

MASS
Capital Cost Factors
February 10, 1997

Account	Category	Capital Cost Factor
2121	BUILDINGS	0.1857
2124	GENERAL PURPOSE COMPUTERS	0.2783
2212	ELECTRONIC SWITCH DIGITAL	0.1686
2220	OPERATOR SYSTEMS	0.2482
2232.11	CIRCUIT EQUIPMENT DDS	0.2535
2232.1	CIRCUIT EQUIPMENT DIGITAL	0.1931
2232.2	CIRCUIT EQUIPMENT ANALOG	0.2325
2351	PUBLIC TEL TERM. EQUIP.	0.2595
2411	POLE LINES	0.1449
2421	AERIAL CABLE EXCH METALLIC	0.1707
2421	AERIAL CABLE EXCH NONMETALLIC	0.1671
2421	AERIAL CABLE TOLL NONMETALLIC	0.1672
2422	UNDERGROUND CA. EXCH METALLIC	0.1648
2422	UNDERGROUND CA. EXCH NONMETALLIC	0.1648
2422	UNDERGROUND CA. TOLL NONMETALLIC	0.1659
2423	BURIED CABLE. EXCH METALLIC	0.1721
2423	BURIED CABLE. EXCH NONMETALLIC	0.1694
2423	BURIED CABLE. TOLL NONMETALLIC	0.1701
2431	AERIAL WIRE	0.2501
2441	CONDUIT	0.1603

Factors are based on the cost of capital of

12.16%

CAPITAL COST RECOVERY FACTOR

ACCOUNT 2423
BURIED CABLE EXCH METALLIC
MASS

FACTOR= 0.1721

TABLE OF INPUT VARIABLES

Original Cost	\$1,000.00
Service Life (Years)	23.00
Future Net Salvage	-10.00%
Debt Ratio	23.51%
Cost of Debt	7.80%

Cost of Equity	13.50%
Cost of Invested Capital	12.16%
MACRS Recovery Period (Years)	15.00
Federal Income Tax Rate	35.00%
State Income Tax Rate	6.50%
Composite Income Tax Rate	39.23%

[illegible]

Total PV	1314.44
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Annuity	172.13
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Factor		0.1721
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MASSACHUSETTS
ADMINISTRATION FACTORS

		<u>EXPENSES</u> ((\$000))					
<u>LINE</u>	<u>ACCOUNT</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>	<u>AVOIDED RETAIL</u>	<u>ASSIGNABLE</u>	<u>DIRECTLY ATTRIBUTED</u>	<u>COMMON</u>
1	6112	MOTOR VEHICLES	4699	0	4699	0	4699
2	6114	SPECIAL PURPOSE VEHICLE	14	0	14	0	14
3	6115	GARAGE WORK EQUIPMENT	221	0	221	221	0
4	6116	OTHER WORK EQUIPMENT	-326	0	-326	0	-326
5	6122	FURNITURE AND ART	3925	737	3188	0	3188
6	6123	OFFICE EQUIPMENT	10188	1913	8274	0	8274
7	6124	GENERAL PURPOSE COMPUTERS	90044	16910	73134	56636	16498
8	6512	PROVISIONING	260	0	260	0	260
9	6532.1,,3,,9	NETWORK ADMINISTRATION	41592	0	37823	37823	0
10	6533.2,,5,,9	TESTING	52731	14216	38515	11958	0
11	6534	PLANT ADMINISTRATION	50986	0	50986	50986	0
12	6535	ENGINEERING	36269	0	36269	36269	0
13	6611	PRODUCT MANAGEMENT	55432	55432	0	0	0
14	6612	SALES	53515	49504	2391	2391	0
15	6623	CUSTOMER ACCOUNTING	186337	151900	34437	34437	0
16	6711	EXECUTIVE	14934	2805	12129	0	12129
17	6712	PLANNING	278	52	226	0	226
18	6721	ACCOUNTING & FINANCE	17754	3334	14420	14420	0
19	6722	EXTERNAL RELATIONS	22209	4171	18038	18038	0
20	6723	HUMAN RESOURCES	33847	6356	27491	27491	0
21	6724	INFORMATION SERVICES	45962	8632	37330	37330	0
22	6725	LEGAL	11835	2223	9612	0	9612
23	6726	PROCUREMENT	6681	1255	5426	5426	0
24	6727	RESEARCH & DEVELOPMENT	22552	4235	18317	0	18317
25	6728	OTHER GENERAL ADMINISTRATIVE	212905	39984	172921	172921	0
26		TOTAL	\$974,844	\$363,659	\$605,795	\$506,348	\$72,891

