

Emerald Expo 2011

New Parlour and Dairy Equipment Plans

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Milking Facilities

Assess existing milking facilities

Parlour types

Parlour Throughput

Location

Specifications

Collecting yards

Drafting

Feeding

Costs

Assess existing milking facilities

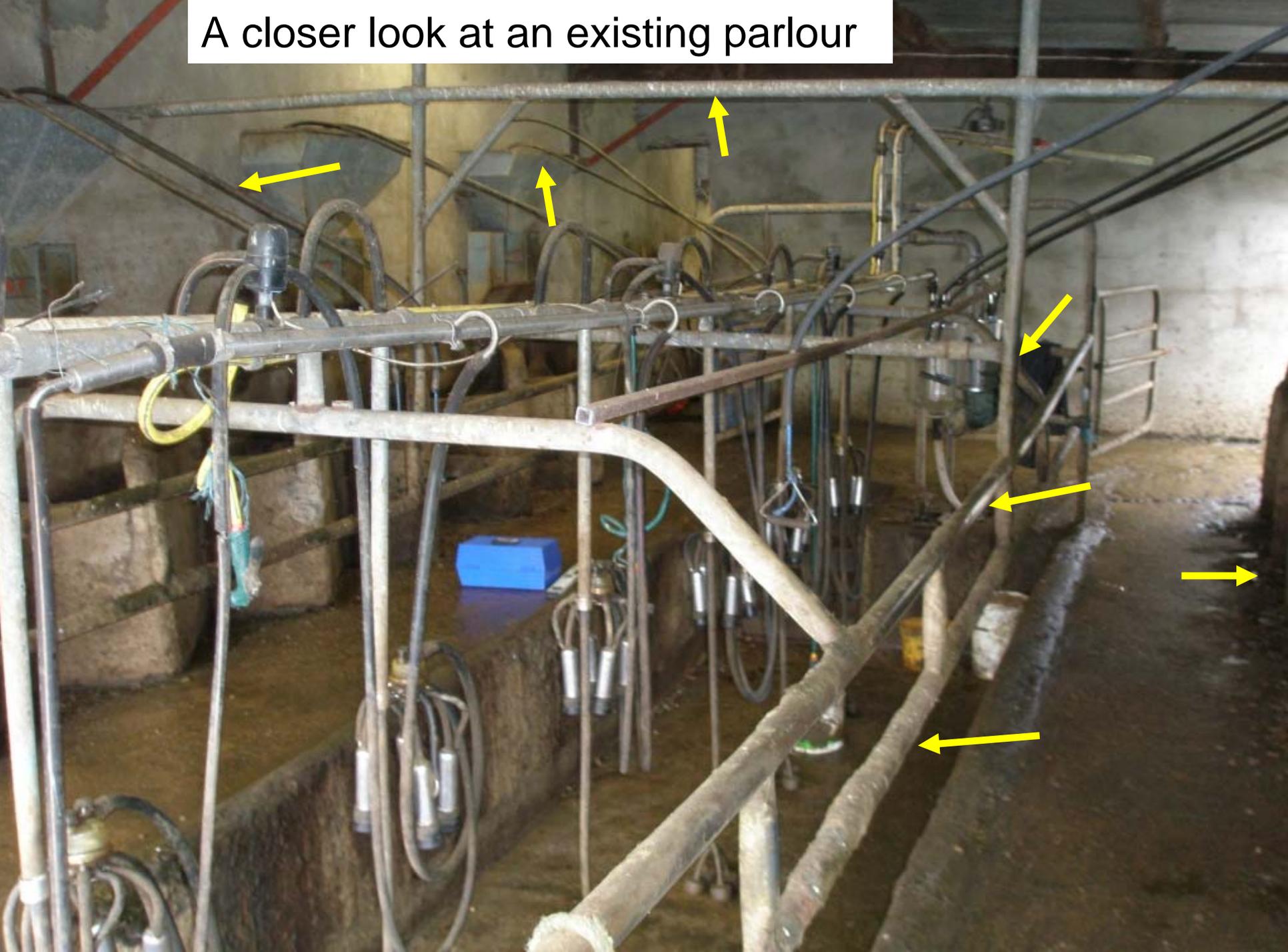
- Width of shed
- Pit depth
- General condition of stallwork
- Age/condition of machine
- Roof condition and height
- Slopes, floors, bonding
- Feeding system – absent, out of date?
- Number of units
- Dairy and plant room

