

FIBER OPTIC INTERFACE (CFJ) SERVICE REQUEST

SITE NAME	ADDRESS,	CITY,	STATE,	ZIP
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CONTACTS	CUSTOMER (POWER, LEC, WSP, OTHER)	AUTHORIZED AGENT	TELEPHONE
	TELEPHONE COMPANY	AUTHORIZED AGENT	TELEPHONE
	ORDER DATE	ORDER NUMBER	SERVICE DATE

CIRCUIT DETAILS	CIRCUIT NUMBER	SPO	TYPE	USOC	CIRCUIT DESCRIPTION	

POWER STATION(S) FAULT CURRENT SOURCE(S) CONTRIBUTING TO SITE GPR								
FAULT DATA	SUBSTATION NAME	GRID Ω	I _{SOURCE} RMS	X/R RATIO	GRID AREA	LINE CHARACTERISTICS [#]		
						STATIC WIRE(S)	PHASE WIRE	SPAN AVERAGES
	FOOT Ω	LENGTH						
							#	#
						#	#	

SEE CROSS SECTION MEASUREMENT DATA ON PAGE 2.

CUSTOMER'S SUBSTATION OR PCS CELL SITE GPR DATA							
CALCULATED GPR - GPD	FAULT LOCATION	SITE I _{FAULT} RMS	GRID Ω	FAULT GPR			
				RMS	PEAK	ZONE OF INFLUENCE	
	GPR	GPD					

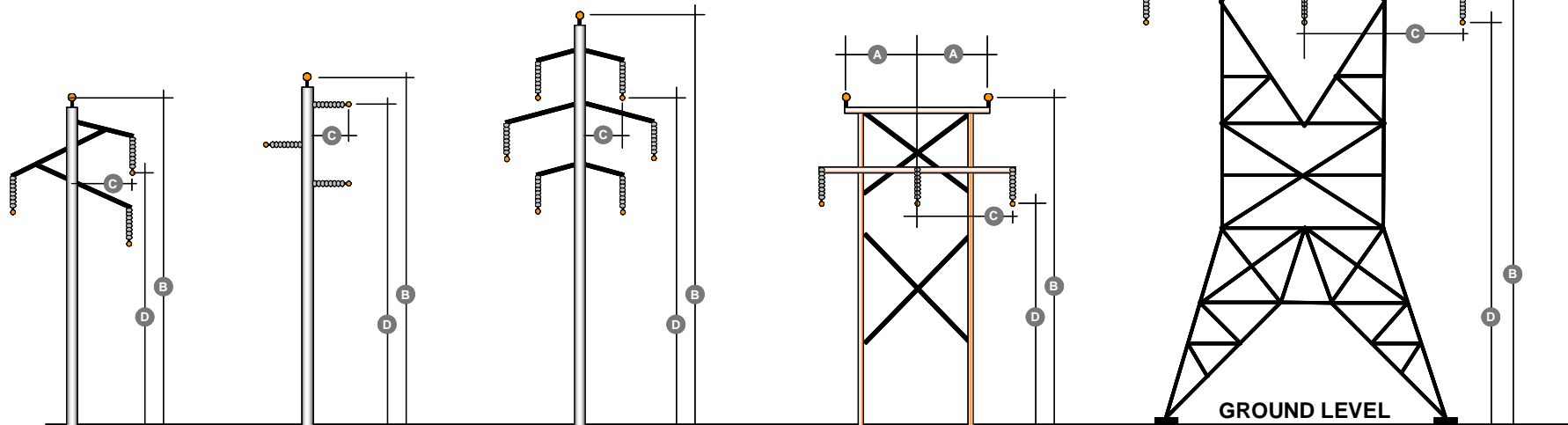
CUSTOMER'S AUTHORIZED AGENT	TITLE	SIGNATURE	DATE
TELEPHONE COMPANY ENGINEER	TITLE	SIGNATURE	DATE

CROSS SECTION MEASUREMENT DATA

The follow transmission tower static and phase wire measurements and descriptions must be provided. See examples below.

- A** Distance in feet from the tower center line to the static (neutral) wire(s). One center static wire = 0.
- B** Distance in feet from the static (neutral) wire to ground level.
- C** Distance in feet from the tower center line to a single phase wire located closest to the static wire.
- D** Distance in feet from the single phase wire to ground level.

STATIC AND PHASE WIRE CONFIGURATIONS			
A	B	C	D
A	STATIC WIRE SIZE-TYPE		PHASE WIRE SIZE-TYPE



CONTACTS

CUSTOMER (POWER, LEC, WSP, OTHER) – Name of the customer requesting CFJ interface.

