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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

February 8, 1999

Ms. Magalie Roman Salas
Secretary - Federal Communications Commission
The Portals, 445 Twelfth St., SW
Washington, D.C., 20554

RE: CC Docket Nos. 96-45 and 97-160
FCC CCB Cost Model Input Workshops – Outside Plant Structure & Cable Costs

Dear Ms. Salas,

The attached information is being provided to the Common Carrier Bureau staff in regard to the above referenced proceedings. Sprint is submitting the attached information in response to the Bureau's voluntary request for Outside Plant Structure and Cable Costs Data.

We request that this information be made a part of the record in the above referenced dockets. The original and three copies of this notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(1) for this purpose. If there are any questions, please call.

Sincerely,

Pete Sywenki

Attachment

cc: Craig Brown
Katie King
Bob Loube
Richard Kwiatkowski
Adrian Wright

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Outside Plant Structure and Cable Costs

These comments are in partial response to the FCC Request for Data on Outside Plant Structure and Cable. This response contains company wide data on cable and buried structure costs. Sprint is still completing the gathering and analysis of data for the CLLI specific requests as well as for underground conduit costs.

The cable cost data for each Part 32 cable account requested by the FCC (aerial copper cable, aerial fiber cable, underground copper cable, underground fiber cable, buried copper cable, and buried fiber cable) was calculated using 1998 closed work order activity as accumulated in Sprint's Project Analysis Costing System (PACS), which is maintained by the Capital Asset Accounting department. PACS tracks all the Work Order related capital expenditures for plant construction. The source documents include original invoices for materials, contract labor, and miscellaneous purchased materials. Company labor is derived directly from daily time reporting.

The first step in the process was to extract all 1998 completed work order activity for each of the appropriate general ledger accounts (2421.1X, 2421.2X, 2422.1X, 2422.2X, 2423.1X, 2423.2X) by company. The data extracted consisted of the Company Number, Account Number, Expenditure Type (e.g., Company Labor, Contract Labor, Material), Material Code and Description (if applicable), Amount, Quantity, Analysis Code, Work Group, and Labor Code. The next step was to select the states to be used in the analysis. Data from six states (Florida, North Carolina, Ohio, Texas, Kansas, and Nebraska/Wyoming) was selected to produce a representative sample of geographically dispersed, large vs. small, and low-cost vs. high-cost states.

Next, the data was segregated into specific categories (Cable Material cost, Other Reportable Material cost, Miscellaneous Material cost, Supply Expense, Splicing, Engineering, Placement and Structure) based on (as appropriate) the Expenditure Type, Material Code/Description, Analysis Code, and/or Work Group.

The cable material cost by account, as well as the footage placed, was summarized by cable size and then in total for each account. The cost per foot by cable size was calculated by dividing the material cost for each size by the corresponding footage. The other categories were similarly summarized by account and Labor Overheads were allocated to the direct labor categories (Splicing, Engineering, Placement, and Structure) on a proportional basis. Costs for items which were not considered to be forward-looking technology - such as load coils - were excluded from the calculations, as were expenditures related to SAI's, Building Terminals, DLC sites or other items specifically counted in other model inputs. All costs are "net" of any sharing or reimbursements, and reflect Sprint's actual in-place costs.

The Sprint cable cost data is provided in Exhibit 1. Fiber and Copper costs are provided on separate pages, with columns on each page for Aerial, Underground and Buried Cable costs.

The data is segregated into two parts, Cable Material costs and all other costs. The dollar amount in each of the "Cable Cost" columns represents the actual material cost, without any loadings, for each size of cable that was placed by Sprint during the study period. The "Feet Placed" Column identifies the total number of feet placed and the average cost per foot is provided in the "Cost/Foot" column.

At the bottom of each page Sprint provides the total dollar amount of other expenditure for all of the cable placed in each of the Part 32 cable account (Aerial Copper, Buried Fiber, etc.) These are "bulk" dollars that are not tied in Sprint's records to each particular size of cable placed. These costs are broken down into the following categories:

1. Miscellaneous Material
2. Supply Expense
3. Splicing Labor
4. Engineering Labor
5. Placing Labor
6. Structure (Buried Only)

A second column "% of Cable Cost" is provided for informational purposes only. It is simply the total dollars in each category divided by the total cost of all the cable placed. It is provided as a gross indicator of the cost of each component relative to the cable material cost.

Sprint's records do not tie the costs in each of these categories to each piece of cable that is placed. For example, on a work order Sprint places some 1800, 900 and 100 pair aerial cable. The Engineer reports hours to design all of the aerial cable, not separate hours to engineer the 1800, 900 and 100 pair cables. Therefore, these costs must be allocated back as a loading to each size of cable.

The most significant challenge then is to find a reasonable means for spreading these cost to each of the cable sizes that are placed. It is obviously critical that this be done in some considered and reliable manner to avoid over- or under-stating the costs of the various cable sizes. As Sprint does not report or record these expenditures directly to each cable size, a precise calculation of total cost by cable size cannot be performed. However, Sprint would offer these suggestions for spreading the following costs based on significant network construction experience and fact-based accounting data.