A closer look at an existing parlour



Sag

A closer look at an existing parlour

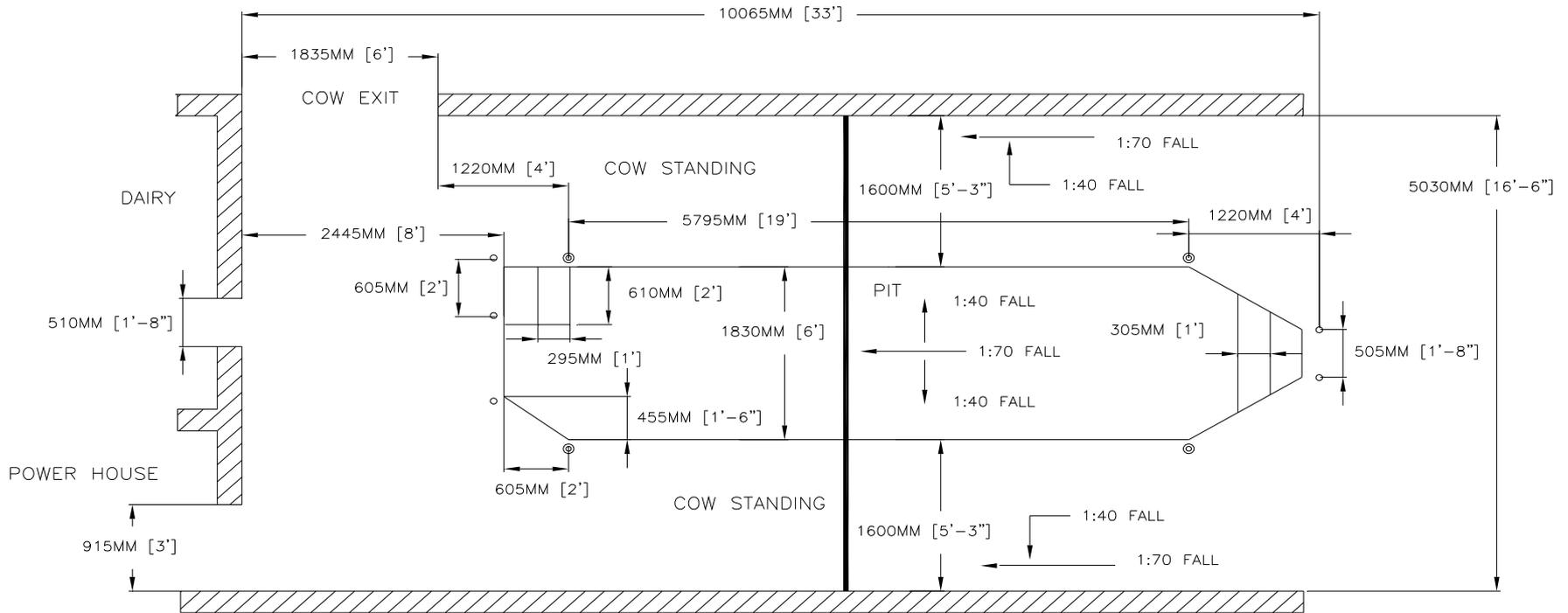




Herringbone - 3 ft. centres

- Herringbone (3`) – 915 mm centres
- Cows at 30 ° angle to milker
- Longer pit , increased walking,
- Cluster attachment in front of hind leg
- Clusters easily kicked off by cows
- Troughs (concrete) hard to install accurately
- Steel troughs better
- Less labour efficient
- Still ok in many situations
- 5' 3" to 6' 6" from wall to edge of pit

