INFORMATION SHEET – SLOTTED ANGLE STORAGE RACKS FOR A4 BOX FILES – AT ORANGE HIYA THIRD FLOOR

Project Description

Supply, fabricate, and install heavy-duty slotted angle storage racks for storing A4 box files in **four (4)** storage rooms.

Each room size:

- Length: 46 ft
- Width: 24 ft

The racks shall be fabricated using slotted angle sections with bolted connections and provided with timber shelves of suitable thickness to prevent sagging or warping under heavy file loads.

Design Basis and Assumptions

A4 Box File Size Assumption

Typical A4 box file dimensions considered:

- Height: 14 inches
- Depth: 11 inches
- Width/Thickness: 4 inches

Additional clearance:

- Shelf clear height: Box file height + 2 inches
- Shelf depth: Box file depth + 2 inches

Therefore:

- Shelf clear height adopted: 16 inches
- Shelf depth adopted: 13 inches minimum

For practicality and durability, the following dimensions are proposed:

- Rack depth: 15 inches

- Number of shelf levels: 9 levels
- Shelf spacing: 16 inches clear minimum
- Rack height: Approximately 12 ft

Proposed Rack Layout Per Room

1. Wall-Mounted Racks Along 46 ft Walls

Wall 1 (Full Length Wall)

Arrangement:

- 0.5 ft clearance from wall
- 3 Nos × 15 ft racks
- No spacing between racks
- 0.5 ft clearance at opposite wall

Calculation:

- 0.5 ft + 15 ft + 15 ft + 15 ft + 0.5 ft = 46 ft

Wall 2 (Wall Adjacent to Entrance and Balcony Door)

Due to entrance door clearance requirements, rack arrangement is as follows:

Arrangement:

- 3 ft clearance from wall
- 3 Nos × 14 ft racks
- No spacing between racks
- 1 ft clearance at opposite wall

Calculation:

- 3 ft + 14 ft + 14 ft + 14 ft + 1 ft = 46 ft

Remaining space is allocated for entrance access and circulation.

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2. Freestanding Double-Sided Central Racks

Arrangement per central row:

- 1 ft clearance from wall
- 3 Nos × 12 ft double-sided racks
- 4 ft aisle spacing between racks
- 1 ft clearance at end wall

Calculation:

- 1 ft + 12 ft + 4 ft + 12 ft + 4 ft + 12 ft + 1 ft = 46 ft

Number of central rows per room:

- 4 Nos double-sided rows

Summary of Rack Quantities Per Room

Rack Type	Rack Length	Quantity
Wall-mounted rack	15 ft	3 Nos
Wall-mounted rack	14 ft	3 Nos
Double-sided central rack	12 ft	12 Nos

Approximate Rack Length	Totals Per Room
Description	Length
Wall-mounted racks	87 ft
Double-sided central racks	144 ft
Total rack running length	231 ft

Note:

- Double-sided racks provide shelving access from both sides.
- Total effective storage capacity is substantially higher than single-sided wall racks.

Technical Specifications

Slotted Angle Frame

- Heavy-duty MS slotted angle
- Minimum size: 40 mm × 40 mm × 2 mm thick
- Powder coated / enamel painted finish
- Bolts, nuts, washers included
- Mid-bracing and back-bracing provided for rigidity and lateral stability

Shelf Material

- 18 mm thick marine plywood OR laminated commercial plywood
- Properly edge sealed
- Fixed securely to slotted angle supports

Shelf Loading

- Suitable for heavy office records and box file storage

Anchoring

- Racks to be properly anchored/braced where necessary for stability

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Suggested Shelf Configuration

Item	Dimension
Rack Height	12 ft approx