Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312.751.5600

Darlene A. LoCascio
Director of Procurement and Materials Management

312.751.6600 f: 312.894.2011
darlene.locascio@mwrd.org

October 7, 2025

Dear Bidder:

Enclosed herewith is "Notice of Revision and Addendum in Contract Documents," Addendum 2, consisting of four (4) pages and other attachments as referenced in the addendum. This addendum is dated October 7, 2025, and pertains to Contract 21-092-3P, "Battery E Activated Sludge Facility, O'Brien Water Reclamation Plant."

Proposers must download Addendum 2 and the attachments in their entirety from the District's Portal at www.mwrd.org. The path is as follows: **Doing Business→Procurement and Materials Management→Contract Announcements**. Scroll to Contract 21-092-3P and click "Addenda" to obtain this and all other addenda. If you are unable to download this addendum or any other contract documents, please email the Contract Desk at contractdesk@mwrd.org or call (312) 751-6629 for assistance.

The Notice must also be signed, dated, inserted in the Contract Documents, and submitted with the Proposal, OR the Bidder may identify the addendum number in the space provided on the Proposal signature page.

Very truly yours,

Darlene A. LoCascio
Director of Procurement and
Materials Management

Attachment

Acknowledgment of receipt of the above-cited Notice:

DATE _____

NAME _____

FIRM _____

SIGNED _____

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

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NOTICE OF REVISION AND ADDENDUM IN CONTRACT DOCUMENTS

ADDENDUM 2

OCTOBER 7, 2025

CONTRACT 21-092-3P
BATTERY E ACTIVATED SLUDGE FACILITY
O'BRIEN WATER RECLAMATION PLANT

All bidders are hereby notified of the following revisions:

Volume 1 of 4 – Signature Book for Submission of Bid

1. INVITATION TO BID – PAGE I-1

   Delete line nine in its entirety and replace it with "**PROPOSALS ARE DUE TUESDAY, NOVEMBER 18, 2025**".

2. INVITATION TO BID – PAGE I-1

   Refer to the paragraph beginning with "Sealed Proposals, endorsed…"

   Delete the phrase "October 28, 2025" from the referenced paragraph and replace it with "November 18, 2025".

3. AGREEMENT – PAGE A-10

   Refer to the row for Section 16902 ELECTRICAL CONTROL DEVICES. Insert the following after the referenced row:

   APPENDIX

   APPENDIX E – ABB COST PROPOSAL
   APPENDIX F – XYLEM COST PROPOSAL
   APPENDIX G – DBS COST PROPOSAL

Volume 2 and 3 of 4 – Specifications

4. VOLUME 2, TABLE OF CONTENTS – PAGE TOC-6

   Refer to the row for Section 16902 ELECTRICAL CONTROL DEVICES. Insert the following after the referenced row:

   APPENDIX

   APPENDIX E – ABB COST PROPOSAL
   APPENDIX F – XYLEM COST PROPOSAL
   APPENDIX G – DBS COST PROPOSAL

5. VOLUME 3, TABLE OF CONTENTS – PAGE TOC-6

   Refer to the row for Section 16902 ELECTRICAL CONTROL DEVICES. Insert the following after the referenced row:

   APPENDIX

   APPENDIX E – ABB COST PROPOSAL
   APPENDIX F – XYLEM COST PROPOSAL
   APPENDIX G – DBS COST PROPOSAL

6. SECTION 14650 – PAGE 1

   Refer to Paragraph 1.01 B.

   Delete the wording "Drawings, S-300" in the first sentence and replace it with "the S-300, S-500, and S-600".

   Delete the last sentence in the referenced paragraph and replace it with the following:

   "If the Contractor selects a different portable crane manufacturer than specified, the alternate product must be compatible with the process equipment specified, at no additional cost to the District."

7. SECTION 14650 – PAGE 4

   Refer to Paragraph 2.03 A.

   Delete the wording "Two (2)" in the first sentence and replace it with "Four (4)".

8. SECTION 14650 – PAGE 5

   Refer to Paragraph 2.04 A.

   Delete the wording "64" in the first sentence and replace it with "76".

9. SECTION 14650 – PAGE 6

   Refer to Paragraph 2.05 A.

   Delete the wording "52" in the first sentence and replace it with "4".

10. SECTION 14650 – PAGE 6

    Refer to Paragraph 2.05 I.

    Delete the wording "42" in the second sentence and replace it with "44".

    Add the following sentence to the end of the referenced paragraph:

    "Handrails shall be wrapped in rubber gaskets to allow the U-bolts to be tightened as much as possible. Alternatively, Contractor can use plastic-coated stainless-steel U-bolts."

11. SECTION 15066 – PAGES 1 TO 10

    Refer to the footers of the referenced page numbers.

    Delete the wording "HANGERS AND SUPPORTS" and replace it with "STAINLESS STEEL PIPE AND FITTINGS".

12. The following specification sections (attached) are hereby added to the contract documents:

SECTION 02300	EARTHWORK	02300-1 TO 02300-19
APPENDIX E	ABB COST PROPOSAL	
APPENDIX F	XYLEM COST PROPOSAL	
APPENDIX G	DBS COST PROPOSAL	

13. PLANS

The following revised plans are included in this Addendum. The revised plans replace previously issued plans having corresponding sheet numbers:

PAGE NO.	SHEET NO.	REV#	TITLE OF SHEET
96	S-213	1	INFLUENT CONDUIT CONNECTION @ STA 1+97
97	S-214	1	INFLUENT CONDUIT CONNECTION @ STA 4+76
256	P-017	1	PROCESS EQUIPMENT SCHEDULES
258	P-019	1	PROCESS EQUIPMENT SCHEDULES
263	P-104	1	BATTERY E WAS CONNECTION - PLAN AND SECTION
376	E-013	1	PANELBOARD SCHEDULES 1 OF 3
377	E-014	1	PANELBOARD SCHEDULES 2 OF 3
378	E-015	1	PANELBOARD SCHEDULES 3 OF 3
408	E-029	1	FINAL SETTLING TANK DRIVE SCHEMATIC
410	E-031	1	FERMENTER RAS/WAS PUMP SCHEMATIC
411	E-032	1	METER BUILDING ACP SCHEMATIC

This Notice must also be signed, dated, inserted in the Contract Documents, and submitted with the Proposal, or the Bidder may identify the addendum number in the space provided on the Proposal signature page.

Catherine A. O'Connor
Director of Engineering

Darlene A. LoCascio
Director of Procurement and Materials Management

The bidder acknowledges that he/she has read this Notice of Revision, dated October 7, 2025, to the Contract Documents and that he/she has taken the provisions thereof into consideration when preparing and submitting this Proposal.

SECTION 02300

EARTHWORK

PART 1 – GENERAL

1.01 DESCRIPTION

A. The work specified in this section includes, but is not limited to, the following:
   1. Excavation for buildings and structures including mat foundations, footings, foundation walls, grade beams and slabs.
   2. Excavation and backfill for installing pipes, electrical duct-banks and other utilities.
   3. Preparing subgrades for slabs-on-grade, mat foundations, walks, pavements, roads, for framed slabs, and as indicated in the contract documents.
   4. Filling and backfilling for buildings and structures including foundation walls, grade beams and slabs.
   5. Backfilling below-grade areas and voids resulting from building demolition operations.
   6. Drainage course for slabs-on-grade, framed slabs and mat foundations where indicated.
   7. Subbase course for pavements and concrete walks.
   8. Base course for pavements and concrete walks.
   9. Purchase, transportation and placement of borrow materials for construction as shown and specified.
   10. Compaction.
   11. Grading.
   12. Removal of excess material, both suitable and unsuitable.

B. Related Documents
   1. Drawings and general provisions of the Contract, including General Conditions, General Specifications, and Division 1 Specification Sections, apply to this Section.
   2. Related work specified elsewhere includes:
      a. General Specifications - Concrete
      b. General Specifications - Sewers
      c. Section 02068 - Shoring, Sheeting and Bracing
      d. Section 02220 - Demolition
      e. Section 02222 - Construction or Demolition Debris & Soil Removal and Disposal
      f. Section 02230 - Site Clearing
      g. Section 02317 – Trenching and Backfill
      h. Section 02560 - Erosion and Sediment Control
      i. Section 02930 - Landscaping – Restoration and New Seeding
      j. Section 03300 - Cast-in-place Concrete

1.02 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. The edition or revision of the referenced publications shall be the latest one as of the date of the Contract Documents, unless otherwise specified.

C. American Society for Testing and Materials (ASTM):
   1. ASTM D698 - Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb Rammer and 12-in. Drop
   2. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method
   3. ASTM D1557 - Standard Test Methods for Moisture-Density Relations of Soil-Aggregate Mixture Using 10-lb Rammer and 18-in. Drop
   4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil In-Place by the Rubber Balloon Method
   5. ASTM D2487 - Standard Test Method for Classification of Soils for Engineering Purposes
   6. ASTM D2937 - Standard Test Method for Density of Soil in Place by Drive-Cylinder Method
   7. ASTM D4253 - Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
   8. ASTM D4254 - Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
   9. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Methods)

D. Illinois Department of Transportation (IDOT)
   1. Latest editions of the IDOT “Standard Specifications for Road and Bridge Construction”, and “Supplemental Specifications and Recurring Special Provisions”, referred to collectively as IDOT “Standard Specifications”, except those articles and/or language having to do with the methods of measurements and basis of payment.

1.03 SUBMITTALS

A. General: Submit the following in accordance with the Conditions of the Contract.
   1. Names and qualifications of the independent geotechnical testing agency, and a geotechnical consultant as necessary for the project
   2. Test Reports: From geotechnical consultant/qualified testing agency providing and interpreting test results for compliance of the following with requirements indicated:
      a. Laboratory testing of materials proposed to be used on the project.
      b. Test reports that are representative, on each on-site or borrow soil material proposed for fill and backfill, including classification according to ASTM D2487.
      c. Laboratory compaction curve according to ASTM D1557 for each on-site or borrow soil material proposed for fill and backfill.
      d. Consultant/Testing Agency Review, and Contractor certification, that the

materials tested by the testing agency are representative of each on-site or borrow location for soil material proposed to be used for fill and backfill.

e. Consultant/testing Agency certification that the representative materials tested meet the contract requirements for fill and backfill.
f. Verification of suitability of subgrade material, in accordance with contract specified requirements within this specification section.
g. Field reports; in-place soil density tests. Refer to Section 3.11.A.5
h. One optimum moisture-maximum density curve for each type of soil encountered.
i. Report of actual unconfined compressive strength and results of bearing test of each stratum tested.

1.04 SUBMITTAL REQUIREMENTS FOR COMPLIANCE WITH BUILD AMERICA, BUY AMERICA (BABA) FOR FEDERAL FINANCING

A. For District projects receiving federal funding, either through federal grants or SRF loans, the Contractor shall provide a certification letter from the manufacturer for all submittals related to BABA products as specified in Section 11 of Appendix I.

B. All equipment or material delivered to the project site shall be clearly marked and/or stamped as "Made in the USA".

C. In order to demonstrate compliance with BABA requirements detailed in Section 11 of Appendix I, the Contractor shall maintain the document described in the Mobilization section of the Proposal. The Contractor shall use the document to contemporaneously track the status of the certifications for the BABA products. The document, along with all material certifications, shall be saved electronically by the Contractor in the specified project management system. The Contractor shall include an updated document with each monthly application for payment. If the Contractor is allowed to use de minimis waivers for any products required by the Contract, the Contractor shall likewise track the de minimis items in the document and maintain documentation of the waivers electronically in the specified project management system.

1.05 QUALITY ASSURANCE

A. The Contractor shall retain at his own expense, a geotechnical testing agency, and a geotechnical consultant as necessary for the project, as approved by the District.

B. Geotechnical Testing Agency Qualifications: Any independent testing agency hired by the Contractor shall be qualified according to ASTM E329 to conduct soil materials testing, as documented according to ASTM D3740 and ASTM E548.

C. The Testing Agency and consultant hired by the Contractor shall:
1. Collect samples.
2. Provide quality assurance testing prior to undertaking earthwork operations.
3. Provide recommendations to the Contractor on earthwork construction techniques appropriate for the project.
4. Perform field testing during construction to provide quality control, to confirm that the techniques adopted by the Contractor are resulting in the necessary performance,

and to recommend corrective action as necessary as work progresses.

5. Provide any certifications as required regarding the earthwork materials and operations.
6. Field verify assumed design soil bearing pressures noted on the drawings.
7. Field measure density of subgrade and backfill materials by Contractor to ensure compliance with compaction requirements shown on drawings and specifications.

1.06 DEFINITIONS

A. Excavation: Removal of material encountered to subgrade elevations indicated on the plans and subsequent disposal of material removed. This also includes removal and disposal of unsuitable material encountered below subgrade, which will not provide the required bearing capacity or meet compaction requirements of subgrade as specified.

B. Unauthorized Excavation: Removal of material beyond indicated subgrade elevations or dimensions, with the exception of removal of unsuitable material for the preparation of subgrade as stated above. Work directed by the District to correct unauthorized excavation shall be at the Contractor's expense.

C. Remedial Work: Excavation that is required if the subgrade material becomes softened due to Contractor's delay in placing subsequent work or due to insufficient means of dewatering. Reconstruction of subgrades that are damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, shall be without additional compensation.

D. Additional Excavation: Excavation below subgrade elevations as directed by the District. Additional excavation and replacement material will be paid for in accordance with the unit price item "Additional Earth Excavation" as described in the Proposal and Agreement.

E. Additional Engineered Fill: Crushed stone material conforming to IDOT CA-6 gradation to be used to fill in Additional Excavation areas and paid for in accordance with the unit price item "Additional Engineered Fill".

F. Surplus Excavated Soil Materials: Excavated soil materials including topsoil, which will not be reused as fill, backfill or topsoil under this contract.

G. Subgrade: Undisturbed earth remaining after completing excavation, or the compacted fill or backfill immediately below granular sub-base, drainage fill, or topsoil materials.

H. Structures: Buildings, footings, foundations, grade-beams, slabs, tanks, retaining walls, curbs, or other man-made stationary features constructed/occurring above or below ground surface.

I. Backfill: Soil materials used to fill an excavation, or below-grade voids and pits resulting from building demolition and other construction operations.

J. Fill: Soil materials used to raise existing grades.

K. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

L. Subbase Course: Layer placed between the subgrade and base course for asphalt pavement, concrete pavement, or concrete walk.

M. Base Course: Layer placed between the subbase course and asphalt pavement, concrete pavement, or concrete walk.

N. Drainage Course: Layer below slab-on-grade, other slabs or mat foundations where indicated, used to minimize capillary flow of pore water or to improve drainage.

O. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.

P. Utilities: Underground pipes, pipe culverts, conduits, ducts, and cables, as well as underground services within buildings.

1.07 MEASUREMENT AND PAYMENT

A. Basis of bids - Excavation:
1. Lump Sum bid items shall include the cost of excavation as required for the proposed construction.
2. Lump Sum bid items shall include the cost of testing, loading surplus excavated soil materials, hauling away from site and disposing the materials, legally, off District property, and all related work.
3. Lump Sum bid items shall include the cost of loading all excavated materials other than soil materials, hauling away from site and disposing the materials, legally, off District property, and all related work.
4. Unit Prices shall apply only to those items of work specifically noted as Unit Price Work, and for contingent, unanticipated work.

B. Basis of bids – Groundwater: Lump sum bid items shall include the cost of all required pumping of ground water and disposal as permitted.

C. Basis of bids – Backfill, fill, and topsoil:
1. Lump sum bid items shall include the cost of backfill, fill, and topsoil for all areas as required for the proposed construction, with approved materials, and all related work, including testing and related activities by the Contractor for quality assurance and quality control.
2. Unit Prices shall apply only to those items of work specifically noted as Unit Price Work, and for contingent, unanticipated work.

D. ALL WORK SHALL BE INCLUDED IN LUMP SUM CONTRACT PRICE UNLESS OTHERWISE NOTED.

1.08 PROJECT CONDITIONS

A. Earthwork Constraints: See Specifications Section 01140 for Construction Limitations and Constraints applicable to earthwork.

B. Existing Utilities: Locate existing underground utilities in areas of excavation work. If utilities are indicated to remain in place, provide adequate means of support and protect during earthwork operations.
   1. Contact utility-locator service for area where Project is located before excavating.
   2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the District immediately for directions. Cooperate with the District in keeping respective services and facilities in operation. Repair or replace damaged utilities to the satisfaction of the District.
   3. Do not interrupt existing utilities serving facilities occupied by the District or others, during occupied or operating hours, except when permitted in writing by the District and then only after acceptable temporary utility services have been provided.
   4. Provide minimum of 48-hour notice in writing to the District and receive written notice to proceed before interrupting any utility.
   5. Payment for work related underground utilities not shown on the drawings shall be made in accordance with Allowance Item C as described in the Proposal and Agreement.

C. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

D. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.
   1. Operate warning lights as recommended by authorities having jurisdiction.
   2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations. See Specification Section 02068 for Shoring, Sheeting and Bracing.

E. Cleaning: When the Contractor's equipment is operated on any portion of a public roadway, the Contractor shall clean the traveled surface of dirt and debris at the end of each day's operation or in accordance with local requirements.

F. Reference Points: Protect and maintain benchmarks, monuments, and other reference points. If disturbed or destroyed, replace without cost to the District.

1.09 SELECTION AND TESTING OF BORROW MATERIALS

A. If borrow materials (imported soils including clays and topsoil; not including granular materials or rock products) are needed for the contract work, analytical testing shall be performed to ensure that the imported soil is free from contamination and an IEPA Form LPC-663 Uncontaminated Soil Certification by Illinois-Licensed Professional Engineer or Professional Geologist shall be fully completed (including Professional Seal) and provided to the District for review and approval.

B. Materials classified as commercially manufactured stone or sand, or manufactured topsoil that can be certified by the manufacturer to be uncontaminated, do not require the

environmental testing stated in Subsection 1.8. Materials obtained from the project site do not require the environmental testing stated in Subsection 1.8.

C. Only borrow materials meeting the requirements of Subsection 1.8, and as submitted to the District and approved by the District, shall be transported and delivered to District property and site of the contract work.

D. Costs associated with analytical testing of imported soil are the responsibility of the Contractor. Soil samples shall be collected in accordance with US Environmental Protection Agency (EPA) Publication No. SW-846, "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," and shall be analyzed by a National Environmental Laboratory Accreditation Program (NELAP)-Accredited laboratory approved to perform analytical testing in Illinois.

E. The representative soil sampling frequency per volume of soil materials certified will be as determined and justified by the Certifying Licensed Professional. However, it shall be noted that, for District contracts, a frequency of a minimum of one representative soil sample collected for every 2,000 cubic yards (in place), or fraction thereof, of imported soil is required to be tested.

F. If imported soil will be derived from more than one source or location, imported soil certification must be provided for each source. Approximate geographic coordinates (latitude/longitude) for each of the imported soil sample/borrow site location(s) shall be provided to the District in addition to the analytical data detailed below. The District reserves the right to inspect the borrow source(s) prior to accepting the proposed clean soil fill.

G. The following laboratory analyses shall be performed to document that imported soil is free from contamination:
   1. Volatile Organic Compounds (VOCs) by EPA Method 8260B
   2. Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270C
   3. Resource Conservation and Recovery Act (RCRA) Metals by EPA Method 6010C/7471B
   4. Organophosphorus Pesticides by EPA Method 8141
   5. Chlorinated Herbicides by EPA Method 8151A
   6. Polychlorinated Biphenyls (PCBs) by EPA Method 8082A
   7. Organochlorine Pesticides by EPA Method 8081A
   8. Cyanide by EPA Method 9010
   9. pH/Corrosivity by EPA Method 9040
   10. Nitrate as Nitrogen by EPA Method 4500

H. Imported soils shall be deemed acceptable for use if concentrations of all analytes from the representative soil sample(s) are below the following criteria:
   1. The most conservative soil remediation objectives (SROs) presented in Illinois EPA Tiered Approach to Corrective Action Objectives (TACO), Appendix B, Table A, Tier 1 Soil Remediation Objectives for Residential Properties, located in 35 IAC 742. 14.
   2. The most conservative TACO SRO values are presented in Illinois EPA Maximum

Allowable Concentrations (MACs) of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regulated Fill Operations, as defined in 35 IAC 1100 Subpart F.

I. A summary table of the MACs can be found at the following website: **********.epa.state.il.us/land/ccdd/new-maxallowable-concentrations-table.pdf.

J. In the event that any of the RCRA metal constituents exceed SROs, the maximum value of the county-specific USGS dataset for naturally occurring elements will be used for comparison. These values can be obtained at the following website: *******mrdata.usgs.gov/geochem/doc/averages/countydata.htm.

K. Analytical data shall be compared to the above standards to preliminarily evaluate if the imported soil contains any potential chemicals of concern (COCs) above the IEPA criteria. Laboratory analytical reports shall be provided to the District for all imported soil to verify the soil is free from contamination. To qualify a given volume of soil for use as import soil, a copy of the completed IEPA LPC-663 Form and associated backup information including the laboratory report(s) must be sent to the District for review and approval.

1.10 TESTING BY THE DISTRICT

A. The District may, at its option, perform additional testing, either by hiring a testing agency or on its own.

B. Any testing by the District or its testing agency does not in any way relieve the Contractor from hiring a testing agency, and a geotechnical consultant as necessary, conducting quality assurance testing and field testing to ensure that the installed works meet the contract requirements.

C. Testing by the Contractor does not preclude the District from determining to its satisfaction whether the installed works meet the contract requirements.

PART 2 – PRODUCTS

2.01 SOIL MATERIALS

A. General: Provide suitable borrow soil materials. Hauling to site shall be included in work of this section. Material shall meet the following requirements.
   1. Satisfactory Soil Material: ASTM D2487 soil classification groups GW, GP, GM, SW, SP, and SM or a combination of these group symbols; free of clay, rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, cobbles and other deleterious matter.
   2. Unsatisfactory Soils: ASTM D2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
   3. Backfill and Fill: Satisfactory soil materials as defined above, unless indicated

otherwise on the plans. The material shall be at least compactable to 95% of the maximum density as per ASTM D1557.

4. Subbase: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to CA-6 as specified in IDOT Standard Specifications, unless noted otherwise on the plans.
5. Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to CA-6 as specified in IDOT Standard Specifications, unless noted otherwise on the plans.
6. Pipe Bedding: Naturally or artificially graded mixture of natural or crushed gravel, and natural or crushed sand; conforming to CA-13 as specified in IDOT Standard Specifications, unless noted otherwise on the plans.
7. Granular Backfill for pipe: From spring line up to 12 inches above pipe. Naturally or artificially graded mixture of natural or crushed gravel, and natural or crushed sand; conforming to CA-13 as specified in IDOT Standard Specifications, unless noted otherwise on the plans.
8. Granular Drainage Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, conforming to CA-7 as specified in IDOT Standard Specifications, unless noted otherwise on the plans.
9. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; conforming to CA-6 as specified in IDOT Standard Specifications and/or as specified in Section 02317.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which the work is to be installed and notify the District in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.03 CONSTRUCTION METHODS

A. The Contractor shall satisfy himself as to the character, quality, distribution and extent of material to be excavated. No payment shall be made for any excavated material that is used for purposes other than those designated herein.

B. The Contractor may use any type of earth moving, compaction, and watering equipment he may desire or has at his disposal, provided the equipment is in a satisfactory condition and is of such capacity that the construction schedule can be maintained. The Contractor shall furnish, operate, and maintain such equipment as is necessary to control backfill density, layers, sections, and smoothness of grade.

C. If it is necessary to interrupt existing surface drainage, sewers or underdrainage, conduits, utilities, or similar underground structures, or parts thereof, the Contractor shall be responsible for and shall take necessary precautions to protect and preserve such services, or provide temporary services. When such facilities are encountered, the Contractor shall, before proceeding, notify the District in writing, as to who will determine if the facilities are to remain in service.

D. If the utilities are to remain in service, the Contractor shall protect them and shall, at his own expense, satisfactorily repair damage that may result from these operations.

E. If utilities are to be abandoned, the Contractor shall remove such utilities as shown on the drawings. The ends of sewers, water mains, conduits, etc., which are to be abandoned, but can remain in the ground, shall be plugged with concrete and capped, unless noted otherwise on the plans. Any abandoned pressure lines shall have a concrete thrust block poured over the cap to prevent pipe movement.

F. Compaction: Comply with ASTM D1557, modified proctor compaction control tests, whenever compaction control meeting a certain percentage of the maximum dry density is required in the specifications and/or plans for satisfactory soil material. When relative density requirements are specified and/or appropriate, comply with ASTM D4253 and ASTM D4254.

3.04 DEWATERING

A. The Contractor is responsible for acquiring a dewatering permit.

B. The Contractor shall, at all times during construction, provide and maintain ample means and devices with which he shall promptly remove and properly dispose of all water or sewage entering trenches, or other parts of the work, and keep said excavations as dry as possible until the structures to be built therein are completed. All water pumped or drained from the work shall be disposed of in a suitable manner without damage to adjacent property, sewers, pavements, electrical conduits, or other work or properties. Until the acceptance of the work, the Contractor shall keep the entire work pumped free of water and sewage, and before the acceptance of any part of the work, shall clean the entire length of such finished part of the work, to the satisfaction of the Engineer.

C. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the project site and surrounding area.

D. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
   1. Reroute surface water runoff away from excavated areas. Do not allow water to

accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

E. Discharge turbid water from well points or dewatering operations into approved desilting basins prior to surface disposal.

F. Dispose of water pumped or drained from the work in a manner satisfactory to the Engineer without damage to adjacent property or to other work under construction.

G. Do not discharge water into sanitary sewers, except as approved by the District.

H. Do not discharge water containing settleable solids into storm sewers.

3.05 EXCAVATION

A. General: Excavation shall be to subgrade elevations and dimensions indicated and specified within a tolerance of plus or minus 1 inch. It shall include, but not be limited to, excavation of pavements and other obstructions visible on surface; underground structure, utilities, and other items indicated to be demolished and removed, together with other materials encountered. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

B. Stability of Excavations: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.

C. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35° F.

D. Excavation For Structures :

1. Excavation for grade beams, slabs, footings, foundations and mat foundations: Excavate to the subgrade elevations indicated on the plans. Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement, when concrete is to be placed on undisturbed subgrade. Trim bottoms to required lines and grades to leave solid base to receive other work.

E. Excavation For Walks, Pavements and Roads :

1. Excavate subgrade surfaces under walks, pavements and roads to provide cross sections, elevations, and grades as indicated.

F. Excavation for pipes shall be in accordance with Subsection 3.20 - Excavation for Installation of Pipes.

3.06 PREPARATION & APPROVAL OF SUBGRADE

A. When excavation has reached required subgrade elevation, notify the Engineer, who will make an inspection of conditions.
   1. Additional excavation and replacement material will be paid for in accordance with the unit price item "Additional Earth Excavation" and "Additional Select Fill" as described in the Proposal and Agreement.

B. If the District or any testing agency (either hired by the Contractor or by the District) determines that bearing materials at required subgrade elevations are unsuitable or that unsatisfactory soil is present, continue excavation until suitable bearing materials are encountered and replace excavated material with compacted backfill or fill material, and/or as directed by the Engineer.
   1. Additional excavation and replacement material will be paid for in accordance with the unit price item "Additional Earth Excavation" and "Additional Engineered Fill" as described in the Proposal and Agreement.

C. Except at locations where undisturbed subgrade is required as per the plans, or when directed otherwise by the Engineer, proof-roll subgrade to detect soft and yielding material and material that will not compact readily. Proof-roll with heavy construction equipment, such as a fully loaded dump truck with an axle load of 32 kips. Do not proof-roll wet or saturated subgrades. A minimum of two coverages of the proof-rolling vehicle in perpendicular directions is required. Proof-rolling shall be performed under the observation of a representative of the District.

D. Any soft or loose soils encountered during the proof-rolling operations, which will not readily compact, soils exhibiting instability or excessive deflection beneath the proof-rolling vehicle, shall be removed and replaced with an approved granular fill or as approved otherwise. Proof-rolling shall be continued until all such soft and loose soils have been located and removed. In all cases, the final surface should be smooth, firm and exhibit no signs of significant deflection under a proof-roll.

E. Compact subgrade in accordance with Subsection 3.12. When subgrade has a density less than that specified for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

F. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Engineer, at the Contractor's expense.

G. The top of the subgrade shall not deviate more than 0.10 feet from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials, reshaping, and recompacting by sprinkling and rolling.

3.07 UNAUTHORIZED EXCAVATION

A. Unless directed by the Engineer, areas that are excavated excessively beyond what is shown on the drawings shall be corrected by the Contractor as described below at no additional cost to the District.

B. Under footings, foundations, retaining walls, or pavement, fill unauthorized excavation by extending indicated bottom elevation of footing or granular base to excavation bottom, without altering required top elevation. Class F concrete fill or engineered fill may be used to bring excavation bottom to proper elevation, when approved by the Engineer.

C. In locations other than specified above, backfill and compact unauthorized excavation as specified for authorized excavation of same classification, unless otherwise specified by the Engineer.

3.08 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials when approved by the Engineer. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Do not store within drip line of remaining trees.

B. Stockpile and retain soil materials or equipment at least 3 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from cave-ins, bank slides, and falling or rolling into excavations, or by a combination of both if necessary.

3.09 BACKFILL AND FILL

A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material. Install approved geotextile as indicated in the plans and specifications, to provide separation between different soil materials and/or aggregates.

B. Place and compact soil material in layers to required subgrade elevations, for each area classification listed below, using material specified in Subsection 2.1 of this section, or as directed.
   1. Under grass areas, use excavated or borrow material meeting the requirements for satisfactory soil material.
   2. Under walks, pavements and slabs, use granular material, excavated or borrow material meeting the requirements for satisfactory soil material, or a combination, except when other specific material is indicated on the plans.
   3. Under steps, ramps and building slabs, use engineered fill, except when other specific material is indicated on the plans.

C. Backfill excavations as promptly as work permits, but not until completion of the following:
   1. Construction below finish grade including, where applicable, dampproofing,

waterproofing, and perimeter insulation.
2. Acceptance of construction below finish grade.
3. Inspection, testing, approval, and recording locations of underground utilities.
4. Removal of concrete formwork.
5. Backfilling of voids with satisfactory materials.
6. Removal of trash and debris from excavation.
7. Removing temporary shoring and bracing, and sheeting.
8. Installing permanent or temporary horizontal bracing on horizontally supported walls.

D. Backfill for pipes shall be in accordance with Subsection 3.21 - Backfill for Installation of Pipes.

3.10 MOISTURE CONTROL

A. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
1. Remove and replace, or scarify and air dry, soil material that exceeds optimum moisture content by 2 percent and is too wet to permit compaction to specified dry density.
2. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.11 PLACEMENT AND COMPACTION OF BACKFILL AND FILL

A. Placement and compaction shall be as per the following:
1. Backfill areas shall be free of topsoil, and soft or unsuitable soils. Depressions or holes below the ground surface, whether caused by grubbing or otherwise, shall be backfilled with suitable material and compacted to a level grade before additional backfilling and final grading shall be permitted to start.
2. Place backfill and fill materials in layers not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 3 inches in loose depth for material compacted by hand-operated tampers. Granular backfill placed against retaining walls shall be compacted by hand-operated tampers.
3. Before compaction, moisten and aerate each layer as appropriate to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
4. Place backfill and fill materials evenly on all sides of structures, piping, or conduit to required elevations, and uniformly along the full length of each structure. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.
5. Control soil and fill compaction, providing minimum percentage of density specified

for each area classification in accordance with Subsection 3.12. Correct improperly compacted areas or lifts if soil density tests indicate inadequate compaction. Tests shall be performed by the Contractor at regular intervals as recommended by his geotechnical consultant and as appropriate to assure that the installed works meet the requirements of the contract but a minimum of one field density test for each 25 cubic yards of structural fill (min. one each lift) and one field density test for each 500 cubic yards of earth fill.

6. For open-graded or coarse granular material, use appropriate compaction methods that will avoid crushing of the materials, and will lock the materials in place without further movement, as approved by the District.

3.12 COMPACTION REQUIREMENTS FOR SUBGRADE, FILL AND BACKFILL

A. Compact soil and well-graded aggregate (such as CA-6) to not less than the following percentages of maximum dry density in accordance with ASTM D1557 and as listed in Section 02317:
   1. Under structures, building slabs, mat foundations, steps, ramps, walkways and pavements, compact the top 6 inches of subgrade and each layer of backfill or fill material at least to 95 percent maximum density.
   2. Under unpaved areas, compact the top 6 inches of subgrade and each layer of backfill or fill material to 90 percent maximum density.

B. Compact open-graded aggregate (such as CA-7) and coarse granular material with less than 10% passing No.4 sieve, to 70% relative density, unless noted otherwise.

3.13 GRADING

A. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated or between such points and existing grades.

B. Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated. Provide a smooth transition between adjacent existing grades and new grades. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

C. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades under walks or unpaved areas to required elevations within 1-inch tolerance.

D. The Contractor shall construct smooth transition between all newly constructed pavements, with existing road surfaces. Materials used for the transitional sections shall be consistent with the existing materials.

E. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface within ½ inch of the required subgrade elevation.

3.14 PAVEMENT SUBBASE AND BASE COURSES

A. General: Subbase and base courses consist of placing subbase and base material, in layers of specified thickness, over subgrade surface to support a pavement.
   1. A base course that is different and distinct from the subbase course may not always be required or specified under this contract. Base/Subbase requirements for each area of work shall be as indicated on the plans.

B. Under pavements and walks, place subbase & base courses on prepared subgrade and as follows:
   1. Place base course material over subbase.
   2. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.
   3. Shape subbase and base to required crown elevations and cross-slope grades.
   4. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.
   5. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 24 inches wide, of the same soil materials as the subbase/base course, and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

3.15 DRAINAGE COURSE

A. Under slabs-on-grade, other slabs or mat foundations, where indicated, place drainage course on prepared subgrade and as follows:
   1. Compact drainage course to required cross sections and thickness, to 70 percent relative density according to ASTM D4253 and ASTM D4254, unless noted otherwise on the plans.
   2. When compacted thickness of drainage course is 6 inches or less, place materials in a single layer.
   3. When compacted thickness of drainage course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

3.16 QUALITY CONTROL AND FIELD TESTING

A. Quality Control is the responsibility of the Contractor. Contractor shall adopt appropriate construction methods and utilize testing at regular intervals to ensure that level of compaction and other requirements of the contract with regard to earthwork are met.

B. In addition to the Contractor’s quality control procedures and tests, the District may, at its option, conduct additional quality checks, utilizing its own resources or through a testing agency or a representative hired for this purpose.

C. Allow testing agency, regardless of whether it was hired by the Contractor or by the District, access to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, unless noted otherwise on the plans, at least one test of each soil stratum will be required to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.

E. Trench Backfill Compaction Test: See Subsection 3.21.

F. Compaction of soils in place shall be tested according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable.

G. Any tests by the District will be performed at locations as identified by the District and its testing agency.

H. When any testing agency, either hired by the Contractor or by the District, reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained, at the Contractor's expense.

I. All costs related to quality assurance and quality control, and for remedying deficient construction shall be considered Contractor's expense, regardless of whether the deficiencies are identified by the Contractor or his testing agency, or by the District or its testing agency.

3.17 MAINTENANCE AND PROTECTION

A. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous objectionable conditions such as ice, flooding, and pollution. Clear adjacent structures and improvements of dust, dirt, and debris caused by earthwork operations. Return adjacent areas to conditions existing prior to the start of the work.

B. Protect newly graded areas from traffic, freezing and erosion. Keep free of trash and debris.

C. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.

D. Where completed, compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

E. Where settling is measurable or observable at excavated areas during warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface of finish to match adjacent work and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF WASTE MATERIALS

A. Remove all excavated materials, other than soil materials, including trash, debris and waste materials and dispose of it legally, off the District's property.

