

$$O_{10}^+(2).2 \pmod{3}$$

|      | blocks | defect | matrix         |
|------|--------|--------|----------------|
| $G:$ | 1      | 5      | $54 \times 20$ |
|      | 2      | 5      | $54 \times 20$ |
|      | 3      | 4      | $23 \times 10$ |
|      | 4      | 1      | $3 \times 2$   |
|      | 5      | 1      | $3 \times 2$   |
|      | 6      | 2      | $9 \times 5$   |

|  | blocks | defect | matrix                                  |
|--|--------|--------|-----------------------------------------|
|  | 7      | 1      | $3 \times 2$                            |
|  | 8      | 1      | $3 \times 2$                            |
|  | 9      | 0      | $1445850_1 = \chi_{83+}, \varphi_{33+}$ |
|  | 10     | 0      | $1445850_2 = \chi_{85+}, \varphi_{35+}$ |
|  | 11     | 0      | $1445850_3 = \chi_{87+}, \varphi_{37+}$ |

| <b>Block 1:</b>          | $\varphi_{1,0}$ | $\varphi_{2,1}$ | $\varphi_{3,1}$ | $\varphi_{4,0}$ | $\varphi_{5,0}$ | $\varphi_{6,0}$ | $\varphi_{7,0}$ | $\varphi_{8,0}$ | $\varphi_{10,1}$ | $\varphi_{11,1}$ | $\varphi_{12,1}$ |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| $1_1 = \chi_{1,0}$       | 1               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $155_2 = \chi_{2,1}$     | .               | 1               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $186_2 = \chi_{3,1}$     | 1               | .               | 1               | .               | .               | .               | .               | .               | .                | .                | .                |
| $340_2 = \chi_{4,1}$     | .               | 1               | 1               | .               | .               | .               | .               | .               | .                | .                | .                |
| $868_1 = \chi_{5,0}$     | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | .                |
| $2108_1 = \chi_{6,0}$    | 1               | .               | 1               | .               | 1               | .               | .               | .               | .                | .                | .                |
| $5270_1 = \chi_{7,0}$    | .               | .               | .               | 1               | .               | 1               | .               | .               | .                | .                | .                |
| $6324_1 = \chi_{8,0}$    | .               | .               | .               | .               | 1               | 1               | .               | .               | .                | .                | .                |
| $7905_1 = \chi_{9,0}$    | .               | .               | .               | 1               | .               | .               | 1               | .               | .                | .                | .                |
| $9300_1 = \chi_{10,0}$   | 1               | 1               | 1               | .               | 1               | .               | 1               | .               | .                | .                | .                |
| $13020_1 = \chi_{12,0}$  | .               | .               | .               | .               | .               | 1               | .               | 1               | .                | .                | .                |
| $13888_2 = \chi_{13,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $14756_2 = \chi_{14,1}$  | 1               | 1               | 1               | .               | .               | .               | .               | .               | .                | 1                | .                |
| $15810_1 = \chi_{15,0}$  | .               | 1               | .               | .               | .               | .               | 1               | 1               | .                | .                | .                |
| $18445_2 = \chi_{16,1}$  | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | 1                |
| $18445_3 = \chi_{17,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $22848_1 = \chi_{18,0}$  | 1               | .               | .               | 1               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $31620_2 = \chi_{19,1}$  | .               | .               | .               | .               | .               | .               | .               | 1               | .                | .                | .                |
| $31620_4 = \chi_{20,1}$  | .               | 1               | .               | .               | .               | .               | .               | .               | 1                | .                | 1                |
| $36890_2 = \chi_{21,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $42160_2 = \chi_{22,1}$  | 1               | 1               | 1               | .               | 1               | .               | 1               | .               | .                | 1                | .                |
| $50592_2 = \chi_{23,1}$  | .               | 1               | .               | .               | .               | .               | .               | .               | .                | 1                | 1                |
| $73780_2 = \chi_{27,1}$  | .               | 1               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $73780_3 = \chi_{28,0}$  | .               | .               | .               | 1               | .               | 1               | .               | 1               | .                | .                | .                |
| $73780_5 = \chi_{29,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $101184_1 = \chi_{30,0}$ | .               | .               | .               | 1               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $110670_3 = \chi_{31,1}$ | .               | .               | .               | .               | .               | .               | 1               | .               | .                | .                | .                |
| $110670_4 = \chi_{32,0}$ | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | 1                |
| $147560_2 = \chi_{35,1}$ | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | 1                |
| $147560_3 = \chi_{36,0}$ | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | .                |
| $148800_2 = \chi_{37,1}$ | 1               | .               | 1               | .               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $158100_2 = \chi_{38,1}$ | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | 1                |
| $166005_2 = \chi_{39,1}$ | .               | .               | .               | .               | .               | .               | .               | .               | 2                | .                | .                |
| $168640_2 = \chi_{42,1}$ | 1               | 1               | 1               | 1               | 1               | 1               | 1               | .               | .                | 1                | 1                |
| $208320_2 = \chi_{43,1}$ | .               | 1               | .               | 2               | .               | .               | .               | .               | .                | .                | 1                |
| $221340_3 = \chi_{44,1}$ | .               | 1               | .               | 1               | .               | 1               | 1               | 1               | .                | .                | .                |
| $236096_2 = \chi_{46,1}$ | 1               | 2               | 1               | 1               | .               | .               | 1               | .               | .                | 1                | 1                |
| $316200_2 = \chi_{49,1}$ | .               | .               | .               | 2               | .               | 1               | .               | .               | .                | .                | 1                |
| $337280_2 = \chi_{53,1}$ | .               | .               | .               | 2               | .               | .               | .               | .               | .                | .                | .                |
| $348160_2 = \chi_{54,1}$ | .               | 1               | 1               | 1               | .               | .               | .               | .               | 1                | .                | 1                |

