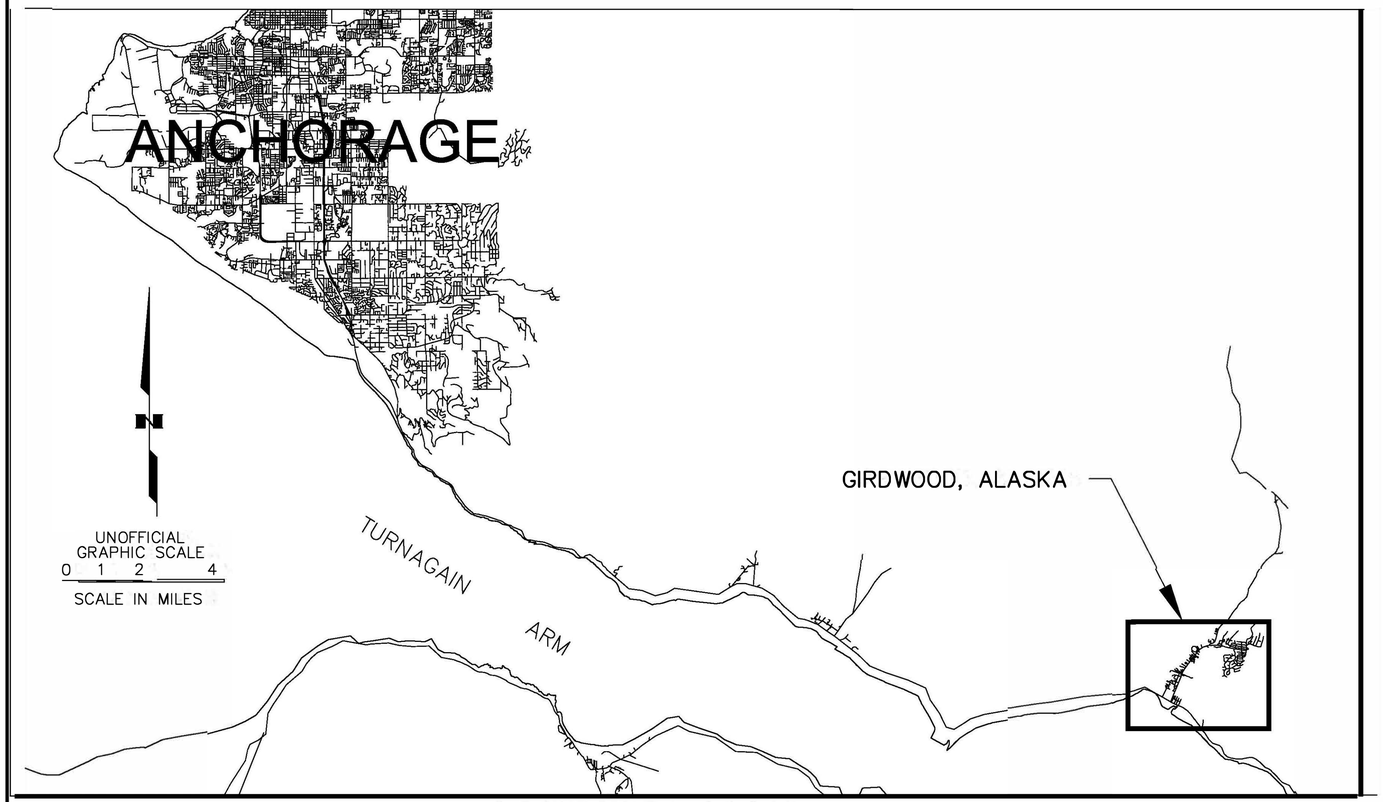
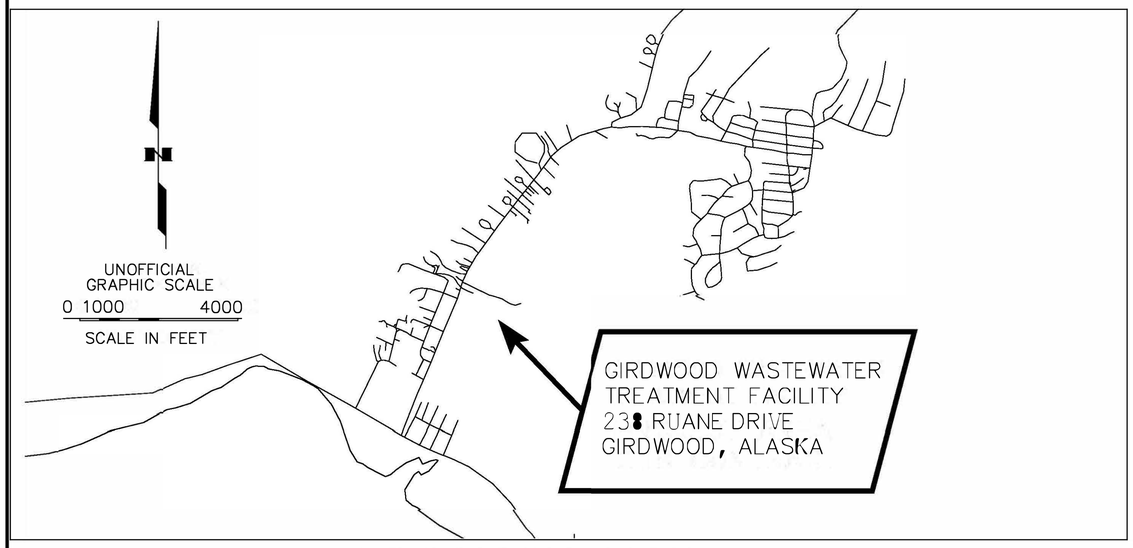



VICINITY MAP

ANCHORAGE, ALASKA




LOCATION MAP

GIRDWOOD, ALASKA

AWWU PLAN SET
NO. 11321

**MUNICIPALITY OF ANCHORAGE**
**WATER & WASTEWATER UTILITY**

3000 ARCTIC BOULEVARD
ANCHORAGE, ALASKA 99503

# GIRDWOOD WASTEWATER TREATMENT FACILITY - AERATION SYSTEM AND BLOWER UPGRADES

INVITATION TO BID NO. XXXX
AWWU PROJECT ID NO. WM.00159
ISSUED FOR BID:
JULY 28, 2022

**PREPARED BY**:

**NORTH BAY WATER CONSULTING ENGINEERS LLC**
**ANCHORAGE, ALASKA**

**IN ASSOCIATION WITH**:

EIC ENGINEERS, INC.
GV JONES & ASSOCIATES, INC.
REID MIDDLETON, INC.
RSA ENGINEERING, INC.
SNOWDWELLER INDUSTRIAL LLC

AWWU PLAN SET
NO. 11321

| SHEET NO. | DRAWING NO. | SHEET TITLE |
|---|---|---|
| 1 | | COVER SHEET – VICINITY MAP AND LOCATION MAP |
| 2 | G01 | DRAWING INDEX, PROJECT NOTES, AND DESIGN CRITERIA |
| 3 | S01 | STRUCTURAL GENERAL NOTES |
| 4 | S02 | STRUCTURAL DETAILS |
| 5 | PI01 | PROCESS AND INSTRUMENTATION – LEGEND |
| 6 | PI02 | PROCESS AND INSTRUMENTATION – BLOWER EQUIPMENT |
| 7 | PI03 | PROCESS AND INSTRUMENTATION – AERATION BASINS |
| 8 | P01 | BLOWER BUILDING – PROCESS PLAN |
| 9 | P02 | BLOWER BUILDING – PROCESS SECTIONS |
| 10 | P03 | MAIN PROCESS BUILDING – PIPING PLAN |
| 11 | P04 | MAIN PROCESS BUILDING – DIFFUSER DROP LEG DETAILS |
| 12 | P05 | MAIN PROCESS BUILDING – DEMOLITION PHOTOS AND NOTES |
| 13 | M01 | MECHANICAL HVAC – LEGEND AND ABBREVIATIONS |
| 14 | M02 | MECHANICAL HVAC – REMODEL PLAN |
| 15 | M03 | MECHANICAL HVAC – REMODEL DETAILS |
| 16 | E01 | ELECTRICAL – LEGEND, SYMBOLS, AND NOTES |
| 17 | E02 | ELECTRICAL – WIRE AND CONDUIT SCHEDULE |
| 18 | E03 | ELECTRICAL – CODE ANALYSIS |
| 19 | E04 | ELECTRICAL – DEMOLITION PLAN |
| 20 | E05 | BLOWER BUILDING LIGHTING PLAN |
| 21 | E06 | BLOWER BUILDING POWER AND SIGNAL PLAN |
| 22 | E07 | BLOWER BUILDING PARTIAL POWER ONE–LINE DIAGRAM |
| 23 | E08 | BLOWER BUILDING PANEL SCHEDULE AND LOAD SUMMARY |
| 24 | IC01 | BLOWER CONTROL – BLOCK DIAGRAM |
| 25 | IC02 | MONITORING AND CONTROL CONDUIT ROUTING |

| DESIGN CRITERIA: | UNIT | VALUE |
|---|---|---|
| INFLUENT FLOW DATA (2020) | | |
| MINIMUM FLOW | MGD | 0.17 |
| AVERAGE FLOW | MGD | 0.52 |
| MAXIMUM FLOW | MGD | 1.81 |
| INFLUENT WATER QUALITY DATA (2020) | | |
| AVERAGE AMMONIA | MG/L | 12.7 |
| MAXIMUM AMMONIA | MG/L | 25.5 |
| AVERAGE TOTAL SUSPENDED SOLIDS | MG/L | 103 |
| MAXIMUM TOTAL SUSPENDED SOLIDS | MG/L | 534 |
| AVERAGE BOD | MG/L | 105 |
| MAXIMUM BOD | MG/L | 334 |
| HIGH SPEED TURBO BLOWER | | |
| NUMBER OF BLOWERS | NO. | 1 + 1 (STANDBY) |
| APPLICATION | N/A | AERATION |
| AIR FLOW RANGE PER BLOWER | SCFM | 354 – 868 |
| DISCHARGE PRESSURE REQUIREMENT | PSI | 7.3 |
| RATED MOTOR OUTPUT | HP | 40 |
| MOTOR CONTROLLER | N/A | VARIABLE FREQ DRIVE (VFD) |
| INPUT VOLTAGE/PHASE/FREQUENCY | VOLTS/ PH / HERTZ | 480/ 3/ 60 |
| FULL LOAD AMPERAGE PER BLOWER | AMPS | 43 |

PROJECT NOTES:

DEMOLITION

1 PATCH/REPAIR CONCRETE FLOOR WHERE HOUSEKEEPING PADS WERE DEMOLISHED. PROVIDE SMOOTH FINISH TRANSITION.
2 THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHETHER THE EQUIPMENT SHOWN TO BE REMOVED ON THE DRAWINGS ARE TO BE SALVAGED AND TURNED OVER TO OWNER OR DISPOSED OF. ALL UNWANTED EQUIPMENT AND MATERIALS SHALL BE PROPERLY DISPOSED OF OFF–SITE BY THE CONTRACTOR.
3 DAMAGE TO EXISTING EQUIPMENT, STRUCTURES, AND PIPING CAUSED BY THE CONTRACTOR'S DEMOLITION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR TO MATCH EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
4 EQUIPMENT NOT IDENTIFIED SPECIFICALLY TO BE DEMOLISHED SHALL REMAIN IN PLACE.

PROCESS MECHANICAL

1 DETAILED INSTALLATION SHOP DRAWINGS FOR ALL PROCESS PIPING AND EQUIPMENT SHALL BE PREPARED AND SUBMITTED FOR APPROVAL BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLING SUCH WORK.
2 A TOPOGRAPHIC SURVEY WAS NOT PERFORMED AS PART OF THIS PROJECT. THE PROJECT DATUM WAS ESTABLISHED FROM MOA GIRDWOOD WASTEWATER INTERCEPTOR SYSTEM & SEWAGE TREATMENT FACILITY, PLAN SET 1229
3 DIMENSIONS ARE SHOWN AS APPROXIMATE AND BASED ON MOA GIRDWOOD WASTEWATER INTERCEPTOR SYSTEM & SEWAGE TREATMENT FACILITY, PLAN SET 3912. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, PIPE DIMENSIONS, AND PIPE MATERIALS PRIOR TO DEVELOPING SHOP DRAWINGS.

ELECTRICAL

1 APPROVED ELECTRICAL SHOP DRAWINGS ARE REQUIRED PRIOR TO INSTALLING NEW ELECTRICAL EQUIPMENT. SHOP DRAWINGS SHALL INCLUDE ALL CONDUIT RUNS (EXISTING AND NEW), JUNCTION BOXES, DISCONNECTS, CONTROL DEVICES, LIGHTING FIXTURES, SUPPORT DETAILS, CONTROL PANELS, LIGHTING AND POWER PANELS IN ALL AFFECTED WORK AREAS.
2 WIRE TAPS AND SPLICES ARE NOT PERMITTED FOR POWER, SIGNAL, AND CONTROL WIRE UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

VERIFY SCALE
IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

REVISIONS

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
This will serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor–provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____



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SCOTT R. BOETTCHER
NO. CE 118391
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REGISTERED PROFESSIONAL ENGINEER
SEAL

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

DRAWING INDEX, PROJECT NOTES, AND DESIGN CRITERIA

DWG G01

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

SHEET 2 of 25

# GENERAL STRUCTURAL NOTES

GENERAL
THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AMONG THE DRAWINGS BEFORE STARTING ANY WORK OR FABRICATION. IN CASE OF DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS, REFERENCE STANDARDS, SITE CONDITIONS OR GOVERNING CODE, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCIES AND OBTAIN DIRECTION PRIOR TO PROCEEDING. NOTES ON INDIVIDUAL STRUCTURAL DRAWINGS SHALL TAKE PRIORITY OVER GENERAL STRUCTURAL NOTES. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS, BUT SHALL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS.

ALL CONSTRUCTION SHALL COMPLY WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE MUNICIPALITY OF ANCHORAGE (MOA).

STRUCTURAL DESIGN DATA
STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE IBC AS AMENDED AND ADOPTED BY THE MUNICIPALITY OF ANCHORAGE. OCCUPANCY CATEGORY IS III IN ACCORDANCE WITH IBC SECTION 1604.5.

