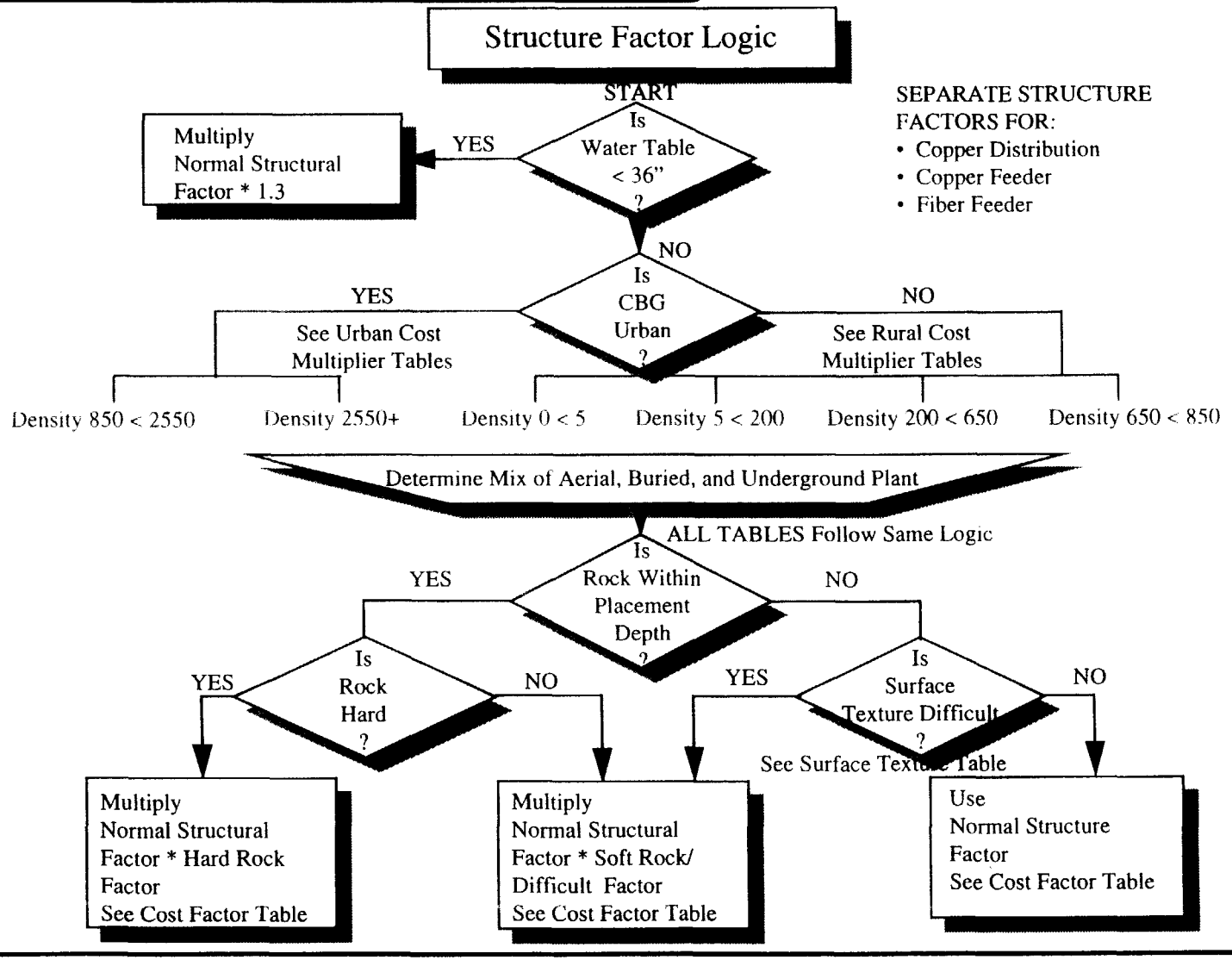
ST-C	0	Stony & Clay
ST-CL	0	Stony & Clay Loam
ST-COSL	0	Stony & Course Sandy Loam
ST-FSL	0	Stony & Fine Sandy Loam
ST-L	0	Stony & Loamy
ST-LCOS	0	Stony & Loamy Course Sand
ST-LFS	0	Stony & Loamy Fine Sand
ST-LS	0	Stony & Loamy Sand
ST-SIL	0	Stony & Silt Loam
ST-SL	0	Stony & Sandy Loam
STV	1	Very Stony
STV-CL	1	Very Stony & Clay Loam
STV-FSL	1	Very Stony & Fine Sandy Loam
STV-L	1	Very Stony & Loamy
STV-MUCK	1	Very Stony & Muck
STV-SICL	1	Very Stony & Silty Clay Loam
STV-SIL	1	Very Stony & Silty Loam
STV-SL	1	Very Stony & Sandy Loam
STX	1	Extremely Stony
STX-C	1	Extremely Stony & Clay
STX-CL	1	Extremely Stony & Clay Loam
STX-L	1	Extremely stony & Loamy
STX-LCOS	1	Extremely Stony & Loamy Course Sand
STX-SIL	1	Extremely Stony & Silty Loam
STX-SL	1	Extremely stony & Sandy Loam
SY	1	Slaty
SY-SIL	1	Slaty & Silty Loam
SYV	1	Very Slaty
SYX	1	Extremely Slaty
UNK	0	Unknown
UWB	1	Unweathered Bedrock
VAR	0	Variable
VFS	0	Very Fine Sand
VFSL	0	Very Fine Sandy loam
WB	1	Weathered Bedrock

BENCHMARK COST MODEL



SEPARATE STRUCTURE FACTORS FOR:

