



**City of Canton, GA
Water Pollution Control Plant
Expansion to 6 MGD**

October 26, 2020

ADDENDUM NO. 2

This Addendum forms part of the “Bid Documents” and modifies or clarifies the original Bid Documents issued on October 1, 2020. Prospective Bidders shall acknowledge receipt of the total number the Addenda issued for this Project on their Sealed Bids. Failure to do so may subject the Bidder to disqualification.

2-1 SPECIFICATION 11380, MEMBRANE SYSTEM

ADD Supplement -1A, Appendix A of Supplement -1 after page 5 of 5, attached hereto.

End of Addendum No. 2

SUEZ Water Technologies & Solutions Proposal

Supplement – 1A



CITY OF CANTON WATER POLLUTION CONTROL PLANT (WPCP) MEMBRANE FILTRATION SYSTEM PIPING & INSTRUMENTATION DIAGRAMS (P&IDs)

**SUEZ WTS
CONTROLLED DOCUMENT**

| REV | DESCRIPTION | ECO | BM DWN | DC APPR | FA APPR | DATE |
|-----|-----------------|-----|-----------|------------|------------|-----------|
| A | INITIAL RELEASE | | | | | 13 MAR 20 |

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|-------------------------|
| TOLERANCES UNLESS NOTED |
| DÉCIMALS |
| X |
| JXX |
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| ANGLES |
| FRAC |



CUSTOMER INFORMATION
CITY OF CANTON, WATER POLLUTION
CONTROL PLANT (WPCP)

TITLE PAGE

| | | | | |
|-------------------------------|-------------|-------------------|-------|----------|
| DRAWING NUMBER | | | | REVISION |
| 506357-WTS-PR-T02-8521-DS-000 | | | | A |
| REF.: - | PROJECT NO. | PART/MATERIAL NO. | SCALE | SIZE |
| | 506357 | | NONE | D |
| | | | | SHEET |
| | | | | 1 OF 1 |

LAST SAVED: Friday, March 13, 2020 9:25:58 PM

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| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | |
|--|---|--|---|---|---|---|--|--|---|
| CONTROL VALVE ACTUATORS ACTUATED VALVE OPERATION IS NORMALLY CLOSED UNLESS MARKED OTHERWISE PISTON DOUBLE ACTING PISTON SPRING TO OPEN PISTON SPRING TO CLOSE DIAPHRAGM DOUBLE ACTING DIAPHRAGM SPRING TO OPEN DIAPHRAGM SPRING TO CLOSE DIAPHRAGM DOUBLE BALANCING BACK PRESSURE CONTROL (EXTERNAL REGULATING) BACK PRESSURE CONTROL (INTERNAL REGULATING) PRESSURE REDUCING (EXTERNAL REGULATING) PRESSURE REDUCING (INTERNAL REGULATING) ROTARY MOTOR ANALOG ROTARY MOTOR DIGITAL I/P CONVERTER POSITIONER TRAVEL STOP MANUAL GEAR WHEEL MANUAL CHAIN WHEEL SOLENOID SOLENOID 3 WAY SOLENOID 4 WAY | VALVE SYMBOLS OPEN DURING NORMAL PROCESS OPERATION CLOSED DURING NORMAL PROCESS OPERATION GATE (OR GENERIC) BALL BUTTERFLY NEEDLE GLOBE DIAPHRAGM ANGLE PLUG PINCH V-BALL KNIFE GATE UPWARD OPENING SLIDING GATE DOWNWARD OPENING SLIDING GATE MANUAL BLAST GATE BACKFLOW PREVENTER CHECK INJECTION QUILL FOOT FLOAT MUD 3 WAY 4 WAY 5 WAY 6 WAY 2 VALVE MANIFOLD 3 VALVE MANIFOLD 5 VALVE MANIFOLD SAMPLE | RELIEF PRESSURE SAFETY VACUUM SAFETY MULTIFUNCTION PRESSURE RUPTURE DISK VACUUM RUPTURE DISK AIR RELEASE VACUUM BREAKER VENT GROUND DRAIN | PUMPS, BLOWERS, & COMPRESSORS CENTRIFUGAL PUMP CENTRIFUGAL/REGENERATIVE BLOWER PROPELLER PUMP ROTARY LOBE COMPRESSOR BLOWER METERING PUMP AIR OPERATED DOUBLE DIAPHRAGM PUMP POSITIVE DISPLACEMENT PUMP VERTICAL TURBINE PUMP CAN PUMP WELL PUMP DRUM PUMP SUBMERSIBLE SUMP PUMP HYDRAULIC PRESSURE BOOSTER | FLOW ELEMENT PADDLE WHEEL ANNUBAR FLOW NOZZLE FLUME MAGNETIC PITOT SONIC/ULTRASONIC TURBINE VENTURI TUBE VORTEX MASS FLOW/CORIOLIS ROTAMETER IN-LINE FLOW GLASS FLOW STRAIGHTENER FIXED ORIFICE ADJUSTABLE ORIFICE RESTRICTED ORIFICE RESTRICTED ORIFICE ANGLE ORIFICE PLATE QUICK-CHANGE | CONNECTIONS FLANGE FLANGE BLIND MECHANICAL COUPLING OR VICTAULIC MECHANICAL COUPLING OR VICTAULIC PLUG SANITARY SANITARY PLUG THREADED THREADED PLUG SOCKET UNION CAMLOCK CAMLOCK PLUG HOSE BARB WELDED PIPE CAP PLAIN END PIPE COUPLING REDUCER COMPRESSION FITTING COMPRESSION FITTING PLUG SPECTACLE BLIND OPEN SPECTACLE BLIND CLOSED HEATING TANK HEATER HEAT EXCHANGER IN-LINE HEATER PLATE & FRAME HEAT EXCHANGER DESUPERHEATER | FILTERS FIXED SCREEN TOP HAT STRAINER BAR SCREEN HEPA FILTER Y STRAINER CONICAL STRAINER FILTER PUMP SCREEN STEAM TRAP RESIN TRAP RO/UF FOUR PORT HOUSING TWO PORT HOUSING END PORT HOUSING MEMBRANE MODULE | VESSELS/TRIM CONICAL BOTTOM TANK PROPELLER AGITATOR VORTEX BREAKER VESSEL INSULATION LEVEL GLASS ELLIPTICAL MANWAY MANHOLE MANHOLE W/ DAVIT ARM VESSEL SIGHT GLASS WATER LEVEL PRESSURE VESSEL HORIZONTAL/VERTICAL OR RECEIVER LADDER/PLATFORM ION EXCHANGE BOTTLE | MISCELLANEOUS MUFFLER EDUCTOR STATIC MIXER EXPANSION JOINT SILENCER VIBRATION ISOLATOR HIGH PRESSURE FLEXIBLE CONNECTOR INJECTION SPARGER DIAPHRAGM SEAL/GUAGE GUARD PULSATION DAMPENERS SPRAYER NOZZLE DESICCANT AIR DRYER HYDROMETER POT COARSE BUBBLE DIFFUSER ELEVATION VIEW FINE BUBBLE DIFFUSER ELEVATION VIEW THERMOWELL TOP MOUNT LEVEL SWITCH ULTRASONIC LEVEL CALIBRATION COLUMN PIG TAIL | SCOPE BREAK CLIENT/OTHER SUEZ MATERIAL BREAK MATERIAL A MATERIAL B PIPE INSULATION/DOUBLE CONTAINMENT PP 2" ("PP" INDICATES PERSONNEL PROTECTION - OPTIONAL) LINE TYPES PRIMARY PROCESS SECONDARY PROCESS SAMPLE/DRAINS/VENTS/ETC PRIMARY PROCESS (BY OTHERS) SECONDARY PROCESS (BY OTHERS) FUTURE EQUIPMENT LIMIT OR BOUNDARY LINE EQUIPMENT EQUIPMENT (BY OTHERS) FLEX HOSE/TUBING SOFTWARE-LINK ELECTRICAL ELECTROMAGNETIC OR SONIC SIGNAL (WIRELESS) PNEUMATIC HYDRAULIC SIGNAL CAPILLARY TUBING HEAT-TRACING STEAM-TRACE ELECTRICAL-TRACE MISCELLANEOUS LINE OBJECTS SLOPE CONTINUATION SYMBOL CONTINUATION SYMBOL CROSSOVER LINE REVISION CLOUD REVISION TRIANGLE |

| | | | | | | | | | | | |
|---|--|--|--|---|--|---------------------------------------|--|--|--|----------------------|--|
| REV DESCRIPTION ECO DWN APPR DATE | | TOLERANCES UNLESS NOTED DECIMALS ANGLES .X .XX .XX .XXX .XXX | | CUSTOMER INFORMATION CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP) | | P&ID, LEGEND & SYMBOLS | | DRAWING NUMBER 506357-WTS-PR-T02-8521-DS-001 | | REVISION A | |
| INITIAL RELEASE A 13 MAR 20 | | BM DC FA 13 MAR 20 | | SUEZ | | PROJECT NO. 506357 | | PART/MATERIAL NO. | | SCALE NONE | |
| REV DESCRIPTION ECO DWN APPR DATE | | PROJECT NO. 506357 | | CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP) | | P&ID, LEGEND & SYMBOLS | | DRAWING NUMBER 506357-WTS-PR-T02-8521-DS-001 | | REVISION A | |

| | | INSTRUMENT FUNCTIONS | | | | | | | | | | | | | | | | | | | | | INSTRUMENT SYMBOLS | | EQUIPMENT / INSTRUMENT TAGGING SCHEME | | EQUIPMENT ABBREVIATIONS | | | | | | | | |
|---------------------------------|-----------------------------|----------------------|------------|-----------|---------------|--------------------|------------------|-----------------------|--------------------------|-------|-----------|-----------------|-------------|-----------|--------|----------|------------------|-------------|------------|----------------|-------------------|------------------------|---|---------------|---------------------------------------|-----------------------|-------------------------|---------------------|--|----------|---------------|-------------------|-----------------------|-------------------------|--|
| SUCCEEDING LETTER | | A | | | | | C | | E | G | I | K | L | Q | R | S | | | T | Y | V,Z | | | SYMBOL | | DESCRIPTION | | MATERIAL CODE | | MATERIAL | | | | | |
| MEASURED OR INITIATING VARIABLE | ALARM | HIGH-HIGH ALARM | HIGH ALARM | LOW ALARM | LOW-LOW ALARM | SENSOR FAULT ALARM | BLIND CONTROLLER | INDICATING CONTROLLER | SENSOR (PRIMARY ELEMENT) | GLASS | INDICATOR | CONTROL STATION | PILOT LIGHT | TOTALIZER | RECORD | SWITCH | HIGH-HIGH SWITCH | HIGH SWITCH | LOW SWITCH | LOW-LOW SWITCH | BLIND TRANSMITTER | INDICATING TRANSMITTER | SOLENOID VALVE (PILOT), RELAY, COMPUTATION, CONVERTER | CONTROL VALVE | VALVE | FINAL CONTROL ELEMENT | FUNCTIONS | CONTINUATION ARROWS | | PR CODE | CLASS | | | | |
| A | ANALYSIS | AA | AAHH | AAH | AAL | AALL | AAT | AC | AIC | AE | AI | AL | AR | AS | ASHH | ASH | ASL | ASLL | AT | AIT | AY | ACV | AV | AZ | | | | | | | | | | | |
| B | BURNER, COMBUSTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | USER'S CHOICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | USER'S CHOICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | VOLTAGE | EA | EAHH | EAH | EAL | EALL | EAT | EC | EIC | EE | EI | EK | EL | ER | ES | ESHH | ESH | ESL | ESLL | ET | EIT | EY | | EZ | | | | | | | | | | | |
| F | FLOW | FA | FAHH | FAH | FAL | FALL | FAT | FC | FIC | FE | FG | FI | FL | FQI | FR | FS | FSHH | FSH | FSL | FSL | FT | FIT | FY | FCV | FV | FO | | | | | ORIFICE PLATE | | | | |
| FF | FLOW RATIO | FFA | FFAHH | FFAH | FFAL | FFALL | | FFC | FFIC | | | | | FFR | FFS | FFSHH | FFSH | FFSL | FFSL | | | FFY | FFCV | | | | | | | | | | | | |
| G | USER'S CHOICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | HAND | HA | | | | | | HC | HIC | | | HL | | HS | | | | | | | | | HCV | HV | HMS | | | | | | | PUSHBUTTON SWITCH | | | |
| I | CURRENT (ELECTRICAL) | IA | IAHH | IAH | IAL | IALL | IAT | IC | IIC | IE | | II | IK | IL | IR | IS | ISHH | ISH | ISL | ISLL | IT | IIT | IY | | IZ | | | | | | | | | | |
| J | POWER | JA | JSHH | JAH | JAL | JALL | JAT | JC | JIC | JE | | JI | JK | JL | JQI | JR | JS | JSHH | JSH | JSL | JSL | JT | LIT | JY | | JZ | | | | | | | | | |
| K | TIME SCHEDULE | KA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KQ | TIME TOTAL | KQA | KQAHH | KQAH | KQAL | KQALL | | | | | | KQI | KQL | | KQR | KQS | KQSHH | KQSH | KQSL | KQSL | | | | | | | | | | | | | | | |
| L | LEVEL | LA | LAHH | LAH | LAL | LALL | LAT | LC | LIC | LE | LG | LI | LL | LR | LS | LSHH | LSH | LSL | LSL | LT | LIT | LY | LCV | LV | LKx | | | | | | | | LEVEL RATE-OF-CHANGE | | |
| M | MOTOR CONTROL | | | | | | | | | | | | | | MS | | | | | | | | | | | | | | | | | | | | |
| N | USER'S CHOICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O | USER'S CHOICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P | PRESSURE OR VACUUM | PA | PAHH | PAH | PAL | PALL | PAT | PC | PIC | | | PI | PL | PR | PS | PSHH | PSH | PSSL | PSSL | PT | PIT | PIT | PY | PV | PSV | | | | | | | | PRESSURE SAFETY VALVE | | |
| PD | PRESSURE DIFFERENTIAL | PDA | PDAHH | PDAH | PDAL | PDALL | PDAT | PDC | PDIC | | | PDI | PDL | PDR | PDS | PDSHH | PDSH | PDSL | PDSL | PDT | PDIT | PDY | PDCV | | | | | | | | | | | | |
| Q | QUANTITY | | | | | | | | | | | | | | | | | | | | | | | | | | QQI | | | | | | | | |
| R | RADIATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S | SPEED OR FREQUENCY | SA | SAHH | SAH | SAL | SALL | SAT | SC | SIC | SE | | SI | SK | SL | SR | SS | SSHH | SSH | SSL | SSL | ST | SIT | SY | SCV | SZ | | | | | | | | | | |
| T | TEMPERATURE | TA | TAHH | TAH | TAL | TALL | TAT | TC | TIC | TE | | TI | TL | TR | TS | TSHH | TSH | TSL | TSL | TT | TIT | TY | TCV | TV | TZ | TW | | | | | | | THERMOWELL | | |
| U | MULTI-VARIABLE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | VIBRATION OR MECH. ANALYSIS | VA | VAHH | VAH | | | VAT | | VE | VI | VL | VR | VS | VSHH | VSH | | | | | | VT | VIT | VY | | | | | | | | | | | | |
| W | WEIGHT OR FORCE | WA | WAHH | WAH | WAL | WALL | WAT | WC | WIC | WE | | WI | WL | WQI | WR | WS | WSHH | WSH | WSL | WSL | WT | WIT | WY | WCV | WV | WZ | | | | | | | | | |
| X | UNCLASSIFIED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Y | EVENT, STATE OR PRESENCE | YA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z | POSITION OR DIMENSION | ZA | ZAO=OPEN | ZAC=CLOSE | ZAT | ZC | ZIC | ZE | ZG | ZI | ZK | ZL | | ZR | ZS | ZSO=OPEN | ZSC=CLOSE | ZT | ZIT | ZY | ZCV | ZV | ZZ | ZKx | | | | | | | | | | POSITION RATE-OF-CHANGE | |

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---|-----|-----|------|------|-----------|
| A | INITIAL RELEASE | | | | | 13 MAR 20 |
| B | PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF SUEZ AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY SUEZ AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST. | | | | | |

TOLERANCES UNLESS NOTED

| DECIMALS | ANGLES |
|----------|--------|
| X | FRAC |
| .XX | |
| .XXX | |

CUSTOMER INFORMATION

CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

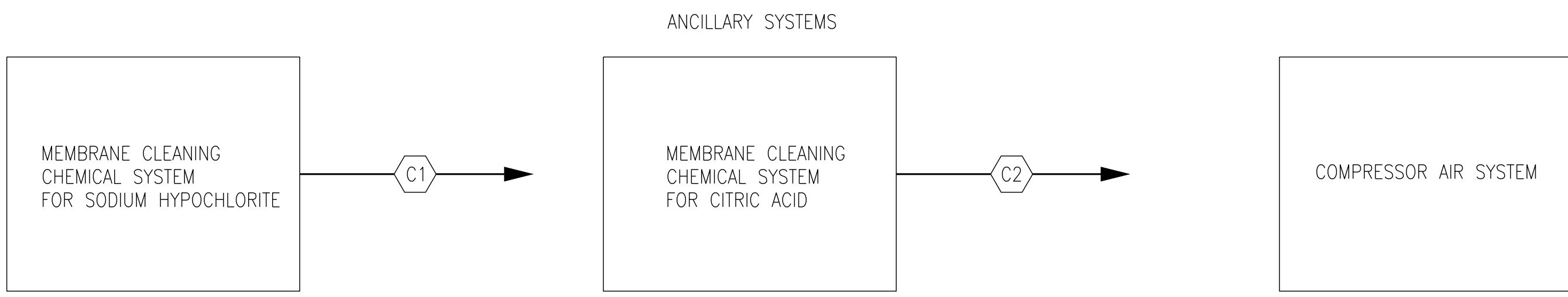
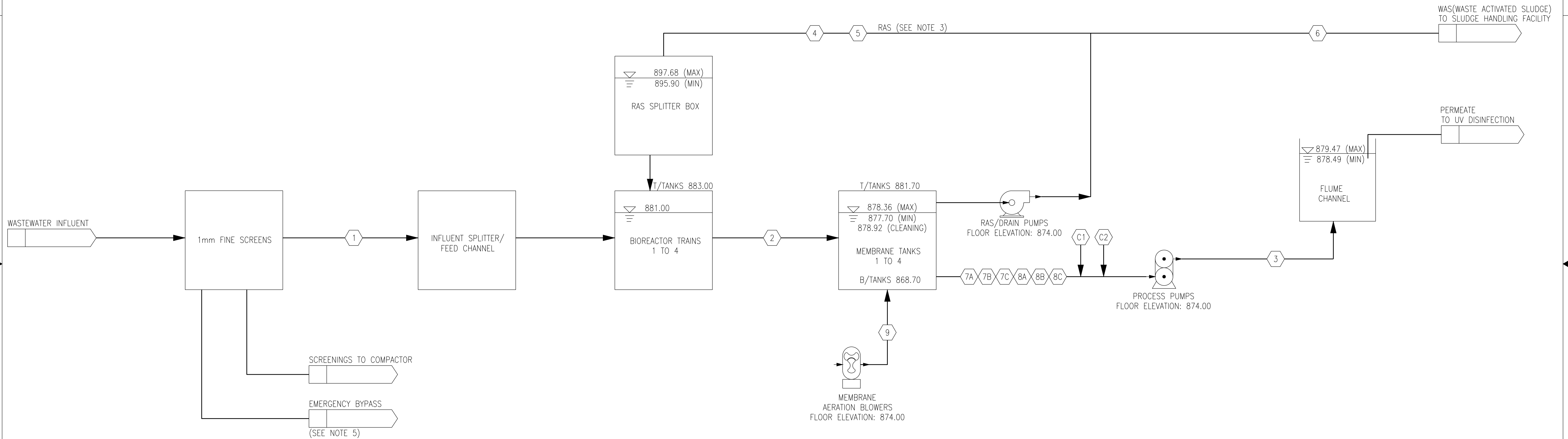
P&ID, LEGEND & SYMBOLS

| DRAWING NUMBER | | REVISION |
|-------------------------------|-------------------|--------------|
| 506357-WTS-PR-T02-8521-DS-001 | | A |
| REF. - | DOC. OWNER - | |
| PROJECT NO. 506357 | PART/MATERIAL NO. | SHEET 2 OF 2 |

SCALE NONE SIZE D

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- NOTES:
1. THIS DIAGRAM DOES NOT REFLECT THE SCOPE OF SUEZ SUPPLIED EQUIPMENT.
 2. FOR ACTUAL NUMBER OF PROCESS COMPONENTS REFER TO RESPECTIVE P&ID.
 3. COMBINED RAS LINE DISCHARGES FREELY INTO RAS SPLITTER BOX.
 4. ELEVATIONS ARE SHOWN IN FASL.
 5. SUEZ TO BE CONTACTED IMMEDIATELY FOLLOWING OVERFLOW ALARM.



