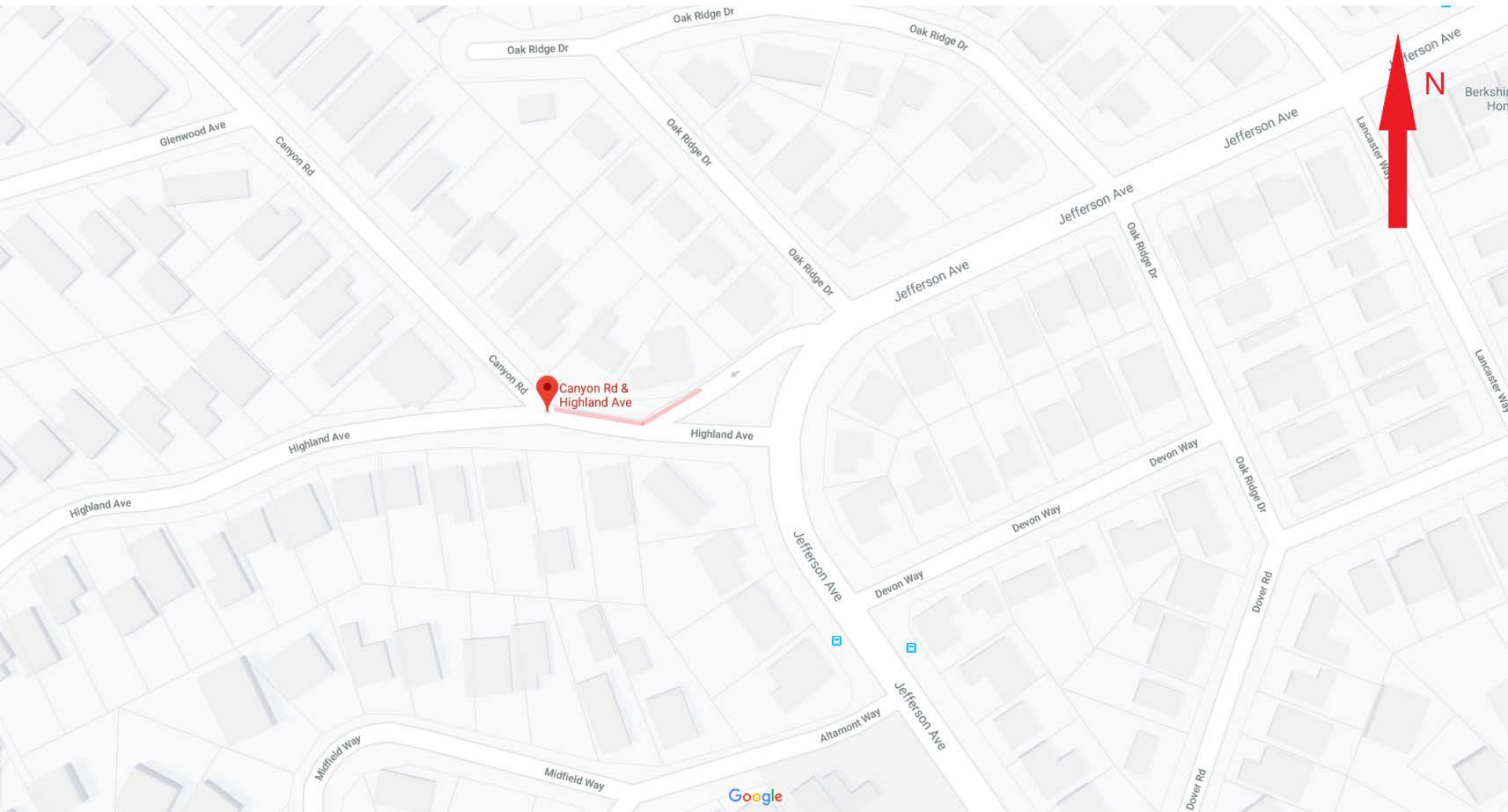


**Draftel +**

# "OSP Aerial Fiber design "

For California Market (with Pole attachment package)