REFER TO OTHER DRAWINGS FOR ELEVATIONS, SLOPES, DEPRESSIONS, FIRE-PROOFING, FASCIA, CURBS, DRAINS, RAILINGS, WATERPROOFING, FINISHES, ETC.

NEW PIPE AND EQUIPMENT BRACED AGAINST NON-STRUCTURAL SEISMIC FORCES (AS DESCRIBED BY ASCE 7-16, CHAPTER 13, Sds=1.2, ap=2.5, Rp=6.0, Ip=1.25) AND EXTERIOR EQUIPMENT ALSO ANCHORED AGAINST WIND FORCES (150 MPH, EXP B)

PIPE WEIGHT:
6" X SCHED 10 GALV STEEL PIPE: 10 PLF
8" X SCHED 10 GALV STEEL PIPE: 14 PLF

EXPANSION LOOP WEIGHT: 310 LBS
FROST DISCOURAGEMENT HOOD: 115 LBS
BLOWER (EACH): 1300 LBS

EXISTING CONDITIONS
CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. EXISTING CONDITIONS SHOWN ON DRAWINGS ARE BASED EITHER ON SITE OBSERVATIONS, ORIGINAL DRAWINGS, OR WERE ASSUMED BASED ON EXPECTED CONDITIONS. IF EXISTING CONDITIONS DO NOT CLOSELY MATCH CONDITIONS SHOWN ON DRAWINGS, OR IF EXISTING MATERIALS ARE OF QUESTIONABLE OR SUBSTANDARD QUALITY, NOTIFY ENGINEER PRIOR TO COMMENCING ANY WORK.

SPECIAL INSPECTION
NO SPECIAL INSPECTION IS REQUIRED.
POST-INSTALLED ANCHORS ARE STRESSED TO LESS THAN 50% OF CAPACITY AND ARE ANCHORS OF A MINOR NATURE.

DEFERRED SUBMITTALS
IF EQUIPMENT OR PIPING OTHER THAN THE BASIS OF DESIGN IS SELECTED, THE CONTRACTOR IS REQUIRED TO PROVIDE STRUCTURAL DESIGN AS A DEFERRED SUBMITTAL.

DRAWINGS AND CALCULATIONS FOR BUILDER-DESIGNED COMPONENTS, SEALED BY AN ALASKA STATE REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW FOR GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING TO BUILDING SAFETY FOR REVIEW. SUBMITTALS OF BUILDER-DESIGNED ITEMS SHALL INCLUDE LOCATIONS, MAGNITUDES, AND DIRECTIONS OF ALL FORCES TRANSFERRED TO THE STRUCTURE. DEFERRED SUBMITTALS MUST BE REVIEWED AND APPROVED BY BUILDING SAFETY PRIOR TO INSTALLATION/CONSTRUCTION.

STRUCTURAL CONCRETE
ALL CAST-IN-PLACE CONCRETE SHALL HAVE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

ALL REINFORCING SHALL BE ASTM A615, GRADE 60. LAP SPLICES SHALL BE CLASS B LAPS PER ACI (63 X BAR DIAMETER). LAP SPLICES MAY ALSO BE ACCOMPLISHED USING MECHANICAL DEVICES THAT DEVELOP 125% OF THE STRENGTH OF THE REBAR.

PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE II. MAXIMUM AGGREGATE SIZE SHALL BE 3/4 INCH. ALL AGGREGATE SHALL BE NORMAL WEIGHT MATERIAL CONFORMING TO ASTM C33. WATER SHALL MEET ASTM C94, SECTION 4.1.3. MAXIMUM WATER CEMENT RATIO SHALL BE 0.50.

CONCRETE SHALL BE PROPORTIONED TO ACHIEVE A WORKABLE MIX THAT CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER. COMPLY WITH IBC SECTION 1905. ALL CONCRETE MAY CONTAIN A WATER REDUCING ADMIXTURE MEETING ASTM C494, TYPE A.

GENERAL USE GROUT SHALL BE A PREMIXED NON-SHRINK GROUT WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI. MIX AND PLACE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 301, STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE. CONCRETE PLACED DURING COLD WEATHER SHALL CONFORM TO ACI 306. ALL COLD WEATHER CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL CONTAIN AIR ENTRAINMENT PER ACI 318 TABLE 4.2.1.

A MINIMUM OF 2-INCHES OF CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT FOR CAST-IN-PLACE CONCRETE.

ALL CONCRETE REINFORCING SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 315, ACI 318, CRSI MSP-1 AND ACI SP-66. DOWELS SHALL BE EPOXY COATED AND MATCH SIZE AND NUMBER OF MAIN REINFORCING.

CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING, COATING AND PLACEMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

POST-INSTALLED ANCHORS
INSTALLATION SHALL CONFORM TO MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS OF ICC-ES REPORT. ALL POST-INSTALLED ANCHORS SHALL HAVE A CURRENT ICC-ES REPORT AND BE AUTHORIZED FOR USE IN SEISMIC DESIGN CATEGORY D.

THREADED ROD SHALL BE GALVANIZED, GRADE 36 ALL-THREAD.

EXISTING BASE SHALL BE SCANNED BY THE CONTRACTOR PRIOR TO DRILLING HOLES. EXISTING REBAR LOCATIONS SHALL BE MARKED, AND NEW ANCHOR LOCATIONS REVISED TO AVOID EXISTING REINFORCING. NO REINFORCING BARS SHALL BE CUT TO INSTALL ANCHORS. ALL DEFECTIVE ANCHOR HOLES SHALL BE GROUTED AND A NEW HOLE DRILLED A MINIMUM OF 3 BOLT DIAMETERS AWAY.

ADHESIVE ANCHORS FOR THREADED ROD AND REBAR SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
CONCRETE:
- -DEWALT "PURE110+" (ESR-3298)
- -HILTI "HIT-HY 200 SAFE SET" (ESR-3187)
- -EPCON "A7+" (ESR-3903)
- -SIMPSON "SET-XP" (ESR-2508)

EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
CONCRETE:
- -HILTI "KWIK BOLT TZ" (ESR-1917)
- -SIMPSON "STRONG-BOLT 2" (ESR-3037)
- -DEWALT "POWER-STUD+SD2" (ESR-2502)

SCREW ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
- -HILTI "KH-EZ" (ESR-3027)
- -SIMPSON "TITEN HD" (ESR-2713)
- -ITW "TAPCON+" (ESR-3699)
- -DEWALT "SCREW-BOLT+" (ESR-3889)

STRUT FRAMING
ALL STRUT FRAMING CONSTRUCTION AND DESIGN SHALL CONFORM TO THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.

FRAMING, PRODUCT NUMBERS AND FITTINGS NOTED HERE-IN ARE PER THE UNISTRUT GENERAL ENGINEERING MANUAL. PROVIDE ALL CHANNELS, FITTINGS AND FASTENERS FROM A SINGLE MANUFACTURER.

CHANNEL MEMBERS SHALL BE 1-5/8"X1-5/8", AND FABRICATED FROM 12 GAUGE. FINISH SHALL BE HOT DIP GALVANIZED. THE HOLE PATTERN ON THE BACK OF THE CHANNEL SHALL BE EITHER UNPIERCED, "HS" OR "T".

ALL FITTINGS SHALL BE HOT DIP GALVANIZED USE 1/2" DIAMETER FASTENERS TYPICALLY, UNLESS ANOTHER FASTENER IS SPECIFICALLY INDICATED. TORQUE ALL FASTENERS TO THE MANUFACTURERS RECOMMENDED TORQUE VALUES.

AWWU PLAN SET
NO. 11321

## ABBREVIATIONS

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| @ | At | BLDG | Building | COL | Column | EW | Each Way | HSS | Hollow Structural Section | MFR | Manufacturer | PLS | Places | T&B | Top and Bottom | UON | Unless Otherwise Noted |
| AB | Anchor Bolt | BLKG | Blocking | CONC | Concrete | EXP | Expansion | IBC | International Building Code | MIN | Minimum | PSF | Pounds-Per-Square-Foot | T&G | Tongue and Groove | U/S | Underside |
| ADD'L | Additional | BM | Beam | CONT | Continuous | FDTN | Foundation | INT | Interior | (N) | New | PSI | Pounds-Per-Square-Inch | T.O. | Top Of | VERT | Vertical |
| ADH | Adhesive | BOT | Bottom | CONTR | Contractor | FF | Finished Floor | LAG | Lag Screw | OC | On-Center | REQ'D | Required | T.O.B. | Top Of Beam | w/ | With |
| AFF | Above Finished Floor | BTWN | Between | DIA, ø | Diameter | GALV | Galvanized | LOC | Location, Locate | OH | Overhead | SCH | Schedule | T.O.S. | Top Of Steel | W/O | Without |
| ALT | Alternate | CJ | Construction Joint | (E) | Existing | GLB | Glue Laminated Beam | LONG | Longitudinal | OPNG | Opening | SIM | Similar | T.O.W. | Top Of Wall | W | Wide Flange |
| ARCH | Architect, Architectural | CLR | Clear | EA | Each | HKP | House-Keeping Pad | MAX | Maximum | ORTH | Orthoganal | SQ | Square | TRANS | Transverse | W/C | Water/Cement Ratio |
| AWW | All Weather Wood | CMU | Conc Masonry Unit | EQ | Earthquake, Equal | HORZ | Horizontal | MEZZ | Mezzanine | PL, ℄ | Plate | STL | Steel | TYP | Typical | WWF | Welded Wire Fabric |

VERIFY SCALE
IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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07/22/2022
SEAL

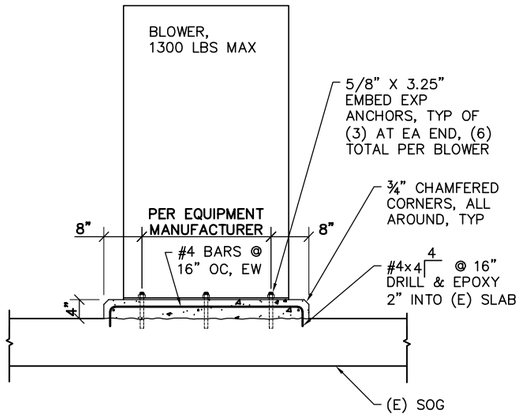
MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

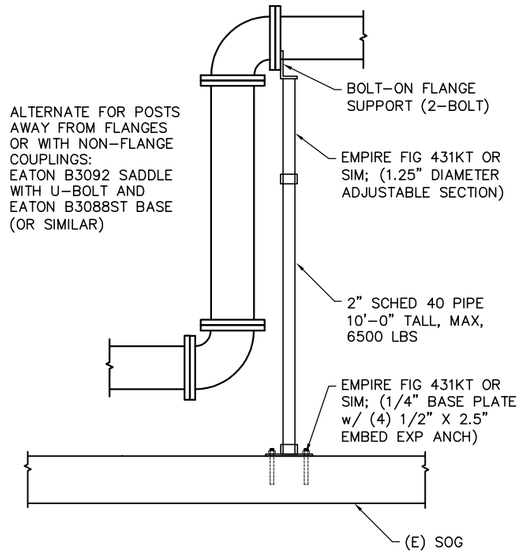
STRUCTURAL
GENERAL NOTES

DWG S01

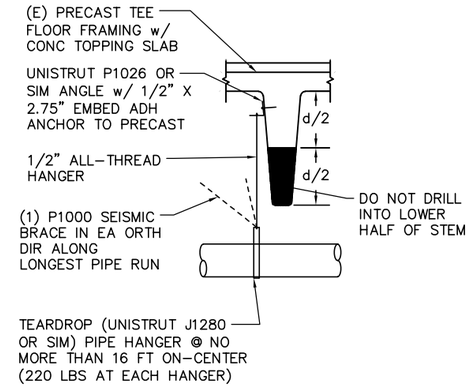
HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159



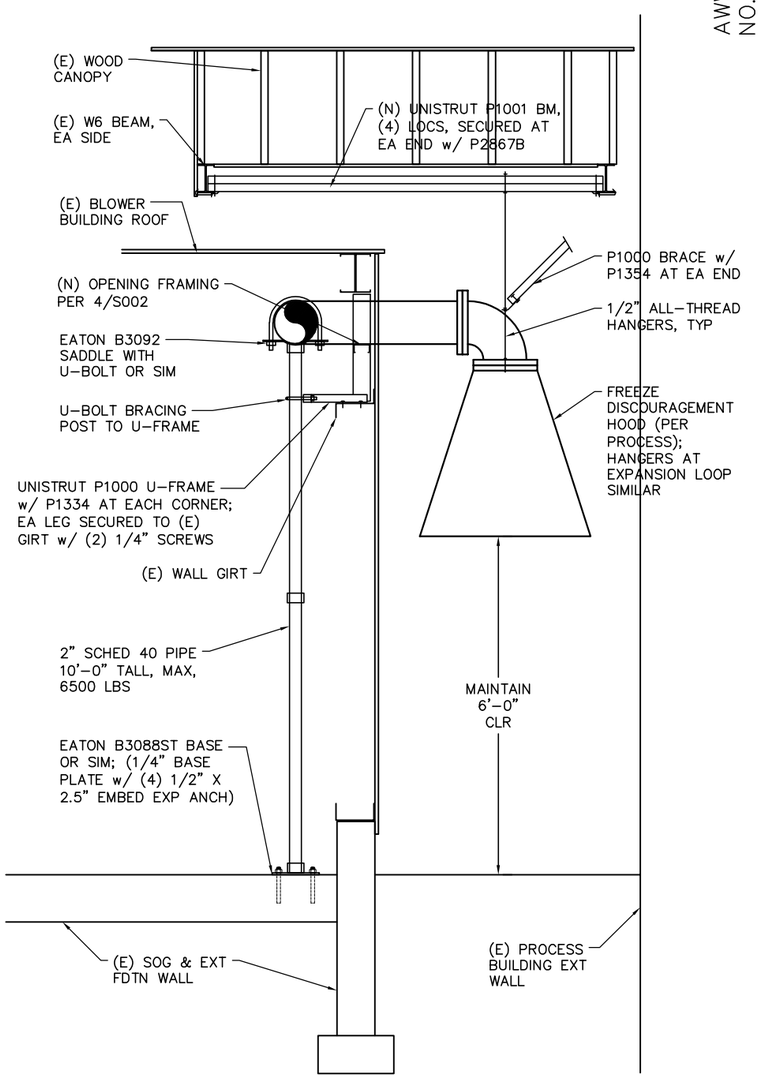

HOUSEKEEPING PAD 1
3/4" = 1'-0"