**SUEZ WTS
CONTROLLED DOCUMENT**

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE | |
|-----|---------------------|-----|-----|------|------|------|-----------|
| D | ISSUED FOR APPROVAL | | | BM | SKH | FA | 01 JUN 20 |
| C | ISSUED FOR APPROVAL | | | BM | DC | FA | 13 MAY 20 |
| B | ISSUED FOR APPROVAL | | | BM | DC | FA | 06 APR 20 |
| A | INITIAL RELEASE | | | BM | DC | FA | 13 MAR 20 |

| TOLERANCES UNLESS NOTED | |
|-------------------------|--------|
| DECIMALS | ANGLES |
| .X | FRAC |
| .XX | |
| .XXX | |



CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

PROCESS FLOW DIAGRAM

| DRAWING NUMBER | | REVISION |
|-------------------------------|-------------------|-----------------|
| 506357-WTS-PR-T02-8511-DI-001 | | D |
| REF.: - | DOC. OWNER: - | |
| PROJECT NO. 506357 | PART/MATERIAL NO. | SHEET 1 OF 3 |
| SCALE NONE | SIZE D | |

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| Stream ID | Stream | Description | Units | MinF | ADF | MMADF | MDF | PHF | EPA Class I |
|-----------|--|---------------|------------|--------------|------------------|----------------------------------|------------------|----------------|-----------------|
| | | | | Minimum Flow | Average Day Flow | Maximum Month Average Daily Flow | Maximum Day Flow | Peak Hour Flow | 0.75*MMADF, N-1 |
| | Plant Capacity | Total | MGD | 2.3 | 5.0 | 6.0 | 9.0 | 12.0 | 4.5 |
| - | Number of membrane trains running | - | n | 2 | 4 | 4 | 4 | 4 | 3 |
| - | Number of modules per train (As-Installed) | - | n | 292 | 292 | 292 | 292 | 292 | 292 |
| - | Number of modules per train (Buildout) | - | n | 364 | 364 | 364 | 364 | 364 | 364 |
| - | Bioreactor Mixed Liquor Concentration | - | mg/L | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 |
| - | Membrane Tank Mixed Liquor Concentration | - | mg/L | 10,000 | 10,000 | 10,000 | 12,000 | 12,000 | 10,000 |
| - | Membrane Recycle Ratio [R] | - | - | 4.0 | 4.0 | 4.0 | 2.0 | 2.0 | 4.0 |
| 1 | 1-mm screened wastewater influent (total) | Continuous | gpm | 1597 | 3472 | 4167 | 6250 | 8333 | 3125 |
| 2 | Membrane Tank Influent (Per Membrane Train) | Continuous | gpm | 3993 | 4340 | 5208 | 4688 | 6250 | 5208 |
| 2 | Membrane Tank Influent (Total) | Continuous | gpm | 7986 | 17361 | 20833 | 18750 | 25000 | 15625 |
| 3 | Permeate Flow - Net (Per Membrane Train) | Net | gpm | 799 | 868 | 1042 | 1563 | 2083 | 1042 |
| 3 | Permeate Flow - Instantaneous ¹ (Per Membrane Train) | Instantaneous | gpm | 1007 | 1083 | 1273 | 1843 | 2413 | 1273 |
| 3 | Permeate Flow - Instantaneous ¹ (Total) | Instantaneous | gpm | 2013 | 4331 | 5091 | 7371 | 9652 | 3818 |
| 4 | RAS - Mixed Liquor Recirculation (Per Membrane Train) | Continuous | gpm | 3,194 | 3,472 | 4,167 | 3,125 | 4,167 | 4,167 |
| 4 | MLSS Recirculation to Bioreactors (Total) | Continuous | gpm | 6,389 | 13,889 | 16,667 | 12,500 | 16,667 | 12,500 |
| 5 | Membrane Tank Drain Flowrate (Per Membrane Train) | Intermittent | gpm | 1,715 | | | | | |
| 6 | Wasting Duration Per Day ² | Continuous | hours | 24 | | | | | |
| 6 | Waste Activated Sludge (WAS) Flow | Continuous | gpm | 160 | | | | | |
| 7A | Backpulse Flow - Backpulse Operation Mode, Per Membrane Train - As-Installed | Intermittent | gpm | 2,413 | | | | | |
| 7B | Backpulse Flow - For Maintenance Clean, Per Membrane Train - As-Installed | Intermittent | gpm | 900 | | | | | |
| 7C | Backpulse Flow - For Recovery Clean, Per Membrane Train - As-Installed | Intermittent | gpm | 900 | | | | | |
| 8A | Backpulse Flow - Backpulse Operation Mode, Per Membrane Train - Buildout | Intermittent | gpm | 2,413 | | | | | |
| 8B | Backpulse Flow - For Maintenance Clean, Per Membrane Train - Buildout | Intermittent | gpm | 1,122 | | | | | |
| 8C | Backpulse Flow - For Recovery Clean, Per Membrane Train - Buildout | Intermittent | gpm | 1,122 | | | | | |

Chemical Flows

| | | | | | | | | | |
|----|---|--------------|-----|------|--|--|--|--|--|
| C1 | Sodium Hypochlorite (12.5% w/w solution) - Maintenance Clean (Per Train) - As-Installed | Intermittent | gpm | 1.20 | | | | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Recovery Clean (Per Train) - As-Installed | Intermittent | gpm | 6.63 | | | | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Maintenance Clean (Per Train) - Buildout | Intermittent | gpm | 1.50 | | | | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Recovery Clean (Per Train) - Buildout | Intermittent | gpm | 8.26 | | | | | |
| C2 | Citric Acid (50% w/w solution) - Maintenance Clean (Per Train - If Required) - As-Installed | Intermittent | gpm | 2.90 | | | | | |
| | Citric Acid (50% w/w solution) - Maintenance Clean (Per Train - If Required) - Buildout | Intermittent | gpm | 3.62 | | | | | |
| | Citric Acid (50% w/w solution) - Recovery Clean (Per Train) - As-Installed | Intermittent | gpm | 3.20 | | | | | |
| | Citric Acid (50% w/w solution) - Recovery Clean (Per Train) - Buildout | Intermittent | gpm | 3.98 | | | | | |

Air Flows

| | | | | | | | | | |
|---|--|------------|------|-------|-------|-------|-------|-------|-------|
| - | Membrane Air - Leap Low (per Membrane train) - As-Installed | Continuous | scfm | 569 | | | | | |
| | Membrane Air - Leap High (per Membrane train) - As-Installed | Continuous | scfm | 1138 | | | | | |
| | Membrane Air - Leap Low (per Membrane train) - Buildout | Continuous | scfm | 707 | | | | | |
| | Membrane Air - Leap High (per Membrane train) - Buildout | Continuous | scfm | 1,415 | | | | | |
| 9 | Membrane Air - Leap Low (Total) - As-Installed | Continuous | scfm | 1,138 | 2,276 | 2,276 | 2,276 | 2,276 | 1,707 |
| | Membrane Air - Leap High (Total) - As-Installed | Continuous | scfm | 2,276 | 4,552 | 4,552 | 4,552 | 4,552 | 3,414 |
| | Membrane Air - Leap Low (Total) - Buildout | Continuous | scfm | 1,414 | 2,828 | 2,828 | 2,828 | 2,828 | 2,121 |
| | Membrane Air - Leap High (Total) - Buildout | Continuous | scfm | 2,830 | 5,660 | 5,660 | 5,660 | 5,660 | 4,245 |

- Total Instantaneous Permeate flow shall be used for pipe sizing
- Wasting is assumed to occur continuously over a 24-hour period

SUEZ WTS
CONTROLLED DOCUMENT

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|---|-----|---|-----------|-----------|---|---------------------|----|----|----|-----------|---|---------------------|----|----|----|-----------|---|-----------------|----|----|----|-----------|--|---|--------------------------------|--|--|
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">D</td> <td style="width: 50%;">ISSUED FOR APPROVAL</td> <td style="width: 10%;">BM</td> <td style="width: 10%;">SKH</td> <td style="width: 10%;">FA</td> <td style="width: 10%;">01 JUN 20</td> </tr> <tr> <td>C</td> <td>ISSUED FOR APPROVAL</td> <td>BM</td> <td>DC</td> <td>FA</td> <td>13 MAY 20</td> </tr> <tr> <td>B</td> <td>ISSUED FOR APPROVAL</td> <td>BM</td> <td>DC</td> <td>FA</td> <td>06 APR 20</td> </tr> <tr> <td>A</td> <td>INITIAL RELEASE</td> <td>BM</td> <td>DC</td> <td>FA</td> <td>13 MAR 20</td> </tr> </table> | D | ISSUED FOR APPROVAL | BM | SKH | FA | 01 JUN 20 | C | ISSUED FOR APPROVAL | BM | DC | FA | 13 MAY 20 | B | ISSUED FOR APPROVAL | BM | DC | FA | 06 APR 20 | A | INITIAL RELEASE | BM | DC | FA | 13 MAR 20 | | <p>CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)</p> | <p>FLOW TABLE</p> <p>6 MGD</p> | <p>DRAWING NUMBER</p> <p style="font-size: 1.2em;">506357-WTS-PR-T02-8511-DI-001</p> | <p>REVISION</p> <p style="font-size: 1.2em;">D</p> |
| D | ISSUED FOR APPROVAL | BM | SKH | FA | 01 JUN 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| C | ISSUED FOR APPROVAL | BM | DC | FA | 13 MAY 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| B | ISSUED FOR APPROVAL | BM | DC | FA | 06 APR 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| A | INITIAL RELEASE | BM | DC | FA | 13 MAR 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF SUEZ AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY SUEZ AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.</p> | | <p>TOLERANCES UNLESS NOTED</p> <p>DECIMALS ANGLES</p> <p>X FRAC</p> <p>XXX XXX</p> | | <p>REF.: - PROJECT NO. PART/MATERIAL NO. SCALE SIZE SHEET</p> <p>506357 NONE D 2 OF 3</p> | | | | | | | | | | | | | | | | | | | | | | | | | |

FILE LOCATION: D:\Users\1315746\appdata\local\temp\AcPublish_10820\506357-WTS-PR-T02-8511-DI-001.dwg

| Stream ID | Stream | Description | Units | MinF | ADF | MMADF | MDF | PHF | EPA Class I |
|-----------|--|---------------|------------|--------------|------------------|----------------------------------|------------------|----------------|-----------------|
| | | | | Minimum Flow | Average Day Flow | Maximum Month Average Daily Flow | Maximum Day Flow | Peak Hour Flow | 0.75*MMADF, N-1 |
| | Plant Capacity | Total | MGD | 2.3 | 5.8 | 7.0 | 10.5 | 14.0 | 5.3 |
| - | Number of membrane trains running | - | n | 2 | 4 | 4 | 4 | 4 | 3 |
| - | Number of modules per train (As-Installed) | - | n | 338 | 338 | 338 | 338 | 338 | 338 |
| - | Number of modules per train (Buildout) | - | n | 364 | 364 | 364 | 364 | 364 | 364 |
| - | Bioreactor Mixed Liquor Concentration | - | mg/L | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 |
| - | Membrane Tank Mixed Liquor Concentration | - | mg/L | 10,000 | 10,000 | 10,000 | 12,000 | 12,000 | 10,000 |
| - | Membrane Recycle Ratio [R] | - | - | 4.0 | 4.0 | 4.0 | 2.0 | 2.0 | 4.0 |
| 1 | 1-mm screened wastewater influent (total) | Continuous | gpm | 1597 | 4051 | 4861 | 7292 | 9722 | 3646 |
| 2 | Membrane Tank Influent (Per Membrane Train) | Continuous | gpm | 3993 | 5064 | 6076 | 5469 | 7292 | 6076 |
| 2 | Membrane Tank Influent (Total) | Continuous | gpm | 7986 | 20255 | 24306 | 21875 | 29167 | 18229 |
| 3 | Permeate Flow - Net (Per Membrane Train) | Net | gpm | 799 | 1013 | 1215 | 1823 | 2431 | 1215 |
| 3 | Permeate Flow - Instantaneous ¹ (Per Membrane Train) | Instantaneous | gpm | 1029 | 1263 | 1485 | 2150 | 2815 | 1485 |
| 3 | Permeate Flow - Instantaneous ¹ (Total) | Instantaneous | gpm | 2058 | 5053 | 5940 | 8600 | 11260 | 4455 |
| 4 | RAS - Mixed Liquor Recirculation (Per Membrane Train) | Continuous | gpm | 3,194 | 4,051 | 4,861 | 3,646 | 4,861 | 4,861 |
| 4 | MLSS Recirculation to Bioreactors (Total) | Continuous | gpm | 6,389 | 16,204 | 19,444 | 14,583 | 19,444 | 14,583 |
| 5 | Membrane Tank Drain Flowrate (Per Membrane Train) | Intermittent | gpm | | | | 1,715 | | |
| 6 | Wasting Duration Per Day ² | Continuous | hours | | | | 24 | | |
| 6 | Waste Activated Sludge (WAS) Flow | Continuous | gpm | | | | 160 | | |
| 7A | Backpulse Flow - Backpulse Operation Mode, Per Membrane Train - As-Installed | Intermittent | gpm | | | | 2,815 | | |
| 7B | Backpulse Flow - For Maintenance Clean, Per Membrane Train - As-Installed | Intermittent | gpm | | | | 1,042 | | |
| 7C | Backpulse Flow - For Recovery Clean, Per Membrane Train - As-Installed | Intermittent | gpm | | | | 1,042 | | |
| 8A | Backpulse Flow - Backpulse Operation Mode, Per Membrane Train - Buildout | Intermittent | gpm | | | | 2,815 | | |
| 8B | Backpulse Flow - For Maintenance Clean, Per Membrane Train - Buildout | Intermittent | gpm | | | | 1,122 | | |
| 8C | Backpulse Flow - For Recovery Clean, Per Membrane Train - Buildout | Intermittent | gpm | | | | 1,122 | | |

Chemical Flows

| | | | | | | | | | |
|----|---|--------------|-----|--|--|--|------|--|--|
| C1 | Sodium Hypochlorite (12.5% w/w solution) - Maintenance Clean (Per Train) - As-Installed | Intermittent | gpm | | | | 1.39 | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Recovery Clean (Per Train) - As-Installed | Intermittent | gpm | | | | 7.67 | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Maintenance Clean (Per Train) - Buildout | Intermittent | gpm | | | | 1.50 | | |
| | Sodium Hypochlorite (12.5% w/w solution) - Recovery Clean (Per Train) - Buildout | Intermittent | gpm | | | | 8.26 | | |
| C2 | Citric Acid (50% w/w solution) - Maintenance Clean (Per Train - If Required) - As-Installed | Intermittent | gpm | | | | 3.36 | | |
| | Citric Acid (50% w/w solution) - Maintenance Clean (Per Train - If Required) - Buildout | Intermittent | gpm | | | | 3.62 | | |
| | Citric Acid (50% w/w solution) - Recovery Clean (Per Train) - As-Installed | Intermittent | gpm | | | | 3.70 | | |
| | Citric Acid (50% w/w solution) - Recovery Clean (Per Train) - Buildout | Intermittent | gpm | | | | 3.98 | | |

Air Flows

| | | | | | | | | | |
|---|--|------------|------|-------|-------|-------|-------|-------|-------|
| - | Membrane Air - Leap Low (per Membrane train) - As-Installed | Continuous | scfm | | | | 659 | | |
| | Membrane Air - Leap High (per Membrane train) - As-Installed | Continuous | scfm | | | | 1318 | | |
| | Membrane Air - Leap Low (per Membrane train) - Buildout | Continuous | scfm | | | | 707 | | |
| | Membrane Air - Leap High (per Membrane train) - Buildout | Continuous | scfm | | | | 1,415 | | |
| 9 | Membrane Air - Leap Low (Total) - As-Installed | Continuous | scfm | 1,318 | 2,636 | 2,636 | 2,636 | 2,636 | 1,977 |
| | Membrane Air - Leap High (Total) - As-Installed | Continuous | scfm | 2,636 | 5,272 | 5,272 | 5,272 | 5,272 | 3,954 |
| | Membrane Air - Leap Low (Total) - Buildout | Continuous | scfm | 1,414 | 2,828 | 2,828 | 2,828 | 2,828 | 2,121 |
| | Membrane Air - Leap High (Total) - Buildout | Continuous | scfm | 2,830 | 5,660 | 5,660 | 5,660 | 5,660 | 4,245 |

- Total Instantaneous Permeate flow shall be used for pipe sizing
- Wasting is assumed to occur continuously over a 24-hour period

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|------|-----------|
| D | ISSUED FOR APPROVAL | | | BM | SKH | 01 JUN 20 |
| C | ISSUED FOR APPROVAL | | | BM | DC | 13 MAY 20 |
| B | ISSUED FOR APPROVAL | | | BM | DC | 06 APR 20 |
| A | INITIAL RELEASE | | | BM | DC | 13 MAR 20 |

| TOLERANCES UNLESS NOTED | DECIMALS | ANGLES |
|-------------------------|----------|--------|
| | X | FRAC |
| | .XX | |
| | .XXX | |

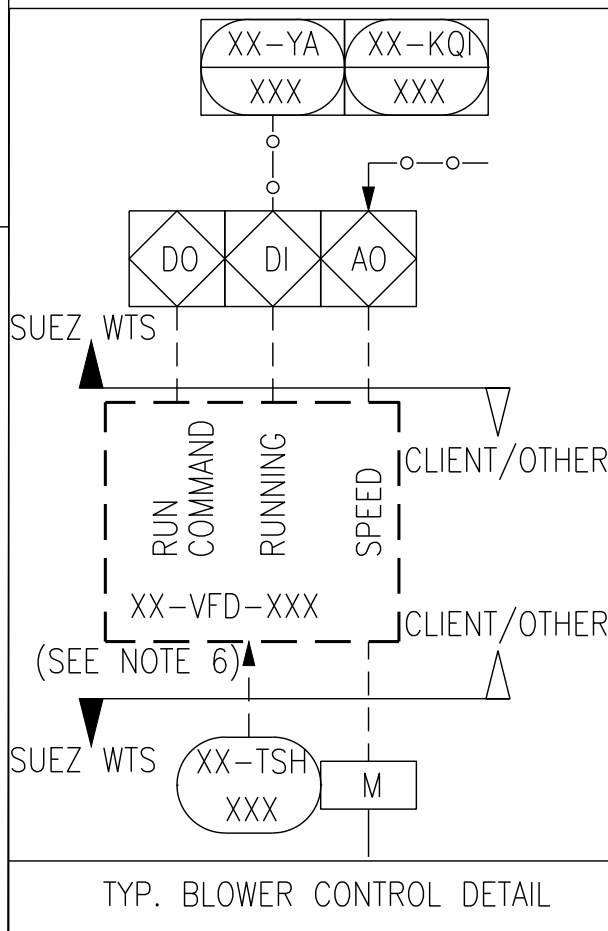
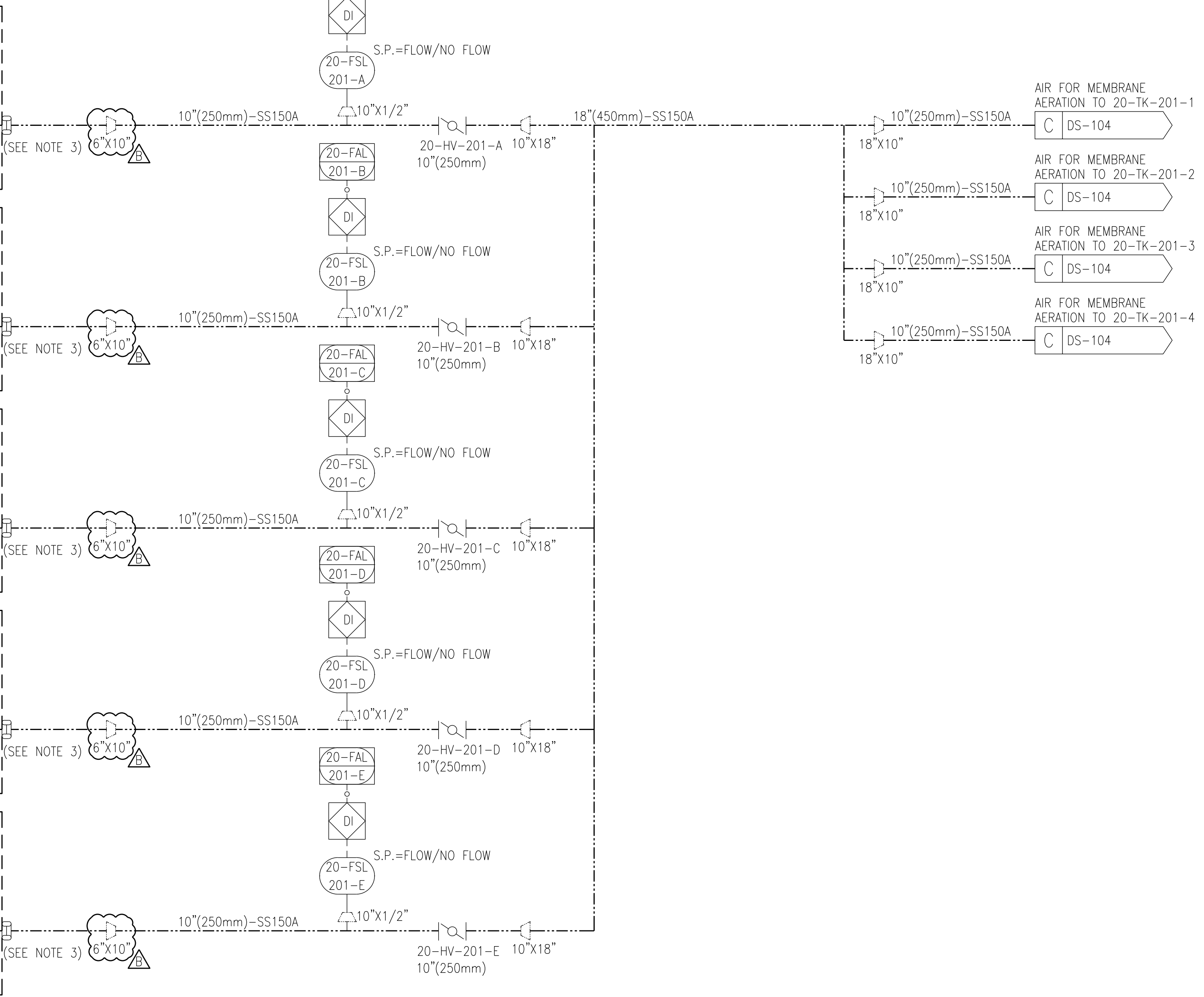
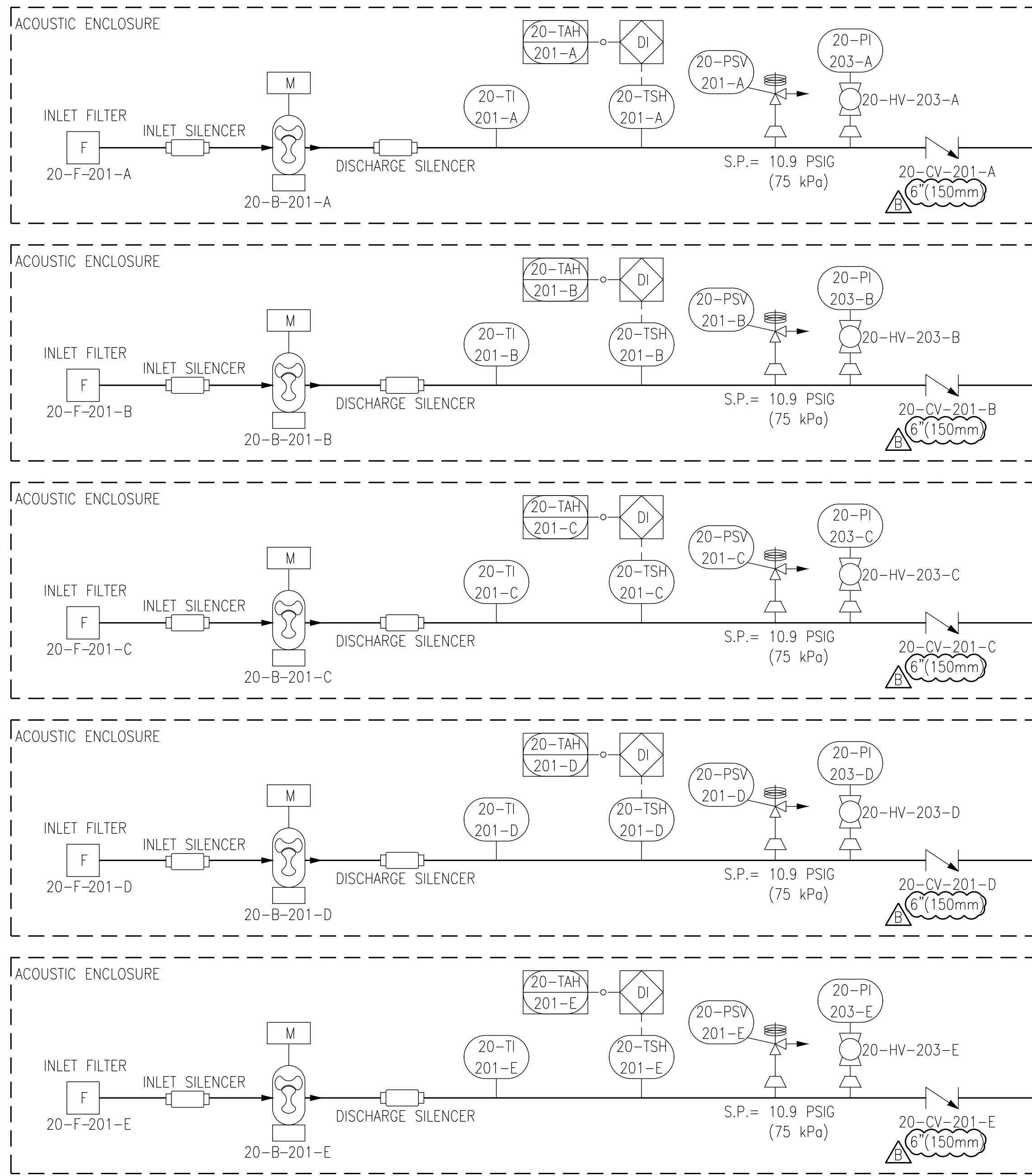


CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

FLOW TABLE
7 MGD (FUTURE)

| DRAWING NUMBER | | REVISION |
|-------------------------------|-------------------|----------|
| 506357-WTS-PR-T02-8511-DI-001 | | D |
| PROJECT NO. | PART/MATERIAL NO. | SHEET |
| 506357 | | 3 OF 3 |

FILE LOCATION: D:\Users\1315746\appdata\local\temp\AcPublish_10820\506357-WTS-PR-T02-8511-DI-001.dwg