**Design Examples | April 2020**





# MAKE-READY (JOB DETAIL) WORKSHEET

TOTAL POLES = 5

BY PASS POWER = 0

POWER NEW = 0

TOTAL NEW POLES = 0

BY PASS JOINT = 0

JOINT NEW = 5

Date: 6/7/2019

LICENSEE: MCI-VERIZON

BY PASS ATT = 0

ATT NEW = 0

JOB #: 073743001DP155

BY PASS OTHER = 0

OTHER NEW = 0

POWER MAP#:

Prepared By: BRIAN HERRERA (DPI) (510) 604-9131

SIGNATURE:

Pole #	LOCATIONS and REMARKS	W O R K	Make-Ready Work Required to be Completed By: MCI					I	N	I	D	P W R	J P	A T & T	O T H E R	
			POWER	AT&T	CATV	OTHER	APPLICANT									
1	W HIGHLAND AVE F/O 3426 JEFFERSON AVE	E	PRI HOA = 41'2" (NW/NE) PRI X-ARM HOA = 41'2" (NW) PRI HOA = 39'6" (NW/NE) PRI HOA = 38'4" (NW/NE) 10M SWG HOA = 37'10" (N) L=9' PRI X-ARM HOA = 38'4" (NW) 10M DG HOA = 36'11" (NW) L=14' 10M SWG HOA = 36'2" (N) L=9' 10M SPAN HEAD HOA = 35'1" (NW) L=75' ST LT HOA = 30'1" (NW) 10M SPAN HEAD HOA = 29'1" (NW) L=177'	TELCO HOA = 22'6" (NW/NE) 2" RISER HOA = 9'00" (NW) 2" RISER HOA = 8'44" (NW) 10M DG HOA = 22'6" (NW) L= 14'	CATV HOA = 25'1" (NW/NE)			X						X		
Map #	37.4686136															
Pole Size-Class	-122.25019	B														
50-1																
Lead Code																
UTL	INSPECTION DATE: 6/17/16	C														
P.T.#	EID : 100282411															
PG971431	TOP															
Max Grade	41'11"	A														
UTL																
End of Pole																

# MAKE-READY (JOB DETAIL) WORKSHEET

TOTAL POLES = 5

BY PASS POWER = 0

POWER NEW = 0

TOTAL NEW POLES = 0

BY PASS JOINT = 0

JOINT NEW = 5

Date: 6/7/2019

LICENSEE: MCI-VERIZON

BY PASS ATT = 0

ATT NEW = 0

POWER MAP#:

JOB #: 073743001DP155

BY PASS OTHER = 0

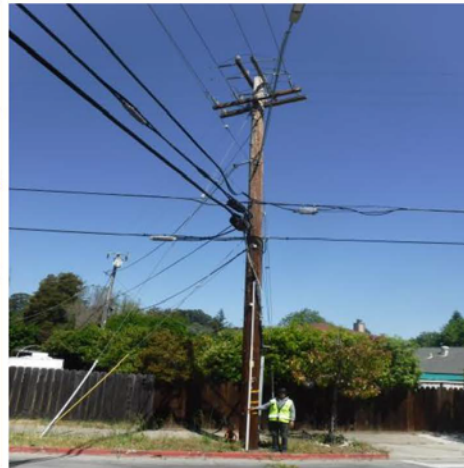
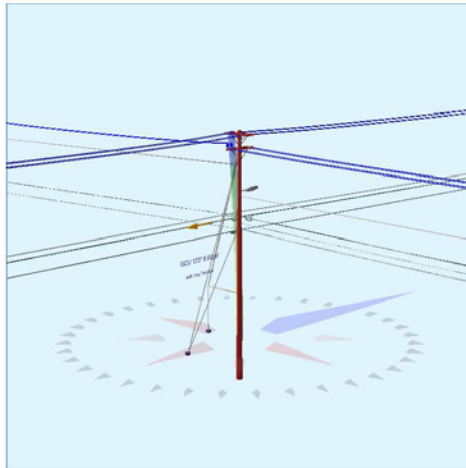
OTHER NEW = 0

SIGNATURE:

Prepared By: BRIAN HERRERA (DPI) (510) 604-9131

LOCATIONS and REMARKS		W O R K	Make-Ready Work Required to be Completed By: MCI					I	N	I	D	P W R	J P	A T & T	O T H E R
Pole #			POWER	AT&T	CATV	OTHER	APPLICANT								
02	W HIGHLAND AVE  F/O 3500 HIGHLAND AVE  37.468513 -122.250444  INSPECTION DATE: 6/17/16 EID : 100282410 TOP 38'4"	E	PRI HOA = 37'10"(NW/NE) PRI X-ARM HOA = 37'00"(S) 10M SPAN HEAD HOA = 35'4"(S) L= 163' PRI X-ARM HOA =34'1"(S)	10M SPAN HEAD HOA = 21'1"(S) L= 163' TELCO HOA =21'1"(NW/NE) □	10M SPAN HEAD HOA =23'1"(S) L= 163' CATV HOA =23'00"(NW/NE)			X					X		
Map #															
Pole Size-Class		B													
50-4															
UTL		C					MCI PL FOC HOA =24'0"(NW/NE) MCI PL 10M SPAN HEAD HOA =24'1"(S) L= 163' MCI TO INSTALL VGR MCI TO BOND ALL COMMS MCI PL STEPS AS NEEDED								
P.T.#															
PT11011															
Max Grade															
UTL		A													
End of Pole															

Pole Num:	<b>POLE #1</b>	Pole Length / Class:	<b>50 / 1</b>	Code:	<b>GO 95</b>	Structure Type:	<b>Guyed Tangent</b>
Aux Data 1	<b>CA</b>	Species:	<b>DOUGLAS FIR</b>	GO 95 Rule:	<b>At Replace (Existing)</b>	Pole Strength Factor:	<b>0.38</b>
Aux Data 2	<b>REDWOOD CITY 049</b>	Setting Depth (ft):	<b>8.04</b>	Construction Grade:	<b>A</b>	Transverse Wind LF:	<b>1.00</b>
Aux Data 3	<b>PG971431</b>	G/L Circumference (in):	<b>44.16</b>	Loading District:	<b>Light</b>	Wire Tension LF:	<b>1.00</b>
Aux Data 4	<b>100282411</b>	G/L Fiber Stress (psi):	<b>8,000</b>	Ice Thickness (in):	<b>0.00</b>	Vertical LF:	<b>1.00</b>
Aux Data 5	<b>Unset</b>	Allowable Stress (psi):	<b>2,960</b>	Wind Speed (mph):	<b>55.90</b>	Pole Factor of Safety:	<b>4.00</b>
Aux Data 6	<b>Unset</b>	Fiber Stress Ht. Reduc:	<b>No</b>	Wind Pressure (psf):	<b>8.00</b>	Vertical Factor of Safety:	<b>70.18</b>
Latitude:	<b>0.000000 Deg</b>	Longitude:	<b>0.000000 Deg</b>	Elevation:	<b>0 Feet</b>	Bending Factor of Safety:	<b>4.07</b>



Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Crossarm allowance 300 lbs			
Maximum	<b>66.6</b>	0.0	173.4
Groundline	<b>66.6</b>	0.0	173.4
Vertical	<b>3.8</b>	29.2	40.4

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Crossarm allowance 300 lbs			
Max Cap Util	<b>44,123</b>	156.9	173.4
Groundline	<b>44,123</b>	156.9	173.4
GL Allowable	<b>67,290</b>		



Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
Expanding - 6" - Soil Class 3	9.0	270.0		15.2	173.4	15.7	150.0
10M (Sidewalk)			37.9	11.4	173.4	11.8	150.0
Sidewalk Strut	9.0	270.0	9.5	11.3	173.4	11.7	150.0
10M (Sidewalk)			36.3	12.8	173.4	13.3	150.0
Expanding - 6" - Soil Class 3	14.0	180.0		0.0	173.4	0.0	0.0
10M (Down)			37.0	0.0	173.4	0.0	0.0
10M (Down)			22.6	0.0	173.4	0.0	0.0
Anchor	75.0	265.0		3.5	173.4	6.6	60.0
10M (Span/Head)			35.1	9.4	173.4	17.6	60.0
Anchor	177.0	95.0		0.0	173.4	0.0	0.0
10M (Span/Head)			29.1	0.0	173.4	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 156.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	451	23.2	16,786	38.0	25.0	756	35	0	756	25.5
Comms	1,233	63.4	28,863	65.4	42.9	1,299	715	5	1,304	44.0
GuyBraces	-172	-8.9	-12,327	-27.9	-18.3	-604	1,808	12	-592	-20.0
Pole	304	15.6	6,212	14.1	9.2	280	1,796	12	291	9.8
Crossarms	58	3.0	2,319	5.3	3.5	104	212	1	106	3.6
Streetlights	35	1.8	1,065	2.4	1.6	48	45	0	48	1.6
Risers	10	0.5	50	0.1	0.1	2	18	0	2	0.1
Insulators	28	1.4	1,155	2.6	1.7	52	184	1	53	1.8
Pole Load	1,946	100.0	44,123	100.0	65.6	1,937	4,813	31	1,968	66.5
Pole Reserve Capacity			23,167		34.4	1,024			993	33.5