3.19 DISPOSAL OF SURPLUS SOIL MATERIALS

A. Contractor shall load surplus excavated and other soil materials, haul away and dispose of the materials, legally, off District property, at no additional expense to the District.

3.20 EXCAVATION FOR INSTALLATION OF PIPES

A. Excavation for installation of pipes shall be as indicated on the plans. The excavation shall be as per Subsection 3.20 for those details that are not shown on the plans.

B. Except as indicated on the plans, excavation for pipes shall be of adequate size for construction, installation, and inspection of pipes, and to provide safe working condition, but shall be confined within the narrowest possible limits. Trench excavation shall be as nearly vertical as possible. The bottom of the trench shall be under-cut to make allowance for placing pipe bedding. Bell holes, if applicable, shall be excavated at proper intervals in the bedding to provide uniform support for the pipe. The bedding thickness shall be a minimum of one-quarter of the nominal dimension of the pipe, but not less than 6 inches.

C. The Contractor shall install adequate sheeting and bracing to provide safe working conditions.

D. Allow no water to rise in the trench excavation until sufficient backfill has been placed to prevent pipe flotation.

3.21 BACKFILL FOR INSTALLATION OF PIPES

A. Backfill shall be installed for pipes, as indicated on the construction plan details.

B. Allow no water to rise in the trench excavation until sufficient backfill has been placed to prevent pipe flotation.

C. Coordinate backfilling with utilities testing.

D. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

E. Backfill shall be granular material as indicated on the plans, and shall be carefully placed, without impact, and hand tamped at the sides to a height of not less than 12 inches above the top of the pipe, after which approved satisfactory soil materials shall be used for backfill, and shall be placed in uniform layers not exceeding 6 inches, loose measure, and shall be compacted by approved methods to a minimum density of 90% for granular materials and 90% for cohesive soils, unless otherwise noted on the plans or instructed by the Engineer.

Flooding or sluicing in lieu of mechanical compaction will not be allowed.

F. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit, to avoid damage or displacement of utility system.

G. Where wood sheeting is used, it shall be cut off and left in place below a level one foot above the top of the pipe. Sheeting above a level of one foot above the top of the pipe shall be removed.

H. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.

I. Place and compact final backfill in layers to elevations as specified, shown, or directed.

J. Trench Backfill Frequency of Test: Perform in accordance with Section 02317.

K. All pipes located below the bottom of the footings of the proposed structures shall be embedded in Class F concrete for the full width and depth of the trench up to the bottom of the proposed footings with not less than 6 inches of concrete cover on the bottom and sides of the pipes unless otherwise noted or specified.

END OF SECTION

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APPENDIX E – ABB COST PROPOSAL

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MWRD

O'Brien Water Reclamation Plant

Battery E Plant Expansion

Reference Number: JSH-240430-1 Firm

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Revision History

Revision History Table

Revision Number	Issue Date	Comments
Revision --	5/2/2024	Draft issued for review.
Revision 00	6/19/2024	Initial Release.
Revision 01	7/10/2024	Modify Terms and Conditions statement.
Revision 02	4/23/2025	Revise for 2025 Firm pricing, and Specification “Contract 21-092-3P O’Brien Water Reclamation Plant Battery E Activated Sludge Facility”, 98%.
Revision 03	6/23/2025	Revise for Power Monitoring addition. Add Clarifications for Specification sections provided since Rev 02.
Revision 04	9/4/2025	Revised to add second location remote I/O cabinets, splitting I/O between locations per meeting/emails with customer August 2025. Adjusted quantities of switches, UPS, power supplies. Increased loop drawings per revised IO.

1 Introduction

ABB is pleased to submit this Firm proposal for the MWRD - O'Brien Water Reclamation Plant Battery E Plant Expansion. Our proposal covers the furnishing of the hardware, software, and services as described in the attached proposal, based on the request.

This proposal is based on the following:

- Provide controller, I/O, and cabinet hardware and software for the DCS.
- Provide DCS configuration and graphics engineering, and field services.

2 Hardware & Software Scope of Supply

2.1 Software Scope of Supply

ABB will be providing the following software:

- Two (2) 800xA Operator Workplace Client Expansion Licenses
- Two (2) PM891 Redundant Controller Software License
- Eight (8) CI867 Modbus TCP Software Licenses
- Four (4) CI871 Profinet I/O Software Licenses

2.2 Hardware Scope of Supply

The following hardware is included in the base scope of supply.

2.2.1 AC800M Controller Hardware

The control logic will be implemented in a controller of the AC800M family.

Several AC800M controller modules are available that vary in terms of processing power, memory size, and redundancy support. Each CPU module is equipped with built-in Ethernet port(s) for communication with other controllers and for interaction with operators, engineers, managers, and higher-level applications. These ports can be configured for redundancy for those cases where availability is of paramount importance. The module is also equipped with two RS-232C ports that can be used for point-to-point communication with programming/debugging tools and with third-party systems and devices.

AC 800M PM891 controller

Features of the controllers include:

- Connector for power supply and status signals (L+, L-, SA, SB).
- DB25 connector for Electrical CEX-Bus (for communication interfaces like Profibus, Modbus TCP, etc.)
- Internal battery and external battery connector.
- Real time clock.
- RJ45 connectors for two Ethernet Control Networks CN1 and CN2
- Two COM ports (COM3 for RS232 serial links, COM4 as a service port).
- Optical ModuleBus connector for connection to a maximum of seven I/O clusters, with 12 non-redundant or six redundant modules (that is, 7x12 = 84 modules).
- Connectors for Redundancy Link.
- CF Compact Flash memory connector
- LEDs and Pushbutton reset switch

Control Processor Proposal Summary

Control Area	Item	Redundant	Quantity
Battery E	PM891	Yes	Two (2) Redundant Pairs

Notes:

1. *ABB has included 20% spare controller capacity.*

2.2.2 S800 I/O

The S800 Input/Output (I/O) system utilizes a wide variety of input, output, and signal conditioning modules to interface process signals to the ABB Distributed Control System. Module types, ranging from standard analog and digital I/O to specialty I/O such as sequence of events, can be combined to provide a comprehensive set of functionality to meet all market and industrial requirements. The S800 I/O modules are designed to support online replacement. Modules can be removed and inserted under power.

I/O Module Proposal Summary

Location	AI890 Module (8-Point) Qty.	AI830 RTD Module (8-Point) Qty.	AO890 Module (8-Point) Qty.	DI828 Module (16-Point) Qty.	DO818 Module (16-Point) Qty.
Battery E – RIO-01	13	1	4	25	4
Battery E – RIO-02	17	1	6	19	2
PCB	-	1	-	2	-
Metering Building	1	1	1	1	-
Spare I/O Modules	3	1	1	5	1
Total	**34**	**3**	**12**	**52**	**7**

Notes:

1. *Digital Outputs are provided with relay boards.*
2. *Marshalling is provided for digital inputs and outputs.*
3. *A minimum of 20% spare I/O is provided.*
4. *Cabinets are provided with temperature monitoring.*

2.2.3 Interface Hardware

Interface Proposal Summary

Item	Qty.	Location/Comments
CI867 Modbus TCP Interface	4 pairs	Redundant Interface to Flygt MAS
CI871 Profinet I/O Interface	2 pairs	Redundant Interface to S800 I/O
CI845 Ethernet FCI, TC860, TC810 - Redundant Interface to Profinet S800 I/O Stations	5 pairs	Battery E – RIO-01
	4 pairs	Battery E – RIO-02
	1 pair	PCB
	1 pair	Metering Building

2.2.4 Spare Parts

Please see the Equipment List in the Attachments section for a list of spare parts included in the base offering.

2.2.5 Plant Networking Hardware

Plant Network Switch Proposal Summary

Type	NE810 Switch Quantity	NE820 Switch Quantity
Controller Network	4	6
Modbus TCP	2	2
800xA Network	4	-
Profinet I/O Network	6	4
Drives Network	43	-
Power Monitoring Network	6	-

Notes:

1. *All switches are ABB managed switches.*
2. *Switches are provided with SFP Transceivers for all networks except the drives network.*

2.2.6 Cabinet Areas Scope of Supply

Cabinet Proposal Summary

Area	Comments
PCB DCS Room	One (1) new Controller cabinet (72”W x 72”H x 18”D) with networks to remote I/O locations, NEMA 12, front-access, two-door with vents, exhaust fans, and floor stands. Sized to accommodate three pairs of redundant controllers. One (1) 1500 W UPS is also provided.
PCB DCS Room	One (1) new I/O cabinet (48”W x 36”H x 12”D), with LED light, AC breaker and fuses.
Metering Building	One (1) new I/O cabinet (48”W x 36”H x 12”D), with LED light, AC breaker and fuses.
Battery E – North	Two (2) new remote I/O cabinets, one left and one right (86”W x 78”H x 24”D), NEMA 4X, front-access, two doors per side. One (1) 1500 W UPS is also provided.
Battery E – South	Two (2) new remote I/O cabinets, one left and one right (86”W x 78”H x 24”D), NEMA 4X, front-access, two doors per side. One (1) 1500 W UPS is also provided.
Field Networking	Two (2) new Networking cabinets (48”W x 36”H x 12”D), each with four (4) networking switches, four (4) 20A power supplies, fiber panel, LED light, AC breaker and fuses.

2.2.7 HMI Hardware

ABB will supply all necessary Dell computer hardware per ABB's specifications, third party software, and all third party equipment as follows:

- Two (2) 800xA Client Workstations
- Two (2) Industrial Pedastal Workstation enclosure with 24" monitor and industrial keyboard

ABB provides McAfee anti-virus software on all computers and Microsoft Excel on engineering computer.

Please see the Attachments section of this proposal and refer to the Overview Drawing and Detailed Bill of Material.

3 Project Organization

3.1 Project Management

A Project Manager will be assigned to the project. The Project Manager develops the project implementation plan in conjunction with the Project Team and is responsible for its execution in accordance with the Client's contractual requirements and expectations. The Project Manager is supported by the Lead Engineer and by Technical Specialists, as needed.

The Lead Engineer is responsible for directing the technical implementation of the project and assuring consistency and uniformity across the design and implementation phases of the project by following the design basis agreed upon with the customer.

3.2 Meetings

The following meetings are included.

Meetings Proposal Summary

Qty.	Meeting	Location	Duration	Attendees
1	Kick-off Meeting	Conference Call	2 Hours	Project Manager & Lead Engineer

Notes:

1. *Additional review meetings can be conducted by conference call.*

4 Project Engineering Services

4.1 Basis of Project Engineering

Below is the basis of system definition and engineering.

4.1.1 System Tags for the DCS

Hardwired I/O Points Summary

Signal Type	Battery E, RIO-01	Battery E, RIO-02	PCB	Metering Building
Analog Input, 4-20 mA	81	111	0	2
RTD,	1	1	0	0
Analog Output, 4-20 mA	23	37	0	1
Digital Input, 120 VAC System Powered	309	240	8	4
Digital Output, 24/120 V Field Powered	42	24	0	0
TOTAL	**456**	**413**	**8**	**7**

Notes:

1. *I/O counts are per specification section DCS Input/Output Schedule emailed to ABB June 5, 2025, updated via email August 8, 2025.*

Foreign Device Interface Points Summary

- Two-hundred fifty-nine (259) Soft I/O points, as detailed in the Attachments section.

4.1.2 System Displays

System Display Summary

ABB will provide the following graphics:

- One (1) Overview Graphic
- A total of eight (8) Process Graphics (including System, Process, and Trend Displays).

4.2 Controller Logic Engineering Services

ABB will provide the engineering services required to configure the new controller as defined below. Part of the engineering services will be provided from the office, with the remaining to be provided on-site.

- Application engineering services required for control logic and sequences to support new controllers.
- Hardware layout design for new controllers and I/O. Note: AC800M controllers to be installed in new cabinets.

- ABB's MOD300 CCF library will be used for the AC800M controller configuration. This library will give the same look and feel as the existing operator interface and logic.
- Hardware assembly includes the mounting of equipment (modules, power, terminations, etc.) onto din-rails mounted in new enclosures and wiring of power and communications channels located within the cabinets.
- Loop Drawings for eight-hundred eighty-four (884) hardwired I/O points.
- Project services also include Project Management, Procurement, System Documentation, Site Testing and Site Services.

4.3 Customer Witness Test

ABB has based the proposal on providing the following:

Customer Witness Test Proposal Summary

Location	Duration
Customer Witness Test Hardware - ABB Assembler Cleveland, OH	Three (3) Days
Customer Witness Test Software – Customer Plant Site during 2nd Programming Review Workshop	One (1) Week

5 Field Service

A detailed Summary of the service support hours can be found below.

Field Service Proposal Summary

ABB Personnel	Purpose/Outage	Trips	Duration	ABB Personnel Shifts
Field Service Engineer	Kick-off Meeting, Site Walkdown and Data Gathering	1	4 Days	12hr Days (Monday - Thursday)
Field Service Engineer	Design Review Meeting and Discussions	1	4 Days	12hr Days (Monday - Thursday)
Field Service Engineer	Two Programming Review Workshops (See note 6)	2	8 Days	12hr Days (Monday - Thursday)
Field Service Engineer	Application Engineering, Field Installation, and Commissioning	7	28 Days	12hr Days (Monday - Thursday)
Field Service Engineer	Formal Training	1	4 Days	12hr Days (Monday - Thursday)

Notes:

1. *Any adjustment of hours (increase or decrease) will result in a responding change order. Please note, a per diem rate for Field Service is provided in the Commercial Section of this proposal for your information.*
2. *The Field Service Engineer shall be granted unencumbered access to the equipment upon which work is to be conducted. Standby time, resulting from any issue, will be charged against the stipulated hours.*
3. *Field Service time is based on 12-hour work days, Monday through Thursday, during normal working hours.*
4. *Travel & Living expenses have been included.*
5. *Formal Training for two four-hour sessions for each of three shifts to take place during one four-day work week. Additional training will take place informally during commissioning. ABB will provide standard training materials.*
6. *One workshop shall be conducted once the draft process graphic displays are developed, and the second workshop shall be conducted a minimum of six weeks prior to anticipated start-up.*

6 Clarifications and Technical Comments

ABB's proposal is in accordance with the customer specification as amended by the following comments. The majority of the following comments indicate minor variances that allow an equal level of functionality to be provided at a lower contract price. These comments may be eliminated with an increase in the contract price, but not necessarily an equivalent increase in the level of functionality delivered. ABB's proposal meets the functional intent of the specification, and at the lowest possible contract price.

This Proposal is in accordance with the 98% Specification Documents (listed below) for Contract 21-092-3P O'Brien Water Reclamation Plant Battery E Activated Sludge Facility project as amended by the comments in the tables below.

- Section 13300 - Distributed Control System
- Section 13309 – Process Control Narrative
- Section 13310 – Distributed Control System Input/Output Schedule
- Drawing IC-002

The validity of ABB's proposal is contingent upon the following comments and qualifiers being incorporated into the contract arising from this proposal:

<u>General Comments – Applicable to all Spec Sections</u>

1. Installation, demolition and equipment required for these activities to be supplied by others.
2. All cabling and wiring to be supplied and installed by others.
3. VFD's, Control Panels, Instrumentation (and calibration of instruments), and Fiber Optic cables and associated equipment outside of proposed cabinets and configuration/engineering thereof are by others.
4. Software testing at site will show graphics without live or simulated values.
5. If required, controller cabinet central UPS system to be provided by Customer.
6. Scope not specifically identified in this proposal is outside ABB's scope of supply. ABB's scope of supply is to implement the DCS logic.

7. The customer will provide ABB with sufficient advance notice of the required plant outages to perform the required on-site work in a manner that does not require an expedited on-site schedule.
8. The Customer will be required to provide a drawing package to be used for installation purposes to ABB and the subcontractor. Required information includes plan and elevation views of locations where the conduit fiber routes and ABB hardware are be installed. Note that some of these drawings exist and will be reused from the current fiber project or other ongoing infrastructure projects. ABB will also require all relative submittals from other vendors.
9. Final I/O list and cabling information documentation provided by ABB to the Customer will be in Excel spreadsheet format.
10. ABB has not included any modifications or materials for the existing field hardware or other control sub-systems as part of this offering.
11. No testing of interfaces to any third-party system is included in the Customer Witness Testing.
12. Customer Witness Test does not include verifying functionality of all 3rd party interfaces (Foreign Device Interface functional check).
13. Cabinet/Sub-panel layouts are per ABB standards.
14. Customer to provide labor for any required power, field, network, or LAN cabling to the new cabinets.

Section 13100 – I & CS General Requirements		
Section	**Reference**	**Comment**
1.01.A	Summary	ABB will only provide DCS for this project. ABB takes exception to any other items. ABB will not provide coordination with other vendors. ABB will support any coordination meetings required by the System Integrator. ABB will not provide any instantiation or construction whatsoever.
1.01.D	Support for Testing	ABB has quoted a block of hours as laid out in our proposal. ABB will pull our service engineers from site once those hours are utilized. A change order in advance would be required for additional time.
1.01.F	Division 13	ABB will supply the equipment defined in our proposal, as previously provided to MWRD and currently operational, which do not necessarily comply with all of Division 13. ABB has included no installation services.
1.01.F	In addition, it should be noted that Section 13100…	The intent of this statement is not clear. ABB assumes it is applicable to the General Contractor, but not specific to ABB's scope of supply.
1.01.G	Training	ABB's training is described in Section 5 and will cover the ABB Distributed Control System only. Instrumentation training to be provided by others.

Section 13100 – I & CS General Requirements		
Section	**Reference**	**Comment**
1.02	References	ABB will supply the equipment defined in our proposal, as previously provided to MWRD and currently operational, which do not necessarily comply with all of the standards referenced.
1.03.A	Control System Definition	ABB will supply only the equipment defined in our proposal, not other related equipment.
1.04	BABA	ABB will provide standard documentation only, as we have done with all of our MWRD contracts. ABB will not provide custom submittals.
1.05	System Description	ABB will provide standard equipment only, as with all of our other MWRD contracts and currently operational. All ABB equipment must be installed and protected in accordance with ABB's Site Planning and Preparation manual.. ABB will provide no other equipment, certifications, etc. than as explicitly described in our proposal.
1.06	Submittals	ABB will provide standard documentation only, as we have done with all of our MWRD contracts. ABB will not provide custom submittals.
1.07	Delivery, Storage, and Handling	ABB has included delivery. Storage and handling must be provided by others.
1.08	Project/Site Conditions	ABB will provide standard equipment only, as with all of our other MWRD contracts and currently operational. All ABB equipment must be installed and protected in accordance with ABB's Site Planning and Preparation manual. ABB will provide no custom or other equipment, certifications, etc. than as explicitly described in our proposal.
3.05	Installation	ABB has not included any instillation related scope of supply.
3.14.A	Sample Calibration Certificate	This Certificate is not applicable to ABB's scope of supply and will not be utilized.

Section 13300 – Distributed Control System		
Section	**Reference**	**Comment**
1.02	Drawings and general provisions of the contract…	ABB takes exception to all parts of the General and Supplementary terms and conditions, as well as Division 1. ABB's proposal is based on our previously negotitated agreement with MWRD, which have been used for all projects since 2002. Thus, the Terms and Conditions of ABB's proposal are based on the Agreement for Requisition Number 1590829, Dated 2022, and all Amendments thereto between Metropolitan Water Reclamation District of Greater Chicago Inc. and ABB Inc, with the exception of Article 26 being updated to reference this offering herein. Other than the additional terms set forth herein below, no other terms and conditions shall apply. ABB reserves the right to increase price if purchaser requests any changes to the foregoing terms and conditions. ABB takes exception to all parts for Division 11 and 16, as they cover items not being supplied by ABB and are therefore inapplicable.
1.03	References and Standards	The design intent of the proposed Control System is to comply with the most common codes, standards and design practices found in our own industry, as well as those of the markets we serve.
1.04, here and in other Spec Sections	BABA	ABB's understanding is that the BABA requirements do not apply to the our system because SCADA systems are listed as "Exempt Products" according to the AIS Site Visit Hand-out, where Exempt Products are defined as "Materials that are not considered construction materials for the purpose of the AIS requirement, including mechanical and electrical components, equipment and systems." Thus, ABB will not comply.
1.05.A.7	Submittals, Interconnection diagrams	ABB will provide its standard documentation for hardware, software and configuration (commensurate with existing plant drawings provided by ABB), with no customizations. Standard drawings do not include anything outside of the ABB cabinets (e.g., any details relative to field wiring, etc.).
1.05.A.16	Submittals, timeline	ABB does not take responsibility for the startup timeline, as many factors outside of ABB are involved.

Section 13300 – Distributed Control System		
Section	**Reference**	**Comment**
1.05.B	Preliminary O&M Manual	Preliminary O&M Manual to be assembled and submitted by others. ABB will provide standard documentation only, with no customizations. Specifically, ABB will not provide SAMA drawings or control strategy description. Only soft copy of actual configuration will be provided.
1.06	Final O&M Manual Submittals for Closeout	Final O&M Manual Submittals for Closeout to be assembled and submitted by others. ABB will provide standard documentation only, with no customizations. Specifically, ABB will not provide SAMA drawings or control strategy description.
1.07.A	...verify accuracy of all IO listings...	This task will require support from other contractors and vendors. ABB takes no responsibility for coordination thereof. ABB will be a contributor only.
1.07.D	...storage and handling of all equipment...	ABB will not be involved in storage or handling of equipment at the site.
1.07.E	Contractor shall be entirely responsible for meeting the requirements of the applicable codes, standards, Contract Documents, and to make all equipment functional.	ABB does not take responsibility for these items. All ABB deliverables will be standard documentation.
1.07.F	The District's decision shall be final and binding on Contractor.	ABB does not agree to providing unilateral decision-making to the District, nor to be bound thereto.
1.07.H	Isolated contacts	Digital I/O modules are provided with isolated contacts, analog I/O modules are not.
1.08.B	Spare Parts packaging	Standard packaging will be provided.

Section 13300 – Distributed Control System		
Section	**Reference**	**Comment**
2.01	DCS System Hardware and Software	ABB will provide standard hardware and software, commensurate with that already operating at the O'Brien WRP.
2.01.M	DCS supplier shall present the proposed monitoring and control strategies for Battery E...	Control narratives are by others and to be provided to ABB. ABB is responsible for implementing the control narratives. Workshops to be conducted to confirm ABB's implementation matches control narrative design provided by others.
2.01.R	IO Cabinet Quantity	Cabinet quantity per discussion with Customer August 4, 2025 and subsequent emails.
2.04.A	Fabrication	ABB takes exception to all parts of 16160. ABB will supply cabinets and associate documentation in accordance with those provided to MWRD previously and are currently in operation at the plant. The standards referenced are voluminous and cannot confirm compliance with every aspect. However, we will use the same cabinets that are currently deployed throughout the plant. Thus, we take exception to this section. However, we do feel that we meet the intent of this specification. Further, according to previous contracts with MWRD, BABA is not applicable to DCS supply. ABB takes exception to all parts for Section 16902, as it covers items not being supplied by ABB and are therefore inapplicable.
2.06.A	Payment Schedule	Please see ABB's proposed Payment Schedule in section 9.10 of this proposal.
2.06.B	Warranty	Warranty will be in accordance with Terms and Conditions included in the Attachments section below.
3.01.A	Interface with Other Products	ABB does not take responsibility for any coordination. ABB will be a contributor.

Section 13300 – Distributed Control System		
Section	**Reference**	**Comment**
3.02	Factory Testing	Hardware factory testing to take place at ABB assembler. The Programming Review Workshop at Customer site will serve as Software factory testing. An integrated system test with all system equipment connected is not included in ABB's proposal at this time. Further discussion with the Customer is required to better understand the needs and assess the approach for conducting an integrated system test.
3.05	Installation	ABB takes no responsibility for installation.
3.06.A	Field Service Personnel	ABB will provide no more than one field service engineer. Contractor or District must provide any services need outside the DCS (e.g., at the instrument for loop checks).
3.08.B	48-Hour Proving Run	ABB takes no responsibility for field sensors/ transducers and instruments.
3.08.C.2	Operational Availability Demonstration	ABB service engineer will not be on site for the 30-day Operational Availability Demonstration.
3.08.C.2. E & F	Control Panels, Sensers/ Transducers and Instruments	ABB takes no responsibility for field sensors/ transducers, instruments or local control panels.

Section 13309 – Process Control Narrative		
Section	**Reference**	**Comment**
1.02.C	Instrumentation HW and SW	ABB does not take responsibility for any instrumentation.

6.1 Proposal Exclusions

The following are excluded from the scope of this proposal, but some can be quoted upon request.

- Equipment not identified in this proposal
- Configuration of 800xA features not currently included in the existing system.
- Data in any files with errors will be processed for additional charges.
- Set up, configuration and connection of existing third party hardware/ software to the 800xA system is done by others (drives and other intelligent interfaces).

7 System Pricing

The System as Described in this Proposal: **$3,778,100.00**

Notes:

1. *The pricing does not include any taxes or duties that may be charged by any governmental authority. ABB Inc. shall be reimbursed for any such taxes, duties, etc. that it may pay on the work or equipment covered by any order resulting from this proposal.*

8 Optional Pricing

8.1 Field Service Pricing

If additional field service time, beyond the time included in the proposal is required, the field service will be invoiced per MWRD – O'Brien Water Reclamation Plant active and valid ABB Care Agreement. If no active and valid ABB Care Agreement is in place, field service will be invoiced at List Price in accordance with ABB Field Service Rate Sheet at the time services are rendered.

9 Purchase Order Instructions

If this proposal meets your approval, please send your purchase order referencing the Proposal Number, JSH-240430-1, Revision Number, and Date information to timmy.maypole@us.abb.com. If signatures are required, please send a signed version of the purchase order.

Please also include a statement in the purchase order referencing the agreed upon Terms and Conditions to be used.

10 Commercial

10.1 Terms and Conditions of Sale

The Terms and Conditions of this Proposal are based on the Agreement for Requisition Number 1590829, effective date of April 14th, 2023, and all Amendments thereto between Metropolitan Water Reclamation District of Greater Chicago Inc. and ABB Inc, with the exception of Article 26 being updated to reference this offering herein.

Other than the additional terms set forth herein below, no other terms and conditions shall apply.

ABB reserves the right to increase price if purchaser requests any changes to the foregoing terms and conditions.

10.2 Cybersecurity Clause

ABB has established and maintain a formal information and cybersecurity program which includes commercially reasonable technical and organizational measures, in order to protect its automation solution or automation solution components against security breaches, accidental or unlawful destruction, loss, alteration, and unauthorized disclosure of, or access to its content. It is the customer's sole responsibility to provide and ensure a secure connection between the Customer's automation solution and the Customer's network or any other network on an ongoing basis. If the customer provides server, virtual host, client and/or networking components for the automation solution components, it is the customer's sole responsibility for establishing and maintaining appropriate measures. The Customer must establish and maintain appropriate measures (such as, but not limited to, installing firewalls, applying authentication measures, data encryption, installing antivirus programs, etc.) to protect the automation solution, including its network and external interfaces against any type of security violations, unauthorized access, interference, intrusion, leakage and/or theft of data or information. Customer waives any and all claims against ABB, its Affiliates, Officers, Directors, Employees or Assigns for damages and/or losses of whatever type related to security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information caused by Customer's failure to maintain the appropriate security measures described above.

10.3 Market Volatility Clause

The Parties are aware of the challenges related to outbreaks, epidemics, war (declared or undeclared), government regulations and acts of governmental authorities (including sanctions), civil unrest, and general shortages of electronic components and elements,

market volatility, availability and cost of raw materials, commodities, as well as the shortage and market fluctuation of logistic/transportation availability, costs and capacities that may impact the normal business activity and cost of performance, the delivery [schedule(s)/dates] and/or the execution of the scope or performance of the Services, the impacts of which are currently unknown. Notwithstanding anything in this agreement to the contrary, if as a result of any of the above aforementioned events, the costs of Seller's performance increase or Seller 's performance obligations are materially adversely affected or delayed, the Parties in the spirit of cooperation, will work together in good faith and within a reasonable time after the invocation of this Clause, to negotiate alternative contractual terms in terms of equitable adjustments to delivery [schedules/dates], pricing and/or possible reductions of the contractually owed quantity of the Equipment and / or Services to be delivered to Purchaser. The aforementioned shall be performed with a view to employing reasonable efforts to ensure that this agreement can be at least fulfilled in part.

Each Party waives any claim against the other Party either for direct damages and/or loss of profits and/or indirect and/or intermediate and/or consequential and/or punitive damages, penalties and/or liquidated damages arising from or anyhow connected with any of the challenges listed above. If any dispute or difference arises between the Parties, the Parties hereto shall endeavor to settle such dispute amicably.

Any contract, order acceptance or order confirmation by Seller is entered into and made subject and conditioned to the above terms, which the Parties recognize as fundamental conditions of any such agreement within the Parties.

10.4 Government Compliance

For all U.S. federal, state, and/or municipal end-user sales (collectively "U.S. Government"), Purchaser shall disclose and provide all U.S. Government contractual flowdown requirements to ABB Inc. and its affiliates and related entities (collectively "ABB") when requesting a quote/proposal from or placing an order with ABB. Purchaser shall indemnify, defend, and hold harmless ABB from and against all losses, costs, claims, causes of action, damages, liabilities, and expenses, including attorney's fees, all expenses of litigation and/or settlement, and court costs, arising from its failure to comply with this obligation.

ABB's proposal is conditioned upon the assumption: (i) there is not a small or diverse business set aside; (ii) absent a wage determination attached to the RFP ABB's services are exempt from prevailing wage obligations; (iii) absent an explicit prohibition listed in the RFP, ABB may procure from any country (except those countries and entities listed on a sanctioned list) consistent with applicable trade control laws; all rights to technical data or software are subject to ABB's standard commercial licenses; and (v) the price is considered reasonable and based upon adequate price competition.

Further, if this proposal supports a federal contract, ABB provides "Commercial Products" or "Commercial Services" as defined by the Federal Acquisition Regulation ("FAR") Part 2.101. In accordance with 41 U.S.C. 3307, contracts for the acquisition of commercial products or commercial services shall, to the maximum extent practicable, include only those clauses— (1) required to implement provisions of law or executive orders applicable to the acquisition of commercial products or commercial services; or (2) determined to be consistent with customary commercial practice. Consistent with

this statute, ABB's proposal is conditioned upon the assumption only the following FAR clauses apply:

52.212-5(e) – including the FAR clauses explicitly indicating incorporation by being checked in accordance with the clause prescription; or

52.244-6 – if required to be incorporated in ABB's customer's contract.

Any change to these assumptions will be deemed a "change" and subject to a mutual agreement and an equitable adjustment.

10.5 Integrity Provisions

Applicable Integrity Laws means:

(i) *Anti-bribery and anti-corruption laws:* including U.S. Foreign Corrupt Practices Act 1977 (as amended), UK Bribery Act 2010 (as amended), any legislation enacting the principles of the OECD Convention on Combating Bribery of Foreign Officials and any other applicable laws, rules, regulations, decrees and/or official governmental orders relating to anti-corruption, anti-money laundering and anti-tax evasion in relevant jurisdictions (collectively "**Anti-Bribery & Corruption Laws**"); and

(ii) *Sanctions and trade control laws and regulations:* any applicable laws, regulations, or administrative or regulatory decisions or guidelines that sanction, prohibit or restrict certain activities including, but not limited to, (i) import, export, re-export, transfer, or trans-shipment of goods, services, technology, or software; (ii) financing of, investment in, or direct or indirect transactions or dealings with certain countries, territories, regions, governments, projects, or specifically designated persons or entities, including any future amendments to these provisions; or (iii) any other laws, regulations, administrative or regulatory decisions, or guidelines adopted, maintained, or enforced by any Sanctions Agency on or after the date of this Agreement (collectively, "**Trade Control Laws**"); and

(iii) *Human rights and anti-modern slavery laws:* including The Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, the OECD Guidelines for Multinational Enterprises, the ILO Core Conventions on Labor Standards, the UK Modern Slavery Act and other similar human rights, anti-human trafficking and anti-modern slavery laws and regulations (collectively, "**Human Rights Laws**").

Sanctions Agency means any governmental or regulatory body, instrumentality, authority, institution, agency or court that promulgates or administers Trade Control Laws including, but not limited to, the aforementioned governmental and regulatory bodies of (i) the United Nations, (ii) the United States of America (including the U.S. Department of Treasury Office of Foreign Assets Control, U.S. Department of State and U.S. Department of Commerce), (iii) the European Union or (iv) Switzerland.

Restricted Person means any entity or person included on a list (including U.S. and EU lists) of targeted parties, blocked parties, or persons subject to asset-freezing or other restrictions introduced under any applicable Trade Control Laws (and includes any entity that is directly or indirectly owned fifty (50) percent or more, in the aggregate or individually, or otherwise controlled by any Restricted Person).

1. Both Parties will comply with all Applicable Integrity Laws in connection with this Agreement. Both Parties shall also ensure that their respective employees, officers, directors, and any affiliates or third parties engaged in any manner in relation to the Agreement shall undertake to comply with all Applicable Integrity Laws and the requirements set out in this Clause in connection with this Agreement. Both Parties

confirm that they have not violated, shall not violate, and shall not cause the other Party to violate, any Applicable Integrity Laws in connection with this Agreement.

2. Each Party represents and warrants that, to the best of its knowledge, at the date of this Agreement neither it, nor any of their respective directors or officers are a Restricted Party. Each Party agrees that it shall promptly notify the other Party if it becomes a Restricted Party.

3. If, as a result of Trade Control Laws issued or amended after the date of this Agreement, (i) the Company becomes a Restricted Party, or (ii) any necessary export license or authorization from a Sanctions Agency is not granted, the performance by ABB or by any affiliates or third parties engaged in any manner in relation to the Agreement becomes illegal or impracticable, ABB shall, as soon as reasonably practicable, give written notice to the Company of its inability to perform or fulfil such obligations. Once such notice has been received by the Company, ABB shall be entitled to either immediately suspend the performance of the affected obligation under the Agreement until such time as ABB may lawfully discharge such obligation or unilaterally terminate the Agreement in whole or in part from the date specified in the said written notice or from any subsequent date thereafter. ABB will not be liable to the Company for any costs, expenses or damages associated with such suspension or termination of the Agreement.

4. In the event of suspension or termination as set out in Clause [3] above, ABB shall be entitled to payment as set out in [Clause[●]] of this Agreement and any reasonable associated costs necessarily incurred by ABB in regard to such suspension or termination including, but not limited to, all reasonable costs associated with suspending or terminating any subcontract placed or committed for goods or services in connection with this Agreement.

5. ABB goods, services, and/or technology may be subject to foreign trade restrictions, including dual-use trade controls. The Parties undertake to obtain all the necessary licenses and/or permits from the competent authorities for the import or export of ABB Products and/or Services. Products, services, and/or technology that originate in the United States are subject to the U.S. Export Administration Regulations ("EAR") and must not be exported, re-exported, or transferred (in-country) without obtaining the necessary valid licenses/authorizations of the competent US authorities.

6. The Company represents that it is the ultimate end recipient of any items provided under this Agreement, that the items are for civil use only. The Company further represents that it will not directly or indirectly sell, export, re-export, release, transmit or otherwise transfer any items received from ABB to any Restricted Parties, or parties that operate, or whose end use will be, in a jurisdiction/region prohibited by ABB including Belarus, Crimea, Cuba, Iran, North Korea, Russia, Syria, as well as the Donetsk, Luhansk, Kherson, and Zaporizhzhia regions of Ukraine (such list may be amended by ABB at any time).The Company further represents and warrants that the [Products and/or Services] provided under this Agreement shall not be installed, used, or applied in or in connection with (i) the design, production, use or storage of chemical, biological or nuclear weapons or their delivery systems, (ii) any military applications or (iii) the operation of any nuclear facilities including, but not limited to,

nuclear power plants, nuclear fuel manufacturing plants, uranium enrichment plants, spent nuclear fuel stores and research reactors, without the prior written consent of ABB.