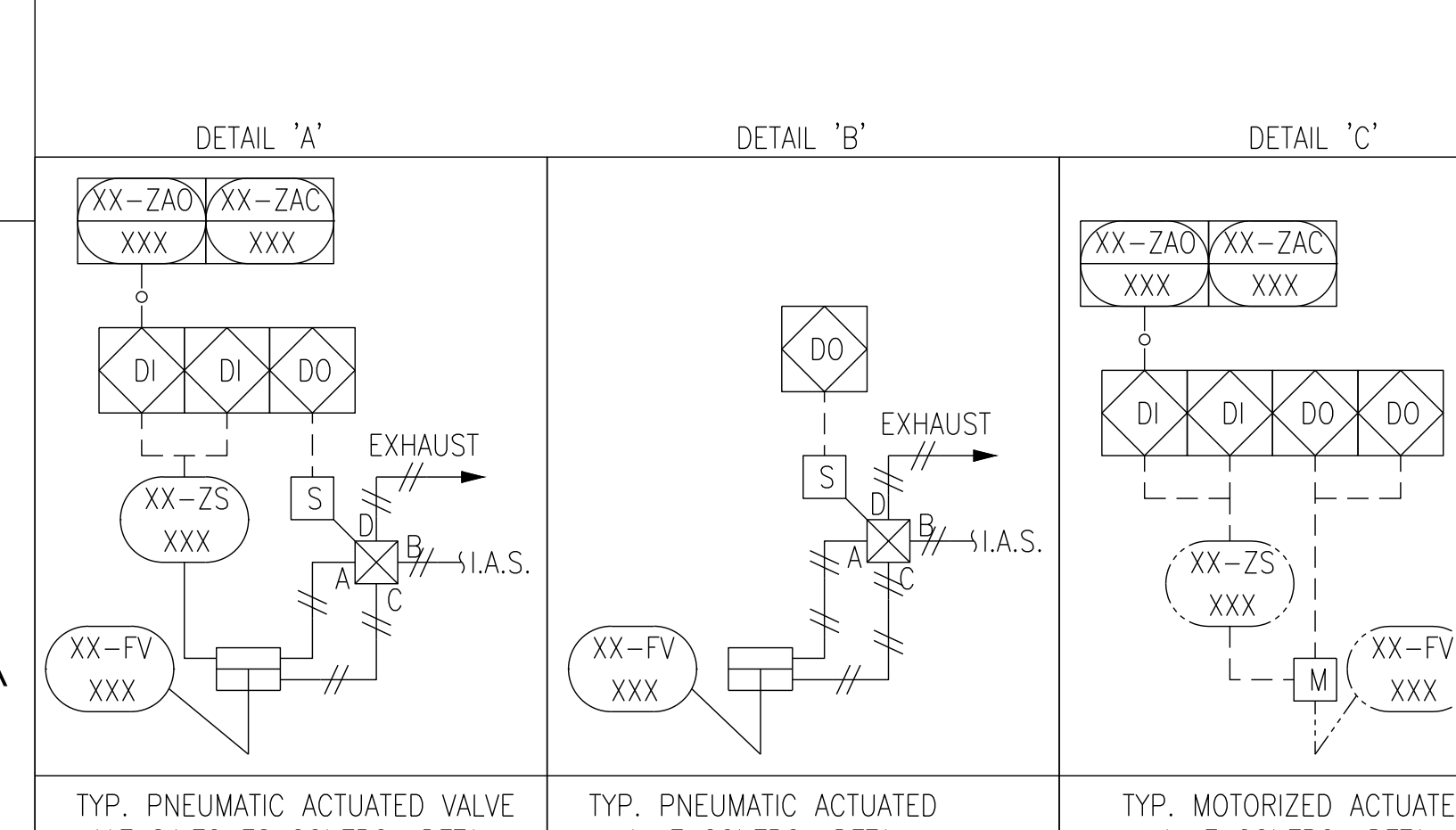
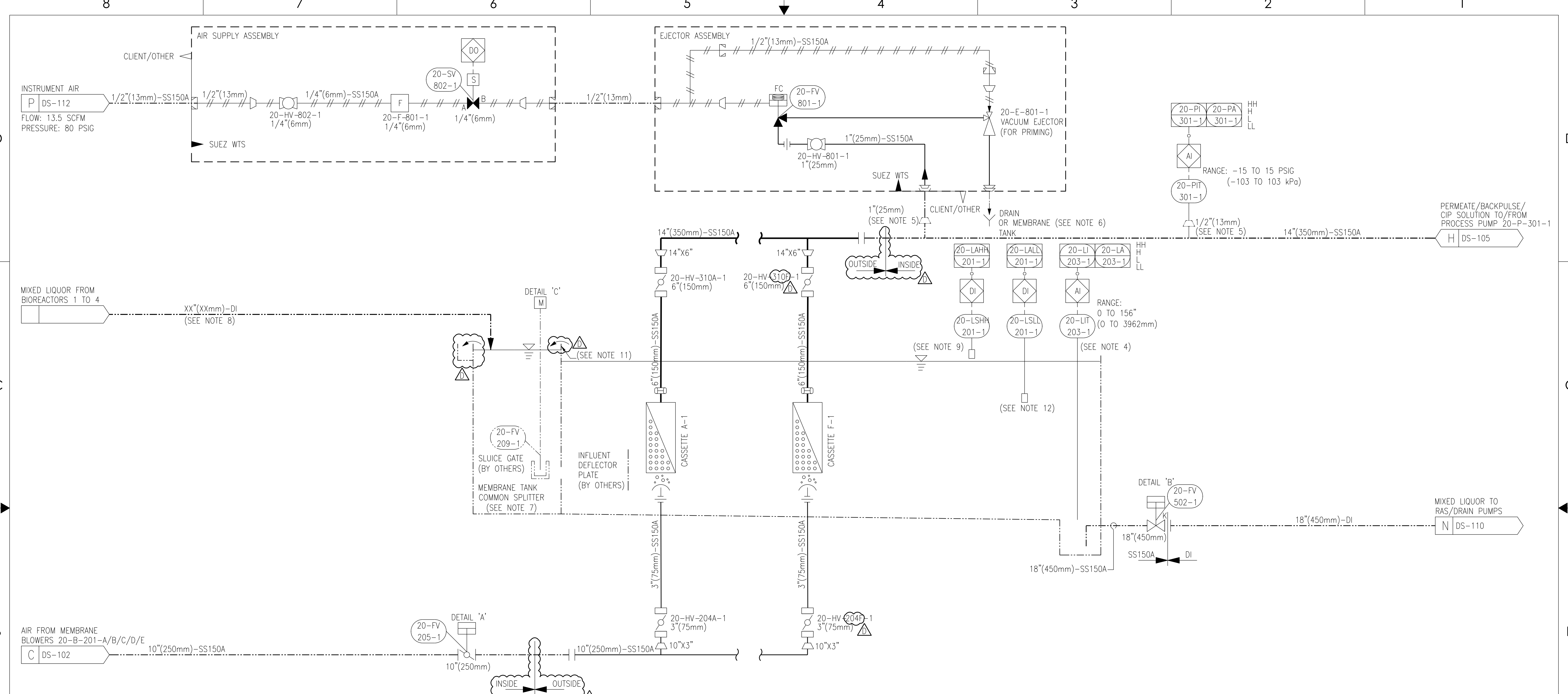
| MEMBRANE BLOWERS INFO | |
|----------------------------|-------------------------|
| GENERAL BLOWER INFO | |
| NO OF DUTY BLOWERS | 4 |
| NO OF STANDBY BLOWERS | 1 |
| TOTAL NO OF BLOWERS | 5 |
| TAG NUMBERS | 20-B-201-X |
| TYPE OF BLOWER | POSITIVE DISPLACEMENT |
| SOUND ENCLOSURE PROVIDED | YES |
| SPEED CONTROL | VFD |
| ELECTRIC MOTOR | TEFC, 60 HP AT 1800 RPM |
| VOLTAGE | 460 VAC / 3 ph / 60 Hz |
| SHEAVED BLOWER MAX SPEED | 3800 RPM |
| BLOWER VENDOR & MODEL | AERZEN, GM 50L DN150 |

| BLOWER DESIGN CONDITIONS | |
|---|-----------------------|
| MIN CAPACITY, AS SUPPLIED | 569 SCFM at 4.4 PSIG |
| MAX CAPACITY, AS SUPPLIED | 1138 SCFM at 5.5 PSIG |
| MIN CAPACITY, BUILDOUT | 707 SCFM at 4.4 PSIG |
| MAX CAPACITY, BUILDOUT | 1415 SCFM at 5.5 PSIG |
| MAX DISCHARGE TEMPERATURE | 82°C |
| PERCENT OF MOTOR/SHEAVED BLOWER MAX SPEED | 65% |

- NOTES:
- ALL DOTTED-LINE EQUIPMENT TO BE SUPPLIED BY OTHERS.
 - SYSTEM INTEGRATOR IS RESPONSIBLE FOR HOT AIR PIPE THERMO-INSULATION AS APPLICABLE.
 - BLOWER DISCHARGE FLEXIBLE SLEEVE.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-CLASSIFIED AREA (PER NFPA 820).
 - EQUIPMENT IS PROVIDED BY SUEZ (UNLESS OTHERWISE NOTED). INTERCONNECTING PIPING/WIRING AND INSTALLATION BY OTHERS.
 - VFD'S ARE SUPPLIED AND POWERED BY OTHERS, BUT CONTROLLED BY SUEZ PLC.

SUEZ WTS CONTROLLED DOCUMENT

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|-------------|-------------|----------|-----------|------|------|---|---------------------|--|--|----------|-----------|---|-----------------|--|--|----------|-----------|--|--|---|--|---|--|---|--|----------------|--|----------|--|-------------------------------|--|---|--|-------|-------------|-------------|-------|--|--------|--|--------|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>REV</td> <td>DESCRIPTION</td> <td>ECO</td> <td>DWN</td> <td>APPR</td> <td>DATE</td> </tr> <tr> <td>B</td> <td>ISSUED FOR APPROVAL</td> <td></td> <td></td> <td>BM DC FA</td> <td>06 APR 20</td> </tr> <tr> <td>A</td> <td>INITIAL RELEASE</td> <td></td> <td></td> <td>BM DC FA</td> <td>13 MAR 20</td> </tr> </table> | | REV | DESCRIPTION | ECO | DWN | APPR | DATE | B | ISSUED FOR APPROVAL | | | BM DC FA | 06 APR 20 | A | INITIAL RELEASE | | | BM DC FA | 13 MAR 20 | | | <p>CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)</p> | | <p>P&ID, MEMBRANE BLOWERS POSITIVE DISPLACEMENT</p> | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">DRAWING NUMBER</td> <td colspan="2">REVISION</td> </tr> <tr> <td colspan="2" style="text-align: center;">506357-WTS-PR-T02-8521-DS-102</td> <td colspan="2" style="text-align: center;">B</td> </tr> <tr> <td>REF.:</td> <td>PROJECT NO.</td> <td>DOC. OWNER:</td> <td>SHEET</td> </tr> <tr> <td></td> <td style="text-align: center;">506357</td> <td></td> <td style="text-align: center;">1 OF 1</td> </tr> </table> | | DRAWING NUMBER | | REVISION | | 506357-WTS-PR-T02-8521-DS-102 | | B | | REF.: | PROJECT NO. | DOC. OWNER: | SHEET | | 506357 | | 1 OF 1 |
| REV | DESCRIPTION | ECO | DWN | APPR | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | ISSUED FOR APPROVAL | | | BM DC FA | 06 APR 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | INITIAL RELEASE | | | BM DC FA | 13 MAR 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRAWING NUMBER | | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 506357-WTS-PR-T02-8521-DS-102 | | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REF.: | PROJECT NO. | DOC. OWNER: | SHEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 506357 | | 1 OF 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAST SAVED: Monday, April 6, 2020 10:31:47 PM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



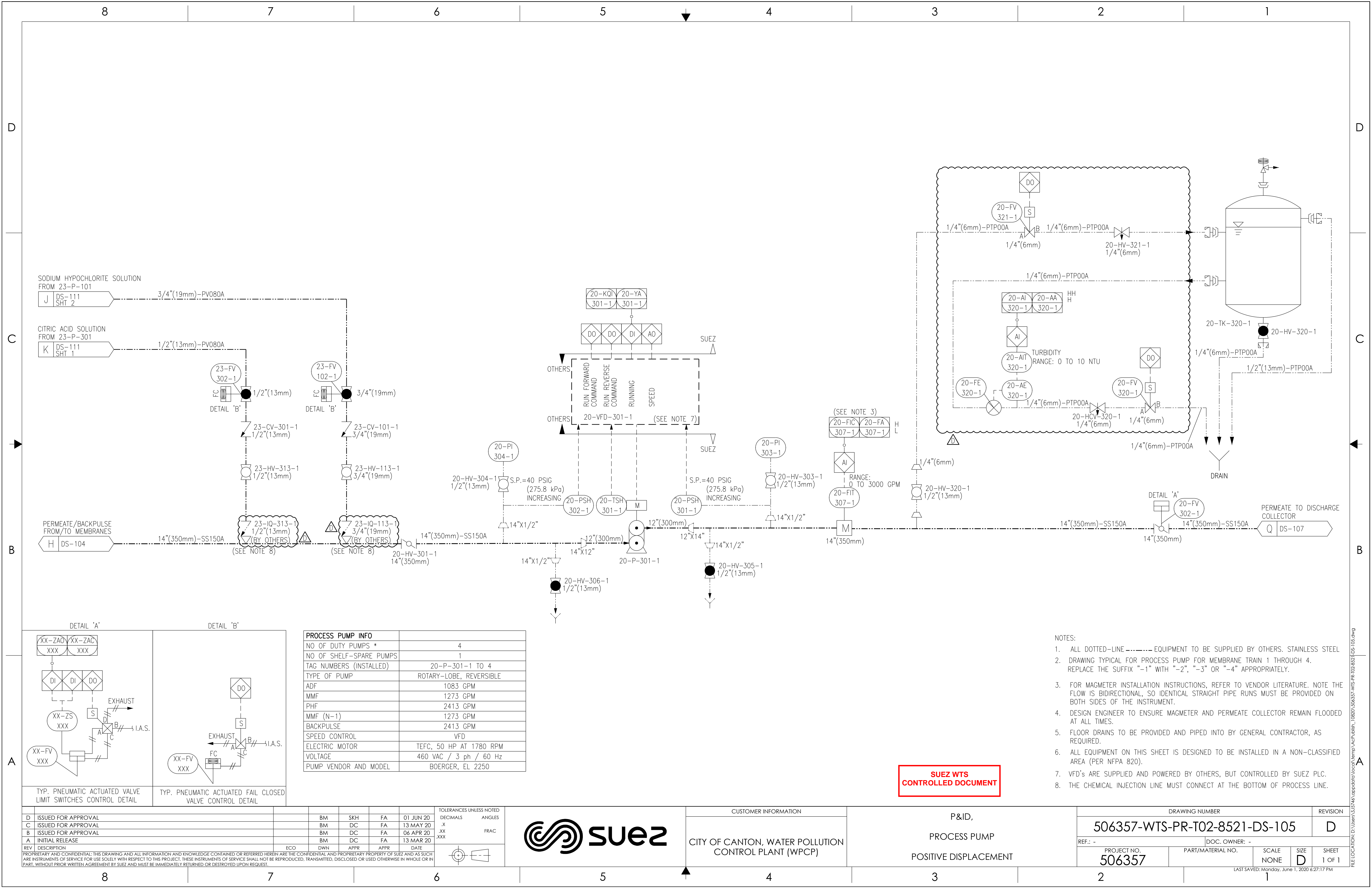
| MEMBRANE TANK DATA | | |
|-------------------------------|-------------|------|
| # OF TRAINS, PHASE 1 | 4 | |
| TAG NUMBERS | 20-TK-201-1 | |
| TANK MATERIAL | CONCRETE | |
| INTERNAL LENGTH | 556 | INCH |
| INTERNAL WIDTH | 96 | INCH |
| TOTAL DEPTH | 156 | INCH |
| MAX OPERATING LIQUID LEVEL | 116 | INCH |
| MIN OPERATING LIQUID LEVEL | 108 | INCH |
| TOP OF EMERGENCY WEIR ELEV. | 144 | INCH |
| CLEANING LEVEL | 95 | INCH |
| TOP OF FIBERS (LSL) ELEVATION | 92.3 | INCH |

| MEMBRANE DATA | |
|--|----------------|
| CASSETTE & MODULE SERIES | ZW500D -- LEAP |
| MODULE SURFACE AREA | 370 FT2 |
| MAX # OF MEMBRANE MODULES PER CASSETTE | 52 |
| # OF CASSETTE SPACES PER TANK | 7 |
| MAXIMUM # OF MODULES PER TANK | 364 |
| # OF ROWS OF CASSETTES PER TANK | 1 |
| # OF FULL CASSETTES | 5 |
| # OF FLEX CASSETTES | 1 |
| # OF MODULES IN FLEX CASSETTE | 32 |
| # OF EMPTY CASSETTE SPACES | 1 |
| TOTAL # OF MODULES INSTALLED PER TRAIN | 292 |
| TOTAL # OF MODULES INSTALLED PER PLANT | 1168 |
| SPARE SPACE | 19.8 |

- NOTES:
- ALL DOTTED-LINE EQUIPMENT BY OTHERS.
 - DRAWING TYPICAL FOR EVERY MEMBRANE TRAIN 1 THROUGH 4. WITH EXCEPTION OF COMMON CHANNELS. REPLACE THE SUFFIX "-1" WITH "-2", "-3" OR "-4" AS REQUIRED FOR OTHER TRAINS.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-CLASSIFIED AREA (PER NFPA 820).
 - LEVEL TRANSMITTER TO BE INSTALLED AS FAR AS POSSIBLE FROM PUMP SUCTION BUT STILL WITHIN DRAIN TRENCH AREA, ~2" (51 MM) ABOVE CONCRETE.
 - CONNECTION TO BE PROVIDED AT HIGHEST POINT ON PIPING BETWEEN PERMEATE HEADER AND PUMP.
 - AIR GAP IS REQUIRED ON EJECTOR DISCHARGE LINE EXHAUST TO MEMBRANE TANK OR DRAIN.
 - MEMBRANE TANK SPLITTER & CHANNEL IS COMMON FOR ALL TRAINS AND PROVIDING EVEN DISTRIBUTION.
 - THIS LINE CAN BE A CHANNEL/PIPE OR THE "BIOREACTOR" & "MEMBRANE TANK COMMON SPLITTER" WALLS CAN BE SHARED WITH THE WATER LEVEL BEING HYDRAULICALLY LINKED. LINE SIZE TO BE DETERMINED BY DESIGN ENGINEER.
 - LEVEL SWITCH IS PLACED 1 FT BELOW THE TOP OF THE TANK.
 - SOLID TANK COVERS ARE RECOMMENDED (TO BE SUPPLIED BY OTHERS).
 - EMERGENCY OVERFLOW WEIR AND SCUM REMOVAL BY OTHERS.
 - 20-LSLL-201-X TO BE INSTALLED JUST ABOVE THE TOP OF THE MEMBRANE FIBRES.

SUEZ WTS CONTROLLED DOCUMENT

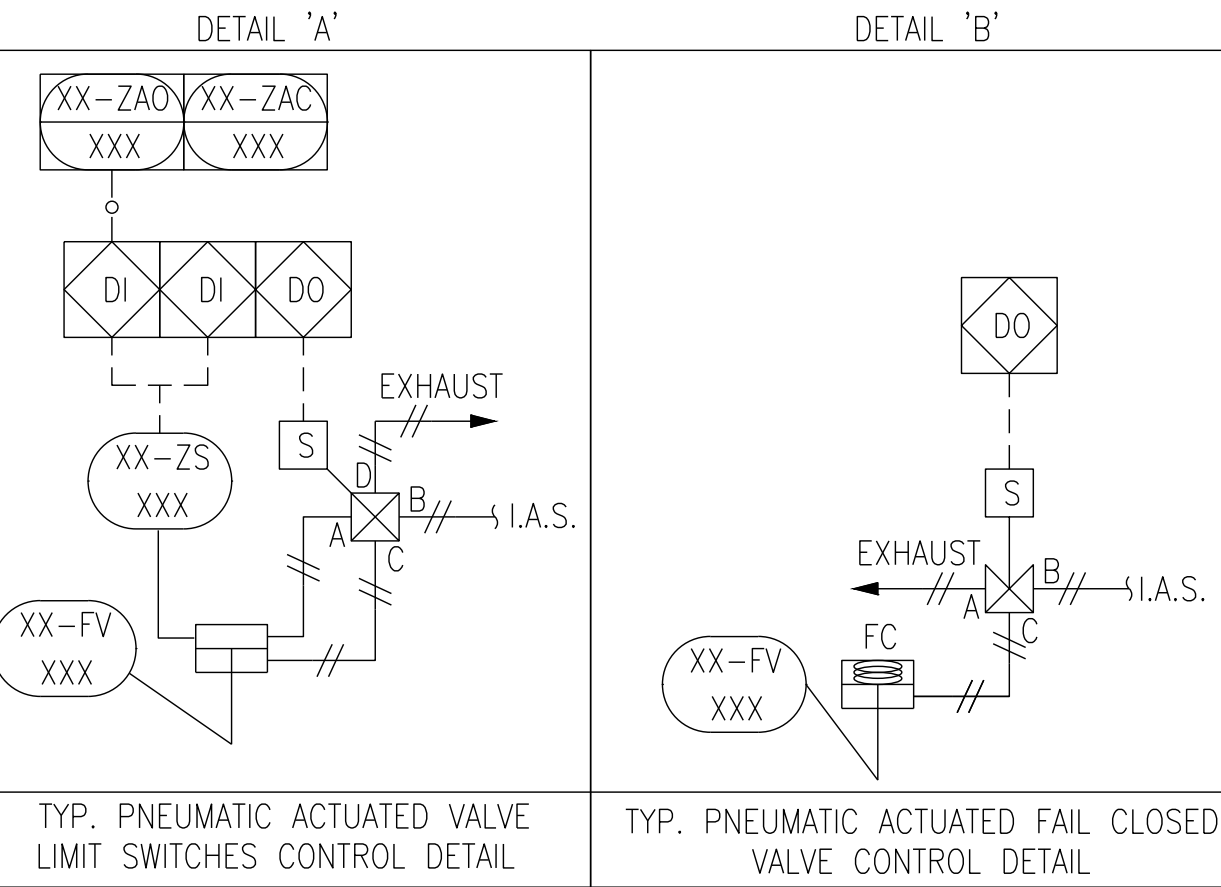
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|--|------------------------|----------|-----------------------|-------|-----------------------|-------|-------------------|-------|-----------------|------------------------|--|---|---------------------------------------|---|----------------|--|----------|-------------------------------|--|---|-------------|-------------------|-------|--------|--|------|------|-------|--|---|--------|--|
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| D ISSUED FOR APPROVAL | BM SKH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C ISSUED FOR APPROVAL | BM DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B ISSUED FOR APPROVAL | BM DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A INITIAL RELEASE | BM DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV DESCRIPTION | ECO DWN APPR APPR DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRAWING NUMBER | | REVISION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 506357-WTS-PR-T02-8521-DS-104 | | D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT NO. | PART/MATERIAL NO. | SCALE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 506357 | | NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIZE | SHEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | 1 OF 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



SODIUM HYPOCHLORITE SOLUTION FROM 23-P-101

CITRIC ACID SOLUTION FROM 23-P-301

PERMEATE/BACKPULSE FROM/TO MEMBRANES



| PROCESS PUMP INFO | |
|-------------------------|-------------------------|
| NO OF DUTY PUMPS * | 4 |
| NO OF SHELF-SPARE PUMPS | 1 |
| TAG NUMBERS (INSTALLED) | 20-P-301-1 TO 4 |
| TYPE OF PUMP | ROTARY-LOBE, REVERSIBLE |
| ADF | 1083 GPM |
| MMF | 1273 GPM |
| PHF | 2413 GPM |
| MMF (N-1) | 1273 GPM |
| BACKPULSE | 2413 GPM |
| SPEED CONTROL | VFD |
| ELECTRIC MOTOR | TEFC, 50 HP AT 1780 RPM |
| VOLTAGE | 460 VAC / 3 ph / 60 Hz |
| PUMP VENDOR AND MODEL | BOERGER, EL 2250 |

- NOTES:
- ALL DOTTED-LINE-----EQUIPMENT TO BE SUPPLIED BY OTHERS. STAINLESS STEEL
 - DRAWING TYPICAL FOR PROCESS PUMP FOR MEMBRANE TRAIN 1 THROUGH 4. REPLACE THE SUFFIX "-1" WITH "-2", "-3" OR "-4" APPROPRIATELY.
 - FOR MAGMETER INSTALLATION INSTRUCTIONS, REFER TO VENDOR LITERATURE. NOTE THE FLOW IS BIDIRECTIONAL, SO IDENTICAL STRAIGHT PIPE RUNS MUST BE PROVIDED ON BOTH SIDES OF THE INSTRUMENT.
 - DESIGN ENGINEER TO ENSURE MAGMETER AND PERMEATE COLLECTOR REMAIN FLOODED AT ALL TIMES.
 - FLOOR DRAINS TO BE PROVIDED AND PIPED INTO BY GENERAL CONTRACTOR, AS REQUIRED.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
 - VFD's ARE SUPPLIED AND POWERED BY OTHERS, BUT CONTROLLED BY SUEZ PLC.
 - THE CHEMICAL INJECTION LINE MUST CONNECT AT THE BOTTOM OF PROCESS LINE.

