

Washington State Community Airports 2022 Conference - Hangar Development Series Hangar Building Design and Permitting



PRECISION  **APPROACH**
ENGINEERING

Key Presentation Topics

- **Hangar Types, Size, and Orientation**
- **Site Design for Vertical Elements**
- **Specific Hangar Features**
- **Permitting**
- **Building Procurement and Construction**

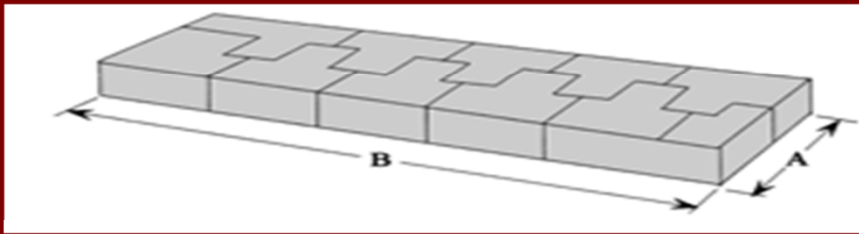
Hangar Type, Size, & Orientation

- Consult Hangar Wait List and Pilots
- Hangar Type – *nested “T” and box typical*
 - Small box ~15% more footprint/cost
- Hangar Type – *special end units (storage, bathroom, or expanded “T”)*
- Consistent Building Color Scheme
- Extent of Input for Land Leases
- Orientation – *perpendicular to wind*

Hangar Type, Size, & Orientation

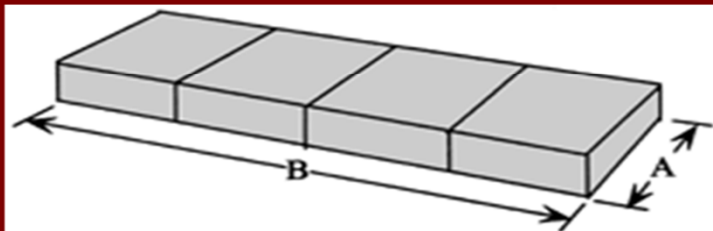


Nested T-hangars and Boxes



OVERALL LENGTH "B".....INDIVIDUAL UNIT DIMENSION

Model Number	Width A	2Unit	4Unit	6Unit	8Unit	10Unit	Clear Door	Depth	Wing Depth	Tail Width
N51-42	51'0"	63'0"	105'0"	147'0"	189'0"	231'0"	41'6" x 12'0"	33'0"	18'0"	21'0"



OVERALL LENGTH "B".....INDIVIDUAL UNIT DIMENSION

Model Number	Width A	Unit1	Unit2	Unit3	Unit4	Unit5	Clear Door	Depth
RG33-42	33'0"	63'0"	84'0"	126'0"	168'0"	210'0"	41'6" x 12'0"	33'0"



Manufacturer	Model	Wingspan	Length	Tail Height
Beechcraft	Duchess	38'-0"	29'-1"	9'-6"
	Duke	39'-3"	33'-10"	12'-4"
Boeing	Stearman	32'-2"	25'-0"	9'-2"
Cessna	172	36'-1"	26'-11"	8'-11"
	182	36'-1"	28'-0"	9'-3"
	206	36'-0"	28'-3"	9'-4"
	210	38'-10"	28'-2"	9'-8"
	310	36'-11"	32'-0"	10'-8"
	337	38'-2"	29'-9"	9'-4"
	340	28'-1"	34'-4"	12'-7"
	401	39'-10"	33'-6"	11'-7"
	421	41'-2"	36'-5"	11'-6"
Lake	Renegade (Turbo)	38'4"	28'-1"	10'-0"
Piper	Cherokee Six	32'-10"	27'-9"	9'-6"
	Twin Comanche	36'-10"	25'-2"	8'-2"
	Seneca V	38'-11"	28'-8"	9'-11"
	Navajo	40'-8"	32'-8"	13'-0"
	Cheyenne	42'-8"	34'-8"	12'-9"
	Seminole	38'-8"	27'-7"	8'-6"
	Aerostar	36'-8"	34'-10"	12'-1"
	Malibu	43'-0"	29'-6"	11'-4"
Raytheon	Baron (B58)	37'-10"	29'-10"	9'-9"
Eclipse	500 (Small Jet)	37'-5"	33'-1"	11'-0"

Site Design (Vertical Elements)

- **Roof Drainage Conveyance** – *piped or surface*
- **Overbuild Hangar Slab** – *access to person door and future pavement rehabilitation*
- **Hangar Door Compatibility**
- **Coordinate Anchor Bolt Installation**

Specific Hangar Features

- **Material** – *red iron, galvanized, specify sheet life*
- **Interior Slab** – *slight slope to shed water, surface finish*
- **Door Types** – *sliding, bi-fold, motor location, roll-ups*
- **Roof Gutters** – *move water away from building*
- **Insulation** – *roof at a minimum, walls in storage areas*
- **Interior Lighting** – *LED, timer, motion sensors*
- **Exterior Lighting** – *LED, MH, HPS, motion sensors*
- **Electrical Features** – *outlet number/location, meter(s)*

Permitting and Codes

- **Confirm Applicable Permitting and Codes with AHJ**
 - Incorporate applicable items into building bid
 - Certificate of Occupancy (if required)
- **Early coordination with Fire Marshal**
 - Size to avoid sprinkling and minimize fire walls

Procurement/Construction Options

- **Develop a Specification and Incorporate Specifics**
- **Bid Schedule(s) – *horizontal and vertical combined or separate***
- **Self Performance Work – *clearing, foundation preparation, concrete work, building assembly***
- **Self Performance Service – *serve as General Contractor***
- **Substantial Completion and Commissioning**

Questions?



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