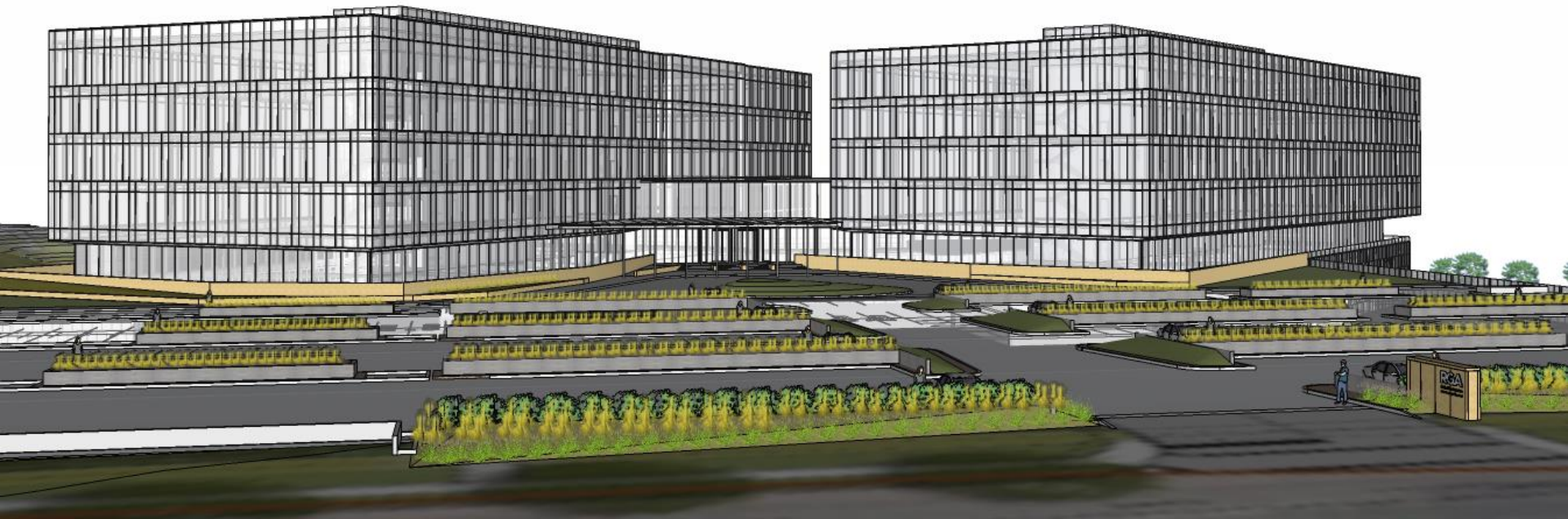
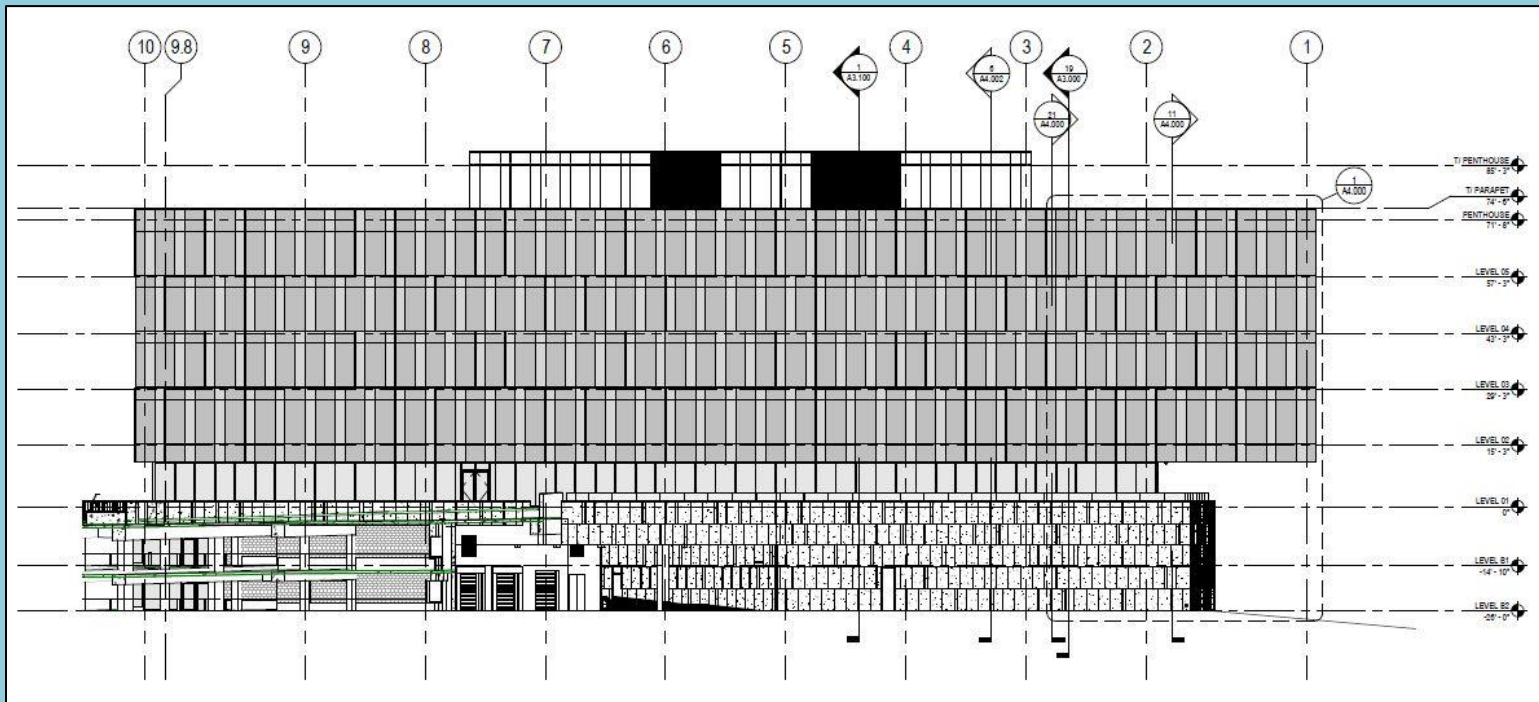


