# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 4C - CONDUIT ( $ PER DUCT-FOOT ) | | | | | | |
| | | | FOR 9.0 KFT AND LONGER | | | | | |
| | | | | | | | | |
| | | | | MED-DIF | | HIGH-DIF | | |
| DENSITY | | NORMAL | | (ROCK-S) | | (ROCK-H) | | WATER |
| 0-10 | | 15.10 | | 22.30 | | 30.30 | | 30.30 |
| 11-50 | | 18.50 | | 27.50 | | 34.70 | | 34.70 |
| 51-150 | | 25.30 | | 35.65 | | 44.85 | | 44.85 |
| 151-500 | | 26.30 | | 38.30 | | 50.30 | | 50.30 |
| 501-2000 | | 15.43 | | 24.18 | | 33.55 | | 33.55 |
| 2001-5000 | | 16.60 | | 28.30 | | 41.30 | | 41.30 |
| 5001+ | | 18.55 | | 34.80 | | 54.30 | | 54.30 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| CONDUIT ( $ PER DUCT-FOOT ) - FRC 4C | | | | |
|---|---|---|---|---|
| | DISTRIBUTION | | | |
| | | | | |
| | | | | ALL |
| DENSITY | | | | TERRAINS |
| 0-10 | | | | 9.50 |
| 11-50 | | | | 9.50 |
| 51-150 | | | | 9.50 |
| 151-500 | | | | 9.50 |
| 501-2000 | | | | 9.50 |
| 2001-5000 | | | | 9.50 |
| 5001+ | | | | 9.50 |

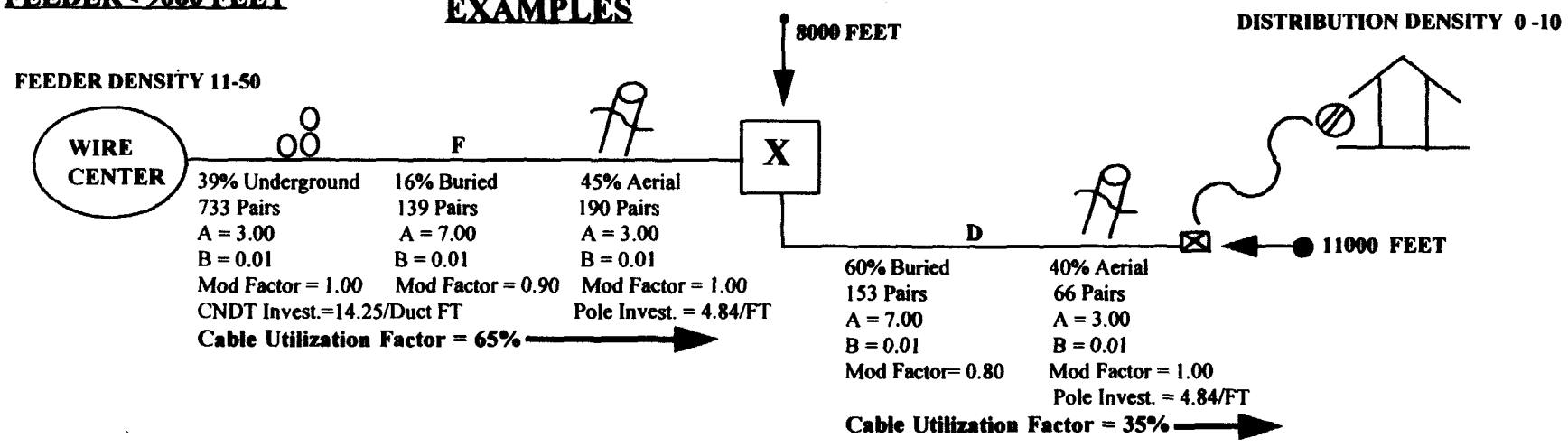
# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

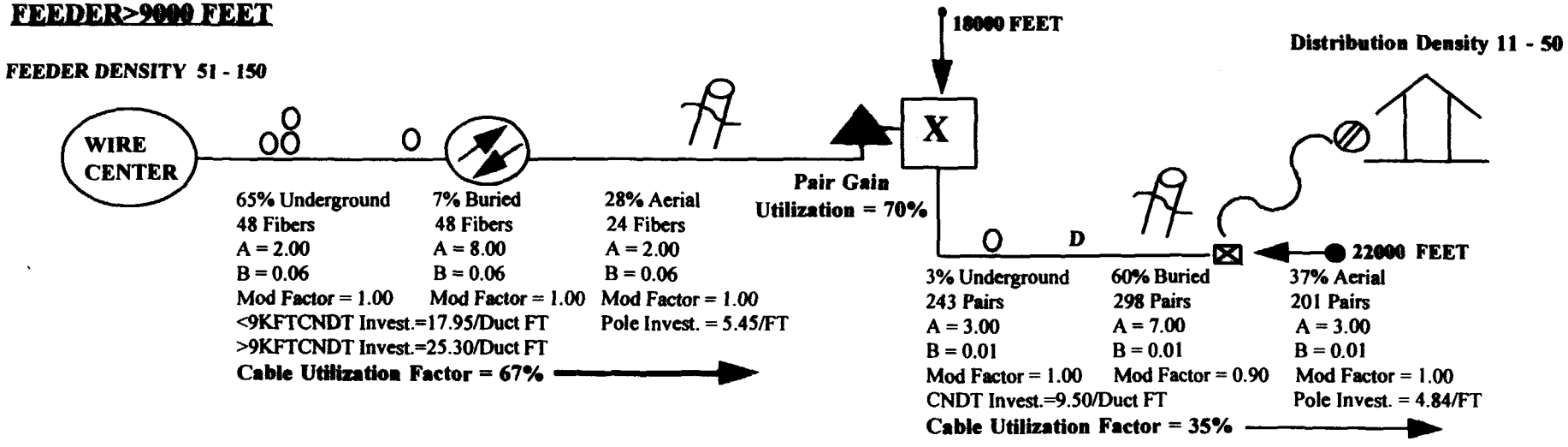
## Loop Assumptions and Calculations

**FEEDER< 9000 FEET**

**EXAMPLES**




**FEEDER>9000 FEET**



# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | AVERAGE UTILIZATION % BY DENSITY ZONES | | | |
|---|---|---|---|---|
| | COPPER FEEDER | FIBER FEEDER | PAIR-GAIN EQUIP. | DISTRIBUTION |
| DENSITY | AVG UTILIZATION | AVG UTILIZATION | AVG UTILIZATION | AVG UTILIZATION |
| 0-10 | 65% | 67% | 63% | 35% |
| 11-50 | 65% | 67% | 70% | 35% |
| 51-150 | 65% | 67% | 71% | 36% |
| 151-500 | 68% | 67% | 69% | 37% |
| 501-2000 | 65% | 67% | 65% | 38% |
| 2001-5000 | 65% | 67% | 65% | 38% |
| 5001+ | 62% | 67% | 63% | 39% |