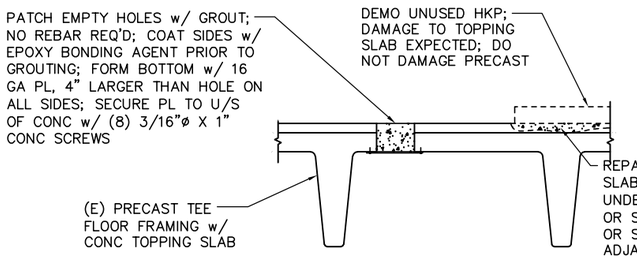

PIPE STAND 2
3/4" = 1'-0"



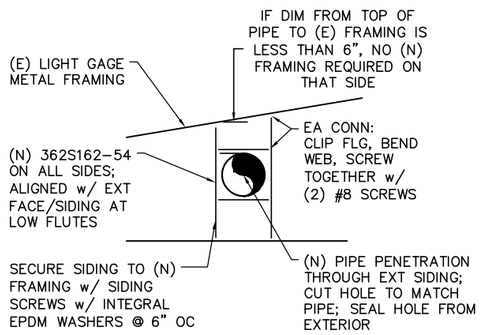

PIPE HANGER FROM PRECAST 3
3/4" = 1'-0"



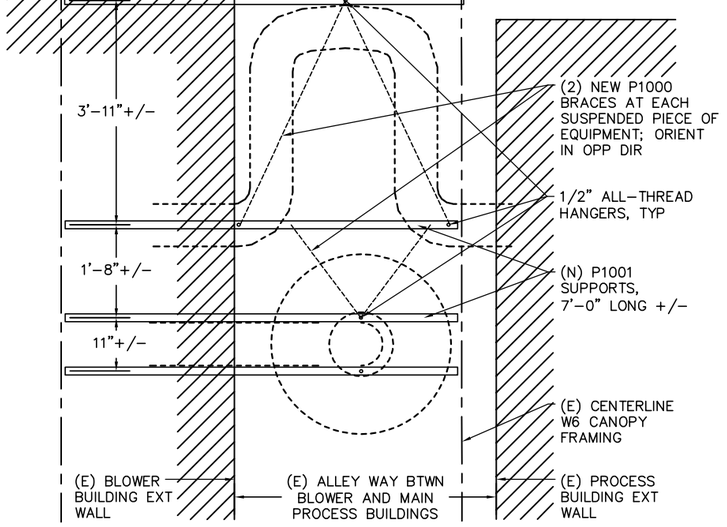

SUPPORT FROM CANOPY, SECTION 7
3/4" = 1'-0"




FLOOR REPAIR 4
3/4" = 1'-0"




EXT WALL PENETRATION 5
3/4" = 1'-0"




SUPPORT FROM CANOPY, PLAN 6
3/4" = 1'-0"

AWWU PLAN SET
NO. 11321

| VERIFY SCALE | IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. |
|---|---|

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
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GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

**STRUCTURAL DETAILS**

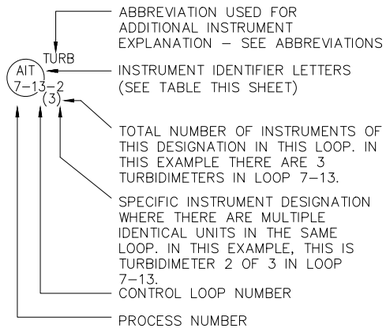
DWG **S02**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00150

SHEET 4 of 24

AWWU PLAN SET
NO. 11321

TYPICAL INSTRUMENT NUMBER




INSTRUMENT LETTER DESIGNATION TABLE

| LETTER | FIRST LETTER(S) | | SUCCESSIVE LETTERS | | |
|---|---|---|---|---|---|
| | PROCESS/INITIATING VARIABLE | MODIFIER | READOUT | OUTPUT | MODIFIER |
| A | ANALYSIS (+) | | ALARM | | |
| B | BURNER FLAME | | | | |
| C | CONDUCTIVITY | | | CONTROL | |
| D | DENSITY | | | | |
| E | VOLTAGE | | | | |
| F | FLOW | | | | |
| G | GAUGE | | | | |
| H | HAND (MANUAL) | | | | HIGH |
| I | CURRENT | INDICATING | | | |
| J | POWER | | | | |
| K | TIME, SCHEDULE | | | CONTROL | |
| L | LEVEL | | LIGHT (PILOT) | | LOW |
| M | MOTION | MOMENTARY | | | MIDDLE |
| N | – | | | | |
| O | – | | | | |
| P | PRESSURE (VACUUM) | | | | |
| Q | QUANTITY OR EVENT | INTEGRATE | | | |
| R | – | | | | |
| S | SPEED OR FREQUENCY | | | SWITCH | |
| T | TEMPERATURE | | TRANSMIT | | |
| U | MULTI-VARIABLE (+) | | | | MULTIFUNCTION |
| V | VACUUM | | | | |
| W | WEIGHT OR FORCE | | | | |
| X | UNCLASSIFIED (+) | | | SEQUENCE | |
| Y | – | | | RELAY | |
| Z | POSITION | | | | |

XX / X-XX — FIELD OR LOCAL MOUNTED INSTRUMENT

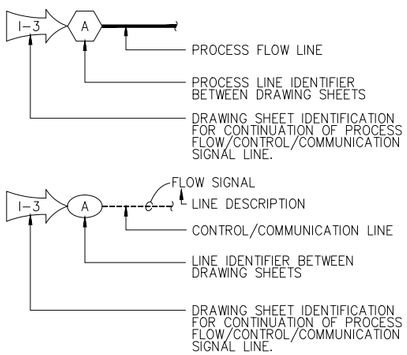
XX / X-XX — PANEL MOUNTED INSTRUMENT

XX / X-XX — INSTRUMENT COMMUNICATION AND/OR DEVICE CONTROL FROM PLC AT PRIMARY STATION

NOTES:

** DESIGNATES BLOWER EQUIPMENT SCOPE OF SUPPLY

DIAGRAM INTERFACE LEGEND




SYMBOL LEGEND

- PROCESS FLOW LINE, PRIMARY
- PROCESS FLOW LINE, SECONDARY
- COMMUNICATIONS, CONTROL SIGNAL
- FLOW DIRECTION
- ANALOG SIGNAL
- PIPING INSULATION

VALVES & PROCESS COMPONENTS

- GATE VALVE, MANUAL
- BALL VALVE, 2 WAY, MANUAL
- BALL VALVE, 3 WAY, MANUAL
- CHECK VALVE, SWING CHECK
- CHECK VALVE, BALL CHECK POPPET VALVE
- GLOBE VALVE, MANUAL
- PLUG VALVE, MANUAL
- DIAPHRAGM VALVE, MANUAL
- DIAPHRAGM VALVE, PNEUMATIC ACUTATION
- DIAPHRAGM VALVE, MOTOR ACTUATED
- BUTTERFLY VALVE, MANUAL
- BUTTERFLY VALVE, MOTOR ACTUATED
- BALL VALVE, PNEUMATICALLY ACTUATED
- BALL VALVE, MOTOR ACTUATED
- SPRING LOADED PRESSURE RELIEF VALVE
- SPRING LOADED PRESSURE REDUCING VALVE
- WYE STRAINER
- FLEX CONNECTION
- PIPE UNION
- REDUCER
- SCREENED TANK VENT
- P — PUMP, CENTRIFUGAL
- S — SAMPLE PORT
- FLOW ELEMENT, MAGNETIC METER
- DR — DRAIN
- FLOW SWITCH
- PS — PRESSURE SWITCH
- LEVEL SENSOR, ULTRASONIC
- DIAPHRAGM SEAL
- FLEXIBLE EXPANSION JOINT
- BLOW OFF VALVE
- I — INTERLOCK
- SIGNAL SPLITTER

ABBREVIATIONS

| | |
|---|---|
| ABV | ABOVE |
| ACP | AUTOMATED CONTROL PANEL |
| AI | ANALYTICAL INDICATOR |
| AIC | ANALYTICAL INDICATOR/CONTROLLER |
| AIT | ANALYTICAL INDICATOR/TRANSMITTER |
| B | BLOWER |
| BEL | BELOW |
| BFV | BUTTERFLY VALVE |
| BOV | BLOW OFF VALVE |
| CONC | CONCRETE |
| COND | CONDUCTIVITY |
| CONN | CONNECTION |
| CPVC | CHLORINATED POLY VINYL CHLORIDE |
| CU | COPPER |
| CV | CHECK VALVE |
| D | DRAIN |
| DI | DUCTILE IRON |
| DO | DISSOLVED OXYGEN |
| DV | DRAIN VALVE |
| E , EX. | EXISTING |
| EJ | FLEXIBLE CONNECTORS |
| EL | ELEVATION |
| ESTOP | EMERGENCY STOP |
| FC | FLOW CONTROL |
| FCV | FLOW CONTROL VALVE (MODULATING) |
| FF | FINISHED FLOOR |
| FLEX | FLEXIBLE |
| FV | FLOW VALVE (OPEN CLOSE ONLY) |
| GSP | GALVANIZED STEEL PIPE |
| HDPE | HIGH DENSITY POLYETHYLENE |
| LCP | LOCAL CONTROL PANEL |
| LPA | LOW PRESSURE AIR |
| M | MOTOR |
| MCP | MAIN CONTROL PANEL |
| MOV | MOTOR OPERATED VALVE |
| OF | OVERFLOW |
| P | PUMP |
| PDI | PRESSURE DIFFERENTIAL INDICATOR |
| PIT | PRESSURE INDICATOR / TRANSMITTER |
| PI | PRESSURE INDICATOR |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PRDV | PRESSURE REDUCING VALVE |
| PRV | PRESSURE RELIEF VALVE |
| PT | PRESSURE TRANSMITTER |
| QA | EVENT ALARM |
| QL | EVENT LIGHT |
| REBAR | REINFORCING STEEL |
| SKH | SPEED CONTROL, HAND |
| SI | SPEED INDICATOR |
| SIC | SPEED INDICATOR, CONTROLLER |
| SS/SST | STAINLESS STEEL |
| ST | STRAINER |
| STL | STEEL |
| SV | SOLENOID VALVE |
| T | TANK |
| TEMP | TEMPERATURE |
| TYP | TYPICAL |
| V | VENT |
| VC | CHECK VALVE |
| YC | EVENT COUNTER |
| ZS | POSITION INDICATOR |
| ZSC | POSITION SWITCH CLOSED |
| ZSO | POSITION SWITCH OPEN |

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
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REVISIONS

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ANDREW E. JONES
No. 107216
JULY 28, 2022
REGISTERED PROFESSIONAL ENGINEER
SEAL

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

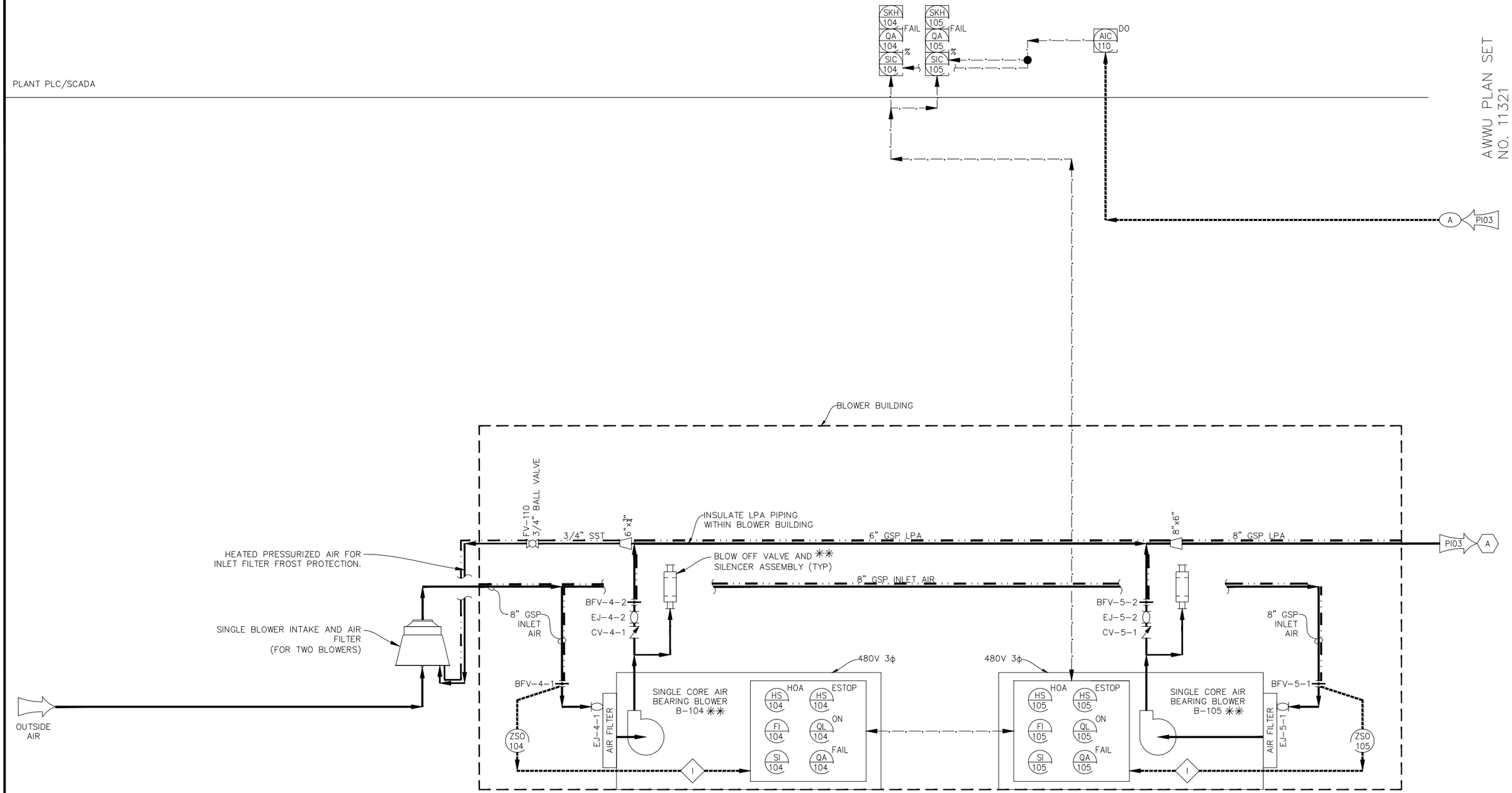
**PROCESS AND INSTRUMENTATION LEGEND**

DWG **PI01**

HORZ SCALE: N/A VERT SCALE: N/A — DATE: JULY 2022 — GRID: SE 5013

PROJ. ID.: WM.00159

SHEET 5 of 25




| VERIFY SCALE | IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. |
|---|---|

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

REVISIONS

## RECORD DRAWING

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# PROCESS AND INSTRUMENTATION BLOWER EQUIPMENT

DWG PI02

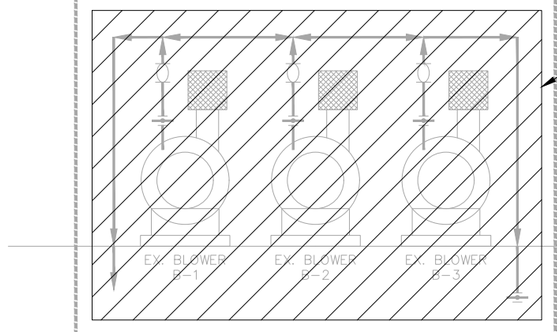
HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159
SHEET 6 of 25

AWWU PLAN SET
NO. 11321

PLANT PLC/SCADA

AI 104 DO / AI 104 TEMP
AI 103 DO / AI 103 TEMP
AI 102 DO / AI 102 TEMP
AI 101 DO / AI 101 TEMP

PI02 A




DEMOLISH EXISTING BLOWER EQUIPMENT FOLLOWING ENGINEERS ACCEPTANCE OF NEW BLOWER EQUIPMENT.