SUEZ WTS CONTROLLED DOCUMENT

| | | | | | |
|-----|---------------------|-----|-----|------|-----------|
| REV | DESCRIPTION | ECO | DWN | APPR | DATE |
| D | ISSUED FOR APPROVAL | BM | SKH | FA | 01 JUN 20 |
| C | ISSUED FOR APPROVAL | BM | DC | FA | 13 MAY 20 |
| B | ISSUED FOR APPROVAL | BM | DC | FA | 06 APR 20 |
| A | INITIAL RELEASE | BM | DC | FA | 13 MAR 20 |

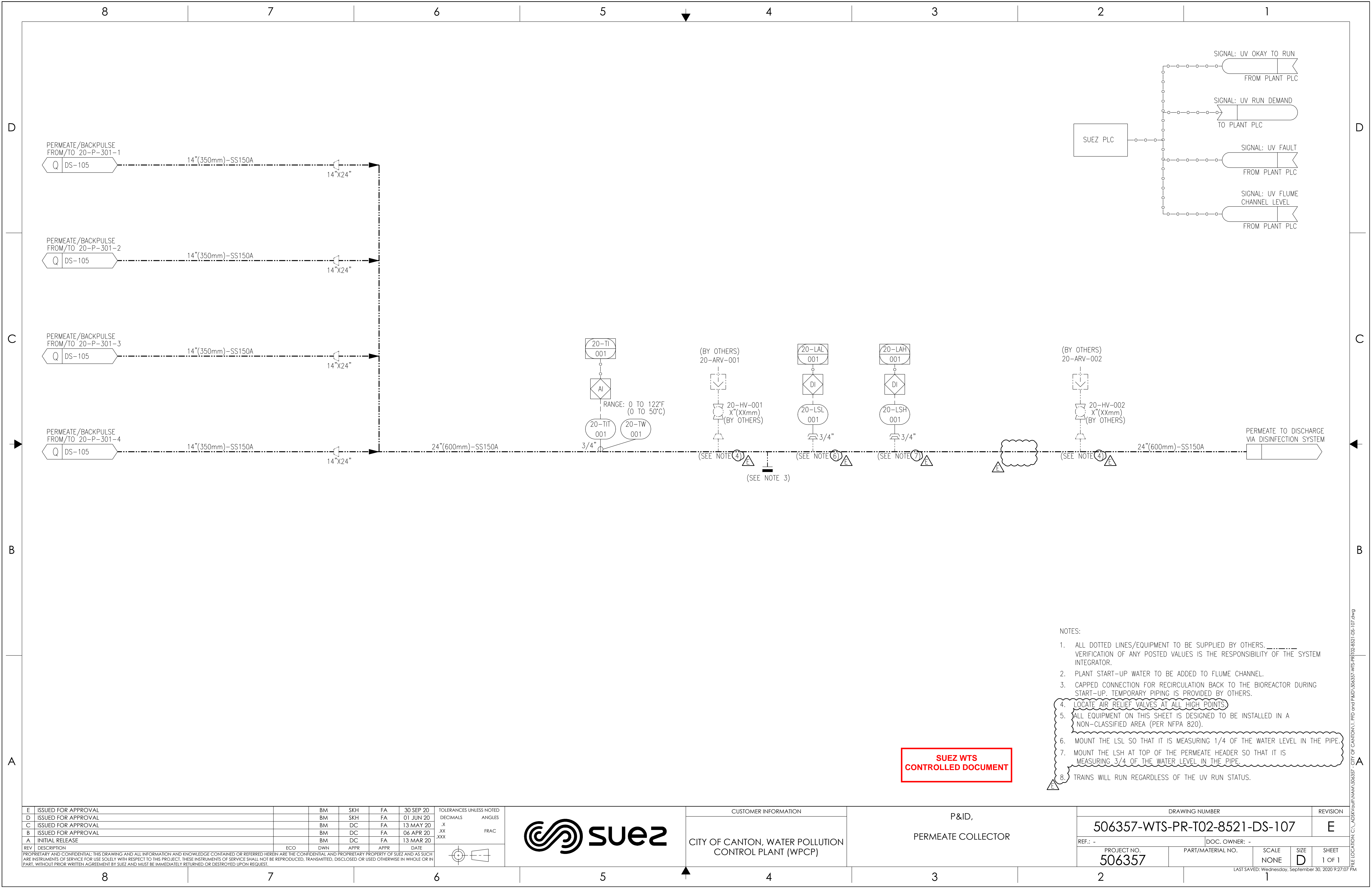
| | | |
|-------------------------|----------|--------|
| TOLERANCES UNLESS NOTED | DECIMALS | ANGLES |
| | X | |
| | .XX | |
| | .XXX | FRAC |



CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
PROCESS PUMP
POSITIVE DISPLACEMENT

| | | | |
|-------------------------------|-------------------|----------|----------|
| DRAWING NUMBER | | REVISION | |
| 506357-WTS-PR-T02-8521-DS-105 | | D | |
| PROJECT NO. | PART/MATERIAL NO. | SCALE | SHEET |
| 506357 | | NONE | D 1 OF 1 |



- NOTES:
- ALL DOTTED LINES/EQUIPMENT TO BE SUPPLIED BY OTHERS. _____ VERIFICATION OF ANY POSTED VALUES IS THE RESPONSIBILITY OF THE SYSTEM INTEGRATOR.
 - PLANT START-UP WATER TO BE ADDED TO FLUME CHANNEL.
 - CAPPED CONNECTION FOR RECIRCULATION BACK TO THE BIOREACTOR DURING START-UP. TEMPORARY PIPING IS PROVIDED BY OTHERS.
 - LOCATE AIR RELIEF VALVES AT ALL HIGH POINTS
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
 - MOUNT THE LSL SO THAT IT IS MEASURING 1/4 OF THE WATER LEVEL IN THE PIPE.
 - MOUNT THE LSH AT TOP OF THE PERMEATE HEADER SO THAT IT IS MEASURING 3/4 OF THE WATER LEVEL IN THE PIPE.
 - TRAINS WILL RUN REGARDLESS OF THE UV RUN STATUS.

**SUEZ WTS
CONTROLLED DOCUMENT**

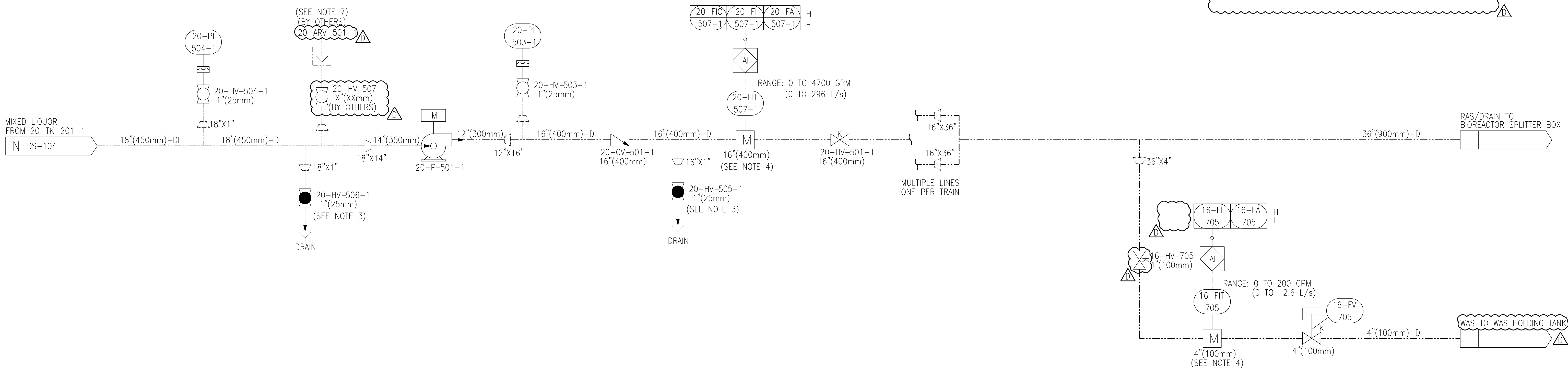
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|-----|---------------------|-----|-----|------|------|-----------|
| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
| E | ISSUED FOR APPROVAL | | | | | 30 SEP 20 |
| D | ISSUED FOR APPROVAL | BM | SKH | FA | | 01 JUN 20 |
| C | ISSUED FOR APPROVAL | BM | DC | FA | | 13 MAY 20 |
| B | ISSUED FOR APPROVAL | BM | DC | FA | | 06 APR 20 |
| A | INITIAL RELEASE | BM | DC | FA | | 13 MAR 20 |



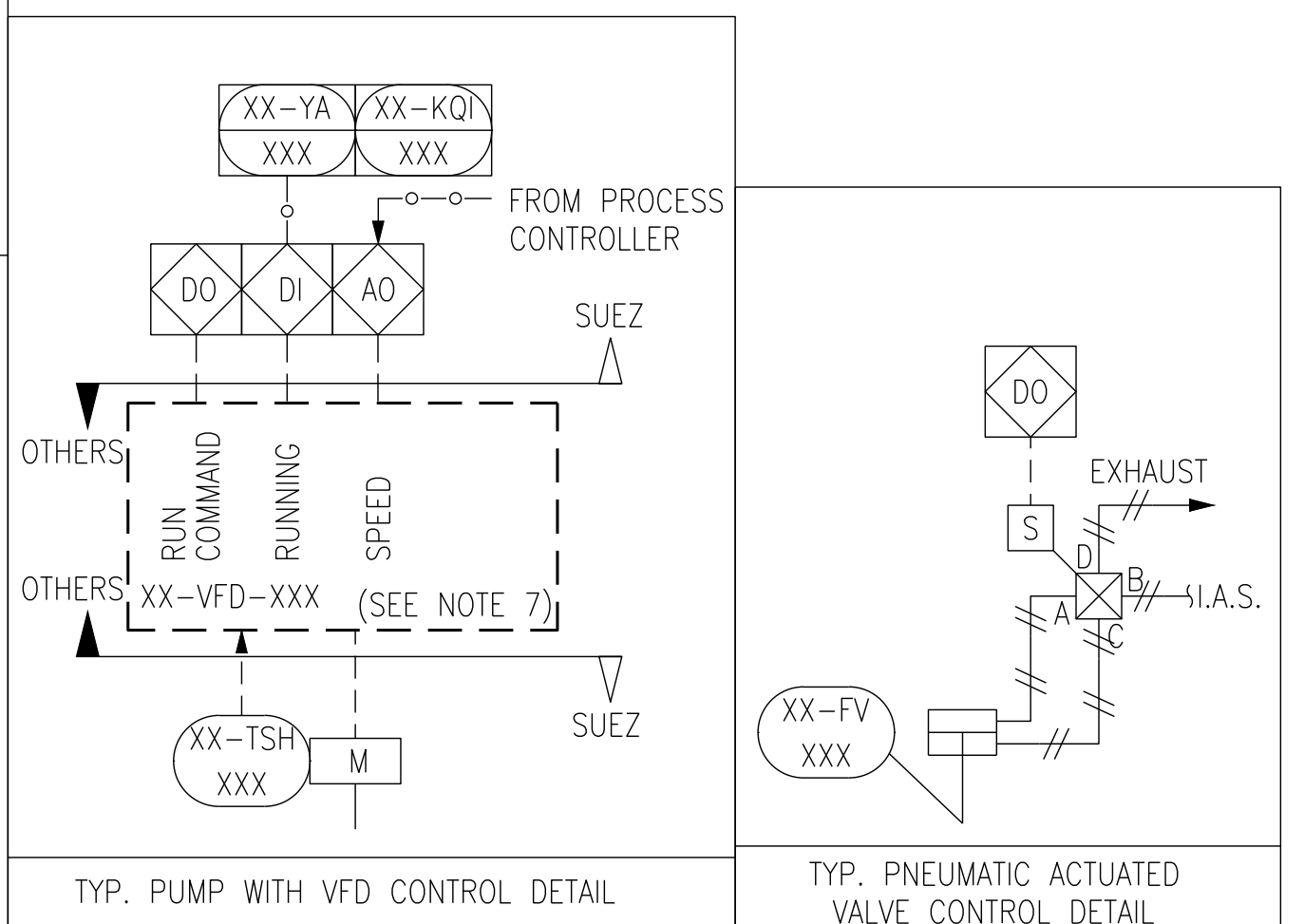
CUSTOMER INFORMATION
CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
PERMEATE COLLECTOR

| | | | |
|-------------------------------|-------------|---------------|-------------------|
| DRAWING NUMBER | | REVISION | |
| 506357-WTS-PR-T02-8521-DS-107 | | E | |
| REF: - | PROJECT NO. | DOC. OWNER: - | PART/MATERIAL NO. |
| | 506357 | | |
| SCALE | SIZE | SHEET | |
| NONE | D | 1 OF 1 | |



| RAS/DRAIN PUMP INFO | |
|--|--------------------------|
| NO OF DUTY PUMPS * | 4 |
| NO OF SHELF-SPARE PUMPS | 1 |
| TAG NUMBERS (INSTALLED) | 20-P-501-1/2/3/4 |
| TYPE OF PUMP | END-SUCTION, CENTRIFUGAL |
| ADF | 3472 GPM |
| MMF | 4167 GPM |
| PHF | 4167 GPM |
| MMF (N-1) | 4167 GPM |
| DESIGN DRAIN CAPACITY | 1715 GPM |
| SPEED CONTROL | VFD |
| ELECTRIC MOTOR | 50 HP AT 880 RPM |
| VOLTAGE | 460 VAC / 3 ph / 60 Hz |
| PUMP VENDOR AND MODEL | SULZER, APT43-12 |
| * ONE DEDICATED PUMP PER TRAIN IS USED | |



- NOTES:
- ALL DOTTED-LINE EQUIPMENT BY OTHERS.
 - DRAWING TYPICAL FOR RAS PUMP FOR MEMBRANE TRAIN THROUGH 4. REPLACE THE SUFFIX "-1" WITH "-2", "-3" OR "-4" APPROPRIATELY.
 - FLOOR DRAINS TO BE PROVIDED AND PIPED INTO BY GENERAL CONTRACTOR, AS REQUIRED.
 - FOLLOW MANUFACTURER'S RECOMMENDATION REGARDING INSTALLATION REQUIREMENTS, INCLUDING NUMBER OF STRAIGHT PIPE RUNS. PIPING MUST BE ARRANGED SO MAG IS ALWAYS FLOODED.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
 - VFD's ARE SUPPLIED AND POWERED BY OTHERS, BUT CONTROLLED BY SUEZ PLC.
 - AIR RELIEF VALVE SHOULD BE INSTALLED AT THE HIGH POINT OF SUCTION PIPING TO PRIME SYSTEM.

**SUEZ WTS
CONTROLLED DOCUMENT**

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|------|-----------|
| D | ISSUED FOR APPROVAL | | | | | 01 JUN 20 |
| C | ISSUED FOR APPROVAL | | | | | 13 MAY 20 |
| B | ISSUED FOR APPROVAL | | | | | 06 APR 20 |
| A | INITIAL RELEASE | | | | | 13 MAR 20 |

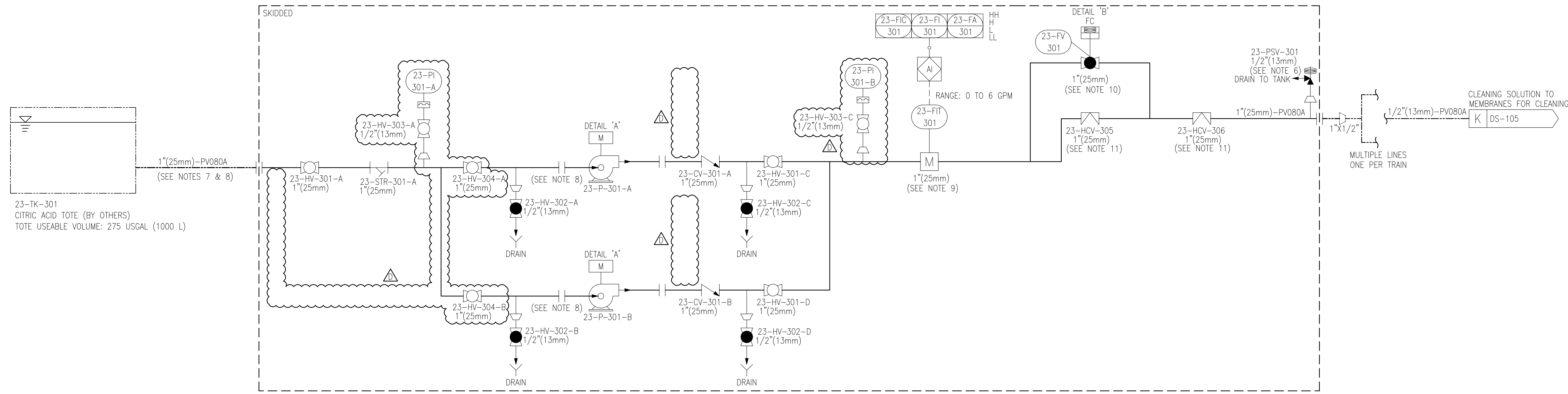
| TOLERANCES UNLESS NOTED | DECIMALS | ANGLES |
|-------------------------|----------|--------|
| | X | |
| | .XX | |
| | .XXX | |



CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
RAS/DRAIN PUMPS

| DRAWING NUMBER | | REVISION |
|-------------------------------|-------------------|-----------------|
| 506357-WTS-PR-T02-8521-DS-110 | | D |
| REF: - | DOC. OWNER: - | |
| PROJECT NO. 506357 | PART/MATERIAL NO. | SCALE NONE |
| | SIZE D | SHEET 1 OF 1 |



23-TK-301
CITRIC ACID TOTE (BY OTHERS)
TOTE USEABLE VOLUME: 275 USGAL (1000 L)

1"(25mm)-PV080A
(SEE NOTES 7 & 8)

(SEE NOTE 8)

(SEE NOTE 8)

RANGE: 0 TO 6 GPM

1"(25mm)
(SEE NOTE 10)

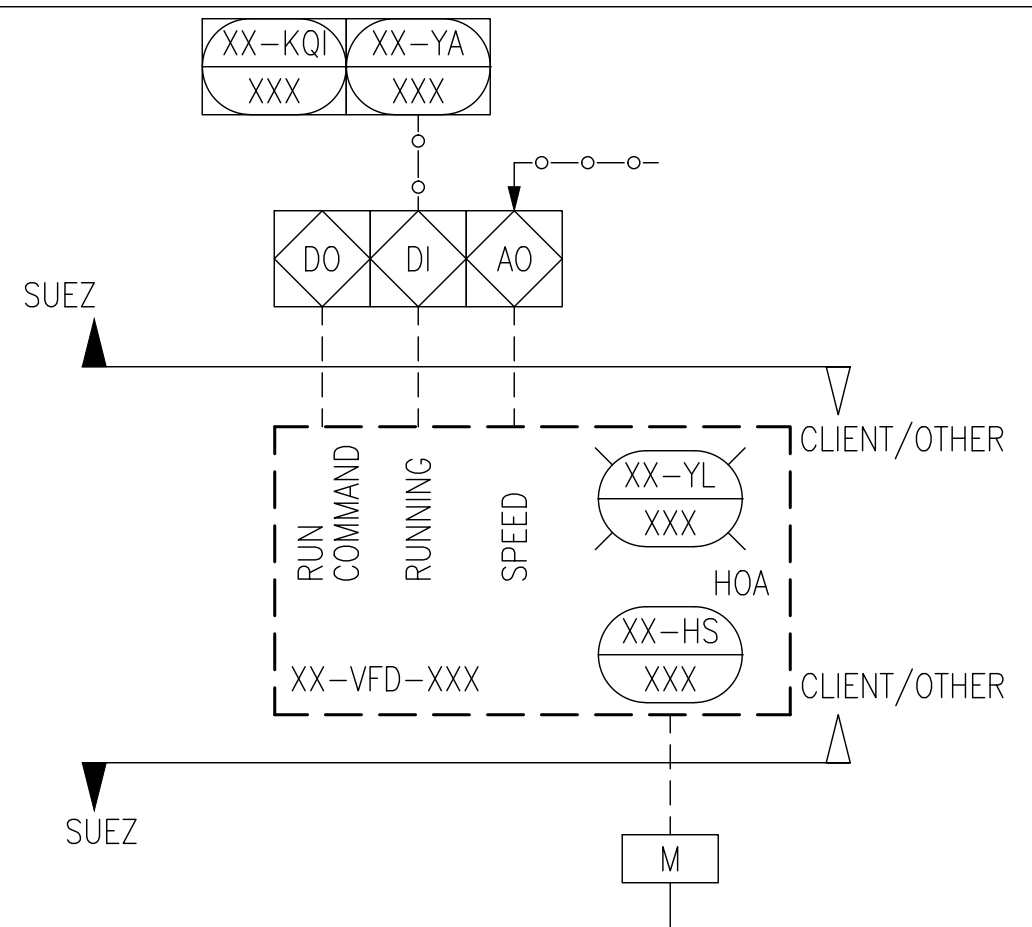
1"(25mm)
(SEE NOTE 11)

1"(25mm)
(SEE NOTE 11)

1/2"(13mm)-PV080A
CLEANING SOLUTION TO
MEMBRANES FOR CLEANING

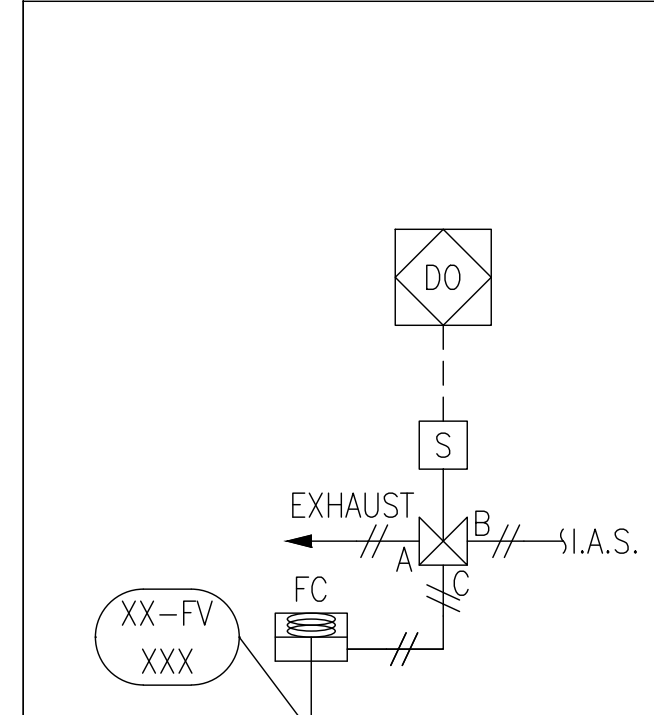
MULTIPLE LINES
ONE PER TRAIN

DETAIL 'A'



TYP. DETAIL FOR PUMP CONTROL WITH VFD FOR 23-P-301-A/B

DETAIL 'B'



TYP. PNEUMATIC ACTUATED FAIL CLOSED VALVE CONTROL DETAIL

| CHEMICAL PUMP DATA | |
|---------------------|------------------------|
| TAG NUMBER | 23-P-301-A/B |
| CHEMICAL TYPE | CITRIC ACID |
| DUTY/STANDBY PUMP | 1+1 |
| DESIGN PRESSURE | 25 PSI |
| PUMP VENDOR & MODEL | FINISH THOMPSON, DB9V |
| TYPE OF PUMP | MAGNETIC DRIVE |
| SPEED CONTROL | VFD |
| ELECTRIC MOTOR | 1.0 HP @ 3450 RPM |
| VOLTAGE | 460 VAC / 3 ph / 60 Hz |

| | DESIGN FLOWS | BUILDOUT |
|----|--------------|----------|
| MC | 2.90 GPM | 3.62 GPM |
| RC | 3.20 GPM | 3.98 GPM |

NOTES:

- ALL DOTTED LINES/EQUIPMENT BY OTHERS.....
- DRAINS FROM SODIUM HYPOCHLORITE SOLUTION SHOULD NOT BE MIXED WITH DRAINS FROM ANY ACIDS, SINCE POISONOUS GASES MAY BE CREATED.
- SECONDARY CONTAINMENT IF REQUIRED IS BY OTHERS.
- ALL REQUIRED TANK PENETRATIONS FOR CONNECTIONS AND MOUNTING OF EQUIPMENT IS BY OTHERS.
- ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
- PRESSURE RELIEF VALVE FOR OFF-GASSING PURPOSE.
- BOTTOM CONNECTION FROM THE TANK IS MANDATORY.
- FLOODED SUCTION SET-UP REQUIRED FOR PUMP OPERATION.
- REFER TO MANUFACTURER'S I&O MANUAL FOR PIPING AND INSTALLATION REQUIREMENTS.
- VALVE TO OPEN ONLY FOR RECOVERY CLEAN PROCESS.
- 23-HCV-305 TO BE ADJUSTED FOR MAINTENANCE CLEAN FLOW. 23-HCV-306 TO BE ADJUSTED FOR RECOVERY CLEAN FLOW.