Herringbone - 3 ft. centres



Drawing 1

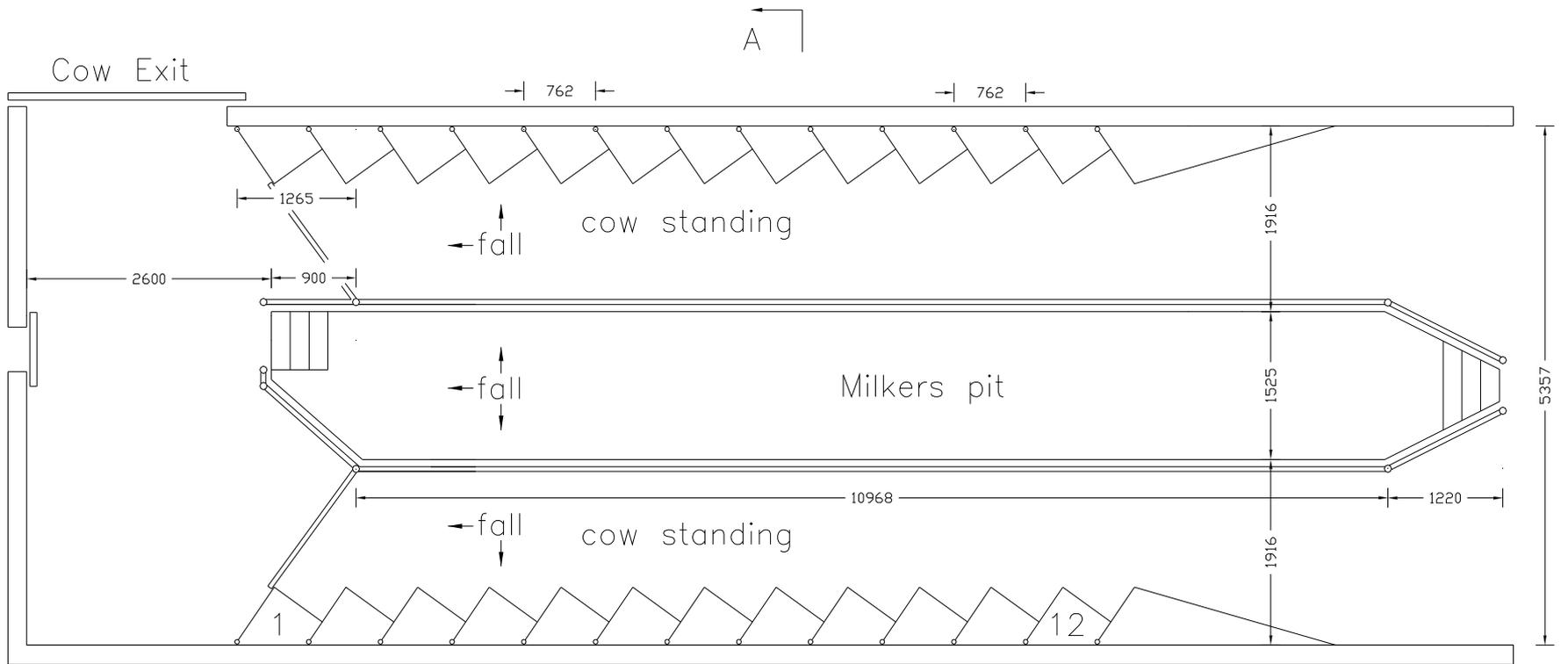
6 Unit steel troughs 915MM [3'-0"] Centres



2` 6"

- 2` 6" (762 mm) centres
- Cows at 50 ° angle to milker
- Shorter pit, less walking
- Clusters applied between back legs – less kicking off of clusters
- Alignment of swing arms/clusters is important
- Zig-zag concrete or steel troughs or straight breast rail and zig-zag rump rail
- Easy to fit into existing shed (if wide enough)
- 1.9m to 2m from wall to edge of pit
- Good cow flow

2' 6"