INSULATE WHERE SHOWN ON PIPING PLAN DRAWING

PI02 A 8" GSP LPA

8"x6" 6"x3" AIT 104 DO/TEMP
8"x6" 6"x3" AIT 103 DO/TEMP
8"x6" 6"x3" AIT 102 DO/TEMP
6"x3" AIT 101 DO/TEMP

NEW DIFFUSERS (TYP)

AERATION BASIN #4
AERATION BASIN #3
AERATION BASIN #2
AERATION BASIN SPLITTER BOX
AERATION BASIN #1

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

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REVISIONS

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AERATION SYSTEM AND BLOWER UPGRADES

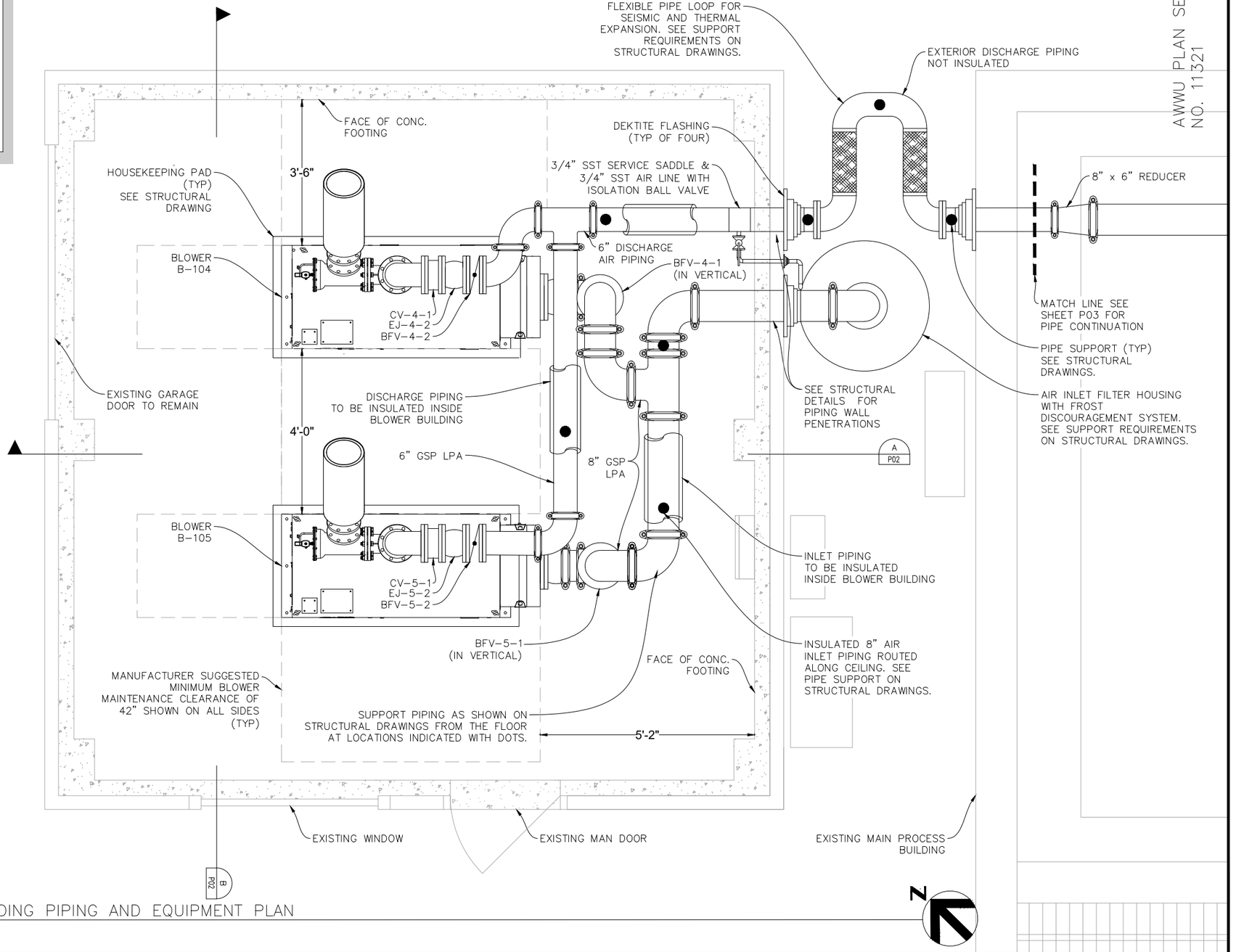
DWG PI03

**PROCESS AND INSTRUMENTATION AERATION BASINS**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

SHEET NOTES AND GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, ALL INTAKE AND DISCHARGE PIPING SHALL BE THIN WALLED SCHEDULE 10 GALVANIZED STEEL.
2. ALL INTAKE, DISCHARGE, AND FROST PROTECTION PIPING SHALL BE INSULATED. FOR LIMITS OF INSULATION, SEE DWGS. P102, P103, AND P03.
3. DIMENSIONS ARE SHOWN AS APPROXIMATE AND BASED ON AS-BUILT DRAWINGS AND A WALKTHROUGH OF THE FACILITY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, PIPE DIMENSIONS, AND PIPE MATERIALS PRIOR TO DEVELOPING SHOP DRAWINGS.




0 1 2 3 4 5
SCALE IN FEET

## BLOWER BUILDING PIPING AND EQUIPMENT PLAN

3/4" = 1'-0"

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

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REVISIONS

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GIRDWOOD WASTEWATER TREATMENT FACILITY
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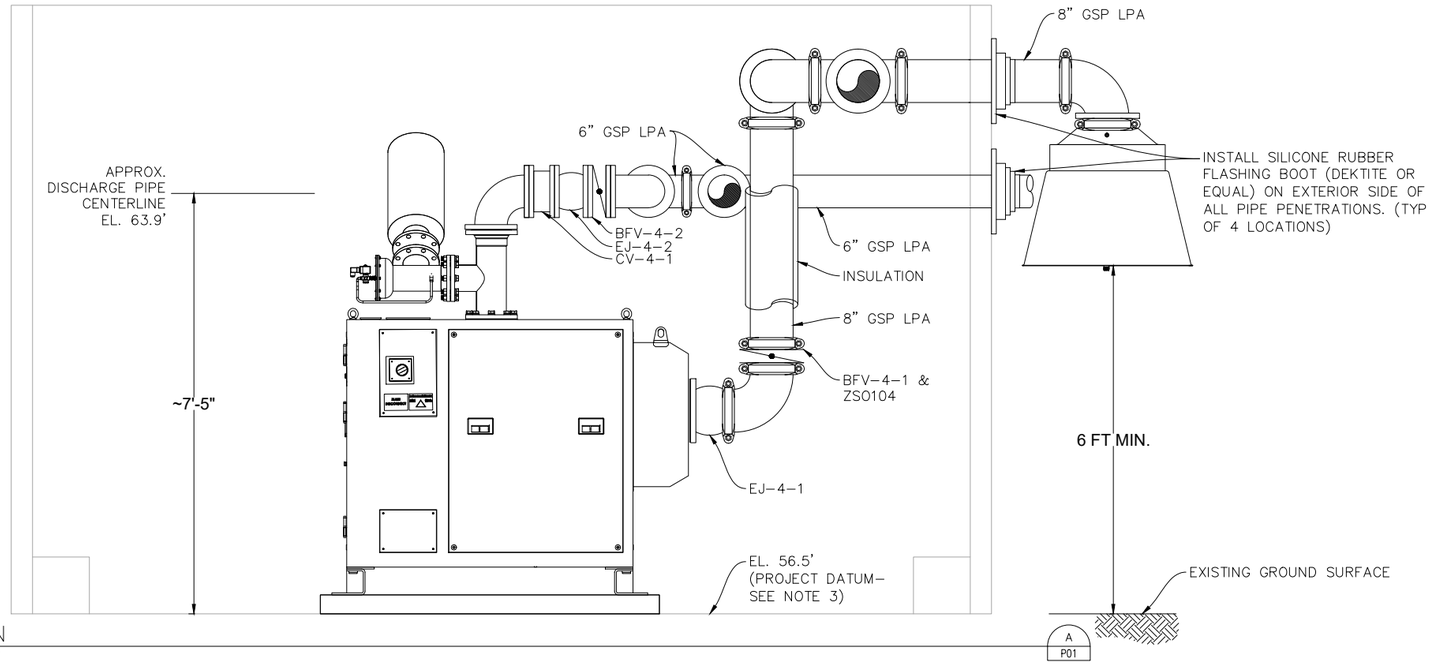
**BLOWER BUILDING PROCESS PLAN**

DWG P01

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

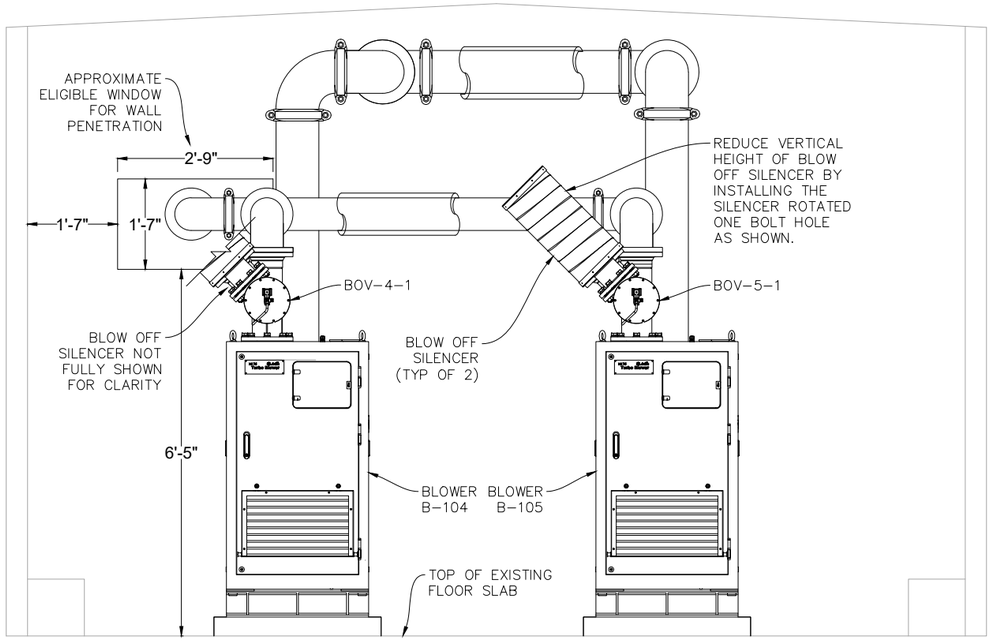
SHEET NOTES

1. PIPING SUPPORTS NOT SHOWN. SEE STRUCTURAL DRAWINGS FOR FLOOR POST SUPPORTS AND PIPE HANGING SUPPORTS
2. THE LOCATIONS OF THE INLET AND DISCHARGE PIPING PENETRATIONS THROUGH THE EXISTING BUILDING WALL ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY PIPING ALIGNMENT IN BOTH BUILDINGS DOES NOT PHYSICALLY CONFLICT WITH STRUCTURAL FRAMING.
3. A TOPOGRAPHIC SURVEY WAS NOT PERFORMED AS PART OF THIS PROJECT. THE TOP OF CONC. SLAB ELEV. OF 56.5' WAS EXTRACTED FROM THE 1977 ORIGINAL CONSTRUCTION RECORD DRAWINGS. THE CONTRACTOR SHALL USE THIS AS THE PROJECT DATUM.
4. DIMENSIONS ARE SHOWN AS APPROXIMATE AND BASED ON AS-BUILT DRAWINGS AND A WALKTHROUGH OF THE FACILITY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, PIPE DIMENSIONS, AND PIPE MATERIALS PRIOR TO DEVELOPING SHOP DRAWINGS.




