City of Phoenix
CONSTRUCTION PLANS REVIEW CHECKLIST FOR INDUSTRIAL USERS

The design of pretreatment equipment and systems, whether for a new installation or for renovations or upgrade of an existing system, will require the production of engineering drawings and specification documents to meet construction, wastewater discharge permitting, and other regulatory requirements. In general, engineering design documents include:

- Facility and pretreatment system layout drawings
- Piping & instrumentation diagrams
- Equipment foundation drawings and support system details
- Mechanical, piping, electrical, instrumentation, controls, and operational drawings and
- specifications
- Specifications for installation coordination, testing, and demonstration of system performance.

Construction drawings and engineering design manuals for industrial manufacturing or industrial servicing facilities must be submitted for review and approval by the City of Phoenix Industrial Pretreatment Program (IPP) **prior to submittal to the City of Phoenix Planning Development Department**.

All submissions must first be received at:

City of Phoenix Industrial Pretreatment Program
23rd Avenue Wastewater Treatment Plant
2474 South 22nd Avenue, Building 31
Phoenix, Arizona 85009

Note - Installation inspections by City of Phoenix IPP staff of the pretreatment system and/or the compliance sampling point and/or vault are required prior to final approval. Pretreatment systems must be approved prior to discharge when possible. Compliance sampling points and vault inspections must be scheduled prior to pouring of concrete and upon final competion. Call the Principal Engineering Technician at 602-534-7588 and/or the Chief Water Quality Inspector at 602-495-5926, not less than 2-working days in advance to request inspection.

Pursuant to Phoenix City Code Chapter 28, Section 28-10, And Title 40 of the Code of Federal Regulations Part 403, the following minimum details must be shown within industrial wastewater drawings and included engineering design manual (as requested) for industrial manufacturing or industrial servicing facilities:

Site Plans - Sealed by an architect or engineer in the State of Arizona (as required)
The following requirements for the site plan do not cover or include Site Planning Requirements as required by City of Phoenix Planning and Development (P&D).

Y	N	N/A	
☐	☐	☐	Legal business name and physical address of the facility (suite number and floor number if applicable)
☐	☐	☐	Show the size and shape of the site
☐	☐	☐	Identify the property lines with dimensions
☐	☐	☐	Show all buildings and structures (delineate existing vs. proposed)
☐	☐	☐	Show the streets and alleys

Y N N/A
☐☐☐ Indicate the North direction
☐☐☐ Show complete floor layout including equipment
☐☐☐ Provide complete equipment schedule
☐☐☐ Show location of chemical storage area(s).
☐☐☐ Show location of waste storage and holding area(s).
☐☐☐ Show secondary containment structures with dimensions and calculations demonstrating containment of 110% of the largest tank or container within the structure or otherwise in compliance with City of Phoenix Fire Code requirements.
☐☐☐ Show location of berms and other spill control devices.
☐☐☐ Identify the use or industrial process within each room, area, or structure
☐☐☐ Show site grading with spot elevations and flow arrows
☐☐☐ Show slopes and heights of berming and depth of stormwater retention areas or structures
☐☐☐ Show location of storm sewers or drains, stormwater retention areas, dry wells, private wells, abandoned wells.
☐☐☐ Show location of each wastewater treatment system and/or devices including interceptors, traps (grease, sand/oil, grit, or other); ion exchange, filtration, neutralization systems; or any other wastewater treatment device in use.
☐☐☐ Show location of wastewater sampling point(s) and respective conveyance into City sewer tap(s)
☐☐☐ Show location(s) of City sewer tap and sewer main into which the pretreatment system(s) and/or wastewater sampling point(s) are connected

Plumbing Plans - Sealed by a registered mechanical engineer in State of Arizona (as required)
The following requirements for the plumbing plan do not cover or include Plumbing Planning Requirements as required by City of Phoenix Planning and Development (P&D).

Y N N/A
☐☐☐ Show complete on-site water & sewer plans for the entire facility (segregation of process/industrial and non-process/domestic should be included)
☐☐☐ Show complete plumbing floor plan and roof drainage systems for the entire facility
☐☐☐ Show all waste plumbing, fixtures, flow directions, and flow rates related to industrial manufacturing or service operations, including wet air scrubbers, the wastewater pretreatment system, the compliance sampling point, and the final discharge point (or plumbing fixture)
☐☐☐ Show waste minimum plumbing fixture analysis
☐☐☐ Show waste plumbing fixture specifications
☐☐☐ Show waste plumbing fixture connection schedule
☐☐☐ Show drain, waste, and vent sizing isometrics
☐☐☐ Show backflow devices [as required] – Type(s) and Location(s).
☐☐☐ Show expansion tanks [as required] -- Size(s) and Location(s).

Compliance Sampling Point & Vault Plans - Sealed by a registered mechanical engineer in State of Arizona (as required)

Provide cut sheet of open channel flow primary measuring device (flume, weir box, etc.)
Y N N/A showing:
☐☐☐ A. Type (Parshall, Trapezoidal, H, V-notch, etc.)