| (Block 1:)               | $\varphi_{13,0}$ | $\varphi_{14,1}$ | $\varphi_{16,0}$ | $\varphi_{17,1}$ | $\varphi_{18,1}$ | $\varphi_{20,1}$ | $\varphi_{21,0}$ | $\varphi_{23,0}$ | $\varphi_{32,0}$ |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| $1_1 = \chi_{1,0}$       | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $155_2 = \chi_{2,1}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $186_2 = \chi_{3,1}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $340_2 = \chi_{4,1}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $868_1 = \chi_{5,0}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $2108_1 = \chi_{6,0}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $5270_1 = \chi_{7,0}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $6324_1 = \chi_{8,0}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $7905_1 = \chi_{9,0}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $9300_1 = \chi_{10,0}$   | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $13020_1 = \chi_{12,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $13888_2 = \chi_{13,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $14756_2 = \chi_{14,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $15810_1 = \chi_{15,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $18445_2 = \chi_{16,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $18445_3 = \chi_{17,0}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $22848_1 = \chi_{18,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $31620_2 = \chi_{19,1}$  | .                | 1                | .                | .                | .                | .                | .                | .                | .                |
| $31620_4 = \chi_{20,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $36890_2 = \chi_{21,1}$  | .                | 1                | .                | .                | .                | .                | .                | .                | .                |
| $42160_2 = \chi_{22,1}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $50592_2 = \chi_{23,1}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $73780_2 = \chi_{27,1}$  | .                | .                | .                | 1                | .                | .                | .                | .                | .                |
| $73780_3 = \chi_{28,0}$  | .                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $73780_5 = \chi_{29,0}$  | .                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $101184_1 = \chi_{30,0}$ | 1                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $110670_3 = \chi_{31,1}$ | .                | .                | .                | .                | 1                | .                | .                | .                | .                |
| $110670_4 = \chi_{32,0}$ | 1                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $147560_2 = \chi_{35,1}$ | .                | .                | .                | .                | .                | 1                | .                | .                | .                |
| $147560_3 = \chi_{36,0}$ | .                | .                | .                | .                | .                | .                | 1                | .                | .                |
| $148800_2 = \chi_{37,1}$ | .                | 1                | .                | .                | 1                | .                | .                | .                | .                |
| $158100_2 = \chi_{38,1}$ | .                | 1                | .                | .                | 1                | .                | .                | .                | .                |
| $166005_2 = \chi_{39,1}$ | .                | 1                | .                | .                | .                | 1                | .                | .                | .                |
| $168640_2 = \chi_{42,1}$ | 1                | .                | .                | .                | 1                | .                | .                | .                | .                |
| $208320_2 = \chi_{43,1}$ | .                | .                | .                | 1                | .                | 1                | .                | .                | .                |
| $221340_3 = \chi_{44,1}$ | .                | 1                | .                | 1                | 1                | .                | .                | .                | .                |
| $236096_2 = \chi_{46,1}$ | 1                | .                | .                | 1                | 1                | .                | .                | .                | .                |
| $316200_2 = \chi_{49,1}$ | .                | .                | .                | 1                | 1                | 1                | .                | .                | .                |
| $337280_2 = \chi_{53,1}$ | .                | .                | .                | 1                | .                | 1                | 1                | .                | .                |
| $348160_2 = \chi_{54,1}$ | .                | 1                | .                | 1                | 1                | 1                | .                | .                | .                |