NOTE: Indirects @ 18.78%

INVESTMENTS

	<u>FACTOR</u>	<u>INVESTMENT</u>	<u>BUILDINGS</u>
27	2211,2212	CO SWITCH	\$300,386
28	2220	OPERATOR SYSTEMS	\$6,722
29	2231,2232	CIRCUIT	\$286,597
			\$593,704
30	2121	BUILDINGS	\$593,704
31	2211-2232	CO	\$3,235,444
32	2411-2441	OSP	\$3,270,624
33	2362	OTHER TERM	\$143,143
34		TOTAL	\$7,242,915

ADMINISTRATION FACTORS
(Reduced @ 1.11)

<u>DIRECTLY ATTRIBUTABLE</u>		<u>DIRECTLY ATTRIBUTABLE / OPERATING INVESTMENT</u>	
35	FACTOR	\$456,169 /	\$7,242,915 = <u>0.0630</u>
<u>COMMON</u>		<u>COMMON/ TELEPHONE PLANT IN SERVICE</u>	
36	FACTOR	\$65,667 /	\$7,753,301 = <u>0.0085</u>

MASSACHUSETTS

TAX FACTORS

1996

AD VALOREM TAXES	0.0018
GROSS REVENUE LOADING	0.0007
PERSONAL PROPERTY TAX	
UNDERGROUND CABLE	0.0144
UNDERGROUND CONDUIT	0.0067
AERIAL PLANT	0.0009
(ON PRIVATE PROPERTY)	
POWER MACHINERY	0.0004
SALES TAX	5%

IMPORTANT NOTE:
FACTORS SHOULD ONLY BE APPLIED IF NOT
PREVIOUSLY INCLUDED IN THE STUDY

TAX FACTOR DEVELOPMENT

MAIN	SUB	SUB-DESC	FSD	FSD-DESC	FC	FC-DESC	1995 (YTD)
1A	7240	1710 OTHER	5ED30	GROSS RECEIPTS TAXES	5E8Q	REGULATORY AGENCIES OTHER	\$1,970,591
1A	7240	2000 SALES AND USE TAXES	5ED50	SALES AND TAXES	5E90	SALES&USE TAXES OPERATING	\$1,465,000
1A	7240	3200 LOCAL PROPERTY TAX	5ED40	PROPERTY TAXES	5E92	LOCAL PROPERTY TAXES	\$12,255,595
1A	7240	3810 OTHER	5ED40	PROPERTY TAXES	5E98	PRPTY TAX BILLED TO OTHERS	(\$48,768)
1A	7240	9100 CAPITAL STOCK TAXES	5ED60	OTHER TAXES	5E9B	OTH TAXES CAPITAL STOCK TAX	\$205,148
1A	7240	9300 MISCELLANEOUS FEDERAL TAXES	5ED60	OTHER TAXES	5E9D	OTH TAXES MISC TAX FEDERAL	\$812,171
1A	7240	9500 STATE AND MUNICIPAL TAXES	5ED60	OTHER TAXES	5E9F	OTH TAXES STATE MUNCPL TX	\$88,402
1A	7240	9900 OTHER	5ED60	OTHER TAXES	5E9G	OTH TAXES OTHER	\$720,062
	1	PERSONAL PROPERTY TAX	5E92	\$44,237,000	1	SUM LESS FC 5E8Q,5E90	\$14,032,610
	2	PERSONAL PROPERTY INVESTMENT		\$1,970,641,894	2	MASS TPIS YE 1995	\$7,753,301,000
					3	ADVALOREM TAX FACTOR (L1/L2)	0.0018
	3	UNDERGROUND CABLE (L1/L2 * L3)	64%	0.0144	4	REGULATORY AGENCY ASSESSMENTS (5E8Q)	\$1,970,591
	4	UNDERGROUND CONDUIT	30%	0.0067	5	UNCOLLECTIBLES	\$33,712,305
	5	AERIAL PLANT ON PRIVATE PROPERTY	4%	0.0009	6	TOTAL (L4+L5)	\$35,682,856
	6	POWER MACHINERY	2%	0.0004	7	TOTAL BOOKED REVENUE	\$2,760,609,288
					8	GROSS REVENUE LOADING (L6/L7)	0.0007
	7	MASSACHUSETTS SALES TAX	5%				

NOTES: 1. PERSONAL PROPERTY TAXES IN MASSACHUSETTS ARE PAID ON THE VALUE OF UNDERGROUND PLANT, AERIAL PLANT ON PRIVATE PROPERTY, AND POWER MACHINERY
2. MASSACHUSETTS SALES TAX SHOULD BE INCLUDED WHEN NOT ALREADY ACCOUNTED FOR IN THE INVESTMENT.

