



Simple Solutions for Poultry Processing

Reducing Water Use with Prime Equipment Group

Water Recirculation and Re-Use Systems



Simple Solutions for Poultry Processing

WATER CONSERVATION

Water is an obvious necessity in poultry processing facilities for many reasons, but there are effective ways to reduce the amount of fresh water used in your facility.

- **Water usage in the industry**
- **Developing a water conservation plan**
- **Analyze opportunities and waste**
- **Technology available for screening & reuse**
- **Sample water reuse systems (200-700 GPM)**
- **Implementing your water program**



WATER USAGE IN POULTRY INDUSTRY

- Water usage figures in the U.S. poultry industry range from 3.0 - 10.0 gallons per bird (GPB)
- Water costs in the U.S. poultry industry vary greatly and range from \$2.00 - \$15.00 (per 1,000 gallons) depending on location and availability

*Saving 1.0 gallon per bird
saves the industry approx.*

9.1B birds/year x

7 GPB = 63.7B gallons/year

\$286,650,000/year (@ \$4.50 per 1,000 gal)

9.1B birds/year x

6 GPB = 54.6B gallons/year

\$245,700,000/year (@ \$4.50 per 1,000 gal)

\$40.95M



WATER CONSERVATION PLAN

- **Step 1:** Evaluate current process operations to determine areas of potential savings
- **Step 2:** Implement a plan to address the opportunities to reduce water consumption without added technology
- **Step 3:** Identify high volume water users in operations that could potentially be reuse options
- **Step 4:** Implement a plan to address reuse opportunities with additional technology for screening and/or treatment



OPPORTUNITIES FOR SAVINGS

How can we save water right now?

- Check for leaks in pumps, pipes, valves, fittings, hoses
- Downsize spray jet opening sizes for less volume
- Check equipment valves during breaks to reduce waste
- Install simple devices such as:
 - Water savers on goosenecks
 - Flow/pressure regulators (actuators)
 - Pipe plugs (restrictors) to reduce volume



OPPORTUNITIES FOR WATER REUSE

Common water sources or collection points:

- Scalding Make-up
- Chiller Overflow
- Inside/Outside Bird Washer (IOBW)
- Brush Scrubbers
- Vacuum Pump Systems or Seal Water
- Paw Picker Scalding
- Drip Pan Rinse
- Feather/Offal Trough Rinse
- Inspection Stations



POTENTIAL REUSE POINTS

Common reuse points or re-distribution points:

- Evisceration Equipment (Ventor, Opener, Cropper)
- Bird Scrubbers
- Whole Bird Chiller
- Whole Bird Scalding
- Final Rinse Cabinet
- Offal Screen Spray Bars
- Trench and Drip Pan Rinse
- Conveyor Belt Washers
- Picking and Live Dock Washdown



ECONOMICAL INVESTMENTS

Many simple technologies available to remove particles and improve water quality prior to reuse.

- Screen particles of varying sizes from used water
- Provide a fast payback with low upfront capital cost

Example payback:

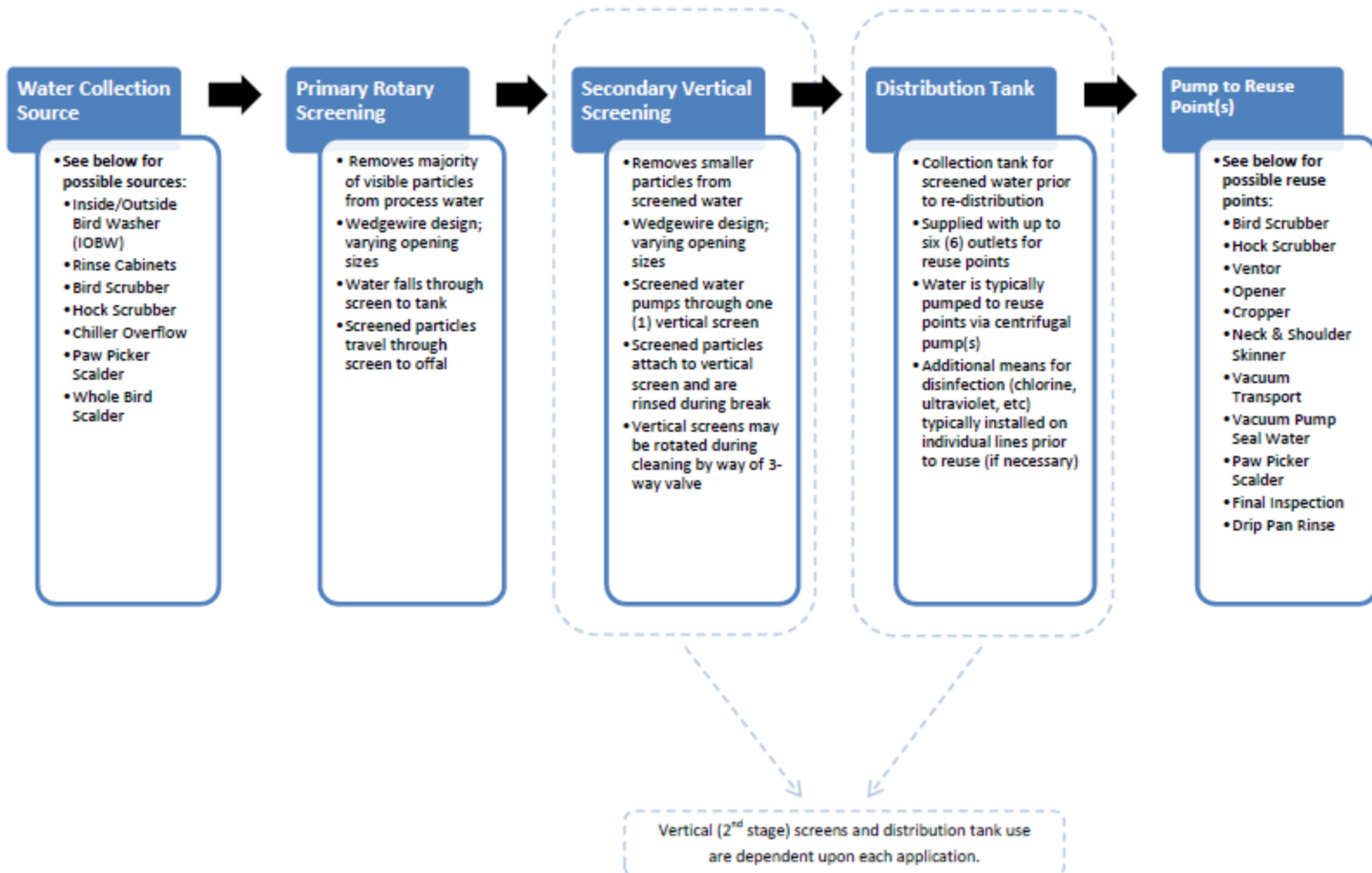
Save 200 GPM x \$4.50/k gal = \$864.00 savings per day

\$216,000.00 savings per year

(based on 2 shifts @ 8 operating hrs/shift, 250 operating days/yr)



WATER REUSE PROCESS FLOW



WATER SCREENING & REUSE

LFS-Series Water Filtration & Reuse Systems

The LFS-Series water filtration systems allow you to safely and efficiently recycle used process water in other areas of the plant.

We work together with our customers in implementing valuable and achievable per-bird water conservation goals, while significantly reducing water consumption costs.