| (Block 1:)                | $\varphi_{1,0}$ | $\varphi_{2,1}$ | $\varphi_{3,1}$ | $\varphi_{4,0}$ | $\varphi_{5,0}$ | $\varphi_{6,0}$ | $\varphi_{7,0}$ | $\varphi_{8,0}$ | $\varphi_{10,1}$ | $\varphi_{11,1}$ | $\varphi_{12,1}$ |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| $368900_1 = \chi_{59,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | 1                |
| $442680_1 = \chi_{66,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $442680_4 = \chi_{67,1}$  | .               | .               | .               | .               | .               | .               | 1               | .               | .                | .                | 1                |
| $505920_1 = \chi_{72,0}$  | .               | .               | .               | 1               | .               | .               | 1               | .               | .                | .                | .                |
| $539648_1 = \chi_{73,0}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2               | 1               | 1                | .                | 1                |
| $590240_1 = \chi_{74,0}$  | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | .                |
| $634880_1 = \chi_{75,0}$  | .               | .               | .               | .               | .               | .               | .               | 1               | 2                | .                | .                |
| $664020_2 = \chi_{76,0}$  | .               | .               | .               | 2               | .               | .               | .               | .               | .                | .                | .                |
| $761856_2 = \chi_{89,1}$  | 1               | 1               | 1               | 2               | .               | .               | 1               | .               | .                | .                | 1                |
| $830025_1 = \chi_{90,0}$  | .               | .               | .               | 2               | .               | .               | .               | .               | 2                | .                | .                |
| $885360_3 = \chi_{91,1}$  | .               | 1               | .               | 3               | .               | 1               | 1               | 1               | 1                | .                | 2                |
| $1011840_1 = \chi_{92,0}$ | .               | 1               | .               | 1               | .               | .               | 1               | 1               | 2                | .                | 1                |
| $1048576_1 = \chi_{93,0}$ | 1               | .               | .               | 1               | .               | .               | 1               | 1               | 1                | .                | .                |
| $1180480_1 = \chi_{94,0}$ | .               | .               | .               | 2               | .               | .               | .               | .               | 2                | .                | 1                |

| (Block 1:)                | $\varphi_{13,0}$ | $\varphi_{14,1}$ | $\varphi_{16,0}$ | $\varphi_{17,1}$ | $\varphi_{18,1}$ | $\varphi_{20,1}$ | $\varphi_{21,0}$ | $\varphi_{23,0}$ | $\varphi_{32,0}$ |
|---------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| $368900_1 = \chi_{59,0}$  | 1                | .                | 1                | .                | .                | .                | .                | 1                | .                |
| $442680_1 = \chi_{66,0}$  | .                | 1                | .                | .                | .                | .                | 1                | 1                | .                |
| $442680_4 = \chi_{67,1}$  | 1                | 1                | .                | .                | 1                | .                | .                | 1                | .                |
| $505920_1 = \chi_{72,0}$  | 1                | .                | 1                | .                | .                | .                | 1                | 1                | .                |
| $539648_1 = \chi_{73,0}$  | 1                | 1                | 1                | .                | 1                | .                | .                | 1                | .                |
| $590240_1 = \chi_{74,0}$  | .                | .                | 1                | .                | .                | .                | .                | .                | 1                |
| $634880_1 = \chi_{75,0}$  | .                | 1                | 1                | .                | .                | .                | .                | .                | 1                |
| $664020_2 = \chi_{76,0}$  | .                | .                | .                | .                | .                | .                | 1                | .                | 1                |
| $761856_2 = \chi_{89,1}$  | .                | 1                | .                | 1                | 1                | 1                | 1                | 1                | .                |
| $830025_1 = \chi_{90,0}$  | .                | 1                | .                | .                | .                | 1                | 1                | .                | 1                |
| $885360_3 = \chi_{91,1}$  | 1                | 1                | 1                | 1                | 1                | 1                | 1                | 1                | .                |
| $1011840_1 = \chi_{92,0}$ | 1                | 1                | 2                | .                | .                | .                | .                | 1                | 1                |
| $1048576_1 = \chi_{93,0}$ | .                | 1                | 1                | .                | .                | .                | 1                | 1                | 1                |
| $1180480_1 = \chi_{94,0}$ | .                | 1                | 1                | .                | .                | 1                | 1                | 1                | 1                |