MASSACHUSETTS
MAINTENANCE FACTORS

1996

Account	Category	Factors
2121	BUILDINGS	0.0359
2124	GENERAL PURPOSE COMPUTERS	0.0116
2112	ELECTRONIC SWITCH DIGITAL	0.0277
2220	OPERATOR SYSTEMS	0.0094
2232.11	CIRCUIT EQUIPMENT DDS	0.0186
2232.1	CIRCUIT EQUIPMENT DIGITAL	0.0101
2232.2	CIRCUIT EQUIPMENT ANALOG	0.0984
2351	PUBLIC TELEPHONE TERM. EQUIP.	0.0049
2411	POLES	0.0880
2421	AERIAL CABLE EXCH METALLIC	0.0851
2421	AERIAL EXCH NONMETALLIC	0.0038
2421	AERIAL CABLE TOLL NONMETALLIC	0.0038
2422	UNDERGROUND CABLE EXCH METALLIC	0.0266
2422	UNDERGROUND CABLE EXCH NONMETALLIC	0.0056
2422	UNDERGROUND CABLE TOLL NONMETALLIC	0.0056
2423	BURIED CABLE EXCH METALLIC	0.0304
2423	BURIED CABLE EXCH NONMETALLIC	0.0034
2423	BURIED CABLE TOLL NONMETALLIC	0.0034
2431	AERIAL WIRE	0.0342
2441	CONDUIT	0.0075

MASSACHUSETTS
MAINTENANCE FACTOR DEVELOPMENT

ATTACHMENT E
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INVESTMENTS
(000)

	TITLE	ACCOUNT	SOURCE	DEC 1994	DEC 1995	AVERAGE	CC/BC	CURRENT	
OSP:									
	POLES	2411	TABLE		\$238,061	\$248,681	\$243,371	1.929	\$469,463
	CABLE		ARMIS						
			FS2A						
	AERIAL	2421	METLC	\$1,284,231	\$1,348,733	\$1,316,482	1.476	\$1,943,127	
			NONMTLC	\$69,185	\$80,018	\$74,602	0.881	\$65,724	
	UNDGRD	2422	METLC	\$616,337	\$636,027	\$626,182	1.782	\$1,115,856	
			NONMTLC	\$175,901	\$188,981	\$182,441	0.872	\$159,089	
	BURIED	2423	METLC	\$169,988	\$175,516	\$172,752	1.720	\$297,133	
			NONMTLC	\$87	\$87	\$87	0.842	\$73	
	SUBMRN	2424	METLC	\$3,502	\$3,468	\$3,485	2.444	\$8,517	
			NONMTLC	\$192	\$194	\$193	0.838	\$162	
	INTRA BLDG	2426	METLC	\$16,137	\$18,410	\$17,274	1.008	\$17,412	
			NONMTLC	\$927	\$1,202	\$1,065	1.008	\$1,074	
	TOTAL CABLE				\$2,336,487	\$2,452,636	\$2,394,563	1.507	\$3,608,167
	WIRE	2431	ARMIS	\$8,119	\$8,107	\$7,113	1.240	\$8,820	
	CONDUIT	2441	ARMIS	\$555,020	\$575,476	\$565,248	2.481	\$1,402,380	
	TOTAL				\$563,139	\$581,583	\$572,361	2.466	\$1,411,200
(1) TOTAL OSP					\$3,137,687	\$3,282,900	\$3,210,295	1.710	\$5,488,830
COE:									
	ESS:								
	DIGITAL	2212	ARMIS	\$1,304,421	\$1,407,761	\$1,356,091	1.039	\$1,408,979	
	ANALOG	2211	ARMIS	\$295,374	\$229,219	\$262,297	1.143	\$299,805	
	ELEC MECH:	2215	ARMIS	\$46	\$39	\$43	1.163	\$50	
	& XBAR								
	TOTAL SWITCHING				\$1,599,841	\$1,637,019	\$1,618,431	1.056	\$1,708,834
	OPR SYS	2220	ARMIS	\$55,451	\$36,630	\$46,041	0.999	\$45,995	
	RADIO SYS	2231	ARMIS	\$19,683	\$17,683	\$18,683	1.418	\$26,492	
	CKT EQ	2232							
	DDS	.11	SUB LDGR	\$40,856	\$38,924	\$39,890	1.267	\$50,541	
	DIGITAL	.19	SUB LDGR	\$851,789	\$893,538	\$872,654	1.267	\$1,105,665	
	ANALOG	.29	SUB LDGR	\$117,594	\$110,725	\$114,160	1.267	\$144,641	
	WIR GAIN								
	DIGITAL	.12	SUB LDGR	\$433,432	\$488,873	\$461,153	1.267	\$584,281	
	ANALOG	.21	SUB LDGR	\$12,287	\$11,141	\$11,714	1.267	\$14,842	
					\$1,531,092	\$1,597,514	\$1,564,305		\$1,972,457
(2) TOTAL COE					\$3,130,933	\$3,234,533	\$3,182,736	1.157	\$3,681,291
(3) LAND	2111	ARMIS		\$25,954	\$25,955	\$25,955	1.000	\$25,955	
(4) BLDGS	2121	ARMIS		\$571,779	\$596,640	\$584,210	3.094	\$1,807,544	
(5) GENERAL ITEMS		ARMIS		\$405,712	\$425,922	\$415,817	0.971	\$403,857	
(2112,14,15,16,22,23,24)									
(6) STA APP	2311	ARMIS		\$8,741	\$8,741	\$8,741	1.356	\$11,853	
(7) CUST PRM	2321	ARMIS		\$0	\$0	\$0	1.182	\$0	
	PUB TEL	2351							
	COIN		SUB LDGR	\$22,680	\$24,508	\$23,594	0.952	\$22,461	
	COINLESS		SUB LDGR	\$3,679	\$3,449	\$3,564	0.952	\$3,393	
	OTHER		SUB LDGR	\$16,803	\$18,010	\$17,407	0.952	\$16,571	
(8) PUB TEL TOTAL	2351	ARMIS		\$43,162	\$45,967	\$44,565		\$42,425	
	OTHER TERM EQ	2362							
(NON-CPE)									
(9) DDS	.1	SUB LDGR		\$0	\$0	\$0	1.252	\$0	
(10) PR GN	.7	SUB LDGR		\$45,993	\$62,843	\$54,418	1.252	\$68,131	
(11) NCTE	.8	SUB LDGR		\$60,070	\$58,377	\$59,224	1.252	\$74,148	
(12) OTHER	.9	SUB LDGR		\$0	\$0	\$0	1.252	\$0	
OTR TERM TOTAL	2362				\$106,063	\$121,220	\$113,642	1.252	\$142,279
TOTAL PLANT IN SVC					\$7,430,031	\$7,741,878	\$7,585,959	1.530	\$11,604,034
LEASE IMPRV		ARMIS		\$48,314	\$56,315				
CAPITAL LEASES		ARMIS		\$3,764	\$1,499				
TOTAL PLANT					\$7,482,109	\$7,799,692			