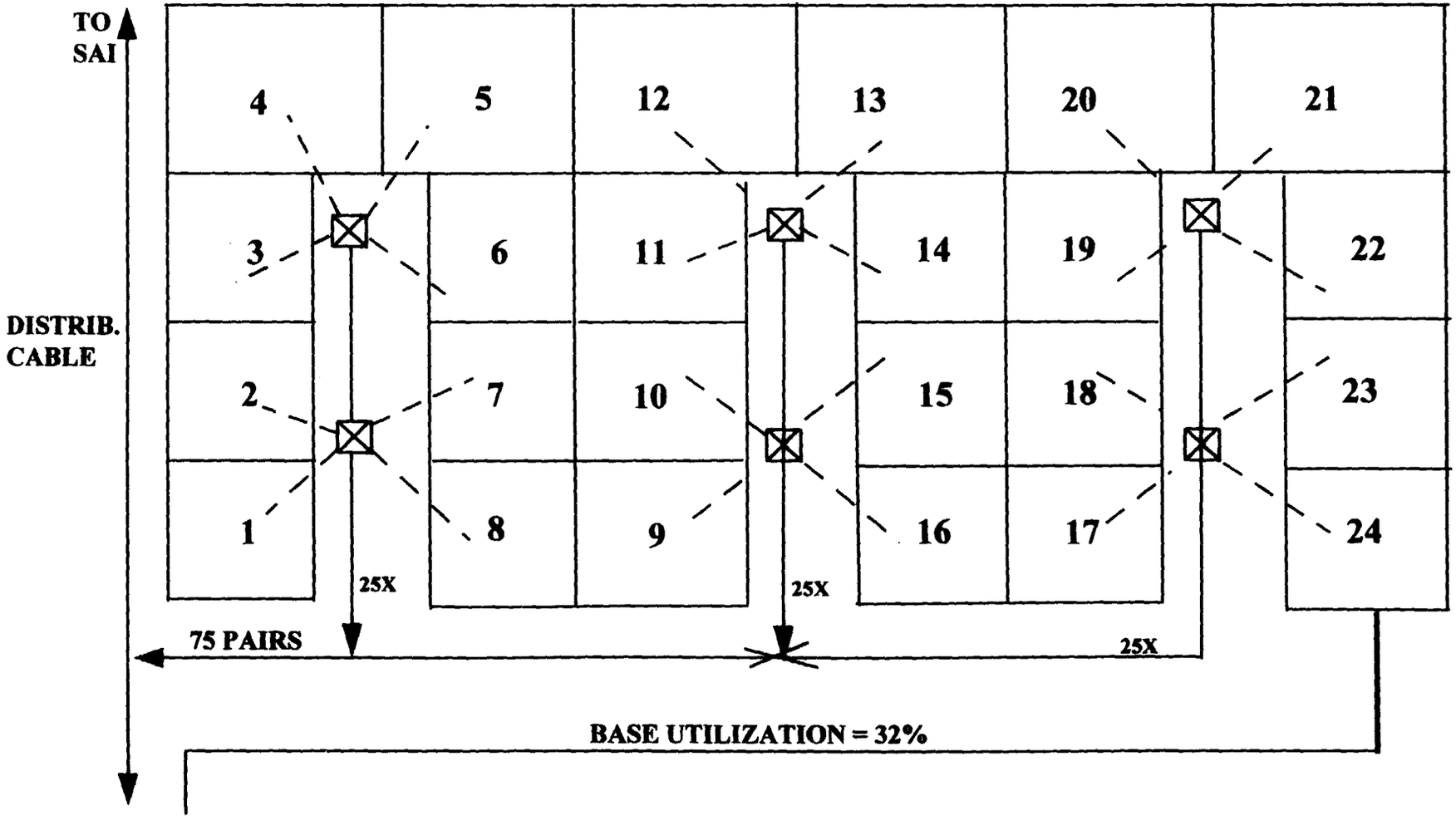
# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

### DISTRIBUTION UTILIZATION

- 24 Lot subdivision
- Buried Plant
- Designed at 2 Lines/Lot
- Min. Size Cable = 25 Pair
- No multiple between Binder Groups
- Dedicated Plant



# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

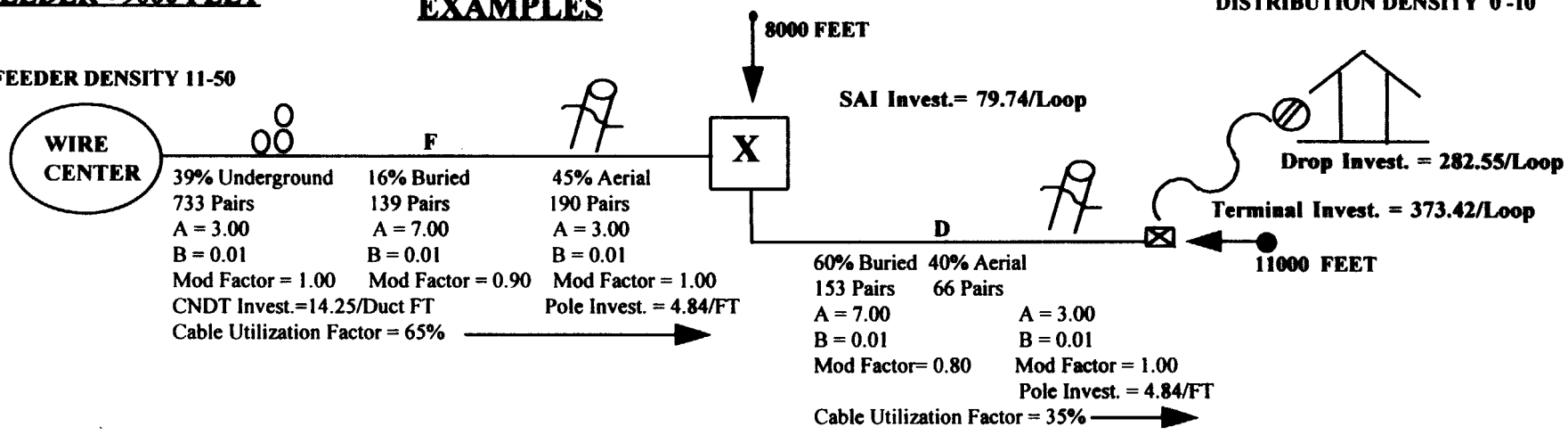
## Loop Assumptions and Calculations

**FEEDER< 9000 FEET**

**EXAMPLES**

**DISTRIBUTION DENSITY 0 -10**

**FEEDER DENSITY 11-50**

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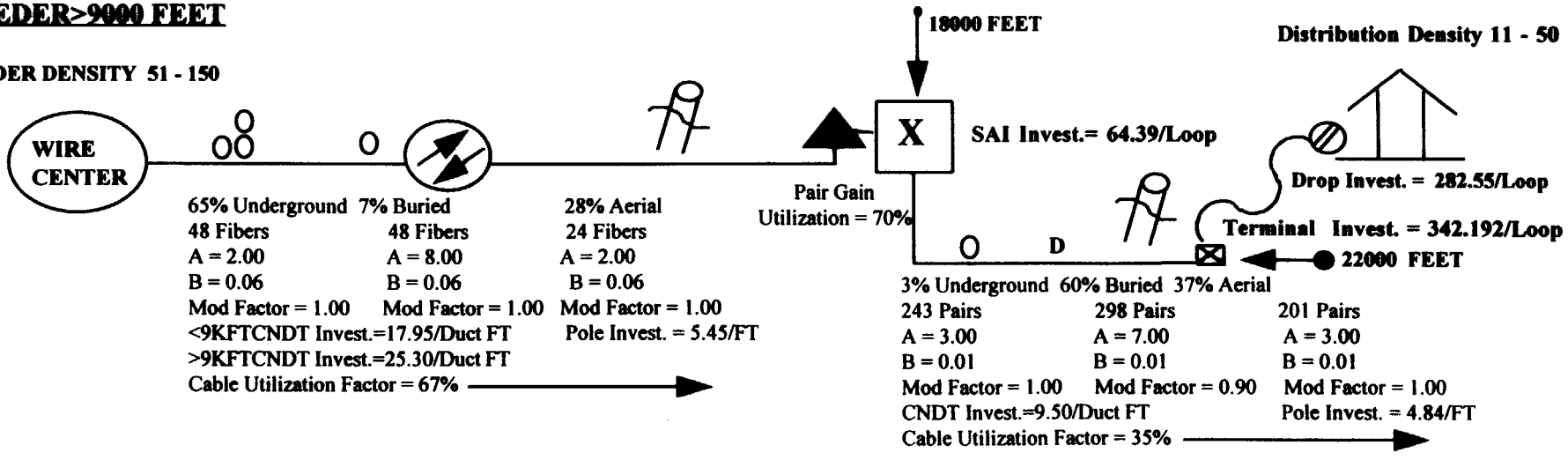
**FEEDER>9000 FEET**

**FEEDER DENSITY 51 - 150**

**Distribution Density 11 - 50**



# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | | | | INVESTMENT PER LINE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DENSITY | SAI $ | % SAI | $ PER LN | BLDG $ | % BLDG. | $ PER LN | X CONN $ | % X CONN | $ PER LN | TOTAL $ |
| 0 - 10 | $57.14 | 5% | $2.86 | $75.85 | 8% | $8.07 | $81.40 | 87% | $70.82 | $79.74 |
| Nov-50 | $45.71 | 25% | $11.43 | $39.48 | 10% | $3.95 | $75.40 | 65% | $49.01 | $64.39 |
| 51 - 150 | $38.09 | 50% | $19.05 | $28.88 | 14% | $4.04 | $31.40 | 36% | $11.30 | $34.39 |
| 151 - 500 | $21.16 | 80% | $16.93 | $23.58 | 20% | $4.72 | $ - | 0% | N/A | $21.65 |
| 501 - 2000 | $21.16 | 74% | $15.66 | $18.85 | 26% | $4.85 | $ - | 0% | N/A | $20.51 |
| 2001 - 5000 | $21.16 | 68% | $14.39 | $18.57 | 32% | $5.94 | $ - | 0% | N/A | $20.33 |
| > 5000 | $17.25 | 47% | $8.11 | $18.52 | 53% | $9.82 | $ - | 0% | N/A | $17.92 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | | TERMINALS - INVESTMENTS PER LINE | | | | | |
|---|---|---|---|---|---|---|---|
| | TERMINAL $ | | TERMINAL MIX | | AVE INVEST | % SINGLE | AVE INVEST |
| | BURIED | AERIAL | BURIED | AERIAL | SUB TOTAL | FAMILY | SINGLE FAM. |
| | A | B | C | D | E | F | G |
| DENSITY | | | | | (A*C)+(B*D) | | E * F |
| 0 - 10 | $ 481.73 | $ 303.27 | 60% | 40% | $ 410.35 | 91% | $ 373.42 |
| 11 - 50 | $ 445.02 | $ 269.86 | 63% | 37% | $ 380.21 | 90% | $ 342.19 |
| 51 - 150 | $ 385.51 | $ 227.87 | 70% | 30% | $ 338.22 | 86% | $ 290.87 |
| 151 - 500 | $ 276.45 | $ 160.39 | 70% | 30% | $ 241.63 | 80% | $ 193.30 |
| 501 - 2000 | $ 108.32 | $ 62.84 | 85% | 15% | $ 101.50 | 74% | $ 75.11 |
| 2001-5000 | $ 73.03 | $ 42.37 | 95% | 5% | $ 71.50 | 68% | $ 48.62 |
| 5000+ | $ 44.22 | $ 25.66 | 98% | 2% | $ 43.85 | 47% | $ 20.61 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | | DROP INVESTMENT PER LINE | | | | | |
|---|---|---|---|---|---|---|---|
| DENSITY | DROP $ | | DROP MIX | | INVEST | % SINGLE | AVE INVEST |
| | BURIED | AERIAL | BURIED | AERIAL | SUB TOTAL | FAMILY | SINGLE FAM. |
| | A | B | C | D | (A*C)+(B*D) | F | F*G |
| 0 - 10 | $ 323.60 | $ 290.82 | 60% | 40% | $ 310.49 | 91% | $ [illegible] |
| 11 - 50 | $ 290.33 | $ 261.36 | 63% | 37% | $ 279.61 | 90% | $ [illegible] |
| 51 - 150 | $ 236.13 | $ 217.98 | 70% | 30% | $ 230.68 | 86% | $ [illegible] |
| 151 - 500 | $ 160.67 | $ 160.68 | 70% | 30% | $ 160.67 | 80% | $ [illegible] |
| 501 - 2000 | $ 115.20 | $ 123.19 | 85% | 15% | $ 116.40 | 74% | $ [illegible] |
| 2001-5000 | $ 114.22 | $ 123.19 | 95% | 5% | $ 114.66 | 68% | $ 77.97 |
| 5001+ | $ 102.23 | $ 113.82 | 98% | 2% | $ 102.46 | 47% | $ 48.16 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