**SUEZ WTS
CONTROLLED DOCUMENT**

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|------|-----------|
| D | ISSUED FOR APPROVAL | | | | | 26 AUG 20 |
| C | ISSUED FOR APPROVAL | KBK | SKH | FA | | 01 JUN 20 |
| B | ISSUED FOR APPROVAL | BM | DC | FA | | 06 APR 20 |
| A | INITIAL RELEASE | BM | DC | FA | | 13 MAR 20 |

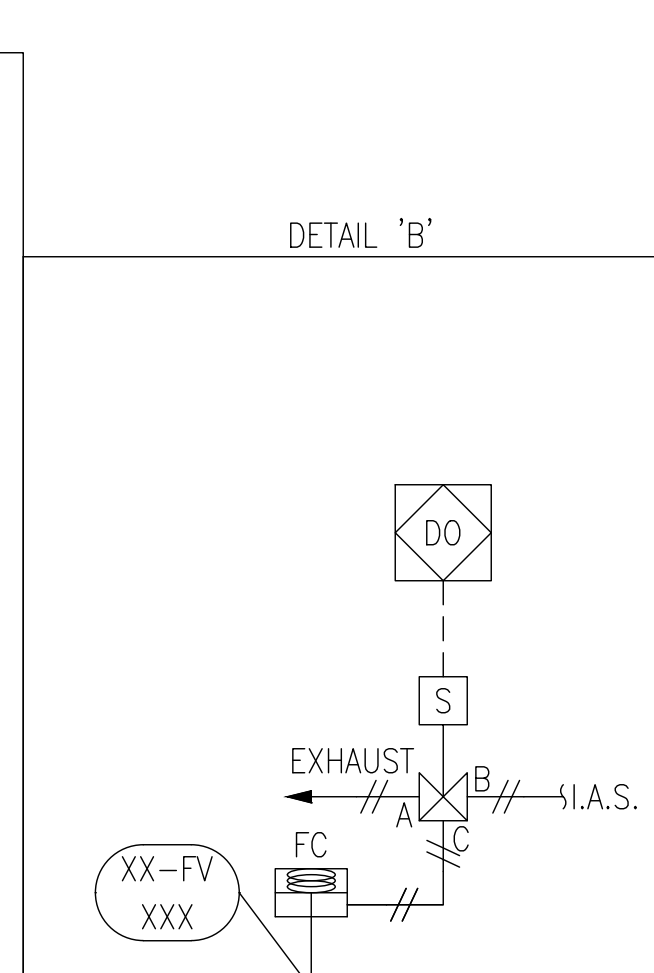
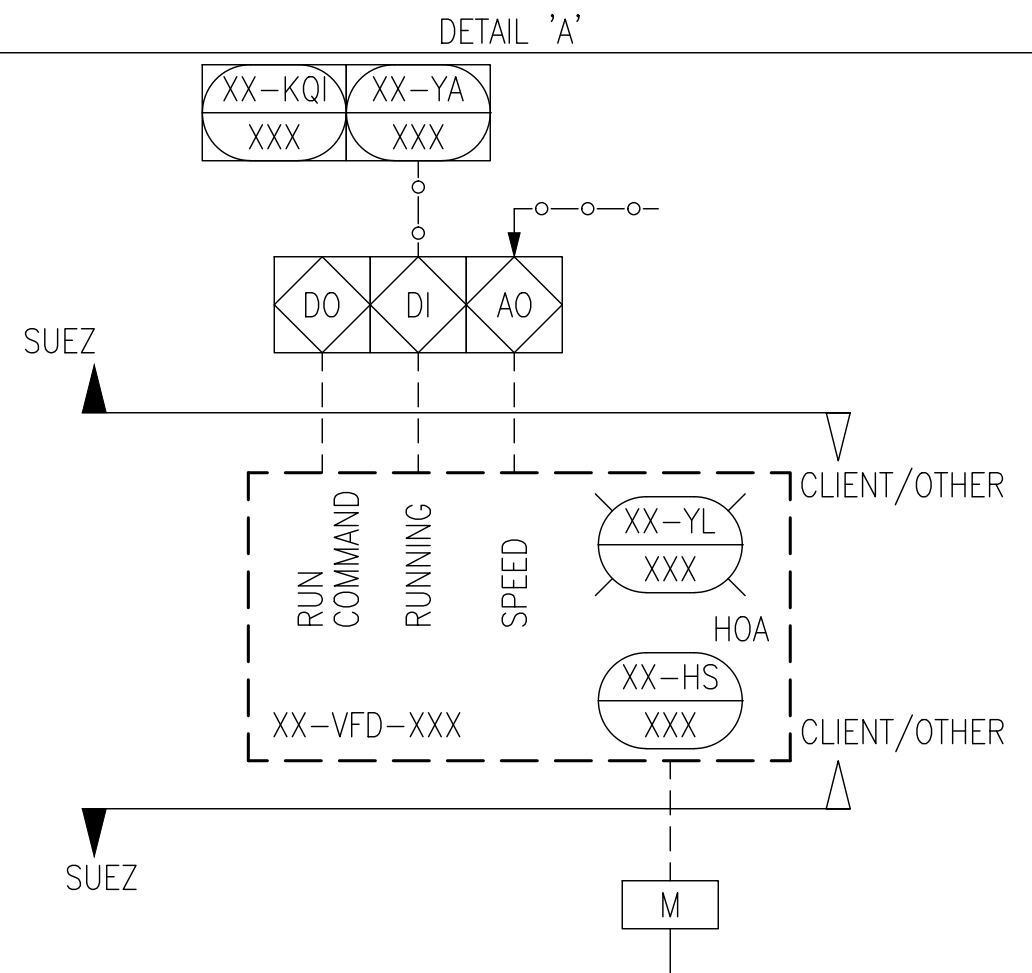
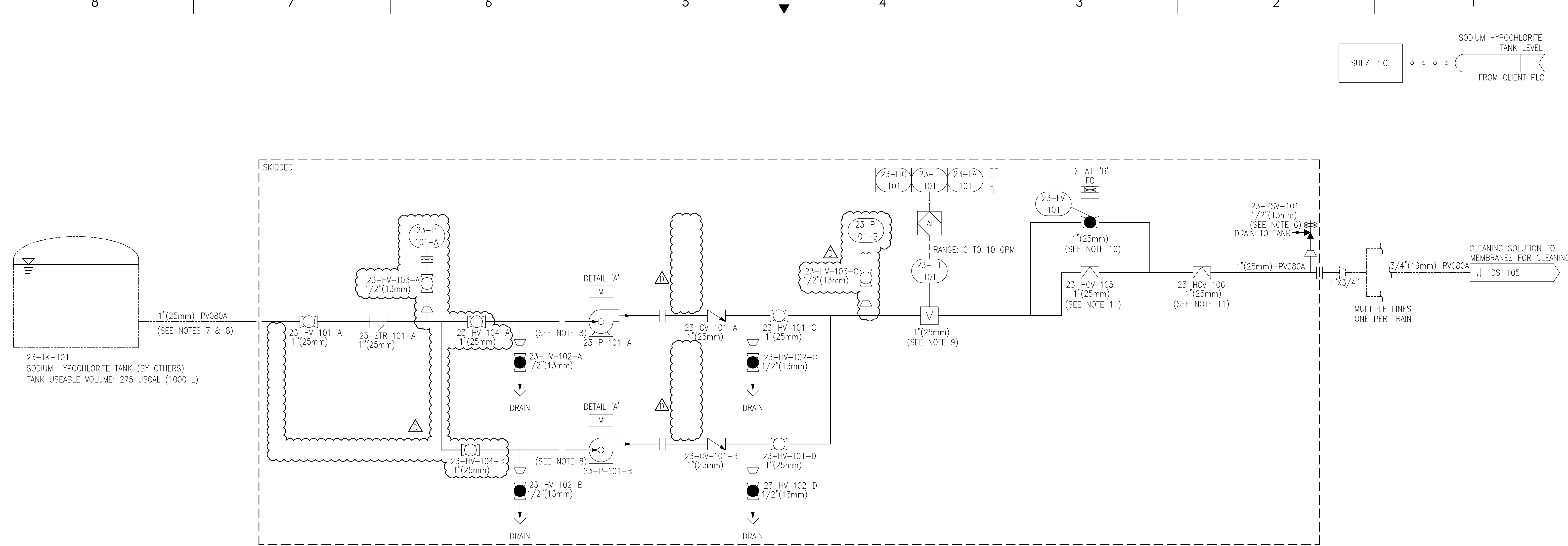
| TOLERANCES UNLESS NOTED | |
|-------------------------|-----|
| DECIMALS | .X |
| ANGLES | .XX |
| FRAC | XXX |



CUSTOMER INFORMATION
CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
CHEMICAL CLEANING SYSTEM
CITRIC ACID

| DRAWING NUMBER | | | | | REVISION |
|-------------------------------|-------------|-------------------|-------|------|----------|
| 506357-WTS-PR-T02-8521-DS-111 | | | | | D |
| REF.: | PROJECT NO. | PART/MATERIAL NO. | SCALE | SIZE | SHEET |
| - | 506357 | | NONE | D | 1 OF 2 |



| CHEMICAL PUMP DATA | |
|---------------------|------------------------|
| TAG NUMBER | 23-P-101-A/B |
| CHEMICAL TYPE | SODIUM HYPOCHLORITE |
| DUTY/STANDBY PUMP | 1+1 |
| DESIGN PRESSURE | 25 PSI |
| PUMP VENDOR & MODEL | FINISH THOMPSON, DB9V |
| TYPE OF PUMP | MAGNETIC DRIVE |
| SPEED CONTROL | VFD |
| ELECTRIC MOTOR | 1.0 HP @ 3450 RPM |
| VOLATGE | 460 VAC / 3 ph / 60 Hz |

| | DESIGN FLOWS | BUILDOUT |
|----|--------------|----------|
| MC | 1.20 GPM | 1.50 GPM |
| RC | 6.63 GPM | 8.26 GPM |

- NOTES:
- ALL DOTTED LINES/EQUIPMENT BY OTHERS.
 - DRAINS FROM SODIUM HYPOCHLORITE SOLUTION SHOULD NOT BE MIXED WITH DRAINS FROM ANY ACIDS, SINCE POISONOUS GASES MAY BE CREATED.
 - SECONDARY CONTAINMENT IF REQUIRED IS BY OTHERS.
 - ALL REQUIRED TANK PENETRATIONS FOR CONNECTIONS AND MOUNTING OF EQUIPMENT IS BY OTHERS.
 - ALL EQUIPMENT ON THIS SHEET IS DESIGNED TO BE INSTALLED IN A NON-Classified AREA (PER NFPA 820).
 - PRESSURE RELIEF VALVE FOR OFF-GASSING PURPOSE.
 - BOTTOM CONNECTION FROM THE TANK IS MANDATORY.
 - FLOODED SUCTION SET-UP REQUIRED FOR PUMP OPERATION.
 - REFER TO MANUFACTURER'S I&O MANUAL FOR PIPING AND INSTALLATION REQUIREMENTS.
 - VALVE TO OPEN ONLY FOR RECOVERY CLEAN PROCESS.
 - 23-HCV-105 TO BE ADJUSTED FOR MAINTENANCE CLEAN FLOW. 23-HCV-106 TO BE ADJUSTED FOR RECOVERY CLEAN FLOW.

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|------|-----------|
| D | ISSUED FOR APPROVAL | | | KBK | SKH | 26 AUG 20 |
| C | ISSUED FOR APPROVAL | | | BM | SKH | 01 JUN 20 |
| B | ISSUED FOR APPROVAL | | | BM | DC | 06 APR 20 |
| A | INITIAL RELEASE | | | BM | DC | 13 MAR 20 |

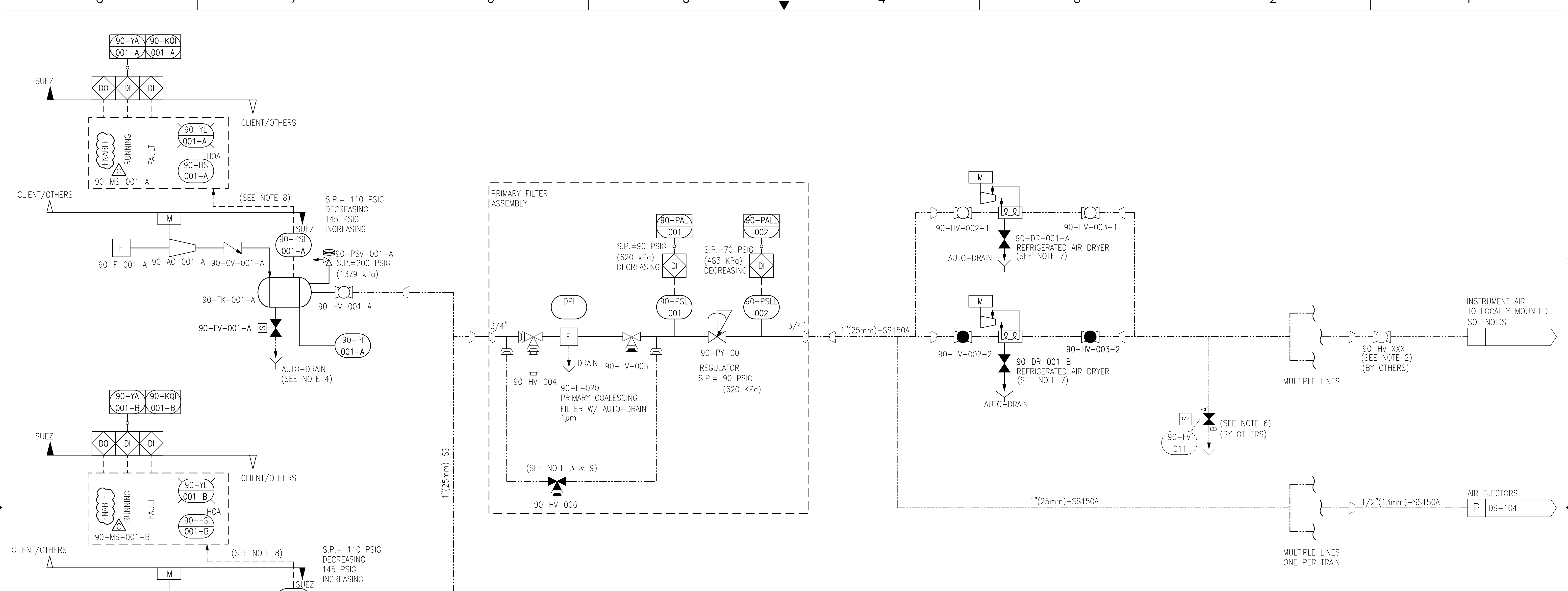
| TOLERANCES UNLESS NOTED |
|-------------------------|
| DECIMALS |
| ANGLES |
| FRAC |



CUSTOMER INFORMATION
CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
CHEMICAL CLEANING SYSTEM
SODIUM HYPOCHLORITE

| DRAWING NUMBER | | REVISION | |
|-------------------------------|-------------|-------------------|--------|
| 506357-WTS-PR-T02-8521-DS-111 | | D | |
| REF.: | PROJECT NO. | DOC. OWNER: | SCALE |
| | 506357 | | NONE |
| | | PART/MATERIAL NO. | SIZE |
| | | | D |
| | | SCALE | SHEET |
| | | NONE | 2 OF 2 |



| GENERAL COMPRESSOR INFO | |
|----------------------------------|--------------------------|
| NO OF DUTY COMPRESSORS | 1 |
| NO OF STANDBY COMPRESSORS | 1 |
| TOTAL NO OF AIR RECEIVER TANK | 2 |
| TAG NUMBER FOR COMPRESSOR | 90-AC-001-A/B |
| TAG NUMBER FOR AIR RECEIVER TANK | 90-TK-001-A/B |
| TYPE OF COMPRESSORS | ROTARY VANE |
| AIR RECEIVER VOLUME PER TANK | 120 US GAL |
| SPEED CONTROL | NO |
| ELECTRIC MOTOR | TEFC, 7.5 HP AT 1800 RPM |
| VOLTAGE | 460 VAC / 3 ph / 60 Hz |
| MODEL | GARDNER DENVER, VR05 |

| FILTER DATA | |
|-------------|---|
| TAG NUMBERS | 90-F-020 |
| FILTER TYPE | 100% PRIMARY COALESCING FILTER WITH AUTODRAIN |
| FILTER SIZE | 1 μm |

| AIR DRYER DATA | |
|----------------|------------------------|
| TAG NUMBERS | 90-DR-001-A/B |
| DRYER TYPE | REFRIGERATED |
| DRYER CAPACITY | 25 CFM |
| ELECTRIC INFO | 120 VAC / 1 ph / 60 Hz |

- NOTES:
1. ALL DOTTED LINES/EQUIPMENT BY OTHERS.
 2. MULTIPLE LINES WITH AT LEAST 1 ISOLATION VALVE PER TRAIN. VALVES SUPPLIED BY OTHERS.
 3. HANDLE FOR BY PASS TO BE REMOVED OR VALVE LOCKED IN CLOSED POSITION.
 4. AUTO-DRAIN PLUGS INTO LOCAL 120 VAC POWER OUTLET NOT CONTROLLED BY PLC.
 5. TIMED DRAIN VALVES TO BE LOCATED AT ANY LOW POINTS IN PIPING WHERE MOISTURE MAY ACCUMULATE. VALVES BY OTHERS.
 6. PRESSURE RELIEF AND PRESSURE REGULATING VALVES TO BE SET IN THE FIELD BY SUEZ FSR.
 7. ONLY ONE DRYER TO OPERATE AT A TIME AND TO BE ROTATED MANUALLY ON A WEEKLY BASIS.
 8. CONTRACTOR TO WIRE AIR COMPRESSOR PRESSURE SWITCH TO MCC. SUEZ FSR TO CONFIRM DURING COMMISSIONING.
 9. REFER TO VENDOR ASSEMBLY DRAWING FOR MORE DETAILS.

SUEZ WTS
CONTROLLED DOCUMENT

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|------|------|
| C | AS BUILT | | | BM | DC | FA |
| B | ISSUED FOR APPROVAL | | | BM | DC | FA |
| A | INITIAL RELEASE | | | BM | DC | FA |

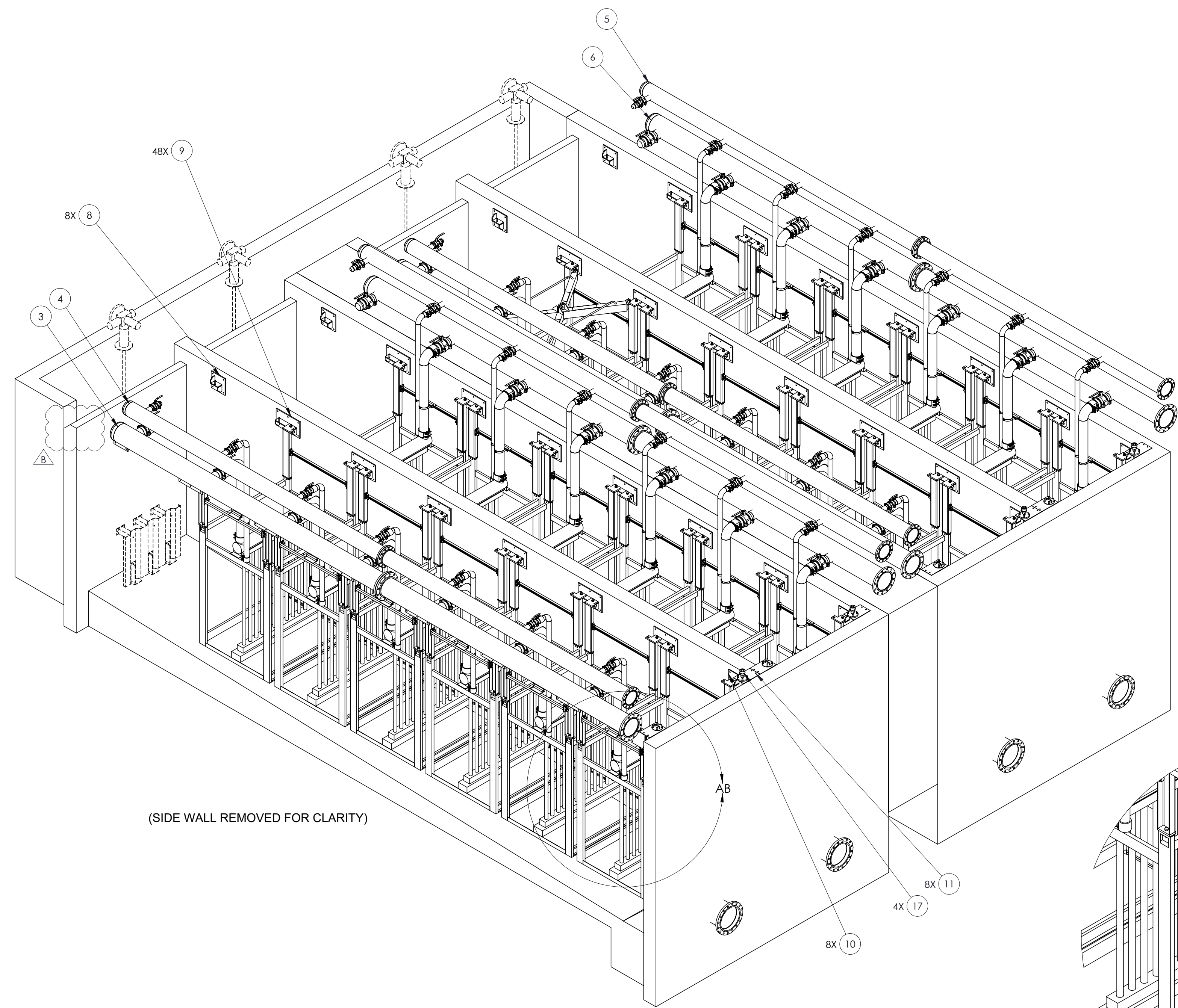
| TOLERANCES UNLESS NOTED | |
|-------------------------|--------|
| DECIMALS | ANGLES |
| .XX | XXX |
| .XXX | XXXX |



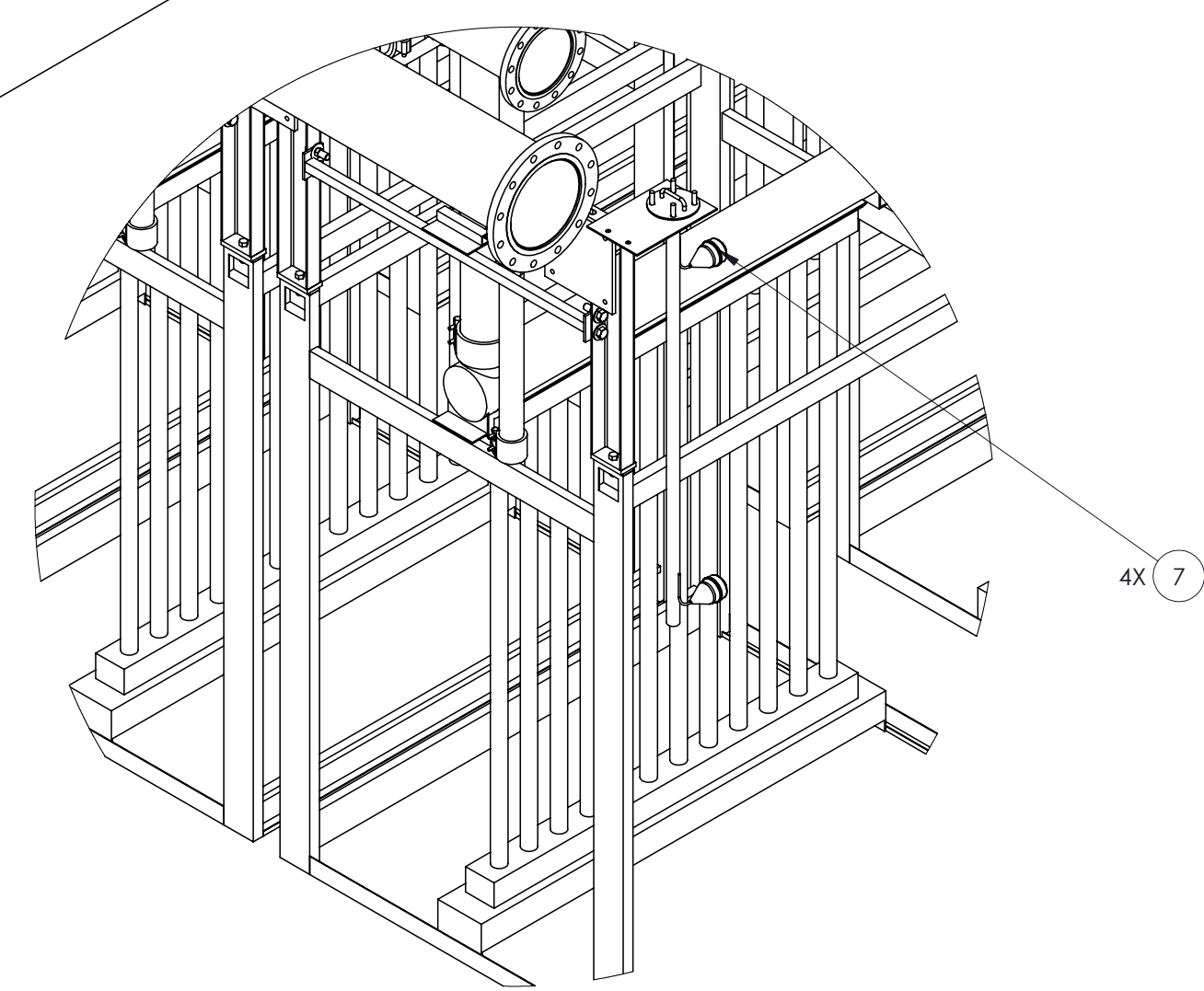
CITY OF CANTON, WATER POLLUTION CONTROL PLANT (WPCP)