7. For the avoidance of doubt, no provision in this Agreement shall be interpreted or applied in a way that would require any party to do, or refrain from doing, any act which would constitute a violation of, or result in a loss of economic benefit under, applicable Trade Control Laws.

8. Company shall immediately notify ABB in writing of any potential or actual breach of obligations set forth under Applicable Integrity Laws, the ABB Code of Conduct, or this Integrity Appendix by either the Company, its affiliated parties or any third parties engaged by Company in relation to the Agreement. In the event of such notification or if ABB otherwise has reason to believe that a potential or actual breach has occurred, Company agrees to cooperate in good faith with any audit, inquiries, or investigation which ABB deems necessary. During such audit, inquiries or investigation, ABB may suspend performance of its obligations until such time as ABB has received confirmation to its satisfaction that no breach has occurred or will occur. ABB shall not be liable to Company for any claim, losses or damages whatsoever related to its decision to suspend or terminate performance of its obligations under this provision.

9. Notwithstanding the foregoing or any other provision in the Agreement, in the event of any actual or imminent violation of Applicable Integrity Laws or material breach of obligations set forth under the ABB Code of Conduct or this Integrity Appendix, ABB shall, subject to mandatory provisions of Applicable Law, have the right to unilaterally terminate the Agreement with immediate effect. Such termination would be without prejudice to all rights of recourse which could be exercised by ABB, and ABB shall not be liable to Company for any claim, losses or damages whatsoever related to its decision to terminate performance of its obligations under this provision. Further, Company shall indemnify ABB for all liabilities, damages, costs, or expenses incurred as a result of any such violation, breach and/or termination of the Agreement. ABB may report such violations to relevant authorities as required by Applicable Integrity Laws.

10.6 Delays Caused by Customer

a) If the performance of any work hereunder is delayed due to the actions of Purchaser, Purchaser will be responsible for all costs which ABB incurs as result of the delay, including, without limitation, overhead and a reasonable profit on all such costs; and any delivery date will be extended to reflect the delay. In addition, Purchaser shall make any such payments at such times that they would have become due had it not caused the delay in performance.

b) If delivery is delayed due to any act or omission of Purchaser, or if having been notified that the Equipment is ready for shipment, Purchaser fails to take delivery or provide adequate shipping instructions, ABB shall be entitled to place the Equipment in suitable storage at Purchaser's expense. Upon placement of the Equipment in storage, the Equipment shall be deemed delivered and all risk of loss and damage shall pass to the Buyer. Purchaser shall be responsible for all costs associated with such

storage. Any amounts otherwise payable to ABB upon delivery shall be payable upon presentation of ABB's invoices.

10.7 Change in Law

The parties agree that in the event of any change in laws, regulations or increases in tariffs or duty rates imposed, implemented or enacted after the date of this agreement or change in interpretation of any laws, regulation, tariffs or duty rates affecting the cost of the goods and services set forth herein and/or the time of performance or delivery of the same, Seller shall be entitled to an adjustment in the contract price reflecting the change in the laws, tariffs or duty rates or other costs and any necessary adjustment to the time of performance or delivery of the goods and services.

10.8 Validity

This proposal is subject to acceptance within Ninety (90) days. All prices, schedules, and technical descriptions are valid throughout this period.

10.9 Payment Terms

Terms are Net 30.

ABB reserves the right to increase price if purchaser requests any changes to the foregoing.

10.10 Payment Milestones

- 20% - Upon Submittal of the Kick-Off Meeting Minutes
- 20% - Upon Initial DCS Hardware Drawings Submittal
- 20% - Upon Initial Functional Narrative and Control Drawings Submittal
- 20% - Upon Hardware Ordering
- 10% - Upon System Shipment
- 5% - Upon Completion of 60-Day Test
- 5% - Upon Customer Acceptance of Final O&M and As-built Drawings or Thirty (30) Days from Completion of 60-Day Test, whichever first occurs

ABB reserves the right to increase price if purchaser requests any changes to the foregoing.

10.11 Delivery

This proposal is based on delivery FCA Jobsite (Skokie, IL) per Incoterms 2020.

10.12 Schedule

Schedule will be mutually agreed between Purchaser and ABB after receipt of order. This proposal makes no commitment whatsoever to any schedule. ABB reserves the right to increase the price if schedule agreement requires any expediting measures.

10.13 Confidentiality

This proposal contains information that is proprietary to ABB Inc.

11 Attachments

1. Overview Drawing
2. Detailed Bill of Material
3. Hardwired I/O List
4. Soft I/O List
5. Field Service Rate Sheet
6. Terms and Conditions

Attachment 1

System Overview Drawing

MWRDGC O'Brien - Battery E Plant Expansion
System Overview Drawing

PCB Telecom Room

Controller & Interface Cabinet

Digital I/O Cabinet

S800 Profinet

AC800M Control Network

To/From Server Cabinets

Multimode –
S800 Profinet
800xA Client Network
VFD Drive Interfaces
Flygt MAS Interface
Other Intelligent devices

HARDWIRED I/O
DI = 8

Metering Building

I/O Cabinet

HARDWIRED I/O
AI = 2
RTD = 0
AO = 1
DI = 4
DO (FIELD) = 0

TOTAL = 7

Battery E

RIO-01

RIO-02

S800 Profinet

Client/Server Network

Interface Network

Flygt MAS

VFD Drives

Other Intelligent Devices

OWS

SOFT I/O
TOTAL 259

OWS

RIO-01 HARDWIRED I/O
AI = 81
RTD = 1
AO = 23
DI = 309
DO (FIELD) = 42

TOTAL 456

RIO-02 HARDWIRED I/O
AI = 111
RTD = 1
AO = 37
DI = 240
DO (FIELD) = 24

TOTAL 413

Notes:

1. Proposal is based on ABB providing new cabinets, as shown.
2. All cabling outside the cabinets are to be provided and installed by others.
3. Unless otherwise stated within proposal, Ethernet connectivity is limited to ABB supplied equipment within cabinets.
4. Any required converters for Fiber Optic to Ethernet cables are to be provided by the customer.
5. Actual layout of equipment will vary. Drawing shows quantity of equipment and system connections.
6. Pedestals are included for OWS, but not shown on drawing.

Key

CAT6 Ethernet – Client/Server Network
CAT6 Ethernet – Profinet I/O Network
CAT6 Ethernet – AC800M Control Network
Multimode Fiber
Third-Party Interface

SYSTEM OVERVIEW DRAWING

CUSTOMER: MWRDGC O'Brien
PROJECT: Battery E Plant Expansion

ABB INC.
PROCESS AUTOMATION
ENERGY INDUSTRIES NORTH AMERICA

ABB PROPOSAL
JSH-240430-1 Rev 04

Attachment 2

Equipment List

MWRDGC
Battery E Plant Expansion
JSH-240430-1 Rev 04 - Equipment List

QTY	PART NUMBER	DESCRIPTION
	HMI SYSTEM SOFTWARE	
	PROCESS AUTOMATION CONTROL	
3	2PAA122376R1	PM891 RED. SW LICENSE 800XA 6.1.1
	OPERATIONS	
2	2PAA122296R1	OPERATOR WORKPLACE - ADD. CLIENT 6.1.1
	CONTROLLER CABINET	
	800XA PROCESSOR & I/O CABINETS	
1	OP-OTHER	TWO-DOOR NEMA 12 CABINET, GRAY, 72x72x18, STEEL
1	8128235	CABINET SIDEWALL PANEL KIT, NEMA 12/4
1	6638902A3	ABB CABINET LOGO ABS PLASTIC
2	OP-OTHER	LED CABINET LIGHT, SCE-LF24
3	OP-OTHER	CONVENIENCE OUTLET
3	OP-OTHER	CONVENIENCE BREAKER
1	3110000	THERMOSTAT - SK3110
	PANEL HARDWARE	
1	OP-OTHER	60x68" MOUNTING PANEL
2	5050063	INSTALLATION MOUNTING PANEL KIT
	AC800M MISC PROJECT HARDWARE	
1	3BSC630197R1	TK212A TOOL CABLE RJ45 8P8C PLUG
	AC800M REDUNDANT PROCESSOR CONTROLLERS	
2	3BSE053242R1	PM891K02 REDUNDANT PROCESSOR UNIT
4	3BSE018172R1	SB822 RECHARGEABLE BATTERY UNIT
8	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
2	3BSE031155R1	BC810K02 CEX-BUS INTERCONNECTION UNIT
	AC800M POWER SUPPLIES	
4	3BSC610067R1	SD834 POWER SUPPLY, 20A
2	3BSE022262R1	MAINS BREAKER KIT FOR DIN RAIL 115/230V
	S800 INTERFACE HARDWARE	
8	3BSE092689R1	CI867AK01 MODBUS TCP INTERFACE
8	2PAA122389R1	CI867 MODBUS TCP SW LICENSE 800XA 6.1.1
	PROFINET	
4	3BSE092693R1	CI871AK01 PROFINET IO INTERFACE
4	2PAA122392R1	CI871 PROFINET IO SW LICENSE 800XA 6.1.1
	ABB SWITCHES	
8	3BSE080207R1	NE810 NETWORK SWITCH
8	3BSE080208R1	NE820 NETWORK SWITCH
20	3BSE080214R1	PT801 OPTICAL TRANSCEIVER
20	OP-OTHER	3M LC-LC OM4 MM PVC FIBER OPTIC PATCH CABLE, 10GB/100GB
	ADDITIONAL CABINET HARDWARE	
2	OP-OTHER	HF10 SIDE MOUNT FILTER FAN, 115V
2	OP-OTHER	HG FILTER FAN EXHAUST GRILL
1	OP-OTHER	1500VA/900W TOWER UPS, APC SMC1500C
	BLOCK MARSHALLING	
1	OP-OTHER	1 LOT - MARSHALLING TB KIT FUSES
	BATTERY E I/O CABINETS	
	800XA PROCESSOR & I/O CABINETS	
1	OP-OTHER	TWO-DOOR NEMA 4X RIGHT BAY CABINET, 86Hx78Wx24D, SS
1	OP-OTHER	TWO-DOOR NEMA 4X LEFT BAY CABINET, 86Hx78Wx24D, SS
1	8128235	CABINET SIDEWALL PANEL KIT, NEMA 12/4
1	OP-OTHER	GASKET BOLT KIT

2	6638902A3	ABB CABINET LOGO ABS PLASTIC
1	8800430	TS BAYING QUICK BRACKET
1	8800500	TS BAYING QUICK WEDGE
2	OP-OTHER	LED CABINET LIGHT, SCE-LF24
3	OP-OTHER	CONVENIENCE OUTLET
3	OP-OTHER	CONVENIENCE BREAKER
1	3110000	THERMOSTAT - SK3110
	PANEL HARDWARE	
2	OP-OTHER	78H X 70.75W MOUNTING PANEL
2	5050063	INSTALLATION MOUNTING PANEL KIT
	CABINET TEMPERATURE MONITORING	
1	CJCAI835	OMEGA 100 OHM PLUG IN RTD
	AC800M POWER SUPPLIES	
4	3BSC610067R1	SD834 POWER SUPPLY, 20A
2	3BSE022262R1	MAINS BREAKER KIT FOR DIN RAIL 115/230V
	PROFINET	
10	3BSE075853R1	CI845 ETHERNET FCI MODULE
10	3BSE076220R1	TC810 ETHERNET ADAPTER FOR ETHERNET FCI
5	3BSE078710R1	TU860 MTU FOR ETHERNET FCI AND S800
20	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	S800 ANALOG INPUTS	
13	3BSC690071R1	AI890 ANALOG INPUT IS 8 CH
13	3BSC840157R1	TU891 NON-IS MTU
1	OP-OTHER	TERMINAL BLOCK SCREW CONNECTION, VIOK 1 5-3D/PE BU VIOK SERIES, PKG OF 50
1	3BSE040662R1	AI830A ANALOG INPUT RTD 8 CH
1	3BSE013234R1	TU830V1 EXTENDED MTU, 50V
	S800 ANALOG OUTPUTS	
4	3BSC690072R1	AO890 ANALOG OUTPUT IS 8 CH
4	3BSC840157R1	TU891 NON-IS MTU
	S800 DIGITAL INPUTS	
25	3BSE069054R1	DI828 DIGITAL INPUT 120V 16 CH
25	3BSE068782R1	TU851 EXTENDED MTU, 250V
	S800 DIGITAL OUPUTS - FIELD POWERED	
4	3BSE069053R1	DO818 DIGITAL OUTPUT 24V 32 CH
4	3BSE013232R1	TU812V1 COMPACT MTU, 50V, D-SUB
4	2304665	PHOENIX 3 METER Y-CABLE FOR RELAY BOARDS, DB-25
8	5604258	PHOENIX P/N 5604258 RELAY BOARD WITH 8 RELAYS
	ABB SWITCHES	
2	3BSE080207R1	NE810 NETWORK SWITCH
2	3BSE080208R1	NE820 NETWORK SWITCH
4	3BSE080214R1	PT801 OPTICAL TRANSCEIVER
4	OP-OTHER	3M LC-LC OM4 MM PVC FIBER OPTIC PATCH CABLE, 10GB/100GB
4	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	ADDITIONAL CABINET HARDWARE	
1	OP-OTHER	1500VA/900W TOWER UPS, APC SMC1500C
	I/O FUSING	
265	OP-OTHER	FUSES FOR S800
	MARSHALLING	
600	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
400	3046100	PHOEX FUSED TB WITH LED 250VAC
400	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
50	3047170	END COVER - D-UT 2,5/4-QUATTRO
100	800886	END STOP - E/NS 35-N
100	3030213	BUS STRIP - FBS 10-5
	BLOCK MARSHALLING	
4	MTBD-DO810R1	DO810R1 MARSHALLING TB KIT DISCONNECT

	BATTERY E RIO-02	
	800XA PROCESSOR & I/O CABINETS	
1	OP-OTHER	TWO-DOOR NEMA 4X RIGHT BAY CABINET, 86Hx78Wx24D, SS
1	OP-OTHER	TWO-DOOR NEMA 4X LEFT BAY CABINET, 86Hx78Wx24D, SS
1	8128235	CABINET SIDEWALL PANEL KIT, NEMA 12/4
1	OP-OTHER	GASKET BOLT KIT
2	6638902A3	ABB CABINET LOGO ABS PLASTIC
1	8800430	TS BAYING QUICK BRACKET
1	8800500	TS BAYING QUICK WEDGE
2	OP-OTHER	LED CABINET LIGHT, SCE-LF24
3	OP-OTHER	CONVENIENCE OUTLET
3	OP-OTHER	CONVENIENCE BREAKER
1	3110000	THERMOSTAT - SK3110
	PANEL HARDWARE	
2	OP-OTHER	78H X 70.75W MOUNTING PANEL
2	5050063	INSTALLATION MOUNTING PANEL KIT
	CABINET TEMPERATURE MONITORING	
1	CJCAI835	OMEGA 100 OHM PLUG IN RTD
	AC800M POWER SUPPLIES	
4	3BSC610067R1	SD834 POWER SUPPLY, 20A
2	3BSE022262R1	MAINS BREAKER KIT FOR DIN RAIL 115/230V
	PROFINET	
8	3BSE075853R1	CI845 ETHERNET FCI MODULE
8	3BSE076220R1	TC810 ETHERNET ADAPTER FOR ETHERNET FCI
4	3BSE078710R1	TU860 MTU FOR ETHERNET FCI AND S800
16	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	S800 ANALOG INPUTS	
17	3BSC690071R1	AI890 ANALOG INPUT IS 8 CH
17	3BSC840157R1	TU891 NON-IS MTU
1	OP-OTHER	TERMINAL BLOCK SCREW CONNECTION, VIOK 1 5-3D/PE BU VIOK SERIES, PKG OF 50
1	3BSE040662R1	AI830A ANALOG INPUT RTD 8 CH
1	3BSE013234R1	TU830V1 EXTENDED MTU, 50V
	S800 ANALOG OUTPUTS	
6	3BSC690072R1	AO890 ANALOG OUTPUT IS 8 CH
6	3BSC840157R1	TU891 NON-IS MTU
	S800 DIGITAL INPUTS	
19	3BSE069054R1	DI828 DIGITAL INPUT 120V 16 CH
19	3BSE068782R1	TU851 EXTENDED MTU, 250V
	S800 DIGITAL OUPUTS - FIELD POWERED	
2	3BSE008510R1	DO810 DIGITAL OUTPUT 24V 16 CH
2	3BSE013232R1	TU812V1 COMPACT MTU, 50V, D-SUB
2	2304665	PHOENIX 3 METER Y-CABLE FOR RELAY BOARDS, DB-25
4	5604258	PHOENIX P/N 5604258 RELAY BOARD WITH 8 RELAYS
	ABB SWITCHES	
2	3BSE080207R1	NE810 NETWORK SWITCH
2	3BSE080208R1	NE820 NETWORK SWITCH
4	3BSE080214R1	PT801 OPTICAL TRANSCEIVER
4	OP-OTHER	3M LC-LC OM4 MM PVC FIBER OPTIC PATCH CABLE, 10GB/100GB
	ADDITIONAL CABINET HARDWARE	
1	OP-OTHER	1500VA/900W TOWER UPS, APC SMC1500C
	I/O FUSING	
217	OP-OTHER	FUSES FOR S800
	MARSHALLING	
456	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
304	3046100	PHOEX FUSED TB WITH LED 250VAC
304	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P

38	3047170	END COVER - D-UT 2,5/4-QUATTRO
76	800886	END STOP - E/NS 35-N
76	3030213	BUS STRIP - FBS 10-5
	BLOCK MARSHALLING	
2	MTBD-DO810R1	DO810R1 MARSHALLING TB KIT DISCONNECT
	NEW I/O CABINET IN PCB	
	CABINET TEMPERATURE MONITORING	
1	CJCAI835	OMEGA 100 OHM PLUG IN RTD
	AC800M POWER SUPPLIES	
2	3BSC610067R1	SD834 POWER SUPPLY, 20A
1	3BSC610068R1	SS832 POWER VOTING UNIT
1	3BSE022262R1	MAINS BREAKER KIT FOR DIN RAIL 115/230V
	PROFINET	
2	3BSE075853R1	CI845 ETHERNET FCI MODULE
2	3BSE076220R1	TC810 ETHERNET ADAPTER FOR ETHERNET FCI
1	3BSE078710R1	TU860 MTU FOR ETHERNET FCI AND S800
4	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	S800 ANALOG INPUTS	
1	3BSE040662R1	AI830A ANALOG INPUT RTD 8 CH
1	3BSE013234R1	TU830V1 EXTENDED MTU, 50V
	S800 DIGITAL INPUTS	
2	3BSE069054R1	DI828 DIGITAL INPUT 120V 16 CH
2	3BSE068782R1	TU851 EXTENDED MTU, 250V
	I/O FUSING	
20	OP-OTHER	FUSES FOR S800
	MARSHALLING	
48	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
32	3046100	PHOEX FUSED TB WITH LED 250VAC
32	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
4	3047170	END COVER - D-UT 2,5/4-QUATTRO
8	800886	END STOP - E/NS 35-N
8	3030213	BUS STRIP - FBS 10-5
	WALL MOUNT CABINET	
1	OP-OTHER	S.S. LPPL ENCLOSURE, 48H X 36W X 12D
1	OP-OTHER	LED CABINET LIGHT, SCE-LF24
	NEW I/O CABINET IN METERING BLDG	
	POWER SUPPLIES	
1	PWRKITACAC	INCOMING POWER KIT AC/AC
	CABINET TEMPERATURE MONITORING	
1	CJCAI835	OMEGA 100 OHM PLUG IN RTD
	AC800M POWER SUPPLIES	
2	3BSC610067R1	SD834 POWER SUPPLY, 20A
1	3BSC610068R1	SS832 POWER VOTING UNIT
1	3BSE022262R1	MAINS BREAKER KIT FOR DIN RAIL 115/230V
	PROFINET	
2	3BSE075853R1	CI845 ETHERNET FCI MODULE
2	3BSE076220R1	TC810 ETHERNET ADAPTER FOR ETHERNET FCI
1	3BSE078710R1	TU860 MTU FOR ETHERNET FCI AND S800
4	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	S800 ANALOG INPUTS	
1	3BSC690071R1	AI890 ANALOG INPUT IS 8 CH
1	3BSC840157R1	TU891 NON-IS MTU
1	3BSE040662R1	AI830A ANALOG INPUT RTD 8 CH
1	3BSE013234R1	TU830V1 EXTENDED MTU, 50V
	S800 ANALOG OUTPUTS	
1	3BSC690072R1	AO890 ANALOG OUTPUT IS 8 CH

1	3BSC840157R1	TU891 NON-IS MTU
	S800 DIGITAL INPUTS	
1	3BSE069054R1	DI828 DIGITAL INPUT 120V 16 CH
1	3BSE068782R1	TU851 EXTENDED MTU, 250V
	I/O FUSING	
14	OP-OTHER	FUSES FOR S800
	MARSHALLING	
24	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
16	3046100	PHOEX FUSED TB WITH LED 250VAC
16	3046171	PHOENIX FEEDTHROUGH TB WITH QD - UT4-MT-P/P
2	3047170	END COVER - D-UT 2,5/4-QUATTRO
4	800886	END STOP - E/NS 35-N
4	3030213	BUS STRIP - FBS 10-5
	ABB SWITCHES	
2	3BSE080207R1	NE810 NETWORK SWITCH
2	3BSE080214R1	PT801 OPTICAL TRANSCEIVER
	WALL MOUNT CABINET	
1	OP-OTHER	S.S. LPPL ENCLOSURE, 48H X 36W X 12D
1	OP-OTHER	LED CABINET LIGHT, SCE-LF24
	FIELD NETWORKING CABINET	
	WALL MOUNT CABINET	
2	OP-OTHER	S.S. LPPL ENCLOSURE, 48H X 36W X 12D
1	OP-OTHER	LED CABINET LIGHT, SCE-LF24
4	3BSC610067R1	SD834 POWER SUPPLY, 20A
2	OP-OTHER	FO CONNECTOR HOUSING, CORNING WCH-04P
8	OP-OTHER	FIBER PANEL, CORNING CCH-CP12-AD
4	OP-OTHER	AC BREAKER
20	OP-OTHER	UKK-HESI FUSE HOLDER
	SERVER CABINET	
	ABB SWITCHES	
8	3BSE080207R1	NE810 NETWORK SWITCH
8	3BSE080214R1	PT801 OPTICAL TRANSCEIVER
8	OP-OTHER	3M LC-LC OM4 MM PVC FIBER OPTIC PATCH CABLE, 10GB/100GB
	CLIENT/SERVER EQUIPMENT	
	OPERATOR WORKSTATIONS	
2	OP-OTHER	ADVANTECH CLIENT COMPUTER
2	OP-OTHER	PEDESTAL WORKSTATION, 304SS, WITH 24" MONITOR, INDUSTRIAL KEYBOARD & PC HOUSING
2	MUT-00074	WIN 10 IOT ENT 2021 LTSC MULTILANG ESD OEI HIGH END
4	ENSOEM-AA-BA	MFE ENDPOINT SECURITY FOR OEM PERP
	VDFs	
	SWITCHES REQUIRED FOR DRIVES	
43	3BSE080207R1	NE810 NETWORK SWITCH
43	EVNSL64X-0010	CAT 6 CABLE EVNSL64X 0010 (10FT)
	SPARE PARTS	
	AC800M REDUNDANT PROCESSOR CONTROLLERS	
1	3BSE053242R1	PM891K02 REDUNDANT PROCESSOR UNIT
	AC800M POWER SUPPLIES	
1	3BSC610067R1	SD834 POWER SUPPLY, 20A
	S800 INTERFACE HARDWARE	
1	3BSE092689R1	CI867AK01 MODBUS TCP INTERFACE
	PROFINET	
1	3BSE092693R1	CI871AK01 PROFINET IO INTERFACE
2	3BSE075853R1	CI845 ETHERNET FCI MODULE
2	3BSE076220R1	TC810 ETHERNET ADAPTER FOR ETHERNET FCI
	S800 ANALOG INPUTS	
3	3BSC690071R1	AI890 ANALOG INPUT IS 8 CH

1	3BSE040662R1	AI830A ANALOG INPUT RTD 8 CH
	S800 ANALOG OUTPUTS	
1	3BSC690072R1	AO890 ANALOG OUTPUT IS 8 CH
	S800 DIGITAL INPUTS	
5	3BSE069054R1	DI828 DIGITAL INPUT 120V 16 CH
	S800 DIGITAL OUPUTS - FIELD POWERED	
1	3BSE008510R1	DO810 DIGITAL OUTPUT 24V 16 CH
2	5604258	PHOENIX P/N 5604258 RELAY BOARD WITH 8 RELAYS
	BLOCK MARSHALLING	
1	OP-OTHER	1 LOT - MARSHALLING TB KIT FUSES

Attachment 3

Hardwired I/O List

HARD I/O

#	SHEET	POINT DESCRIPTION	I/O LOCATION	SIGNAL TYPE	RANGE
17	IC-005	MAKEUP AIR UNIT 1 - RUNNING	BATTERY E RIO-01	DI	-
18	IC-005	MAKEUP AIR UNIT 1 - GENERAL ALARM	BATTERY E RIO-01	DI	-
19	IC-105	MAKEUP AIR UNIT 1 - TEMPERATURE	BATTERY E RIO-01	AI	32-100 DEGREES F
23	IC-005	MAKEUP AIR UNIT 3 - RUNNING	BATTERY E RIO-01	DI	-
24	IC-005	MAKEUP AIR UNIT 3 - GENERAL ALARM	BATTERY E RIO-01	DI	-
25	IC-105	MAKEUP AIR UNIT 3 - TEMPERATURE	BATTERY E RIO-01	AI	32-100 DEGREES F
26	IC-005	MAKEUP AIR UNIT 4 - RUNNING	BATTERY E RIO-01	DI	-
27	IC-005	MAKEUP AIR UNIT 4 - GENERAL ALARM	BATTERY E RIO-01	DI	-
28	IC-105	MAKEUP AIR UNIT 4 - TEMPERATURE	BATTERY E RIO-01	AI	32-100 DEGREES F
29	IC-005	SUMP PUMP 1 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
30	IC-005	SUMP PUMP 1 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
31	IC-005	SUMP PUMP 1 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
35	IC-005	SUMP PUMP 3 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
36	IC-005	SUMP PUMP 3 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
37	IC-005	SUMP PUMP 3 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
38	IC-005	SUMP PUMP 4 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
39	IC-005	SUMP PUMP 4 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
40	IC-005	SUMP PUMP 4 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
41	IC-005	SUMP PUMP 5 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
42	IC-005	SUMP PUMP 5 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
43	IC-005	SUMP PUMP 5 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
44	IC-005	SUMP PUMP 6 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
45	IC-005	SUMP PUMP 6 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
46	IC-005	SUMP PUMP 6 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
47	IC-005	SUMP PUMP 7 - PUMP A RUNNING	BATTERY E RIO-01	DI	-
48	IC-005	SUMP PUMP 7 - PUMP B RUNNING	BATTERY E RIO-01	DI	-
49	IC-005	SUMP PUMP 7 - HIGH LEVEL ALARM	BATTERY E RIO-01	DI	-
58	IC-006	GALLERY - BASEMENT NORTH HEAT ALARM	BATTERY E RIO-01	DI	-
59	IC-006	GALLERY - BASEMENT MIDDLE HEAT ALARM	BATTERY E RIO-01	DI	-
61	IC-006	GALLERY - UPPER LEVEL TEMPERATURE NORTH	BATTERY E RIO-01	RTD	32-100 DEGREES F
63	IC-006	ODOR CONTROL 1 - RUNNING	BATTERY E RIO-01	DI	-
64	IC-006	ODOR CONTROL 1 - GENERAL ALARM	BATTERY E RIO-01	DI	-
65	IC-006	ODOR CONTROL 2 - RUNNING	BATTERY E RIO-01	DI	-
66	IC-006	ODOR CONTROL 2 - GENERAL ALARM	BATTERY E RIO-01	DI	-
67	IC-106	MDP-E1 MAIN BREAKER OPEN COMMAND	BATTERY E RIO-01	DO	-
68	IC-106	MDP-E1 MAIN BREAKER CLOSE COMMAND	BATTERY E RIO-01	DO	-
69	IC-106	MDP-E1 MAIN BREAKER OPEN	BATTERY E RIO-01	DI	-
70	IC-106	MDP-E1 MAIN BREAKER CLOSED	BATTERY E RIO-01	DI	-
71	IC-106	MDP-E1 MAIN BREAKER IN REMOTE MODE	BATTERY E RIO-01	DI	-
72	IC-106	MDP-E1 TIE BREAKER OPEN COMMAND	BATTERY E RIO-01	DO	-
73	IC-106	MDP-E1 TIE BREAKER CLOSE COMMAND	BATTERY E RIO-01	DO	-
74	IC-106	MDP-E1 TIE BREAKER OPEN	BATTERY E RIO-01	DI	-
75	IC-106	MDP-E1 TIE BREAKER CLOSED	BATTERY E RIO-01	DI	-
76	IC-106	MDP-E1 TIE BREAKER IN REMOTE MODE	BATTERY E RIO-01	DI	-
77	IC-106	MDP-E1 CIRCUIT BREAKER 1 OPEN	BATTERY E RIO-01	DI	-
78	IC-106	MDP-E1 CIRCUIT BREAKER 1 CLOSED	BATTERY E RIO-01	DI	-
79	IC-106	MDP-E1 CIRCUIT BREAKER 2 OPEN	BATTERY E RIO-01	DI	-
80	IC-106	MDP-E1 CIRCUIT BREAKER 2 CLOSED	BATTERY E RIO-01	DI	-
81	IC-106	MDP-E1 CIRCUIT BREAKER 3 OPEN	BATTERY E RIO-01	DI	-
82	IC-106	MDP-E1 CIRCUIT BREAKER 3 CLOSED	BATTERY E RIO-01	DI	-
83	IC-106	MDP-E1 CIRCUIT BREAKER 4 OPEN	BATTERY E RIO-01	DI	-
84	IC-106	MDP-E1 CIRCUIT BREAKER 4 CLOSED	BATTERY E RIO-01	DI	-
85	IC-106	MDP-E1 CIRCUIT BREAKER 5 OPEN	BATTERY E RIO-01	DI	-
86	IC-106	MDP-E1 CIRCUIT BREAKER 5 CLOSED	BATTERY E RIO-01	DI	-
87	IC-106	MDP-E1 CIRCUIT BREAKER 6 OPEN	BATTERY E RIO-01	DI	-
88	IC-106	MDP-E1 CIRCUIT BREAKER 6 CLOSED	BATTERY E RIO-01	DI	-
89	IC-106	MDP-E1 CIRCUIT BREAKER 7 OPEN	BATTERY E RIO-01	DI	-
90	IC-106	MDP-E1 CIRCUIT BREAKER 7 CLOSED	BATTERY E RIO-01	DI	-
91	IC-106	MDP-E1 CIRCUIT BREAKER 8 OPEN	BATTERY E RIO-01	DI	-
92	IC-106	MDP-E1 CIRCUIT BREAKER 8 CLOSED	BATTERY E RIO-01	DI	-
93	IC-106	MDP-E1 GROUND FAULT	BATTERY E RIO-01	DI	-

94	IC-106	MDP-E2 MAIN BREAKER OPEN COMMAND	BATTERY E RIO-01	DO	-
95	IC-106	MDP-E2 MAIN BREAKER CLOSE COMMAND	BATTERY E RIO-01	DO	-
96	IC-106	MDP-E2 MAIN BREAKER OPEN	BATTERY E RIO-01	DI	-
97	IC-106	MDP-E2 MAIN BREAKER CLOSED	BATTERY E RIO-01	DI	-
98	IC-106	MDP-E2 MAIN BREAKER IN REMOTE MODE	BATTERY E RIO-01	DI	-
99	IC-106	MDP-E2 TIE BREAKER OPEN COMMAND	BATTERY E RIO-01	DO	-
100	IC-106	MDP-E2 TIE BREAKER CLOSED COMMAND	BATTERY E RIO-01	DO	-
101	IC-106	MDP-E2 TIE BREAKER OPEN	BATTERY E RIO-01	DI	-
102	IC-106	MDP-E2 TIE BREAKER CLOSED	BATTERY E RIO-01	DI	-
103	IC-106	MDP-E2 TIE BREAKER IN REMOTE MODE	BATTERY E RIO-01	DI	-
104	IC-106	MDP-E2 CIRCUIT BREAKER 1 OPEN	BATTERY E RIO-01	DI	-
105	IC-106	MDP-E2 CIRCUIT BREAKER 1 CLOSED	BATTERY E RIO-01	DI	-
106	IC-106	MDP-E2 CIRCUIT BREAKER 2 OPEN	BATTERY E RIO-01	DI	-
107	IC-106	MDP-E2 CIRCUIT BREAKER 2 CLOSED	BATTERY E RIO-01	DI	-
108	IC-106	MDP-E2 CIRCUIT BREAKER 3 OPEN	BATTERY E RIO-01	DI	-
109	IC-106	MDP-E2 CIRCUIT BREAKER 3 CLOSED	BATTERY E RIO-01	DI	-
110	IC-106	MDP-E2 CIRCUIT BREAKER 4 OPEN	BATTERY E RIO-01	DI	-
111	IC-106	MDP-E2 CIRCUIT BREAKER 4 CLOSED	BATTERY E RIO-01	DI	-
112	IC-106	MDP-E2 CIRCUIT BREAKER 5 OPEN	BATTERY E RIO-01	DI	-
113	IC-106	MDP-E2 CIRCUIT BREAKER 5 CLOSED	BATTERY E RIO-01	DI	-
114	IC-106	MDP-E2 CIRCUIT BREAKER 6 OPEN	BATTERY E RIO-01	DI	-
115	IC-106	MDP-E2 CIRCUIT BREAKER 6 CLOSED	BATTERY E RIO-01	DI	-
116	IC-106	MDP-E2 CIRCUIT BREAKER 7 OPEN	BATTERY E RIO-01	DI	-
117	IC-106	MDP-E2 CIRCUIT BREAKER 7 CLOSED	BATTERY E RIO-01	DI	-
118	IC-106	MDP-E2 CIRCUIT BREAKER 8 OPEN	BATTERY E RIO-01	DI	-
119	IC-106	MDP-E2 CIRCUIT BREAKER 8 CLOSED	BATTERY E RIO-01	DI	-
120	IC-106	MDP-E2 GROUND FAULT	BATTERY E RIO-01	DI	-
128	IC-101	BATTERY E RAS FLOW	BATTERY E RIO-01	AI	0 - 100 MGD
129	IC-101	RAS METER ISOLATION VALVE NORTH - IN REMOTE	BATTERY E RIO-01	DI	-
130	IC-101	RAS METER ISOLATION VALVE NORTH - OPENED	BATTERY E RIO-01	DI	-
131	IC-101	RAS METER ISOLATION VALVE NORTH - CLOSED	BATTERY E RIO-01	DI	-
132	IC-101	RAS METER ISOLATION VALVE NORTH - FAULT	BATTERY E RIO-01	DI	-
133	IC-101	RAS METER ISOLATION VALVE NORTH - OPEN COMMAND	BATTERY E RIO-01	DO	-
134	IC-101	RAS METER ISOLATION VALVE NORTH - CLOSE COMMAND	BATTERY E RIO-01	DO	-
135	IC-101	RAS METER ISOLATION VALVE SOUTH - IN REMOTE	BATTERY E RIO-01	DI	-
136	IC-101	RAS METER ISOLATION VALVE SOUTH - OPENED	BATTERY E RIO-01	DI	-
137	IC-101	RAS METER ISOLATION VALVE SOUTH - CLOSED	BATTERY E RIO-01	DI	-
138	IC-101	RAS METER ISOLATION VALVE SOUTH - FAULT	BATTERY E RIO-01	DI	-
139	IC-101	RAS METER ISOLATION VALVE SOUTH - OPEN COMMAND	BATTERY E RIO-01	DO	-
140	IC-101	RAS METER ISOLATION VALVE SOUTH - CLOSE COMMAND	BATTERY E RIO-01	DO	-
279	IC-301	FERMENTER RAS ORP LEVEL	BATTERY E RIO-01	AI	(-1500) - 1500 mV
280	IC-301	ANOXIC PASS NITRATE LEVEL	BATTERY E RIO-01	AI	0 - 5 mg/L
301	IC-303	AERATION TANK 1 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
302	IC-303	AERATION TANK 1 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
303	IC-303	AERATION TANK 1 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
304	IC-303	AERATION TANK 1 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
305	IC-303	AERATION TANK 1 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
306	IC-303	AERATION TANK 1 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
307	IC-303	AERATION TANK 1 IMLR PUMP - IN REMOTE	BATTERY E RIO-01	DI	-
308	IC-303	AERATION TANK 1 IMLR PUMP - RUNNING	BATTERY E RIO-01	DI	-
309	IC-303	AERATION TANK 1 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-01	DI	-
310	IC-303	AERATION TANK 1 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-01	DI	-
311	IC-303	AERATION TANK 1 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-01	DI	-
312	IC-303	AERATION TANK 1 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-01	DO	-
323	IC-303	AERATION TANK 1 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-01	AI	0 - 15 mg/L
324	IC-303	AERATION TANK 1 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
325	IC-303	AERATION TANK 1 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-01	AI	0 - 15 mg/L
326	IC-303	AERATION TANK 1 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
327	IC-303	AERATION TANK 1 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
328	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
329	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-01	DI	
330	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
331	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-01	DI	
332	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%