Reinsurance Group of America (RGA) Global Headquarters



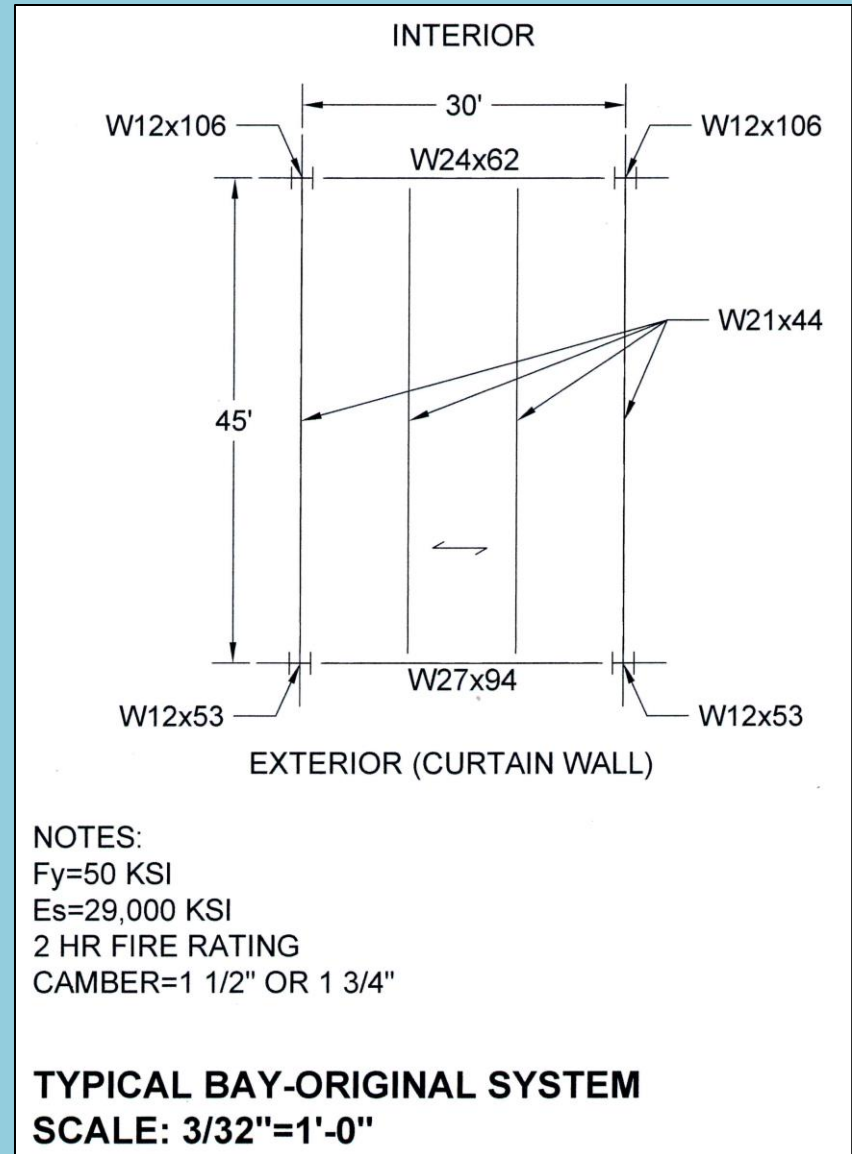
General Building Info

- Steel superstructure with braced frames
- Concrete parking garage with shear walls
- Braced frames and shear walls act together