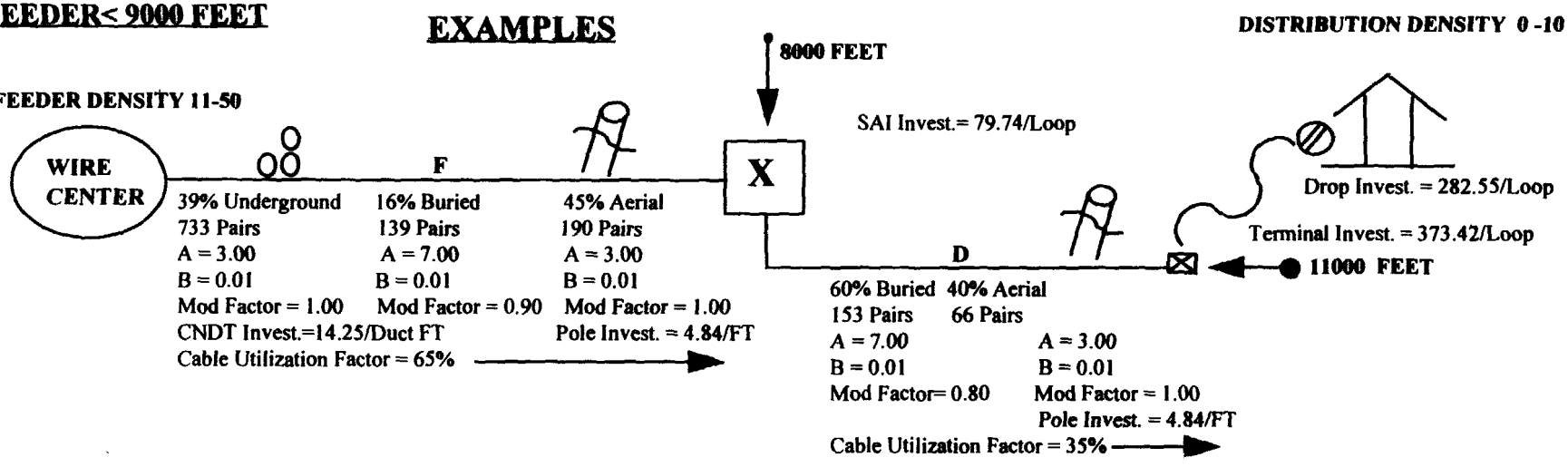
## Loop Assumptions and Calculations

**FEEDER< 9000 FEET**

**EXAMPLES**

**DISTRIBUTION DENSITY 0 -10**

**FEEDER DENSITY 11-50**

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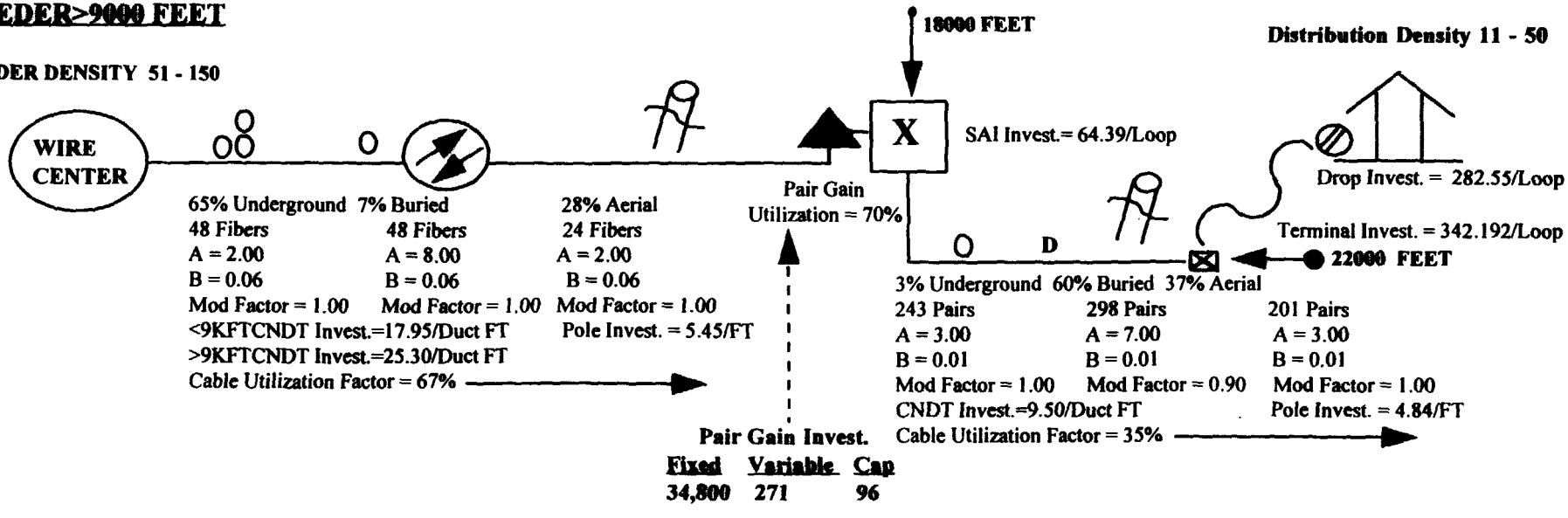
**FEEDER>9000 FEET**

**FEEDER DENSITY 51 - 150**

**Distribution Density 11 - 50**



# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| PAIR GAIN EQUIPMENT INVESTMENTS - FRC 257C | | | | | |
|---|---|---|---|---|---|
| | (DIGITAL LOOP CARRIER) | | | | |
| | | | | | |
| | | FIXED $ | VARIABLE | CHAN. | |
| | DENSITY | PER LOC | $ PER PR | CAP. | |
| | 0-10 | 27800 | 121 | 24 | |
| | 11-50 | 34800 | 271 | 96 | |
| | 51-150 | 34800 | 271 | 96 | |
| | 151-500 | 115000 | 125 | 672 | |
| | 501-2000 | 115000 | 125 | 672 | |
| | 2001-5000 | 140000 | 125 | 1344 | |
| | 5001+ | 140000 | 125 | 1344 | |