MAINTENANCE FACTOR DEVELOPMENT

AVERAGE EMBEDDED INVESTMENTS "\$000"

(1)	(2)	(3)	(4)	(5)	(6)	(7)	OTHER TERM (NON-CPE)			
OSP	COE	LAND	BLDG	STA APP	CUST PRM	PUB TEL	(8)	(9)	(10)	(11)
DDO	PR GN	NCTE	OTHR MISC							
\$3,210,295	\$3,182,736	\$25,955	\$584,210	\$8,741	\$0	\$44,565	\$0	\$54,418	\$59,224	\$0

AVERAGE CURRENT INVESTMENTS "\$000"

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OSP	COE	LAND	BLDG	STA APP	CUST PRM	PUB TEL	DDO	PR GN	NCTE	OTHR MISC
\$5,488,830	\$3,681,291	\$25,955	\$1,807,544	\$11,853	\$0	\$42,425	\$0	\$68,131	\$74,148	\$0

MAINTENANCE EXPENSE "\$000"

ACCOUNT	TITLE	SOURCE	AMOUNT (\$000)
6121	BLDG & GRD	ARMIS	\$65,841
6410	OSP	ARMIS	\$268,020
6210	COE M+R	ARMIS	\$68,899
6533.1,2	SUB LINE TEST	FAIS	\$3,358
6533.4	TRK TEST	FAIS	\$22,636
6532.8	IFA & CL	FAIS	\$3,109
6531	TRANS OF PWR	ARMIS	\$16,609
6351	PUB TEL	ARMIS	\$9,579
6362	OTHR TERM EQP		
.1	-DDO	FAIS	\$2
.7	-PR GN	FAIS	\$89
.8	-NCTE	FAIS	\$1,201
.92	-OTH MISC	FAIS	\$4