333	IC-303	AERATION TANK 1 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
334	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
335	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-01	DI	
336	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
337	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-01	DI	
338	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
339	IC-303	AERATION TANK 1 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
340	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
341	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-01	DI	
342	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
343	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-01	DI	
344	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
345	IC-303	AERATION TANK 1 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
346	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
347	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-01	DI	
348	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
349	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-01	DI	
350	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
351	IC-303	AERATION TANK 1 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
352	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
353	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-01	DI	
354	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
355	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-01	DI	
356	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
357	IC-303	AERATION TANK 1 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
358	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
359	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-01	DI	
360	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
361	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-01	DI	
362	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
363	IC-303	AERATION TANK 1 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
364	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	
365	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-01	DI	
366	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-01	DI	
367	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-01	DI	
368	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
369	IC-303	AERATION TANK 1 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
370	IC-303	AERATION TANK 1 ZONE 2 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
371	IC-303	AERATION TANK 1 ZONE 3 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
372	IC-303	AERATION TANK 1 ZONE 4 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
373	IC-303	AERATION TANK 1 ZONE 5 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
374	IC-303	AERATION TANK 1 ZONE 6 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
375	IC-303	AERATION TANK 1 ZONE 7 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
376	IC-303	AERATION TANK 1 ZONE 8 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
377	IC-304	AERATION TANK 2 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
378	IC-304	AERATION TANK 2 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
379	IC-304	AERATION TANK 2 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
380	IC-304	AERATION TANK 2 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
381	IC-304	AERATION TANK 2 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
382	IC-304	AERATION TANK 2 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
383	IC-304	AERATION TANK 2 IMLR PUMP - IN REMOTE	BATTERY E RIO-01	DI	-
384	IC-304	AERATION TANK 2 IMLR PUMP - RUNNING	BATTERY E RIO-01	DI	-
385	IC-304	AERATION TANK 2 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-01	DI	-
386	IC-304	AERATION TANK 2 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-01	DI	-
387	IC-304	AERATION TANK 2 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-01	DI	-
388	IC-304	AERATION TANK 2 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-01	DO	-
399	IC-304	AERATION TANK 2 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-01	AI	0 - 15 mg/L
400	IC-304	AERATION TANK 2 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
401	IC-304	AERATION TANK 2 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-01	AI	0 - 15 mg/L
402	IC-304	AERATION TANK 2 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
403	IC-304	AERATION TANK 2 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
404	IC-304	AERATION TANK 2 ANOXIC ZONE NITRATE LEVEL	BATTERY E RIO-01	AI	0 - 5 mg/L
405	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
406	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-01	DI	-

407	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
408	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
409	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
410	IC-304	AERATION TANK 2 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
411	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
412	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
413	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
414	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
415	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
416	IC-304	AERATION TANK 2 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
417	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
418	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
419	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
420	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
421	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
422	IC-304	AERATION TANK 2 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
423	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
424	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
425	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
426	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
427	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
428	IC-304	AERATION TANK 2 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
429	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
430	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
431	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
432	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
433	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
434	IC-304	AERATION TANK 2 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
435	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
436	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
437	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
438	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
439	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
440	IC-304	AERATION TANK 2 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
441	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
442	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-01	DI	-
443	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
444	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-01	DI	-
445	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
446	IC-304	AERATION TANK 2 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
447	IC-304	AERATION TANK 2 ZONE 2 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
448	IC-304	AERATION TANK 2 ZONE 3 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
449	IC-304	AERATION TANK 2 ZONE 4 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
450	IC-304	AERATION TANK 2 ZONE 5 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
451	IC-304	AERATION TANK 2 ZONE 6 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
452	IC-304	AERATION TANK 2 ZONE 7 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
453	IC-304	AERATION TANK 2 ZONE 8 AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
760	IC-401	FERMENTER RAS PUMP 1 - VFD IN REMOTE	BATTERY E RIO-01	DI	-
761	IC-401	FERMENTER RAS PUMP 1 - LCS IN REMOTE	BATTERY E RIO-01	DI	-
762	IC-401	FERMENTER RAS PUMP 1 - RUNNING ON VFD	BATTERY E RIO-01	DI	-
763	IC-401	FERMENTER RAS PUMP 1 - IN BYPASS	BATTERY E RIO-01	DI	-
764	IC-401	FERMENTER RAS PUMP 1 - RUNNING IN BYPASS	BATTERY E RIO-01	DI	-
765	IC-401	FERMENTER RAS PUMP 1 - BYPASS OVERLOAD	BATTERY E RIO-01	DI	-
766	IC-401	FERMENTER RAS PUMP 1 - HIGH DISCHARGE PRESSURE	BATTERY E RIO-01	DI	-
767	IC-401	FERMENTER RAS PUMP 1 - MOTOR HIGH TEMPERATURE	BATTERY E RIO-01	DI	-
768	IC-401	FERMENTER RAS PUMP 1 - LOW SEAL WATER PRESSURE	BATTERY E RIO-01	DI	-
769	IC-401	FERMENTER RAS PUMP 1 - CONTROL POWER ON	BATTERY E RIO-01	DI	-
775	IC-401	FERMENTER RAS PUMP 2 - VFD IN REMOTE	BATTERY E RIO-01	DI	-
776	IC-401	FERMENTER RAS PUMP 2 - LCS IN REMOTE	BATTERY E RIO-01	DI	-
777	IC-401	FERMENTER RAS PUMP 2 - RUNNING ON VFD	BATTERY E RIO-01	DI	-
778	IC-401	FERMENTER RAS PUMP 2 - IN BYPASS	BATTERY E RIO-01	DI	-
779	IC-401	FERMENTER RAS PUMP 2 - RUNNING IN BYPASS	BATTERY E RIO-01	DI	-
780	IC-401	FERMENTER RAS PUMP 2 - BYPASS OVERLOAD	BATTERY E RIO-01	DI	-
781	IC-401	FERMENTER RAS PUMP 2 - HIGH DISCHARGE PRESSURE	BATTERY E RIO-01	DI	-

782	IC-401	FERMENTER RAS PUMP 2 - MOTOR HIGH TEMPERATURE	BATTERY E RIO-01	DI	-
783	IC-401	FERMENTER RAS PUMP 2 - LOW SEAL WATER PRESSURE	BATTERY E RIO-01	DI	-
784	IC-401	FERMENTER RAS PUMP 2 - CONTROL POWER ON	BATTERY E RIO-01	DI	-
790	IC-401	FERMENTER RAS PUMP 3 - VFD IN REMOTE	BATTERY E RIO-01	DI	-
791	IC-401	FERMENTER RAS PUMP 3 - LCS IN REMOTE	BATTERY E RIO-01	DI	-
792	IC-401	FERMENTER RAS PUMP 3 - RUNNING ON VFD	BATTERY E RIO-01	DI	-
793	IC-401	FERMENTER RAS PUMP 3 - IN BYPASS	BATTERY E RIO-01	DI	-
794	IC-401	FERMENTER RAS PUMP 3 - RUNNING IN BYPASS	BATTERY E RIO-01	DI	-
795	IC-401	FERMENTER RAS PUMP 3 - BYPASS OVERLOAD	BATTERY E RIO-01	DI	-
796	IC-401	FERMENTER RAS PUMP 3 - HIGH DISCHARGE PRESSURE	BATTERY E RIO-01	DI	-
797	IC-401	FERMENTER RAS PUMP 3 - MOTOR HIGH TEMPERATURE	BATTERY E RIO-01	DI	-
798	IC-401	FERMENTER RAS PUMP 3 - LOW SEAL WATER PRESSURE	BATTERY E RIO-01	DI	-
799	IC-401	FERMENTER RAS PUMP 3 - CONTROL POWER ON	BATTERY E RIO-01	DI	-
805	IC-401	RAS PUMPS DISCHARGE FLOW	BATTERY E RIO-01	AI	0 - 20 MGD
806	IC-402	WAS PUMP 1 - LCS IN REMOTE	BATTERY E RIO-01	DI	-
807	IC-402	WAS PUMP 1 - RUNNING ON VFD	BATTERY E RIO-01	DI	-
808	IC-402	WAS PUMP 1 - IN BYPASS	BATTERY E RIO-01	DI	-
809	IC-402	WAS PUMP 1 - RUNNING IN BYPASS	BATTERY E RIO-01	DI	-
810	IC-402	WAS PUMP 1 - BYPASS OVERLOAD	BATTERY E RIO-01	DI	-
811	IC-402	WAS PUMP 1 - HIGH DISCHARGE PRESSURE	BATTERY E RIO-01	DI	-
812	IC-402	WAS PUMP 1 - MOTOR HIGH TEMPERATURE	BATTERY E RIO-01	DI	-
813	IC-402	WAS PUMP 1 - LOW SEAL WATER PRESSURE	BATTERY E RIO-01	DI	-
814	IC-402	WAS PUMP 1 - CONTROL POWER ON	BATTERY E RIO-01	DI	-
820	IC-402	WAS PUMP 2 - VFD IN REMOTE	BATTERY E RIO-01	DI	-
821	IC-402	WAS PUMP 2 - LCS IN REMOTE	BATTERY E RIO-01	DI	-
822	IC-402	WAS PUMP 2 - RUNNING ON VFD	BATTERY E RIO-01	DI	-
823	IC-402	WAS PUMP 2 - IN BYPASS	BATTERY E RIO-01	DI	-
824	IC-402	WAS PUMP 2 - RUNNING IN BYPASS	BATTERY E RIO-01	DI	-
825	IC-402	WAS PUMP 2 - BYPASS OVERLOAD	BATTERY E RIO-01	DI	-
826	IC-402	WAS PUMP 2 - HIGH DISCHARGE PRESSURE	BATTERY E RIO-01	DI	-
827	IC-402	WAS PUMP 2 - MOTOR HIGH TEMPERATURE	BATTERY E RIO-01	DI	-
828	IC-402	WAS PUMP 2 - LOW SEAL WATER PRESSURE	BATTERY E RIO-01	DI	-
829	IC-402	WAS PUMP 2 - CONTROL POWER ON	BATTERY E RIO-01	DI	-
835	IC-402	WAS PUMPS DISCHARGE FLOW	BATTERY E RIO-01	AI	0 - 200 MGD
836	IC-501	MIXED LIQUOR CHANNEL SUSPENDED SOLIDS NORTH	BATTERY E RIO-01	AI	0 - 10000 mg/L
837	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
838	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
839	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
840	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
841	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
842	IC-501	FINAL SETTLING TANK 1 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
843	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
844	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
845	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
846	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
847	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
848	IC-501	FINAL SETTLING TANK 2 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
849	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
850	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
851	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
852	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
853	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
854	IC-501	FINAL SETTLING TANK 3 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
855	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - IN REMOTE	BATTERY E RIO-01	DI	-
856	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - OPENED	BATTERY E RIO-01	DI	-
857	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - CLOSED	BATTERY E RIO-01	DI	-
858	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - FAULT	BATTERY E RIO-01	DI	-
859	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
860	IC-501	FINAL SETTLING TANK 4 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
861	IC-501	FINAL SETTLING TANK 1 DRIVE - IN REMOTE	BATTERY E RIO-01	DI	-
862	IC-501	FINAL SETTLING TANK 1 DRIVE - RUNNING	BATTERY E RIO-01	DI	-
863	IC-501	FINAL SETTLING TANK 1 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-01	DI	-
864	IC-501	FINAL SETTLING TANK 1 DRIVE - TORQUE WARNING	BATTERY E RIO-01	DI	-
865	IC-501	FINAL SETTLING TANK 1 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-01	DI	-

866	IC-501	FINAL SETTLING TANK 1 DRIVE - LOW OIL LEVEL	BATTERY E RIO-01	DI	-
867	IC-501	FINAL SETTLING TANK 1 DRIVE - START/STOP COMMAND	BATTERY E RIO-01	DO	-
868	IC-501	FINAL SETTLING TANK 1 DRIVE - TORQUE	BATTERY E RIO-01	AI	0 - 100%
869	IC-501	FINAL SETTLING TANK 1 SLUDGE BLANKET LEVEL	BATTERY E RIO-01	AI	0 - 25 FT
870	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
871	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - IN REMOTE	BATTERY E RIO-01	DI	-
872	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - OPENED	BATTERY E RIO-01	DI	-
873	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - CLOSED	BATTERY E RIO-01	DI	-
874	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - FAULT	BATTERY E RIO-01	DI	-
875	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
876	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1A FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
877	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
878	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - IN REMOTE	BATTERY E RIO-01	DI	-
879	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - OPENED	BATTERY E RIO-01	DI	-
880	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - CLOSED	BATTERY E RIO-01	DI	-
881	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - FAULT	BATTERY E RIO-01	DI	-
882	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
883	IC-501	FINAL SETTLING TANK 1 AIR LIFT 1B FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
884	IC-502	FINAL SETTLING TANK 2 DRIVE - IN REMOTE	BATTERY E RIO-01	DI	-
885	IC-502	FINAL SETTLING TANK 2 DRIVE - RUNNING	BATTERY E RIO-01	DI	-
886	IC-502	FINAL SETTLING TANK 2 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-01	DI	-
887	IC-502	FINAL SETTLING TANK 2 DRIVE - TORQUE WARNING	BATTERY E RIO-01	DI	-
888	IC-502	FINAL SETTLING TANK 2 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-01	DI	-
889	IC-502	FINAL SETTLING TANK 2 DRIVE - LOW OIL LEVEL	BATTERY E RIO-01	DI	-
890	IC-502	FINAL SETTLING TANK 2 DRIVE - START/STOP COMMAND	BATTERY E RIO-01	DO	-
891	IC-502	FINAL SETTLING TANK 2 DRIVE - TORQUE	BATTERY E RIO-01	AI	0 - 100%
892	IC-502	FINAL SETTLING TANK 2 SLUDGE BLANKET LEVEL	BATTERY E RIO-01	AI	0 - 25 FT
893	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
894	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - IN REMOTE	BATTERY E RIO-01	DI	-
895	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - OPENED	BATTERY E RIO-01	DI	-
896	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - CLOSED	BATTERY E RIO-01	DI	-
897	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - FAULT	BATTERY E RIO-01	DI	-
898	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
899	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2A FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
900	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
901	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - IN REMOTE	BATTERY E RIO-01	DI	-
902	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - OPENED	BATTERY E RIO-01	DI	-
903	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - CLOSED	BATTERY E RIO-01	DI	-
904	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - FAULT	BATTERY E RIO-01	DI	-
905	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
906	IC-502	FINAL SETTLING TANK 2 AIR LIFT 2B FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
907	IC-503	FINAL SETTLING TANK 3 DRIVE - IN REMOTE	BATTERY E RIO-01	DI	-
908	IC-503	FINAL SETTLING TANK 3 DRIVE - RUNNING	BATTERY E RIO-01	DI	-
909	IC-503	FINAL SETTLING TANK 3 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-01	DI	-
910	IC-503	FINAL SETTLING TANK 3 DRIVE - TORQUE WARNING	BATTERY E RIO-01	DI	-
911	IC-503	FINAL SETTLING TANK 3 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-01	DI	-
912	IC-503	FINAL SETTLING TANK 3 DRIVE - LOW OIL LEVEL	BATTERY E RIO-01	DI	-
913	IC-503	FINAL SETTLING TANK 3 DRIVE - START/STOP COMMAND	BATTERY E RIO-01	DO	-
914	IC-503	FINAL SETTLING TANK 3 DRIVE - TORQUE	BATTERY E RIO-01	AI	0 - 100%
915	IC-503	FINAL SETTLING TANK 3 SLUDGE BLANKET LEVEL	BATTERY E RIO-01	AI	0 - 25 FT
916	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
917	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - IN REMOTE	BATTERY E RIO-01	DI	-
918	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - OPENED	BATTERY E RIO-01	DI	-
919	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - CLOSED	BATTERY E RIO-01	DI	-
920	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - FAULT	BATTERY E RIO-01	DI	-
921	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
922	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3A FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
923	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
924	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - IN REMOTE	BATTERY E RIO-01	DI	-
925	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - OPENED	BATTERY E RIO-01	DI	-
926	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - CLOSED	BATTERY E RIO-01	DI	-
927	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - FAULT	BATTERY E RIO-01	DI	-
928	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
929	IC-503	FINAL SETTLING TANK 3 AIR LIFT 3B FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%

930	IC-504	FINAL SETTLING TANK 4 DRIVE - IN REMOTE	BATTERY E RIO-01	DI	-
931	IC-504	FINAL SETTLING TANK 4 DRIVE - RUNNING	BATTERY E RIO-01	DI	-
932	IC-504	FINAL SETTLING TANK 4 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-01	DI	-
933	IC-504	FINAL SETTLING TANK 4 DRIVE - TORQUE WARNING	BATTERY E RIO-01	DI	-
934	IC-504	FINAL SETTLING TANK 4 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-01	DI	-
935	IC-504	FINAL SETTLING TANK 4 DRIVE - LOW OIL LEVEL	BATTERY E RIO-01	DI	-
936	IC-504	FINAL SETTLING TANK 4 DRIVE - START/STOP COMMAND	BATTERY E RIO-01	DO	-
937	IC-504	FINAL SETTLING TANK 4 DRIVE - TORQUE	BATTERY E RIO-01	AI	0 - 100%
938	IC-504	FINAL SETTLING TANK 4 SLUDGE BLANKET LEVEL	BATTERY E RIO-01	AI	0 - 25 FT
939	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
940	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - IN REMOTE	BATTERY E RIO-01	DI	-
941	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - OPENED	BATTERY E RIO-01	DI	-
942	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - CLOSED	BATTERY E RIO-01	DI	-
943	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - FAULT	BATTERY E RIO-01	DI	-
944	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
945	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4A FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
946	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B AIR FLOW	BATTERY E RIO-01	AI	0 - 1500 SCFM
947	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - IN REMOTE	BATTERY E RIO-01	DI	-
948	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - OPENED	BATTERY E RIO-01	DI	-
949	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - CLOSED	BATTERY E RIO-01	DI	-
950	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - FAULT	BATTERY E RIO-01	DI	-
951	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
952	IC-504	FINAL SETTLING TANK 4 AIR LIFT 4B FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
1070	IC-601	POST-AERATION WEST CHANNEL INLET GATE - IN REMOTE	BATTERY E RIO-01	DI	-
1071	IC-601	POST-AERATION WEST CHANNEL INLET GATE - OPENED	BATTERY E RIO-01	DI	-
1072	IC-601	POST-AERATION WEST CHANNEL INLET GATE - CLOSED	BATTERY E RIO-01	DI	-
1073	IC-601	POST-AERATION WEST CHANNEL INLET GATE - FAULT	BATTERY E RIO-01	DI	-
1074	IC-601	POST-AERATION WEST CHANNEL INLET GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
1075	IC-601	POST-AERATION WEST CHANNEL INLET GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1076	IC-601	POST-AERATION EAST CHANNEL INLET GATE - IN REMOTE	BATTERY E RIO-01	DI	-
1077	IC-601	POST-AERATION EAST CHANNEL INLET GATE - OPENED	BATTERY E RIO-01	DI	-
1078	IC-601	POST-AERATION EAST CHANNEL INLET GATE - CLOSED	BATTERY E RIO-01	DI	-
1079	IC-601	POST-AERATION EAST CHANNEL INLET GATE - FAULT	BATTERY E RIO-01	DI	-
1080	IC-601	POST-AERATION EAST CHANNEL INLET GATE - OPEN COMMAND	BATTERY E RIO-01	DO	-
1081	IC-601	POST-AERATION EAST CHANNEL INLET GATE - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1082	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - IN REMOTE	BATTERY E RIO-01	DI	-
1083	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - OPENED	BATTERY E RIO-01	DI	-
1084	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - CLOSED	BATTERY E RIO-01	DI	-
1085	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - FAULT	BATTERY E RIO-01	DI	-
1086	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - OPEN COMMAND	BATTERY E RIO-01	DO	-
1087	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE A - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1088	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - IN REMOTE	BATTERY E RIO-01	DI	-
1089	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - OPENED	BATTERY E RIO-01	DI	-
1090	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - CLOSED	BATTERY E RIO-01	DI	-
1091	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - FAULT	BATTERY E RIO-01	DI	-
1092	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - OPEN COMMAND	BATTERY E RIO-01	DO	-
1093	IC-601	POST-AERATION WEST CHANNEL OUTLET GATE B - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1094	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - IN REMOTE	BATTERY E RIO-01	DI	-
1095	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - OPENED	BATTERY E RIO-01	DI	-
1096	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - CLOSED	BATTERY E RIO-01	DI	-
1097	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - FAULT	BATTERY E RIO-01	DI	-
1098	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - OPEN COMMAND	BATTERY E RIO-01	DO	-
1099	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE A - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1100	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - IN REMOTE	BATTERY E RIO-01	DI	-
1101	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - OPENED	BATTERY E RIO-01	DI	-
1102	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - CLOSED	BATTERY E RIO-01	DI	-
1103	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - FAULT	BATTERY E RIO-01	DI	-
1104	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - OPEN COMMAND	BATTERY E RIO-01	DO	-
1105	IC-601	POST-AERATION EAST CHANNEL OUTLET GATE B - CLOSE COMMAND	BATTERY E RIO-01	DO	-
1106	IC-601	EFFLUENT SAMPLE PUMP 1 - OVERLOAD	BATTERY E RIO-01	DI	-
1107	IC-601	EFFLUENT SAMPLE PUMP 1 - RUNNING	BATTERY E RIO-01	DI	-
1110	IC-601	POST-AERATION WEST CHANNEL DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
1111	IC-601	POST-AERATION EAST CHANNEL DISSOLVED OXYGEN LEVEL	BATTERY E RIO-01	AI	0 - 10 mg/L
1112	IC-601	EFFLUENT SAMPLER 1 TURBIDITY	BATTERY E RIO-01	AI	0 - 2000 NTU

HARD I/O

1113	IC-601	EFFLUENT SAMPLER 1 NITRITE LEVEL	BATTERY E RIO-01	AI	0 - 5 mg/L
1114	IC-601	EFFLUENT SAMPLER 1 NITRATE LEVEL	BATTERY E RIO-01	AI	0 - 20 mg/L
1115	IC-601	EFFLUENT SAMPLER 1 AMMONIA LEVEL	BATTERY E RIO-01	AI	0 - 20 mg/L
1116	IC-601	EFFLUENT SAMPLER 1 PHOSPHATE LEVEL	BATTERY E RIO-01	AI	0 - 5 mg/L
1122	IC-601	POST-AERATION TANK AIR FLOW	BATTERY E RIO-01	AI	0 - 2500 SCFM
1123	IC-601	POST-AERATION TANK AIR FCV - IN REMOTE	BATTERY E RIO-01	DI	-
1124	IC-601	POST-AERATION TANK AIR FCV - OPENED	BATTERY E RIO-01	DI	-
1125	IC-601	POST-AERATION TANK AIR FCV - CLOSED	BATTERY E RIO-01	DI	-
1126	IC-601	POST-AERATION TANK AIR FCV - FAULT	BATTERY E RIO-01	DI	-
1127	IC-601	POST-AERATION TANK AIR FCV - POSITION COMMAND	BATTERY E RIO-01	AO	0 - 100%
1128	IC-601	POST-AERATION TANK AIR FCV - POSITION FEEDBACK	BATTERY E RIO-01	AI	0 - 100%
20	IC-005	MAKEUP AIR UNIT 2 - RUNNING	BATTERY E RIO-02	DI	-
21	IC-005	MAKEUP AIR UNIT 2 - GENERAL ALARM	BATTERY E RIO-02	DI	-
22	IC-105	MAKEUP AIR UNIT 2 - TEMPERATURE	BATTERY E RIO-02	AI	32-100 DEGREES F
32	IC-005	SUMP PUMP 2 - PUMP A RUNNING	BATTERY E RIO-02	DI	-
33	IC-005	SUMP PUMP 2 - PUMP B RUNNING	BATTERY E RIO-02	DI	-
34	IC-005	SUMP PUMP 2 - HIGH LEVEL ALARM	BATTERY E RIO-02	DI	-
60	IC-006	GALLERY - BASEMENT SOUTH HEAT ALARM	BATTERY E RIO-02	DI	-
62	IC-006	GALLERY - UPPER LEVEL TEMPERATURE SOUTH	BATTERY E RIO-02	RTD	32-100 DEGREES F
454	IC-305	AERATION TANK 3 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
455	IC-305	AERATION TANK 3 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
456	IC-305	AERATION TANK 3 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
457	IC-305	AERATION TANK 3 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
458	IC-305	AERATION TANK 3 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
459	IC-305	AERATION TANK 3 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
460	IC-305	AERATION TANK 3 IMLR PUMP - IN REMOTE	BATTERY E RIO-02	DI	-
461	IC-305	AERATION TANK 3 IMLR PUMP - RUNNING	BATTERY E RIO-02	DI	-
462	IC-305	AERATION TANK 3 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-02	DI	-
463	IC-305	AERATION TANK 3 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-02	DI	-
464	IC-305	AERATION TANK 3 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-02	DI	-
465	IC-305	AERATION TANK 3 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-02	DO	-
476	IC-305	AERATION TANK 3 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
477	IC-305	AERATION TANK 3 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
478	IC-305	AERATION TANK 3 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
479	IC-305	AERATION TANK 3 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
480	IC-305	AERATION TANK 3 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
481	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
482	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
483	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
484	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
485	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
486	IC-305	AERATION TANK 3 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
487	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
488	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
489	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
490	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
491	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
492	IC-305	AERATION TANK 3 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
493	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
494	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
495	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
496	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
497	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
498	IC-305	AERATION TANK 3 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
499	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
500	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
501	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
502	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
503	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
504	IC-305	AERATION TANK 3 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
505	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
506	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
507	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
508	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-02	DI	-

509	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
510	IC-305	AERATION TANK 3 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
511	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
512	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
513	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
514	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
515	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
516	IC-305	AERATION TANK 3 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
517	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
518	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
519	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
520	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
521	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
522	IC-305	AERATION TANK 3 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
523	IC-305	AERATION TANK 3 ZONE 2 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
524	IC-305	AERATION TANK 3 ZONE 3 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
525	IC-305	AERATION TANK 3 ZONE 4 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
526	IC-305	AERATION TANK 3 ZONE 5 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
527	IC-305	AERATION TANK 3 ZONE 6 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
528	IC-305	AERATION TANK 3 ZONE 7 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
529	IC-305	AERATION TANK 3 ZONE 8 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
530	IC-306	AERATION TANK 4 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
531	IC-306	AERATION TANK 4 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
532	IC-306	AERATION TANK 4 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
533	IC-306	AERATION TANK 4 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
534	IC-306	AERATION TANK 4 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
535	IC-306	AERATION TANK 4 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
536	IC-306	AERATION TANK 4 IMLR PUMP - IN REMOTE	BATTERY E RIO-02	DI	-
537	IC-306	AERATION TANK 4 IMLR PUMP - RUNNING	BATTERY E RIO-02	DI	-
538	IC-306	AERATION TANK 4 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-02	DI	-
539	IC-306	AERATION TANK 4 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-02	DI	-
540	IC-306	AERATION TANK 4 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-02	DI	-
541	IC-306	AERATION TANK 4 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-02	DO	-
552	IC-306	AERATION TANK 4 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
553	IC-306	AERATION TANK 4 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
554	IC-306	AERATION TANK 4 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
555	IC-306	AERATION TANK 4 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
556	IC-306	AERATION TANK 4 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
557	IC-306	AERATION TANK 4 ANOXIC ZONE NITRATE LEVEL	BATTERY E RIO-02	AI	0 - 5 mg/L
558	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
559	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
560	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
561	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
562	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
563	IC-306	AERATION TANK 4 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
564	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
565	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
566	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
567	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
568	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
569	IC-306	AERATION TANK 4 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
570	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
571	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
572	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
573	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
574	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
575	IC-306	AERATION TANK 4 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
576	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
577	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
578	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
579	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
580	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
581	IC-306	AERATION TANK 4 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
582	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-

583	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
584	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
585	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
586	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
587	IC-306	AERATION TANK 4 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
588	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
589	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
590	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
591	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
592	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
593	IC-306	AERATION TANK 4 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
594	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
595	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
596	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
597	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
598	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
599	IC-306	AERATION TANK 4 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
600	IC-306	AERATION TANK 4 ZONE 2 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
601	IC-306	AERATION TANK 4 ZONE 3 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
602	IC-306	AERATION TANK 4 ZONE 4 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
603	IC-306	AERATION TANK 4 ZONE 5 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
604	IC-306	AERATION TANK 4 ZONE 6 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
605	IC-306	AERATION TANK 4 ZONE 7 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
606	IC-306	AERATION TANK 4 ZONE 8 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
607	IC-307	AERATION TANK 5 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
608	IC-307	AERATION TANK 5 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
609	IC-307	AERATION TANK 5 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
610	IC-307	AERATION TANK 5 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
611	IC-307	AERATION TANK 5 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
612	IC-307	AERATION TANK 5 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
613	IC-307	AERATION TANK 5 IMLR PUMP - IN REMOTE	BATTERY E RIO-02	DI	-
614	IC-307	AERATION TANK 5 IMLR PUMP - RUNNING	BATTERY E RIO-02	DI	-
615	IC-307	AERATION TANK 5 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-02	DI	-
616	IC-307	AERATION TANK 5 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-02	DI	-
617	IC-307	AERATION TANK 5 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-02	DI	-
618	IC-307	AERATION TANK 5 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-02	DO	-
629	IC-307	AERATION TANK 5 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
630	IC-307	AERATION TANK 5 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
631	IC-307	AERATION TANK 5 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
632	IC-307	AERATION TANK 5 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
633	IC-307	AERATION TANK 5 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
634	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
635	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
636	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
637	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
638	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
639	IC-307	AERATION TANK 5 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
640	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
641	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
642	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
643	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
644	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
645	IC-307	AERATION TANK 5 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
646	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
647	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
648	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
649	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
650	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
651	IC-307	AERATION TANK 5 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
652	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
653	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
654	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
655	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
656	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%

657	IC-307	AERATION TANK 5 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
658	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
659	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
660	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
661	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
662	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
663	IC-307	AERATION TANK 5 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
664	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
665	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
666	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
667	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
668	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
669	IC-307	AERATION TANK 5 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
670	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
671	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
672	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
673	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
674	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
675	IC-307	AERATION TANK 5 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
676	IC-307	AERATION TANK 5 ZONE 2 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
677	IC-307	AERATION TANK 5 ZONE 3 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
678	IC-307	AERATION TANK 5 ZONE 4 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
679	IC-307	AERATION TANK 5 ZONE 5 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
680	IC-307	AERATION TANK 5 ZONE 6 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
681	IC-307	AERATION TANK 5 ZONE 7 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
682	IC-307	AERATION TANK 5 ZONE 8 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
683	IC-308	AERATION TANK 6 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
684	IC-308	AERATION TANK 6 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
685	IC-308	AERATION TANK 6 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
686	IC-308	AERATION TANK 6 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
687	IC-308	AERATION TANK 6 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
688	IC-308	AERATION TANK 6 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
689	IC-308	AERATION TANK 6 IMLR PUMP - IN REMOTE	BATTERY E RIO-02	DI	-
690	IC-308	AERATION TANK 6 IMLR PUMP - RUNNING	BATTERY E RIO-02	DI	-
691	IC-308	AERATION TANK 6 IMLR PUMP - MOTOR OVERLOAD	BATTERY E RIO-02	DI	-
692	IC-308	AERATION TANK 6 IMLR PUMP - HIGH MOTOR TEMPTERATURE	BATTERY E RIO-02	DI	-
693	IC-308	AERATION TANK 6 IMLR PUMP - MOISTURE IN MOTOR	BATTERY E RIO-02	DI	-
694	IC-308	AERATION TANK 6 IMLR PUMP - START/STOP COMMAND	BATTERY E RIO-02	DO	-
705	IC-308	AERATION TANK 6 ZONE 3 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
706	IC-308	AERATION TANK 6 ZONE 3 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
707	IC-308	AERATION TANK 6 ZONE 5 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 15 mg/L
708	IC-308	AERATION TANK 6 ZONE 5 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
709	IC-308	AERATION TANK 6 ZONE 7 DISSOLVED OXYGEN LEVEL	BATTERY E RIO-02	AI	0 - 10 mg/L
710	IC-308	AERATION TANK 6 ANOXIC ZONE NITRATE LEVEL	BATTERY E RIO-02	AI	0 - 5 mg/L
711	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
712	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
713	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
714	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
715	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
716	IC-308	AERATION TANK 6 ZONE 2 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
717	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
718	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
719	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
720	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
721	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
722	IC-308	AERATION TANK 6 ZONE 3 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
723	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
724	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
725	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
726	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
727	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
728	IC-308	AERATION TANK 6 ZONE 4 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
729	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
730	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - OPENED	BATTERY E RIO-02	DI	-