- Copper Distribution
- Copper Feeder
- Fiber Feeder

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BENCHMARK COST MODEL

FEEDER SEGMENT AND DISTRIBUTION CABLE COSTS

- Feeder Segment Cost = Segment Distance * Cable Cost per foot

- Distribution Cable Cost = Avg. Distribution Plant Distance * Distribution Leg Cost Per Foot * 4 Distribution Legs

BENCHMARK COST MODEL

STRUCTURE COST

- Structure Cost =

  Total Cable Cost * CBG/Segment Specific Weighted Structure Cost Factor

  Where Weighted Structure Cost Factor =

  (Urban/Rural Terrain Specific Structure Multiplier For Buried Cable * % Buried Cable) + (Urban/Rural Terrain Specific Structure Multiplier For Aerial Cable* % Aerial Cable)

placement cost not by cable size – supposedly reflected in the density factors

"Input Variables for switching and overheads

Per line switch cost =	238.87	
Fixed Cost per switch =	647526	
% Non Traffic Sensitive	70.00%	(Enter as decimal)
% of Traffic Sensitive that is local =	30.00%	(Enter as decimal)
Business Gross Up Fac	1.75	
Switch Fill Factor =	0.8	
ARMIS Carrying Charge Factor =	0.316765	
Direct Carrying Charge Factor =	0.2297	

NOTE: Switching costs are entered as a fixed cost per switch plus the per line additive. Both costs must be included to accurately reflect switching costs. The fixed cost will be converted to a per line cost and added to the per line additive to determine switching cost per line.

The % Non traffic sensitive is applied to the fixed cost portion of the switch.

BENCHMARK COST MODEL

SWITCHING COSTS

- CLLI Common Switching Costs Per Line =

  (Total CLLI Common Cost * Land & Building Factor * Basic Local Service Factor)/(Sum of Households * Ratio of Total Lines to Residence Lines)

Where:

» Total CLLI Common Cost = $647,526

» Land & Building Factor = 1.043

» Basic Local Service Factor = .79

» Ratio Of Total Lines to Res Lines = 1.75

% NDS portion of switch 100%
% YES = 30% - 30% SLU - Local
100% [illegible]

?

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BENCHMARK COST MODEL

SWITCHING COSTS

- Line Sensitive Switch Costs Per Household =
  Per Line Switch Cost * Land & Building Factor/ Switch Fill Factor

Where:

» Per Line Switch Cost = $238.87
» Land & Building Factor = 1.043
» Switch Fill Factor = 0.80

BENCHMARK COST MODEL

PURPOSE OF ANNUAL COST FACTORS

- The BCM Produces Investments in Plant Used to Provide Basic Local Service - No Direct Calculation of Expenses

- Annual Cost Factors are Applied to Investment Amounts to Determine the Recurring Cost of Service, Including Return, Depreciation, Taxes and Operating Expenses

BENCHMARK COST MODEL

TWO ANNUAL COST FACTORS USED

- Cost Factor #1 is Derived From Historical Accounting Data for Tier 1 LECs
- Cost Factor #2 is Based on the Hatfield Associates Study of the Cost of Basic Universal Service

BENCHMARK COST MODEL

COST FACTOR #1

- Factor is 31.6765%
- Derived from 1994 ARMIS Form 43-01 for Tier 1 LECs
- Represents Broad-Gauge Historical Relationship Between Investments and Expenses

BENCHMARK COST MODEL

COST FACTOR #2

- Factor is 22.97%
- Based on '94 Study by Hatfield Associates
- In General, Uses ARMIS Data for RBOCs
- Excludes Some Expense Categories as not Related to Basic Universal Service
- Uses Overhead Loading Factor of 10% — Corp operations, plus some other
- Billing Expenses Based on Incremental Cost Data

4. Determining Monthly Basic Local Service Costs

Throughout the BCM process, all cost calculations are derived in terms of investment. In order to determine a monthly cost for basic local service by CBG, the individual investments for the piece parts must be summed to include loop and structure investments, electronic circuit equipment investments, and switching investments. An annual cost factor is applied to total investment and divided by 12 to estimate a monthly cost of basic local service.

For purposes of this model, two different annual cost factors are considered. The two factors represent two views of the appropriate level of expenses attributable to basic local service, and provides upper and lower boundaries for the discussion of the monthly cost of basic service. The first annual cost factor of 31.6765% is based on historical accounting data and total expense levels of the Tier 1 LECs, utilizing the following 1994 ARMIS Form 43-01 source data: Rows 1010-1090; 1120-1190; 1290; 1320-1390; 1410-1490; 1510-1590; 1620-1690; 1705-1790; 1820-1890; and 1919-1920. The second annual cost factor of 22.97% is based on the inclusion of limited expense categories and limited expense amounts, and uses the following assumptions based on the Hatfield/MCI Study approach:

- Investment-related expenses of depreciation and after-tax return on investment (ROI)
  - ROI = 9.5%
  - 45/55 Debt to Equity Ratio
  - 11.0% Cost of Equity
  - Combined Federal and State Tax Rate of 39 percent
  - 18 year Wtd. Avg. Service Life in Calculating Depreciation

- Operating and Maintenance Expenses Partially Attributable to Basic Local Service
  - Network Support
  - General Support
  - Central Office Switching
  - Central Office Transmission
  - Cable and Wire
  - Provisioning
  - Network Operations
  - Call Completion
  - Billing and Collection

- Excluded Expenses
  - Some Customer Services Expenses
  - Marketing Expenses
  - Product Development Expenses

- General and Administrative Expenses
  - 10% Gross-Up included for Overhead