Drawing 2

Plan View

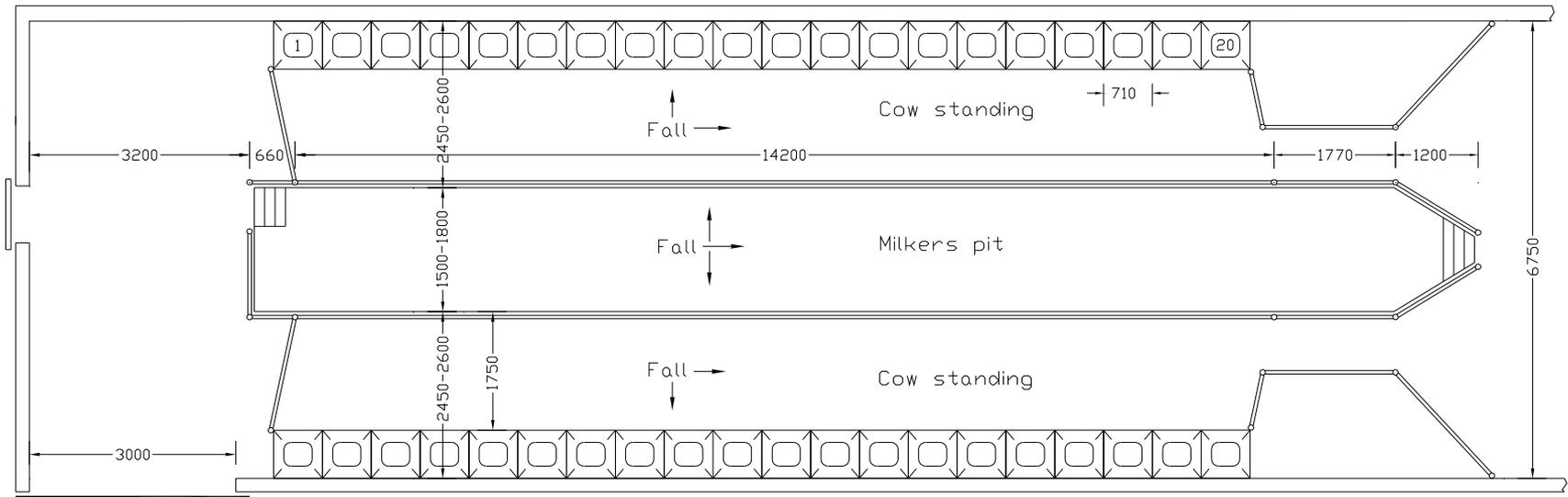
12 unit 2' 6"
Room for 14 units

Side-by-side



- Cows at 660mm, 685mm or 710mm centres (2' 2", 2' 3", or 2' 4")
- Cows at about 85° angle to pit
- Good udder presentation – clusters applied between back legs – easy reach from pit
- Shorter pit – less walking
- Very good cow control
- Need manual/sequential bailing system
- Good cow flow
- Usually about 2.4m (8ft) from wall to edge of pit