$$\begin{array}{ll}
\varphi_{1,0} & = 1_1 \\
\varphi_{2,1} & = 155_2 \\
\varphi_{3,1} & = 185_2 \\
\varphi_{4,0} & = 868_1 \\
\varphi_{5,0} & = 1922_1 \\
\varphi_{6,0} & = 4402_1 \\
\varphi_{7,0} & = 7037_1 \\
\varphi_{8,0} & = 8618_1 \\
\varphi_{10,1} & = 13888_2 \\
\varphi_{11,1} & = 14415_2 \\
\varphi_{12,1} & = 17577_2 \\
\varphi_{13,0} & = 18445_1 \\
\varphi_{14,1} & = 23002_2 \\
\varphi_{16,0} & = 59892_1 \\
\varphi_{17,1} & = 73625_2 \\
\varphi_{18,1} & = 103633_2 \\
\varphi_{20,1} & = 115227_2 \\
\varphi_{21,0} & = 146692_1 \\
\varphi_{23,0} & = 272986_1 \\
\varphi_{32,0} & = 515592_1
\end{array}$$

| <b>Block 2:</b>          | $\varphi_{1,1}$ | $\varphi_{2,0}$ | $\varphi_{3,0}$ | $\varphi_{4,1}$ | $\varphi_{5,1}$ | $\varphi_{6,1}$ | $\varphi_{7,1}$ | $\varphi_{8,1}$ | $\varphi_{10,0}$ | $\varphi_{11,0}$ | $\varphi_{12,0}$ |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| $1_2 = \chi_{1,1}$       | 1               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $155_1 = \chi_{2,0}$     | .               | 1               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $186_1 = \chi_{3,0}$     | 1               | .               | 1               | .               | .               | .               | .               | .               | .                | .                | .                |
| $340_1 = \chi_{4,0}$     | .               | 1               | 1               | .               | .               | .               | .               | .               | .                | .                | .                |
| $868_2 = \chi_{5,1}$     | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | .                |
| $2108_2 = \chi_{6,1}$    | 1               | .               | 1               | .               | 1               | .               | .               | .               | .                | .                | .                |
| $5270_2 = \chi_{7,1}$    | .               | .               | .               | 1               | .               | 1               | .               | .               | .                | .                | .                |
| $6324_2 = \chi_{8,1}$    | .               | .               | .               | .               | 1               | 1               | .               | .               | .                | .                | .                |
| $7905_2 = \chi_{9,1}$    | .               | .               | .               | 1               | .               | .               | 1               | .               | .                | .                | .                |
| $9300_2 = \chi_{10,1}$   | 1               | 1               | 1               | .               | 1               | .               | 1               | .               | .                | .                | .                |
| $13020_2 = \chi_{12,1}$  | .               | .               | .               | .               | .               | 1               | .               | 1               | .                | .                | .                |
| $13888_1 = \chi_{13,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $14756_1 = \chi_{14,0}$  | 1               | 1               | 1               | .               | .               | .               | .               | .               | .                | 1                | .                |
| $15810_2 = \chi_{15,1}$  | .               | 1               | .               | .               | .               | .               | 1               | 1               | .                | .                | .                |
| $18445_1 = \chi_{16,0}$  | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | 1                |
| $18445_4 = \chi_{17,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $22848_2 = \chi_{18,1}$  | 1               | .               | .               | 1               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $31620_1 = \chi_{19,0}$  | .               | .               | .               | .               | .               | .               | .               | 1               | .                | .                | .                |
| $31620_3 = \chi_{20,0}$  | .               | 1               | .               | .               | .               | .               | .               | .               | 1                | .                | 1                |
| $36890_1 = \chi_{21,0}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $42160_1 = \chi_{22,0}$  | 1               | 1               | 1               | .               | 1               | .               | 1               | .               | .                | 1                | .                |
| $50592_1 = \chi_{23,0}$  | .               | 1               | .               | .               | .               | .               | .               | .               | .                | 1                | 1                |
| $73780_1 = \chi_{27,0}$  | .               | 1               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $73780_4 = \chi_{28,1}$  | .               | .               | .               | 1               | .               | 1               | .               | 1               | .                | .                | .                |
| $73780_6 = \chi_{29,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | .                |
| $101184_2 = \chi_{30,1}$ | .               | .               | .               | 1               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $110670_2 = \chi_{31,0}$ | .               | .               | .               | .               | .               | .               | 1               | .               | .                | .                | .                |
| $110670_5 = \chi_{32,1}$ | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | 1                |
| $147560_1 = \chi_{35,0}$ | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | 1                |
| $147560_4 = \chi_{36,1}$ | .               | .               | .               | 1               | .               | .               | .               | .               | .                | .                | .                |
| $148800_1 = \chi_{37,0}$ | 1               | .               | 1               | .               | 1               | 1               | 1               | 1               | .                | .                | .                |
| $158100_1 = \chi_{38,0}$ | .               | .               | .               | .               | .               | .               | .               | .               | 1                | .                | 1                |
| $166005_1 = \chi_{39,0}$ | .               | .               | .               | .               | .               | .               | .               | .               | 2                | .                | .                |
| $168640_1 = \chi_{42,0}$ | 1               | 1               | 1               | 1               | 1               | 1               | 1               | .               | .                | 1                | 1                |
| $208320_1 = \chi_{43,0}$ | .               | 1               | .               | 2               | .               | .               | .               | .               | .                | .                | 1                |
| $221340_2 = \chi_{44,0}$ | .               | 1               | .               | 1               | .               | 1               | 1               | 1               | .                | .                | .                |
| $236096_1 = \chi_{46,0}$ | 1               | 2               | 1               | 1               | .               | .               | 1               | .               | .                | 1                | 1                |
| $316200_1 = \chi_{49,0}$ | .               | .               | .               | 2               | .               | 1               | .               | .               | .                | .                | 1                |
| $337280_1 = \chi_{53,0}$ | .               | .               | .               | 2               | .               | .               | .               | .               | .                | .                | .                |
| $348160_1 = \chi_{54,0}$ | .               | 1               | 1               | 1               | .               | .               | .               | .               | 1                | .                | 1                |

