$$\begin{bmatrix}
840B_{40}+5040B_{60} & 0 & -720\sqrt{7}B_{66} & 0 & 60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & 0 & 720\sqrt{7}B_{66} & \\
0 & -1260B_{40}-21420B_{60} & 0 & 1080\sqrt{7}B_{66} & 0 & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & 0 & \\
-720\sqrt{7}B_{66} & 0 & -660B_{40}+27720B_{60} & 0 & 0 & 0 & 900B_{40}+52920B_{60} & \\
0 & 1080\sqrt{7}B_{66} & 0 & 540B_{40}+1260B_{60} & 0 & -2520B_{66} & 0 & 300\sqrt{} \\
60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & 0 & 0 & 0 & 1080B_{40}-25200B_{60} & 0 & 0 & \\
0 & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & 0 & -2520B_{66} & 0 & 540B_{40}+1260B_{60} & 0 & \\
720\sqrt{7}B_{66} & 0 & 900B_{40}+52920B_{60} & 0 & 0 & 0 & -660B_{40}+27720B_{60} & \\
0 & 2520B_{66} & 0 & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & 0 & 1080\sqrt{7}B_{66} & 0 & -12 \\
0 & 0 & 720\sqrt{7}B_{66} & 0 & 60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & 0 & -720\sqrt{7}B_{66} &
\end{bmatrix}$$

Subspace 1

Base: $|4\rangle,\ |2\rangle,\ |0\rangle,\ |-2\rangle,\ |-4\rangle$

$$H_1 = \begin{bmatrix}
840B_{40}+5040B_{60} & -720\sqrt{7}B_{66} & 60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & 720\sqrt{7}B_{66} & 0 \\
-720\sqrt{7}B_{66} & -660B_{40}+27720B_{60} & 0 & 900B_{40}+52920B_{60} & 720\sqrt{7}B_{66} \\
60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & 0 & 1080B_{40}-25200B_{60} & 0 & 60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} \\
720\sqrt{7}B_{66} & 900B_{40}+52920B_{60} & 0 & -660B_{40}+27720B_{60} & -720\sqrt{7}B_{66} \\
0 & 720\sqrt{7}B_{66} & 60\sqrt{70}B_{40}-7560\sqrt{70}B_{60} & -720\sqrt{7}B_{66} & 840B_{40}+5040B_{60}
\end{bmatrix}$$

$\lambda_{1,1}^{(1)} = 1680B_{40}-100800B_{60}$

$\lambda_{1,2}^{(2)} = 240B_{40}+80640B_{60}$

$\lambda_{1,3}^{(1)} = -360B_{40}-10080B_{60}-240\sqrt{25B_{40}^2+630B_{40}B_{60}+3969B_{60}^2+252B_{66}^2}$

$\lambda_{1,4}^{(1)} = -360B_{40}-10080B_{60}+240\sqrt{25B_{40}^2+630B_{40}B_{60}+3969B_{60}^2+252B_{66}^2}$

Subspace 2

Base: $|3\rangle,\ |1\rangle,\ |-1\rangle,\ |-3\rangle$

$$H_2 = \begin{bmatrix}
-1260B_{40}-21420B_{60} & 1080\sqrt{7}B_{66} & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & 2520B_{66} \\
1080\sqrt{7}B_{66} & 540B_{40}+1260B_{60} & -2520B_{66} & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} \\
300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & -2520B_{66} & 540B_{40}+1260B_{60} & 1080\sqrt{7}B_{66} \\
2520B_{66} & 300\sqrt{7}B_{40}+3780\sqrt{7}B_{60} & 1080\sqrt{7}B_{66} & -1260B_{40}-21420B_{60}
\end{bmatrix}$$

$\lambda_{2,1}^{(2)} = -360B_{40}-10080B_{60}-240\sqrt{25B_{40}^2+630B_{40}B_{60}+3969B_{60}^2+252B_{66}^2}$

$\lambda_{2,2}^{(2)} = -360B_{40}-10080B_{60}+240\sqrt{25B_{40}^2+630B_{40}B_{60}+3969B_{60}^2+252B_{66}^2}$