- Cantilever Truss System



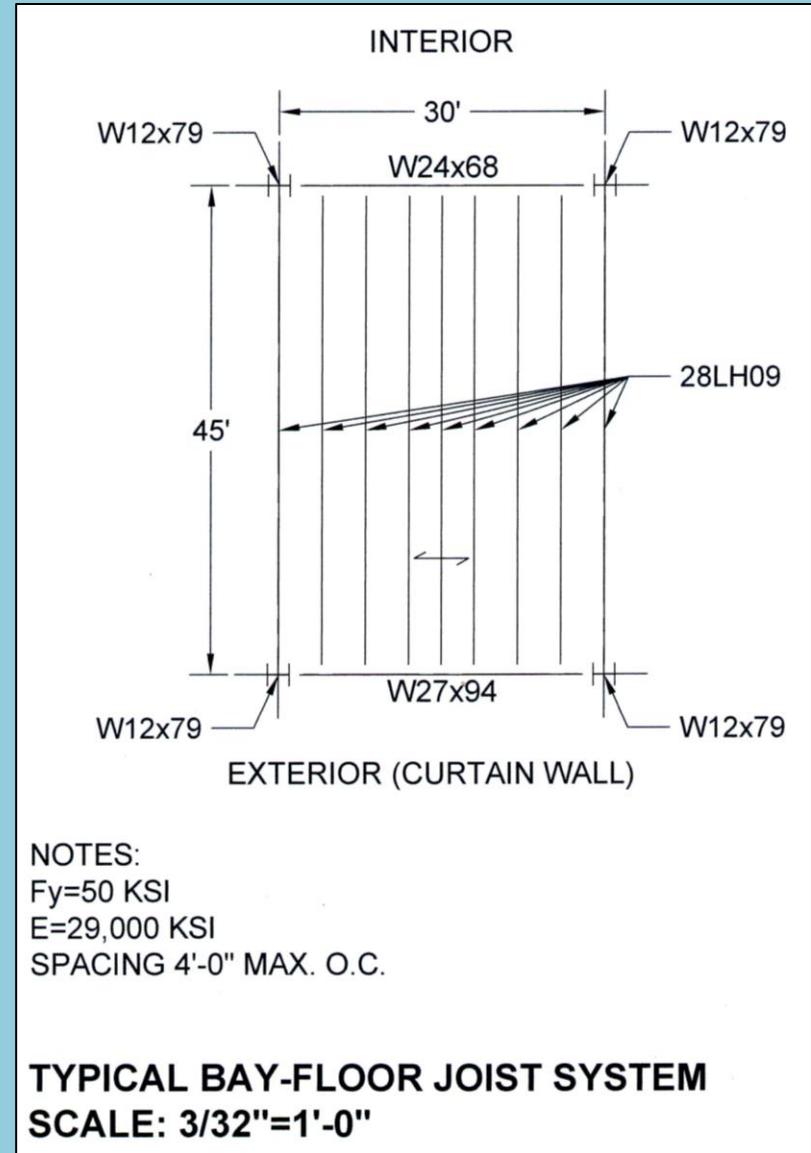
Existing System-Composite Steel

- Typical bay
- 2 hour fire rating
- 49.0 psf
- \$39.73/SF
- 30" Depth
- Deck unshored
- Oversized for strength
- Deflections pass comfortably