| (Block 2:)               | $\varphi_{13,1}$ | $\varphi_{14,0}$ | $\varphi_{16,1}$ | $\varphi_{17,0}$ | $\varphi_{18,0}$ | $\varphi_{20,0}$ | $\varphi_{21,1}$ | $\varphi_{23,1}$ | $\varphi_{32,1}$ |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| $1_2 = \chi_{1,1}$       | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $155_1 = \chi_{2,0}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $186_1 = \chi_{3,0}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $340_1 = \chi_{4,0}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $868_2 = \chi_{5,1}$     | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $2108_2 = \chi_{6,1}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $5270_2 = \chi_{7,1}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $6324_2 = \chi_{8,1}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $7905_2 = \chi_{9,1}$    | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $9300_2 = \chi_{10,1}$   | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $13020_2 = \chi_{12,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $13888_1 = \chi_{13,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $14756_1 = \chi_{14,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $15810_2 = \chi_{15,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $18445_1 = \chi_{16,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $18445_4 = \chi_{17,1}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $22848_2 = \chi_{18,1}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $31620_1 = \chi_{19,0}$  | .                | 1                | .                | .                | .                | .                | .                | .                | .                |
| $31620_3 = \chi_{20,0}$  | .                | .                | .                | .                | .                | .                | .                | .                | .                |
| $36890_1 = \chi_{21,0}$  | .                | 1                | .                | .                | .                | .                | .                | .                | .                |
| $42160_1 = \chi_{22,0}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $50592_1 = \chi_{23,0}$  | 1                | .                | .                | .                | .                | .                | .                | .                | .                |
| $73780_1 = \chi_{27,0}$  | .                | .                | .                | 1                | .                | .                | .                | .                | .                |
| $73780_4 = \chi_{28,1}$  | .                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $73780_6 = \chi_{29,1}$  | .                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $101184_2 = \chi_{30,1}$ | 1                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $110670_2 = \chi_{31,0}$ | .                | .                | .                | .                | 1                | .                | .                | .                | .                |
| $110670_5 = \chi_{32,1}$ | 1                | .                | 1                | .                | .                | .                | .                | .                | .                |
| $147560_1 = \chi_{35,0}$ | .                | .                | .                | .                | .                | 1                | .                | .                | .                |
| $147560_4 = \chi_{36,1}$ | .                | .                | .                | .                | .                | .                | 1                | .                | .                |
| $148800_1 = \chi_{37,0}$ | .                | 1                | .                | .                | 1                | .                | .                | .                | .                |
| $158100_1 = \chi_{38,0}$ | .                | 1                | .                | .                | 1                | .                | .                | .                | .                |
| $166005_1 = \chi_{39,0}$ | .                | 1                | .                | .                | .                | 1                | .                | .                | .                |
| $168640_1 = \chi_{42,0}$ | 1                | .                | .                | .                | 1                | .                | .                | .                | .                |
| $208320_1 = \chi_{43,0}$ | .                | .                | .                | 1                | .                | 1                | .                | .                | .                |
| $221340_2 = \chi_{44,0}$ | .                | 1                | .                | 1                | 1                | .                | .                | .                | .                |
| $236096_1 = \chi_{46,0}$ | 1                | .                | .                | 1                | 1                | .                | .                | .                | .                |
| $316200_1 = \chi_{49,0}$ | .                | .                | .                | 1                | 1                | 1                | .                | .                | .                |
| $337280_1 = \chi_{53,0}$ | .                | .                | .                | 1                | .                | 1                | 1                | .                | .                |
| $348160_1 = \chi_{54,0}$ | .                | 1                | .                | 1                | 1                | 1                | .                | .                | .                |