P&ID,
AIR COMPRESSOR & ASSOC. EQUIPMENT

| DRAWING NUMBER | | REVISION |
|-------------------------------|-------------------|----------|
| 506357-WTS-PR-T02-8521-DS-112 | | C |
| PROJECT NO. | PART/MATERIAL NO. | SHEET |
| 506357 | | 1 OF 1 |



(SIDE WALL REMOVED FOR CLARITY)



SIDE WALL REMOVED FOR CLARITY

DETAIL AB
SCALE 1 : 25

| EQUIPMENT & PLUMBING TABLE | | | | |
|----------------------------|------|----------------|---|-----|
| ITEM | QTY. | SAP | DESCRIPTION | U/M |
| 1 | 24 | 506357-PP-01 | PLMB-PERM.SS150A,6.00.DROP LEG | EA |
| 2 | 24 | 506357-PP-02 | PLMB-AIR.SS150A,3.00, DROP LEG | EA |
| 3 | 2 | 506357-PP-03 | PLMB-PERMEATE.SS150A,14.0X6.0 | EA |
| 4 | 2 | 506357-PP-04 | PLMB-AIR.SS150A,10.00X3.00 | EA |
| 5 | 2 | 506357-PP-05 | PLMB-AIR.SS150A,10.00X3.00 | EA |
| 6 | 2 | 506357-PP-06 | PLMB-PERMEATE.SS150A,14.0X6.00 | EA |
| 7 | 4 | 506357-MA-01 | PLMB,SWITCHES-FLOAT,PP,120/220VAC,4"FLT | EA |
| 8 | 8 | 506357-SB-01 | FRAME-WLDT,316,WALL BRKT, END SINGLE PIN | EA |
| 9 | 48 | 506357-SB-02 | FRAME-WLDT,316,WALL BRKT, MIDDLE DOUBLE PIN | EA |
| 10 | 8 | 506357-SB-03 | FRAME-WLDT,316,WALL BRKT, END SINGLE PIN | EA |
| 11 | 8 | 506357-SB-04 | FRAME-WLDT,316,LEVEL SUPPORT BRACKET | EA |
| 12 | 48 | 2830000A-SB-04 | FRAME-WLDT,316,HANGER ARM,CS2,52M,PF,D1 | EA |
| 13 | 48 | 2830000A-SB-05 | FRAME-WLDT,316,HANGER ARM,CS2,52M,PF,D2 | EA |
| 14 | 24 | 2830000A-SB-07 | FRAME-WLDT,316,HANGER BRACE,CS2,52M,D2 | EA |
| 15 | 24 | 2830000A-SB-06 | FRAME-WLDT,316,HANGER BRACE,CS2,52M,D1 | EA |
| 16 | 1 | 2830000A-SB-10 | FRAME-WLDT,304,LIFTING MODULE,52M | EA |
| 17 | 4 | 3136677 | TRANS-LEVEL,316,3.00,FLG,156",E+H | EA |
| 18 | 20 | 3157511 | M/C-ZW500D,370,FLO,52/52,316L,LEAP,6IN | EA |
| 19 | 4 | 3164975 | M/C-ZW500D,370,FLO,52/52,316L,LEAP,6IN | EA |
| 20 | 96 | 3089594 | BOLT-HH,316,0.75-10CX3,00L | EA |
| 21 | 96 | 3083060 | WASHER-LOCK,316,1.54 ODX0.75 ,NLOCK | EA |
| 22 | 192 | 3086521 | NUT,HEX,316,0.75-10UNC | EA |
| 23 | 192 | 3076814 | SCREW-CAP,316,0.375-16CX1.75,HH | EA |
| 24 | 384 | 1264037 | WASHER-FLAT,316,0.38WASHER-FLAT,316,0.38 | EA |
| 25 | 192 | 3072297 | NUT,HEXHD,0.375"-16UNC,316SS | EA |
| 26 | 24 | 3079669 | CLAMP-STRUT,SS,6.00 | EA |
| 27 | 24 | 3079667 | CLAMP-STRUT,SS,3.00,B-LINE | EA |
| 28 | 96 | 3085920 | COLLAR,DOUBL SPLIT SHAFT,SS,0.75,SP01,75 | EA |

- NOTES:
- FOR SCOPE OF SUEZ-SUPPLIED EQUIPMENT AND TECHNICAL DATA REFER TO THE P&IDs AND EQUIPMENT BILL OF MATERIALS.
 - SYSTEM INTEGRATOR IS RESPONSIBLE FOR DESIGN OF CONCRETE TANKS, GRAVITY CHANNEL INFLUENT GATES, EMERGENCY OVERFLOW, WALKWAYS/HANDRAILS ON TOP OF WALLS (IF REQUIRED). THESE ARE NOT SHOWN IN THIS DRAWING FOR CLARITY.
 - TANK BOTTOM AND DRAIN SUMP DESIGNS ARE NOT BY SUEZ, HOWEVER, IT IS RECOMMENDED THAT MEMBRANE TANK BOTTOM IS TO BE CONFIGURED AS A ONE WAY SLOPE TOWARDS DRAIN TRENCH CROSSING THE ENTIRE TANK WIDTH. DRAIN SUMP CAN BE LOCATED ANYWHERE INSIDE THE TRENCH, WITH A TRENCH SLOPE TAPERING INTO THE SUMP ON ONE OR BOTH SIDES OF IT, DEPENDING ON THE LOCATION OF THE DRAIN SUCTION NOZZLE.
 - DRAIN SUCTION NOZZLE OPENING HAS TO BE AT LEAST 6" BELOW ELEVATION OF A TANK BOTTOM AT ITS SHALLOW END.
 - TANKS TO BE COVERED FOR ACCESS TO CASSETTES AND EQUIPMENT. DESIGN, SUPPLY AND INSTALLATION OF MEMBRANE TANK COVERS ARE BY OTHERS. TANKS MUST BE VENTED. TANK COVER ELEVATION AND THICKNESS SHOULD BE COORDINATED WITH THE WALL BRACKET SUPPORTS.
 - MEMBRANE TANK INTERNALS WILL BE IN CONTACT WITH MEMBRANE CLEANING CHEMICALS - SODIUM HYPOCHLORITE CITRIC ACID SOLUTIONS. FOR ADDITIONAL INFORMATION REFER TO THE SUEZ DOCUMENT LISTED BELOW (NOTE 15d).
 - ALL INTERNAL DIMENSIONS ARE GIVEN TO THE FINISHED CONCRETE.
 - DESIGN AND SUPPLY OF SUPPORTS FOR PERMEATE AND AIR HEADERS ARE BY OTHERS. SYSTEM INTEGRATOR TO DETERMINE DESIGN, NUMBER AND LOCATION OF SUPPORTS. TIE POINTS MUST NOT BE USED TO SUPPORT INTERCONNECTING PIPING.
 - INFLUENT DEFLECTOR PLATE IS REQUIRED TO PREVENT DIRECT IMPACT OF FEED WATER ON CASSETTES. DESIGN AND SUPPLY ARE BY OTHERS. FOR ADDITIONAL INFORMATION REFER TO THE SUEZ DOCUMENT LISTED BELOW (15d).
 - MEMBRANE TANK EMERGENCY OVERFLOW WEIR IS FOR REFERENCE ONLY. DESIGN AND SUPPLY BY OTHERS.
 - FOR INTERIOR TANK WALLS THAT HAVE BRACKETS ON BOTH SIDES, IF THE ANCHOR EMBEDMENT PLUS TWO TIMES THE ANCHOR DIAMETER IS GREATER THAN HALF OF TANK WALL THICKNESS, THEN THRU-WALL 5/8" DIA THREADED RODS, 316A, ASTM F593 MUST BE USED (RODS TO BE SUPPLIED BY OTHERS)
 - LIFTING MODULE IS NOT TO BE LEFT INSIDE MEMBRANE TANK DURING OPERATION. A STORAGE SPACE WILL BE REQUIRED WHEN LIFTING MODULE IS NOT IN USE.
 - REFERENCE - PIPING AND INSTRUMENTATION DIAGRAM: 506357-WTS-PR-T02-8521-DS-104
 - ESTIMATED CASSETTE SHIPPING WEIGHT: 4,500 LBS (2,040 KG). ESTIMATED CASSETTE MAX WEIGHT(SLUDGED): 9,500 LBS (4,310 KG). MEMBRANE LIFTING DEVICE (TRAVELING BRIDGE-CRANE) TO BE SIZED FOR 5,000 TON (NOTE 15e).
 - THE FOLLOWING DESIGN GUIDELINES ARE AVAILABLE FROM SUEZ UPON REQUEST:
 - TANK COVER GUIDELINES FOR ZEEWEED 500 SYSTEMS.
 - MG-09012-C CONCRETE TANK COATING GUIDELINES FOR ZEEWEED SYSTEMS.
 - MG-09011-A MEMBRANE TANK TOLERANCES.
 - BEP #2007-04 BAFFLE DESIGN.
 - ZEEWEED 500 SERIES MEMBRANE LIFTING EQUIPMENT GUIDELINE.
 - MANUAL DOWNWARD OPENING WEIR GATE FOR SCUM REMOVAL. DESIGN AND SUPPLY BY OTHERS.
 - PIPING MATERIAL:
 - AIR :SCH. 10, 316SS
 - PERMEATE : SCH. 10, 316SS
 - GASKET MATERIAL:
 - SS LINES :BLUE GUARD
 - FASTENER MATERIAL
 - 316SS
 - FEED CHANNEL EMERGENCY OVERFLOW WEIR SHOULD BE AT A LOWER ELEVATION THAN THE MEMBRANE TANK EMERGENCY OVERFLOW WEIR. DESIGN AND SUPPLY BY OTHERS.

SUEZ WTS
CONTROLLED DOCUMENT

| REV | DESCRIPTION | ECO | DOWN | APPR | APPR | DATE |
|-----|---------------------|-----|------|------|------|-----------|
| B | ISSUED FOR APPROVAL | | | KM | JC | 03 JUN 20 |
| A | INITIAL RELEASE | | | SK | JC | 07 APR 20 |

| TOLERANCES UNLESS NOTED | |
|-------------------------|-----------|
| DECIMALS | ANGLES |
| .X | +/- 0.5° |
| .XX | +/- 0.13 |
| .XXX | +/- 0.062 |
| | FRACTION |
| | +/- 1/16" |

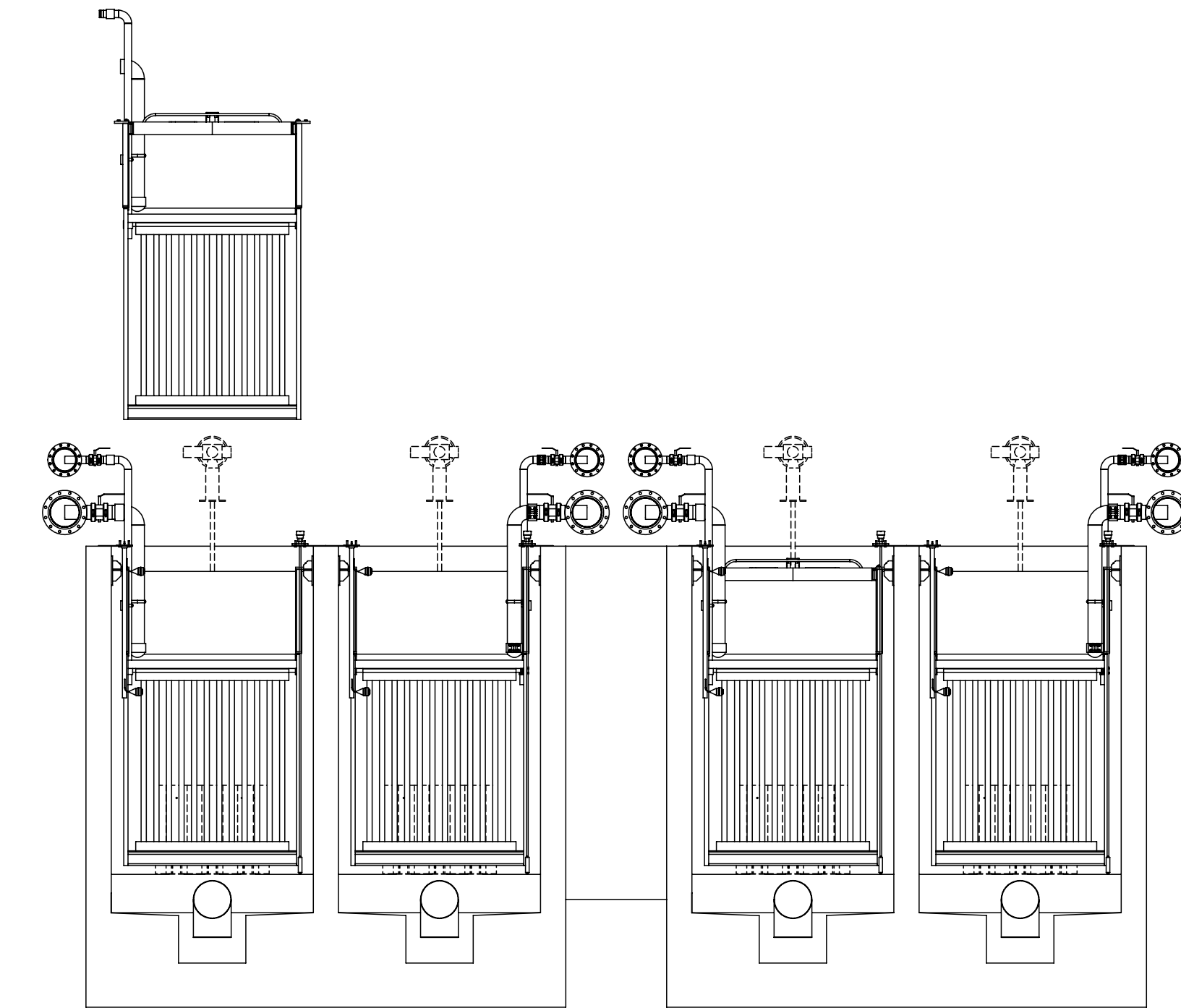
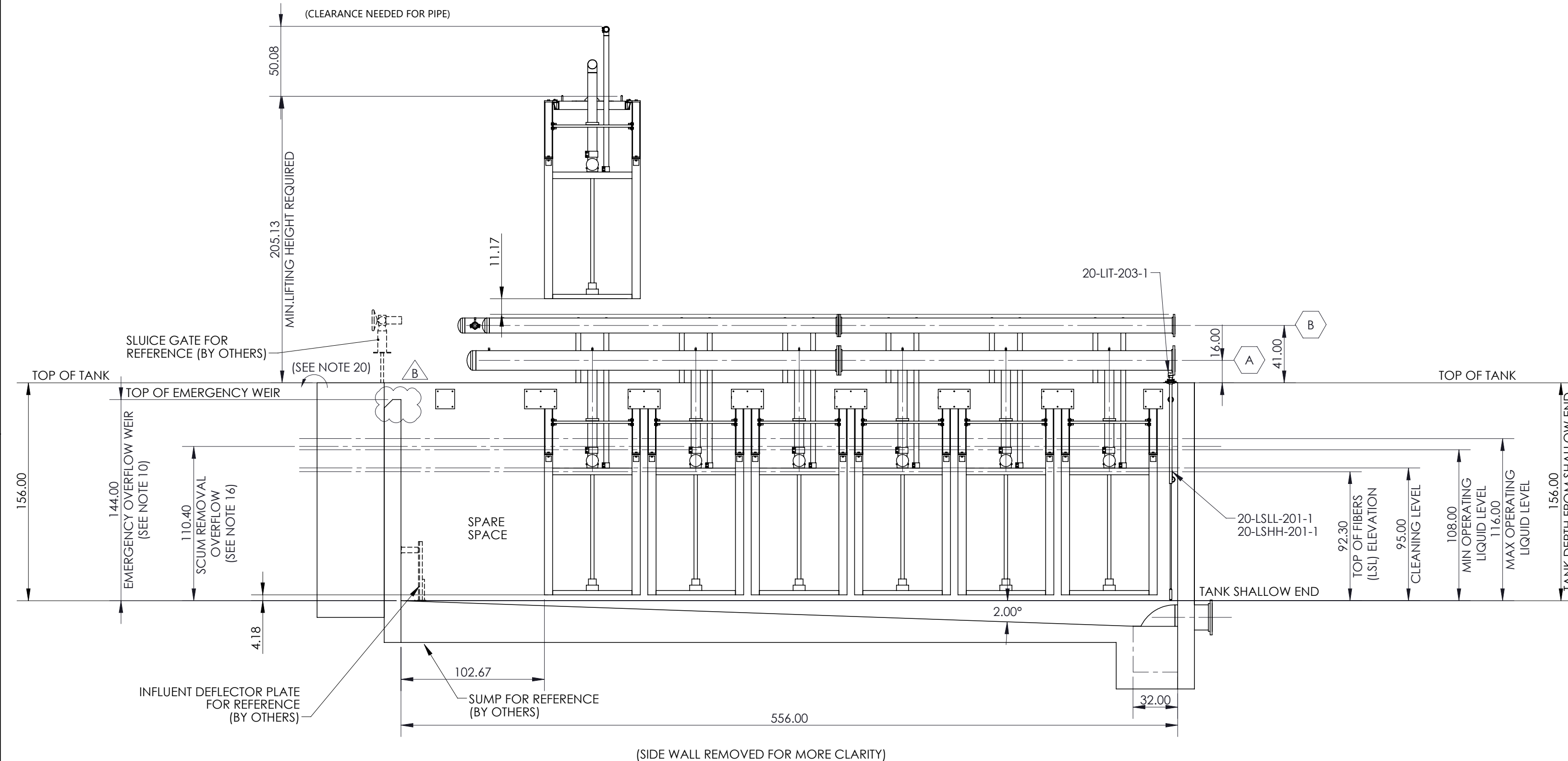
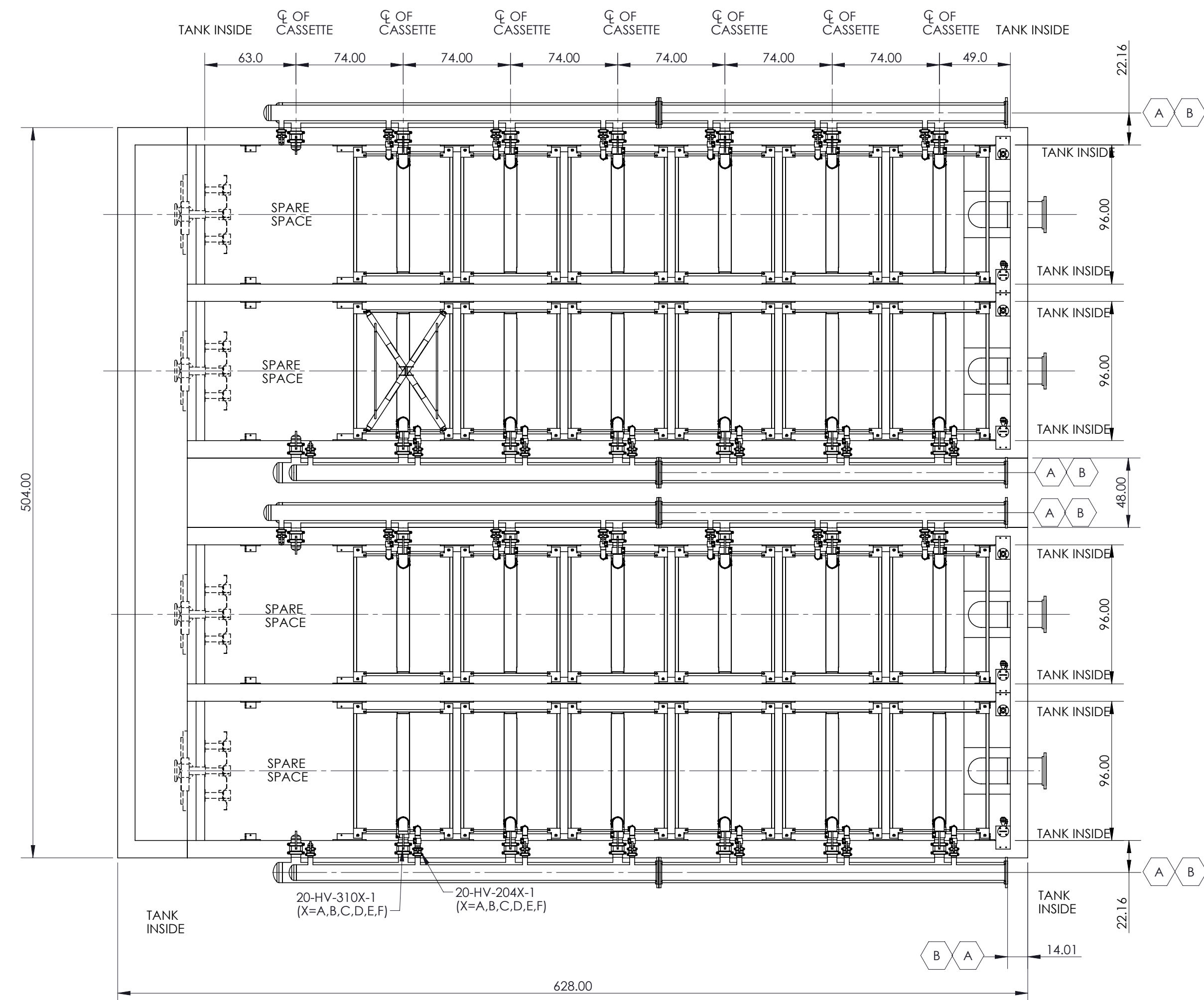


CUSTOMER INFORMATION
CITY OF CANTON
WATER POLLUTION CONTROL
PLANT (WPCP)

GENERAL ARRANGEMENT
MEMBRANE TANK

| DRAWING NUMBER | | REVISION | |
|-------------------------------|-------------|-------------|-------------------|
| 506357-WTS-ME-667-1010-DA-001 | | B | |
| REF.: | PROJECT NO. | DOC. OWNER: | PART/MATERIAL NO. |
| | 506357 | | |
| | SCALE | SIZE | SHEET |
| | 1:50 | D | 1 OF 4 |

| CONNECTION TABLE | | | |
|------------------|---|-------------|------|
| ITEM | DESCRIPTION | TYPE | SIZE |
| A | PERMEATE/BACKPULSE TO/FROM PROCESS PUMP | 150# RF FLG | 14.0 |
| B | AIR FROM MEMBRANE BLOWERS | 150# RF FLG | 10.0 |