Power = Power company, LEC = Local Exchange Carrier, WSP = Wireless Service Provider.

AUTHORIZED AGENT – Name of person representing the customer and their contact number.

TELEPHONE COMPANY – Name of company whose service is being requested.

AUTHORIZED AGENT – Service representative and contact number accepting service request.

ORDER DATE – Date that the customer ordered the telephone service.

ORDER NUMBER – Internal order tracking number assigned by the telephone company.

SERVICE DATE – Mutually agreed upon service completion date.

CIRCUIT DETAILS

CIRCUIT NUMBER – Number assigned to the specific circuit by the telephone company.

SPO – Service Performance Objects as defined in IEEE-1590.

Class **A**. Non-interruptible service performance (should function before, during, and after the power fault condition).

Class **B**. Self-restoring interruptible service performance (should function before and after the power fault condition).

Class **C**. Interruptible service performance (can tolerate a station visit to restore service).

TYPE – Service type as defined in IEEE-1590.

Type **1**. Services requiring either dc transmission or ac and dc transmission used for

a) Basic exchange telephone service or private line, or both, voice telephone service, etc.

b) Teletypewriter, telemetering, supervisory control, etc.

Type **2**. Private line services requiring ac or dc transmission, or both, used for pilot wire protective relaying, or dc tripping.

Type **3**. Private line services requiring only ac transmission used for telemetering, supervisory control, data, etc.

Type **4**. Private line services requiring only ac transmission used for audio tone protective relaying.

Type **5**. Digital services such as DS-1 digital transmission used for T-1, ISDN, and DSL private line transport services.

USOC – Universal Service Order Code assigned for each circuit ordered.

CIRCUIT DESCRIPTION – Common language such as POTS, 4-wire data, DS-1.

FAULT DATA

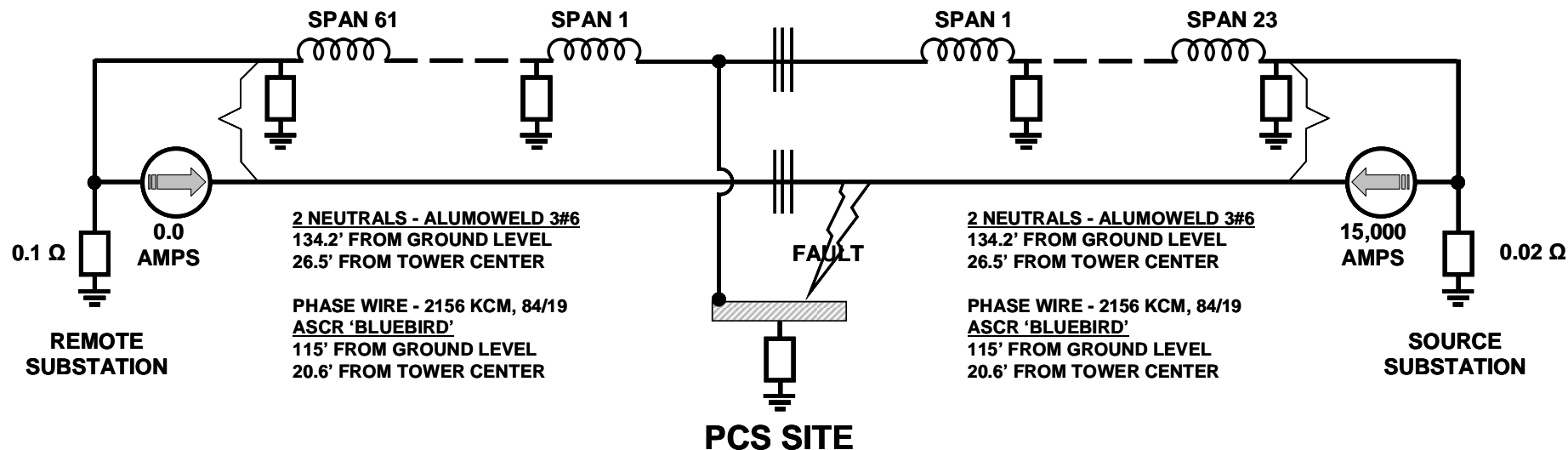
SUBSTATION ADDRESS – The substation producing current into the study site.

GRID Ω – The 60 Hz grid impedance for each external substation and or PCS grid located on a transmission tower between two substations.