| (Block 2:)                | $\varphi_{1,1}$ | $\varphi_{2,0}$ | $\varphi_{3,0}$ | $\varphi_{4,1}$ | $\varphi_{5,1}$ | $\varphi_{6,1}$ | $\varphi_{7,1}$ | $\varphi_{8,1}$ | $\varphi_{10,0}$ | $\varphi_{11,0}$ | $\varphi_{12,0}$ |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| $368900_2 = \chi_{59,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | 1                |
| $442680_2 = \chi_{66,1}$  | .               | .               | .               | .               | .               | .               | .               | .               | .                | .                | .                |
| $442680_3 = \chi_{67,0}$  | .               | .               | .               | .               | .               | .               | 1               | .               | .                | .                | 1                |
| $505920_2 = \chi_{72,1}$  | .               | .               | .               | 1               | .               | .               | 1               | .               | .                | .                | .                |
| $539648_2 = \chi_{73,1}$  | 1               | 1               | 1               | 1               | 1               | 1               | 2               | 1               | 1                | .                | 1                |
| $590240_2 = \chi_{74,1}$  | .               | .               | .               | 1               | .               | .               | .               | .               | 1                | .                | .                |
| $634880_2 = \chi_{75,1}$  | .               | .               | .               | .               | .               | .               | .               | 1               | 2                | .                | .                |
| $664020_3 = \chi_{76,1}$  | .               | .               | .               | 2               | .               | .               | .               | .               | .                | .                | .                |
| $761856_1 = \chi_{89,0}$  | 1               | 1               | 1               | 2               | .               | .               | 1               | .               | .                | .                | 1                |
| $830025_2 = \chi_{90,1}$  | .               | .               | .               | 2               | .               | .               | .               | .               | 2                | .                | .                |
| $885360_2 = \chi_{91,0}$  | .               | 1               | .               | 3               | .               | 1               | 1               | 1               | 1                | .                | 2                |
| $1011840_2 = \chi_{92,1}$ | .               | 1               | .               | 1               | .               | .               | 1               | 1               | 2                | .                | 1                |
| $1048576_2 = \chi_{93,1}$ | 1               | .               | .               | 1               | .               | .               | 1               | 1               | 1                | .                | .                |
| $1180480_2 = \chi_{94,1}$ | .               | .               | .               | 2               | .               | .               | .               | .               | 2                | .                | 1                |

| (Block 2:)                | $\varphi_{13,1}$ | $\varphi_{14,0}$ | $\varphi_{16,1}$ | $\varphi_{17,0}$ | $\varphi_{18,0}$ | $\varphi_{20,0}$ | $\varphi_{21,1}$ | $\varphi_{23,1}$ | $\varphi_{32,1}$ |
|---------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| $368900_2 = \chi_{59,1}$  | 1                | .                | 1                | .                | .                | .                | .                | 1                | .                |
| $442680_2 = \chi_{66,1}$  | .                | 1                | .                | .                | .                | .                | 1                | 1                | .                |
| $442680_3 = \chi_{67,0}$  | 1                | 1                | .                | .                | 1                | .                | .                | 1                | .                |
| $505920_2 = \chi_{72,1}$  | 1                | .                | 1                | .                | .                | .                | 1                | 1                | .                |
| $539648_2 = \chi_{73,1}$  | 1                | 1                | 1                | .                | 1                | .                | .                | 1                | .                |
| $590240_2 = \chi_{74,1}$  | .                | .                | 1                | .                | .                | .                | .                | .                | 1                |
| $634880_2 = \chi_{75,1}$  | .                | 1                | 1                | .                | .                | .                | .                | .                | 1                |
| $664020_3 = \chi_{76,1}$  | .                | .                | .                | .                | .                | .                | 1                | .                | 1                |
| $761856_1 = \chi_{89,0}$  | .                | 1                | .                | 1                | 1                | 1                | 1                | 1                | .                |
| $830025_2 = \chi_{90,1}$  | .                | 1                | .                | .                | .                | 1                | 1                | .                | 1                |
| $885360_2 = \chi_{91,0}$  | 1                | 1                | 1                | 1                | 1                | 1                | 1                | 1                | .                |
| $1011840_2 = \chi_{92,1}$ | 1                | 1                | 2                | .                | .                | .                | .                | 1                | 1                |
| $1048576_2 = \chi_{93,1}$ | .                | 1                | 1                | .                | .                | .                | 1                | 1                | 1                |
| $1180480_2 = \chi_{94,1}$ | .                | 1                | 1                | .                | .                | 1                | 1                | 1                | 1                |