731	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
732	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
733	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
734	IC-308	AERATION TANK 6 ZONE 5 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
735	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
736	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
737	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
738	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
739	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
740	IC-308	AERATION TANK 6 ZONE 6 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
741	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
742	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
743	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
744	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
745	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
746	IC-308	AERATION TANK 6 ZONE 7 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
747	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - IN REMOTE	BATTERY E RIO-02	DI	-
748	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - OPENED	BATTERY E RIO-02	DI	-
749	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - CLOSED	BATTERY E RIO-02	DI	-
750	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - FAULT	BATTERY E RIO-02	DI	-
751	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
752	IC-308	AERATION TANK 6 ZONE 8 AIR FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
753	IC-308	AERATION TANK 6 ZONE 2 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
754	IC-308	AERATION TANK 6 ZONE 3 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
755	IC-308	AERATION TANK 6 ZONE 4 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
756	IC-308	AERATION TANK 6 ZONE 5 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
757	IC-308	AERATION TANK 6 ZONE 6 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
758	IC-308	AERATION TANK 6 ZONE 7 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
759	IC-308	AERATION TANK 6 ZONE 8 AIR FLOW	BATTERY E RIO-02	AI	0 - 2500 SCFM
953	IC-505	MIXED LIQUOR CHANNEL SUSPENDED SOLIDS SOUTH	BATTERY E RIO-02	AI	0 - 10000 mg/L
954	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
955	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
956	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
957	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
958	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
959	IC-505	FINAL SETTLING TANK 5 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
960	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
961	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
962	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
963	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
964	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
965	IC-505	FINAL SETTLING TANK 6 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
966	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
967	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
968	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
969	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
970	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
971	IC-505	FINAL SETTLING TANK 7 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
972	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - IN REMOTE	BATTERY E RIO-02	DI	-
973	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - OPENED	BATTERY E RIO-02	DI	-
974	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - CLOSED	BATTERY E RIO-02	DI	-
975	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - FAULT	BATTERY E RIO-02	DI	-
976	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - OPEN COMMAND	BATTERY E RIO-02	DO	-
977	IC-505	FINAL SETTLING TANK 8 INFLUENT GATE - CLOSE COMMAND	BATTERY E RIO-02	DO	-
978	IC-505	FINAL SETTLING TANK 5 DRIVE - IN REMOTE	BATTERY E RIO-02	DI	-
979	IC-505	FINAL SETTLING TANK 5 DRIVE - RUNNING	BATTERY E RIO-02	DI	-
980	IC-505	FINAL SETTLING TANK 5 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-02	DI	-
981	IC-505	FINAL SETTLING TANK 5 DRIVE - TORQUE WARNING	BATTERY E RIO-02	DI	-
982	IC-505	FINAL SETTLING TANK 5 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-02	DI	-
983	IC-505	FINAL SETTLING TANK 5 DRIVE - LOW OIL LEVEL	BATTERY E RIO-02	DI	-
984	IC-505	FINAL SETTLING TANK 5 DRIVE - START/STOP COMMAND	BATTERY E RIO-02	DO	-
985	IC-505	FINAL SETTLING TANK 5 DRIVE - TORQUE	BATTERY E RIO-02	AI	0 - 100%
986	IC-505	FINAL SETTLING TANK 5 SLUDGE BLANKET LEVEL	BATTERY E RIO-02	AI	0 - 25 FT
987	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM

988	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - IN REMOTE	BATTERY E RIO-02	DI	-
989	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - OPENED	BATTERY E RIO-02	DI	-
990	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - CLOSED	BATTERY E RIO-02	DI	-
991	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - FAULT	BATTERY E RIO-02	DI	-
992	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
993	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5A FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
994	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
995	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - IN REMOTE	BATTERY E RIO-02	DI	-
996	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - OPENED	BATTERY E RIO-02	DI	-
997	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - CLOSED	BATTERY E RIO-02	DI	-
998	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - FAULT	BATTERY E RIO-02	DI	-
999	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1000	IC-505	FINAL SETTLING TANK 5 AIR LIFT 5B FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1001	IC-506	FINAL SETTLING TANK 6 DRIVE - IN REMOTE	BATTERY E RIO-02	DI	-
1002	IC-506	FINAL SETTLING TANK 6 DRIVE - RUNNING	BATTERY E RIO-02	DI	-
1003	IC-506	FINAL SETTLING TANK 6 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-02	DI	-
1004	IC-506	FINAL SETTLING TANK 6 DRIVE - TORQUE WARNING	BATTERY E RIO-02	DI	-
1005	IC-506	FINAL SETTLING TANK 6 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-02	DI	-
1006	IC-506	FINAL SETTLING TANK 6 DRIVE - LOW OIL LEVEL	BATTERY E RIO-02	DI	-
1007	IC-506	FINAL SETTLING TANK 6 DRIVE - START/STOP COMMAND	BATTERY E RIO-02	DO	-
1008	IC-506	FINAL SETTLING TANK 6 DRIVE - TORQUE	BATTERY E RIO-02	AI	0 - 100%
1009	IC-506	FINAL SETTLING TANK 6 SLUDGE BLANKET LEVEL	BATTERY E RIO-02	AI	0 - 25 FT
1010	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1011	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1012	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - OPENED	BATTERY E RIO-02	DI	-
1013	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - CLOSED	BATTERY E RIO-02	DI	-
1014	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - FAULT	BATTERY E RIO-02	DI	-
1015	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1016	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6A FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1017	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1018	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1019	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - OPENED	BATTERY E RIO-02	DI	-
1020	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - CLOSED	BATTERY E RIO-02	DI	-
1021	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - FAULT	BATTERY E RIO-02	DI	-
1022	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1023	IC-506	FINAL SETTLING TANK 6 AIR LIFT 6B FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1024	IC-507	FINAL SETTLING TANK 7 DRIVE - IN REMOTE	BATTERY E RIO-02	DI	-
1025	IC-507	FINAL SETTLING TANK 7 DRIVE - RUNNING	BATTERY E RIO-02	DI	-
1026	IC-507	FINAL SETTLING TANK 7 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-02	DI	-
1027	IC-507	FINAL SETTLING TANK 7 DRIVE - TORQUE WARNING	BATTERY E RIO-02	DI	-
1028	IC-507	FINAL SETTLING TANK 7 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-02	DI	-
1029	IC-507	FINAL SETTLING TANK 7 DRIVE - LOW OIL LEVEL	BATTERY E RIO-02	DI	-
1030	IC-507	FINAL SETTLING TANK 7 DRIVE - START/STOP COMMAND	BATTERY E RIO-02	DO	-
1031	IC-507	FINAL SETTLING TANK 7 DRIVE - TORQUE	BATTERY E RIO-02	AI	0 - 100%
1032	IC-507	FINAL SETTLING TANK 7 SLUDGE BLANKET LEVEL	BATTERY E RIO-02	AI	0 - 25 FT
1033	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1034	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1035	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - OPENED	BATTERY E RIO-02	DI	-
1036	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - CLOSED	BATTERY E RIO-02	DI	-
1037	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - FAULT	BATTERY E RIO-02	DI	-
1038	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1039	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7A FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1040	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1041	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1042	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - OPENED	BATTERY E RIO-02	DI	-
1043	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - CLOSED	BATTERY E RIO-02	DI	-
1044	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - FAULT	BATTERY E RIO-02	DI	-
1045	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1046	IC-507	FINAL SETTLING TANK 7 AIR LIFT 7B FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1047	IC-508	FINAL SETTLING TANK 8 DRIVE - IN REMOTE	BATTERY E RIO-02	DI	-
1048	IC-508	FINAL SETTLING TANK 8 DRIVE - RUNNING	BATTERY E RIO-02	DI	-
1049	IC-508	FINAL SETTLING TANK 8 DRIVE - DRIVE OVERLOAD	BATTERY E RIO-02	DI	-
1050	IC-508	FINAL SETTLING TANK 8 DRIVE - TORQUE WARNING	BATTERY E RIO-02	DI	-
1051	IC-508	FINAL SETTLING TANK 8 DRIVE - TORQUE SHUTDOWN	BATTERY E RIO-02	DI	-

1052	IC-508	FINAL SETTLING TANK 8 DRIVE - LOW OIL LEVEL	BATTERY E RIO-02	DI	-
1053	IC-508	FINAL SETTLING TANK 8 DRIVE - START/STOP COMMAND	BATTERY E RIO-02	DO	-
1054	IC-508	FINAL SETTLING TANK 8 DRIVE - TORQUE	BATTERY E RIO-02	AI	0 - 100%
1055	IC-508	FINAL SETTLING TANK 8 SLUDGE BLANKET LEVEL	BATTERY E RIO-02	AI	0 - 25 FT
1056	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1057	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1058	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - OPENED	BATTERY E RIO-02	DI	-
1059	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - CLOSED	BATTERY E RIO-02	DI	-
1060	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - FAULT	BATTERY E RIO-02	DI	-
1061	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1062	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8A FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1063	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B AIR FLOW	BATTERY E RIO-02	AI	0 - 1500 SCFM
1064	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - IN REMOTE	BATTERY E RIO-02	DI	-
1065	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - OPENED	BATTERY E RIO-02	DI	-
1066	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - CLOSED	BATTERY E RIO-02	DI	-
1067	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - FAULT	BATTERY E RIO-02	DI	-
1068	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - POSITION COMMAND	BATTERY E RIO-02	AO	0 - 100%
1069	IC-508	FINAL SETTLING TANK 8 AIR LIFT 8B FCV - POSITION FEEDBACK	BATTERY E RIO-02	AI	0 - 100%
1108	IC-601	EFFLUENT SAMPLE PUMP 2 - OVERLOAD	BATTERY E RIO-02	DI	-
1109	IC-601	EFFLUENT SAMPLE PUMP 2 - RUNNING	BATTERY E RIO-02	DI	-
1117	IC-601	EFFLUENT SAMPLER 2 TURBIDITY	BATTERY E RIO-02	AI	0 - 2000 NTU
1118	IC-601	EFFLUENT SAMPLER 2 NITRITE LEVEL	BATTERY E RIO-02	AI	0 - 5 mg/L
1119	IC-601	EFFLUENT SAMPLER 2 NITRATE LEVEL	BATTERY E RIO-02	AI	0 - 20 mg/L
1120	IC-601	EFFLUENT SAMPLER 2 AMMONIA LEVEL	BATTERY E RIO-02	AI	0 - 20 mg/L
1121	IC-601	EFFLUENT SAMPLER 2 PHOSPHATE LEVEL	BATTERY E RIO-02	AI	0 - 5 mg/L
121	IC-101	BATTERY E INFLUENT FLOW	METER BUILDING	AI	0 - 200 MGD
122	IC-101	BATTERY E INFLUENT FCV - IN REMOTE	METER BUILDING	DI	-
123	IC-101	BATTERY E INFLUENT FCV - OPENED	METER BUILDING	DI	-
124	IC-101	BATTERY E INFLUENT FCV - CLOSED	METER BUILDING	DI	-
125	IC-101	BATTERY E INFLUENT FCV - FAULT	METER BUILDING	DI	-
126	IC-101	BATTERY E INFLUENT FCV - POSITION COMMAND	METER BUILDING	AO	0 - 100%
127	IC-101	BATTERY E INFLUENT FCV - POSITION FEEDBACK	METER BUILDING	AI	0 - 100%
50	IC-005	PCB BUS 1 TRANSFORMER 12 DISCONNECT OPEN	PCB	DI	-
51	IC-005	PCB BUS 1 TRANSFORMER 12 DISCONNECT CLOSED	PCB	DI	-
52	IC-005	PCB BUS 1 BATTERY E DISCONNECT OPEN	PCB	DI	-
53	IC-005	PCB BUS 1 BATTERY E DISCONNECT CLOSED	PCB	DI	-
54	IC-005	PCB BUS 2 TRANSFORMER 11 DISCONNECT OPEN	PCB	DI	-
55	IC-005	PCB BUS 2 TRANSFORMER 11 DISCONNECT CLOSED	PCB	DI	-
56	IC-005	PCB BUS 2 BATTERY E DISCONNECT OPEN	PCB	DI	-
57	IC-005	PCB BUS 2 BATTERY E DISCONNECT CLOSED	PCB	DI	-

Attachment 4

Soft I/O List

SOFT I/O

#	SHEET	POINT DESCRIPTION	I/O LOCATION	SIGNAL TYPE	RANGE
9	IC-002	BATTERY E MDP-E1 VOLTAGE PER PHASE FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
10	IC-002	BATTERY E MDP-E1 CURRENT PER PHASE FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
11	IC-002	BATTERY E MDP-E1 POWER FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
12	IC-002	BATTERY E MDP-E1 POWER FACTOR FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
13	IC-002	BATTERY E MDP-E2 VOLTAGE PER PHASE FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
14	IC-002	BATTERY E MDP-E2 CURRENT PER PHASE FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
15	IC-002	BATTERY E MDP-E2 POWER FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
16	IC-002	BATTERY E MDP-E2 POWER FACTOR FROM POWER MONITOR	BATTERY E RIO-01	COMM	PER MANUFACTURER
141	IC-301	FERMENTER RAS MIXER 1 - IN REMOTE	BATTERY E RIO-01	COMM	-
142	IC-301	FERMENTER RAS MIXER 1 - RUNNING	BATTERY E RIO-01	COMM	-
143	IC-301	FERMENTER RAS MIXER 1 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
144	IC-301	FERMENTER RAS MIXER 1 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
145	IC-301	FERMENTER RAS MIXER 1 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
146	IC-301	FERMENTER RAS MIXER 1 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
147	IC-301	FERMENTER RAS MIXER 1 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
148	IC-301	FERMENTER RAS MIXER 2 - IN REMOTE	BATTERY E RIO-01	COMM	-
149	IC-301	FERMENTER RAS MIXER 2 - RUNNING	BATTERY E RIO-01	COMM	-
150	IC-301	FERMENTER RAS MIXER 2 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
151	IC-301	FERMENTER RAS MIXER 2 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
152	IC-301	FERMENTER RAS MIXER 2 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
153	IC-301	FERMENTER RAS MIXER 2 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
154	IC-301	FERMENTER RAS MIXER 2 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
155	IC-301	FERMENTER RAS MIXER 3 - IN REMOTE	BATTERY E RIO-01	COMM	-
156	IC-301	FERMENTER RAS MIXER 3 - RUNNING	BATTERY E RIO-01	COMM	-
157	IC-301	FERMENTER RAS MIXER 3 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
158	IC-301	FERMENTER RAS MIXER 3 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
159	IC-301	FERMENTER RAS MIXER 3 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
160	IC-301	FERMENTER RAS MIXER 3 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
161	IC-301	FERMENTER RAS MIXER 3 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
162	IC-301	FERMENTER RAS MIXER 4 - IN REMOTE	BATTERY E RIO-01	COMM	-
163	IC-301	FERMENTER RAS MIXER 4 - RUNNING	BATTERY E RIO-01	COMM	-
164	IC-301	FERMENTER RAS MIXER 4 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
165	IC-301	FERMENTER RAS MIXER 4 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
166	IC-301	FERMENTER RAS MIXER 4 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
167	IC-301	FERMENTER RAS MIXER 4 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
168	IC-301	FERMENTER RAS MIXER 4 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
169	IC-301	FERMENTER RAS MIXER 5 - IN REMOTE	BATTERY E RIO-01	COMM	-
170	IC-301	FERMENTER RAS MIXER 5 - RUNNING	BATTERY E RIO-01	COMM	-
171	IC-301	FERMENTER RAS MIXER 5 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
172	IC-301	FERMENTER RAS MIXER 5 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
173	IC-301	FERMENTER RAS MIXER 5 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
174	IC-301	FERMENTER RAS MIXER 5 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
175	IC-301	FERMENTER RAS MIXER 5 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
176	IC-301	FERMENTER RAS MIXER 6 - IN REMOTE	BATTERY E RIO-01	COMM	-
177	IC-301	FERMENTER RAS MIXER 6 - RUNNING	BATTERY E RIO-01	COMM	-
178	IC-301	FERMENTER RAS MIXER 6 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
179	IC-301	FERMENTER RAS MIXER 6 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
180	IC-301	FERMENTER RAS MIXER 6 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
181	IC-301	FERMENTER RAS MIXER 6 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
182	IC-301	FERMENTER RAS MIXER 6 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
183	IC-301	FERMENTER RAS MIXER 7 - IN REMOTE	BATTERY E RIO-01	COMM	-
184	IC-301	FERMENTER RAS MIXER 7 - RUNNING	BATTERY E RIO-01	COMM	-
185	IC-301	FERMENTER RAS MIXER 7 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
186	IC-301	FERMENTER RAS MIXER 7 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
187	IC-301	FERMENTER RAS MIXER 7 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
188	IC-301	FERMENTER RAS MIXER 7 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
189	IC-301	FERMENTER RAS MIXER 7 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
190	IC-301	FERMENTER RAS MIXER 8 - IN REMOTE	BATTERY E RIO-01	COMM	-
191	IC-301	FERMENTER RAS MIXER 8 - RUNNING	BATTERY E RIO-01	COMM	-
192	IC-301	FERMENTER RAS MIXER 8 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
193	IC-301	FERMENTER RAS MIXER 8 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
194	IC-301	FERMENTER RAS MIXER 8 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
195	IC-301	FERMENTER RAS MIXER 8 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
196	IC-301	FERMENTER RAS MIXER 8 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
197	IC-301	FERMENTER RAS MIXER 9 - IN REMOTE	BATTERY E RIO-01	COMM	-
198	IC-301	FERMENTER RAS MIXER 9 - RUNNING	BATTERY E RIO-01	COMM	-

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199	IC-301	FERMENTER RAS MIXER 9 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
200	IC-301	FERMENTER RAS MIXER 9 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
201	IC-301	FERMENTER RAS MIXER 9 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
202	IC-301	FERMENTER RAS MIXER 9 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
203	IC-301	FERMENTER RAS MIXER 9 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
204	IC-301	FERMENTER RAS MIXER 10 - IN REMOTE	BATTERY E RIO-01	COMM	-
205	IC-301	FERMENTER RAS MIXER 10 - RUNNING	BATTERY E RIO-01	COMM	-
206	IC-301	FERMENTER RAS MIXER 10 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
207	IC-301	FERMENTER RAS MIXER 10 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
208	IC-301	FERMENTER RAS MIXER 10 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
209	IC-301	FERMENTER RAS MIXER 10 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
210	IC-301	FERMENTER RAS MIXER 10 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
211	IC-301	FERMENTER RAS MIXER 11 - IN REMOTE	BATTERY E RIO-01	COMM	-
212	IC-301	FERMENTER RAS MIXER 11 - RUNNING	BATTERY E RIO-01	COMM	-
213	IC-301	FERMENTER RAS MIXER 11 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
214	IC-301	FERMENTER RAS MIXER 11 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
215	IC-301	FERMENTER RAS MIXER 11 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
216	IC-301	FERMENTER RAS MIXER 11 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
217	IC-301	FERMENTER RAS MIXER 11 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
218	IC-301	FERMENTER RAS MIXER 12 - IN REMOTE	BATTERY E RIO-01	COMM	-
219	IC-301	FERMENTER RAS MIXER 12 - RUNNING	BATTERY E RIO-01	COMM	-
220	IC-301	FERMENTER RAS MIXER 12 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
221	IC-301	FERMENTER RAS MIXER 12 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
222	IC-301	FERMENTER RAS MIXER 12 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
223	IC-301	FERMENTER RAS MIXER 12 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
224	IC-301	FERMENTER RAS MIXER 12 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
225	IC-301	FERMENTER RAS MIXER 13 - IN REMOTE	BATTERY E RIO-01	COMM	-
226	IC-301	FERMENTER RAS MIXER 13 - RUNNING	BATTERY E RIO-01	COMM	-
227	IC-301	FERMENTER RAS MIXER 13 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
228	IC-301	FERMENTER RAS MIXER 13 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
229	IC-301	FERMENTER RAS MIXER 13 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
230	IC-301	FERMENTER RAS MIXER 13 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
231	IC-301	FERMENTER RAS MIXER 13 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
232	IC-301	FERMENTER RAS MIXER 14 - IN REMOTE	BATTERY E RIO-01	COMM	-
233	IC-301	FERMENTER RAS MIXER 14 - RUNNING	BATTERY E RIO-01	COMM	-
234	IC-301	FERMENTER RAS MIXER 14 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
235	IC-301	FERMENTER RAS MIXER 14 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
236	IC-301	FERMENTER RAS MIXER 14 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
237	IC-301	FERMENTER RAS MIXER 14 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
238	IC-301	FERMENTER RAS MIXER 14 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
239	IC-301	ANOXIC PASS MIXER 1 - IN REMOTE	BATTERY E RIO-01	COMM	-
240	IC-301	ANOXIC PASS MIXER 1 - RUNNING	BATTERY E RIO-01	COMM	-
241	IC-301	ANOXIC PASS MIXER 1 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
242	IC-301	ANOXIC PASS MIXER 1 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
243	IC-301	ANOXIC PASS MIXER 1 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
244	IC-301	ANOXIC PASS MIXER 2 - IN REMOTE	BATTERY E RIO-01	COMM	-
245	IC-301	ANOXIC PASS MIXER 2 - RUNNING	BATTERY E RIO-01	COMM	-
246	IC-301	ANOXIC PASS MIXER 2 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
247	IC-301	ANOXIC PASS MIXER 2 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
248	IC-301	ANOXIC PASS MIXER 2 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
249	IC-301	ANOXIC PASS MIXER 3 - IN REMOTE	BATTERY E RIO-01	COMM	-
250	IC-301	ANOXIC PASS MIXER 3 - RUNNING	BATTERY E RIO-01	COMM	-
251	IC-301	ANOXIC PASS MIXER 3 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
252	IC-301	ANOXIC PASS MIXER 3 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
253	IC-301	ANOXIC PASS MIXER 3 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
254	IC-301	ANOXIC PASS MIXER 4 - IN REMOTE	BATTERY E RIO-01	COMM	-
255	IC-301	ANOXIC PASS MIXER 4 - RUNNING	BATTERY E RIO-01	COMM	-
256	IC-301	ANOXIC PASS MIXER 4 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
257	IC-301	ANOXIC PASS MIXER 4 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
258	IC-301	ANOXIC PASS MIXER 4 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
259	IC-301	ANOXIC PASS MIXER 5 - IN REMOTE	BATTERY E RIO-01	COMM	-
260	IC-301	ANOXIC PASS MIXER 5 - RUNNING	BATTERY E RIO-01	COMM	-
261	IC-301	ANOXIC PASS MIXER 5 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
262	IC-301	ANOXIC PASS MIXER 5 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
263	IC-301	ANOXIC PASS MIXER 5 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
264	IC-301	ANOXIC PASS MIXER 6 - IN REMOTE	BATTERY E RIO-01	COMM	-
265	IC-301	ANOXIC PASS MIXER 6 - RUNNING	BATTERY E RIO-01	COMM	-
266	IC-301	ANOXIC PASS MIXER 6 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-

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267	IC-301	ANOXIC PASS MIXER 6 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
268	IC-301	ANOXIC PASS MIXER 6 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
269	IC-301	ANOXIC PASS MIXER 7 - IN REMOTE	BATTERY E RIO-01	COMM	-
270	IC-301	ANOXIC PASS MIXER 7 - RUNNING	BATTERY E RIO-01	COMM	-
271	IC-301	ANOXIC PASS MIXER 7 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
272	IC-301	ANOXIC PASS MIXER 7 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
273	IC-301	ANOXIC PASS MIXER 7 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
274	IC-301	ANOXIC PASS MIXER 8 - IN REMOTE	BATTERY E RIO-01	COMM	-
275	IC-301	ANOXIC PASS MIXER 8 - RUNNING	BATTERY E RIO-01	COMM	-
276	IC-301	ANOXIC PASS MIXER 8 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
277	IC-301	ANOXIC PASS MIXER 8 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
278	IC-301	ANOXIC PASS MIXER 8 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
281	IC-302	INFLUENT CHANNEL MIXER 1 - IN REMOTE	BATTERY E RIO-01	COMM	-
282	IC-302	INFLUENT CHANNEL MIXER 1 - RUNNING	BATTERY E RIO-01	COMM	-
283	IC-302	INFLUENT CHANNEL MIXER 1 - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
284	IC-302	INFLUENT CHANNEL MIXER 1 - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
285	IC-302	INFLUENT CHANNEL MIXER 1 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
313	IC-303	AERATION TANK 1 WEST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
314	IC-303	AERATION TANK 1 WEST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
315	IC-303	AERATION TANK 1 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
316	IC-303	AERATION TANK 1 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
317	IC-303	AERATION TANK 1 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
318	IC-303	AERATION TANK 1 EAST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
319	IC-303	AERATION TANK 1 EAST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
320	IC-303	AERATION TANK 1 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
321	IC-303	AERATION TANK 1 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
322	IC-303	AERATION TANK 1 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
389	IC-304	AERATION TANK 2 WEST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
390	IC-304	AERATION TANK 2 WEST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
391	IC-304	AERATION TANK 2 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
392	IC-304	AERATION TANK 2 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
393	IC-304	AERATION TANK 2 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
394	IC-304	AERATION TANK 2 EAST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
395	IC-304	AERATION TANK 2 EAST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
396	IC-304	AERATION TANK 2 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
397	IC-304	AERATION TANK 2 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
398	IC-304	AERATION TANK 2 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
466	IC-305	AERATION TANK 3 WEST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
467	IC-305	AERATION TANK 3 WEST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
468	IC-305	AERATION TANK 3 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
469	IC-305	AERATION TANK 3 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
470	IC-305	AERATION TANK 3 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
471	IC-305	AERATION TANK 3 EAST MIXER - IN REMOTE	BATTERY E RIO-01	COMM	-
472	IC-305	AERATION TANK 3 EAST MIXER - RUNNING	BATTERY E RIO-01	COMM	-
473	IC-305	AERATION TANK 3 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-01	COMM	-
474	IC-305	AERATION TANK 3 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-01	COMM	-
475	IC-305	AERATION TANK 3 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
770	IC-401	FERMENTER RAS PUMP 1 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
771	IC-401	FERMENTER RAS PUMP 1 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
772	IC-401	FERMENTER RAS PUMP 1 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
773	IC-401	FERMENTER RAS PUMP 1 - VOLTAGE	BATTERY E RIO-01	COMM	PER MANUFACTURER
774	IC-401	FERMENTER RAS PUMP 1 - CURRENT	BATTERY E RIO-01	COMM	PER MANUFACTURER
785	IC-401	FERMENTER RAS PUMP 2 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
786	IC-401	FERMENTER RAS PUMP 2 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
787	IC-401	FERMENTER RAS PUMP 2 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
788	IC-401	FERMENTER RAS PUMP 2 - VOLTAGE	BATTERY E RIO-01	COMM	PER MANUFACTURER
789	IC-401	FERMENTER RAS PUMP 2 - CURRENT	BATTERY E RIO-01	COMM	PER MANUFACTURER
800	IC-401	FERMENTER RAS PUMP 3 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
801	IC-401	FERMENTER RAS PUMP 3 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
802	IC-401	FERMENTER RAS PUMP 3 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
803	IC-401	FERMENTER RAS PUMP 3 - VOLTAGE	BATTERY E RIO-01	COMM	PER MANUFACTURER
804	IC-401	FERMENTER RAS PUMP 3 - CURRENT	BATTERY E RIO-01	COMM	PER MANUFACTURER
815	IC-402	WAS PUMP 1 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-
816	IC-402	WAS PUMP 1 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
817	IC-402	WAS PUMP 1 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
818	IC-402	WAS PUMP 1 - VOLTAGE	BATTERY E RIO-01	COMM	PER MANUFACTURER
819	IC-402	WAS PUMP 1 - CURRENT	BATTERY E RIO-01	COMM	PER MANUFACTURER
830	IC-402	WAS PUMP 2 - START/STOP COMMAND	BATTERY E RIO-01	COMM	-

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831	IC-402	WAS PUMP 2 - SPEED COMMAND	BATTERY E RIO-01	COMM	0 - 100%
832	IC-402	WAS PUMP 2 - SPEED FEEDBACK	BATTERY E RIO-01	COMM	0 - 100%
833	IC-402	WAS PUMP 2 - VOLTAGE	BATTERY E RIO-01	COMM	PER MANUFACTURER
834	IC-402	WAS PUMP 2 - CURRENT	BATTERY E RIO-01	COMM	PER MANUFACTURER
286	IC-302	INFLUENT CHANNEL MIXER 2 - IN REMOTE	BATTERY E RIO-02	COMM	-
287	IC-302	INFLUENT CHANNEL MIXER 2 - RUNNING	BATTERY E RIO-02	COMM	-
288	IC-302	INFLUENT CHANNEL MIXER 2 - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
289	IC-302	INFLUENT CHANNEL MIXER 2 - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
290	IC-302	INFLUENT CHANNEL MIXER 2 - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
291	IC-302	INFLUENT CHANNEL MIXER 3 - IN REMOTE	BATTERY E RIO-02	COMM	-
292	IC-302	INFLUENT CHANNEL MIXER 3 - RUNNING	BATTERY E RIO-02	COMM	-
293	IC-302	INFLUENT CHANNEL MIXER 3 - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
294	IC-302	INFLUENT CHANNEL MIXER 3 - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
295	IC-302	INFLUENT CHANNEL MIXER 3 - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
296	IC-302	INFLUENT CHANNEL MIXER 4 - IN REMOTE	BATTERY E RIO-02	COMM	-
297	IC-302	INFLUENT CHANNEL MIXER 4 - RUNNING	BATTERY E RIO-02	COMM	-
298	IC-302	INFLUENT CHANNEL MIXER 4 - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
299	IC-302	INFLUENT CHANNEL MIXER 4 - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
300	IC-302	INFLUENT CHANNEL MIXER 4 - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
542	IC-306	AERATION TANK 4 WEST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
543	IC-306	AERATION TANK 4 WEST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
544	IC-306	AERATION TANK 4 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
545	IC-306	AERATION TANK 4 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
546	IC-306	AERATION TANK 4 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
547	IC-306	AERATION TANK 4 EAST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
548	IC-306	AERATION TANK 4 EAST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
549	IC-306	AERATION TANK 4 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
550	IC-306	AERATION TANK 4 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
551	IC-306	AERATION TANK 4 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
619	IC-307	AERATION TANK 5 WEST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
620	IC-307	AERATION TANK 5 WEST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
621	IC-307	AERATION TANK 5 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
622	IC-307	AERATION TANK 5 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
623	IC-307	AERATION TANK 5 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
624	IC-307	AERATION TANK 5 EAST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
625	IC-307	AERATION TANK 5 EAST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
626	IC-307	AERATION TANK 5 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
627	IC-307	AERATION TANK 5 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
628	IC-307	AERATION TANK 5 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
695	IC-308	AERATION TANK 6 WEST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
696	IC-308	AERATION TANK 6 WEST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
697	IC-308	AERATION TANK 6 WEST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
698	IC-308	AERATION TANK 6 WEST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
699	IC-308	AERATION TANK 6 WEST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
700	IC-308	AERATION TANK 6 EAST MIXER - IN REMOTE	BATTERY E RIO-02	COMM	-
701	IC-308	AERATION TANK 6 EAST MIXER - RUNNING	BATTERY E RIO-02	COMM	-
702	IC-308	AERATION TANK 6 EAST MIXER - SHUTDOWN FAULT ALARM	BATTERY E RIO-02	COMM	-
703	IC-308	AERATION TANK 6 EAST MIXER - WARNING FAULT ALARM	BATTERY E RIO-02	COMM	-
704	IC-308	AERATION TANK 6 EAST MIXER - START/STOP COMMAND	BATTERY E RIO-02	COMM	-
1	IC-002	PCB BUS 1 VOLTAGE PER PHASE FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
2	IC-002	PCB BUS 1 CURRENT PER PHASE FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
3	IC-002	PCB BUS 1 POWER FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
4	IC-002	PCB BUS 1 POWER FACTOR FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
5	IC-002	PCB BUS 2 VOLTAGE PER PHASE FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
6	IC-002	PCB BUS 2 CURRENT PER PHASE FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
7	IC-002	PCB BUS 2 POWER FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER
8	IC-002	PCB BUS 2 POWER FACTOR FROM POWER MONITOR	PCB	COMM	PER MANUFACTURER

Attachment 5

ABB US Service Standard Rate Sheet

ABB US PAEN Service Standard Rate Sheet – 2025

Primary Work Hours

The following labor rates are applicable during Primary Working Hours (PWH) defined as an 8-hour period beginning between 7:00 A.M. and 10: 00 A.M. Monday through Friday, excluding national and ABB recognized holidays. The primary work hours include a one half-hour non-paid lunch period and two 15-minute breaks during the day.

Base Service Labor Rates

Technology	Service Type	Hourly Rate
Control systems (OCS/DCS)	Field Services	$399
	Process Application Engineering Services	$450
Power Generation Specialist	Turbine Control Systems Services	$441
	Flame Scanner Services	$441
	Power Plant Tuning	$441
All	Process Control Tuning Services	$441
	Regional Technical Advisor, Network & Security Services	$450
	Process Optimization Services	$469

Overtime Hours

For billing purposes ABB Inc. defines overtime as those hours worked outside the Primary Working Hours or in excess of eight (8) hours in one day. The standard charges for overtime are defined as follows:

- All work performed outside the PWH or over 8 hours in one day is charged at one and one half times the labor rate (Base Service Labor Rate X 1.5).
- All work performed on Saturday is charged at one and one half times the labor rate (Base Service Labor Rate X 1.5).
- All work performed on Sunday is charged at two times the labor rate (Base Service Labor Rate X 2).
- All work performed on national or an ABB holiday is charged at three times the labor rate (Base Service Labor Rate X 3).

Field Engineer Stand-By

- Engineer Stand-By support occurs when a customer requests an engineer to perform “stand-by” duty where that engineer is specifically reserved for that Customer and cannot be dispatched to another Customer job site. The customer reserving the engineer in stand-by readiness mode shall be charged for Stand-By service.
- Field Engineer Stand-By Service is charged at 4 PWH per day. If the “reserved” Field Engineer is called to this site, then 2 PWH will be credited to the customer. Overtime hours, travel expenses, travel time and other conditions of service per this rate sheet shall apply.

Telephone Support.....$469.00 per hour

- A minimum of one (1) hour is charged per request.
- Additional charges are in one-hour increments beyond the first one (1) hour period.

Travel Costs

- Travel expenses are charged at 67 cents / mile or actual public transportation costs plus 10%.
- Living expenses are charged at actual costs incurred plus 10%.
- Completed Travel Time, to and from the Customer Site, will be charged at rates listed under this rate sheet.

Conditions of Service

- Scheduled Field Service visits may be cancelled subject to the following limitations:
  - Scheduled work of 0 to 7-day duration may be cancelled with no cancellation fee up to 48 hours prior to scheduled field engineer arrival.
  - Scheduled work of greater than 7-day duration may be cancelled with no cancellation fee up to 2 weeks prior to scheduled field engineer arrival
  - Scheduled work canceled outside these limitations will be subject to a cancellation fee equal to actual expenses incurred including but not limited to travel, travel time, and material shipment plus usage of prepaid field hours equivalent to 50% of the scheduled work duration.
- Service provided per this rate sheet is approved by the customer in the form of a purchase order or written authorization for additional hours prior to dispatching field personal to site.
- Other chargeable time will be invoiced which may include additional PWH and/or overtime spent at the customer's facility, round trip travel to and from site, time spent preparing written service reports, and time for other customer requested activities.
- A minimum of four (4) hours is charged for any service call to a client's facility.
- All information contained herein is proprietary data of ABB Inc. and that no disclosure, reproduction or use by third parties may be made without written permission of ABB.

2025 Holiday Schedule (Tentative and subject to change)

Wednesday, Jan. 1 – New Year's Day	Monday, Sept. 1 – Labor Day
Monday, Jan. 20 – Martin Luther King Jr. Day	Tuesday, Nov. 11 – Veteran's Day
Friday, April 18 – Good Friday	Thursday, Nov. 27 – Thanksgiving Day
Monday, May 26 – Memorial Day	Friday, Nov. 28 – Thanksgiving Day (Day After)
Friday, July 4 – Independence Day	Wednesday, Dec. 24 – Christmas Eve
	Thursday, Dec. 25 – Christmas Day

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APPENDIX F – XYLEM COST PROPOSAL

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Xylem Water Solutions USA, Inc.
Flygt Products

9661 194th Street
Mokena, IL 60448
Tel (708) 342-0484
Fax (708) 342-0491

July 21, 2025

METRO WTR RECLAMATION DIST OF
PO BOX 10642
CHICAGO IL 60610

Quote # 2025-CHI-0158
Project Name: MWRDGC O'brien Battery E
Job Name:

Xylem Water Solutions USA, Inc. is pleased to provide a quote for the following Flygt equipment.

Mixers do not meet BABA requirments.
Davit Cranes supplied by others.
Mixers will be hardwired into remote panel. No plugs included.