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 156.9°**

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
PG&E	702	36.1	15,184	34.4	22.6	634	4,046	26	660	22.3
MCI	27	1.4	711	1.6	1.1	32	137	1	33	1.1
CATV	301	15.4	7,427	16.8	11.0	334	271	2	336	11.3
TELCO	917	47.1	20,801	47.1	30.9	936	359	2	938	31.7
General Statement	0	0.0	0	0.0	0.0	0	0	0	0	0.0
<b>Totals:</b>	1,946	100.0	44,123	100.0	65.6	1,937	4,813	31	1,968	66.5

**Detailed Load Components:**

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	36.52	0.2320	1.05	0.039	142.0	0.0	142.0	291	-11,021	0	21	-11,001
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	26.64	0.2320	1.05	0.039	142.0	0.0	142.0	291	-11,021	-1	21	-11,002
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	36.52	0.2320	1.05	0.039	142.0	0.0	142.0	291	-11,021	-1	21	-11,002
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	26.64	0.2320	1.05	0.039	142.0	0.0	142.0	291	-11,021	0	21	-11,001
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	26.64	0.2320	0.46	0.039	86.0	177.0	86.0	291	11,252	0	6	11,259
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	36.52	0.2320	0.46	0.039	86.0	177.0	86.0	291	11,252	0	6	11,259
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	36.52	0.2320	0.46	0.039	86.0	177.0	86.0	291	11,252	0	6	11,258
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	41.22	26.64	0.2320	0.46	0.039	86.0	177.0	86.0	291	11,252	1	6	11,259
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	39.52	20.96	0.2320	0.38	0.039	75.0	265.0	75.0	291	-3,574	2	218	-3,354
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	39.52	32.61	0.2320	0.38	0.039	75.0	265.0	75.0	291	-3,574	3	218	-3,353
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	38.38	36.61	0.2320	1.52	0.039	177.0	95.0	177.0	291	5,258	1	454	5,713
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	38.38	26.76	0.2320	1.52	0.039	177.0	95.0	177.0	291	5,258	-1	454	5,711
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	38.38	36.61	0.2320	1.52	0.039	177.0	95.0	177.0	291	5,258	-1	454	5,711
Primary	AAC 4 AWG 7 STRAND ROSE	PG&E	38.38	26.76	0.2320	1.52	0.039	177.0	95.0	177.0	291	5,258	1	454	5,713
<b>Totals:</b>												14,809	6	2,357	17,171



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## O-Calc® Pro Group Summary Report

Pole Group: PPLX  
Report Created: 6/6/2019

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Pole	Structure Type	Guying Status	Bending Moment Capacity (lb-ft)	Bending Moment at GL (lb-ft)	Pole Groundline Capacity Utilization	Pole Maximum Capacity Utilization	Vertical Buckling Capacity Utilization
POLE #1	Guyed Tangent	Guys are adequate	67289.5	44122.7	66.6%	66.6%	3.8%
POLE #2	Angle	Guys are adequate	31368.8	9337.4	30.4%	30.4%	1.7%
POLE #2A	Angle	Guys are adequate	69140.1	12406.5	18.6%	18.6%	1.5%
POLE #2B	Guyed Tangent	Guys are adequate	31335.7	3330.4	13.9%	26.8%	10.1%
POLE #3	Guyed Tangent	Guys are adequate	35847.8	6431.8	46.0%	55.3%	2.1%