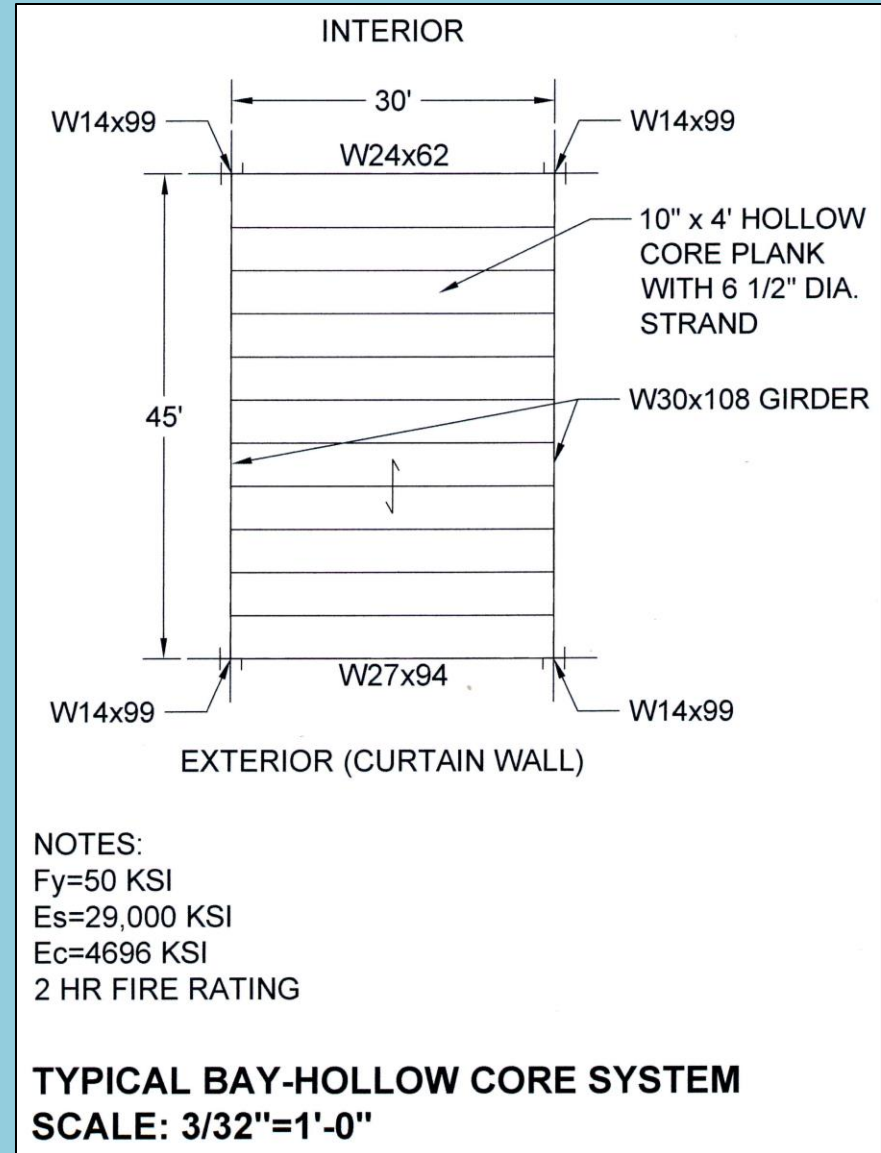
Alternate 1-Floor Joists on Beams

- 2 hour fire rated deck, but **joists difficult to fireproof** effectively
- 48.5 psf ~ Existing
- \$39.73/SF < Existing
- 34.5" depth > Existing
- Lateral load path unchanged



