

- 1 108 free stalls, to match a herd of 100 milking and dry cows
- 2 calves (3 - 6 mo.) 13 stalls @ 2'-3" x 4'-0"
- 3 calves (6 - 9 mo.) 13 stalls @ 2'-6" x 4'-6"
- 4 calves (9 - 12 mo.) 13 stalls @ 2'-9" x 5'-0"
- 5 heifers (12 - 15 mo.) 13 stalls @ 3'-0" x 5'-6"
- 6 heifers (15 - 18 mo.) 13 stalls @ 3'-3" x 6'-0"
- 7 heifers (18 - 21 mo.) 13 stalls @ 3'-6" x 6'-6"
- 8 heifers (21 - 24 mo.) 13 stalls @ 3'-9" x 7'-0"
- 9 dry cows, 17 stalls @ 4'-0" x 7'-6"
- 10 optional feed room, silos etc.

SPECIFICATIONS

Unless otherwise specified, all cast-in-place concrete is to be min. 4000 psi, @ 28 days, 6% air entrainment

All reinforcing steel to be min. 40 000 psi deformed bars; provide 2" concrete cover over reinforcing steel

All exposed steel to be galvanized or painted to resist corrosion from moisture and manure gases

All wood indicated 'pressure-treated' is CCA pressure-treated to a net retention of 0.4 lb/ft³ (ground contact specification, CSA-080 Wood Preservation)

All nails exposed to treated wood to be hot-dip galvanized

All untreated framing lumber is No. 2 (or better), S-P-F species group, unless otherwise specified

This plan is designed to meet the requirements of the Canadian Farm Building Code

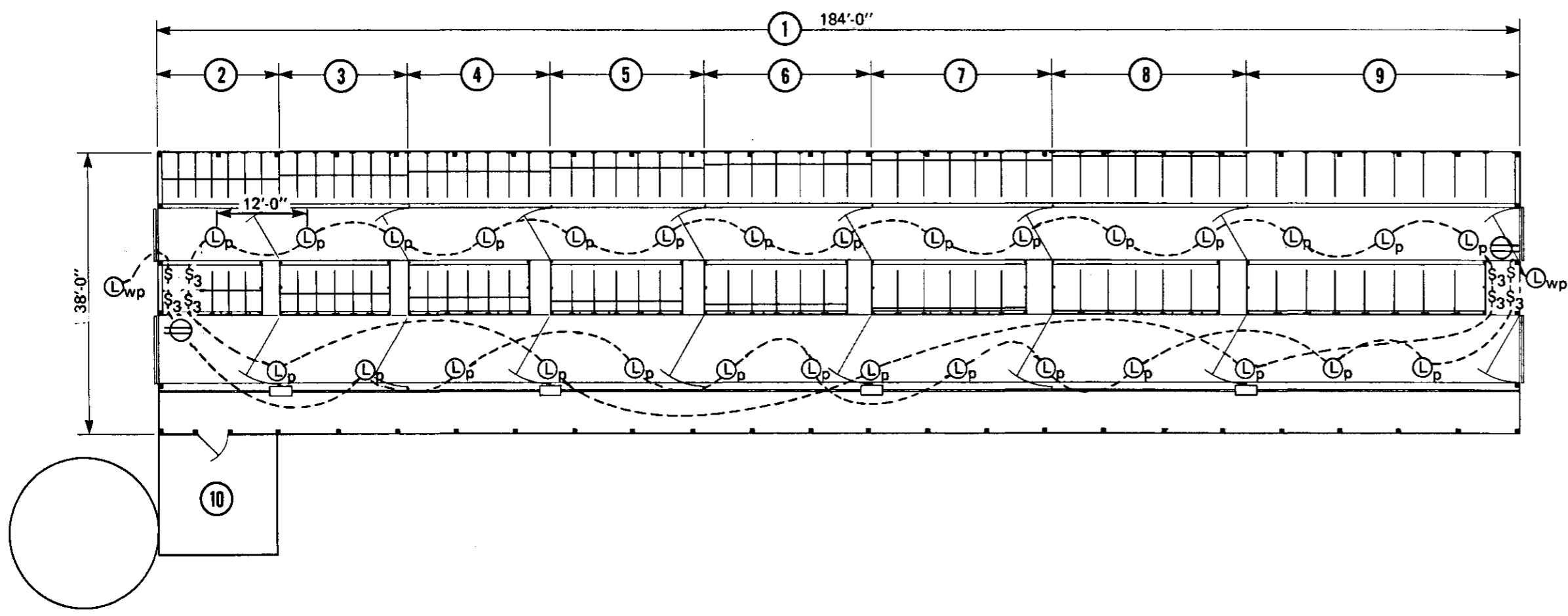
Notes thus marked indicate where this plan gives structural choices to be selected to meet local climatic loads (wind, snow), soil bearing capacity and other local conditions. The plan user must ensure that these requirements are met. Consult an engineer if you are not familiar with the details required