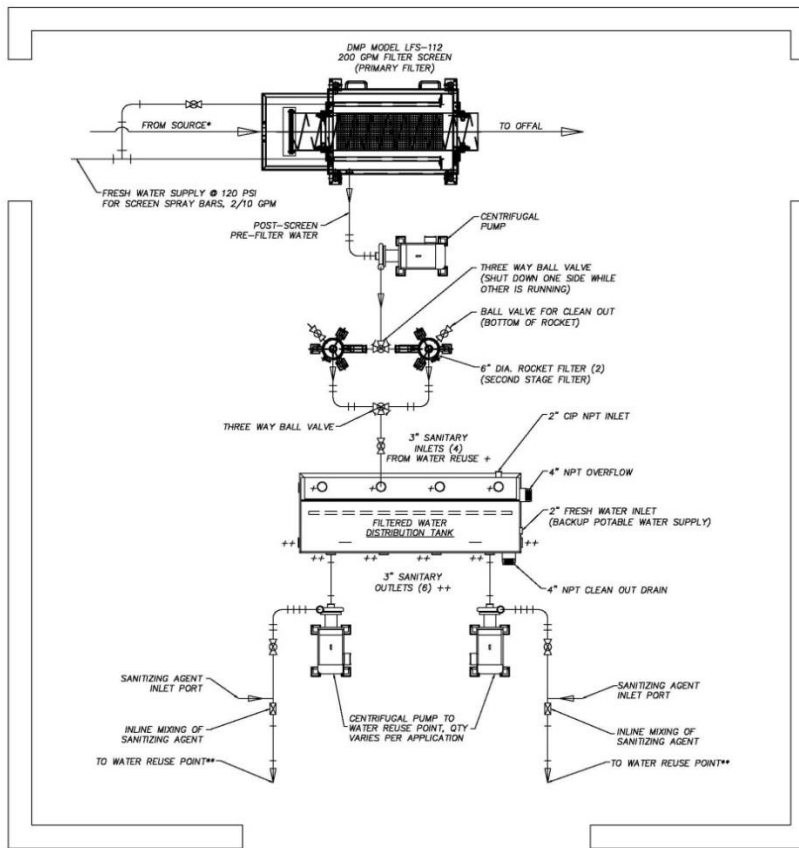


Model:	LFS-112	LFS-116	LFS-125
Capacity:	200 GPM	300 GPM	750 GPM

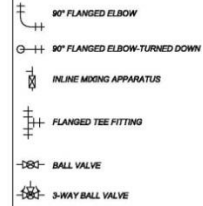


PROCESS WATER REUSE – 200 GPM

LFS-112 SINGLE SCREEN LAYOUT 200 GPM



PIPING SCHEMATIC LEGEND



- *COMMON WATER SOURCES INCLUDE:**
- INSIDE/OUTSIDE BIRD WASHER (IOBW)
 - RINSE CABINETS
 - BIRD SCRUBBER & HOCK SCRUBBER
 - CHILLER OVERFLOW
 - PAW PICKER SCALDER
 - FINAL SPRAY CABINET

- **WATER REUSE POINTS INCLUDE:**
- HOCK SCRUBBERS
 - BIRD SCRUBBERS
 - VENTOR
 - OPENER
 - CROPPER
 - NECK & SHOULDER SKINNER
 - VACUUM PUMP SYSTEMS (GIBLETS, PAWS, ETC.)
 - PAW PICKER SCALDER
 - FINAL INSPECTION MACHINE (FIM)
 - DRIP PAN RINSE
 - VACUUM PUMP SEAL WATER