SECTION
3/4" = 1'-0"

A P01




SECTION
3/4" = 1'-0"

B P01

0 1 2 3 4 5
SCALE IN FEET

AWWU PLAN SET
NO. 11321

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

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REVISIONS

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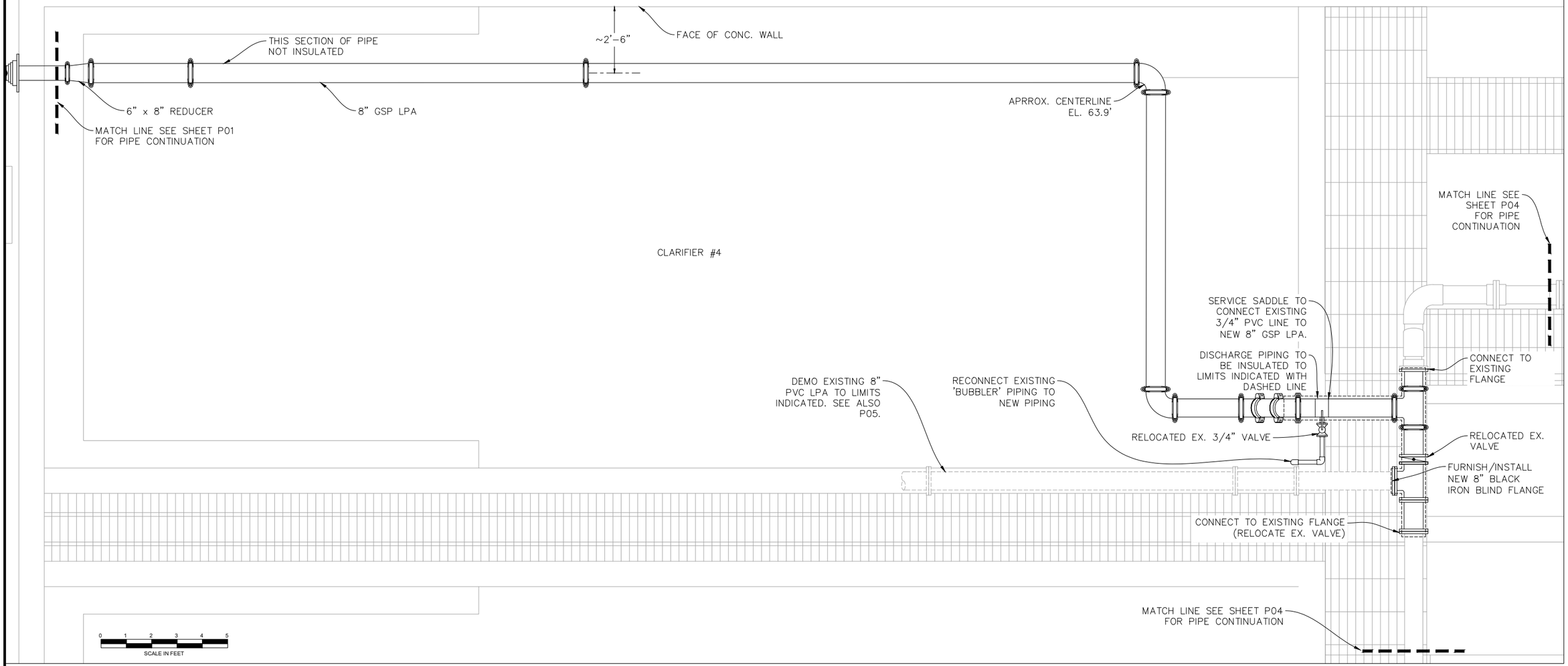
**BLOWER BUILDING PROCESS SECTIONS**

DWG P02

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159




AWWU PLAN SET
NO. 11321

## BLOWER BUILDING PIPING AND EQUIPMENT PLAN

1/2" = 1'-0"

N

SHEET NOTES:

1. DIMENSIONS ARE SHOWN AS APPROXIMATE AND BASED ON AS-BUILT DRAWINGS AND A WALKTHROUGH OF THE FACILITY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, PIPE DIMENSIONS, AND PIPE MATERIALS PRIOR TO DEVELOPING SHOP DRAWINGS.
2. SEE SPECIFICATION SECTION 01 14 00 FOR ADDITIONAL INFORMATION ABOUT CONSTRUCTION SEQUENCING.

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
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REUSE OF DOCUMENTS

THIS DOCUMENT AND THE IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF AWWU AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF AWWU.


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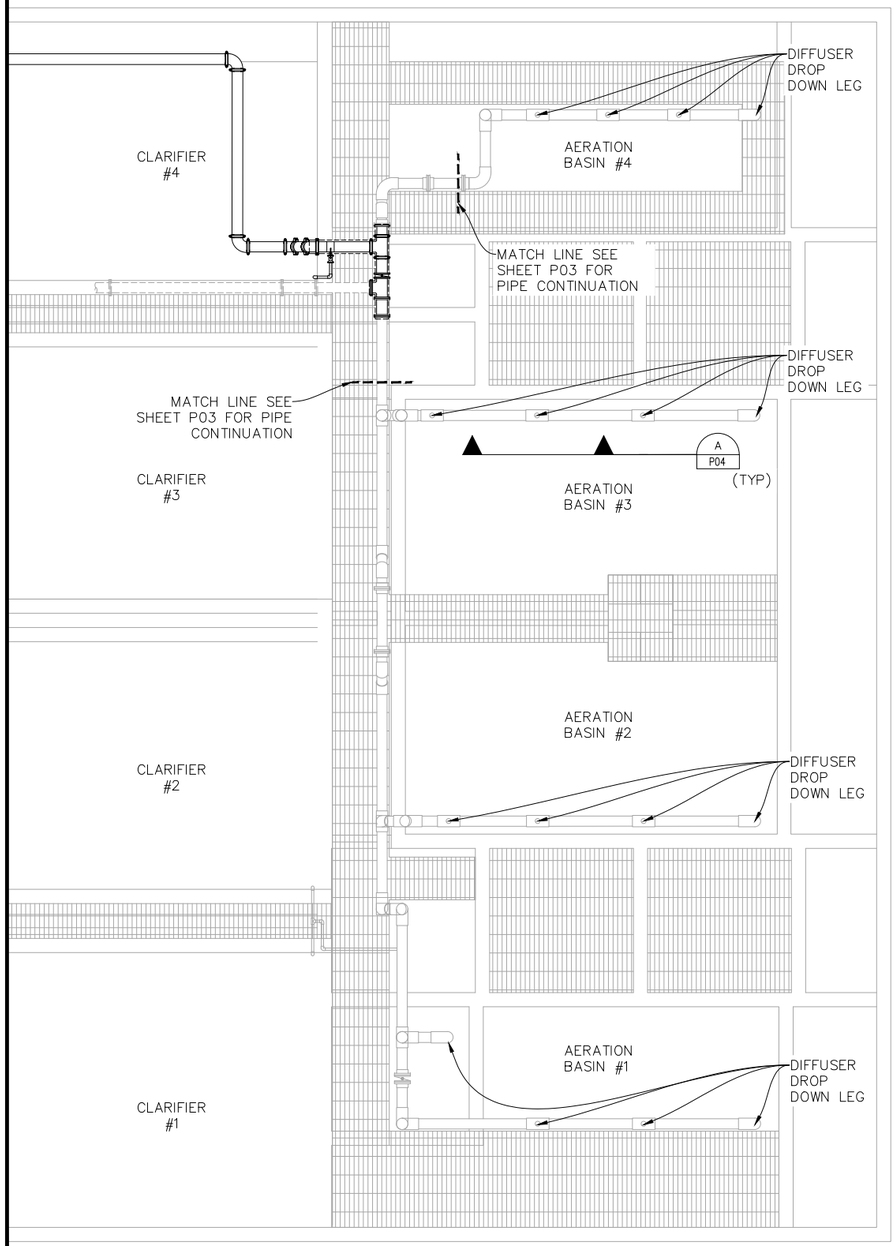
**MAIN PROCESS BUILDING PIPING PLAN**

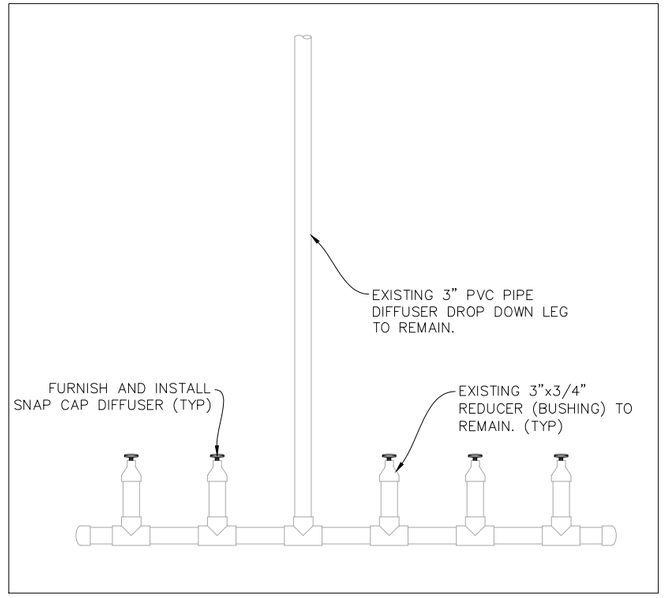
DWG P03

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159




DIFFUSER REPLACEMENT LOCATIONS

3/16" = 1'-0"




DIFFUSER DROP LEG DETAIL

3/4" = 1'-0"

A
P04

AWWU PLAN SET
NO. 11321

N

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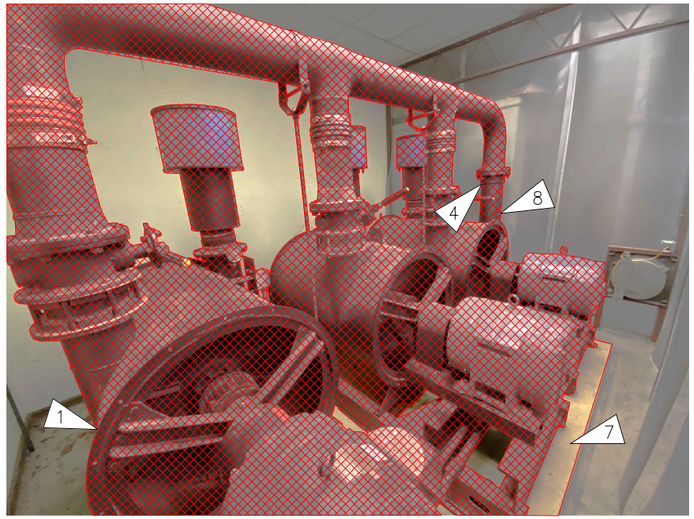
**MAIN PROCESS BUILDING**
**DIFFUSER DROP LEG DETAILS**

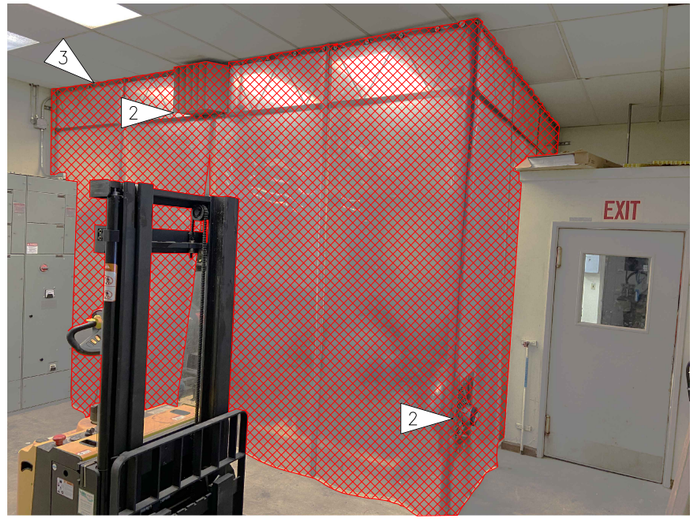
DWG P04

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

AWWU PLAN SET
NO. 11321



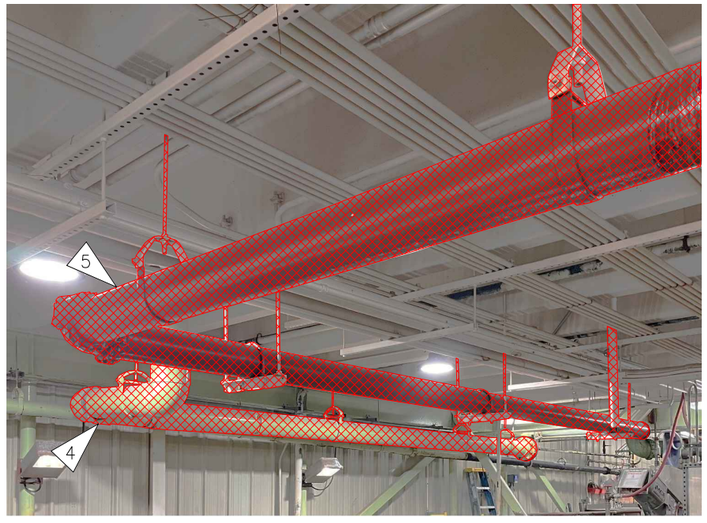

DEMOLITION DETAIL
EXISTING BLOWER EQUIPMENT
A P05




DEMOLITION DETAIL
EXISTING BLOWER EQUIPMENT
B P05

GENERAL NOTES:

1. THE CONTRACTOR SHALL PERFORM THE DEMOLITION WORK SHOWN AND DISPOSE OF ALL DEMOLISHED MATERIALS IN A SAFE MANNER.
2. THE CONTRACTOR SHALL PERFORM THE DEMOLITION WORK DESCRIBED WITHOUT DAMAGE TO OTHER AREAS OF THE PLANT. ANY DAMAGES CAUSED AS A RESULT OF THE CONTRACTOR'S ACTIVITIES WILL BE RESTORED TO THEIR PRE-CONTRACT CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
3. SEE SECTION 02 41 19 FOR EQUIPMENT TO BE REUSED AND/OR SALVAGED.
4. DEMOLITION OF EXISTING EQUIPMENT IS DEPICTED AND DESCRIBED IN THESE ANNOTATED PHOTO SHEETS. DEMOLITION ACTIVITIES ARE ALSO DESCRIBED AND DEPICTED ELSEWHERE IN THE CONTRACT DOCUMENTS. ALL AREAS OF THE CONTRACT DOCUMENTS APPLY TO THE WORK AND THE DEPICTION OF DEMOLITION ACTIVITY IN ONE LOCATION AND NOT IN ANOTHER SHALL NOT REMOVE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM THAT DEMOLITION.
5. UNLESS OTHERWISE NOTED, REMOVE SUPPORTS FROM EQUIPMENT AND PIPING IDENTIFIED TO BE DEMOLISHED.
6. FOR ALL WORK SHOWN HERE REFERENCE SPECIFICATION SECTION 01 14 00




DEMOLITION DETAIL
EXISTING PIPING REMOVAL
C P05


DEMOLITION DETAIL
EXISTING PIPING REMVOAL AND CONNECTION
D P05

NOTES ON PHOTOS:

1. EXISTING BLOWERS TO BE DEMOLISHED UPON ENGINEERS ACCEPTANCE OF NEW BLOWERS.
2. DEMOLISH EXISTING EXHAUST FANS, ALONG WITH RECEPTACLES, CONDUCTORS, AND RACEWAYS BACK TO THE SOURCE.
3. EXISTING SOUND ENCLOSURE FOR EXISTING BLOWERS TO BE DEMOLISHED ALONG WITH STRUCTURAL FRAME.
4. EXISTING ABANDONED PIPE TO BE DEMOLISHED. COORDINATE SHUTDOWN OF EXISTING BLOWER EQUIPMENT WITH ENGINEER TO REMOVE EXISTING PIPE AND INSTALL A TEMPORARY BLIND FLANGE ON EXISTING LPA PIPING.
5. EXISTING ABANDONED PIPE TO BE DEMOLISHED.
6. EXISTING AIR PIPE SHALL BE DEMOLISHED AS SHOWN HERE UPON ENGINEERS ACCEPTANCE OF NEW BLOWERS.
7. HOUSEKEEPING PAD TO BE DEMOLISHED.
8. SEE STRUCTURAL SHEETS FOR ADDITIONAL DETAIL REGARDING REPAIR OF HOLES IN FLOOR OF THE BLOWER ROOM LEFT BY THE REMOVAL OF THE EXISTING AIR PIPES.