ONE SET OF DRAWINGS AND LEAFLETS SHOULD INCLUDE:

CPS no.	sheet no.	Title
2404	-1-	Free stall dairy calf and heifer barn
2404	-2-	Floor plan & stall details
2404	-3-	Cross section & wall detail

AND LEAFLETS

2404	Free stall dairy calf and heifer barn
2658	Tombstone feed fence for young & adult cattle
9101	Building your own roof trusses
9102	Truss erection and bracing
9341	Sliding doors



ELECTRICAL

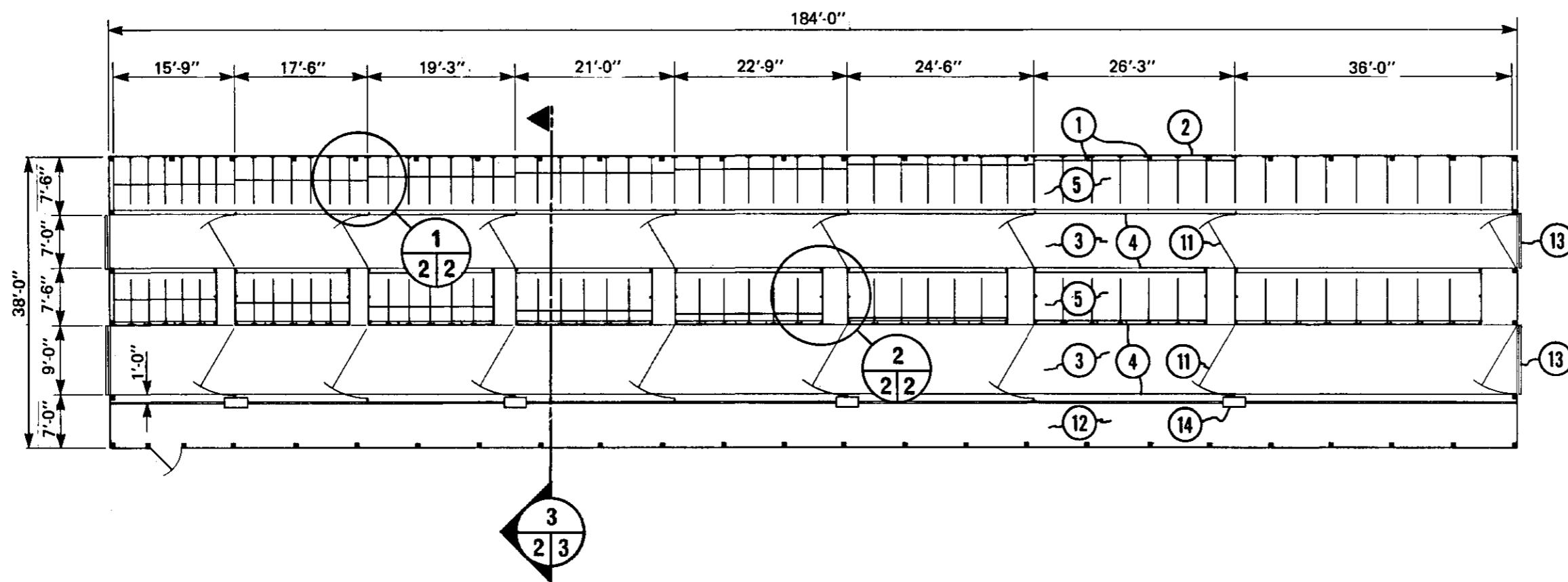
- Incandescent Lampholder, Pigtail Type
- Weatherproof Incandescent Lampholder
- Duplex Convenience Outlet