**DOES NOT REPRESENT PACIFIC BELL COST**

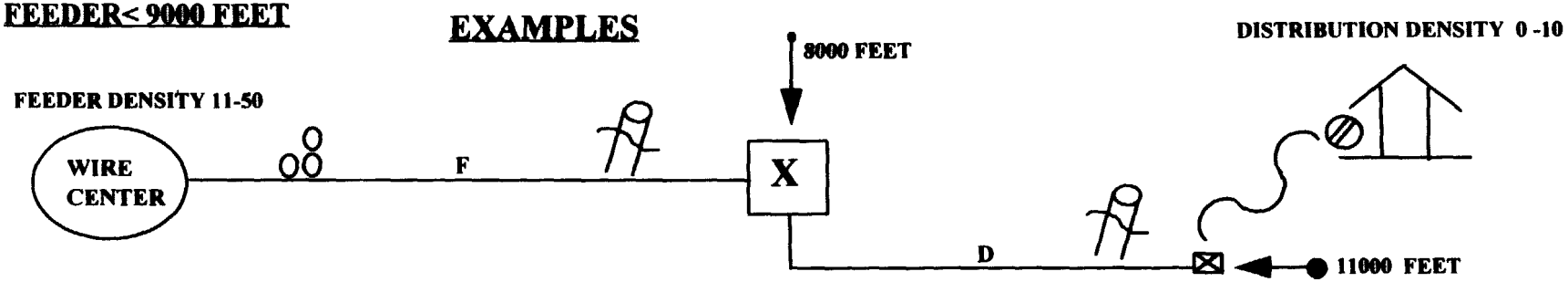
# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

**FEEDER< 9000 FEET**

**EXAMPLES**




CABLE INVESTMENT - Length x {(A-Cost +(B Cost x Cable Size))/ Cable Size / Cable Utilization x Modifying Factor)

| | | | INVESTMENT |
|---|---|---|---|
| F | Underground | - 3120 x {(3.00 + (.01 x 733))/ 733 / 65% x 1.00} = 3120 x .021681 = | $67.64 |
| F | Buried | - 1280x {(7.00 + (.01 x 1393))/ 139 / 65% x .90} = 1280 x .083574 = | $106.98 |
| F | Aerial | - 3600 x {(3.00 + (.01 x 190))/ 190 / 65% x 1.00} = 3600 x .039676 = | $142.83 |
| D | Buried | - 1800 x {(7.00 + (.01 x 153))/ 153 / 35% x .80} = 1800 x .127432 = | $229.38 |
| D | Aerial | - 1200 x {(3.00 + (.01 x 66))/ 66 / 35% x 1.00} = 1200 x .158441 = | 190.13 |

STRUCTURE INVESTMENT - Length x (Conduit / Cable size / Cable Utilization

| | | | |
|---|---|---|---|
| F | Conduit | - 3120 x (14.25 / 733 / 65%) = 3120 X .029909 = | $93.32 |
| | | Length x (Poleline / Cable Size / Cable Utilization) | |
| F | Pole Line | - 3600 x (4.84 / 190 / 65%) = 3600 X .039190 = | $141.08 |
| D | Pole Line | - 1200 x (4.84 / 66 / 35%) = 1200 X .209524 = | $251.43 |

OTHER INVESTMENT

| | |
|---|---|
| SAI - | $79.74 |
| TERMINAL - | $373.42 |
| DROP - | $282.55 |

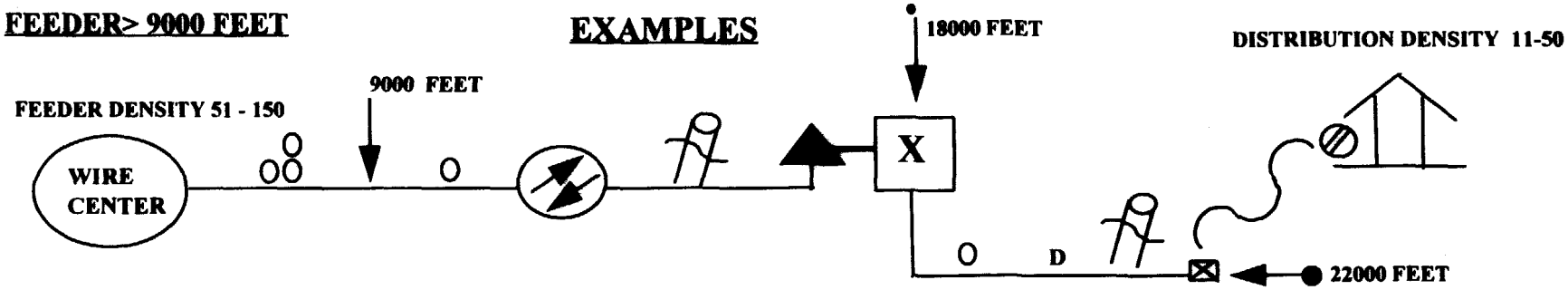
| | | |
|---|---|---|
| **TOTAL INVESTMENT** | DOES NOT REPRESENT PACIFIC BELL COST | $1958.50 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

**FEEDER> 9000 FEET** **EXAMPLES**




FIBER CABLE INVESTMENT - Length x {[(((A-Cost +(B-Cost x Cable Size))/ Cable Size) x 4 Fibers / Cable Utilization x Modifying Factor)/ (# of channels x Equipment Utilization)}

| | | INVESTMENT |
|---|---|---|
| F | Underground - 11700 x {[((2.00 + (.06 x 48)) / 48) x 4 / 67% x 1.00} / (96 x .70%)} = 11700 x .009032 = | $105.68 |
| F | Buried - 1260 x {[((8.00 + (.06 x 48)) / 48) x 4 / 67% x 1.00} / (96 x .70%)} = 1260 x .020137 = | $25.37 |
| F | Aerial - 5040 x {[((2.00 + (.06 x 24)) / 48) x 4 / 67% x 1.00} / (96 x .70%)} = 5040 x .012734 = | $64.18 |

STRUCTURE INVESTMENT - Length x [((Conduit / Cable Size0 x 4 Fibers / Cable Utilization) / (Channels x Equipment Utilization)] / 3

| | | |
|---|---|---|
| F | Conduit - < 9KFT - 9000 x {((17.95 / 48) x 4 / 67%) / (96 x 70%)} / 3 = 9000 x .011074 = | $99.67 |
| F | Conduit - > 9KFT - 2700 x {((25.30 / 48) x 4 / 67%) / (96 x 70%)} / 3 = 2700 x .015609= | $42.14 |
| | Length x {((PoleLine / Cable Size) x 4 Fibers / Cable utilization)) / (/channels x Equipment Utilization))} | |
| F | Pole line - 5040 x {((5.45 / 24) x 4 / 67%)) / (96 x 70%)} = 5040 x .020174 = | $101.68 |