"M" TIME DISTRIBUTION

ACCOUNTS	\$212	\$211	\$232.11	\$232.19	\$232.29	\$232.12	\$232.21	\$231
"M"	\$25,053	\$9,660	\$421	\$7,684	\$14,350	\$2,712	\$4	\$23
%	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.16
	4,008	1,546	67	1,229	2,296	0	0	4
"R"	\$24,998	\$9,098	\$513	\$2,070	\$10,916	\$1,098	\$5	\$196
TOTALS*	\$29,006	\$10,644	\$580	\$3,299	\$13,212	\$1,098	\$5	\$200

*NOTE: ONLY THE NON SERVICE ORDER DRIVEN EXPENSES ARE INCLUDED IN "M" DOLLARS.

MASSACHUSETTS
MAINTENANCE FACTOR DEVELOPMENT

ATTACHMENT E
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CURRENT FACTORS

BUILDING FACTORS:	OTHER TERM EQ (NON-CPE)							
	OSP	COE	B&Q	PUB TEL	DDS	PR GN	NCTE	OTHER
BLDG & GRDS			0.0359					
OSP	0.0488							
COE M+R		0.0187						
SUB LINE TST	0.0006			0.0006	0.0006	0.0006	0.0006	0.0006
TRK TST	0.0025	0.0025						
IFA & CL	0.0003	0.0003		0.0043	0.0043	0.0043	0.0043	0.0043
TRANS OF POWER		0.0043		0.3915				
PUB TEL								
OTHER TERM EQP					0.0000			
-DOS						0.0013		
-PR GN							0.0162	
-NCTE								0.0000
-OTH MISC								
TOTAL	0.0522	0.0258	0.0359	0.3964	0.0049	0.0062	0.0211	0.0049
FACTOR	0.0034	0.0071	0.0359	0.0049	0.0049	0.0049	0.0049	0.0049

CO FACTORS:

	ELECTRONIC		CIRCUIT		DIGITAL		PR GN		RADIO	OPR SYS
	DIGITAL	ANALOG	DDS	DIGITAL	(DDS+DGTL)	ANALOG	DIGITAL	ANALOG		
INVESTMENTS:	1,408,979	299,805	50,541	1,105,665	1,156,206	144,641	584,281	14,842	26,492	45,995
ACCOUNTS:	6212	6211	6232.11	6232.19	6232.1	6232.29	6232.12	6232.21	6231	6220
EXPENSES:	29,006	10,644	580	3,299	3,879	13,212	1,098	5	200	105
FACTORS:	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071	0.0071
LOADINGS:	0.0206	0.0355	0.0115	0.0030	0.0034	0.0913	0.0019	0.0003	0.0075	0.0023
EXPENSES:										
FACTOR	0.0277	0.0426	0.0186	0.0101	0.0105	0.0984	0.0090	0.0074	0.0146	0.0094

WIRE FACTORS:

	POLES	CABLE					AERIAL WIRE	CONDUIT
		AERIAL*	U.G.	BURIED*	SUBMR	INTRA BLDG		
INVESTMENTS:	469,463	2,008,851	1,274,945	297,206	8,679	18,486	8,820	1,402,380
ACCOUNTS:	6411	6421	6422	6423	6424	6426	6431	6441
EXPENSES:	2,532	211,053	26,379	8,019	16	3,326	272	5,694
FACTORS:	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034
LOADINGS:	0.0054	0.1051	0.0207	0.0270	0.0018	0.1800	0.0308	0.0041
EXPENSES:								
FACTOR	0.0088	0.1085	0.0241	0.0304	0.0052	0.1834	0.0342	0.0075

	AERIAL		UNGRD		BURIED		SUBMRN		INTRBLDG	
	MTLC	NONMTLC	MTLC	NONMTLC	MTLC	NONMTLC	MTLC	NONMTLC	MTLC	NONMTLC
INVESTMENTS:	1,943,127	65,724	1,115,856	159,089	297,133	73	8,517	162	17,412	1,074
ACCOUNTS:	6421	6421	6422	6422	6423	6423	6424	6424	6426	6426
EXPENSES:	158,837	27	25,935	345	8,012	0	0	ERR	3,326	1
FACTORS:	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034
LOADINGS:	0.0817	0.0004	0.0232	0.0022	0.0270	0.0000	0.0000	ERR	0.1910	0.0009
EXPENSES:								ERR	0.1844	0.0043
FACTOR	0.0851	0.0038	0.0266	0.0056	0.0304	0.0034	0.0034	ERR	0.1844	0.0043

*Service Order Local Assignment related expenses have been removed.