SYM	REVISIONS	CHECKED	DATE	APPROVED

FREE STALL DAIRY CALF AND HEIFER BARN

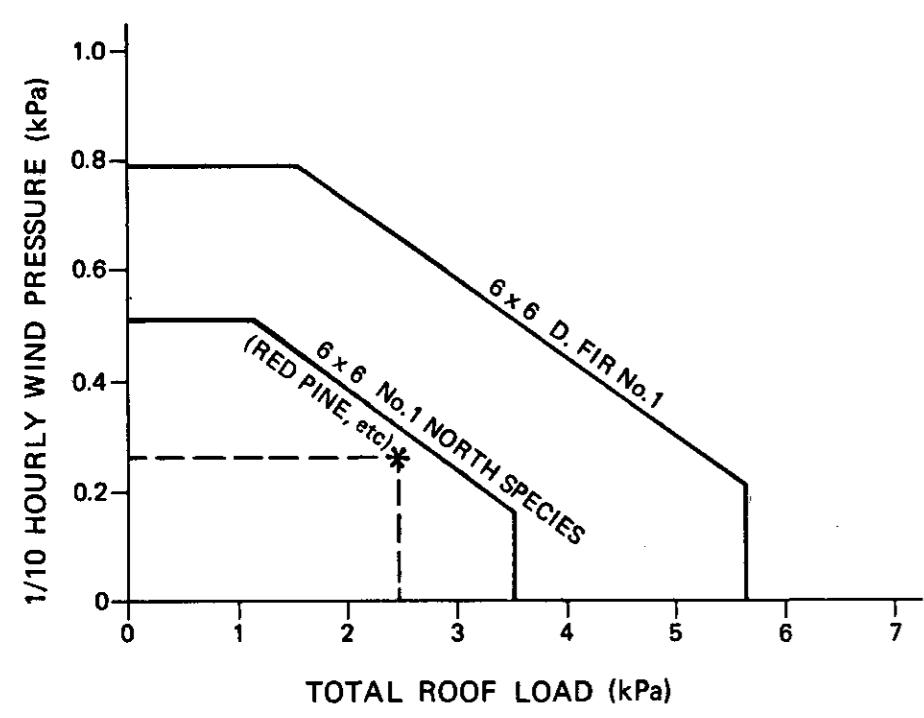
(not to scale)

DESIGNED <i>JAM</i>	DATE 86-06	PLAN
DRAWN D. BROWN	REVISED	
TRACED	DETAIL NUMBER A	2404
CHECKED <i>JET</i>	ORIGINATES ON SHEET B DRAWN ON SHEET C	
		SHEET 1



- 1 pressure-treated poles @ 8'-0" oc, see pole selection chart for sizes
- 2 insulated exterior walls, see note ⑬ sheet 3
- 3 concrete alley with crack control joints @ 20'-0" max.
- 4 continuous concrete curb
- 5 free stalls; effective length of stalls shown, see sheet 1 for sizes
- 6 1 1/2" x 4'-0" long galv. steel pipe set in curb ④ @ 4'-0" oc max. weld on and drill plates and angles as required to attach planking
- 7 trombone-type steel tube partition, bolted through 2 x 8 vertical plank to plank fence
- 8 cross alley
- 9 optional calf free stall dividers, from 3/4" plywood and 2 x 4 framing members
- 10 1 1/2" x 2'-6" long galv. steel pipe set in concrete curb; weld straps to pipe and drill for bolts to attach stall divider
- 11 pen gates
- 12 feeding alley, tombstone feed fence (see 2658)
- 13 sliding doors, see leaflet 9341
- 14 frost free waterers