$$\begin{array}{ll}
\varphi_{1,1} = 1_2 & \varphi_{12,0} = 17577_1 \\
\varphi_{2,0} = 155_1 & \varphi_{13,1} = 18445_2 \\
\varphi_{3,0} = 185_1 & \varphi_{14,0} = 23002_1 \\
\varphi_{4,1} = 868_2 & \varphi_{16,1} = 59892_2 \\
\varphi_{5,1} = 1922_2 & \varphi_{17,0} = 73625_1 \\
\varphi_{6,1} = 4402_2 & \varphi_{18,0} = 103633_1 \\
\varphi_{7,1} = 7037_2 & \varphi_{20,0} = 115227_1 \\
\varphi_{8,1} = 8618_2 & \varphi_{21,1} = 146692_2 \\
\varphi_{10,0} = 13888_1 & \varphi_{23,1} = 272986_2 \\
\varphi_{11,0} = 14415_1 & \varphi_{32,1} = 515592_2
\end{array}$$

| <b>Block 3:</b>          | $\varphi_{9,0}$ | $\varphi_{9,1}$ | $\varphi_{15,0}$ | $\varphi_{15,1}$ | $\varphi_{19,0}$ | $\varphi_{19,1}$ | $\varphi_{22,0}$ | $\varphi_{22,1}$ | $\varphi_{24,0}$ | $\varphi_{24,1}$ |
|--------------------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| $11067_1 = \chi_{11,0}$  | 1               | .               | .                | .                | .                | .                | .                | .                | .                | .                |
| $11067_2 = \chi_{11,1}$  | .               | 1               | .                | .                | .                | .                | .                | .                | .                | .                |
| $110670_1 = \chi_{24+}$  | .               | .               | 1                | 1                | .                | .                | .                | .                | .                | .                |
| $66402_1 = \chi_{26,0}$  | 1               | .               | 1                | .                | .                | .                | .                | .                | .                | .                |
| $66402_2 = \chi_{26,1}$  | .               | 1               | .                | 1                | .                | .                | .                | .                | .                | .                |
| $221340_1 = \chi_{33+}$  | .               | .               | .                | .                | 1                | 1                | .                | .                | .                | .                |
| $166005_3 = \chi_{40,0}$ | .               | 1               | .                | .                | .                | .                | 1                | .                | .                | .                |
| $166005_4 = \chi_{40,1}$ | 1               | .               | .                | .                | .                | .                | .                | 1                | .                | .                |
| $166005_5 = \chi_{41,0}$ | .               | .               | 1                | .                | 1                | .                | .                | .                | .                | .                |
| $166005_6 = \chi_{41,1}$ | .               | .               | .                | 1                | .                | 1                | .                | .                | .                | .                |
| $221340_4 = \chi_{45,0}$ | 1               | .               | 1                | .                | .                | .                | 1                | .                | .                | .                |
| $221340_5 = \chi_{45,1}$ | .               | 1               | .                | 1                | .                | .                | .                | 1                | .                | .                |
| $265608_1 = \chi_{47,0}$ | .               | .               | .                | .                | .                | 1                | 1                | .                | .                | .                |
| $265608_2 = \chi_{47,1}$ | .               | .               | .                | .                | 1                | .                | .                | 1                | .                | .                |
| $332010_1 = \chi_{50,0}$ | .               | .               | 1                | .                | .                | .                | .                | .                | 1                | .                |
| $332010_2 = \chi_{50,1}$ | .               | .               | .                | 1                | .                | .                | .                | .                | .                | 1                |
| $664020_1 = \chi_{51+}$  | 1               | 1               | 1                | 1                | 1                | 1                | 1                | 1                | .                | .                |
| $885360_1 = \chi_{68+}$  | .               | .               | 1                | 1                | 1                | 1                | .                | .                | 1                | 1                |
| $996030_1 = \chi_{70+}$  | .               | .               | .                | .                | 2                | 2                | .                | .                | 1                | 1                |
| $664020_4 = \chi_{77,0}$ | .               | 1               | 1                | 1                | .                | 1                | 1                | .                | 1                | .                |
| $664020_5 = \chi_{77,1}$ | 1               | .               | 1                | 1                | 1                | .                | .                | 1                | .                | 1                |
| $708288_1 = \chi_{78,0}$ | .               | .               | 1                | .                | 1                | 1                | 1                | .                | 1                | .                |
| $708288_2 = \chi_{78,1}$ | .               | .               | .                | 1                | 1                | 1                | .                | 1                | .                | 1                |