Side-by-side



Plan View

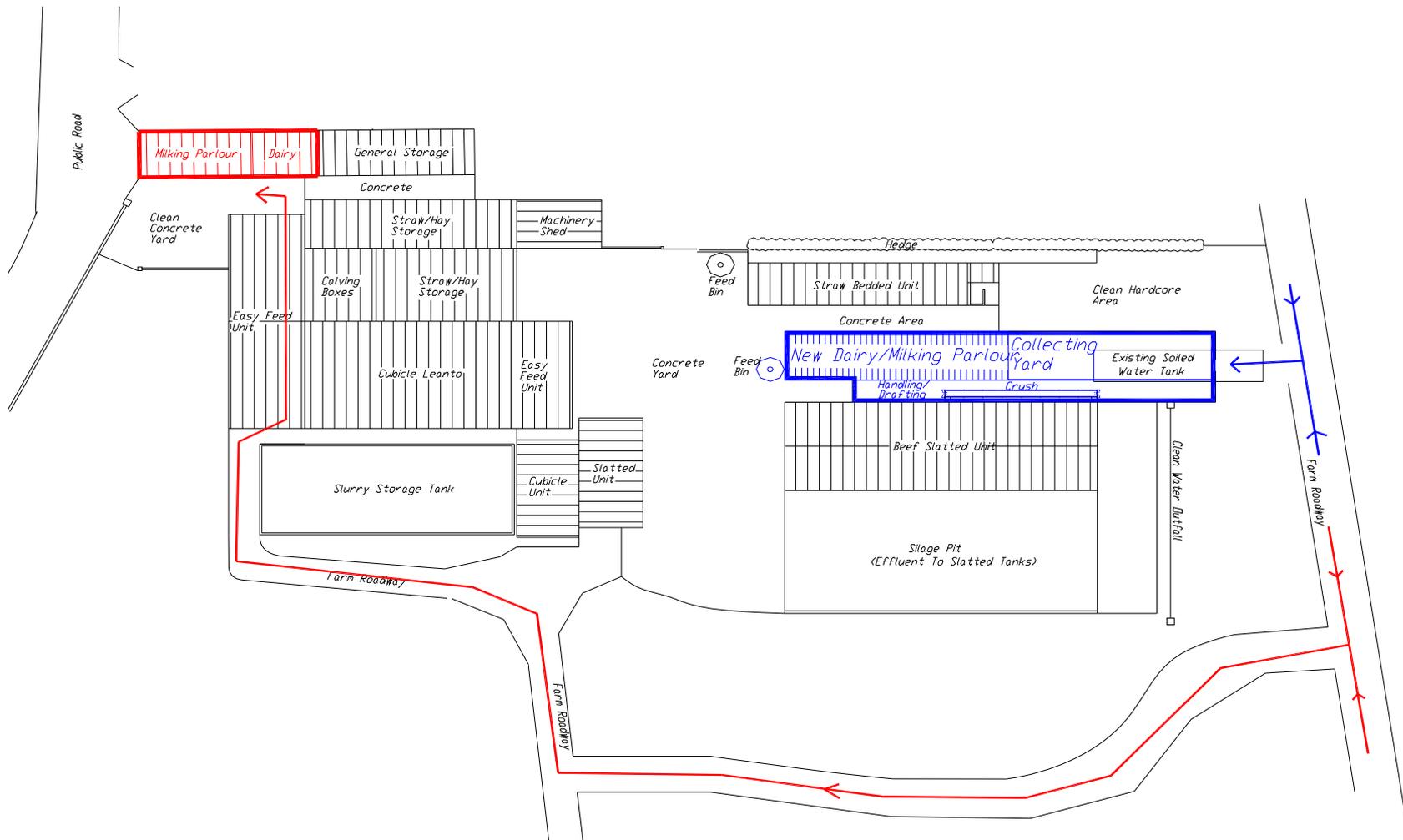
Drawing 4. 20 unit side-by-side parlour with sequential bailing and auto identification

Parlour Throughput

Time for different elements of milking routine

Milking routine	Seconds/cow
Cow entry	3
Pre-spray and paper dry (estimate)	?? (10)
Attaching clusters	10
Disinfecting teats	3
Cow exit	3
Miscellaneous	5.0
Work routine time (WRT)	24 (0.4 minutes) (34)
Maximum number of cows milked per person hour	150 (106)