Y N N/A
☐☐☐ B. Model (Tracom, etc.)
☐☐☐ C. Size (based on expected minimum and maximum flow rates and velocities to ensure correct measurements, free flow conditions, and an adequate level to obtain samples)
☐☐☐ D. Material of molded fiberglass, reinforced polyester or other City approved material
☐☐☐ E. Constructed of one piece with ample wall thickness and reinforcing ribs to prevent distortion during shipment, installation and operation
☐☐☐ F. Ability to support itself and require no external supporting structure in order to maintain its dimensional integrity and prevent sagging, deformation, or dislodgement
☐☐☐ G. Conditions of gravity flow, wave free, non-turbulent, symmetrical and uniform velocity of wastewater discharge; upstream floor elevation of the device shall be high enough relative to downstream conditions to prevent submergence or submerged flow condition
☐☐☐ H. An approach channel length of at minimum 10 times the diameter of the upstream sewer pipe
☐☐☐ I. A cover or enclosure for devices installed above ground and/or in areas exposed to inflow of stormwater, precipitation, particulates and/or pollutants
☐☐☐ Flow monitoring equipment with data logging capability and +/- 10 percent accuracy
☐☐☐ Continuous pH monitoring equipment (if required) with data logging capability and +/- 10 percent accuracy
☐☐☐ Show the height from the surface of the finished floor to the top of the open flow channel measuring device

Y N N/A <u>Provide cut sheet of alternate compliance sampling point (tank with spigot, utility sink):</u>
☐☐☐ Showing tank size and/or sink setup with valves and location for sample collection
☐☐☐ Showing demarcations on holding tank for flow-proportional sampling

Y N N/A <u>Provide a sampling vault cutsheet and detail showing:</u>
☐☐☐ A. Material, make and model
☐☐☐ B. Inner and outer dimensions (minimum interior length of no less than 8-feet and minimum interior width of no less than 5-feet)
☐☐☐ C. Positioning of the open flow channel device within the vault (must be positioned off center and opposite the vault entry/exit ladder to maximize working space for sample collection)
☐☐☐ D. Depth of vault from the finished floor to the top of the finished opening (critical dimension for eliminating permit required confined space entry is < 48-inches)
☐☐☐ E. Ladder detail (rungs positioned 12-inches apart, clearance of 12-inches from flume minimum, stainless steel corrosion resistant hardware and mounting brackets)
☐☐☐ F. Safety pole detail (high strength aluminum, corrosion resistant, vertically fixed in position or extendable, no less than 42-inches above top of vault door frame or landing; telescoping post or pole weighing no more than 25 pounds provided with a pull up loop at the upper end to facilitate raising, a safety locking mechanism when fully extended, and a release level for disengagement and return to lowered position)
☐☐☐ G. Locking double-leaf door detail (aluminum/stainless steel corrosion resistant with torsion or compression spring assist, automatic lock-open safety arm, exterior lock or hasp with loops, and frame opening dimensions of no less than 3-feet by 5-feet)
☐☐☐ Sampling vaults should be installed as close to the IU sewer tap as feasible and the location shall be approved in writing by the IPP Section

Y N N/A

☐☐☐ Show lineal footage between the outlet of the final wastewater pretreatment system component and the inlet for the open flow channel measuring device (must show there are no bends in pipe for 25-pipe diameters upstream of device). If minimum lineal footage requirement cannot be met, provide Froude number with all calculations demonstrating that laminar flow velocity of 1 to 3 feet per second can be achieved.

☐☐☐ Show lineal footage between the outlet of the open flow channel measuring device and any downstream bends of components (must show there are no bends in pipe for 10-pipe diameters downstream of device)

Wastewater Pretreatment System Plans - Sealed by a registered mechanical engineer in State of Arizona (as required)

Y N N/A Show ALL wastewater pretreatment system component details including:

☐☐☐ A. Pretreatment system components (manufacturers' specifications, detail, anticipated pollutant reduction rates with engineering citations)

☐☐☐ B. Tanks, tank sizes and heights, tank material, tank cutsheets

☐☐☐ C. Tank influent, effluent, overflow heights (bypasses are prohibited)

☐☐☐ D. Flow capacity ratings and flow directions between components

☐☐☐ E. Pumps, mixers, float switches

☐☐☐ F. Chemical dosing equipment

☐☐☐ G. pH monitoring equipment (in-process will have data logging capability of +/- 0.1 standard unit accuracy and 0.01 standard unit resolution)

☐☐☐ H. Alarms

☐☐☐ Show itemized schedule of drainage fixture units for all industrial process drainage fixtures and equipment with pretreatment component or device sizing calculations demonstrating achievement of industry standard hydraulic retention times

☐☐☐ Show secondary containment structures with dimensions and calculations demonstrating containment of 110% of the largest tank or container within the structure or otherwise in compliance with City of Phoenix Fire Code requirements.

☐☐☐ Show roofs, awnings, or other structures preventing the inflow of stormwater into outdoor waste plumbing fixtures, the wastewater sampling point, and the sanitary sewer

☐☐☐ Provide a raw materials, chemicals, and bulk chemical storage tank inventory with full identification of raw materials and chemicals – not product names (If City of Phoenix Fire Prevention required it, provide a copy of the Hazardous Materials Application, the Hazardous Material Inventory Statement, and the Site Plan Worksheet).

All Plans

Y N N/A

☐☐☐ All construction shall conform to City of Phoenix Supplements to the Maricopa Association of Governments (MAG) Specifications and Details. Modifications to City of Phoenix MAG Specifications may be requested and require IPP written approval.