VERIFY SCALE
IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

REVISIONS

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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REUSE OF DOCUMENTS

THIS DOCUMENT AND THE IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF AWWU AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF AWWU.


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WATER & WASTEWATER UTILITY
GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES
DWG P05

**MAIN PROCESS BUILDING**
**DEMOLITION PHOTOS AND NOTES**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159
SHEET 12 of 25

AWWU PLAN SET
NO. 11321

## LEGEND

- DENOTES DEMOLITION
- HEAVY LINE DENOTES NEW WORK
- EXISTING
- ROUND DUCT UP & DOWN
- SUPPLY AIR UP & DOWN
- RETURN AIR UP & DOWN
- EXHAUST AIR UP & DOWN
- POINT OF CONNECTION (NEW TO EXISTING)
- 5 / M2 — DETAIL NUMBER / SHEET LOCATED ON
- DIRECTION OF VIEW
- 5 / M2 — SECTION NUMBER / SHEET LOCATED ON
- 1 — SHEET NOTES
- X — 6"ø / CFM — CONNECTION SIZE / AIR FLOW RATE / AIR INLET/OUTLET SYMBOL

## ABBREVIATIONS

| | |
|---|---|
| A | COMPRESSED AIR |
| ABV | ABOVE |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AGA | AMERICAN GAS ASSOCIATION |
| AHAP | AS HIGH AS POSSIBLE |
| AL | ALUMINUM |
| AMPS | AMPERES |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE |
| APD | AIR PRESSURE DROP |
| ARCH | ARCHITECTURAL |
| ASCE | AMERICAN SOCIETY OF CIVIL ENGINEERS |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS |
| ASTM | AMERICAN STANDARD FOR TESTING AND MATERIALS |
| AWS | AMERICAN WELDING SOCIETY |
| AWWA | AMERICAN WATER WORKS ASSOCIATION |
| BDD | BACKDRAFT DAMPER |
| BLDG | BUILDING |
| BOD | BOTTOM OF DUCT |
| BTUH | BRITISH THERMAL UNIT/HOUR |
| CAP | CAPACITY |
| C/A | COMBUSTION AIR |
| CFH | CUBIC FEET PER HOUR |
| CFM | CUBIC FEET PER MINUTE |
| CLG | CEILING |
| CONT | CONTINUED |
| C.O./CO | CLEANOUT |
| CONN | CONNECTION |
| CSA | CANADIAN STANDARDS ASSOCIATION |
| CU | COPPER |
| CU. FT. | CUBIC FEET |
| CW | COLD WATER |
| dB | DECIBLES |
| DDC | DIRECT DIGITAL CONTROL |
| DEG | DEGREE |
| DIA | DIAMETER |
| DIM | DIMENSION |
| DN | DOWN |
| DWG | DRAWING |
| E/A | EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EDB | ENTERING DRY BULB |
| EFF | EFFICIENCY |
| EF-X | EXHAUST FAN DESIGNATOR |
| ESP | EXTERNAL STATIC PRESSURE |
| EWB | ENTERING WET BULB |
| EXIST | EXISTING |
| EXH | EXHAUST |
| F | FAHRENHEIT |
| FT | FEET |
| FCO | FLOOR CLEAN OUT |
| FIN | FINISHED |
| FLA | FULL LOAD AMPS |
| FLR | FLOOR |
| FM | FACTORY MUTUAL |
| FPF | FINS PER FOOT |
| FPM | FEET PER MINUTE |
| FT | FEET |
| FTU | FAN TERMINAL UNIT |
| GA | GAUGE |
| GAL | GALLONS |
| GALV | GALVANIZED |
| HD | HEAD |
| HOA | HAND-OFF-AUTO |
| HP | HORSEPOWER |
| IAPMO | INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS |
| IBC | INTERNATIONAL BUILDING CODE |
| ID | INSIDE DAMPER |
| IECC | INTERNATIONAL ENERGY CONSERVATION CODE |
| IFC | INTERNATIONAL FIRE CODE |
| IFGC | INTERNATIONAL FUEL GAS CODE |
| IMC | INTERNATIONAL MECHANICAL CODE |
| IN | INCHES |
| IN. WC. | INCHES WATER COLUMN |
| KPA | KILOPASCALS |
| LAT | LEAVING AIR TEMPERATURE |
| LAV | LAVATORY |
| LB/LBS | POUND(S) |
| LF | LINEAL FEET |
| MAX | MAXIMUM |
| MBH | THOUSAND BTUH |
| MFGR | MANUFACTURER |
| M/A | MAKEUP AIR |
| MIN | MINIMUM |
| MOA | MUNICIPALITY OF ANCHORAGE |
| MOD | MOTOR OPERATED DAMPER |
| MTD | MOUNTED |
| NC | NOISE CRITERIA |
| N.C. | NORMALLY CLOSED |
| NEBB | NATIONAL ENVIRONMENTAL BALANCING BUREAU |
| NEC | NATIONAL ELECTRICAL CODE |
| NFPA | NATIONAL FIRE PROTECTION AGENCY |
| NO. | NUMBER |
| N.O. | NORMALLY OPEN |
| NSF | NATIONAL SANITATION FOUNDATION |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| O/A | OUTSIDE AIR |
| OD | OUTSIDE DAMPER |
| OSV | OIL SAFETY VALVE |
| PD | PRESSURE DROP |
| PDI | PLUMBING AND DRAINAGE INSTITUTE |
| PG | PROPYLENE GLYCOL |
| PH | PHASE |
| PSI | POUND PER SQUARE INCH |
| PSIG | POUNDS PER SQUARE INCH GAUGE |
| RPM | REVOLUTIONS PER MINUTE |
| S/A | SUPPLY AIR |
| SMACNA | SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION |
| SP | STATIC PRESSURE |
| SQ | SQUARE |
| T/A | TRANSFER AIR |
| TEMP | TEMPERATURE |
| TOD | TOP OF DUCT |
| TSP | TOTAL STATIC PRESSURE |
| T'STAT | THERMOSTAT |
| TTL | TOTAL |
| TYP | TYPICAL |
| UH-X | UNIT HEATER DESIGNATOR |
| UL | UNDERWRITERS LABORATORY |
| VTR | VENT THRU ROOF |
| W | WASTE |
| W/ | WITH |
| W/O | WITHOUT |
| WC | WATER COLUMN |
| WCO | WALL CLEAN OUT |
| WG | WATER GAUGE |
| WHA | WATER HAMMER ARRESTOR |
| YCO | YARD CLEAN OUT |

## FAN SCHEDULE

| | | | | | | TSP | MOTOR DATA | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SYMBOL | MANUFACTURER | MODEL | TYPE | SERVICE | CFM | IN W.C. | POWER | ELEC | DRIVE | WEIGHT | REMARKS |
| EF-1 | DAYTON | 484X37 | SHUTTER AXIAL EXHAUST FAN | BLOWER BUILDING VENT. | 420 | 0.1250 | 1/25HP | 120/60/1 | DIRECT | 12 LB | INTEGRAL INTAKE GUARD, BACKDRAFT DAMPER. PROVIDE AND INSTALL SOLID STATE SPEED CONTROLLER AND REVERSE ACTING THERMOSTAT TO ACHIEVE PROPER FAN AIR FLOW AND AUTOMATIC OPERATION. |

## AIR INLET/OUTLET SCHEDULE

| SYMBOL | MANUFACTURER | MODEL | TYPE | USE | MATERIAL | FINISH | CFM | FACE SIZE (IN.) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| A | BROAN | 643FA | WALL | INTAKE | ALUMINUM | MILL. | PER PLANS | 10/10 | WALL CAP WITH INTEGRAL SCREEN. |

SEQUENCE OF OPERATIONS

EXHAUST FAN SHALL BE OPERATED BY REVERSE ACTING THERMOSTAT TO CYCLE FAN AS NECESSARY TO MAINTAIN TEMPERATURE.

CONTRACTOR SHALL PROVIDE AND INSTALL SOLID STATE SPEED CONTROLLER TO PERMIT FAN SPEED ADJUST MOUNT. MOUNT CONTROLLER ON WALL ADJACENT TO FAN DISCONNECT.

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

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GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

**MECHANICAL HVAC LEGEND AND ABBREVIATIONS**

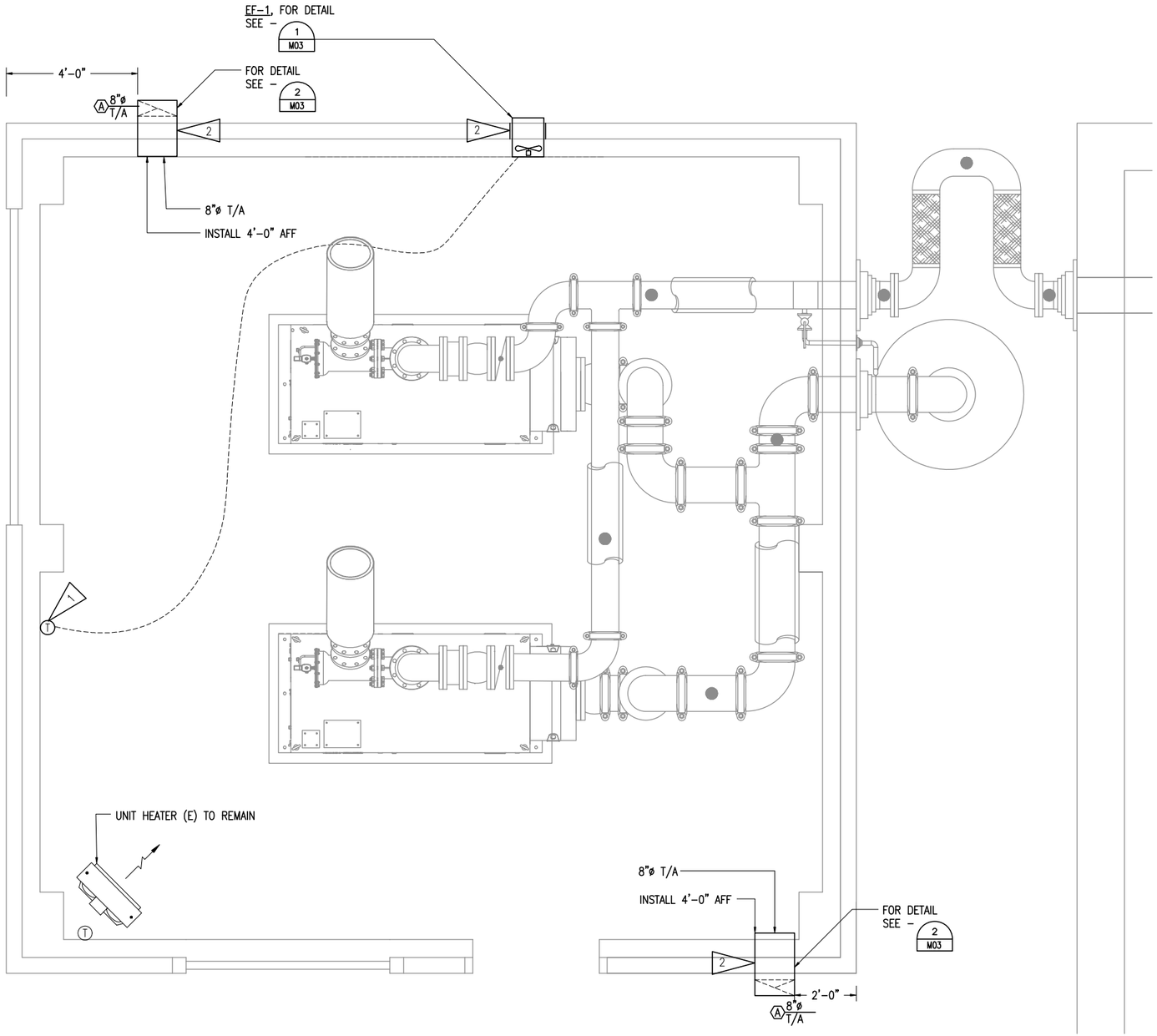
DWG **M01**

HORZ SCALE: N/A VERT SCALE: N/A — DATE: JULY 2022 — GRID: SE 5013

PROJ. ID.: WM.00159

SHEET 13 of 25

AWWU PLAN SET
NO. 11321




## GENERAL NOTES:

A. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, DUCT DIMENSIONS, AND DUCT MATERIALS PRIOR TO DEMOLITION AND SHOP DRAWING DEVELOPMENT.