Parlour location



Department Specifications

S106 - new milking parlours and dairies

S103 - upgrading existing milking parlours and dairies

S100 - concrete

S101 - roofs

S102 - cladding

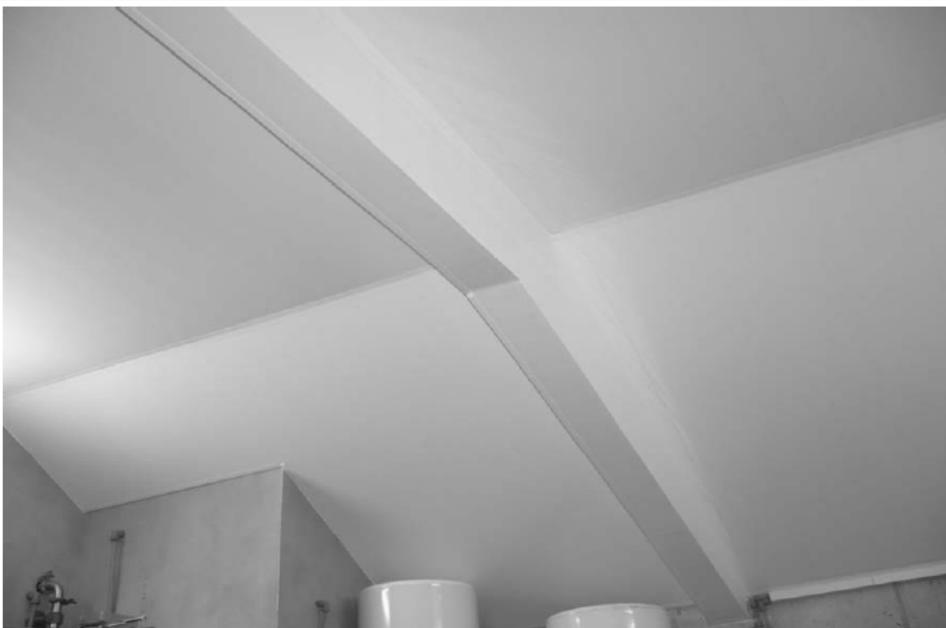
S123 - tanks

S129 - yard drainage



Dairy – S106

- Size – according to bulk tank size (allow for future expansion)
- Leave space around tank
- Ceiling - no common air space and vermin proof
- Double wash trough
- Good drainage



Plant Room – S106



Exhaust
vent pipe

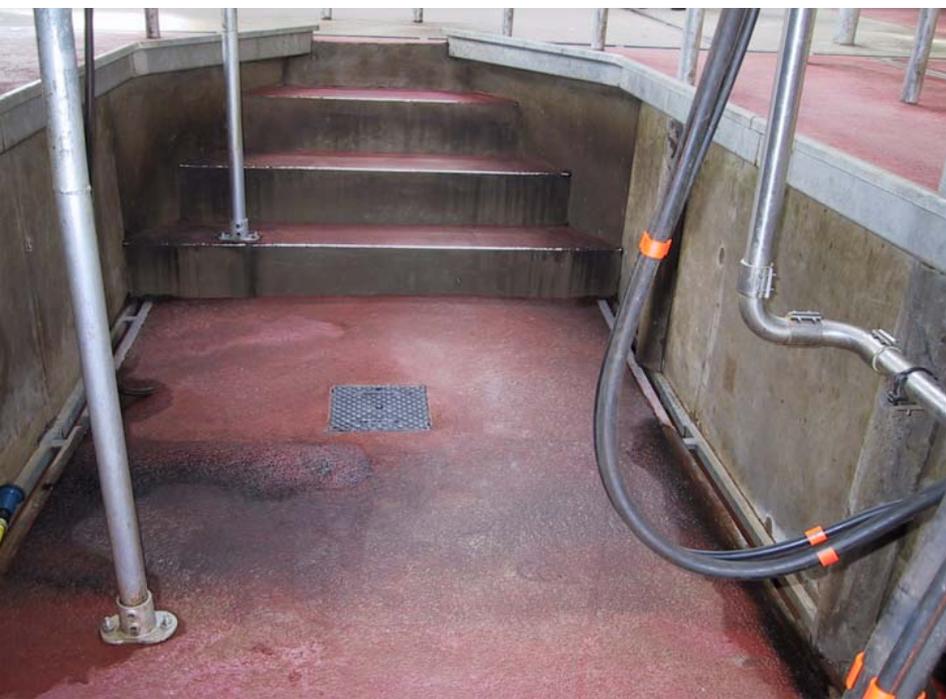
- Houses motor, and pump, and other equipment
- Separate room and separate entrance from outside or from milking parlour
- Spacious enough – for installation and maintenance
- Accessible electrics
- Ceiling very desirable - noise
- Condensing unit may be in plant room – but preferably outside
- Ice builders should to be located in the plant room
- Exhaust – noise, fumes, cleanliness

Milking premises – S106

- Eave height
- Good light
- Avoid steps at entrance and exit
- Channels and trapped gullies
- Bonding
- Floor and wall finishes