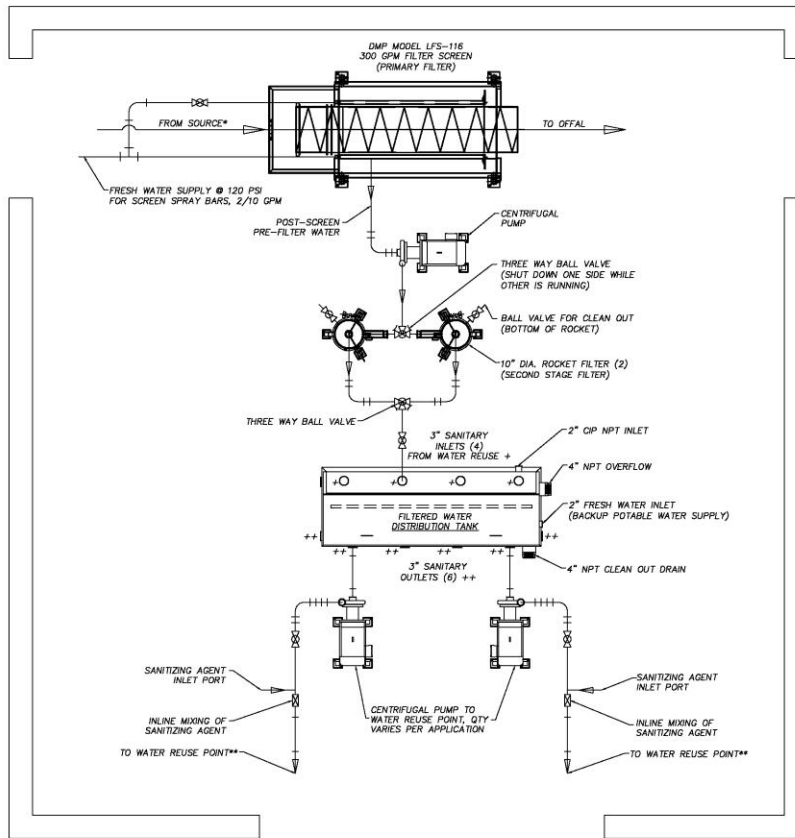


NO	DATE	BY	DESCRIPTION
REVISIONS			
<p>PRIME EQUIPMENT GROUP 2000 E. Palm Dr. Gainesville, FL 32609 Tel: 352-385-8888 Fax: 352-385-8888</p>			
DIVERSIFIED MACHINE PRODUCTS			
GAINESVILLE, GA.			
LFS-112 WATER REUSE SYSTEM			
200 GPM WATER REUSE SYSTEM LAYOUT			
DATE: 9/7/2010	DESIGNED BY: PATRICK MOLLOHAN	TITLE: WATER REUSE SETUP.DWG	SHEET # OF: 1/16
DATE: 9/20/2010	DESIGNED BY: PMOLLOHAN	ISSUE NO:	ISSUE DESC:
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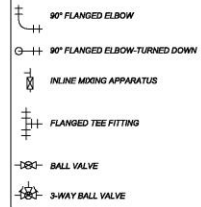