(SIDE WALL REMOVED FOR CLARITY)

| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
|-----|---------------------|-----|-----|------|-----------|------|
| B | ISSUED FOR APPROVAL | | | | | |
| A | INITIAL RELEASE | KM | JC | FA | 03 JUN 20 | |
| | | SK | JC | FA | 07 APR 20 | |

| TOLERANCES UNLESS NOTED | |
|-------------------------|-------------|
| DECIMALS | ANGLES |
| .X | ± 0.5° |
| .XX | ± 0.13 |
| .XXX | ± 0.062 |
| | FRAC ± 1/8" |



| CUSTOMER INFORMATION | |
|---|--|
| CITY OF CANTON WATER POLLUTION CONTROL PLANT (WPCP) | |

| GENERAL ARRANGEMENT | |
|---------------------|--|
| MEMBRANE TANK | |

| DRAWING NUMBER | | | | REVISION | |
|-------------------------------|-------------|-------------|-------------------|----------|----------|
| 506357-WTS-ME-667-1010-DA-001 | | | | B | |
| REF.: | PROJECT NO. | DOC. OWNER: | PART/MATERIAL NO. | SCALE | SHEET |
| | 506357 | | | 1:50 | D 2 OF 4 |

D

C

B

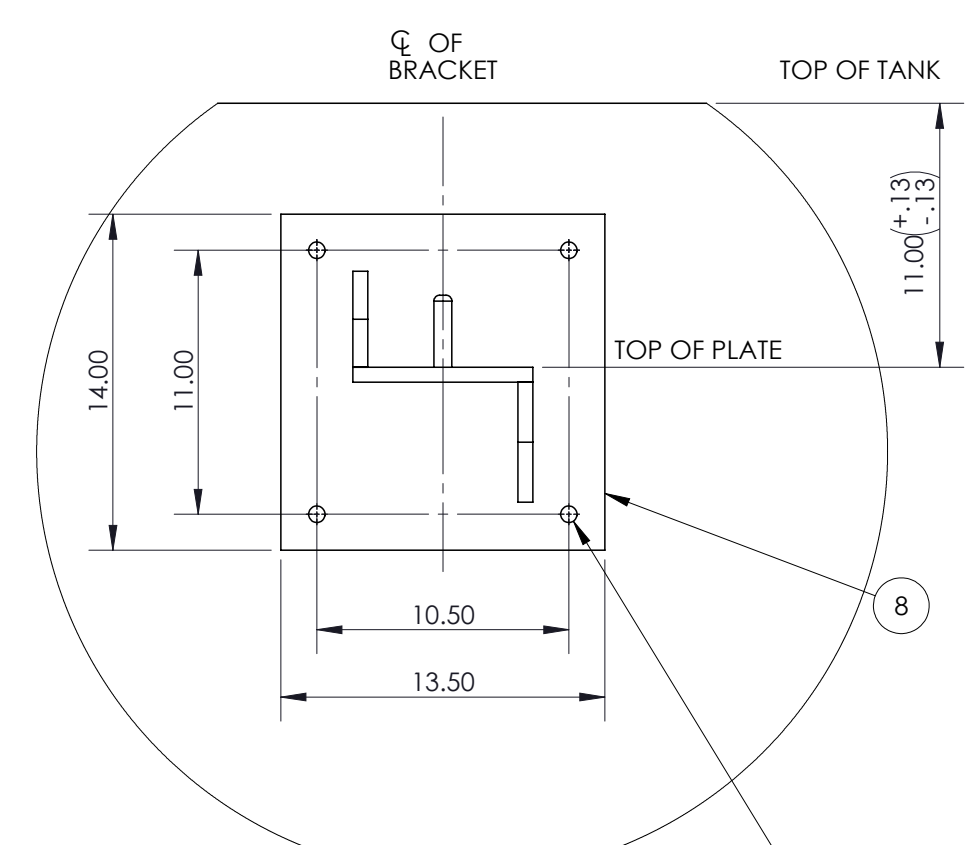
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D

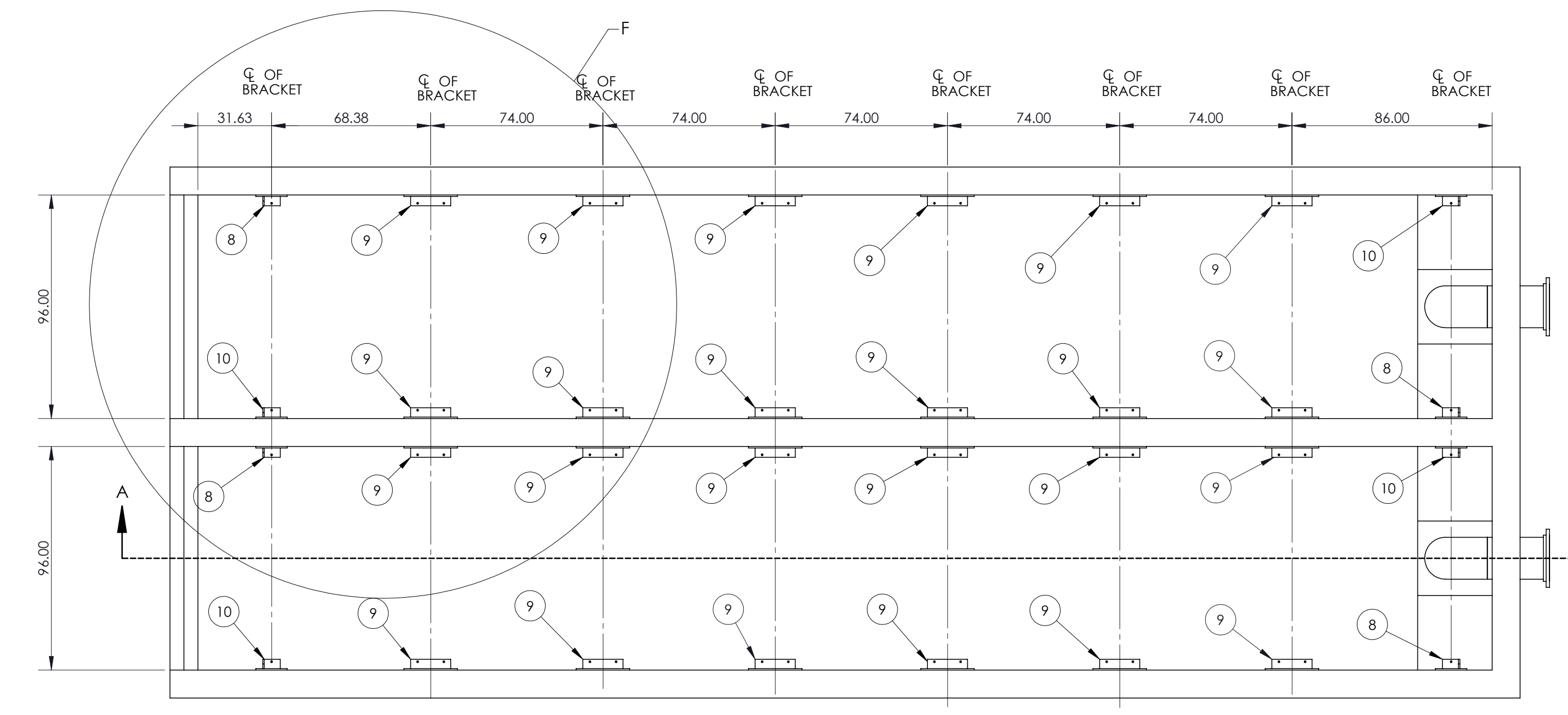
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B

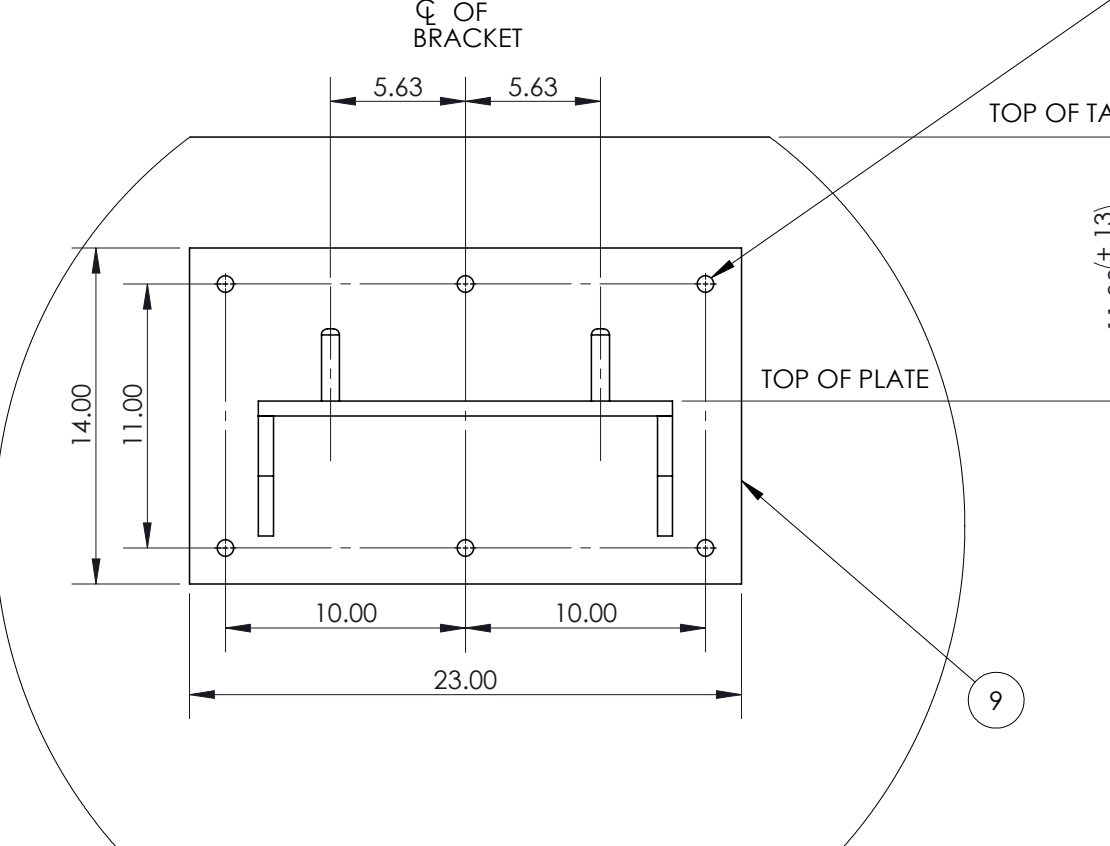
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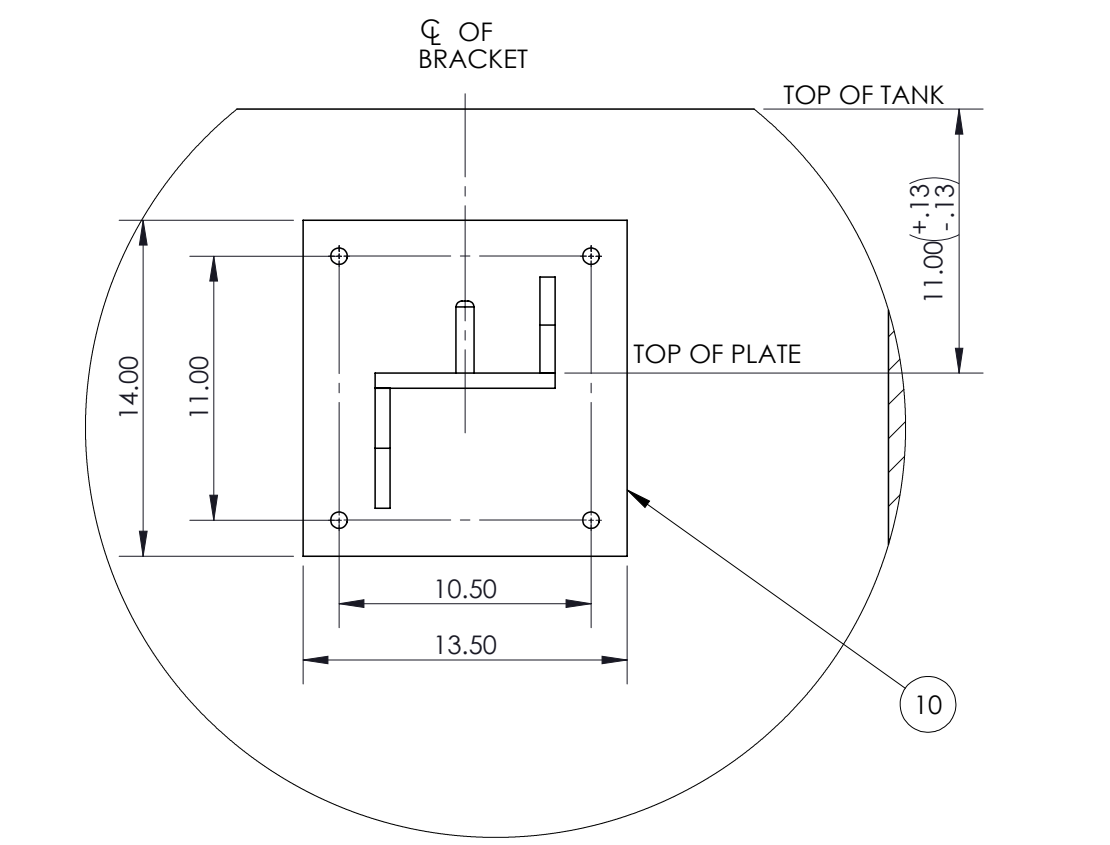
DETAIL C
SCALE 1 : 8



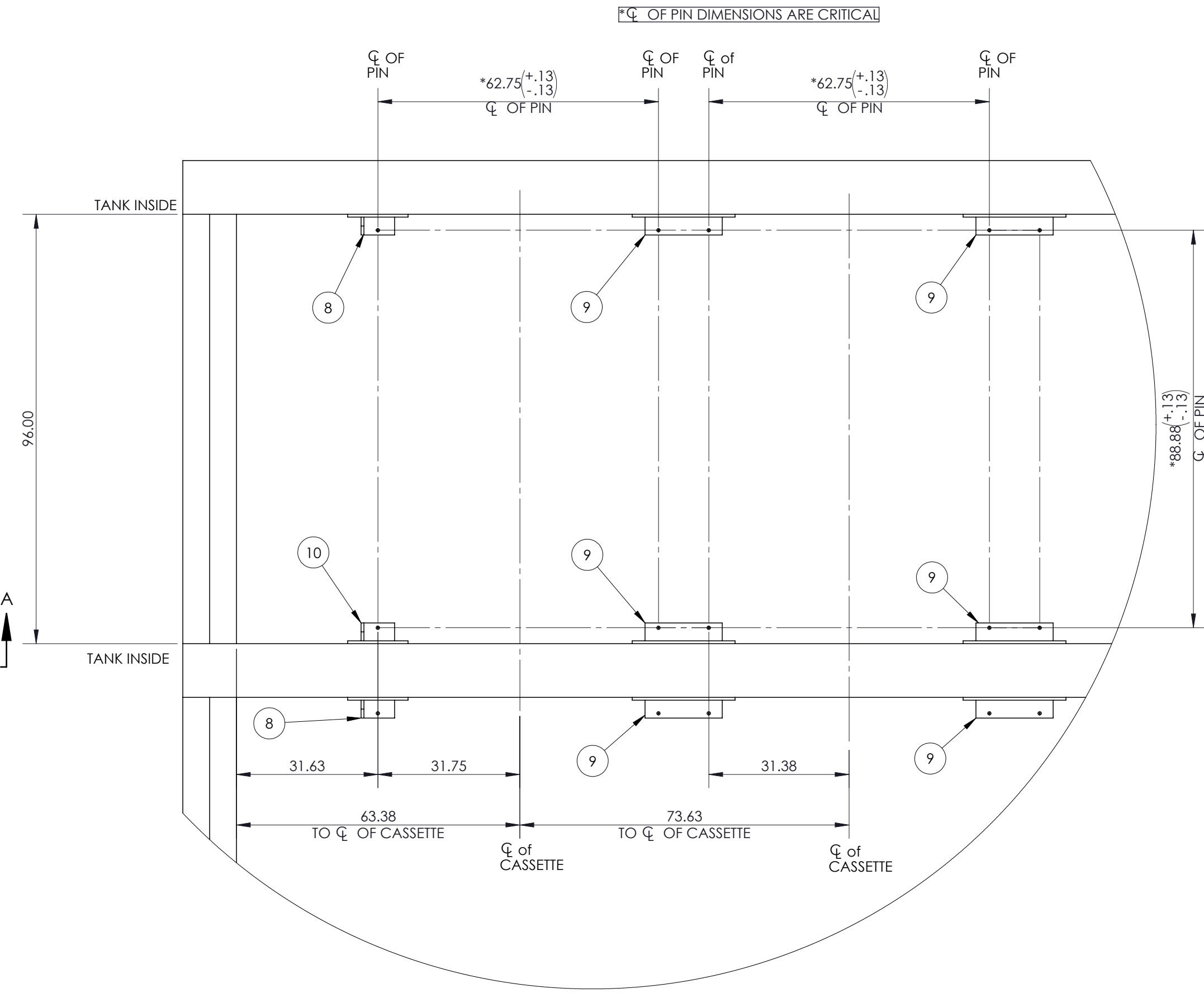
5/8" DIA. X 4 1/2" EMBEDMENT X MIN. 1 3/4" PROJECTION. HILTI HAS-R ROD WITH HIT-RE 500 EPOXY ANCHORS OR EQUAL. 316A, ASTM-F593F (ANCHORS TO BE SUPPLIED BY OTHERS)



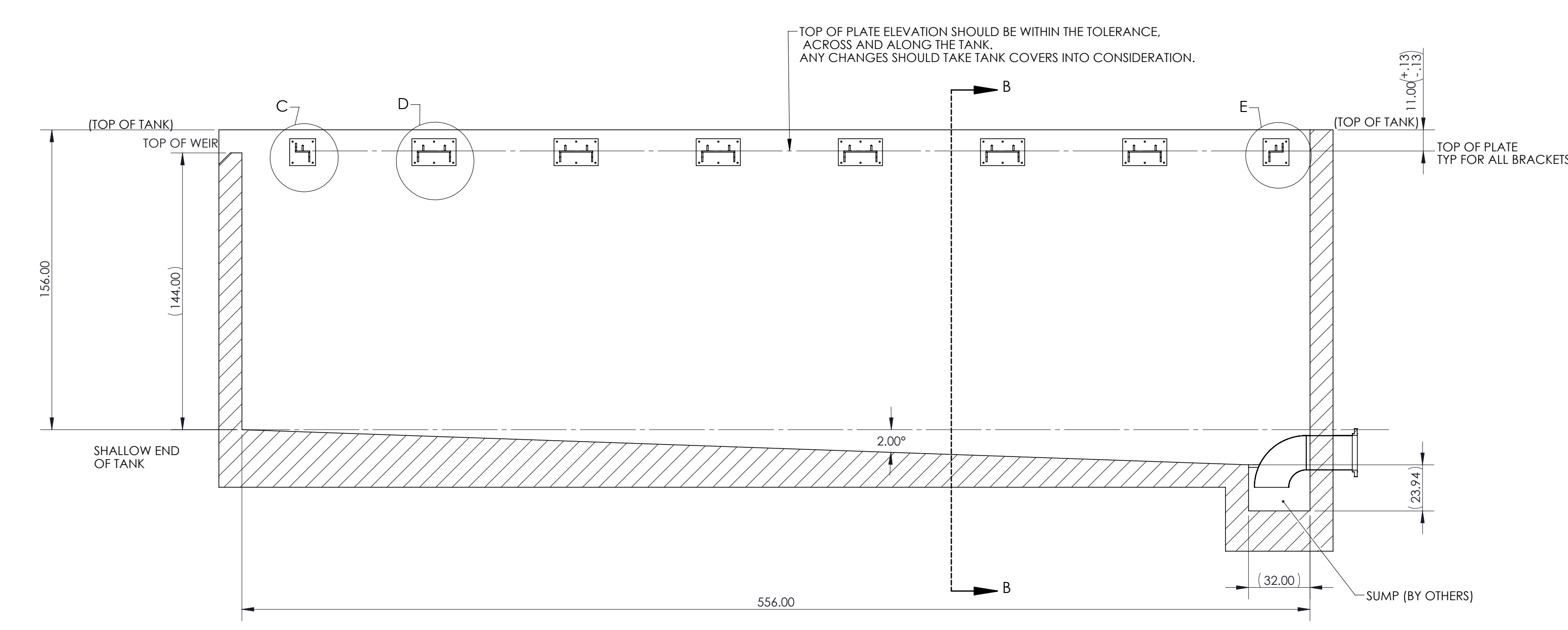
DETAIL D
SCALE 1 : 8



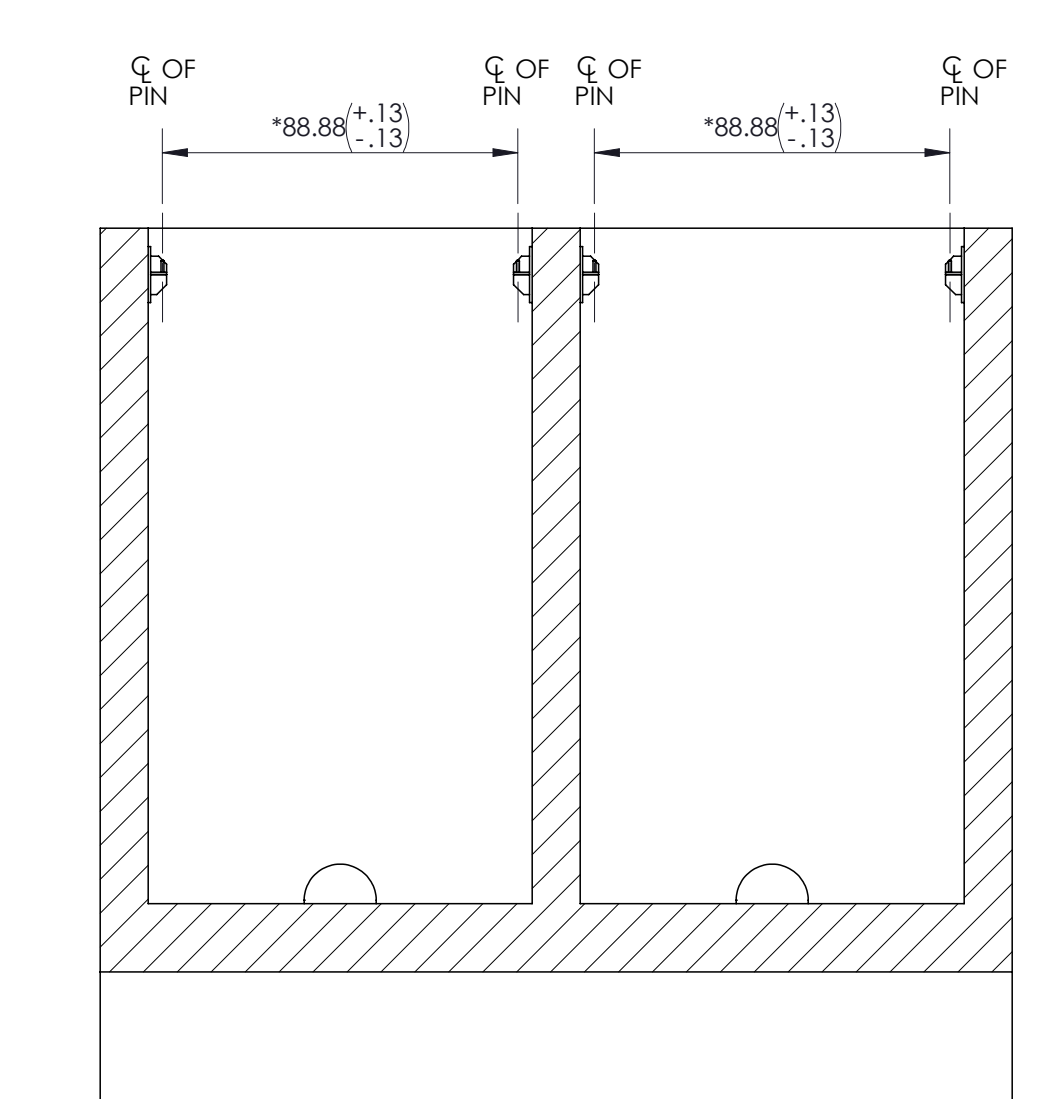
DETAIL E
SCALE 1 : 8



DETAIL F
SCALE 1 : 24



SECTION A-A
SCALE 1 : 48



SECTION B-B
SCALE 1 : 48

TOP OF PLATE ELEVATION SHOULD BE WITHIN THE TOLERANCE, ACROSS AND ALONG THE TANK. ANY CHANGES SHOULD TAKE TANK COVERS INTO CONSIDERATION.

