

TANK INSTALLATION

Relocation of Gasoline and Diesel Tanks Lane Community College

- Relocation of gasoline and diesel tanks for vehicle fueling
- Design included system piping and electrical
- Permit preparation and representation with Oregon Fire Marshall
- Incorporation of a proximity card system for tank access

Addition of Two 10,000-gallon Tanks Borden Chemical, Inc. Resin Production Plant

- Layout for capital estimating and project team review
- Flow sheet/P&ID
- Tank drawings with nozzle schedule
- Analysis of existing tank for seismic restraint requirements
- Foundation and containment area design
- Access road grading and concrete unloading apron
- Piping isometric to end of truss over railroad tracks and details at the pumps

Herb Extract Plant East Earth Herb, Inc., Food Additives Plant

- Evaluation of existing building for installation of a food additives production facility
- Evaluation of residuals
- Architectural design
- Civil/structural design for the plant
- Tanks and equipment – containment
- Piping – analysis of materials and layout
- Permit preparation and representation with governmental agencies

Coating Line Modification Evanite Fiber Corporation, Wood Products Coating Plant

- Modifications to existing coating line for UV and fill coat type coatings
- Development of optimum layout
- Specification of equipment needed
- Layouts for capital estimating and project team review
- Flow sheet/P&ID
- Contractor bid documents – minimal package
- Piping layout
- Specification of tanks as needed
- One line electrical and grounding drawing



Ammonia Etchant Bulk Storage System (VW & R Leased to) Circuit Technology, Circuit Board/IC Assembly

- Designed two bulk storage tanks (fresh and spent etchant), including
 - duplex pump station
 - ammonia scrubbers
 - truck load/unload station
 - field distribution piping
 - level controls
 - alarms
- Designed all controls in conjunction with the customer's facilities engineer
- Supervised installation by subcontracted trades personnel and provided start-up testing and operator training

Bulk Chemical Mixing System Great Western Chemical, Chemical Distributor

- Designed installation of aqueous bulk chemical mixing system for batch processing. Project involved converting existing warehouse to H3 occupancy to house process function.
- Designed process piping, process exhaust, class 100 HVAC environmental upgrade, instrumentation and process controls. Process was designed to batch process chemistry and transfer into containers for distribution.

Bulk Chemical Delivery System – F5 [Major Semiconductor Manufacturer]

- Designed installation of nine bulk chemical delivery pumping modules (CDMs) that deliver chemicals to 21 process tools. Two chemicals were solvents and seven were caustic/corrosives.
- Solvent CDMs were installed in a separate solvent room, the others in an HPM room on a raised floor. The solvent CDMs were installed in a Class 1, Div. 2 environment with the distribution system fabricated from welded stainless steel.
- The caustic/corrosive CDMs were installed in a HPM room requiring reconfiguration of existing equipment to accept installation of new units.
- All distribution piping was non-metallic with primary/secondary containment. Field routing was performed for installation of all piping and valve boxes.
- Designed all valve boxes to fit field conditions.