PROCESS WATER REUSE – 300 GPM

LFS-116 SINGLE SCREEN LAYOUT 300 GPM



PIPING SCHEMATIC LEGEND



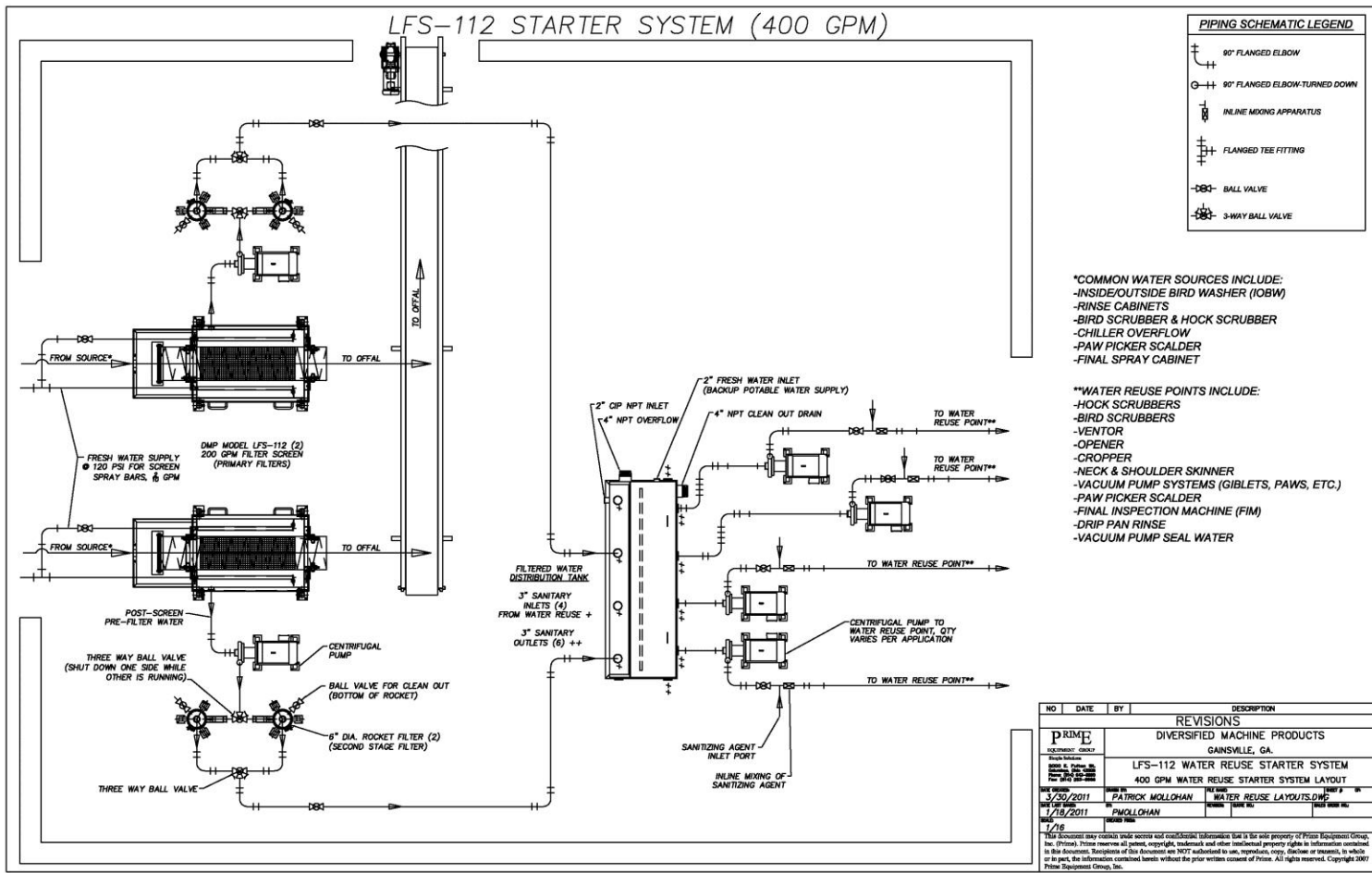
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 - VACUUM PUMP SEAL WATER

