CUSTOMER: Indiana Southport AWT
Indianapolis, IN

ENGINEER: Wessler Engineering
Indianapolis, IN

PROJECT DESCRIPTION:

Maintain solids in suspension to prevent build-up in grit removal system for a dry weather flow of 70 MGD.

SPECIAL REQUIREMENTS:

The pulsed air mixing system is provided in JS 101 B to suspend solids which settle out following grit removal so they can pass on downstream for further removal or treatment. Keeping solids from accumulating in JS 101 B will minimize or eliminate the need to periodically take JS 101 B out of service for cleaning, which would be a major undertaking. These solids are anticipated to be lighter organics or very fine grit which passed through grit removal and settled out at lower flows, but can be re-suspended relatively easily. Mechanical in-tank mixers or pumped mixing systems were not even considered. The only other method considered was typical diffused aeration with coarse bubble diffusers, but it was decided that diffused air would not provide sufficient mixing energy throughout the tank, particularly in the bottom third, and would allow accumulation of solids between pipe headers, as is commonly seen in aeration tanks. The pulsed air system was selected due to its higher mixing energy and better ability to keep or re-suspend solids throughout the entire tank. The system can be operated on a continuous basis or may be operated intermittently, based on operator preference. (Per Gary Ruston, Senior Project Engineer)

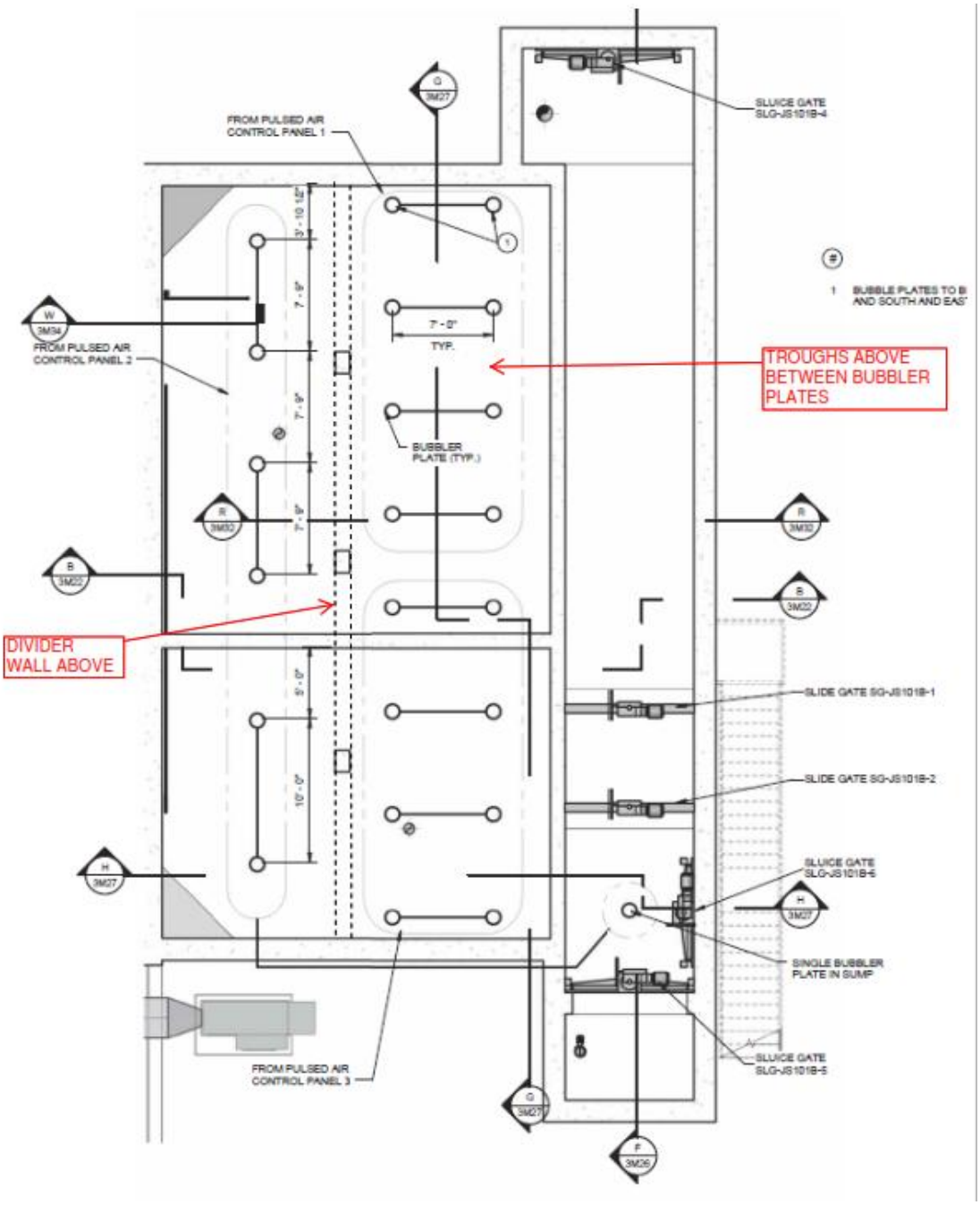
PHI SOLUTION:

Provide 24 bubble forming plates located in the channels and basin pursuant with the CFD model. PHI supplied three 4-valve mixing panels with Allen-Bradley PLC and two rotary screw 20 hp compressors.

RESULTS:

Requirements met and verified by customer's engineer.

(See Reverse for Application Drawing)


FROM PULSED AIR CONTROL PANEL 1
SLUICE GATE SLG-JS101B-4
1 BUBBLE PLATES TO B AND SOUTH AND EAS
7' - 0" TYP.
TROUGHS ABOVE BETWEEN BUBBLER PLATES
FROM PULSED AIR CONTROL PANEL 2
BUBBLER PLATE (TYP.)
DIVIDER WALL ABOVE
SLIDE GATE SG-JS101B-1
SLIDE GATE SG-JS101B-2
SLUICE GATE SLG-JS101B-6
SINGLE BUBBLER PLATE IN SUMP
SLUICE GATE SLG-JS101B-5
FROM PULSED AIR CONTROL PANEL 3