PAIR GAIN INVESTMENT - (Fixed Cost & (Variable Cost x Channel Capacity)) / Channel Capacity / Equipment Utilization)}
(34,800 & (271 x 96)) / 96 / 70% = $905.00

DISTRIBUTION AGGREGATE
[redacted] as Previous Example) $1093.19

**TOTAL INVESTMENT** DOES NOT REPRESENT PACIFIC BELL COST **$2436.91**

# *UNIVERSAL SERVICE*

# Pacific Bell Cost Proxy Model

# Loop Assumptions and Calculations

## FACTOR DEVELOPMENT for BURIED CABLE

FOR INTERNAL USE ONLY

| (A) | (B) | (C=BxJ) | (D) | (E=DxJ) | (F) | (G=FxJ) | (H) | (I=HxJ) | (J) | (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | CABLE ADJUSTMENT | | | | | | | |
| DENSITY | NORMAL | ADJ. $ | MED-DIF (ROCKS) | ADJ. $ | HIGH-DIF (ROCKH) | ADJ. $ | WATER | ADJ. $ | UNADJ. $ PER SHEATH FOOT | AVERAGE BURIED FEEDER CA. SIZE |
| 0 - 10 | 1.0 | 2.46 | 1.0 | 2.46 | 1.0 | 2.46 | 1.0 | 2.46 | 2.46 | 96 |
| 10 - 50 | 1.0 | 2.82 | 1.0 | 2.82 | 1.0 | 2.82 | 1.0 | 2.82 | 2.82 | 135 |
| 50 - 150 | 1.0 | 4.40 | 1.0 | 4.40 | 1.0 | 4.40 | 1.0 | 4.40 | 4.40 | 311 |
| 150 - 500 | 1.0 | 4.14 | 1.0 | 4.14 | 1.0 | 4.14 | 1.0 | 4.14 | 4.14 | 282 |
| 500 - 2000 | 1.0 | 6.19 | 1.0 | 6.19 | 1.0 | 6.19 | 1.0 | 6.19 | 6.19 | 510 |
| 2000 - 5000 | 1.1 | 12.45 | 1.1 | 12.45 | 1.1 | 12.45 | 1.1 | 12.45 | 11.32 | 1080 |
| 5000 + | 1.2 | 15.57 | 1.2 | 15.57 | 1.2 | 15.57 | 1.2 | 15.57 | 12.98 | 1264 |

FACTORS WERE DEVELOPED TO REFLECT THE AFFECTS OF TERRAIN ON THE TRENCHING OPERATION ($5.00 PER TRENCH FOOT) AND ADJUSTED INVESTMENTS PER TRENCH FOOT WERE CALCULATED.

| (A) | (B) | (C=BxJ) | (D) | (E=DxJ) | (F) | (G=FxJ) | (H) | (I=HxJ) | (J) | (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | TRENCHING ADJUSTMENT | | | | | | | |
| DENSITY | NORMAL | ADJ. $ | MED-DIF (ROCKS) | ADJ. $ | HIGH-DIF (ROCKH) | ADJ. $ | WATER | ADJ. $ | UNADJ. TRENCH $ PER FOOT | AVERAGE BURIED FEEDER CA. SIZE |
| 0 - 10 | 0.70 | 3.50 | 1.25 | 6.25 | 1.75 | 8.75 | 1.75 | 8.75 | 5.00 | 96 |
| 10 - 50 | 0.85 | 4.25 | 1.40 | 7.00 | 1.80 | 9.00 | 1.80 | 9.00 | 5.00 | 135 |
| 50 - 150 | 1.00 | 5.00 | 1.45 | 7.25 | 1.85 | 9.25 | 1.85 | 9.25 | 5.00 | 311 |
| 150 - 500 | 1.00 | 5.00 | 1.50 | 7.50 | 2.00 | 10.00 | 2.00 | 10.00 | 5.00 | 282 |
| 500 - 2000 | 1.00 | 5.00 | 1.75 | 8.75 | 2.50 | 12.50 | 2.50 | 12.50 | 5.00 | 510 |
| 2000 - 5000 | 1.10 | 5.50 | 2.00 | 10.00 | 3.00 | 15.00 | 3.00 | 15.00 | 5.00 | 1080 |
| 5000 + | 1.20 | 6.00 | 2.50 | 12.50 | 4.00 | 20.00 | 4.00 | 20.00 | 5.00 | 1264 |

THE ADJUSTED PLACING OPERATION INVESTMENTS PER FOOT WERE ADDED TO ADJUSTED TRENCHING COSTS AND SUMS DIVIDED BY THE UNADJUSTED INPLACE COST PER FOOT TO CALCULATE A FACTOR IN EACH DENSITY ZONE AND TERRAIN.

| (A) | (B=C/J) | (C) | (D=E/J) | (E) | (F=G/J) | (G) | (H=I/J) | (I) | (J) | (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | TOTAL ADJUSTMENT | | | | | | | |
| DENSITY | NORMAL (mod factor) | ADJ. $ | MED-DIF (ROCKS) (mod factor) | ADJ. $ | HIGH-DIF (ROCKH) (mod factor) | ADJ. $ | WATER (mod factor) | ADJ. $ | UNADJ. INPLACE $ PER FOOT | AVERAGE BURIED FEEDER CA. SIZE |
| 0 - 10 | 0.80 | 5.96 | 1.17 | 8.71 | 1.50 | 11.21 | 1.50 | 11.21 | 7.46 | 96 |
| 10 - 50 | 0.90 | 7.07 | 1.26 | 9.82 | 1.51 | 11.82 | 1.51 | 11.82 | 7.82 | 135 |
| 50 - 150 | 1.00 | 9.40 | 1.24 | 11.65 | 1.45 | 13.65 | 1.45 | 13.65 | 9.40 | 311 |
| 150 - 500 | 1.00 | 9.14 | 1.27 | 11.64 | 1.55 | 14.14 | 1.55 | 14.14 | 9.14 | 282 |
| 500 - 2000 | 1.00 | 11.19 | 1.34 | 14.94 | 1.67 | 18.69 | 1.67 | 18.69 | 11.19 | 510 |
| 2000 - 5000 | 1.10 | 17.95 | 1.38 | 22.45 | 1.68 | 27.45 | 1.68 | 27.45 | 16.32 | 1080 |
| 5000 + | 1.20 | 21.57 | 1.56 | 28.07 | 1.98 | 35.57 | 1.98 | 35.57 | 17.98 | 1264 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

