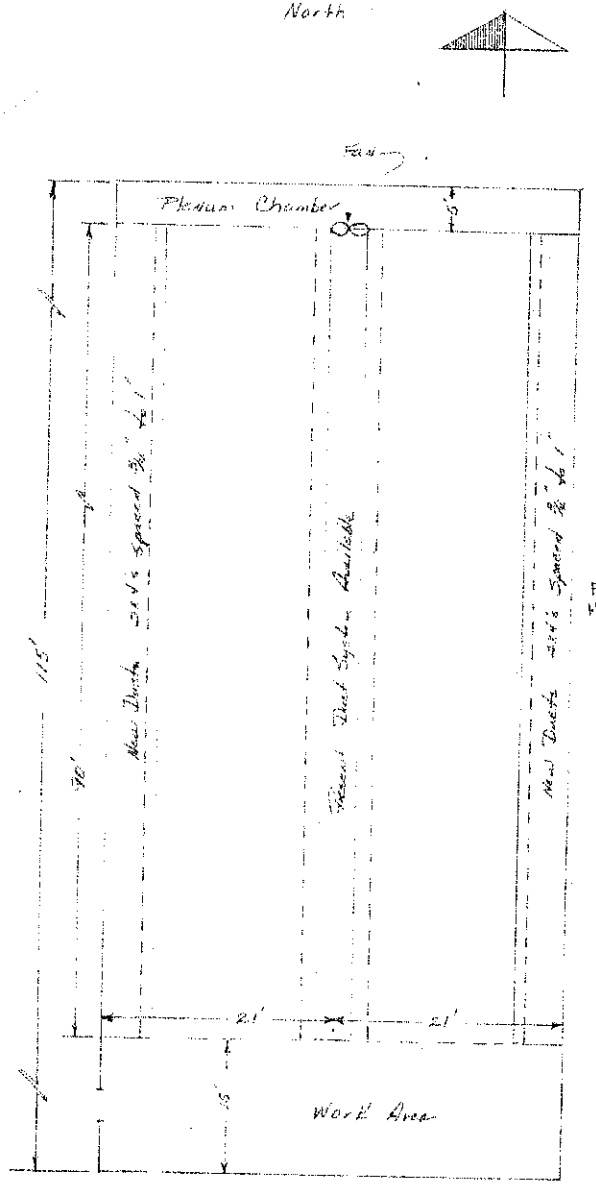
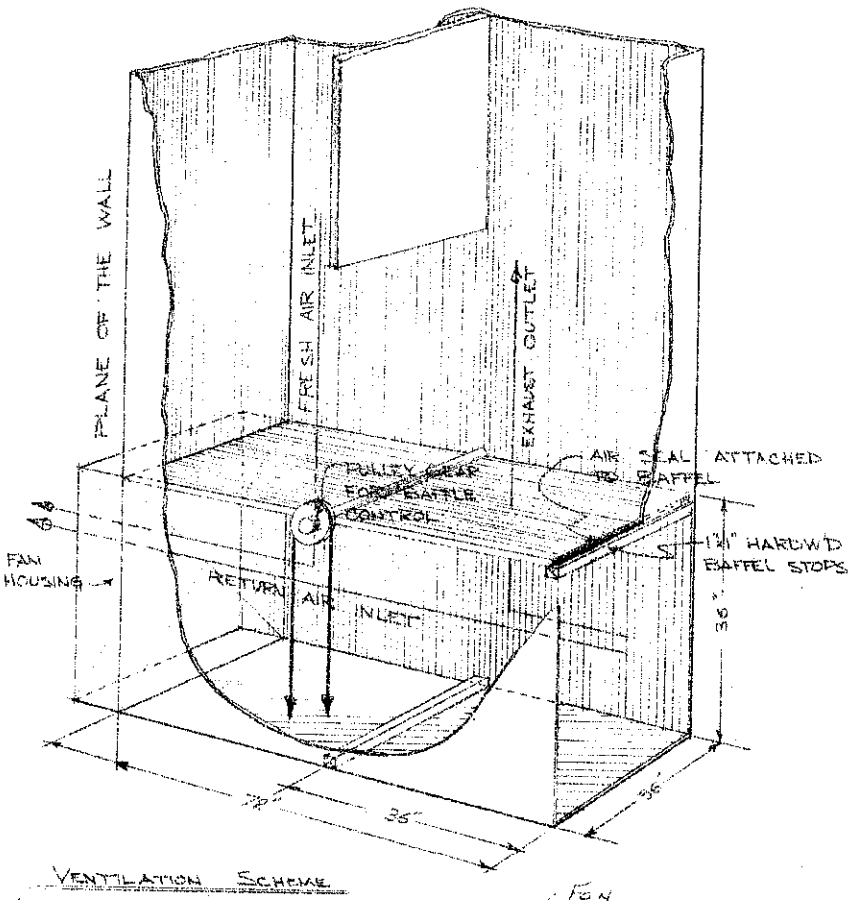
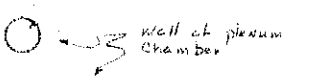
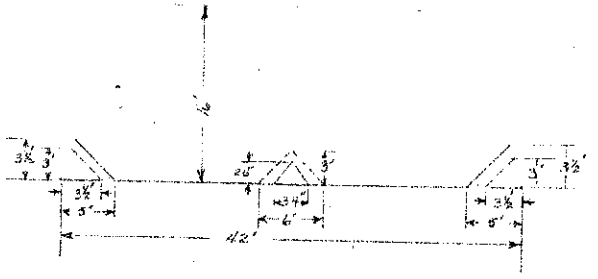


PROPOSED VENTILATION SYSTEM



VENTILATION SCHEME





Note: If you use your 3'x2½' "A" duct you will need the 3½'x5' duct system on exterior wall. I would rather see you use the 3'x5' "A" duct in the center with the 5'x3.5' ducts on the exterior walls. The 21' between ducts is along way to move air horizontal and your present "A" duct is small and might not do the job you want it used in middle of storage. It has also short on cross sectional area to use along the outside wall.

Recommendations

1. Computed Capacity at 16' depth and .42 cmt per cu. ft (.42 x 90 x 42 x 16) - (.42 x 90 x 42 x 16) = 19,656 cmt
2. Fan Capacity 19,500 cfm based on .42 cm per cmt. Must deliver air ½" static pressure
3. Consider a fresh air inlet and exhaust openings not any smaller than fan shroud.
4. Completely seal Plenum Chamber from air.
5. Inlet opening to fan should not be smaller than fan shroud.
6. Space 2 x 4 on duct 3/4" to 1"
7. Cribbing on exterior wall maybe closed below duct except for approximately 3" allowing some air to flow up along the outside wall.
8. Install fan as near the peak to bring return air along ceiling of storage.
9. If additional small fan are available they maybe installed near work area pushing air toward Plenum chamber.
10. Combined Cross sectional Area of Ducts should add up to be 20 ft. sq.
11. The 21' spacing between center duct and outside wall duct is a maximum. The center duct should be near the 4' to have a cross section area of 10 ft² (approx.) need for good air flow.
12.

PREPARED BY:
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POTATO STORAGE VENTILATION INLET/EXHAUST DAMPER

NDSU EXT. AGRIC. ENGINEERING
1970 PUB

N.D. 835-3-2 1 SH.