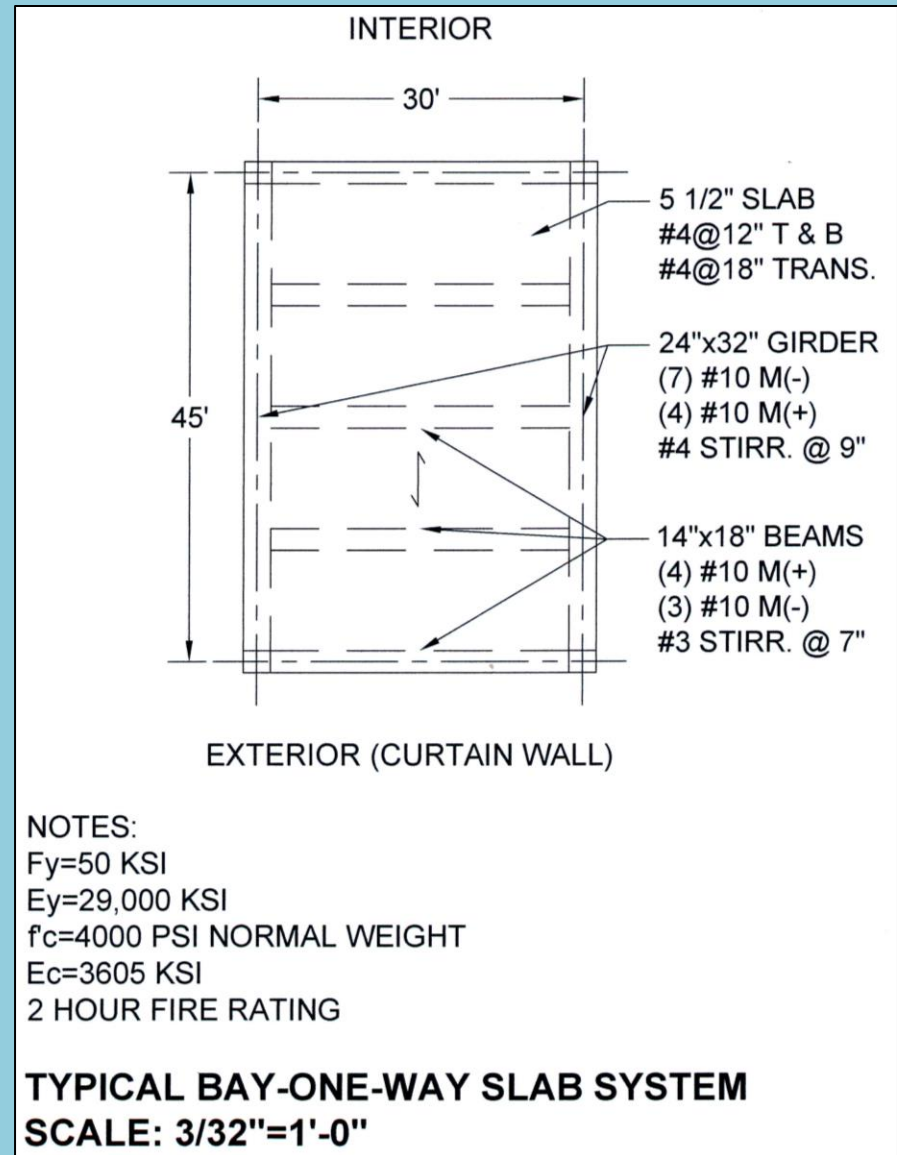
Alternate 2-Hollow Core on Beams

- 2 hour fire rating
- 107.8 psf >> Existing
- \$56.70/SF >> Existing
- 42" >> Existing
- Not a viable option
- Lateral load path unchanged



Alternate 3- One-Way Slab with Beams

- 2 hour fire rating
- **101.2 psf >> Existing**
- \$31.23/SF < Existing
- 32" > Existing
- Viable, but weight will impact garage
- Shear walls in parking garage and through the superstructure's core



Final System Comparison

	Existing	Floor Joists	Hollow Core	One-Way Slab
Weight	49.0 psf	48.5 psf	107.8 psf	101.2 psf
Cost	\$39.73/SF	\$37.18/SF	\$56.70/SF	\$31.23/SF
System Depth	30"	34.5"	42"	32"
Fire Protection	2 Hour	2 Hour*	2 Hour	2 Hour
Deflections (LL)	0.375"	0.58"	0.804"	0.586"
Viable?	Benchmark	Yes	No	Yes