**CONDUIT ( $ PER DUCT-FOOT ) - FRC 4C**

**FOR 0.0 KFT TO 9.0 KFT**

| REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | NORMAL INVEST. /DUCT-FT (H=G/A-1) |
|---|---|---|---|---|---|---|---|
| 3 | 22.00 | 2.30 | 0.80 | 17.60 | 6.90 | 24.50 | 12.[illegible] |
| 3 | 24.00 | 2.30 | 0.90 | 21.60 | 6.90 | 28.50 | 14.[illegible] |
| 3 | 29.00 | 2.30 | 1.00 | 29.00 | 6.90 | 35.90 | 17.[illegible] |
| 3 | 30.00 | 2.30 | 1.00 | 30.00 | 6.90 | 36.90 | 18.[illegible] |
| 4 | 31.00 | 2.30 | 1.05 | 32.55 | 9.20 | 41.75 | 13.[illegible] |
| 6 | 32.00 | 2.30 | 1.10 | 35.20 | 13.80 | 49.00 | 9.[illegible] |
| 9 | 32.00 | 2.30 | 1.25 | 40.00 | 20.70 | 60.70 | 7.[illegible] |

| REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | MED-DIF INVEST. /DUCT-FT (H=G/A-1) |
|---|---|---|---|---|---|---|---|
| 3 | 22.00 | 2.30 | 1.25 | 27.50 | 6.90 | 34.40 | 17.[illegible] |
| 3 | 24.00 | 2.30 | 1.40 | 33.60 | 6.90 | 40.50 | 20.[illegible] |
| 3 | 29.00 | 2.30 | 1.45 | 42.05 | 6.90 | 48.95 | 24.[illegible] |
| 3 | 30.00 | 2.30 | 1.50 | 45.00 | 6.90 | 51.90 | 26.[illegible] |
| 4 | 31.00 | 2.30 | 1.75 | 54.25 | 9.20 | 63.45 | 21.15 |
| 6 | 32.00 | 2.30 | 2.00 | 64.00 | 13.80 | 77.80 | 16.[illegible] |
| 9 | 32.00 | 2.30 | 2.50 | 80.00 | 20.70 | 100.70 | 12.[illegible] |

| REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | HIGH-DIF INVEST. /DUCT-FT (H=G/A-1) |
|---|---|---|---|---|---|---|---|
| 3 | 22.00 | 2.30 | 1.75 | 38.50 | 6.90 | 45.40 | 22.70 |
| 3 | 24.00 | 2.30 | 1.80 | 43.20 | 6.90 | 50.10 | 25.[illegible] |
| 3 | 29.00 | 2.30 | 1.85 | 53.65 | 6.90 | 60.55 | 30.[illegible] |
| 3 | 30.00 | 2.30 | 2.00 | 60.00 | 6.90 | 66.90 | 33.[illegible] |
| 4 | 31.00 | 2.30 | 2.50 | 77.50 | 9.20 | 86.70 | 20.[illegible] |
| 6 | 32.00 | 2.30 | 3.00 | 96.00 | 13.80 | 109.80 | 21.[illegible] |
| 9 | 32.00 | 2.30 | 4.00 | 128.00 | 20.70 | 148.70 | 16.[illegible] |

| REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | WATER INVEST. /DUCT-FT (H=G/A-1) |
|---|---|---|---|---|---|---|---|
| 3 | 22.00 | 2.30 | 1.75 | 38.50 | 6.90 | 45.40 | 22.70 |
| 3 | 24.00 | 2.30 | 1.80 | 43.20 | 6.90 | 50.10 | 25.[illegible] |
| 3 | 29.00 | 2.30 | 1.85 | 53.65 | 6.90 | 60.55 | 30.[illegible] |
| 3 | 30.00 | 2.30 | 2.00 | 60.00 | 6.90 | 66.90 | 33.[illegible] |
| 4 | 31.00 | 2.30 | 2.50 | 77.50 | 9.20 | 86.70 | 20.[illegible] |
| 6 | 32.00 | 2.30 | 3.00 | 96.00 | 13.80 | 109.80 | 21.[illegible] |
| 9 | 32.00 | 2.30 | 4.00 | 128.00 | 20.70 | 148.70 | 16.[illegible] |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

**CONDUIT ( $ PER DUCT-FOOT ) - FRC 4C**

**FOR 9.0 KFT AND LONGER**

| DENSITY | REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | NORMAL INVEST. /DUCT-FT (H=G/A) |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 1 | 16.00 | 2.30 | 0.80 | 12.80 | 2.30 | 15.10 | 15.10 |
| 11-50 | 1 | 18.00 | 2.30 | 0.90 | 16.20 | 2.30 | 18.50 | [illegible] |
| 51-150 | 1 | 23.00 | 2.30 | 1.00 | 23.00 | 2.30 | 25.30 | [illegible] |
| 151-500 | 1 | 24.00 | 2.30 | 1.00 | 24.00 | 2.30 | 26.30 | [illegible] |
| 501-2000 | 2 | 25.00 | 2.30 | 1.05 | 26.25 | 4.60 | 30.85 | 15.43 |
| 2001-5000 | 2 | 26.00 | 2.30 | 1.10 | 28.60 | 4.60 | 33.20 | [illegible] |
| 5001+ | 2 | 26.00 | 2.30 | 1.25 | 32.50 | 4.60 | 37.10 | [illegible] |

| DENSITY | REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | MED-DIF INVEST. /DUCT-FT (H=G/A) |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 1 | 16.00 | 2.30 | 1.25 | 20.00 | 2.30 | 22.30 | [illegible] |
| 11-50 | 1 | 18.00 | 2.30 | 1.40 | 25.20 | 2.30 | 27.50 | [illegible] |
| 51-150 | 1 | 23.00 | 2.30 | 1.45 | 33.35 | 2.30 | 35.65 | [illegible] |
| 151-500 | 1 | 24.00 | 2.30 | 1.50 | 36.00 | 2.30 | 38.30 | [illegible] |
| 501-2000 | 2 | 25.00 | 2.30 | 1.75 | 43.75 | 4.60 | 48.35 | 24.18 |
| 2001-5000 | 2 | 26.00 | 2.30 | 2.00 | 52.00 | 4.60 | 56.60 | [illegible] |
| 5001+ | 2 | 26.00 | 2.30 | 2.50 | 65.00 | 4.60 | 69.60 | [illegible] |