B. EXISTING LAYOUTS, ELEVATIONS, AND HORIZONTAL DIMENSIONS ARE TAKEN FROM AWWU AS BUILTS.

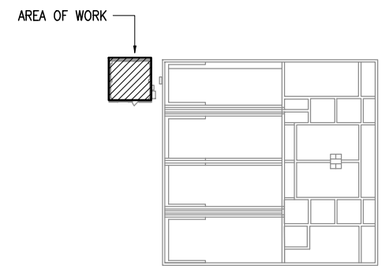
## SHEET NOTES: X

1. PROVIDE REVERSE ACTING THERMOSTAT ON WALL. INSTALL IN SURFACE MOUNT JUNCTION BOX. PROVIDE INSULATING BASE FOR T'STAT.

2. PROVIDE EPOXY COATED FLASHING, COLOR MATCHED TO SIDING, AND SILICONE SEALANT ALL SIDES OF INTAKE HOOD FOR WEATHER-PROOFING AT INTERFACE WITH EXISTING CORRUGATED METAL SIDING.

## 1 ENLARGED BLOWER BUILDING REMODEL PLAN

3/4" = 1'-0"




## KEY PLAN

NO SCALE

| VERIFY SCALE | IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. |
|---|---|

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
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WATER & WASTEWATER UTILITY

GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

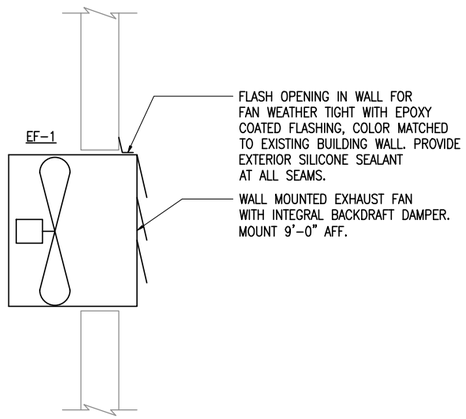
**MECHANICAL HVAC REMODEL PLAN**

DWG **M02**

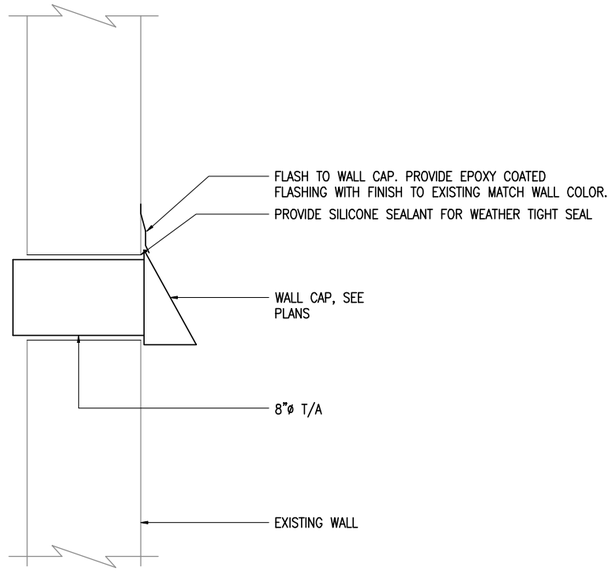
HORZ SCALE: N/A VERT SCALE: N/A | DATE: JULY 2022 | GRID: SE 5013

PROJ. ID.: WM.00159

SHEET 14 of 25




EF-1 DETAIL
NOT TO SCALE
1 M02




WALL INTAKE DETAIL
NOT TO SCALE
2 M02

AWWU PLAN SET
NO. 11321

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**MECHANICAL HVAC REMODEL DETAILS**

DWG **M03**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

SHEET 15 of 25

## ELECTRICAL LEGEND

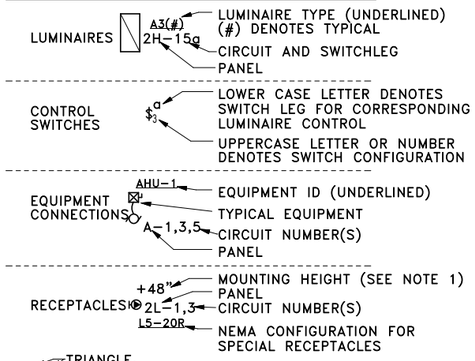
- LUMINAIRE – TYPE AS NOTED ON PLAN.
- LUMINAIRE – WALL MOUNTED: TYPE AS NOTED ON PLAN
- EMERGENCY LIGHTING UNIT (WALL; CEILING; REMOTE HEAD)
- COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN, SHADE DENOTES FACE
- $ SWITCH – SINGLE POLE, SINGLE THROW, UON
- $x SWITCH – SEE SWITCH LEGEND FOR TYPE
- POWER PANELBOARD
- T TRANSFORMER: APPROX. PHYSICAL SIZE AS SCALED
- MOTOR CONNECTION
- NON–FUSED SAFETY SWITCH / DISCONNECT
- JUNCTION BOX OR EQUIPMENT CONNECTION (CEILING; WALL; FLOOR)
- DUPLEX RECEPTACLE – GFCI PROTECTED
- DUPLEX RECEPTACLE – GFCI PROTECTED, WEATHERPROOF, +24" UON
- SPECIAL RECEPTACLE – VERIFY NEMA CONFIGURATION (WALL; CEILING)
- RECEPTACLE – FLUSH MOUNTED IN CEILING
- T TSTAT – LINE VOLTAGE

### SWITCH LEGEND

3 (THREE WAY); 4 (FOUR WAY); L (LOW VOLTAGE); D (DIMMER); K (KEYED); P (PILOT LIGHT); V (VARIABLE SPEED CONTROL); VS (VACANCY SENSOR); DV (DIMING VACANCY SENSOR); OS (OCCUPANCY SENSOR); TM (TIMER); T (INTEGRAL MOTOR OVERLOAD)

- XXXX DENOTES AVAILABLE FAULT CURRENT
- LINETYPE/LINEWEIGHT DENOTING FUTURE WORK
- LINETYPE/LINEWEIGHT DENOTING EXISTING WORK TO REMAIN
- LINETYPE/LINEWEIGHT DENOTING NEW WORK
- LINETYPE/LINEWEIGHT DENOTING DEMO WORK
- LINETYPE/LINEWEIGHT DENOTING BELOW GRADE CONDUIT
- LINETYPE/LINEWEIGHT DENOTING CONTROL WIRING

### EQUIPMENT TAG LEGEND




NOTE 1: DIMENSIONS (WHEN GIVEN ARE AFF). 'C' OR TRIANGLE DENOTES 4" ABOVE COUNTER/BACKSPLASH OR ADJACENT COUNTER/SINK (COORDINATE WITH ARCHITECTURE). THIS APPLIES TO ALL ELECTRICAL DEVICES.

| ABBREVIATIONS | |
|---|---|
| INDUSTRY STANDARD ABBREVIATIONS SHALL ALSO BE APPLICABLE. | |
| KEY NAME | FULL WORD |
| (D) | DEMOLISH |
| (E) | EXISTING |
| (N) | NEW |
| (R) | RELOCATED |
| AFCI | ARC FAULT CIRCUIT INTERRUPTER |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AL | ALUMINUM |
| BJ | BONDING JUMPER |
| CB | CIRCUIT BREAKER |
| CO, C.O. | CONDUIT ONLY |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| DFACU | DEDICATED FIRE ALARM CONTROL UNIT |
| EGC | EQUIPMENT GROUNDING CONDUCTOR |
| FAA | FIRE ALARM ANNUCIATOR |
| FACP | FIRE ALARM CONTROL PANEL |
| FACU | FIRE ALARM CONTROL UNIT |
| FHP | FRACTIONAL HORSEPOWER |
| FLA | FULL LOAD AMPS |
| FSD | FIRE SMOKE DAMPER |
| G, GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GEC | GROUNDING ELECTRODE CONDUCTOR |
| GES | GROUNDING ELECTRODE SYSTEM |
| GFEP | GROUND FAULT EQUIPMENT PROTECTION |
| MCA | MINIMUM CIRCUIT AMPACITY |
| MFS | MAXIMUM FUSE SIZE |
| NC | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT (NOT IN SCOPE) |
| NO | NORMALLY OPEN |
| P | POLES |
| PC | PHOTO CELL |
| PH, Ø | PHASE |
| PNL | PANEL |
| RIB | RELAY IN A BOX (MOTOR RATED) |
| SCCR | SHORT CIRCUIT CURRENT RATING |
| SE | SERVICE ENTRANCE RATED |
| SSBJ | SUPPLY SIDE BONDING JUMPER |
| SSEBJ | SUPPLY SIDE EQUIPMENT BONDING JUMPER |
| TGB | TELECOMMUNICATION GROUNDING BUSBAR |
| TMGB | TELECOMMUNICATION MAIN GROUNDING BUSBAR |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| VFD | VARIABLE FREQUENCY DRIVE |
| W | WATTS OR WIRE |
| WG | WIRE GUARD |
| WP | WEATHERPROOF |
| XFMR | TRANSFORMER |

| MOUNTING HEIGHT SCHEDULE | |
|---|---|
| EQUIPMENT | HEIGHT |
| PANELBOARDS (TOP) | 72" |
| SPECIAL SYSTEM PANELS (TOP) | 72" |
| POWER METER BASE (CENTER LINE OF SOCKET) | PER UTILITY |
| CONTACTORS, MOTOR STARTERS, DISCONNECT (TOP) | 66" |
| REC IN OFFICE AREAS | 18" |
| REC LOCATED IN HAZARDOUS OR S–2 OCCUPANCIES | 24" MINIMUM |
| REC IN NON–FINISHED AND MECHANICAL SPACES | 46" |
| WALL MOUNTED SWITCHES | 46" |
| TELECOMMUNICATION OUTLETS | 18" |
| INDICATING DEVICES (BOTTOM) | 80" |
| PULL STATIONS, PUSH BUTTONS | 46" |

### GENERAL NOTES

1. MINIMUM CONDUIT SIZE FOR ALL CIRCUITS AND CONDUCTORS SHALL BE 3/4".
2. ALL NEW CONDUIT SHALL BE GRC.
3. ALL INTERIOR AREAS OF THE FACILITY SHALL BE NEMA 1 LOCATIONS ALL EXTERIOR AREAS SHALL BE NEMA 3R LOCATIONS.
4. FLEXIBLE CONDUIT MAXIMUM LENGTH IS 36" UON.
5. CONTRACTOR SHALL PROVIDE SHORT CIRCUIT ANALYSIS, ARC FLASH HAZARD STUDY AND SELECTIVE COORDINATION STUDY PER THE PROJECT SPECIFICATIONS FOR ALL NEW ELECTRICAL EQUIPMENT. CONTRACTOR SHALL PROVIDE SHORT CIRCUIT AND ARC FLASH WARNING LABELS PER PROJECT SPECIFICATIONS. CONTRACTOR SHALL USE THE ROCKWELL AUTOMATIONS GROUP 'ESC SERVICES' TO PERFORM THESE STUDIES.
6. CONTRACTOR SHALL PROVIDE CONDUCTOR AND EQUIPMENT IDENTIFICATION AND LABELING PER THE PROJECT SPECIFICATIONS.
7. HANGARS AND SUPPORTS FOR ELECTRICAL SYSTEMS: SUPPORT ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, PANELBOARDS, BOXES, CONDUIT, ETC. PER NEC AND IBC SEISMIC REQUIREMENTS. PROVIDE SEISMIC SUPPORT AND DESIGN SEALED BY A LICENSED STRUCTURAL ENGINEER AS A DEFERRED SUBMITTAL TO THE AHJ FOR ALL EQUIPMENT OVER 400 LBS AND, EQUIPMENT OVER 20 LBS MOUNTED GREATER THAN 4FT AFF, CONDUIT 2.5"C OR GREATER AND ALL TRAPEZE SUPPORTED RACEWAY 10 LBS/LF OR GREATER.

AWWU PLAN SET
NO. 11321

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

REVISIONS

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REUSE OF DOCUMENTS

THIS DOCUMENT AND THE IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF AWWU AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF AWWU.