SITE $I_{\text{FAULT RMS}}$ – The rms fault current generated by an external source substation, or substations, into the transmission line feeding the site under study. Example below illustrates a 15,000 amp from the source substation and 0.0 amps from a remote (non-source) substation creating a GPR at a PCS site.

X/R – Total Reactance over Resistance ratio from the power source to the fault location.

GRID AREA – Total square foot of substation grounding grid (excluding fenced area if larger than grid).



LINE CHARACTERISTICS – The voltage and physical layout with cross reference measurements for the transmission line towers leaving the substation and extending to the fault location under study.

STATIC WIRE(S) – An industry description (ALUMOWELD 3#6) neutral and or lightning protection wires (1 or 2) usually located above the phase wires. The above example shows 2 static (neutral) wires located 134.2' from ground level and 26.5' either side of center line.

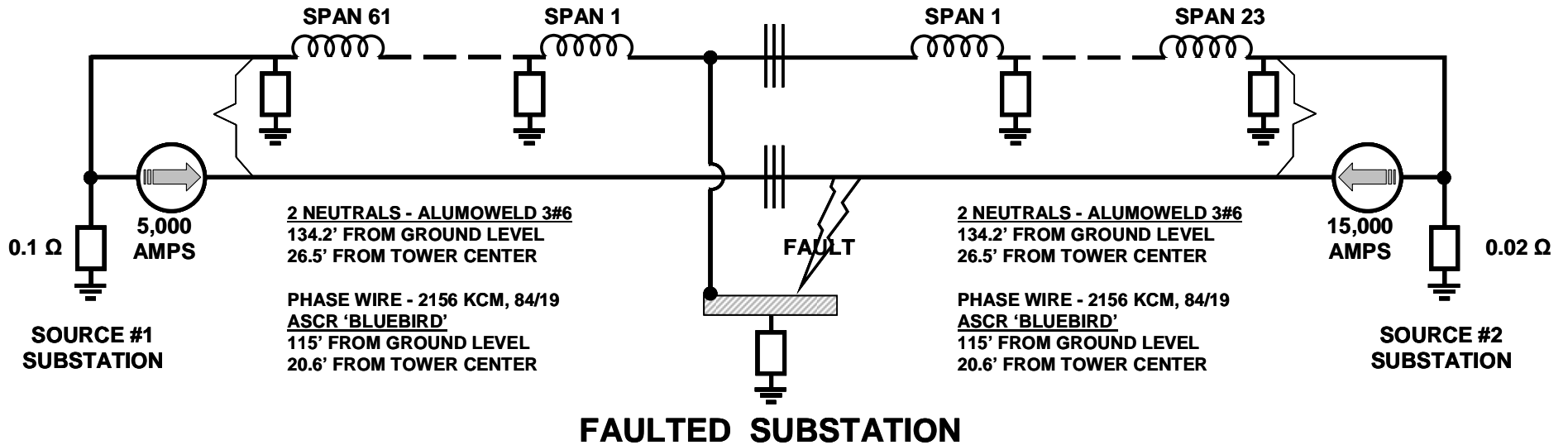
PHASE WIRE – An industry description (**ASCR 'BLUEBIRD'** 2156 KCM, 84/19) of the first phase wire closest to its lightning protection static wire. The above example shows the phase wire located 115' from ground level and 20.6' from the tower center line.

SPAN AVERAGES

FOOT Ω – The average transmission line tower footing impedance.

LENGTH – The average distance between adjacent towers.

Note: If a cell site or a substation has more than one current source, contributing to the fault location's GPR magnitude, it must be included as depicted in this example. Up to four external current sources and or non-current source lines (transmission or distribution) can be modeled.



CALCULATED GPR - GPD

FAULT LOCATION – The name of the site under study.

SITE I_{FAULT} RMS – RMS fault current magnitude entering the site grid that contributes to GPR.

GRID IMPEDANCE – Measured or calculated grid impedance in its working configuration. This must take into consideration all metallic infrastructures connected to or influenced by the grid.

FAULT GPR

RMS – Calculated rms GPR considering worse case single phase to ground fault conditions.

PEAK – Calculated peak asymmetric stress voltage (X/R derived) under same conditions.

ZONE OF INFLUENCE (ZOI)

GPR – Calculated Ground Potential Rise created by the I_{FAULT} rms current.

GPD – Calculated Ground Potential Difference created by the I_{FAULT} rms current entering the site under study, and a selected metallic infrastructure where a CFJ can be located.