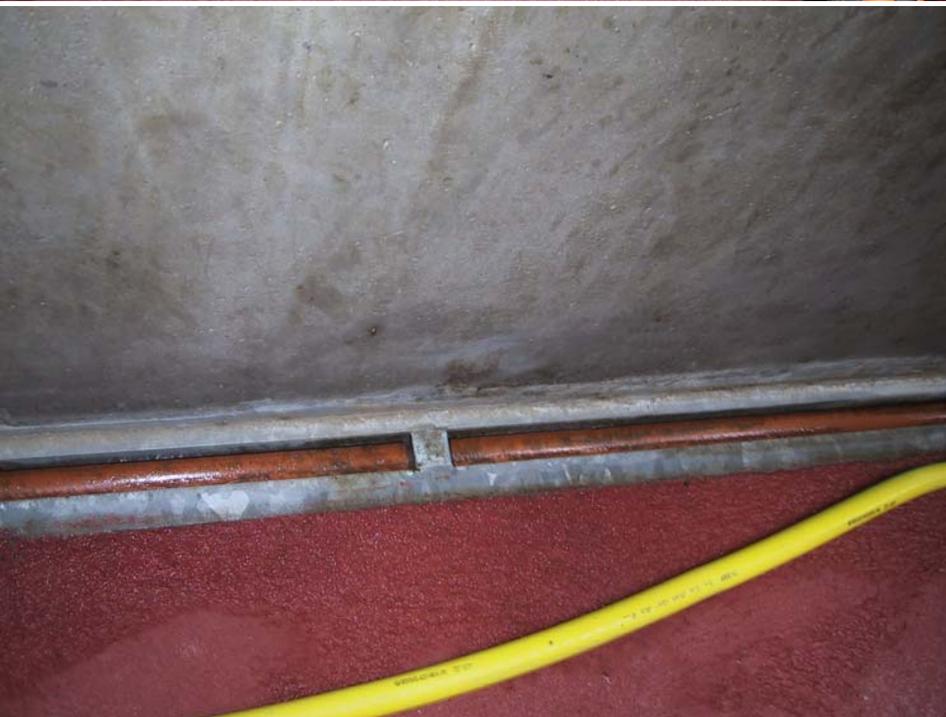


35N10 or 35N14



Drainage, levels and falls – S106

- Cow standings, pit, dairy, yard washings, roofs
- 1:60 to 1:70 along standings
- 1:40 across the cow standings and the pit
- Pit drainage to external pump sump



Collecting yards

- 1.4m² (15 ft²) per cow
- Rectangular or circular
- Roofed or unroofed
- Backing gates – scraper or up and over type
- Controlled from the pit



Scraper backing gate



Slip through

Quality construction



Drafting



- Automatic
- Semi-automatic
- Manually operated from front of pit
- Ropes and pulleys or pneumatic/vacuum
- Remain in pit
- Single file

Drafting - automatic



- Transponders
- Ear, neck, tail and foot types
- 2 way or 3 way
- Controlled from the pit or via computer



Person access

Person access

Drafting unit

Group restraining crush

Slatted channel

Split drains

Auto teat spray

Parlour exit

In-parlour feeding

- Quick and easy
- Individual, batch, automatic
- Performance related feeding to yield, bodyweight and stage of lactation possible
- Drudgery/affect on routine times
- Tendency to over feed/accuracy
- Dust free designs
- Not grant aided now



Costs

Milking Parlour Costs per unit

14 unit parlour (construction).....€4500+

18 unit parlour (construction).....€4000+

Milking equipment..... €1750 - €8000

Grants (Dairy Equipment Scheme), VAT refund, Capital allowances and interest relief

Bulk milk tank is extra

Other factors to consider

- Autowasher*
- Diversion line*
- Auto ID systems
- ACR`s*
- Electronic milk meters
- Low level wash*
- Swing over arms*
- Automatic drafting
- Auto entrance and exit gates*
- Feeders*

* Items included a for machine costing about €4200 per unit

Final messages



- Complex construction
- Labour intensive to build
- Attention to detail
- Quality finish
- Good liaison
- **Build with end users in mind – milkers and cows**
- Visit existing units, choose location carefully
- Once off/lifetime job
- Control Costs