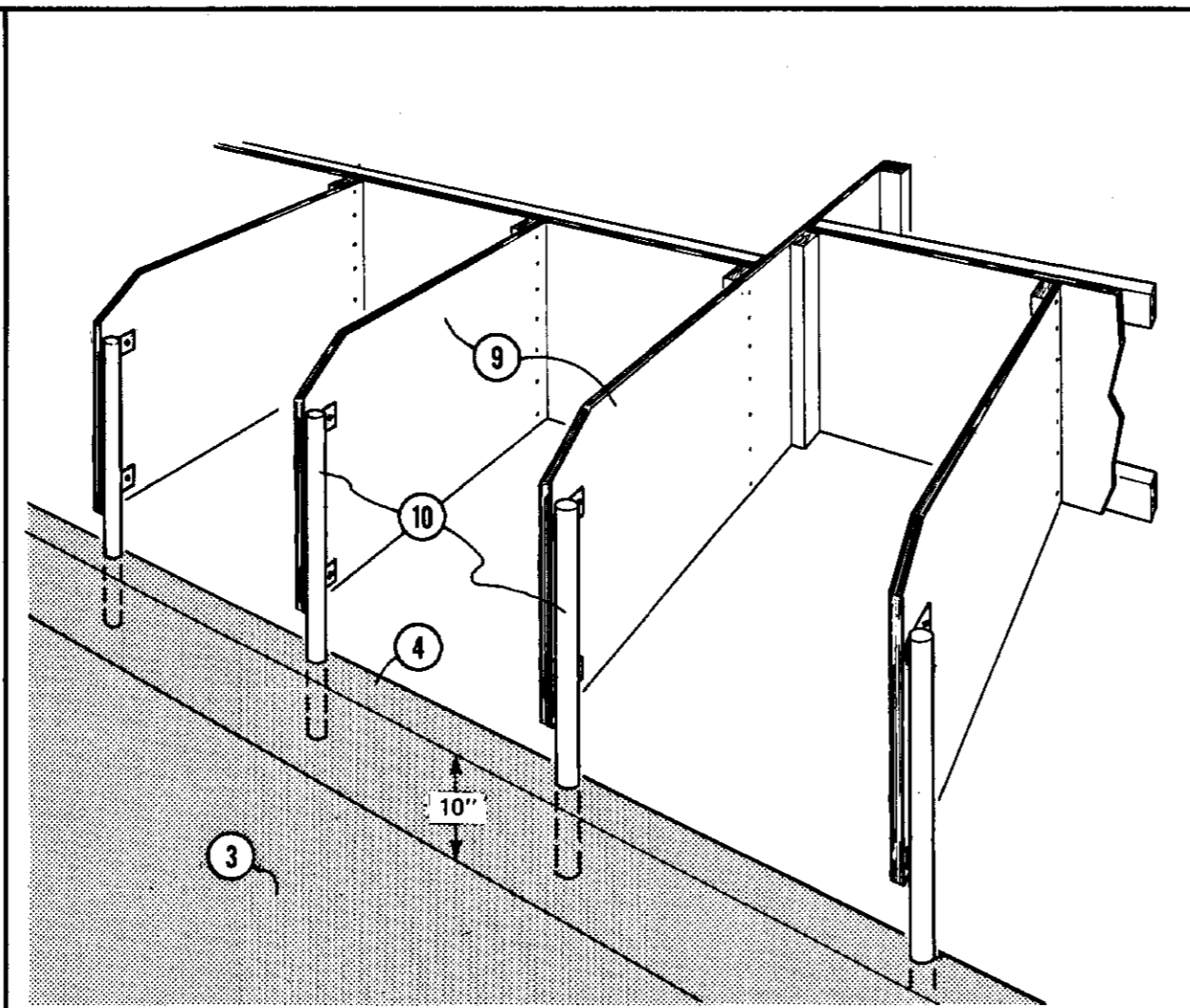
① POLE SELECTION CHART



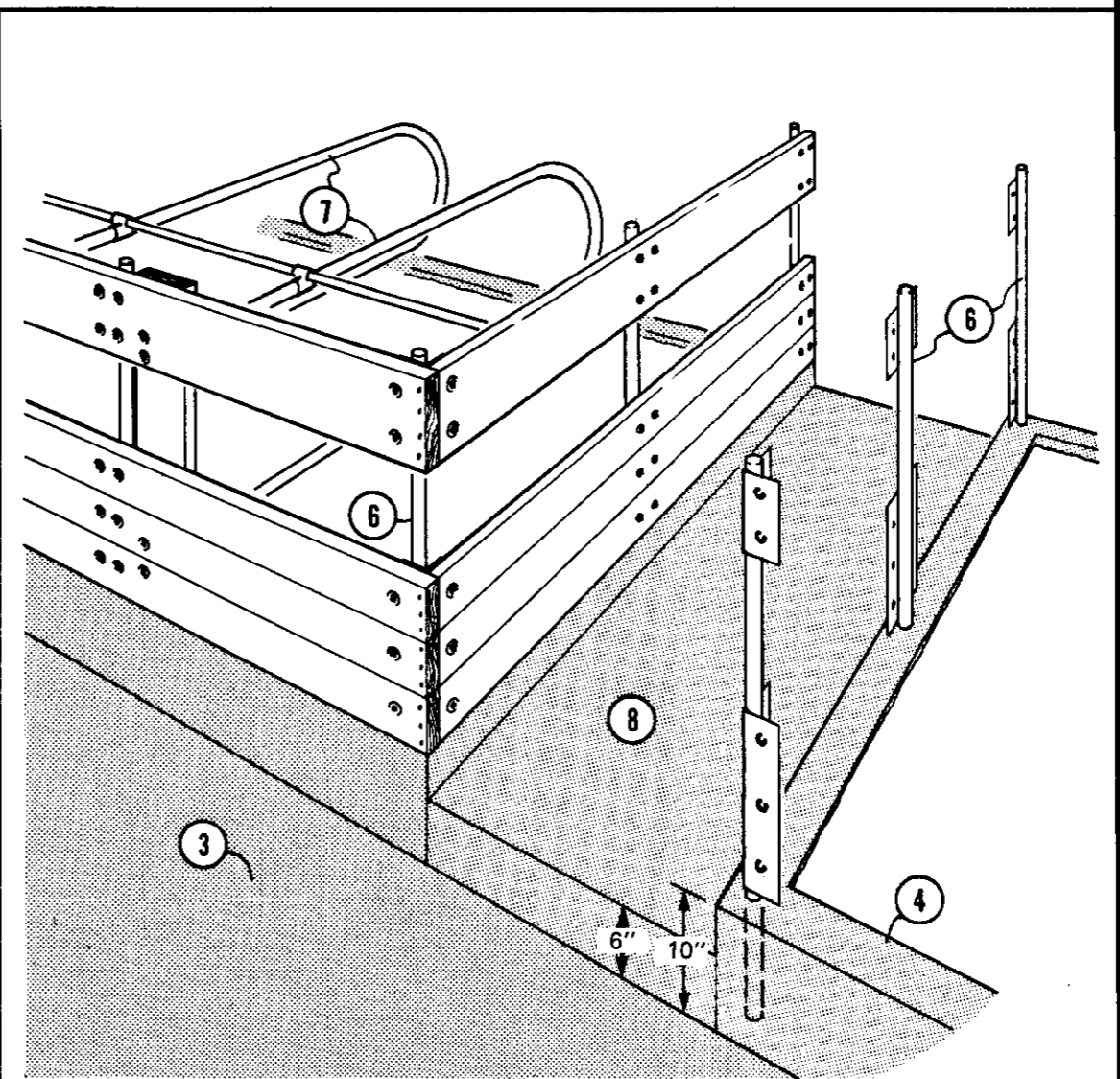
EXAMPLE Select poles for snow and wind loads at Granby, Quebec (ground snow 2.7 kPa; 1/10 hourly wind pressure 0.26 kPa).

If the roof is not exposed to wind, total roof load is:
 0.8×2.7 (snow) + 0.3 (dead) = 2.46 kPa

Enter pole chart ① at 2.46 kPa total roof load and 0.26 kPa wind pressure (see *). Using No.1 North Species lumber (red pine, for example), select 6 x 6 poles.