4320 1.5HP Spare Included

Qty	Description
13	SR2X2.0 1.5/25 65' FM FLS
12	TRIPOD MIXER MT ASSY,4IN 20FT+ 60-3/8" MIXER ELEVATION 304SS
2	START UP,FLYGT,NO TAX 3-TP MODELS: 3000,7000,8000
12	GATEWAY,CONTROL MIXER FPG 415
12	HMI,OPERATOR FOP315

4320 3HP Spare Included

Qty	Description
23	SR2X2.0 3/25 65' FM FLS
22	TRIPOD MIXER MT ASSY,4IN 20FT+ 60-3/8" MIXER ELEVATION 304SS
3	START UP,FLYGT,NO TAX 3-TP MODELS: 3000,7000,8000
22	GATEWAY,CONTROL MIXER FPG 415
22	HMI,OPERATOR FOP315

Control panel 1.5HP/3HP

Qty	Description
34	

Enclosure Type:	NEMA 4X (304) Stainless Steel (24”x24”x8”)
Enclosure Mounting:	Wall/Rack mounted by others
Power Requirements:	480 Volt 3 Phase
Horsepower:	1.5 HP 3 FLA
Station Type:	Simplex Aeration Tank Mixer

Main incoming power distribution block

____ Mixer motor circuit breaker with interlocking door handle
____ NEMA rated Starter with adjustable solid-state overload protection
____ Overload tripped indicator light, door mounted
____ Adjustable current monitoring relay
____ Fan forced anti-condensation heater with adjustable thermostat
____ 480/120 Volt control transformer with primary circuit breaker protection
____ 120 Volt control circuit breaker
____ Mounting and wiring of customer supplied Mini-CAS pump monitoring relay
____ Mixer running indicator light, door mounted
____ Mixer stopped indicator light, door mounted
____ Hand-Off-Auto selector switch, door mounted
____ Manual Start/Stop push-buttons, door mounted
· Lights and switches to be 4X, 30.5mm Heavy-Duty rated
· Lights to be LED Push-to-Test type
____ Elapsed time meter, door mounted
____ Enclosure mounted strobe alarm light for common alarms
____ Enclosure mounted audible alarm horn with silence push-button
____ Alarm/Status dry contacts for remote monitoring
____ Relays, wireway and engraved legends as required
____ Terminals and ground bar for field connections
____ UL 508A Listed for industrial control panels

4220 Spare Included

Qty	Description
5	SR580 3/276 65' FM FLS
4	KIT,SYSTEM IV-2" FLOOR MOUNT+ 20'CABLE, NO SUPPORTS
4	ARM,SUPPORT UNIT
40	TUBING,SQUARE SS316 2X2X.180"
5	KIT,RETROFIT ADF MIXER 480V+ STANDARD HMI
4	NEMA 3R SS enclosure
	480V 3HP
	Motor breakers
	FPG415 gateway
	FOP315 HMI
	Surge protection
	Outer Door fitted with viewing window.

Extended warranty

Qty	Description
1	WARRANTY,EXT,FLYGT PROD TM MODELS: 4000

Engineering/CFD

Qty	Description
2	Anchor bolt calculations 4320/4220 models
1	CFD modeling 4320/4220 models

Testing

Qty	Description
41	TEST FAL 2.6 DRY RUN 4000-4600 FAL 15-900013
41	TEST FAL 2.4 INSUL 4000-4600 FAL 15-900011

Lifting Cables

Qty	Description
38	Thern Lifting Cable sized for tank depth
	Davit Crane Supplied by Others

Total Price $ 2,778,356.76

Freight Charge
$ 125,026.00

Total Price $ 2,903,382.76

Terms & Conditions

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted which terms are available at http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx and incorporated herein by reference and made a part of the agreement between the parties.

As of October 14th, 2024, all orders must meet a minimum dollar value of $1,200. Xylem reserves the right to refuse to process any order that does not meet the minimum order value requirement. Xylem will support order adjustments to meet the minimum order value threshold.

Purchase Orders: Please make purchase orders out to: Xylem Water Solutions USA, Inc.
Freight Terms: 3 DAP - Delivered At Place 08 - Jobsite (per IncoTerms 2020)
See Freight Payment (Delivery Terms) below.
Taxes: State, local and other applicable taxes are not included in this quotation.
Back Charges: Buyer shall not make purchases nor shall Buyer incur any labor that would result in a back charge to Seller without prior written consent of an authorized employee of Seller.

Tariff Changes: The prices quoted herein are based on the current tariff rates, duties, government charges, and trade regulations as of the date of this quote. If any new tariffs, duties, taxes, or similar charges are imposed, or any existing tariffs, duties, or charges are increased or modified by any government or regulatory authority (collectively, "Tariff Changes"), and such Tariff Changes result in an increase in the cost of goods, Xylem reserves the right to adjust the pricing of the affected goods to reflect the increased costs.

Shortages: Xylem will not be responsible for apparent shipment shortages or damages incurred in shipment that are not reported within two weeks from delivery to the jobsite. Damages should be noted on the receiving slip and the truck driver advised of the damages. Please contact our office as soon as possible to report damages or shortages so that replacement items can be shipped and the appropriate claims made.

Terms of Delivery: PP/Add Order Position

Terms of Payment: 100% N30 after invoice date.
Xylem's payment shall not be dependent upon Purchaser being paid by any third party unless Owner denies payment due to reasons solely attributable to items related to the equipment being provided by FLYGT.

Schedule: Submittals will be supplied 2-4 weeks after order acceptance.

Schedule: Delivery lead times are 14-16 weeks after receipt of submittal approval and order acceptance.

Validity: This Quote is valid for (30) days.

Other: Seller's payment shall not be dependent upon Buyer being paid by any third party unless Owner denies payment due to reasons solely attributable to items related to the equipment being provided by Seller.

Customer Acceptance:
A signed facsimile copy of this quote is acceptable as a binding contract.

Signature:_____ Company/Utility: _____

Name : _____ Address: _____
(PLEASE PRINT)

Email: _____ _____

Date: _____ Phone _____

PO#:_____ Fax: _____

Sincerely,

FLYGT
a xylem brand

Chris Tuinstra
Direct Sales Representative
Phone: 708-781-0177
Cell: 708-990-4919
christopher.tuinstra@xylem.com
Fax: 708-342-0491

FLYGT
a xylem brand

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APPENDIX G – DBS COST PROPOSAL

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DBS MANUFACTURING

July 25, 2025

To: Peterson & Matz, Inc.

Ref: MWRD O'BRIEN OWRP SKOKIE, IL
Specification Section 11340 Ø112 ft Final Settling Tanks
FINAL SETTLING TANK SLUDGE COLLECTION AND SCUM REMOVAL MECHANISM DRIVE EQUIPMENT

The District has negotiated with the supplier DBS Manufacturing Inc, the price of supply of the drive units per Specifications Section 11340. This lump sum price stated shall include the cost of design, configuration, preparation of shop drawings, manufacturing, factory testing, warranty, manufacturer's support during start-up, on-site testing, on-site training, and delivery of the equipment to the job site.

DBS Manufacturing shall provide the following equipment and services as described below:

Item 1 DBS Model D60-DF Drive Units (Total 8 units)

DBS Drive Model D60-DF shall consist of an electric motor, a hydraulic primary reduction unit, an intermediate planetary reduction unit, and an enclosed final reduction unit consisting of pinion and an integral gear/bearing. All components are directly coupled. The drive unit output torque shall be limited by a torque overload protection device. The drive unit shall be made to meet or exceed all performance, bearing life, and torque capacity requirements specified in Specification Section 11340.

Item 2 Spare Parts

One (1) set of gaskets, seals, and felt seals.

Item 3 Warranty

The drive unit equipment shall have a 5-year warranty.

Item 4 Submittal

AGMA Calculations shall be certified by a licensed Professional Engineer.

Item 5 Operation and Maintenance Manual

O&M Manual shall be electronic (PDF) and shall contain maintenance instructions, drawings, components list, troubleshooting, catalog cut sheets, disassembly and assembly instructions, and electrical wiring instructions.

Item 6 Installation, Functional Testing, Field Performance Testing & Operator Training

DBS factory engineers will inspect the installation, supervise the functional testing, supervise field performance testing, and perform maintenance training for the owner's personnel. Four (4) separate trips are included, each trip with one day at jobsite. Additional days are done by Peterson and Matz.

NOTICE!

No other services or equipment shall be provided other than those described above.

Specifically, not included are the following:

1. Electrical controls, instrumentation, wire, conduits, starters, or pushbutton stations are provided by others except as specified above.
2. Anchor bolts, accessories, fasteners to attach items are provided by others except as specified above.
3. Assembly and installation of drive units.
4. Field torque tests and testing equipment.

Price for equipment and services: $ 1,520,240 delivered to Jobsite
One million, five hundred hundred twenty thousand and two-hundred and forty dollars and no cents.
Valid for 120 days from the date of this proposal

Delivery Schedule:
First shipment of (2) drive units, 20 weeks after submittal approval
Second shipment of (2) drive units, 26 weeks after submittal approval
Third shipment of (2) drive units, 32 weeks after submittal approval
Fourth shipment of (2) drive units, 38 weeks after submittal approval

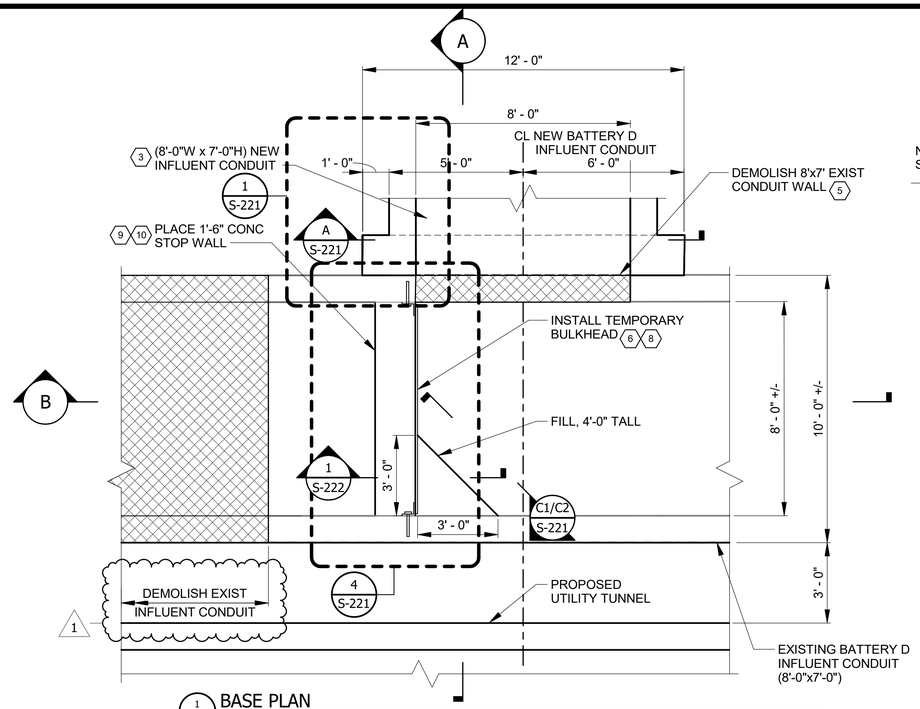
Payment Schedule (upon credit approval):
30% Net 10 on submittal approval (total P.O.)
20% due prior to shipment for each drive
45% Net 30 after shipment of each drive
5% Net 30 after commissioning each drive, but not to exceed 120 days from shipment date

Document Schedule

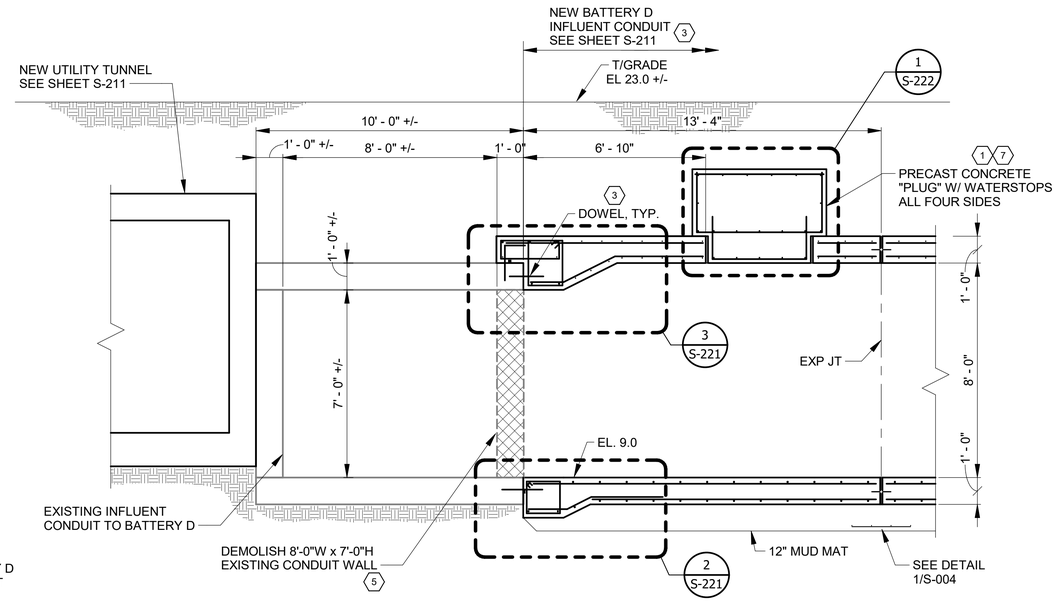
Submittal:	2 to 4 weeks after receipt of PO
Owner Review:	2 to 4 weeks after receipt of submittal

DBS Manufacturing Facility – Atlanta, GA

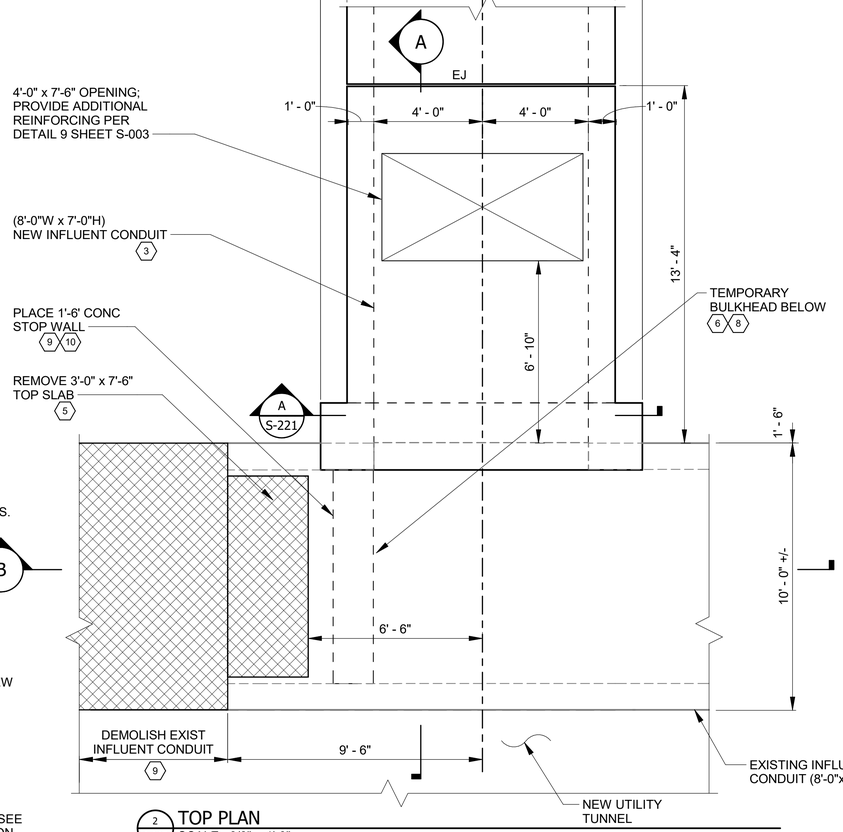
N



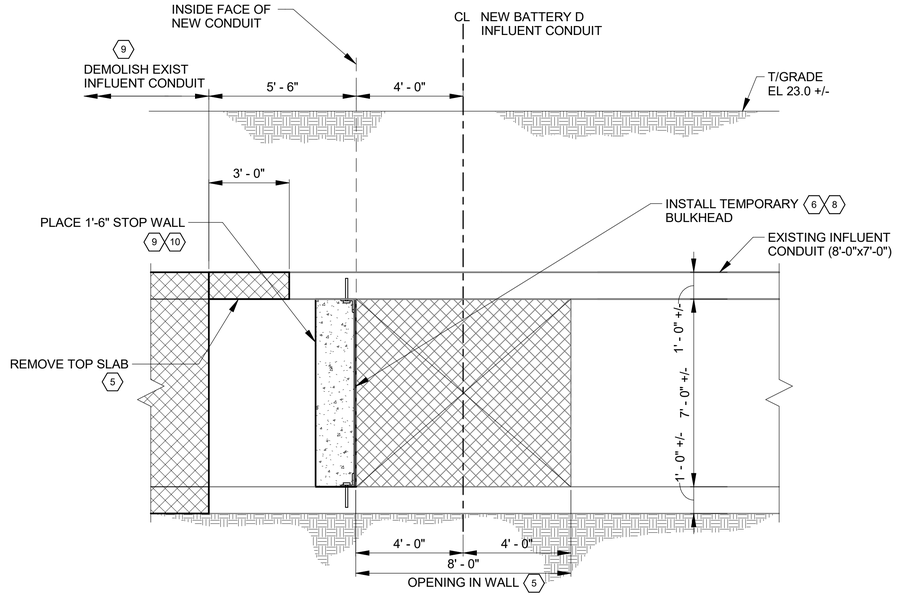
1 S-203 BASE PLAN
SCALE: 3/8" = 1'-0"



A SECTION
SCALE: 3/8" = 1'-0"



2 S-207 TOP PLAN
SCALE: 3/8" = 1'-0"



B SECTION
SCALE: 3/8" = 1'-0"

NOTE:

SEE SHEET S-215 FOR NOTES AND SUGGESTED SEQUENCE FOR THE INFLUENT CONDUIT CONNECTIONS.

LEGEND:

- NEW OR EXISTING BACKGROUND
- EXISTING WORK TO REMAIN (OR NEW WORK FURNISHED AND INSTALLED UNDER OTHER CONTRACT ITEMS)
- NEW WORK
- REMOVAL WORK
- (1) CONSTRUCTION SEQUENCE STEP, SEE SHEET S-215 FOR STEP DESCRIPTION.

0 1' 2' 3' 4' 5' 8'
SCALE: 3/8" = 1'-0"

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by:	Checked by:	Scale:
JA	JA	3/8" = 1'-0"
Drawn by:	Reviewed by:	
KP	AG	
Date:		
7/1/2025		

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
UTILITY TUNNEL & INFLUENT CONDUITS

INFLUENT CONDUIT CONNECTION @ STA 1+97

LICENSED STRUCTURAL ENGINEER
JAMES E. ADAMS
081-006039
Expires 11-30-26
STATE OF ILLINOIS

Sheet Number: S-213
Page Number: 96

PLOT DATE: 10/3/2025 3:38:02 PM

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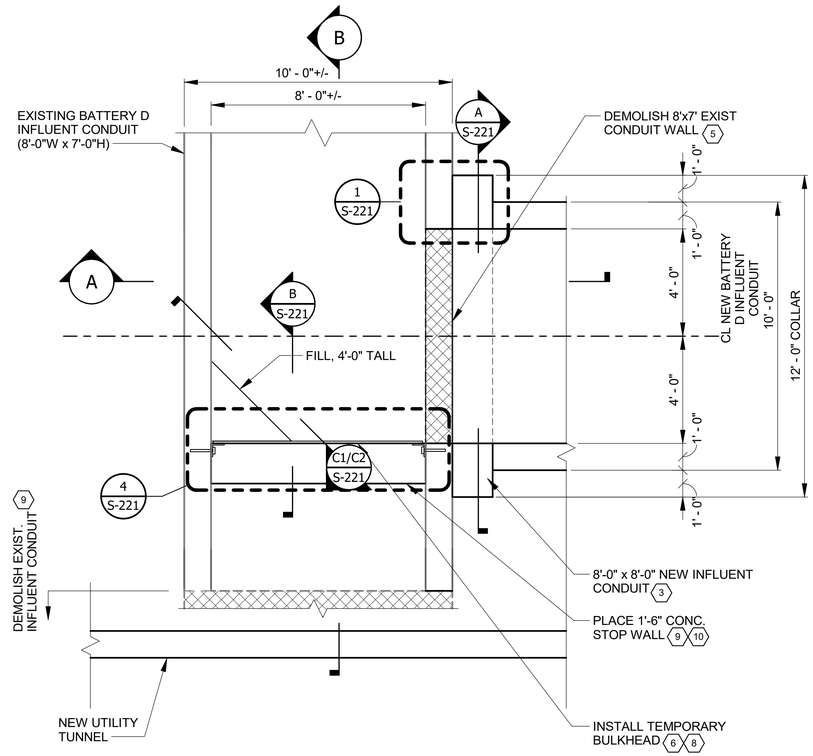
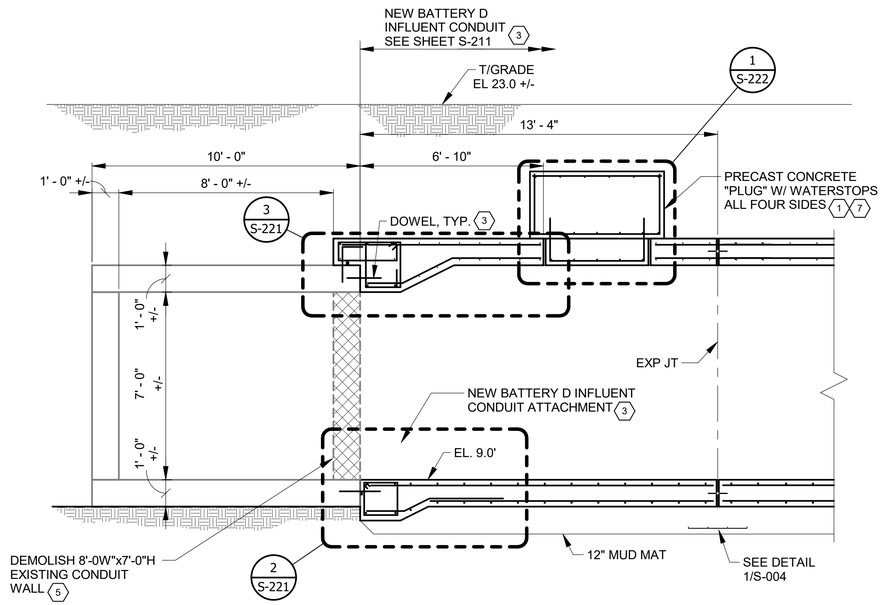
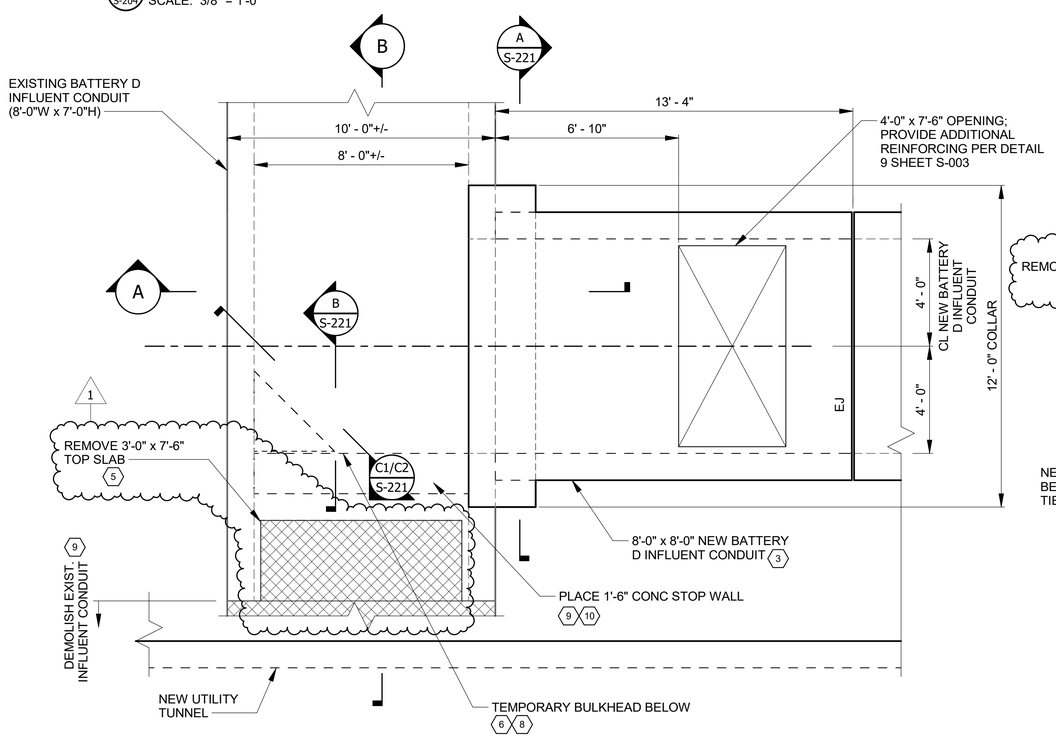


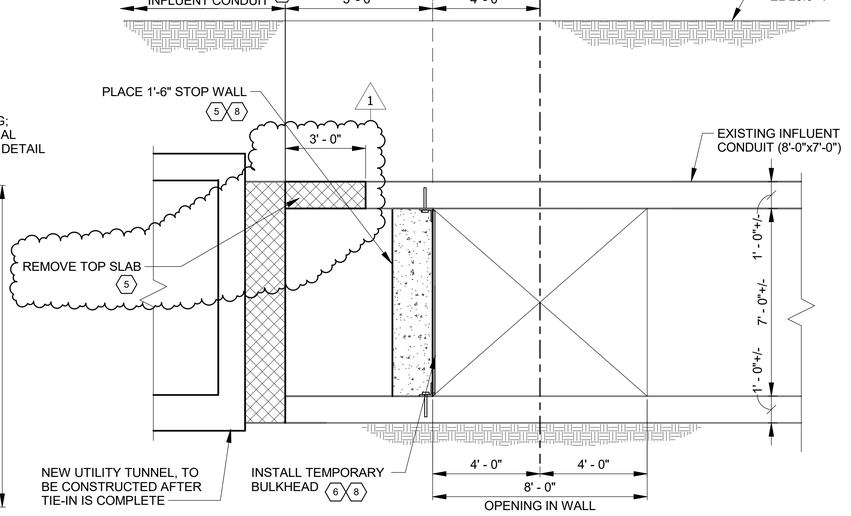
1 S-204 BASE PLAN
SCALE: 3/8" = 1'-0"



A SECTION
SCALE: 3/8" = 1'-0"



2 S-208 TOP PLAN
SCALE: 3/8" = 1'-0"



B SECTION
SCALE: 3/8" = 1'-0"

NOTE:

SEE SHEET S-215 FOR NOTES AND SUGGESTED SEQUENCE FOR THE INFLUENT CONDUIT CONNECTIONS.

LEGEND:

- NEW OR EXISTING BACKGROUND
- EXISTING WORK TO REMAIN (OR NEW WORK FURNISHED AND INSTALLED UNDER OTHER CONTRACT ITEMS)
- NEW WORK
- REMOVAL WORK
- (1) CONSTRUCTION SEQUENCE STEP, SEE SHEET S-215 FOR STEP DESCRIPTION.

0 1' 2' 3' 4' 5' 8'
SCALE: 3/8" = 1'-0"

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by:	Checked by:	Reviewed by:	Scale:
JA	JA	AG	3/8" = 1'-0"
Drawn by:			
KP			
Date:			
7/1/2025			

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
UTILITY TUNNEL & INFLUENT CONDUITS

INFLUENT CONDUIT CONNECTION @ STA 4+76

LICENSED STRUCTURAL ENGINEER
JAMES E. ADAMS
081-006039
Expires 11-30-26
STATE OF ILLINOIS

Sheet Number: S-214
Page Number: 97

PROCESS PUMP SCHEDULE

TAG NUMBER	NUMBER OF UNITS	NAME	LOCATION	PUMP TYPE	CONFIGURATION	RATING POINT				AIR LIFTS		MINIMUM SUCTION / DISCHARGE SIZE (INCH)	NOMINAL MAX PUMP SPEED (RPM)	SEAL TYPE	SEAL WATER (Y/N)	MOTOR DATA					RATING	SPEC SEC	DISCHARGE GAUGE TYPE	ANSI/ HI STANDARD & PUMP TEST ACCEPTANCE GRADE	REMARKS
						CAPACITY	TOTAL DYNAMIC HEAD, TDH (FT)	MIN EFF (%)	MINIMUM SHUTOFF HEAD (FT)	LIFT (FT)	DYNAMIC SUBMERGENCE (%)					DRIVE HP	RPM	ENCLOSURE	ELECTRICAL SERVICE	DRIVE TYPE					
RAS P01 THRU RAS P03	3	FERMENTER RAS PUMP	WAS/FERMENTER RAS PUMP ROOM	SOLIDS HANDLING	HORIZONTAL	4.80 MGD	10	78	42	-	-	12" /12"	947	PACKING (DETAIL 10 ON P003)	Y	20	1000	EXPLOSION PROOF	460/3/360	460/3/360	CLASS 1 DIV 2	11314	DETAIL 7 / IC-003	14.6 / 1U	VFD
WAS P01 THRU WAS P02	2	WAS PUMP	WAS/FERMENTER RAS PUMP ROOM	SOLIDS HANDLING	HORIZONTAL	0.97 MGD	25	73	47	-	-	6" / 6"	1146	PACKING (DETAIL 10 ON P003)	Y	5	1500	EXPLOSION PROOF	460/3/360	460/3/360	CLASS 1 DIV 2	11314	DETAIL 7 / IC-003	14.6 / 1U	VFD
AT1 IMLRP THRU AT6 IMLRP	6	INTERNAL MIXED LIQUOR RECYCLE PUMP	AERATION TANKS	SUBMERSIBLE PROPELLER	HORIZONTAL	13.33 MGD	1.2	52	11	-	-	30"	1770	-	N	20	1800	SUBMERSIBLE	460/3/360	460/3/360	-	11303	-	14.6 / 1U	-
AL P1A THRU AL P8A AL P1B THRU AL P8B	16	FINAL SETTLING TANKS AIR LIFTS	OPERATING GALLERY - SLUDGE BOX	AIR LIFT	-	3 MGD	6.7	-	-	6.66	68	-	-	-	N	-	-	-	-	-	-	11219	-	(SEE SECTION 11219)	-
SAM P01 THRU SAM P02	2	SAMPLE PUMP	OPERATING GALLERY	SOLIDS HANDLING	HORIZONTAL	40 GPM	20	-	45	-	-	1" / 3/4"		PACKING (DETAIL 10 ON P003)	Y			TOTALLY ENCLOSED FAN COOLED	460/3/360	460/3/360	-			14.6 / 1U	-

PROCESS VALVE SCHEDULE - SPEC SECTION 15100

TAG NUMBER	NUMBER OF UNITS	LOCATION	SERVICE	FUNCTION	TYPE	SIZE (IN)	MAXIMUM FLOW	JOINT TYPE	OPERATOR TYPE
KGV01	1	METER BUILDING	SP	BATTERY E INFLUENT	KNIFE GATE	72	125 MGD	FLANGED	ELECTRIC ACTUATOR - MODULATING OPERATOR CONTROL
KGV02 THRU KGV03	2	UTILITY TUNNEL	RAS	RAS METER	KNIFE GATE	60	61.6 MGD	FLANGED	ELECTRIC ACTUATOR - OPEN/CLOSE OPERATOR CONTROL
PV01 THRU PV02	2	WAS/FERMENTER RAS PUMP ROOM	WAS	WAS PUMP SUCTION	PLUG	8	0.97 MGD	FLANGED	MANUAL
CV01 THRU CV02	2	WAS/FERMENTER RAS PUMP ROOM	WAS	WAS PUMP DISCHARGE	CHECK	8	0.97 MGD	FLANGED	MANUAL
PV03 THRU PV04	2	WAS/FERMENTER RAS PUMP ROOM	WAS	WAS PUMP DISCHARGE	PLUG	8	0.97 MGD	FLANGED	MANUAL
PV05 THRU PV07	3	WAS/FERMENTER RAS PUMP ROOM	FERMENTER RAS	FERMENTER RAS PUMP SUCTION	PLUG	18	4.8 MGD	FLANGED	MANUAL
CV03 THRU CV05	3	WAS/FERMENTER RAS PUMP ROOM	FERMENTER RAS	FERMENTER RAS PUMP DISCHARGE	CHECK	12	4.8 MGD	FLANGED	MANUAL
PV08 THRU PV10	3	WAS/FERMENTER RAS PUMP ROOM	FERMENTER RAS	FERMENTER RAS PUMP DISCHARGE	PLUG	12	4.8 MGD	FLANGED	MANUAL
PV11 THRU PV18	8	FINAL SETTLING TANKS	PLANT DRAIN	FINAL SETTLING TANKS PLANT DRAIN	PLUG	12	4.1 MGD	FLANGED	MANUAL
PV19	1	OPERATING GALLERY	PLANT DRAIN	INFLUENT CHANNEL DRAIN	PLUG	8	2.2 MGD	FLANGED	MANUAL - OPERATING NUT
PV20	1	OPERATING GALLERY	PLANT DRAIN	RAS CONDUIT DRAIN	PLUG	8	350 GPM	FLANGED	MANUAL - OPERATING NUT
PV21, PV23	2	SAMPLE PUMP	SECONDARY TREATMENT SAMPLING	BATTERY E FINAL EFFLUENT SAMPLING SUCTION	PLUG	3	40 GPM	FLANGED	MANUAL
PV22, PV24	2	SAMPLE PUMP	SECONDARY TREATMENT SAMPLING	BATTERY E FINAL EFFLUENT SAMPLING DISCHARGE	PLUG	1	40 GPM	FLANGED	MANUAL
CV06 THRU CV07	2	SAMPLE PUMP	SECONDARY TREATMENT SAMPLING	BATTERY E FINAL EFFLUENT SAMPLING DISCHARGE	CHECK	1	40 GPM	FLANGED	MANUAL
PV25	1	BATTERY E UTILITY TUNNEL	PLANT DRAIN	RAS CONDUIT / RAS PIPE DRAIN	PLUG	8	1.7 MGD	FLANGED	MANUAL - OPERATING NUT
BFV1	1	SOUTHWEST OF BATTERY C	PROCESS AIR	AIR MAIN HEADER	BUTTERFLY	48	61,740 SCFM	FLANGED	MANUAL
BFV2	1	BATTERY D OPERATING GALLERY	PROCESS AIR	AIR MAIN HEADER	BUTTERFLY	48	59,800 SCFM	FLANGED	MANUAL
BFV3	1	BATTERY E OPERATING GALLERY	PROCESS AIR	AIR MAIN HEADER	BUTTERFLY	48	59,800 SCFM	FLANGED	MANUAL
AT1 BFV1 THRU AT6 BFV1	6	OPERATING GALLERY	PROCESS AIR	AIR MAIN HEADER	BUTTERFLY	18	7957 SCFM	FLANGED	MANUAL
AT1 BFV2 THRU AT6 BFV2	6	AERATION TANKS 1 TO 6 - ZONE 2	PROCESS AIR	AIR DROP LEG	BUTTERFLY	10	4217 SCFM	FLANGED	MANUAL
AT1 BFV3 THRU AT6 BFV3	6	AERATION TANKS 1 TO 6 - ZONE 3	PROCESS AIR	AIR DROP LEG	BUTTERFLY	8	4217 SCFM	FLANGED	MANUAL
AT1 BFV4 THRU AT6 BFV4	6	AERATION TANKS 1 TO 6 - ZONE 4	PROCESS AIR	AIR DROP LEG	BUTTERFLY	6	3691 SCFM	FLANGED	MANUAL
AT1 BFV5 THRU AT6 BFV5	6	AERATION TANKS 1 TO 6 - ZONE 5	PROCESS AIR	AIR DROP LEG	BUTTERFLY	6	3691 SCFM	FLANGED	MANUAL
AT1 BFV6 THRU AT6 BFV6	6	AERATION TANKS 1 TO 6 - ZONE 6	PROCESS AIR	AIR DROP LEG	BUTTERFLY	6	3691 SCFM	FLANGED	MANUAL
AT1 BFV7 THRU AT6 BFV7	6	AERATION TANKS 1 TO 6 - ZONE 7	PROCESS AIR	AIR DROP LEG	BUTTERFLY	6	2979 SCFM	FLANGED	MANUAL
AT1 BFV8 THRU AT6 BFV8	6	AERATION TANKS 1 TO 6 - ZONE 8	PROCESS AIR	AIR DROP LEG	BUTTERFLY	6	2979 SCFM	FLANGED	MANUAL
FST1 BFV 1A THRU FST8 BFV 8A FST1 BFV 1B THRU FST8 BFV 8B	16	OPERATING GALLERY	PROCESS AIR	AIR LIFTS	BUTTERFLY	8	870 SCFM	FLANGED	MANUAL
PAT BFV1	1	POST AERATION TANK	PROCESS AIR	BATTERY E FINAL EFFLUENT	BUTTERFLY	12	2500 SCFM	FLANGED	MANUAL
PAT BFV2 THRU PAT BFV3	2	POST AERATION TANK	PROCESS AIR	BATTERY E FINAL EFFLUENT	BUTTERFLY	10	1250 SCFM	FLANGED	MANUAL
ML BFV1 THRU ML BFV2	2	OPERATING GALLERY	PROCESS AIR	AIR MAIN HEADER TO MIXED LIQUOR CHANNEL	BUTTERFLY	8	950 SCFM	FLANGED	MANUAL
FST BFV1	1	OPERATING GALLERY	PROCESS AIR	AIR MAIN HEADER TO SLUDGE LEVEL INDICATORS AT FINAL SETTLING TANKS	BUTTERFLY	4		FLANGED	MANUAL
PV26	1	PROCESS CONTROL BUILDING	WAS	BATTERY E WAS PUMP TO SLUDGE CONCENTRATION TANK CONNECTION	PLUG	8	0.97 MGD	FLANGED	MANUAL