$$\begin{array}{ll}
\varphi_{9,0} &= 11067_1 \\
\varphi_{9,1} &= 11067_2 \\
\varphi_{15,0} &= 55335_1 \\
\varphi_{15,1} &= 55335_2 \\
\varphi_{19,0} &= 110670_1
\end{array}
\qquad
\begin{array}{ll}
\varphi_{19,1} &= 110670_2 \\
\varphi_{22,0} &= 154938_1 \\
\varphi_{22,1} &= 154938_2 \\
\varphi_{24,0} &= 276675_1 \\
\varphi_{24,1} &= 276675_2
\end{array}$$

| <b>Block 4:</b>           | $\varphi_{25,0}$ | $\varphi_{39,0}$ |
|---------------------------|------------------|------------------|
| $298809_1 = \chi_{48,0}$  | 1                | .                |
| $1195236_1 = \chi_{95,0}$ | .                | 1                |
| $1494045_1 = \chi_{97,0}$ | 1                | 1                |

$$\begin{array}{ll}
\varphi_{25,0} &= 298809_1 \\
\varphi_{39,0} &= 1195236_1
\end{array}$$

| <b>Block 5:</b>           | $\varphi_{25,1}$ | $\varphi_{39,1}$ |
|---------------------------|------------------|------------------|
| $298809_2 = \chi_{48,1}$  | 1                | .                |
| $1195236_2 = \chi_{95,1}$ | .                | 1                |
| $1494045_2 = \chi_{97,1}$ | 1                | 1                |

$$\begin{array}{ll}
\varphi_{25,1} &= 298809_2 \\
\varphi_{39,1} &= 1195236_2
\end{array}$$

| <b>Block 6:</b>           | $\varphi_{26,0}$ | $\varphi_{26,1}$ | $\varphi_{27,0}$ | $\varphi_{27,1}$ | $\varphi_{28+}$ |                             |
|---------------------------|------------------|------------------|------------------|------------------|-----------------|-----------------------------|
| $355725_1 = \chi_{55,0}$  | 1                | .                | .                | .                | .               |                             |
| $355725_2 = \chi_{55,1}$  | .                | 1                | .                | .                | .               | $\varphi_{26,0} = 355725_1$ |
| $355725_3 = \chi_{56,0}$  | .                | .                | 1                | .                | .               | $\varphi_{26,1} = 355725_2$ |
| $355725_4 = \chi_{56,1}$  | .                | .                | .                | 1                | .               | $\varphi_{27,0} = 355725_3$ |
| $711450_1 = \chi_{57+}$   | .                | .                | .                | .                | 1               | $\varphi_{27,1} = 355725_4$ |
| $1422900_1 = \chi_{79+}$  | 1                | 1                | .                | .                | 1               | $\varphi_{28+} = 711450_1$  |
| $1422900_2 = \chi_{81+}$  | .                | .                | 1                | 1                | 1               |                             |
| $1422900_3 = \chi_{96,0}$ | 1                | .                | 1                | .                | 1               |                             |
| $1422900_4 = \chi_{96,1}$ | .                | 1                | .                | 1                | 1               |                             |

| <b>Block 7:</b>          | $\varphi_{30,0}$ | $\varphi_{30,1}$ |                             |
|--------------------------|------------------|------------------|-----------------------------|
| $439425_1 = \chi_{60,0}$ | 1                | .                | $\varphi_{30,0} = 439425_1$ |
| $439425_2 = \chi_{60,1}$ | .                | 1                | $\varphi_{30,1} = 439425_2$ |
| $878850_1 = \chi_{62+}$  | 1                | 1                |                             |

| <b>Block 8:</b>          | $\varphi_{31,0}$ | $\varphi_{31,1}$ |                             |
|--------------------------|------------------|------------------|-----------------------------|
| $439425_3 = \chi_{61,0}$ | 1                | .                | $\varphi_{31,0} = 439425_3$ |
| $439425_4 = \chi_{61,1}$ | .                | 1                | $\varphi_{31,1} = 439425_4$ |
| $878850_2 = \chi_{64+}$  | 1                | 1                |                             |