| DENSITY | REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | HIGH-DIF INVEST. /DUCT-FT (H=G/A) |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 1 | 16.00 | 2.30 | 1.75 | 28.00 | 2.30 | 30.30 | [illegible] |
| 11-50 | 1 | 18.00 | 2.30 | 1.80 | 32.40 | 2.30 | 34.70 | [illegible] |
| 51-150 | 1 | 23.00 | 2.30 | 1.85 | 42.55 | 2.30 | 44.85 | [illegible] |
| 151-500 | 1 | 24.00 | 2.30 | 2.00 | 48.00 | 2.30 | 50.30 | [illegible] |
| 501-2000 | 2 | 25.00 | 2.30 | 2.50 | 62.50 | 4.60 | 67.10 | [illegible] |
| 2001-5000 | 2 | 26.00 | 2.30 | 3.00 | 78.00 | 4.60 | 82.60 | [illegible] |
| 5001+ | 2 | 26.00 | 2.30 | 4.00 | 104.00 | 4.60 | 108.60 | [illegible] |

| DENSITY | REQUIRED DUCTS (A) | A COST (B) | B COST (C) | MOD FACT (D) | MODIFIED A COST (E=BxD) | TOTAL B COST (F=AxC) | TOTAL INVEST RENCH-FT (G=E+F) | WATER INVEST. /DUCT-FT (H=G/A) |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 1 | 16.00 | 2.30 | 1.75 | 28.00 | 2.30 | 30.30 | [illegible] |
| 11-50 | 1 | 18.00 | 2.30 | 1.80 | 32.40 | 2.30 | 34.70 | [illegible] |
| 51-150 | 1 | 23.00 | 2.30 | 1.85 | 42.55 | 2.30 | 44.85 | [illegible] |
| 151-500 | 1 | 24.00 | 2.30 | 2.00 | 48.00 | 2.30 | 50.30 | [illegible] |
| 501-2000 | 2 | 25.00 | 2.30 | 2.50 | 62.50 | 4.60 | 67.10 | [illegible] |
| 2001-5000 | 2 | 26.00 | 2.30 | 3.00 | 78.00 | 4.60 | 82.60 | [illegible] |
| 5001+ | 2 | 26.00 | 2.30 | 4.00 | 104.00 | 4.60 | 108.60 | [illegible] |

# *UNIVERSAL SERVICE*
## Pacific Bell Cost Proxy Model
## Loop Assumptions and Calculations

DUMMY COST FILE

| TYPE OF CABLE | FRC | A COST $ / SHEATH-FOOT | B COST $ / PAIR-FOOT |
|---|---|---|---|
| Copper Underground Cable | 5C | 3.00 | 0.0100 |
| Copper Buried Cable | 4 5C | 7.00 | 0.0100 |
| Copper Aerial Cable | 12C | 3.00 | 0.0100 |
| Fiber Underground Cable | 85C | 2.00 | 0.0600 |
| Fiber Buried Cable | 845C | 8.00 | 0.0600 |
| Fiber Aerial Cable | 812C | 2.00 | 0.0600 |

# *UNIVERSAL SERVICE*

## Pacific Bell Cost Proxy Model

## Loop Assumptions and Calculations

| | | % FEEDER | | |
|---|---|---|---|---|
| | | | | |
| | DISTANCE FROM C.O. | | | |
| DENSITY | 0-9 KFT | 9-15 KFT | 15-24 KFT | 24 KFT+ |
| 0-10 | 64% | 60% | 67% | 82% |
| 11-50 | 64% | 60% | 67% | 82% |
| 51-150 | 64% | 60% | 73% | 85% |
| 151-500 | 64% | 73% | 85% | 92% |
| 501-2000 | 68% | 83% | 89% | 90% |
| 2001-5000 | 77% | 85% | 89% | 93% |
| 5001+ | 85% | 89% | 93% | 93% |

# COST PROXY MODEL:

## *UNIVERSAL SERVICE EDITION*

# *User Manual*

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# FOREWORD

Announcements of telecommunication company restructuring, partnering, merging, acquisition and billion-dollar investments are occurring more frequently every week. Regulators and policy makers are in the process of changing the rules and functionality of the telecommunications marketplace. Long-term success for the companies, the marketplace, the state, and the nation depends on the informed, timely decisions made by managers, regulators and policy makers.

One component of this impending change is Universal Service funding. The ability to understand and make explicit the cost of Universal Service is crucial as telecommunication companies approach this critical junction in time. The secure world of highly regulated marketplaces has given way to the uncertainty of competition. As competition becomes commonplace and regulation changes to allow greater marketplace flexibility, the current structure of funding Universal Service through a complex set of implicit cross subsidies is rapidly becoming obsolete. A new paradigm is needed to successfully fund Universal Service in the competitive environment. This new paradigm is compelled by the passage of the Telcommunications Act of 1996.

Telecommunication companies cannot continue to rely on pricing structures developed for a regulated, cost reimbursement environment. Prices must be market derived and set to minimize inefficient cross-subsidization of formerly residually priced services. Realizing this, various commissions across the country are trying to develop a new paradigm so that Universal Service be properly maintained.

Given this, Pacific Bell and INDETEC International have co-developed this tool to help prepare a company for the competitive marketplace by improving the quality and quantity of information available to make and support decisions. By integrating sound financial, engineering, economic and managerial accounting principles, the Cost Proxy Model provides the costs, revenues, and the residual Universal Service supports.

# Chapter 1

# INTRODUCTION

Welcome to the Cost Proxy Model User Guide. The Introduction contains an overview of the User Guide.

The Cost Proxy Model is an important regulatory tool that helps you understand the structure and effects of the cost of providing Universal Service. As people become more informed using information from the Cost Proxy Model, the system will provide the payoff for which it was created. As a tool, however, it has a limited scope of application (since it only analyzes basic service). Understanding when and how to use the Cost Proxy Model information effectively is important. This User Guide is designed to further that understanding.

## 1.1 Purpose of the Cost Proxy Model User Guide

The User Guide is designed to serve as a concise reference for Cost Proxy Model users. It provides helpful insights into the Cost Proxy Model including why it was developed, how it works, where to get it and when to use it. This Guide is intended to answer most, but not all, of your questions.

Contact INDETEC International for more detailed explanations, help with reports or suggestions for making the system even more useful.

## 1.2 Using the Cost Proxy Model User Guide

The Table of Contents gives the specific topic titles of each section so that information can be located easily. Pages are numbered sequentially within each chapter with the chapter number being the first number. Screens are numbered sequentially within each chapter again with the chapter number being the first number.

## 1.3 Contents of the User Guide

This User Guide contains the following sections:

- Chapter 1 - Introduction
- Chapter 2 - Cost Proxy Model Basics
- Chapter 3 - Model Structure and Platform
- Chapter 4 - Online System
- Appendix A - Detailed System Flowcharts
- Appendix B - Data Dictionary
- Appendix C - SAS® Procedures
- Appendix D - SAS® Table Layouts
- Appendix E - Comma Separated Value (CSV) File Layouts