TOP OF PLATE TYP FOR ALL BRACKETS

| | | | | | | |
|-----|---------------------|-----|-----|------|------|------|
| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
| B | ISSUED FOR APPROVAL | | | | | |
| A | INITIAL RELEASE | | | | | |

| | | | |
|----|----|----|-----------|
| KM | JC | FA | 03 JUN 20 |
| SK | JC | FA | 07 APR 20 |

TOLERANCES UNLESS NOTED
DECIMALS ANGLES
X +/- 0.51
XX +/- 0.13 FRAC
XXX +/- 0.062 +/- 1/8"

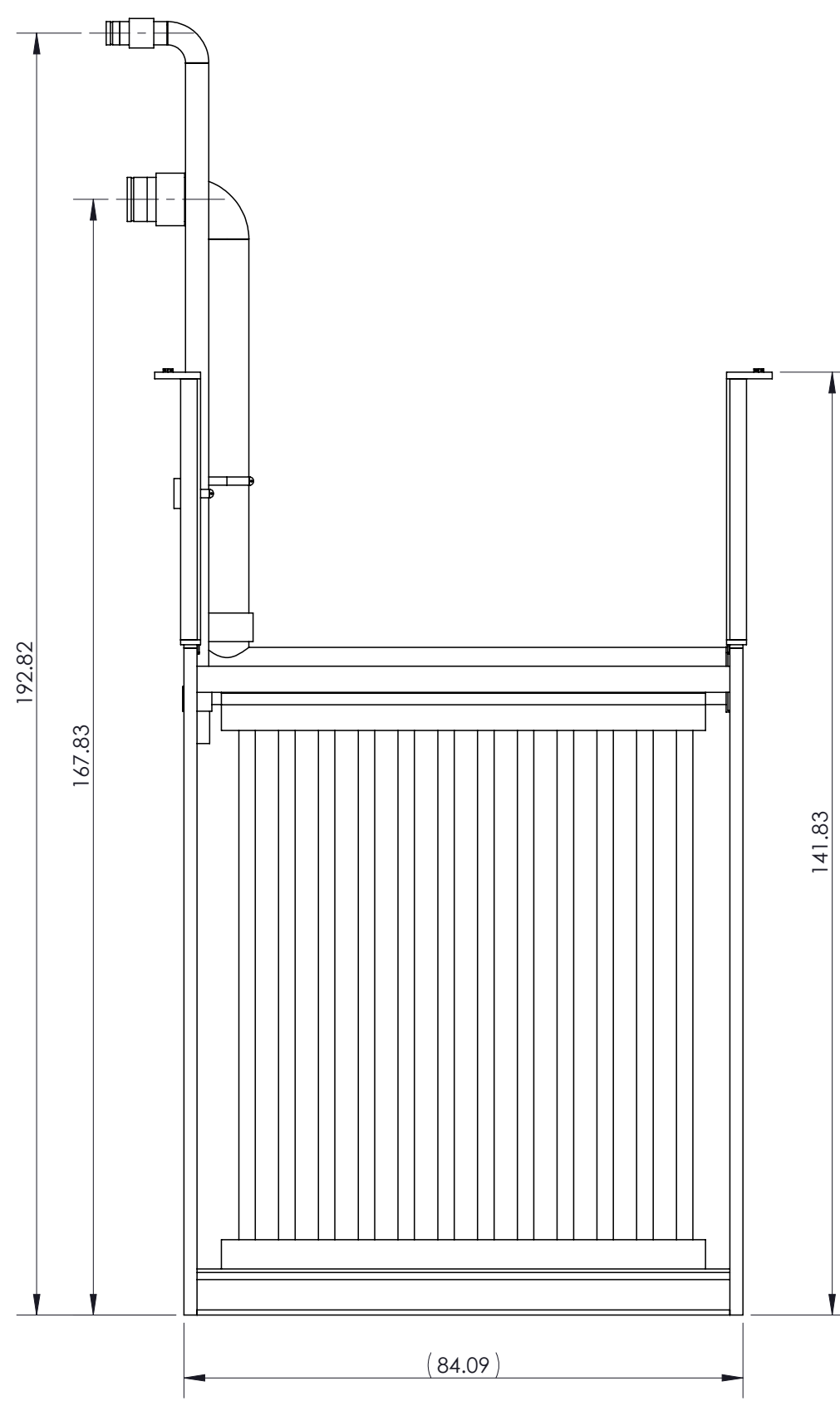
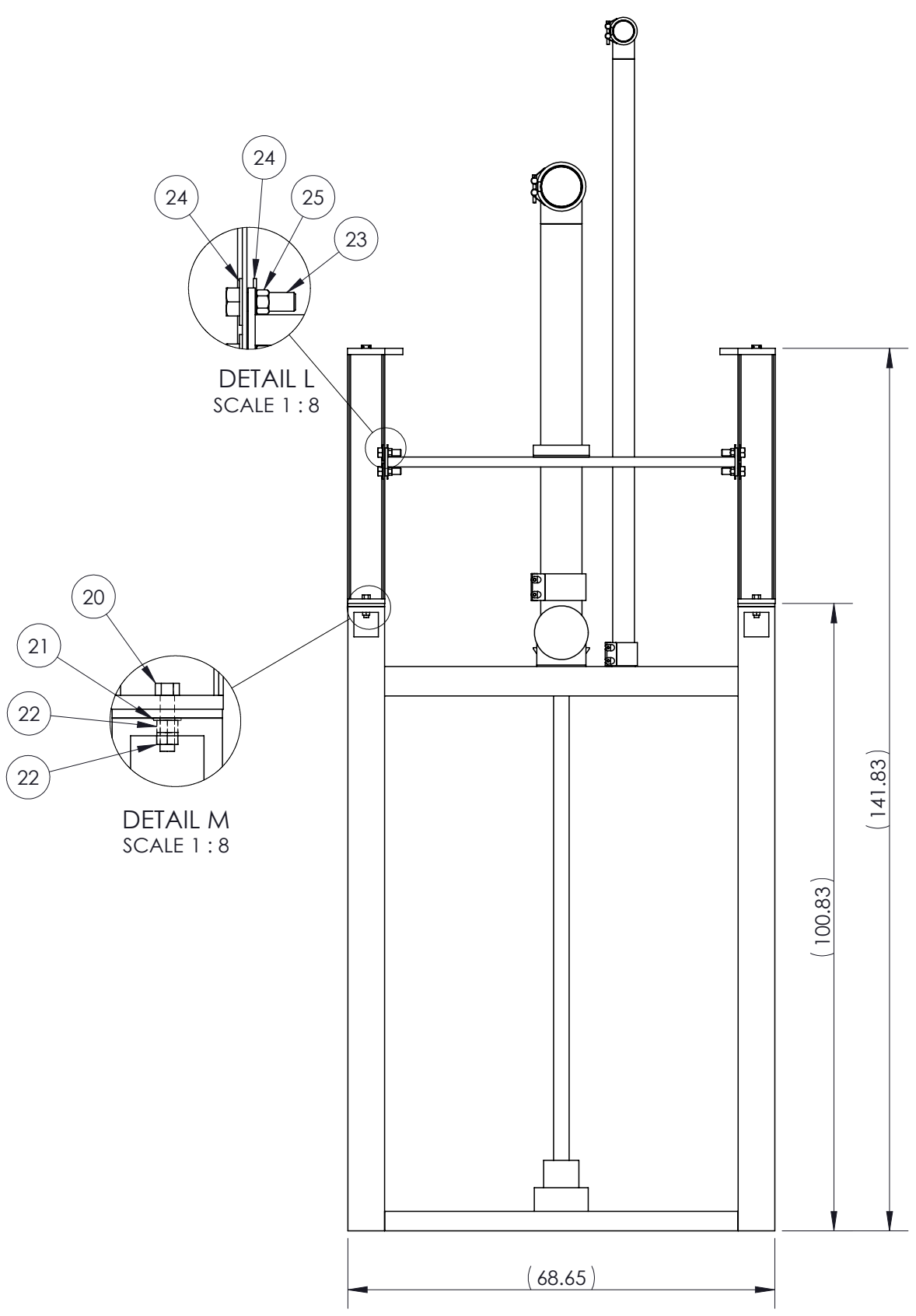
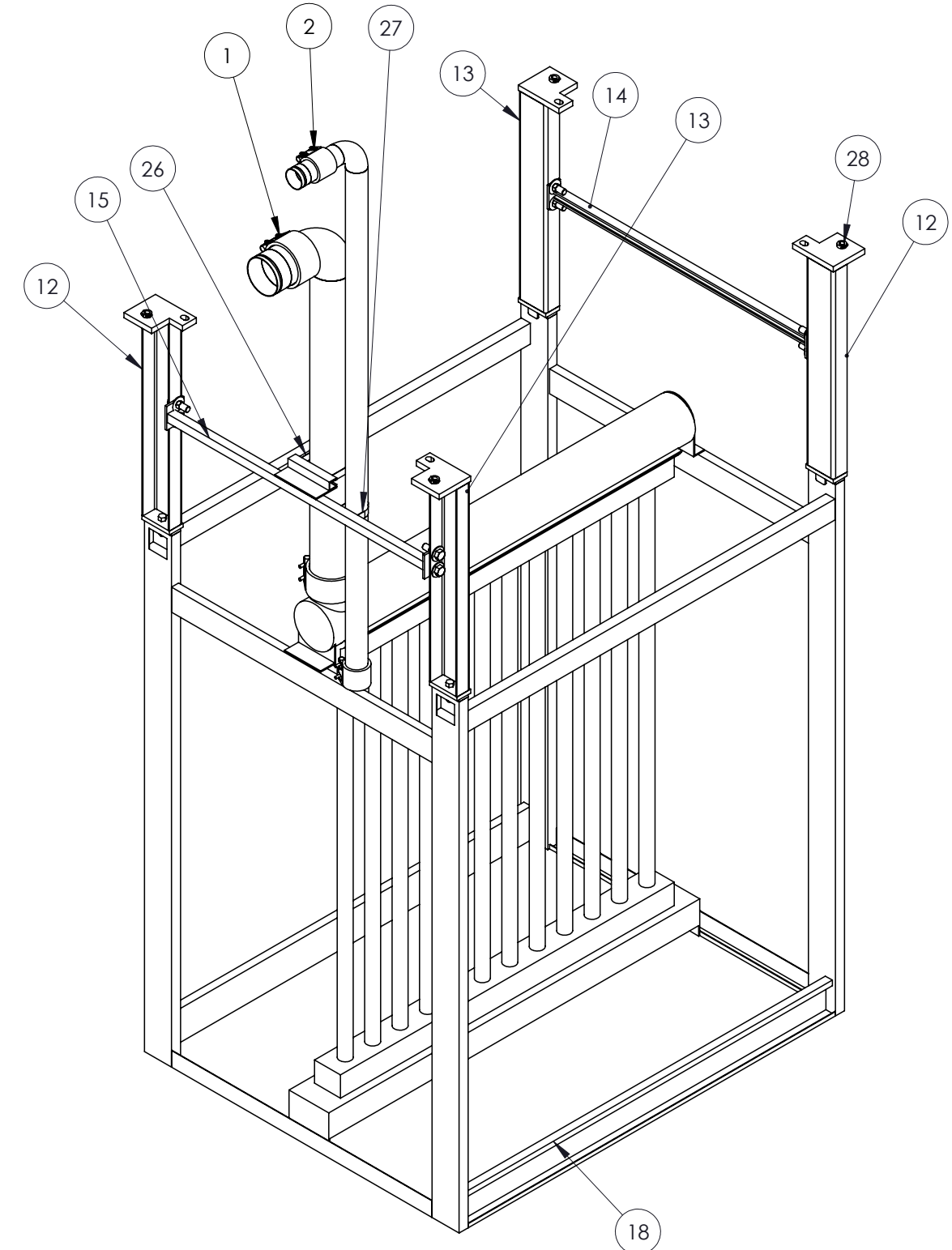
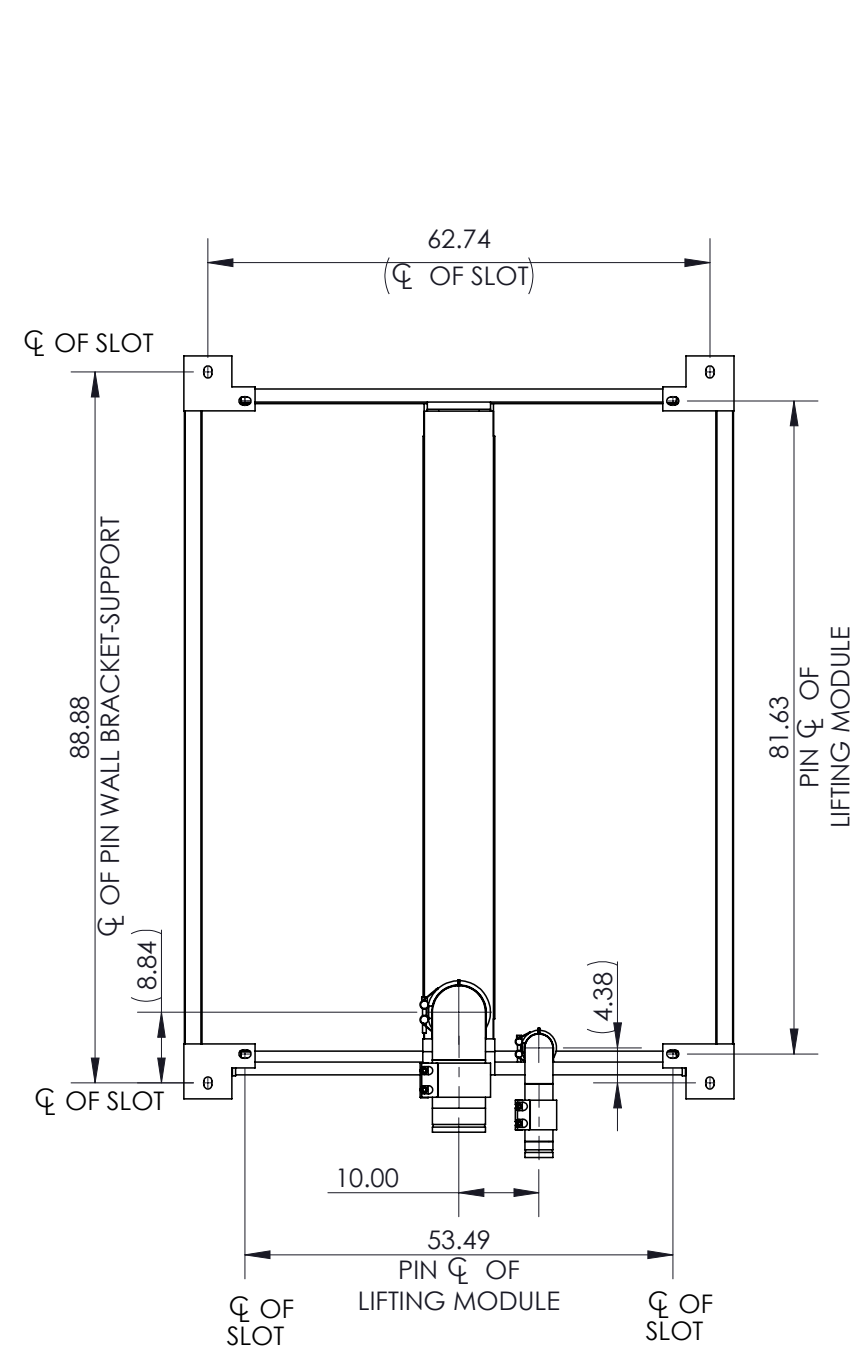
CUSTOMER INFORMATION
CITY OF CANTON
WATER POLLUTION CONTROL
PLANT (WPCP)

GENERAL ARRANGEMENT
MEMBRANE TANK

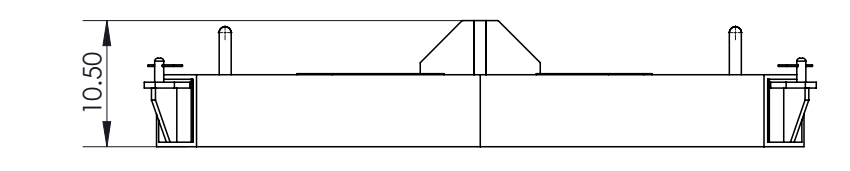
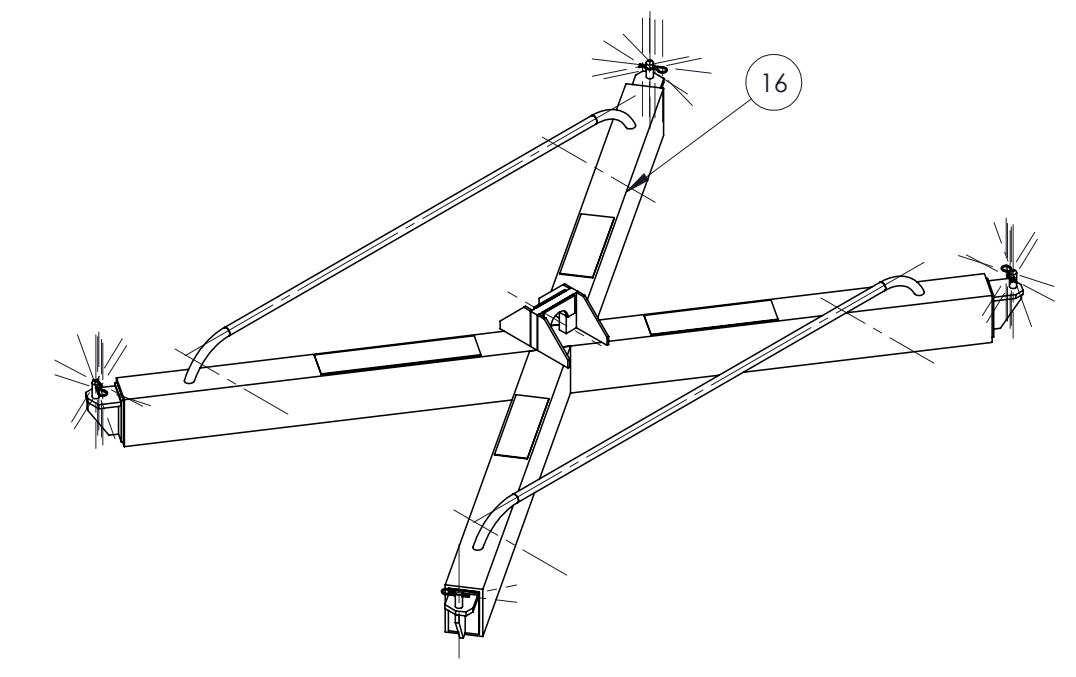
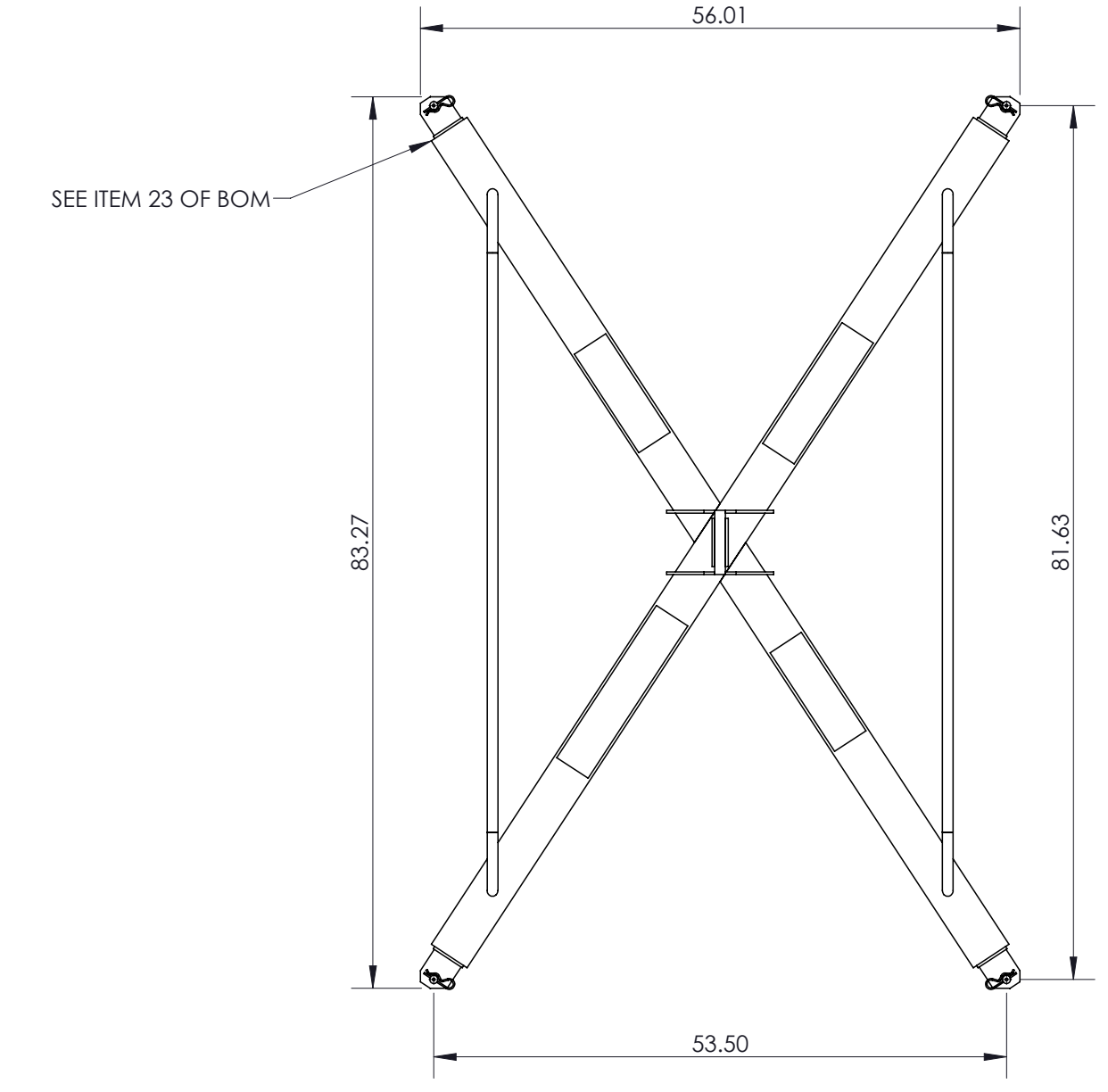
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|-------------------------------|-------------|-------------------|-------|------|----------|
| DRAWING NUMBER | | | | | REVISION |
| 506357-WTS-ME-667-1010-DA-001 | | | | | B |
| REF.: | PROJECT NO. | PART/MATERIAL NO. | SCALE | SIZE | SHEET |
| | 506357 | | 1:48 | D | 3 OF 4 |

FILE LOCATION: C:\SWPDM\NAMA\506357 - CITY OF CANTON\2. Mechanical Drawings\

CASSETTE ASSEMBLY (24) TWENTY FOUR REQUIRED



LIFTING MODULE (1) ONE SUPPLIED PER PLANT



| | | | | | | |
|-----|---------------------|-----|-----|------|------|------|
| REV | DESCRIPTION | ECO | DWN | APPR | APPR | DATE |
| B | ISSUED FOR APPROVAL | | | | | |
| A | INITIAL RELEASE | | | | | |

| | | | |
|----|----|----|-----------|
| KM | JC | FA | 03 JUN 20 |
| SK | JC | FA | 07 APR 20 |

TOLERANCES UNLESS NOTED
 DECIMALS .X
 ANGLES +/- 0.5°
 FRACTIONS XXX +/- 0.13
 FRACTIONS XXXX +/- 0.062
 FRACTIONS +/- 1/16"

CUSTOMER INFORMATION
 CITY OF CANTON
 WATER POLLUTION CONTROL
 PLANT (WPCP)

GENERAL ARRANGEMENT
 MEMBRANE TANK

| | | | | | |
|-------------------------------|-------------|-------------------|-------|------|----------|
| DRAWING NUMBER | | | | | REVISION |
| 506357-WTS-ME-667-1010-DA-001 | | | | | B |
| REF.: | PROJECT NO. | PART/MATERIAL NO. | SCALE | SIZE | SHEET |
| | 506357 | | 1:24 | D | 4 OF 4 |