①
2/2



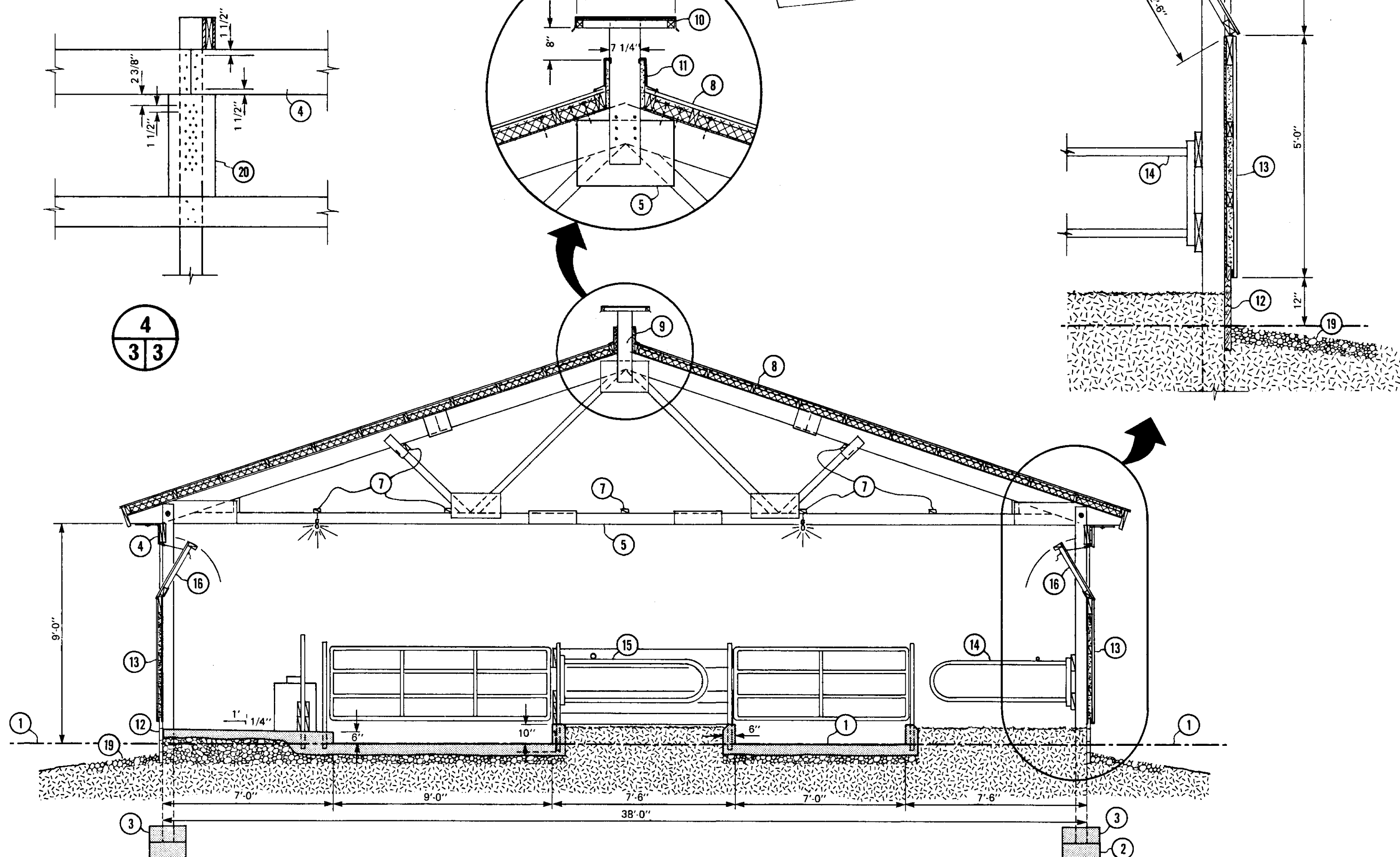
②
2/2

SYM	REVISIONS	CHECKED	DATE	APPROVE						
FLOOR PLAN & STALL DETAILS				(not to scale)						
DESIGNED <i>J.A.M.</i>	DATE 86-06	PLAN 2404								
DRAWN <i>D.BROWN</i>	REVISED	SHEET 2								
TRACED	<table border="1"> <tr> <td>DETAIL NUMBER</td> <td>A</td> </tr> <tr> <td>ORIGINATES ON SHEET</td> <td>B</td> </tr> <tr> <td>DRAWN ON SHEET</td> <td>C</td> </tr> </table>	DETAIL NUMBER	A	ORIGINATES ON SHEET	B	DRAWN ON SHEET	C			
DETAIL NUMBER	A									
ORIGINATES ON SHEET	B									
DRAWN ON SHEET	C									
CHECKED <i>J.E.T.</i>	<table border="1"> <tr> <td> </td> <td></td> </tr> </table>									

