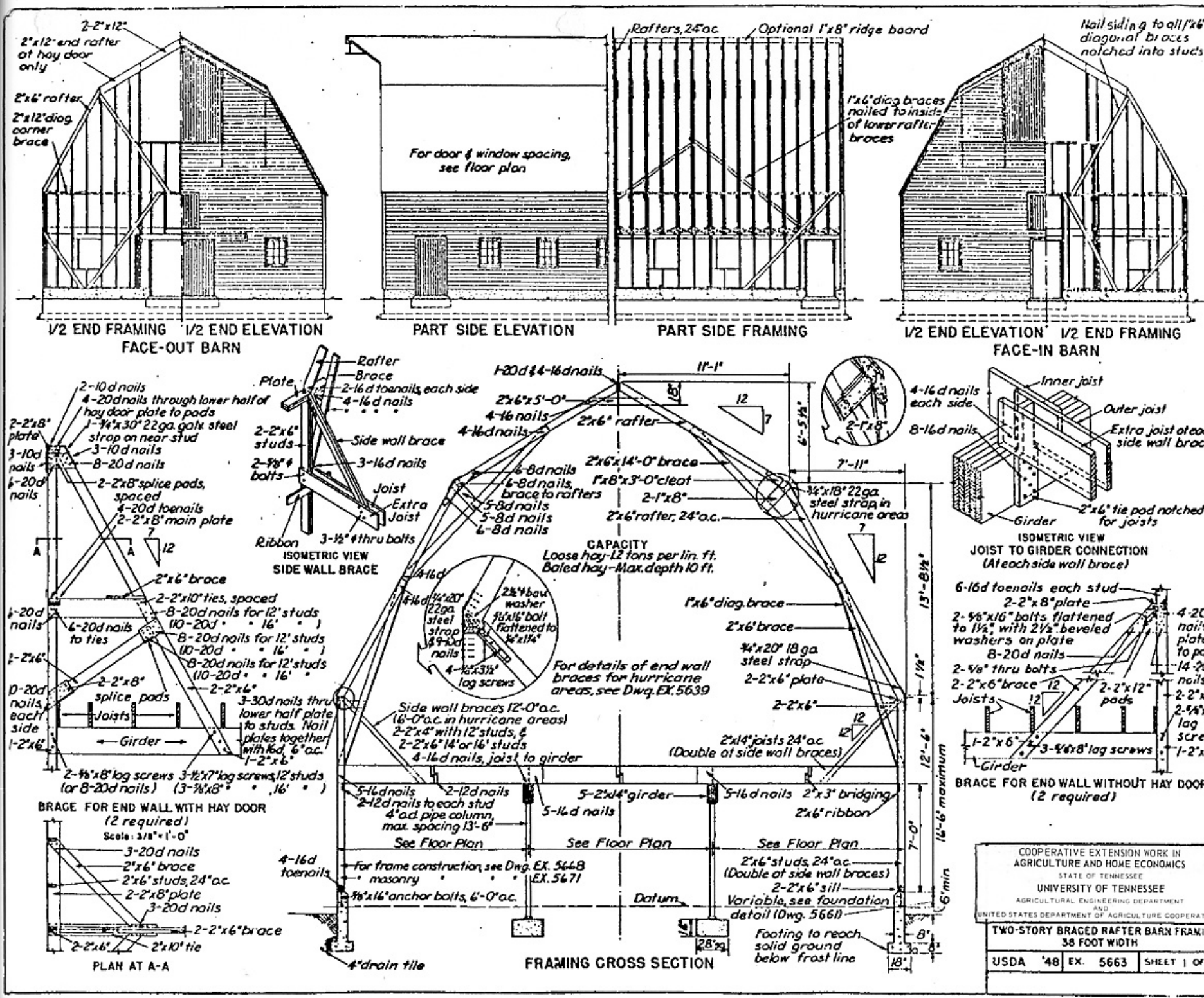
2-2"x12"
2"x12" end rafter at hay door only
2"x6" rafter
2"x12" diag. corner brace
1/2 END FRAMING
1/2 END ELEVATION
FACE-OUT BARN
Rafters, 24" o.c.