1

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by: WW/FK | Checked by: RK | Scale: NONE
Drawn by: AT | Reviewed by: BK | Date: 7/1/2025

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PROCESS EQUIPMENT SCHEDULES

Sheet Number: P-017
Page Number: 256

PROCESS PIPING SCHEDULE - SPEC SECTION 15370

PIPING								SYSTEM DESIGN CONDITIONS			REMARKS
LEGEND	SERVICE	DIAMETER RANGE (INCH)	MATERIAL	LOCATION	COATING		JOINT TYPE	MIN/MAX TEMP (F)	MAX WORKING PRESSURE (PSI)	PIPE TESTING	
					INTERIOR	EXTERIOR					
WAS	WAS	6, 8	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
WAS	WAS	8, 10	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
RAS	RAS	60	FRP SN72 PN100	BURIED / INTERIOR EXPOSED	-	-	FRP COUPLING / RESTRAINED COUPLING	40/75	15	HYDROSTATIC	NOMINAL INSIDE DIAMETER 60-INCH / TEST AT 50 PSI.
RAS	RAS	60	STEEL	INTERIOR EXPOSED	EPOXY	PAINTED	FLANGED	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
FM RAS	FERMENTER RAS	18	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
FM RAS	FERMENTER RAS	12, 18, 24	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
1 FM RAS	FERMENTER RAS	24	DUCTILE IRON	IMMERSED / SEWAGE CONTACT	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
SLS	SECONDARY SLUDGE	24	DUCTILE IRON	BURIED (CONCRETE ENCASED / POLYETHYLENE WRAP)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	20	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42	DUCTILE IRON	IMMERSED / SEWAGE CONTACT	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42, 48	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
PD	PLANT DRAIN	8, 12, 16	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
PD	PLANT DRAIN	36	DUCTILE IRON/HDPE/STEEL	BURIED (CONCRETE ENCASED)/BURIED/BURIED	CEMENT MORTAR LINED/-/-	PAINTED/-/PAINTED	MECHANICAL/HEAT FUSION/WELDED	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
PD	PLANT DRAIN	6, 8, 12	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
WS	WATER NON-POTABLE	3" AND SMALLER	GALVANIZED	INTERIOR EXPOSED	-	-	FLANGED	40/75	90	HYDROSTATIC	TEST AT 150 PSI.
SC	SCUM	6, 8	HDPE	BURIED	-	-	HEAT FUSION	40/75	10	LOW PRESSURE AIR	TEST AT 50 PSI.
SAN	SANITARY	6	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	CEMENT MORTAR LINED	ASPHALTIC COATING	MECHANICAL	40/75	10	LOW PRESSURE AIR	TEST AT 50 PSI.
W	WATER POTABLE	3	GALVANIZED/HDPE	BURIED	-	PAINTED/-	WELDED/HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150 PSI.
W	WATER POTABLE	8	HDPE	BURIED	-	-	HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150PSI.
WNP	WATER NON-POTABLE	4, 8	HDPE	BURIED	-	-	HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150PSI.
LPA	AIR HEADER	48	CORTEN STEEL	OUTDOOR	-	-	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	ASTM A588 NO EXTERIOR COATING TEST AT 15 PSI.
LPA	AIR HEADER	48	STEEL	INTERIOR EXPOSED	EPOXY	HIGH TEMP	WELDED / FLANGED	75/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR HEADER	48	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	-	ASPHALTIC COATING	MECHANICAL	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO POST AERATION TANK	10	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	-	ASPHALTIC COATING	MECHANICAL	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO AERATION TANK	18	STAINLESS STEEL	OUTDOOR/INTERIOR EXPOSED	-	HIGH TEMP	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO DIFFUSERS (AERATION TANKS AND POST-AERATION TANK)	3, 4, 5, 6, 8, 10	STAINLESS STEEL	OUTDOOR EXPOSED	-	HIGH TEMP	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO SLUDGE LEVEL INDICATORS	1, 1-1/2, 2 ,4	STAINLESS STEEL	BURIED	-	HIGH TEMP	WELDED / THREADED / PRESS FIT	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
SAM	BATTERY E EFFLUENT WATER SAMPLE	3	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	CEMENT MORTAR LINED	ASPHALTIC COATING	MECHANICAL	40/75	25	HYDROSTATIC	TEST AT 50 PSI.
SAM	BATTERY E EFFLUENT WATER SAMPLE	1	GALVANIZED	INTERIOR EXPOSED	-	PAINTED	THREADED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
EFF	FST 17/18 EFFLUENT	24	DUCTILE IRON/HDPE	BURIED (CONCRETE ENCASED)/BURIED	CEMENT MORTAR LINED/-	-	MECHANICAL/HEAT FUSION	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
SP	BATTERY E INFLUENT CONDUIT	72	STEEL	INTERIOR EXPOSED	EPOXY	PAINTED	WELDED	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
ML SAM	MIXED LIQUOR SAMPLE	3	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
ML SAM	MIXED LIQUOR SAMPLE	3	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
RAS SAM	RAS SAMPLE	3	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
RAS SAM	RAS SAMPLE	3	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
1 IMLR	INTERNAL MIXED LIQUOR RECYCLE DISCHARGE	30	STAINLESS STEEL	IMMERSED / SEWAGE CONTACT	-	-	WELDED/FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.

NOTES:
1. SEE TABLE 1 IN GSPC FOR PIPING COLOR CODING SCHEDULE.

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by: WW/FK | Checked by: RK | Scale: NONE
Drawn by: AT | Reviewed by: BK | Date: 7/1/2025

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PROCESS EQUIPMENT SCHEDULES

Sheet Number: P-019

Page Number: 258

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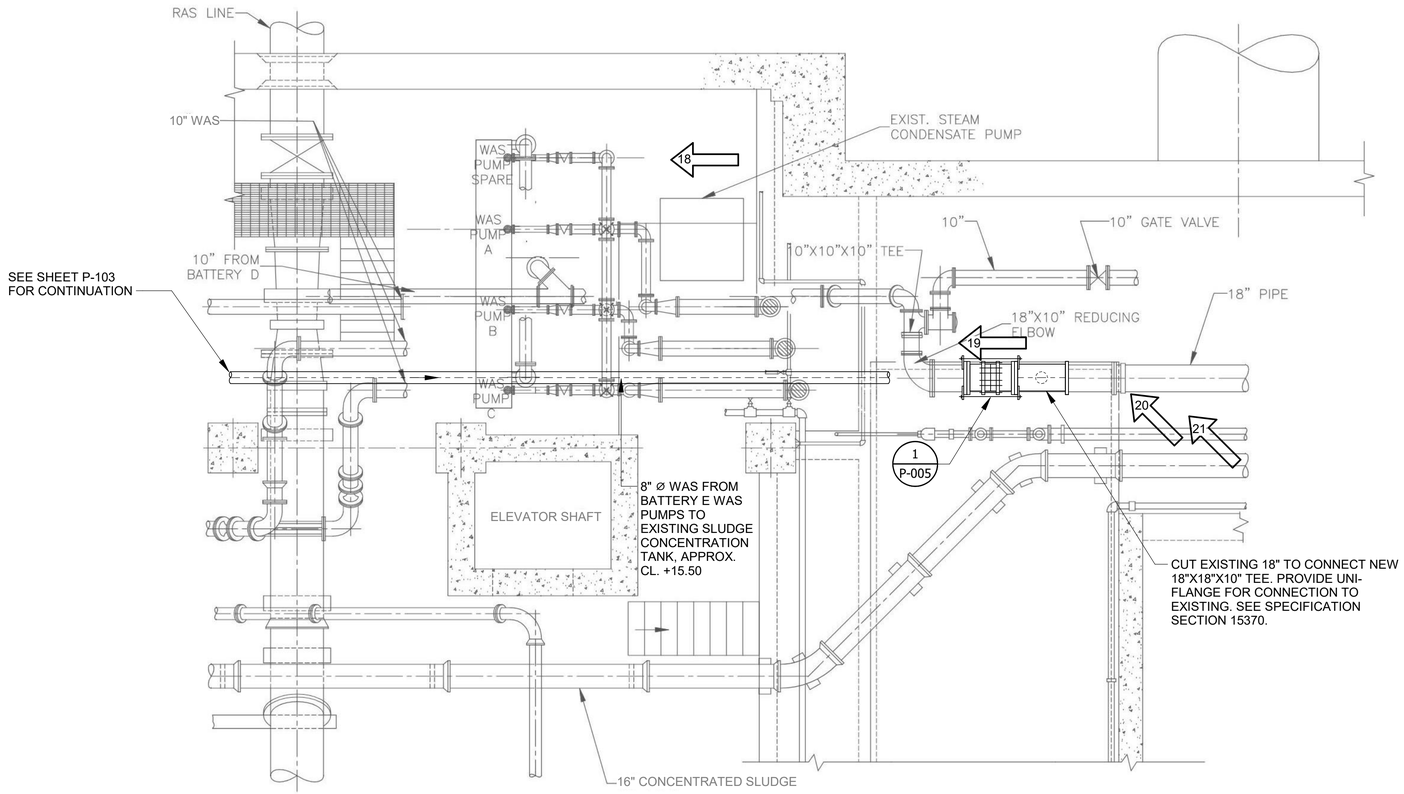
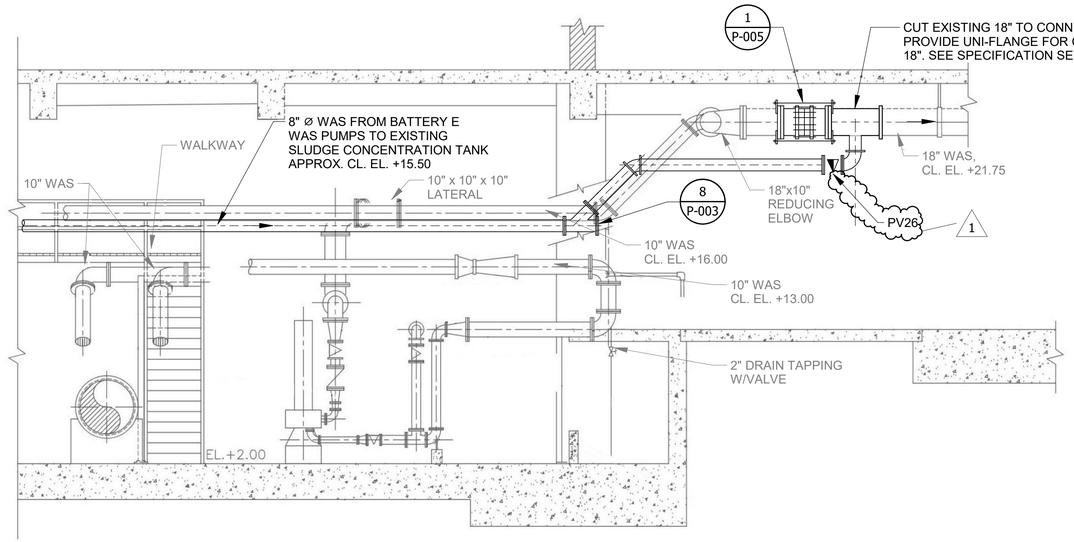


1 PROCESS CONTROL BUILDING - PLAN
SCALE: 1/4" = 1'-0"



A PROCESS CONTROL BUILDING - SECTION
SCALE: 1/4" = 1'-0"

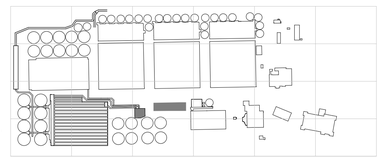
NOTES:

1. ARROWS INDICATE SITE PHOTO DIRECTION, SEE P-106 AND P-107.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, AND FIELD ROUTE 8" WAS PIPING AS NEEDED TO AVOID CONFLICTS.
3. REFER TO SECTION 15060 FOR REQUIREMENTS OF PIPE SUPPORTS.

SUGGESTED TIE-IN SEQUENCE:

1. COORDINATE SHUTDOWN OF EXISTING WAS PUMPS PRIOR TO CONNECTION OF NEW WAS PIPING WITH EXISTING PIPING. SHUTDOWN TO BE A MAXIMUM OF 8 HOURS.
2. WAS PIPING TO BE DRAINED TO BELOW THE ELEVATION OF THE WAS PIPING AT THE CONNECTION THROUGH ONE OF THE WAS PUMPS.
3. MAKE CONNECTION OF NEW WAS PIPING TO EXISTING WAS PIPING DURING WAS PUMP SHUTDOWN. INSTALL A TEMPORARY BLIND FLANGE ON NEW TEE IF NECESSARY.

0 2' 4' 8' 12'
SCALE: 1/4" = 1'-0"



OVERALL KEYPLAN

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Designed by: WW/FK	Checked by: RK	AECOM	PRUDENTIAL PLAZA ONE 130 E RANDOLPH STREET SUITE 2400 CHICAGO, IL 60601, USA
Drawn by: AT	Reviewed by: BK		
Date: 7/11/2025	Scale: 1/4" = 1'-0"		

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
PROCESS CONTROL BUILDING & METER BUILDING
BATTERY E WAS CONNECTION - PLAN AND SECTION

Sheet Number: P-104
Page Number: 263

PLOT DATE: 10/3/2025 3:38:00 PM

TAG: E-DP-E1 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	FERMENTER TANK PASS NO.1 (FT1-M01, FT1-M02, FT1-M03, FT1-M04)	M	3	30 A	5321	0									2
3							5321	0			30 A	3	--	SPD	4
5									5321	0					6
7	FERMENTER TANK PASS NO.2 (FT2-M01, FT2-M02, FT2-M03, FT2-M04)	M	3	30 A	5321	1330									8
9							5321	1330			20 A	3	M	ODOR 1	10
11									5321	1330					12
13	FERMENTER TANK PASS NO.3 (FT3-M01, FT3-M02, FT3-M03)	M	3	30 A	3991	1330									14
15							3991	1330			20 A	3	M	ODOR-2	16
17									3991	1330					18
19	FERMENTER TANK PASS NO.3 (FT3-M04, FT3-M05, FT3-M06)	M	3	30 A	3991	1995									20
21							3991	1995			20 A	3	M	WH-1	22
23									3991	1995					24
25	ANOXIC PASS (AP-M01, AP-M02, AP-M03, AP-M04)	M	3	30 A	5321	4213									26
27							5321	4213			20 A	3	M	SP-1A & SP-1B	28
29									5321	4213					30
31	ANOXIC PASS (AP-M05, AP-M06, AP-M07, AP-M08)	M	3	30 A	5321	--									32
33							5321	--			--	3	--	SPARE	34
35									5321	--					36
37	PROVISION	--	3	--	--	--									38
39							--	--			--	3	--	PROVISION	40
41									--	--					42

TOTAL VA PHASE A	38136 VA	TOTAL CONNECTED AMPS	138 A
TOTAL VA PHASE B	38136 VA	TOTAL CONNECTED VA	114408 VA
TOTAL VA PHASE C	38136 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	114408 VA

TAG: E-DP-E2 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					1108	0									2
3	FST1 (FCV-1A & FCV-1B), FST2 (FCV-2A & FCV-2B)	M	3	20 A			1108	0			30 A	3	--	SPD	4
5									1108	0					6
7					2106	1663									8
9	SG-07 (FOR FST-01)	M	3	20 A			2106	1663			20 A	3	M	AERATION TANK 1 (AT1-M01 & AT1-M02)	10
11									2106	1663					12
13					2106	3880									14
15	SG-08 (FOR FST-02)	M	3	20 A			2106	3880			50 A	3	M	AT1 IMLRP	16
17									2106	3880					18
19					582	2106									20
21	FST 01 (PLOW DRIVE)	M	3	20 A			582	2106			20 A	3	M	SG-01 - AERATION TANK 1 - INFLUENT GATE	22
23									582	2106					24
25					582	1939									26
27	FST 02 (PLOW DRIVE)	M	3	20 A			582	1939			20 A	3	M	AERATION TANK 1 FCV (AT1-FCV1 THROUGH AT1-FCV7)	28
29									582	1939					30
31					7621	3880									32
33	MAU-1	M	3	50 A			7621	3772			60 A	3	L; R; E; M	E-LP-3	34
35									7621	3920					36
37					3048	--									38
39	EF-1	M	3	20 A			3048	--			--	3	--	SPARE	40
41									3048	--					42
43					--	--									44
45	SPARE	--	3	--			--	--			--	3	--	SPARE	46
47									--	--					48
49					--	--									50
51	PROVISION	--	3	--			--	--			--	3	--	PROVISION	52
53									--	--					54

TOTAL VA PHASE A	30622 VA	TOTAL CONNECTED AMPS	110 A
TOTAL VA PHASE B	30514 VA	TOTAL CONNECTED VA	91797 VA
TOTAL VA PHASE C	30662 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	500 VA
MOTOR (M)	89005 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	2160 VA

TAG: E-DP-E3 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					1108	0									2
3	FST3 (FCV-3A & FCV-3B), FST4 (FCV-4A & FCV-4B)	M	3	20 A			1108	0			30 A	3	--	SPD	4
5									1108	0					6
7					2106	1663									8
9	SG-09 (FOR FST-03)	M	3	20 A			2106	1663			20 A	3	M	AERATION TANK 2 (AT2-M01, AT2-M02)	10
11									2106	1663					12
13					2106	7479									14
15	SG-10 (FOR FST-04)	M	3	20 A			2106	7479			50 A	3	M	AT2 IMLRP	16
17									2106	7479					18
19					582	2106									20
21	FST 03 (PLOW DRIVE)	M	3	20 A			582	2106			20 A	3	M	SG-02 - AERATION TANK 2 - INFLUENT GATE	22
23									582	2106					24
25					582	1939									26
27	FST 04 (PLOW DRIVE)	M	3	20 A			582	1939			20 A	3	M	AERATION TANK 2 (AT2-FCV1 THROUGH AT2-FCV7)	28
29									582	1939					30
31					1330	5732							M; L; R; E; M		32
33	INFL-M01	M	3	20 A			1330	4360			60 A	3		E-LP-4	34
35									1330	3940					36
37					1330	--									38
39	INFL-M02	M	3	20 A			1330	--			--	3	--	SPARE	40
41									1330	--					42
43					--	--									44
45	SPARE	--	3	--			--	--			--	3	--	SPARE	46
47									--	--					48
49					--	--									50
51	PROVISION	--	3	--			--	--			--	3	--	PROVISION	52
53									--	--					54

TOTAL VA PHASE A	28064 VA	TOTAL CONNECTED AMPS	97 A
TOTAL VA PHASE B	26692 VA	TOTAL CONNECTED VA	81029 VA
TOTAL VA PHASE C	26272 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	500 VA
MOTOR (M)	79317 VA
Motor	360 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	720 VA

TAG: E-DP-E4 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					4213	0									2
3	SP-4A & SP-4B	M	3	20 A			4213	0			30 A	3	--	SPD	4
5									4213	0					6
7					4213	1330									8
9	SP-5A & SP-5B	M	3	20 A			4213	1330			20 A	3	M	HOIST-2	10
11									4213	1330					12
13					4213	3797									14
15	SP-6A & SP-6B	M	3	20 A			4213	3797			20 A	3	M	MAU-3	16
17									4213	3797					18
19					4213	2106									20
21	SP-7A & SP-7B	M	3	20 A			4213	2106			20 A	3	M	KGV-03	22
23									4213	2106					24
25					942	2106									26
27	EF-3A	M	3	20 A			942	2106			20 A	3	M	KGV-02	28
29									942	2106					30
31					942	10000									32
33	EF-3B	M	3	20 A			942	10000			60 A	3	R	WELDING RECEPTACLE	34
35									942	10000					36
37					--	--									38
39	SPARE	--	3	--			--	--			--	3	--	SPARE	40
41									--	--					42
43					--	--									44
45	SPARE	--	3	--			--	--			--	3	--	SPARE	46
47									--	--					48
49					--	--									50
51	PROVISION	--	3	--			--	--			--	3	--	PROVISION	52
53									--	--					54

TOTAL VA PHASE A	38075 VA	TOTAL CONNECTED AMPS	137 A
TOTAL VA PHASE B	38075 VA	TOTAL CONNECTED VA	114225 VA
TOTAL VA PHASE C	38075 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	71587 VA
Motor	12638 VA
RECEPTACLE (R)	30000 VA

TAG: E-DP-E5 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					1108	0									2
3	FST5 (FCV-5A & FCV-5B), FST6 (FCV-6A & FCV-6B)	M	3	20 A			1108	0			30 A	3	--	SPD	4
5									1108	0					6
7					2106	1663									8
9	SG-11 (FOR FST-05)	M	3	20 A			2106	1663			20 A	3	M	AERATION TANK 3 (AT3-M01, AT3-MO2)	10
11									2106	1663					12
13					2106	7479									14
15	SG-12 (FOR FST-06)	M	3	20 A			2106	7479			50 A	3	M	AT3 IMLRP	16
17									2106	7479					18
19					582	2106									20
21	FST 05 (PLOW DRIVE)	M	3	20 A			582	2106			20 A	3	M	SG-03 - AERATION TANK 3 - INFLUENT GATE	22
23									582	2106					24
25					582	1939									26
27	FST 06 (PLOW DRIVE)	M	3	20 A			582	1939			20 A	3	M	AERATION TANK 3 (AT3-FCV1 THROUGH AT3-FCV7)	28
29									582	1939					30
31					4213	2640									32
33	SP-2A & SP-2B	M	3	20 A			4213	2460			60 A	3	L; R; M	E-LP-5	34
35									4213	2952					36
37					443	--									38
39	SAM-P02	M	3	20 A			443	--			--	3	--	SPARE	40
41									443	--					42
43					--	--									44
45	SPARE	--	3	--			--	--			--	3	--	SPARE	46
47									--	--					48
49					--	--									50
51	PROVISION	--	3	--			--	--			--	3	--	PROVISION	52
53									--	--					54

TOTAL VA PHASE A	26968 VA	TOTAL CONNECTED AMPS	97 A
TOTAL VA PHASE B	26788 VA	TOTAL CONNECTED VA	81035 VA
TOTAL VA PHASE C	27280 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	78743 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	2160 VA

1 **LEGEND:**

L - LIGHTING LOAD

R - RECEPTACLE LOAD

E - POWER LOAD

M - MOTOR LOAD

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Primera
550 W. Jackson Boulevard • Suite 400 • Chicago, Illinois 60661

Designed by:	Checked by:	Reviewed by:	Scale:
AR	DES	CA	NONE
Drawn by:			Date:
BM			7/1/2025

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PANELBOARD SCHEDULES 1 OF 3

Sheet Number:
E-013
Page Number: 376

PLOT DATE: 10/3/2025 3:37:45 PM

TAG: E-DP-E6 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					1108	0									2
3	FST7 (FCV-7A & FCV-7B), FST8 (FCV-8A & FCV-8B)	M	3	20 A			1108	0			30 A	3	--	SPD	4
5									1108	0					6
7					2106	1663									8
9	SG-13 (FOR FST-07)	M	3	20 A			2106	1663			20 A	3	M	AERATION TANK 4 (AT4-M01, AT4-MO2)	10
11									2106	1663					12
13					2106	7479									14
15	SG-14 (FOR FST-08)	M	3	20 A			2106	7479			50 A	3	M	AT4 IMLRP	16
17									2106	7479					18
19					582	2106									20
21	FST 07 (PLOW DRIVE)	M	3	20 A			582	2106			20 A	3	M	SG-04 - AERATION TANK 4 - INFLUENT GATE	22
23									582	2106					24
25					582	1939									26
27	FST 08 (PLOW DRIVE)	M	3	20 A			582	1939			20 A	3	M	AERATION TANK 4 (AT4-FCV1 THROUGH AT4-FCV7)	28
29									582	1939					30
31					3048	2160									32
33	EF-2	M	3	20 A			3048	2160			60 A	3	L; R; M	E-LP-6	34
35									3048	2292					36
37					7621	--									38
39	MAU-2	M	3	50 A			7621	--			--	3	--	SPARE	40
41									7621	--					42
43					--	--									44
45	SPARE	--	3	--			--	--			--	3	--	SPARE	46
47									--	--					48
49					--	--									50
51	PROVISION	--	3	--			--	--			--	3	--	PROVISION	52
53									--	--					54

TOTAL VA PHASE A	32501 VA	TOTAL CONNECTED AMPS	117 A
TOTAL VA PHASE B	32501 VA	TOTAL CONNECTED VA	97635 VA
TOTAL VA PHASE C	32633 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	96783 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	720 VA

TAG: E-DP-E7 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1															2
3	AERATION TANK 5 (AT5-M01, AT5-MO2)	M	3	20 A	1663	0					30 A	3	--	SPD	4
5							1663	0							6
7					7479	1663									8
9	AT5 IMLRP	M	3	50 A			7479	1663			20 A	3	M	AERATION TANK 6 (AT6-M01, AT6-MO2)	10
11									7479	1663					12
13					2106	7479									14
15	SG-05 - AERATION TANK 5 - INFLUENT GATE	M	3	20 A			2106	7479			50 A	3	M	AT6 IMLRP	16
17									2106	7479					18
19					1939	2106									20
21	AERATION TANK 5 (AT5-FCV1 THROUGH AT5-FCV7)	M	3	20 A			1939	2106			20 A	3	M	SG-06 - AERATION TANK 6 - INFLUENT GATE	22
23									1939	2106					24
25					1330	1939									26
27	INFL-M03	M	3	20 A			1330	1939			20 A	3	M	AERATION TANK 6 (AT6-FCV1 THROUGH AT6-FCV7)	28
29									1330	1939					30
31					1330	--									32
33	INFL-M04	M	3	20 A			1330	--			--	3	--	SPARE	34
35									1330	--					36
37					--	--									38
39	PROVISION	--	3	--			--	--			--	3	--	PROVISION	40
41									--	--					42

TOTAL VA PHASE A	29035 VA	TOTAL CONNECTED AMPS	105 A
TOTAL VA PHASE B	29035 VA	TOTAL CONNECTED VA	87104 VA
TOTAL VA PHASE C	29035 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	87104 VA

TAG: E-DP-E8 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					7482	0									2
3	RAS P01	M	3	50 A			7482	0			30 A	3	--	SPD	4
5									7482	0					6
7					7482	2633									8
9	RAS P02	M	3	50 A			7482	2633			15 A	3	M	MAU-4	10
11									7482	2633					12
13					7482	443									14
15	RAS P03	M	3	50 A			7482	443			20 A	3	M	SAM-P01	16
17									7482	443					18
19					2106	3047									20
21	WAS P02	M	3	20 A			2106	3047			15 A	3	M	AS-1	22
23									2106	3047					24
25					2106	--									26
27	WAS P01	M	3	20 A			2106	--			--	3	--	SPARE	28
29									2106	--					30
31					1330	--									32
33	HOIST-1	M	3	20 A			1330	--			--	3	--	SPARE	34
35									1330	--					36
37					4213	--									38
39	SP-3A & SP-3B	M	3	20 A			4213	--			--	3	--	PROVISION	40
41									4213	--					42

TOTAL VA PHASE A	38326 VA	TOTAL CONNECTED AMPS	138 A
TOTAL VA PHASE B	38326 VA	TOTAL CONNECTED VA	114977 VA
TOTAL VA PHASE C	38326 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	114977 VA

TAG: E-DP-E9 VOLTAG... 480 Delta,3P,3W NEUTRAL: N/A
MTG: SURFACE BUS: 225 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 225 A MCB REMARKS: 65KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1					2106	0									2
3	SG-15 (POST AERATION PASS 1 INFLUENT GATE)	M	3	20 A			2106	0			30 A	3	--	SPD	4
5									2106	0					6
7					2106	277									8
9	SG-16 (POST AERATION PASS 2 INFLUENT GATE)	M	3	20 A			2106	277			20 A	3	M	POST AERATION TANK AIR FCV PAT-FCV1	10
11									2106	277					12
13					2106	4213									14
15	SG-17 (POST AERATION PASS 1 WEST EFFLUENT GATE)	M	3	20 A			2106	4213			20 A	3	M	SP-8A, SP-8B	16
17									2106	4213					18
19					2106	--									20
21	SG-18 (POST AERATION PASS 1 EAST EFFLUENT GATE)	M	3	20 A			2106	--			--	3	--	SPARE	22
23									2106	--					24
25					2105	--									26
27	SG-19 (POST AERATION PASS 2 WEST EFFLUENT GATE)	M	3	20 A			2105	--			--	3	--	SPARE	28
29									2105	--					30
31					2105	--									32
33	SG-20 (POST AERATION PASS 2 EAST EFFLUENT GATE)	M	3	20 A			2105	--			--	3	--	PROVISION	34
35									2105	--					36
37					--	--									38
39	PROVISION	--	3	--			--	--			--	3	--	PROVISION	40
41									--	--					42

TOTAL VA PHASE A	17126 VA	TOTAL CONNECTED AMPS	62 A
TOTAL VA PHASE B	17126 VA	TOTAL CONNECTED VA	51377 VA
TOTAL VA PHASE C	17126 VA		

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	12638 VA
Motor	38739 VA

TRANSFORMER SCHEDULE

TAG	SIZE	VOLTAGE	REMARKS
JB-HT-ODOR -01	PEL_Dummy Load 208V		
JB-HT-ODOR -02	PEL_Dummy Load		
T-E1	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 2 WEST WALL
T-E2	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 4 WEST WALL
T-E3	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 1 EAST WALL
T-E4	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 2 EAST WALL
T-E5	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 3 EAST WALL
T-E6	45 kVA	480-208/120V	UPPER LEVEL GALLERY AREA 4 EAST WALL
UST-E1	1000 kVA	6.9kV-480V	UTILITY TUNNEL AREA 4 ABOVE GRADE
UST-E2	1000 kVA	6.9kV-480V	UTILITY TUNNEL AREA 4 ABOVE GRADE

LEGEND:

1 L - LIGHTING LOAD
R - RECEPTACLE LOAD
E - POWER LOAD
M - MOTOR LOAD

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Primera

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by: AR | Drawn by: BM | Checked by: DES | Reviewed by: CA | Date: 7/1/2025 | Scale: NONE

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PANELBOARD SCHEDULES 2 OF 3

Sheet Number: E-014
Page Number: 377

PLOT DATE: 10/3/2025 3:37:47 PM

TAG: E-LP-1 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	EXTERIOR REC	R	1	20 A	720	0					20 A	1	--	SPARE	2
3	EXTERIOR REC	R	1	20 A			720	500			20 A	1	E	FST TORQUE GALLER ALARM...	4
5	UPPER OPERATING GALLERY	R	1	20 A					720	360	20 A	1	R	ROOF REC	6
7	UPPER OPERATING GALLERY	R	1	20 A	1080	35					20 A	1	L	TOP LEVEL EXIT SIGNS	8
9	UPPER OPERATING GALLERY	R	1	20 A			720	500			20 A	1	E	RIO-01 AREA CONTROL PANEL	10
11	BASEMENT LTG	L	1	20 A					744	25	20 A	1	L	TOP LEVEL EM LIGHTING	12
13	BASEMENT LIGHTING	L	1	20 A	744	1330					20 A	1	M	EF-5 (1/60 HP)	14
15	WAS/FERMENTER LTG	L	1	20 A			505	998							16
17	TOP LIGHTING	L	1	20 A					837	998	20 A	2	M	EF-4 (1 HP)	18
19	TOP LIGHTING	L	1	20 A	1065	900					20 A	1	L	TUNNEL LIGHTING	20
21	BASEMENT REC	R	1	20 A			1080	781			20 A	1	L	TUNNEL LIGHTING	22
23	EXTERIOR LIGHTING	L	1	20 A					320	871	20 A	1	L	TUNNEL LIGHTING	24
25	BASEMENT REC	R	1	20 A	540	855					20 A	1	L	TUNNEL LIGHTING	26
27	BASEMENT REC	R	1	20 A			540	720			20 A	1	R	TUNNEL REC	28
29	UC REFRIG	R	1	20 A					180	500	20 A	1	E	PHONE CONTROLLER	30
31	BASEMENT EM LIGHTING	L	1	20 A	135	50					20 A	1	E	TUNNEL SMOKE DETECTORS	32
33	BASEMENT EXIT SIGNS	L	1	20 A			25	0			20 A	1	--	SPARE	34
35	EH-1C	M	2	30 A					2000	0	20 A	1	--	SPARE	36
37					2000	--					--	1	--	PROVISION	38
39	EH-1D	M	2	30 A			2000	--			--	1	--	PROVISION	40
41									2000	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 9454 VA
TOTAL VA PHASE B 9089 VA
TOTAL VA PHASE C 9555 VA
TOTAL CONNECTED AMPS 78 A
TOTAL CONNECTED VA 28097 VA

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	1550 VA
MOTOR (M)	11325 VA
LIGHTING (L)	7842 VA
RECEPTACLE (R)	7380 VA