Table (4) Plate beam and support scab details

Beam size No.2 S-P-F	Safe uniform total roof load, kPa Truss spacing, mm on centre			Scab size	No. of 5" spiral nails in beam & scab
	48"	32"	24"		
2 - 2 x 8	1.52	1.28	1.22	2 x 8	15
2 - 2 x 10	2.27	1.84	1.66	2 x 10	23
2 - 2 x 12	2.90	2.24	2.02	2 x 12	29

No.2 D. Fir				Scab size	No. of 5" spiral nails in beam & scab
2 - 2 x 8	2 - 2 x 10	2 - 2 x 12			
2 - 2 x 8	1.29	1.09	1.03	2 x 6	9
2 - 2 x 10	1.92	1.62	1.55	2 x 6	13
2 - 2 x 12	2.59	2.19	2.08	2 x 8	18



- 1 datum line, top of alley floor
- 2 18" dia. x 8" min. concrete footing, based on soil strength 200 kPa, roof snow load 2.3 kPa; depth to below frost, 4'-0" min.
- 3 drill poles and retreat holes with wood preservative, insert 2 - 10M x 1'-4" rebar, or use 8 - 6" spikes, place concrete around rebar or spikes
- 4 notch poles for 2 - 2 x 10 x 16'-0" plate beam (3 in end spans); joints staggered 8'-0" at poles; no.2 spruce safe to 2.27 kPa total roof load; for truss spacings other than 4'-0" oc and/or heavier roof loads, see Table (4)
- 5 38' trusses @ 48" oc or to suit local snow loads
- 6 1/2" bolt & washers, truss to pole; intermediate trusses secured to (4) with galv. framing anchors
- 7 2 x 4 continuous truss stiffeners (see 9102)
- 8 insulated roof (design winter temp. -15°C): 3/8" plywood ceiling, 4 mil polyethylene vapor barrier, 2 x 4 purlins on edge @ 2'-0" oc, 2 x 3 blocking between purlins to trusses @ 8'-0" oc with 2 - 5" spiral nails, R12 friction-fit insulation, galv. steel roofing prepainted white
- 9 open ridge vent, stops 8'-0" from each end wall; soak exposed truss joints with wood preservative
- 10 optional ridge cap; 2 x 8 upright and 2 x 2 frame covered with 1/2" plywood & galv. steel flashing
- 11 1" x 12" extruded polystyrene (STYROFOAM SM or equal), protect with galv. steel flashing on outside and top edge only
- 12 4 - 2 x 6 pressure-treated tongue & groove planking continuous; rabbet top plank for plywood interior cladding
- 13 wall composed of: 3/8" plywood, nail over poles from outside; polyethylene vapor barrier; 2 x 8 top girt, others 2 x 4; 1 1/2" fiberglass or polystyrene insulation, 15 lb asphalt felt, and exterior siding
- 14 trombone stall divider, follow manufacturer's instructions for installation
- 15 stall dividers at center alley, see sheet 2
- 16 tilt-in wall panel made of FRP translucent siding to match wall siding profile, on 2 x 4 framing
- 17 3/4" soffit and 2" continuous vent slot, L-hooks to secure flap when closed
- 18 cable in pulleys, to winch
- 19 4" x 3'-0" coarse gravel splash pad
- 20 scab to support outer plate beam member (4); see size in table (4); butt tight top & bottom

REVISED & RE-ISSUED	HAJ	87-09	JET
SYM	REVISIONS	CHECKED	DATE APPROVED

DESIGNED J.A.M.
DRAWN D. BROWN
TRACED
CHECKED J.E.T.

DATE 86-06
REVISED 87-09

PLAN
2404
SHEET 3