Miscellaneous Material: Miscellaneous materials include such items as pedestals, closures, splice cases, hardware, supplies and other small items of plant. The smallest sized units of this kind of material will support cables from 6 through 100 pair. The size, quantity and cost then trend upward based on cable size. Sprint would recommend that the Miscellaneous Material loading be calculated as a percentage of the cable material price, with a minimum dollar amount equal to the percentage loading for a 100 pair copper cable or a 48 fiber cable.

Supply Expense: Supply expense includes the cost such things as purchasing, shipping, and warehousing of materials. These costs trend directly with cost of the material. Sprint recommends an even spread of Supply Expenses as a percentage of the material cost of the cable.

Splicing Labor: In addition to the actual cost of joining pairs, splicing labor includes the costs of splice cases, testing, set-up/tear/down and other activities. These costs generally are a function of cable size, although there is a minimum cost due to the other activities. Sprint recommends that splicing costs be spread on the basis of pair-feet. That is, cost would be calculated by dividing total pair-feet placed by total dollars to obtain a cost per pair-foot. This factor would be multiplied by the pair/fiber size to determine a dollar loading factor for each cable type and size with a minimum dollar amount equal to the dollar loading for a 100 pair cable or a 24 fiber cable.

Engineering Labor: While there is some impact to engineering labor based on the size of a copper cable, Sprint would support an allocation of Engineering labor based on sheath feet of cable placed.

Placing Labor: The cost of placing cable, particularly fiber, does not vary significantly with size. Sprint recommends that placing costs for each be spread evenly based on sheath feet.

Structure (Buried Only): For Fiber cable, structure cost is clearly independent of fiber size. Structure cost should be allocated per sheath foot placed. For copper cable, structure cost is independent of cable size within two ranges: cable that can generally be plowed (cables 6 to 200 pair), and cable that must be trenched (cable larger than 200 pair). However, even that distinction is not valid in many Sprint areas, because Sprint often contracts for a single price for cable structure regardless of whether the cable is plowed or trenched. Assuming that Density factors will be reflective of some of the differences, Sprint recommends that copper cable structure cost also be spread evenly based on sheath feet.

Other Comments/Adjustments

The cost of aerial cable support strand (messenger strand) for a forward-looking network has not been fully reflected in Sprint's aerial copper and aerial fiber costs. Some portion of the aerial fiber and copper placed in the Sprint data set was placed on pre-existing strand. Sprint aerial copper and fiber costs may need to be adjusted upwards to reflect this additional cost.

The cost of innerduct for Underground Fiber Optic cable has been handled by the models in different ways. The cost is sometimes entered as a separate input or may be included in the cost of the fiber optic cable. Please be aware that for purposes of this data request, Sprint has ***not*** included the cost of the innerduct in the cost of the underground fiber. It will be reflected in the cost of the underground conduit. If innerduct costs are to be included in the underground cable cost inputs, Sprint inputs will need to be adjusted upwards to reflect this additional cost.

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Cable Costs by Category and Size

Type	Cable Size	Aerial Cable Cost	Aerial Feet Placed	Aerial Cost / foot	Underground Cable Cost	Underground Feet Placed	Underground Cost / foot	Buried Cable Cost	Buried Feet Placed	Buried Cost / foot
Copper	6	1,093	7,000	0.16	0	0	-	3,302	18,640	0.18
	12	7,906	32,603	0.24	0	0	-	474,539	1,721,750	0.28
	18	29	55	0.53	0	0	-	0	0	-
	25	226,503	710,962	0.32	716	2,543	0.28	3,174,423	9,333,587	0.34
	28	689	815	0.85	438	518	0.85	5,730	6,685	0.86
	50	520,010	977,343	0.53	2,600	4,994	0.52	3,558,190	6,208,263	0.57
	54	7,184	5,562	1.29	696	526	1.32	2,437	1,826	1.33
	75	0	0	-	32	50	0.63	0	0	-
	100	780,070	825,196	0.95	5,471	6,218	0.88	4,169,470	4,366,255	0.95
	106	29,848	14,761	2.02	3,820	1,693	2.26	21,965	9,855	2.23
	150	367	380	0.97	0	0	-	4,421	4,295	1.03
	200	739,432	435,095	1.70	24,905	14,934	1.67	4,152,283	2,391,998	1.74
	300	440,008	178,697	2.46	35,398	15,087	2.35	1,814,517	727,516	2.49
	400	358,440	108,281	3.31	19,250	6,183	3.11	1,467,228	446,701	3.28
	600	486,308	101,531	4.79	87,276	18,078	4.83	1,850,000	392,030	4.72
	900	300,654	44,298	6.79	177,009	26,051	6.79	1,140,266	165,187	6.90
	1200	84,449	10,279	8.22	183,309	21,122	8.68	825,396	91,142	9.06
	1500	965	100	9.65	87,185	8,287	10.52	323,175	29,114	11.10
	1800	3,634	306	11.88	137,800	10,452	13.18	258,932	18,209	14.22
	2100	0	0	-	20,955	1,334	15.71	46,363	3,041	15.25
	2400	19,213	1,319	14.57	189,936	8,458	22.46	53,861	3,096	17.40
	2700	0	0	-	46,243	2,804	16.49	79,878	3,954	20.20
	3000	0	0	-	2,987	170	17.57	0	0	-
	3600	0	0	-	13,427	764	17.57	0	0	-
	4200	0	0	-	0	0	-	0	0	-
Total Cable Cost		4,006,803	3,454,583		1,039,451	150,266		23,426,376	25,943,144	

