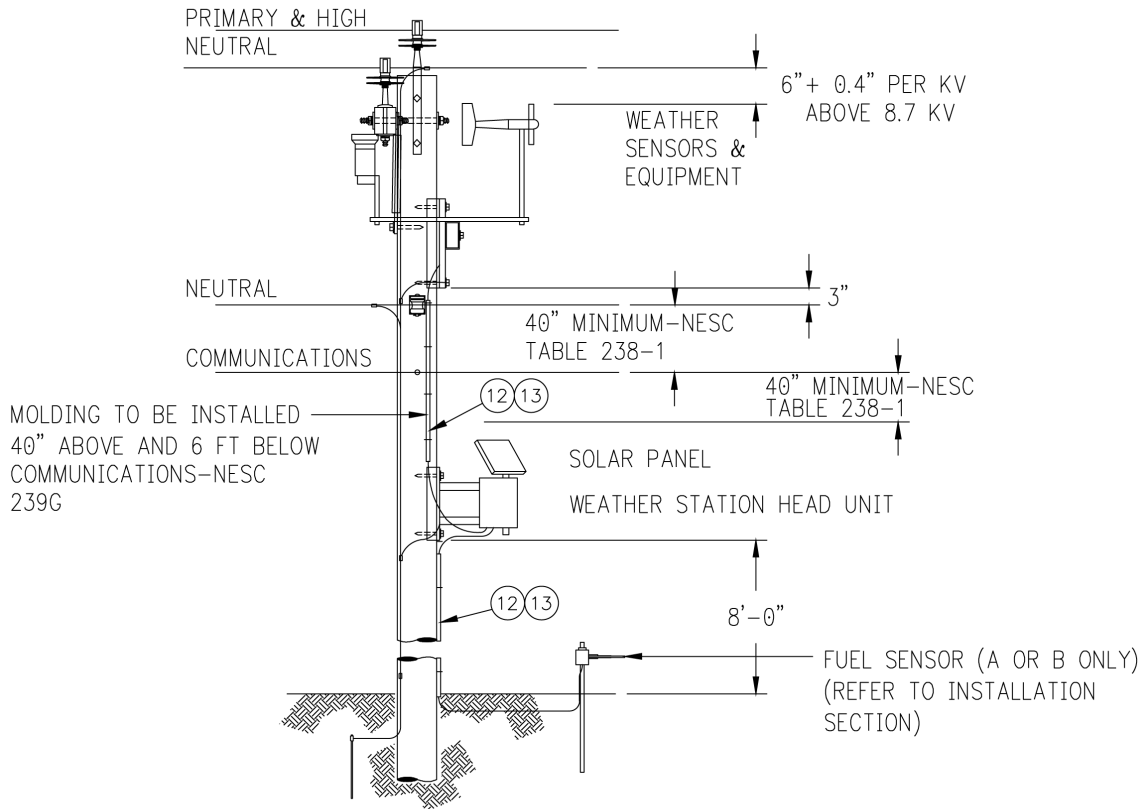


Figure 8—Weather Station, Primary (Equipment Arm, Inset)

Note:

Forty inches can be reduced to 30 inches if there is no secondary present and if the neutral is effectively grounded, per NESC Table 235-5, Note 5.

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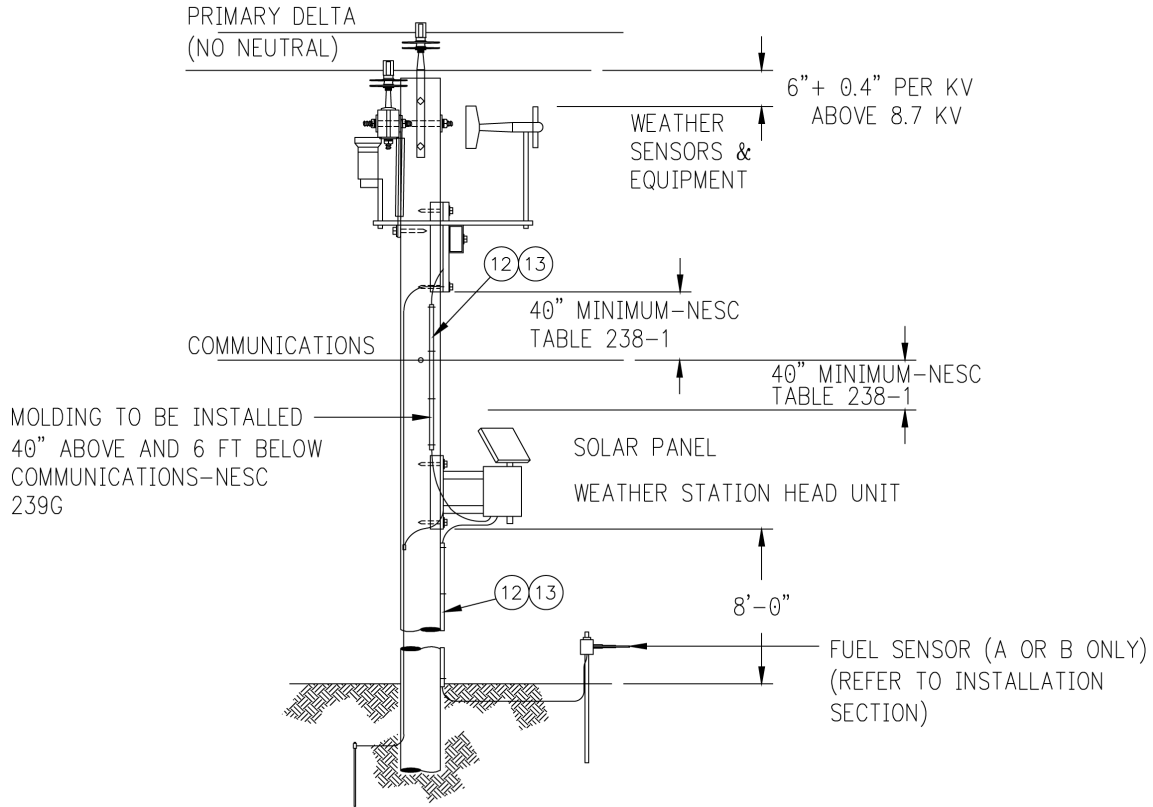


Figure 9—Weather Station, No Neutral (Equipment Arm, Inset)