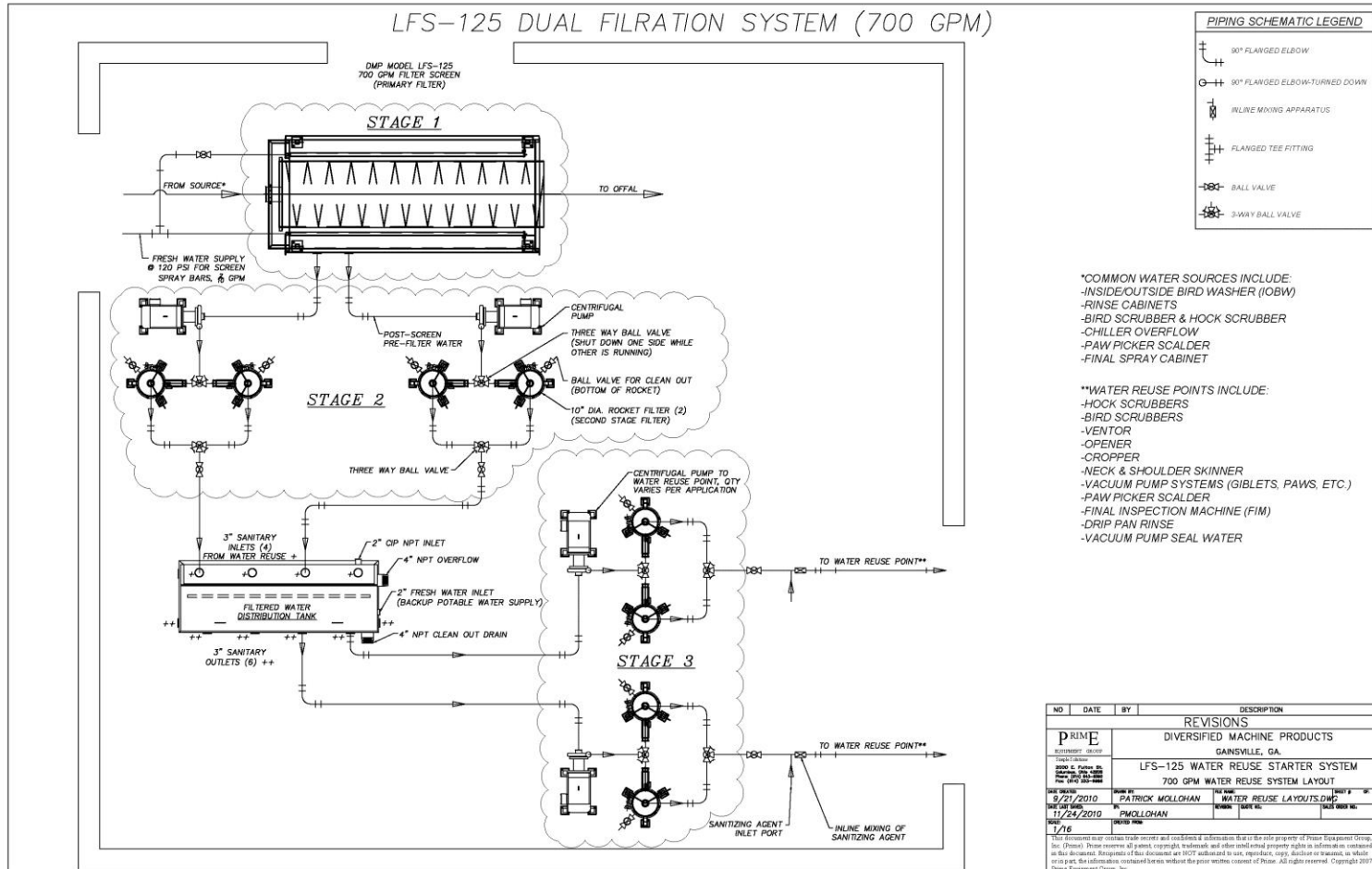
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NO: 1/16	DRAWN BY:		
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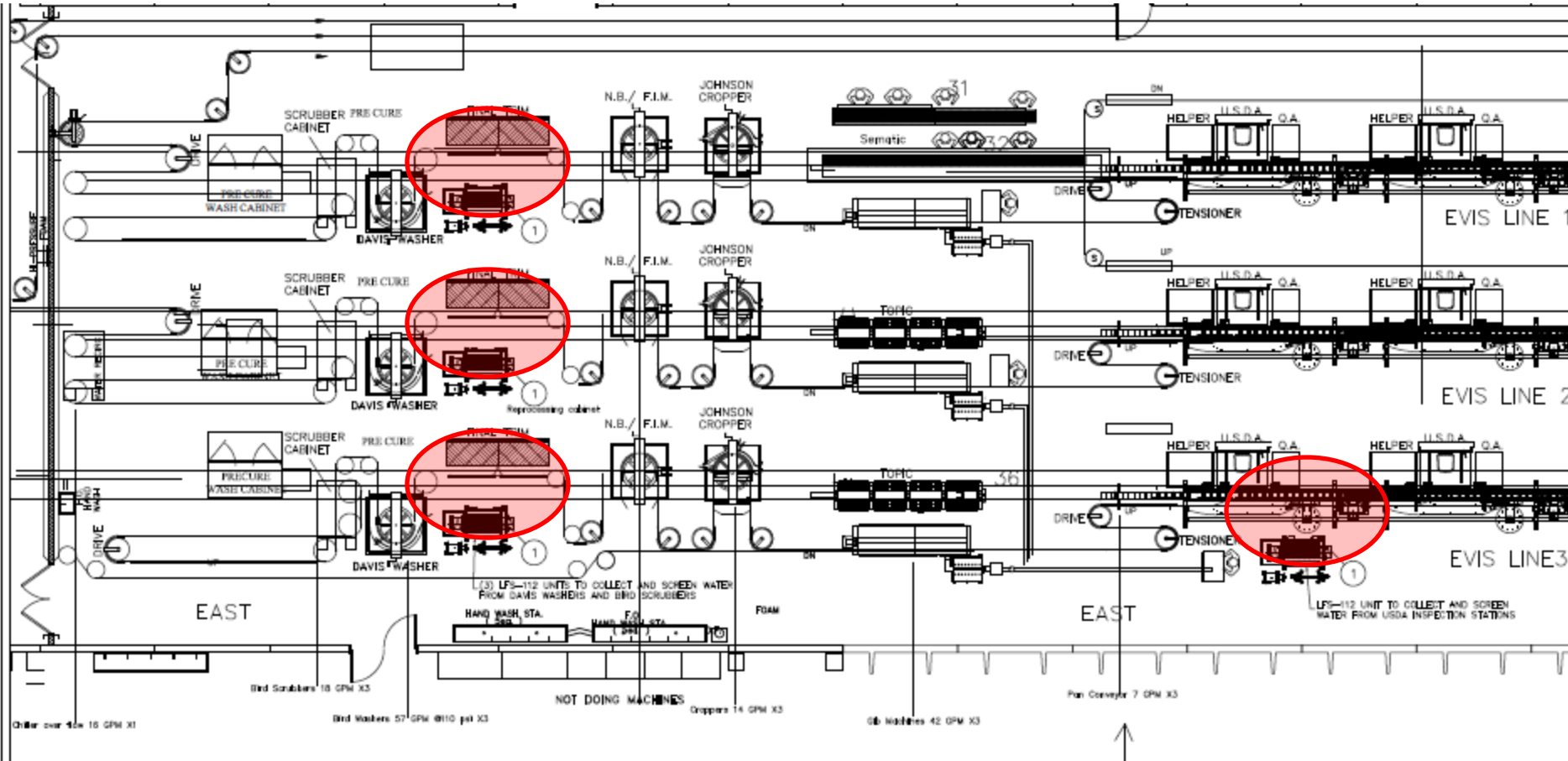
PROCESS WATER REUSE – 400 GPM



PROCESS WATER REUSE – 750 GPM



LAYOUT EXAMPLE



Saving 500 GPM or \$540,000.00 annually



IMPLEMENTING A PROGRAM

Where should we start?

- Appoint a ***Water Specialist*** to manage the programs objectives and drive improvements
- Audit the plant, then review and implement a savings program with specific and measurable goals (GPB)
- Get started with basic water saving opportunities and focus on incremental improvements
- Target processes in the plant using higher volumes of water where reuse equipment may be a valid option



BENEFITS OF IMPLEMENTING

Lower Operating Costs:

- Water cost savings, BTU savings, treatment costs
- Screening reduces amount of material leaving plant in water stream

Environmental Improvements:

- Environmental stewardship and public perception
- Marketing advantages with quantifiable reductions





Simple Solutions for Poultry Processing

**Contact Your Prime Sales Rep
For A Water Audit today**

www.PrimeEquipmentGroup.com

(614) 253-8950



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