Optional 1"x8" ridge board
For door & window spacing, see floor plan
1"x6" diag. braces nailed to inside of lower rafter braces
PART SIDE ELEVATION
PART SIDE FRAMING
Nail siding to all 1"x6" diagonal braces notched into studs
1/2 END ELEVATION
1/2 END FRAMING
FACE-IN BARN
2-10d nails
4-20d nails through lower half of hay door plate to pads
1-¾"x30" 22 ga. galv. steel strap on near stud
3-10d nails
8-20d nails
2-2"x8" splice pads, spaced
4-20d toenails
2-2"x8" main plate
2-2"x8" plate
3-10d nails
6-20d nails
2"x6" brace
2-2"x10" ties, spaced
8-20d nails for 12" studs (10-20d " " 16")
4-20d nails to ties
2-2"x6"
2-2"x8" splice pads
3-30d nails thru lower half plate to studs. Nail plates together with 16d, 6" o.c.
Joists
Girder
1-2"x6"
2-⅝"x8" log screws (or 8-20d nails)
3-½"x7" log screws, 12" studs (3-⅝"x8" " 16")
BRACE FOR END WALL WITH HAY DOOR
(2 required)
Scale: 3/8" = 1'-0"
3-20d nails
2"x6" brace
2"x6" studs, 24" o.c.
2-2"x8" plate
3-20d nails
2-2"x6" brace
2-2"x6"
2"x10" tie
PLAN AT A-A
Rafter
Brace
Plate
2-16d toenails each side
4-16d nails
2-2"x6" studs
Side wall brace
2-⅝" ϕ bolts
3-16d nails
Joist
Extra Joist
Ribbon
3-½" ϕ thru bolts
ISOMETRIC VIEW
SIDE WALL BRACE
1-20d & 4-16d nails
11'-1"
2"x6"x5'-0"
4-16 nails
4-16d nails
2"x6" rafter
2"x6"x14'-0" brace
1"x8"x3'-0" cleat
2-1"x8"
2"x6" rafter, 24" o.c.
6-8d nails
6-8d nails, brace to rafters
5-8d nails
5-8d nails
6-8d nails
7'-11"
¾"x18" 22 ga. steel strap in hurricane areas
CAPACITY
Loose hay-1.2 tons per lin. ft.
Baled hay-Max. depth 10 ft.
4-16d
4-16d
¾"x20" 22 ga. steel strap & 4-10d nails
2½" ϕ bow washer ⅝"x16" bolt flattened to ⅝"x1¾"
4-½"x3½" lag screws
For details of end wall braces for hurricane areas, see Dwg. EX. 5639
1"x6" diag. brace
2"x6" brace
¾"x20" 18 ga. steel strap
2-2"x6" plate
2-2"x6"
Side wall braces 12'-0" o.c. (16'-0" o.c. in hurricane areas)
2-2"x4" with 12" studs, & 2-2"x6" 14' or 16' studs
4-16d nails, joist to girder
2"x14" joists 24" o.c. (Double at side wall braces)
5-16d nails
2-12d nails
2-12d nails to each stud
4" o.d. pipe column, max. spacing 13'-8"
5-16d nails
5-2"x14" girder
5-16d nails
2"x3" bridging
2"x6" ribbon
See Floor Plan
See Floor Plan
See Floor Plan
4-16d toenails
For frame construction, see Dwg. EX. 5668
" masonry " " " EX. 5671
⅝"x16" anchor bolts, 6'-0" o.c.
2"x6" studs, 24" o.c. (Double at side wall braces)
2-2"x6" sill
Datum
Variable, see foundation detail (Dwg. 5661)
Footing to reach solid ground below frost line
4" drain tile
FRAMING CROSS SECTION
13'-8½"
1'-1½"
12'-6"
16'-6" maximum
7'-0"
6' min
8"
18"
28" sq
2-1"x8"
4-16d nails each side
Inner joist
Outer joist
8-16d nails
Extra joist at end side wall brace
Girder
2"x6" tie pad notched for joists
ISOMETRIC VIEW
JOIST TO GIRDER CONNECTION
(At each side wall brace)
6-16d toenails each stud
2-2"x8" plate
2-⅝" x16" bolts flattened to 1½", with 2½" beveled washers on plate
8-20d nails
2-⅝" thru bolts
2-2"x6" brace
Joists
2-2"x12" pads
1-2"x6"
3-⅝"x8" lag screws
Girder
BRACE FOR END WALL WITHOUT HAY DOOR
(2 required)
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
STATE OF TENNESSEE
UNIVERSITY OF TENNESSEE
AGRICULTURAL ENGINEERING DEPARTMENT
AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERAT
TWO-STORY BRACED RAFTER BARN FRAM
38 FOOT WIDTH
USDA '48 EX. 5663 SHEET 1 OF