TAG: E-LP-2 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	EXTERIOR REC	R	1	20 A	720	25					20 A	1	L	TOP LEVEL EXIT SIGNS	2
3	EXTERIOR REC	R	1	20 A			540	20			20 A	1	L	TOP LEVEL EM LIGHTING	4
5	UPPER OPERATING GALLERY	R	1	20 A					900	180	20 A	1	R	ROOF REC	6
7	SPARE	--	1	20 A	0	90					20 A	1	L	ROOF STAIR LIGHTING	8
9	UPPER OPERATING GALLERY	R	1	20 A			720	0			20 A	1	--	SPARE	10
11	BASEMENT LTG	L	1	20 A					744	900	20 A	1	R	UPPER OPERATING GALLERY	12
13	BASEMENT LTG	L	1	20 A	744	0					20 A	1	--	SPARE	14
15	BASEMENT LTG	L	1	20 A			744	0			20 A	1	--	SPARE	16
17	BASEMENT LTG	L	1	20 A					558	0	20 A	1	--	SPARE	18
19	UPPER OPERATING GALLERY	L	1	20 A	1023	0					20 A	1	--	SPARE	20
21	UPPER OPERATING GALLERY	L	1	20 A			1023	0			20 A	1	--	SPARE	22
23	EXTERIOR LIGHTING	L	1	20 A					240	0	20 A	1	--	SPARE	24
25	BASEMENT REC	R	1	20 A	1080	0					20 A	1	--	SPARE	26
27	BASEMENT REC	R	1	20 A			900	0			20 A	1	--	SPARE	28
29	RIO-02 AREA CONTROL PANEL	E	1	20 A					500	0	20 A	1	--	SPARE	30
31	BASEMENT EM LIGHTING	L	1	20 A	15	0					20 A	1	--	SPARE	32
33	BASEMENT EXIT SIGNS	L	1	20 A			20	0			20 A	1	--	SPARE	34
35	PROVISION	--	1	--					--	--	--	1	--	PROVISION	36
37	PROVISION	--	1	--	--	--					--	1	--	PROVISION	38
39	PROVISION	--	1	--			--	--			--	1	--	PROVISION	40
41	PROVISION	--	1	--					--	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 3697 VA
TOTAL VA PHASE B 3967 VA
TOTAL VA PHASE C 4022 VA
TOTAL CONNECTED AMPS 32 A
TOTAL CONNECTED VA 11686 VA

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	500 VA
LIGHTING (L)	5246 VA
RECEPTACLE (R)	5940 VA

TAG: E-MP-3 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	PROVISION	--	1	--	--	0					20 A	1	--	SPARE	2
3	AIT-316A, AIT-316B	M	1	20 A			360	360			20 A	1	M	LIT-510C, LIT-520C	4
5	FIT-314A, FIT-314F, FIT-314G	M	1	20 A					540	720	20 A	1	M	FIT-510D, 510F, 520D, 520F	6
7	FIT-314B, 314C, 314D, 314E	M	1	20 A	720	1000					20 A	2	M	EH-2B	8
9	AIT-316C, AIT-316D, AIT-316E	M	1	20 A			540	1000							10
11	AIT-301B ANOXIC PASS	M	1	20 A					180	1000	20 A	2	M	EH-2A	12
13	AIT-301A FERMENTER TANK	M	1	20 A	180	1000									14
15	ANALYZER	R	1	20 A			480	852			20 A	1	L; R	FST 01 & 02	16
17	CHEMSCAN	R	1	20 A					480	500	20 A	1	E	RIO 02 CONTROL PANEL	18
19	ANALYZER	R	1	20 A	480	--					--	1	--	PROVISION	20
21	AIT-316F	M	1	20 A			180	--			--	1	--	PROVISION	22
23	HT-ODOR-02	M	1	20 A					500	--	--	1	--	PROVISION	24
25	HT-ODOR-01	M	1	20 A	500	--					--	1	--	PROVISION	26
27	PROVISION	--	1	--			--	--			--	1	--	PROVISION	28
29	PROVISION	--	1	--					--	--	--	1	--	PROVISION	30
31	PROVISION	--	1	--	--	--					--	1	--	PROVISION	32
33	PROVISION	--	1	--			--	--			--	1	--	PROVISION	34
35	PROVISION	--	1	--					--	--	--	1	--	PROVISION	36
37	PROVISION	--	1	--	--	--					--	1	--	PROVISION	38
39	PROVISION	--	1	--			--	--			--	1	--	PROVISION	40
41	PROVISION	--	1	--					--	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 3880 VA
TOTAL VA PHASE B 3772 VA
TOTAL VA PHASE C 3920 VA
TOTAL CONNECTED AMPS 32 A
TOTAL CONNECTED VA 11572 VA

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	500 VA
MOTOR (M)	8780 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	2160 VA

TAG: E-MP-4 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	AIT-326C, AIT-326D, AIT-326E	M	1	20 A	540	852					20 A	1	L; R	FST 03 & 04	2
3	PROVISION	--	1	--			--	--			--	1	--	PROVISION	4
5	FIT-324B, 324C, 324D, 324E	M	1	20 A					720	360	20 A	1	M	LIT-530C, LIT-540C	6
7	AIT-326A, AIT-326B, AIT-426C	M	1	20 A	540	540					20 A	1	M	FIT-606, AIT-608A, AIT-608B -...	8
9	FIT-422, FIT-200, FIT-414	M	1	20 A			360	2000			20 A	2	M	EH-1A	10
11	PF-1, PF-2 (1/15HP EACH)	M	1	20 A					360	2000					12
13	SPARE	--	1	20 A	0	2000					20 A	2	M	EH-1B	14
15	SPARE	--	1	20 A			0	2000							16
17	SPARE	--	1	20 A					0	500	20 A	1	E	EQUIPMENT (E)	18
19	FIT-324A, FIT-324F, FIT-324G	M	1	20 A	540	720					20 A	1	M	FIT-530D, 530F, 540D, 540F	20
21	PROVISION	--	1	--			--	--			--	1	--	PROVISION	22
23	PROVISION	--	1	--					--	--	--	1	--	PROVISION	24
25	PROVISION	--	1	--	--	--					--	1	--	PROVISION	26
27	PROVISION	--	1	--			--	--			--	1	--	PROVISION	28
29	PROVISION	--	1	--					--	--	--	1	--	PROVISION	30
31	PROVISION	--	1	--	--	--					--	1	--	PROVISION	32
33	PROVISION	--	1	--			--	--			--	1	--	PROVISION	34
35	PROVISION	--	1	--					--	--	--	1	--	PROVISION	36
37	PROVISION	--	1	--	--	--					--	1	--	PROVISION	38
39	PROVISION	--	1	--			--	--			--	1	--	PROVISION	40
41	PROVISION	--	1	--					--	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 5732 VA
TOTAL VA PHASE B 4360 VA
TOTAL VA PHASE C 3940 VA
TOTAL CONNECTED AMPS 39 A
TOTAL CONNECTED VA 14032 VA

LOAD CLASSIFICATION	CONNECTED LOAD
EQUIPMENT (E)	500 VA
MOTOR (M)	12320 VA
Motor	360 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	720 VA

TAG: E-MP-5 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	FIT-550D, 550F, 560D, 560F	M	1	20 A	720	180					20 A	1	M	AIT-336F	2
3	LIT-560C, LIT-550C	M	1	20 A			360	360			20 A	1	M	AIT-336A, AIT-336B	4
5	FST 05 & 06	L; R	1	20 A					852	540	20 A	1	M	FIT-334A, FIT-334F, FIT-334G	6
7	ANALYZER	R	1	20 A	480	720					20 A	1	M	FIT-334B, 334C, 334D, 334E	8
9	SAMPLER	R	1	20 A			480	540			20 A	1	M	AIT-336C, AIT-336D, AIT-336E	10
11	ANALYZER	R	1	20 A					480	540	20 A	1	M	AIT-346C, AIT-346D, AIT-346E	12
13	SPARE	--	1	20 A	0	540					20 A	1	M	FIT-344A, FIT-344F, FIT-344G	14
15	SPARE	--	1	20 A			0	720			20 A	1	M	FIT-344B, 344C, 344D, 344E	16
17	SPARE	--	1	20 A					0	540	20 A	1	M	AIT-346A, AIT-346B, AIT-346C	18
19	PROVISION	--	1	--	--	--					--	1	--	PROVISION	20
21	PROVISION	--	1	--			--	--			--	1	--	PROVISION	22
23	PROVISION	--	1	--					--	--	--	1	--	PROVISION	24
25	PROVISION	--	1	--	--	--					--	1	--	PROVISION	26
27	PROVISION	--	1	--			--	--			--	1	--	PROVISION	28
29	PROVISION	--	1	--					--	--	--	1	--	PROVISION	30
31	PROVISION	--	1	--	--	--					--	1	--	PROVISION	32
33	PROVISION	--	1	--			--	--			--	1	--	PROVISION	34
35	PROVISION	--	1	--					--	--	--	1	--	PROVISION	36
37	PROVISION	--	1	--	--	--					--	1	--	PROVISION	38
39	PROVISION	--	1	--			--	--			--	1	--	PROVISION	40
41	PROVISION	--	1	--					--	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 2640 VA
TOTAL VA PHASE B 2460 VA
TOTAL VA PHASE C 2952 VA
TOTAL CONNECTED AMPS 22 A
TOTAL CONNECTED VA 8052 VA

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	5760 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	2160 VA

TAG: E-MP-6 VOLTAG... 120/208 Wye,3P,4W NEUTRAL: 100%
MTG: SURFACE BUS: 200 A GROUND: 100%
RM: UPPER OPERATING GALLERY MOCP: 150 A MCB REMARKS: 35KAIC

CKT	DESCRIPTION	TYPE	P	TRIP	A		B		C		TRIP	P	TYPE	DESCRIPTION	CKT
1	FIT-570D, 570F, 580D, 580F	M	1	20 A	720	180					20 A	1	M	AIT-356F	2
3	LIT-570C, LIT-580C	M	1	20 A			360	540			20 A	1	M	FIT-354A, FIT-354F, FIT-354G	4
5	FST 07 & 08	L; R	1	20 A					852	360	20 A	1	M	AIT-356A, AIT-356B	6
7	SPARE	--	1	20 A	0	720					20 A	1	M	FIT-354B, 354C, 354D, 354E	8
9	SPARE	--	1	20 A			0	540			20 A	1	M	AIT-356C, AIT-356D, AIT-356E	10
11	SPARE	--	1	20 A					0	540	20 A	1	M	AIT-366C, AIT-366D, AIT-366E	12
13	SPARE	--	1	20 A	0	540					20 A	1	M	FIT-364A, FIT-364B, FIT-364G	14
15	SPARE	--	1	20 A			0	720			20 A	1	M	FIT-364C, 364D, 364E, 364F	16
17	SPARE	--	1	20 A					0	540	20 A	1	M	AIT-366A, AIT-366B, AIT-366C	18
19	PROVISION	--	1	--	--	--					--	1	--	PROVISION	20
21	PROVISION	--	1	--			--	--			--	1	--	PROVISION	22
23	PROVISION	--	1	--					--	--	--	1	--	PROVISION	24
25	PROVISION	--	1	--	--	--					--	1	--	PROVISION	26
27	PROVISION	--	1	--			--	--			--	1	--	PROVISION	28
29	PROVISION	--	1	--					--	--	--	1	--	PROVISION	30
31	PROVISION	--	1	--	--	--					--	1	--	PROVISION	32
33	PROVISION	--	1	--			--	--			--	1	--	PROVISION	34
35	PROVISION	--	1	--					--	--	--	1	--	PROVISION	36
37	PROVISION	--	1	--	--	--					--	1	--	PROVISION	38
39	PROVISION	--	1	--			--	--			--	1	--	PROVISION	40
41	PROVISION	--	1	--					--	--	--	1	--	PROVISION	42

TOTAL VA PHASE A 2160 VA
TOTAL VA PHASE B 2160 VA
TOTAL VA PHASE C 2292 VA
TOTAL CONNECTED AMPS 18 A
TOTAL CONNECTED VA 6612 VA

LOAD CLASSIFICATION	CONNECTED LOAD
MOTOR (M)	5760 VA
LIGHTING (L)	132 VA
RECEPTACLE (R)	720 VA

LEGEND:

1 L - LIGHTING LOAD
R - RECEPTACLE LOAD
E - POWER LOAD
M - MOTOR LOAD

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

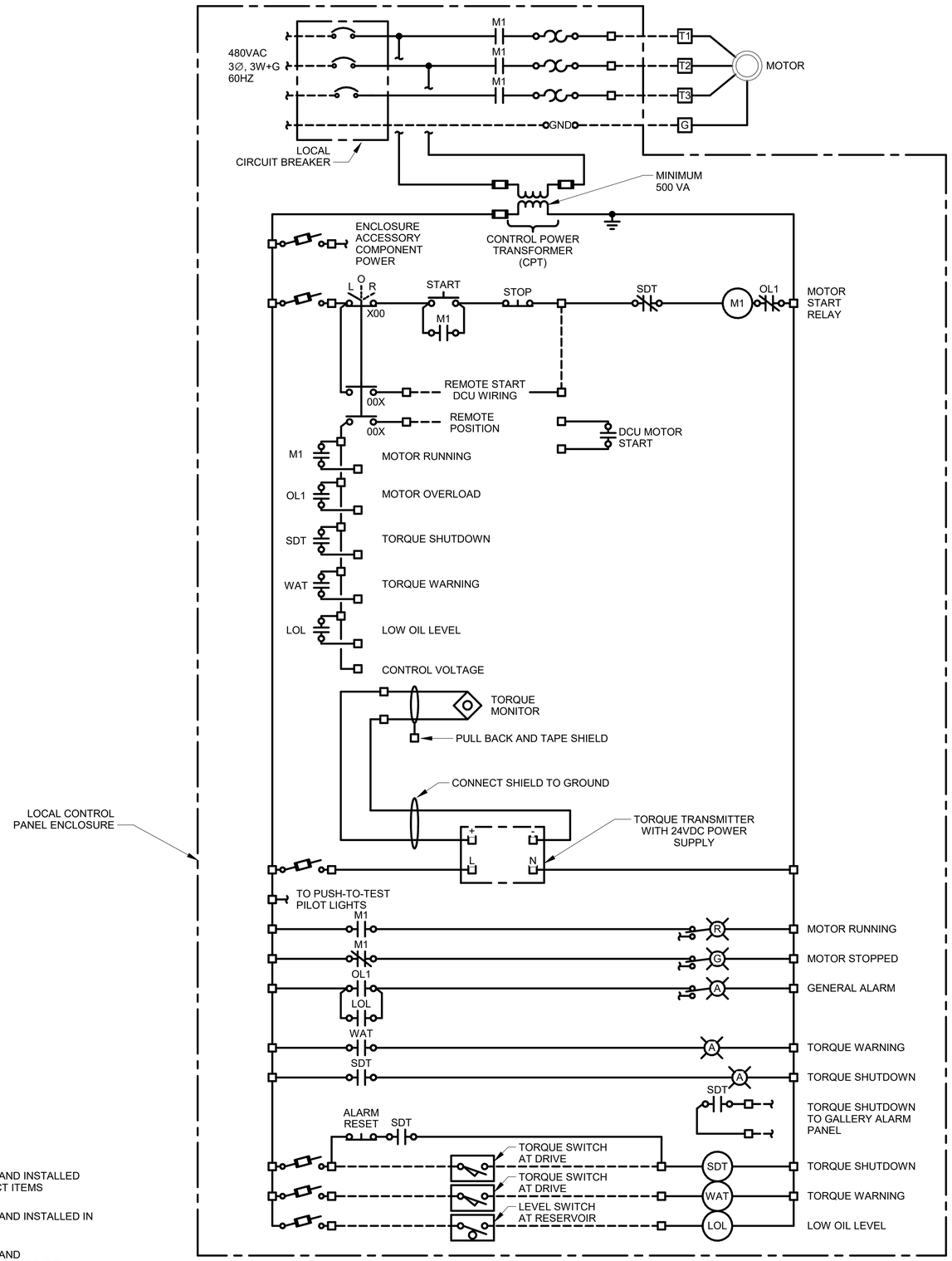
AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA
Primera
550 W. Jackson Boulevard • Suite 400 • Chicago, Illinois 60641

Designed by: AR
Drawn by: BM
Checked by: DES
Reviewed by: CA
Date: 7/1/2025
Scale: NONE

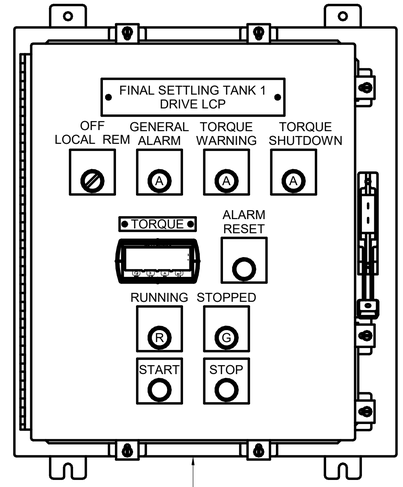
CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PANELBOARD SCHEDULES 3 OF 3

Sheet Number: E-015
Page Number: 378



1 FINAL SETTLING TANK DRIVE SCHEMATIC
SCALE: NTS



2 FST DRIVE LOCAL CONTROL PANEL LAYOUT
SCALE: NTS

ITEM	CKT. NO.
FINAL SETTLING TANK FST-1	E-DP-E2: 19,21,23
FINAL SETTLING TANK FST-2	E-DP-E2: 25,27,29
FINAL SETTLING TANK FST-3	E-DP-E3: 19,21,23
FINAL SETTLING TANK FST-4	E-DP-E3: 25,27,29
FINAL SETTLING TANK FST-5	E-DP-E5: 19,21,23
FINAL SETTLING TANK FST-6	E-DP-E5: 25,27,29
FINAL SETTLING TANK FST-7	E-DP-E6: 20,22,24
FINAL SETTLING TANK FST-8	E-DP-E6: 26,28,30

1

LEGEND:

- NEW WORK FURNISHED AND INSTALLED UNDER OTHER CONTRACT ITEMS
- NEW WORK FURNISHED AND INSTALLED IN FIELD
- NEW WORK FURNISHED AND INSTALLED IN STARTER ENCLOSURE
- CONTROL PANEL ENCLOSURE

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

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PRUDENTIAL PLAZA ONE
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SUITE 2400
CHICAGO, IL 60601, USA

Primera
550 W. Jackson Boulevard · Suite 400 · Chicago, Illinois 60661

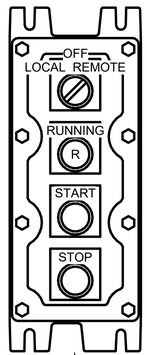
Designed by:	Checked by:	Reviewed by:	Scale:
AR	DES	CA	NONE
Drawn by:			Date:
BM			7/1/2025

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

FINAL SETTLING TANK DRIVE SCHEMATIC

Sheet Number: E-029

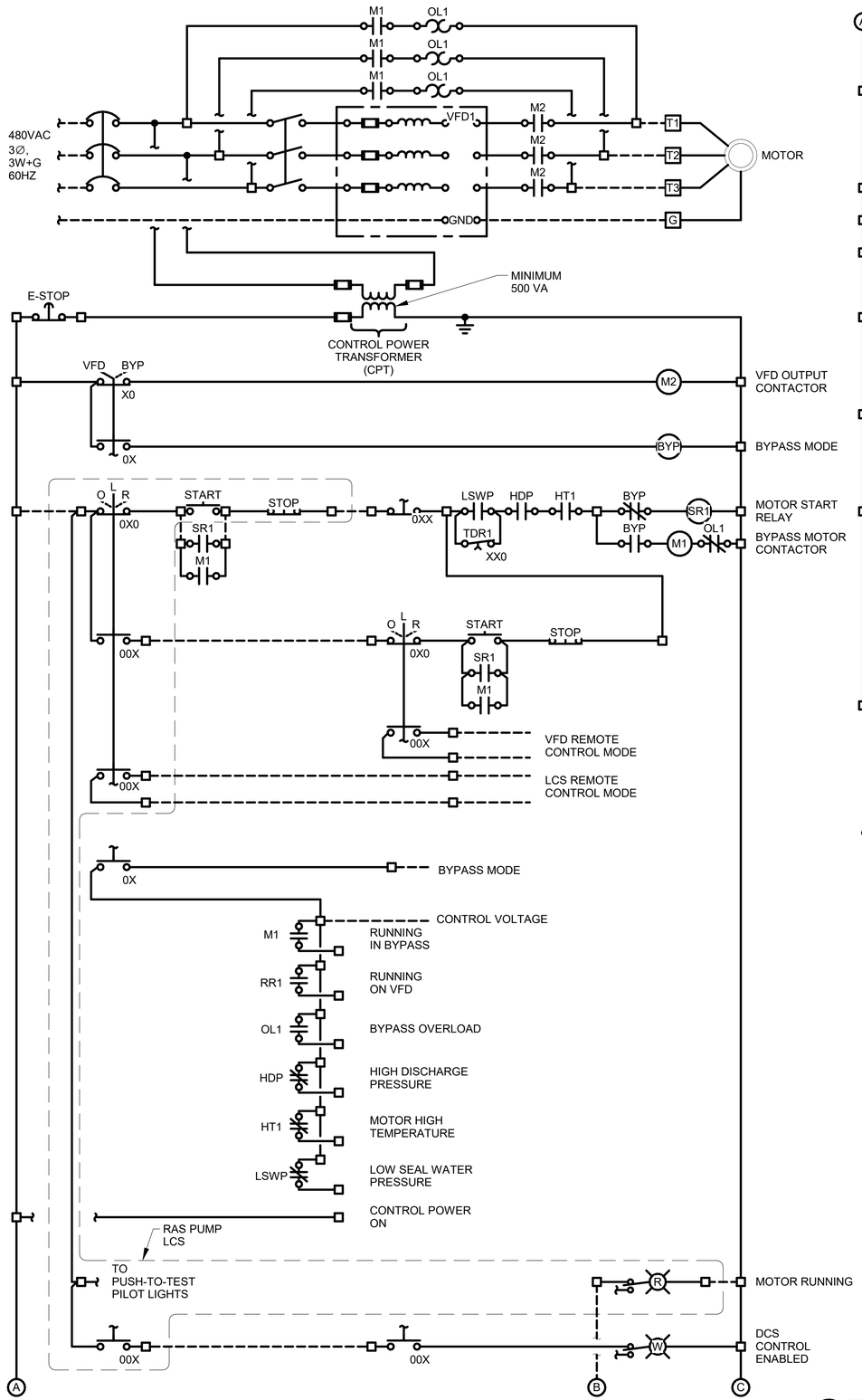
Page Number: 408

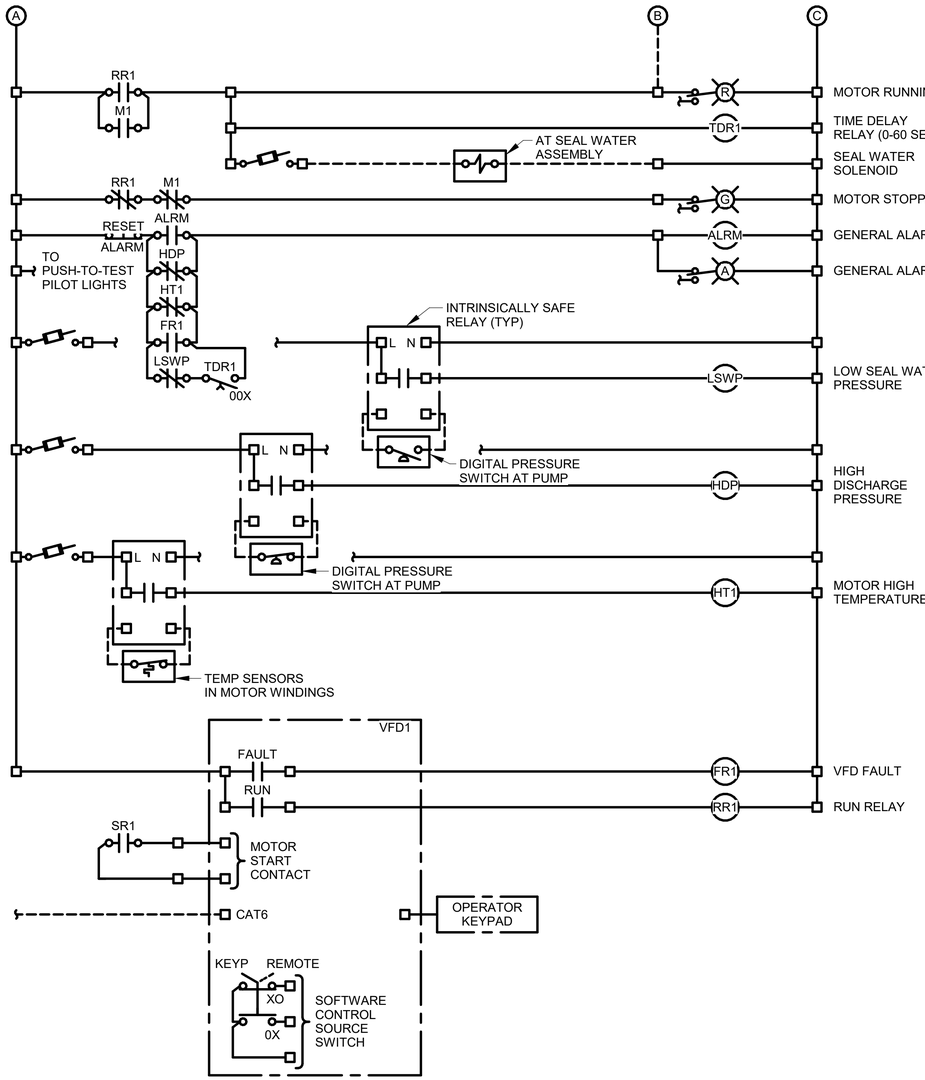


4'-0" ABOVE
FINISHED
FLOOR/GROUND

NEMA 7; NOT TO SCALE
SEE SPECIFICATIONS

2 RAS/WAS LOCAL CONTROL PANEL LAYOUT
SCALE: NTS





LEGEND:

- NEW WORK FURNISHED AND INSTALLED UNDER OTHER CONTRACT ITEMS
- NEW WORK FURNISHED AND INSTALLED IN FIELD
- NEW WORK FURNISHED AND INSTALLED IN STARTER ENCLOSURE
- CONTROL PANEL ENCLOSURE

ITEM	CKT. NO.
WASTE ACTIVATED SLUDGE PUMP NO.1	E-DPE8: 25,27,29
WASTE ACTIVATED SLUDGE PUMP NO.2	E-DPE8: 19,21,23

1

ITEM	CKT. NO.
FERMENTER RAS PUMP NO.1	E-DPE8: 1,3,5
FERMENTER RAS PUMP NO.2	E-DPE8: 7,9,11
FERMENTER RAS PUMP NO.3	E-DPE8: 13,15,17

1

ALL COMPONENTS LOCATED IN VFD ENCLOSURE, UNLESS NOTED OTHERWISE. NOT TO SCALE.

1 FERMENTER RAS/WAS PUMP SCHEMATIC
SCALE: NTS

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

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CHICAGO, IL 60601, USA

Primera
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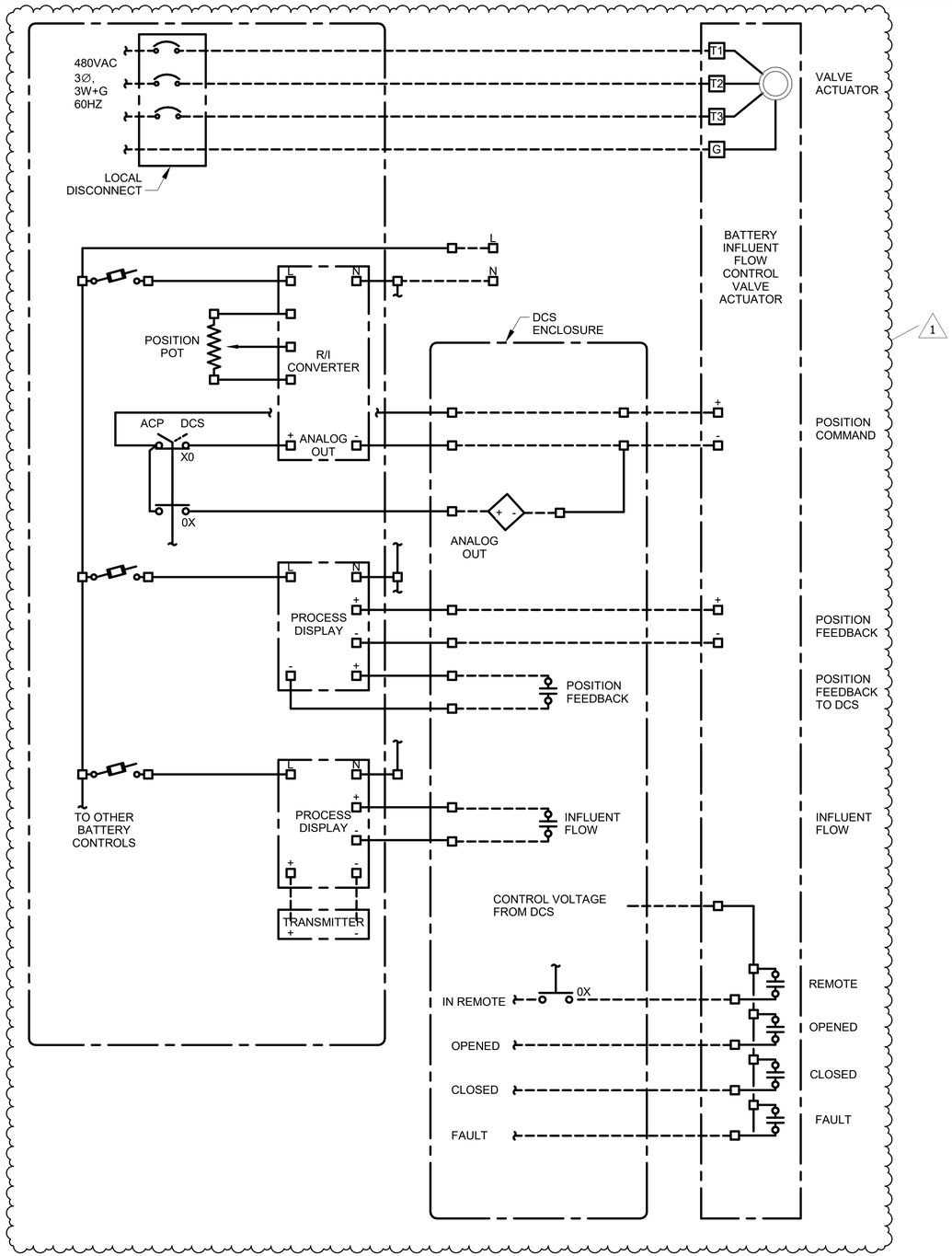
Designed by:	Checked by:	Reviewed by:	Scale:
AR	DES	CA	NONE
Drawn by:			Date:
BM			7/1/2025

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

FERMENTER RAS/WAS PUMP SCHEMATIC

Sheet Number:
E-031
Page Number: 410

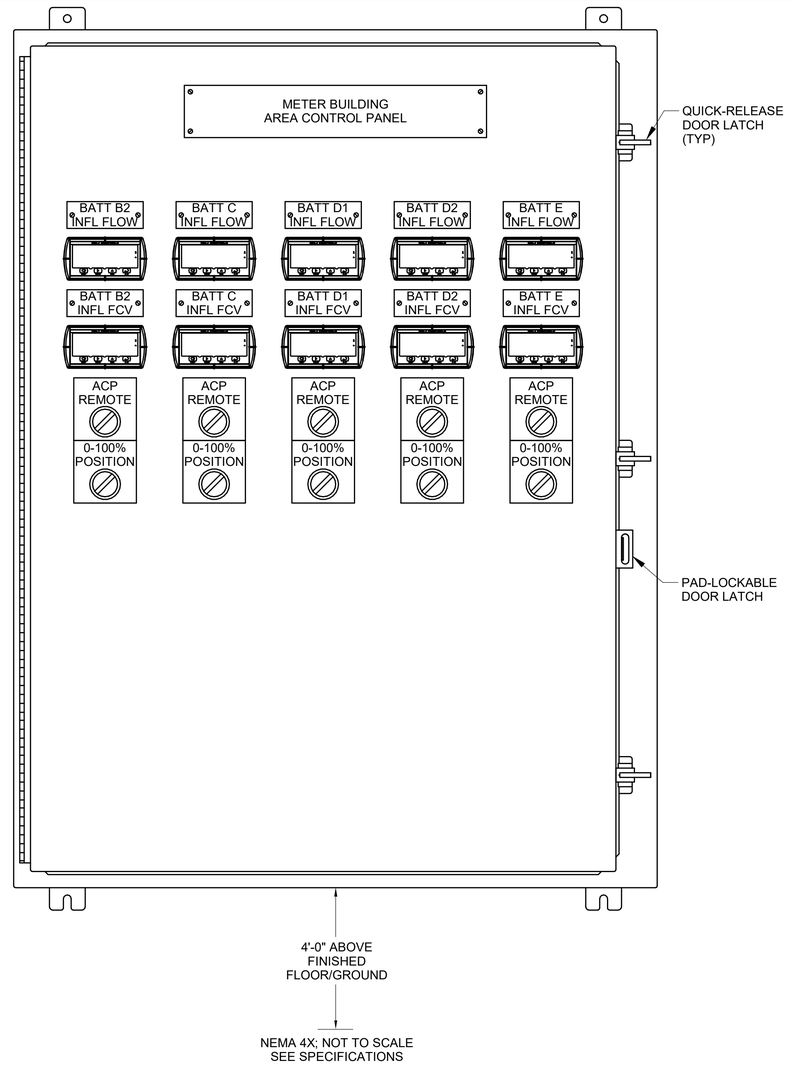


LEGEND:

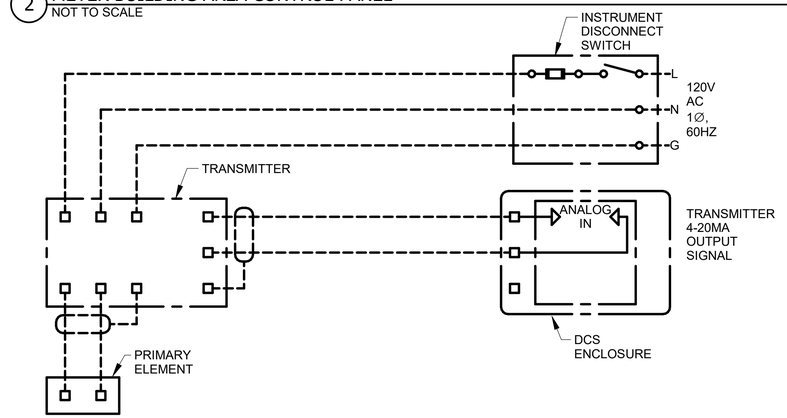
- NEW WORK FURNISHED AND INSTALLED UNDER OTHER CONTRACT ITEMS
- NEW WORK FURNISHED AND INSTALLED IN FIELD
- NEW WORK FURNISHED AND INSTALLED IN STARTER ENCLOSURE
- CONTROL PANEL ENCLOSURE
- ANALOG OUTPUT (1)

5 THUS; PROVIDE BATTERY B2, C, D1, D2 CONTROL (NOT SHOWN) SIMILAR TO BATTERY E SHOWN ABOVE. ALL COMPONENTS LOCATED IN AREA CONTROL PANEL, UNLESS NOTED OTHERWISE. NOT TO SCALE.

1 METER BUILDING ACP WIRING DIAGRAM
SCALE: NTS



2 METER BUILDING AREA CONTROL PANEL
NOT TO SCALE



SHOWN TYPICAL. PROVIDE FOR EACH 120VAC INSTRUMENTATION DEVICE, UNLESS NOTED OTHERWISE. NOT TO SCALE.

3 TYPICAL 120VAC INSTRUMENTATION WIRING DIAGRAM
SCALE: NTS

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	EAE	10/06/25

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Designed by: AR | Checked by: DES | Drawn by: BM | Reviewed by: CA | Date: 7/1/2025 | Scale: NONE

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CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

METER BUILDING ACP SCHEMATIC

Sheet Number: E-032
Page Number: 411

PLOT DATE: 10/3/2025 3:37:54 PM