	Aerial Total Cost	Aerial % of Cable Cost	Underground Total Cost	Underground % of Cable Cost	Buried Total Cost	Buried % of Cable Cost
Misc Material	1,638,103	40.88%	307,041	29.54%	10,479,860	44.74%
Supply Expense	313,461	7.82%	40,268	3.87%	1,912,288	8.16%
Splicing	1,875,083	46.80%	291,699	28.06%	3,140,218	13.40%
Engineering	1,160,302	28.96%	225,808	21.72%	8,304,492	35.45%
Placement	5,819,060	145.23%	1,707,044	164.23%	2,593,397	11.07%
Structure	0	0.00%	0	0.00%	57,919,623	247.24%
Total	10,806,009	269.69%	2,571,860	247.42%	84,349,879	360.06%

Sprint LTD
Cable Costs by Category and Size

Type	Cable Size	Aerial Cable Cost	Aerial Feet Placed	Aerial Cost / foot	Underground Cable Cost	Underground Feet Placed	Underground Cost / foot	Buried Cable Cost	Buried Feet Placed	Buried Cost / foot
Fiber	4	281	630	0.45			-	1,055	2,125	0.50
	8	8,085	15,078	0.54			-	6,077	9,214	0.66
	12	56,644	81,723	0.69	6,332	9,149	0.69	199,678	288,408	0.69
	16	19,835	26,105	0.76	4,223	4,646	0.91	104,739	114,136	0.92
	20			-			-	34,240	29,818	1.15
	24	249,160	262,382	0.95	71,670	70,134	1.02	865,734	861,540	1.00
	28	2,609	2,194	1.19	3,517	2,913	1.21	62,714	54,516	1.15
	32	33,689	27,459	1.23	675	568	1.19	147,036	114,376	1.29
	36	183,020	138,128	1.33	73,722	52,979	1.39	1,569,745	1,127,624	1.39
	40	45,639	27,977	1.63	21,299	10,954	1.94	76,701	50,328	1.52
	44			-			-	40,738	25,510	1.60
	48	392,820	239,572	1.64	195,244	113,591	1.72	1,384,891	813,871	1.70
	60	287,939	148,923	1.93	61,135	29,329	2.08	577,594	288,884	2.00
	64	42,605	20,676	2.06	9,742	4,393	2.22	4,109	1,978	2.08
	72	256,825	108,954	2.36	113,384	45,780	2.48	354,664	146,736	2.42
	84	11,664	4,875	2.39	56,673	20,656	2.74	210,286	77,687	2.71
	96	418,210	135,097	3.10	520,662	161,797	3.22	1,180,069	374,075	3.15
	108	3,517	1,217	2.89	43,605	13,530	3.22	95,896	26,394	3.63
	120	148,755	38,646	3.85	132,290	34,627	3.82	106,396	27,108	3.92
	132			-	23,959	5,853	4.09	23,274	5,322	4.37
	144	74,448	16,764	4.44	79,713	17,407	4.58	34,830	7,609	4.58
	156			-	23,619	4,876	4.84	54,964	10,754	5.11
	168	10,441	2,004	5.21	54,033	9,912	5.45	6,821	1,274	5.35
	180			-			-	31,259	5,346	5.85
	192			-	23,505	3,848	6.11	33,793	5,454	6.20
	204			-			-	43,616	6,646	6.56
	216	14,968	2,290	6.54	194,902	29,265	6.66	62,966	9,132	6.90
	240			-	39,995	5,044	7.93			-
	264	60,897	6,968	8.74	889	102	8.74	28,528	3,264	8.74
	288			-	356,715	35,648	10.01	166,305	18,883	8.81
Total		2,322,051	1,307,662		2,111,501	686,999		7,508,717	4,508,013	

	Aerial Total Cost	Aerial % of Cable Cost	Underground Total Cost	Underground % of Cable Cost	Buried Total Cost	Buried % of Cable Cost
Misc Material	293,759	12.65%	238,261	11.28%	1,752,685	23.34%
Supply Expense	102,355	4.41%	84,708	4.01%	406,515	5.41%
Splicing	177,043	7.62%	66,130	3.13%	418,510	5.57%
Engineering	374,387	16.12%	292,817	13.87%	4,497,845	59.90%
Placement	1,422,585	61.26%	2,014,273	95.40%	574,726	7.65%
Structure	0	0.00%	0	0.00%	16,452,660	219.11%
Total	2,370,128	102.07%	2,696,190	127.69%	24,102,941	321.00%