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GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

**ELECTRICAL - LEGEND, SYMBOLS, AND NOTES**

DWG **E01**

HORZ SCALE: N/A VERT SCALE: N/A DATE: JULY 2022 GRID: SE 5013

PROJ. ID.: WM.00159

AWWU PLAN SET
NO. 11321

## EQUIPMENT CONNECTION SCHEDULE – AC LOADS

NOTES

| | |
|---|---|
| (KEY) | '(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE. |
| (A) | QUANTITIES/COUNTS SHOWN IN SCHEDULES ARE FOR CONVENIENCE ONLY. CONTRACTOR TO VERIFY ALL QUANTITIES/COUNTS FROM PLANS. |
| (B) | REFER TO FLOOR PLAN DRAWINGS FOR EQUIPMENT TYPE REQUIREMENTS, LOCATIONS AND QUANTITIES. |
| (C) | COORDINATE ALL CONNECTION REQUIREMENTS WITH ACTUAL EQUIPMENT SUPPLIED PRIOR TO ROUGH-IN. |
| (D) | COORDINATE AND PROVIDE SPECIFIC SIZING OF OVERLOADS AND FUSES WITH EQUIPMENT NAMEPLATES. |
| (E) | FRACTIONAL HP TYPE MOTOR SWITCH WHERE AUTO CONTROL IS REQUIRED PROVIDE 'RELAY IN BOX'. |
| 1 | NEW BLOWERS 'B-104' AND 'B-105' PROVIDED WITH INTEGRAL DISCONNECT. |

SCHEDULE

| QTY | EQUIP ID | LOCATION OR FUNCTION | KVA | HP | FLA | MCA | MFS | TYPE | CONFIG | VAC | PH | OPD | FEEDER (MINIMUM) CU UON | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B-104 | TURBO BLOWER | 56.534 | 40 | | 68 | 125 | MOTOR | NEMA 1 | 480 | 3 | 125 A | 1.5"C, (3)1 AWG, (1)6 AWG EGC | 1 |
| 1 | B-105 | TURBO BLOWER | 56.534 | 40 | | 68 | 125 | MOTOR | NEMA 1 | 480 | 3 | 125 A | 1.5"C, (3)1 AWG, (1)6 AWG EGC | 1 |
| 1 | EF-1 | SHUTTER AXIAL EXHAUST FAN | 0.180 | 1/25 | | | | MOTOR SWITCH | NEMA 1 | 120 | 1 | 15 A | 0.75"C, (2)12 AWG, (1)12 AWG EGC | |

## FAULT CURRENT MITIGATION SCHEDULE ( > 5,000 AMPS)

NOTES

| | |
|---|---|
| (A) | AVAILABLE FAULT CURRENT (AFC) VALUES FOR EACH PIECE OF EQUIPMENT ARE SHOWN AT THE POINT THEY RESIDE IN THE POWER SYSTEM. |
| (B) | CONTRACTOR TO COORDINATE EQUIPMENT SCCR RATINGS WITH PROVIDED EQUIPMENT. IF PROVIDED EQUIPMENT'S SCCR RATING DOES NOT EXCEED AFC, THE CONTRACTOR SHALL PROVIDE A FUSED DISCONNECT SWITCH WITH CLASS R OR J CURRENT LIMITING FUSES THAT REDUCE THE AFC TO THE SUPPLIED EQUIPMENT... |
| (C) | CONTRACTOR SHALL PROVIDE PLACARDS ON ALL DISCONNECT SWITCHES NEEDING CURRENT LIMITING FUSES AS REQUIRED BY NEC. |

SCHEDULE

| SCHEDULE | ID | LOCATION OR FUNCTION | TYPE | AFC |
|---|---|---|---|---|
| EQUIPMENT | B-104 | TURBO BLOWER | MOTOR | 13.41 kA |
| EQUIPMENT | B-105 | TURBO BLOWER | MOTOR | 13.57 kA |

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

| REV | DATE | DESCRIPTION | BY |
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REVISIONS

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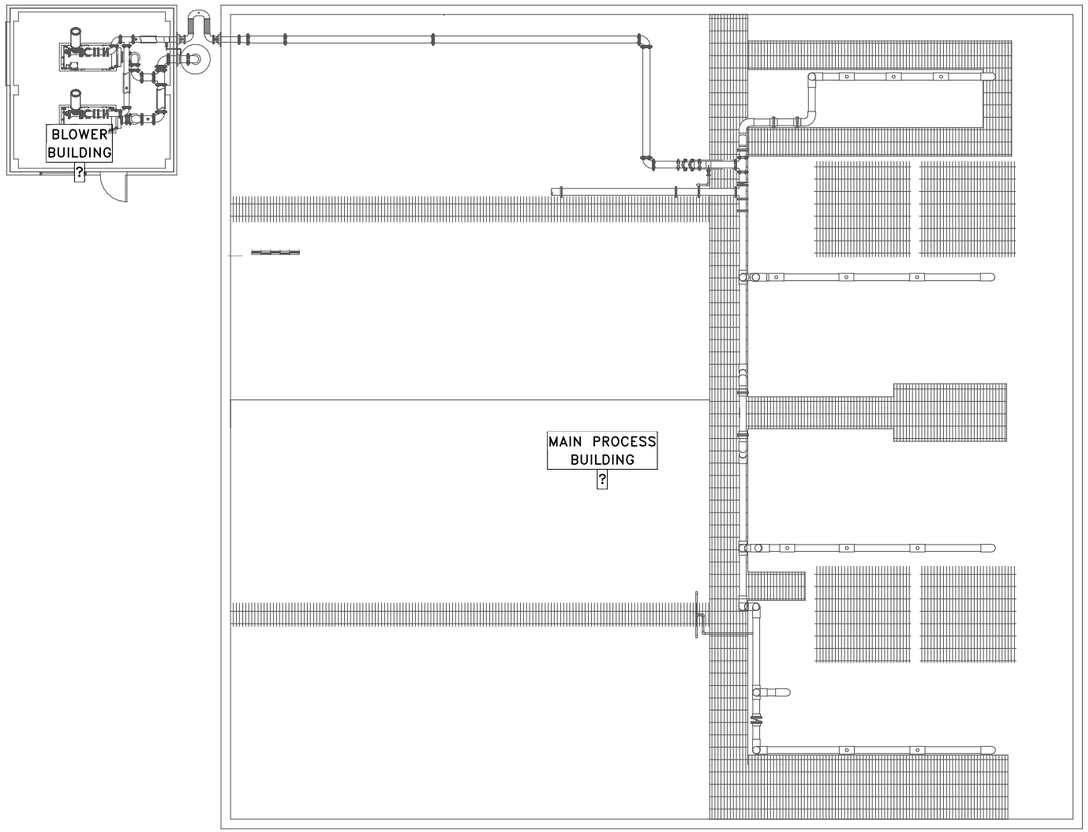
**ELECTRICAL - WIRE AND CONDUIT SCHEDULE**

DWG E02

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159

AWWU PLAN SET
NO. 11321




BUILDING OVERVIEW PLAN
SCALE: 1/8" = 1'-0"

1
E03

HAZARDOUS LOCATION CODE ANALYSIS

ALL NEW WORK SHALL BE PERFORMED INSIDE THE BLOWER BUILDING 437 WHICH IS UNCLASSIFIED. THERE ARE CLASSIFIED LOCATIONS ON SITE WHICH ARE NOT WITHIN THE AREA OF NEW WORK.

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|---|---|---|---|
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DWG
E03

**ELECTRICAL - CODE ANALYSIS**

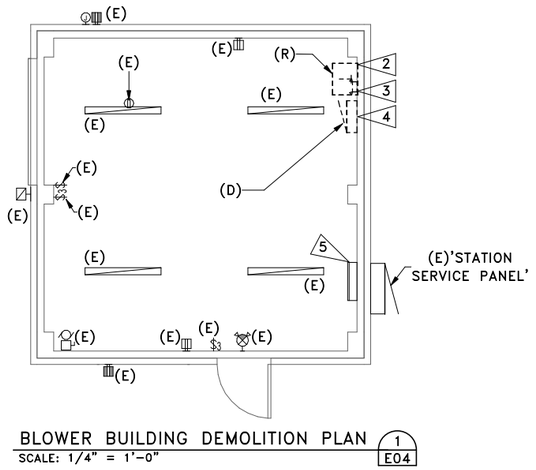
HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159

SHEET 18 of 25

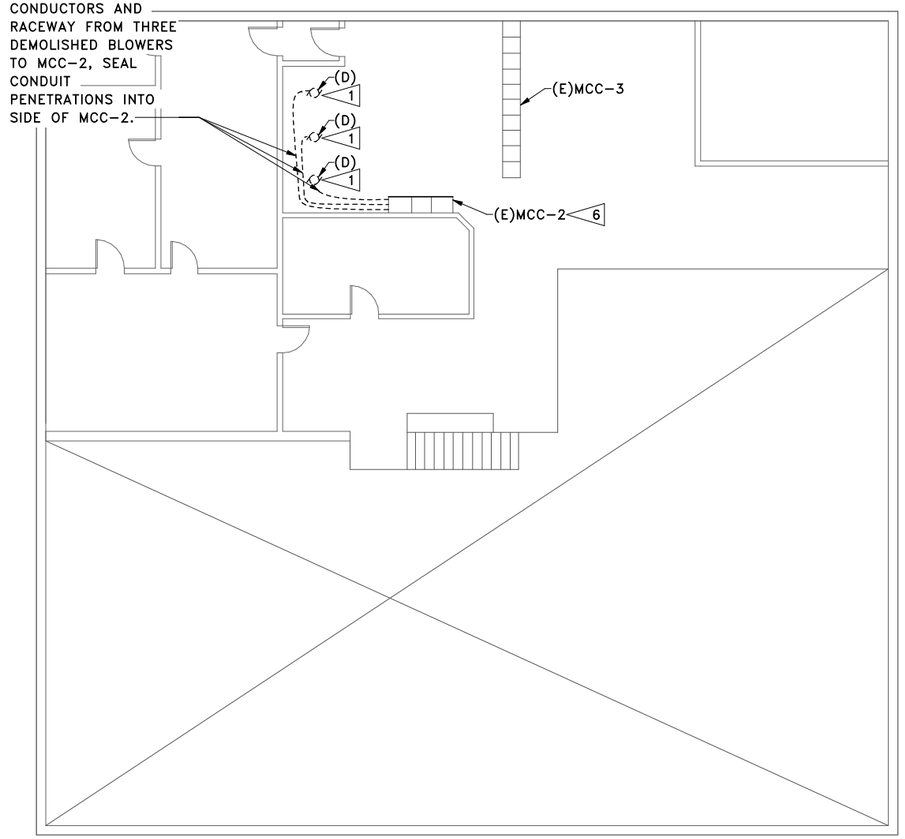
AWWU PLAN SET
NO. 11321

# REFERENCED SHEET NOTES

| REF | NOTE |
|---|---|
| 1 | DEMOLISH EXISTING BLOWERS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO VIBRATION SENSORS AND ASSOCIATED CONDUIT AND CONDUCTORS BACK TO EXISTING MCC–2. PROVIDE SEALS OVER CONDUIT HOLES IN THE SIDE OF MCC–2. PROVIDE NEW ENGRAVED LABELS ON VFD'S IN MCC–2 THAT INDICATE EQUIPMENT WAS DISCONNECTED, VFD'S ARE NO LONGER USED AND VFD DISCONNECTS SHALL REMAIN IN THE 'OFF' POSITION. |
| 2 | REMOVE AND SALVAGE EXISTING TRANSFORMER 'T2'. PROTECT TRANSFORMER 'T2' FROM DAMAGE DURING REMOVAL AND STORAGE. REINSTALL TRANSFORMER 'T2' AS SHOWN ON NEW PLANS. |
| 3 | REMOVE AND SALVAGE EXISTING EMERGENCY LIGHT. PROTECT EMERGENCY LIGHT FROM DAMAGE DURING REMOVAL AND STORAGE. REINSTALL EMERGENCY LIGHT AS SHOWN ON NEW PLANS. |
| 4 | DEMOLISH EXISTING PANEL 'P1'. DEMOLISH ALL EXISTING BRANCH CIRCUIT WIRING BACK TO NEAREST EXISTING DEVICE TO REMAIN, UNLESS OTHERWISE NOTED. EXTEND NEW BRANCH CIRCUIT FROM NEW PANEL 'P1' AS SHOWN ON THE NEW PLAN TO ALL EXISTING DEVICES TO REMAIN, UNLESS OTHERWISE NOTED. SEE NEW PLANS. |
| 5 | DEMOLISH EXISTING BRANCH CIRCUIT WIRING FOR HEAT TRACE BACK TO EXISTING JUNCTION BOX. SALVAGE EXISTING WIRING FROM JUNCTION TO HEAT TRACE FOR SPLICING AND EXTENDING TO NEW PANEL 'P1'. SEE NEW PLANS. |
| 6 | PROVIDE BLANK COVER PLATES OVER TOP OF EXISTING MCC BUCKETS WHICH ARE TO BE ABANDONED IN PLACE, SUCH THAT THE ORIGINAL MANUFACTURER'S UL LISTING OF MCC–2 IS MAINTAINED. MATCH EXISTING FASTENER PATTERN SO AS TO NOT DRILL NEW HOLES IN MCC–2. |




BLOWER BUILDING DEMOLITION PLAN (1 / E04)
SCALE: 1/4" = 1'–0"




ELECTRICAL DEMOLITION PLAN – MAIN PROCESS BUILDING – UPPER LEVEL (2 / E04)
SCALE: 1/8" = 1'–0"

## GENERAL NOTES

1. DEMOLISH ALL LUMINAIRES, DEVICES, AND EQUIPMENT DENOTED BY THE DEMOLITION LINE WEIGHT/TYPE OR '(D)' NOTATION ON THIS PLAN.
2. DEMOLISH ALL CONDUCTORS BACK TO THEIR SOURCE FOR ALL DEMOLISHED LUMINAIRES, DEVICES, AND EQUIPMENT, UON.
3. DEMOLISH ALL RACEWAYS AND ALL ASSOCIATED FITTINGS, SUPPORTS, BOXES, AND SEALOFFS BACK TO THEIR SOURCE FOR ALL DEMOLISHED LUMINAIRES, DEVICES, AND EQUIPMENT BACK TO SOURCE, UON. EXISTING RACEWAYS MAY REMAIN IF THEY ARE TO BE REUSED FOR NEW CONDUCTORS AND MEET CURRENT CODE REQUIREMENTS.
4. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHETHER THE ITEMS AND MATERIALS SHOWN AS REMOVED ON THE DRAWINGS ARE TO BE SALVAGED AND TURNED OVER TO THE OWNER OR DISPOSED OF. ALL UNWANTED EQUIPMENT AND MATERIALS SHALL BE PROPERLY DISPOSED OF OFF–SITE BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL PALLETIZE, PROTECT AND DELIVER OWNER SALVAGED ITEMS TO A LOCATION IN THE MUNICIPALITY OF ANCHORAGE TO BE SELECTED BY THE OWNER.
6. DAMAGE TO EXISTING EQUIPMENT, STRUCTURES, AND PIPING CAUSED BY THE CONTRACTOR'S DEMOLITION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR TO MATCH EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
7. EQUIPMENT NOT IDENTIFIED SPECIFICALLY TO BE DEMOLISHED SHALL REMAIN IN PLACE.
8. COORDINATE SEQUENCE OF DEMOLITION WITH RESPECT TO PROJECT CONSTRUCTION SCHEDULE AND INSTALLATION REQUIREMENTS.
9. ALL RECESSED CONDUIT EMBEDDED IN WALLS, FLOORS, AND CEILING SHALL BE GROUND DOWN 1/2 INCH BELOW FINISHED SURFACE AND GROUT SHAL BE USED TO BRING WALL SURFACE FLUSH PRIOR TO PAINTING.
10. UNLESS OTHERWISE NOTED, REMOVE SUPPORTS FROM EQUIPMENT IDENTIFIED TO BE DEMOLISHED. DEMOLISH ALL ANCHORS AND REPAIR CONCRETE OR CMU BLOCK PER DETAIL C, DRAWING P116
11. EXISTING FIRE ALARM AND INTERCOM SYSTEM DEVICES NOT SHOWN ON PLANS ARE EXISTING TO REMAIN.

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

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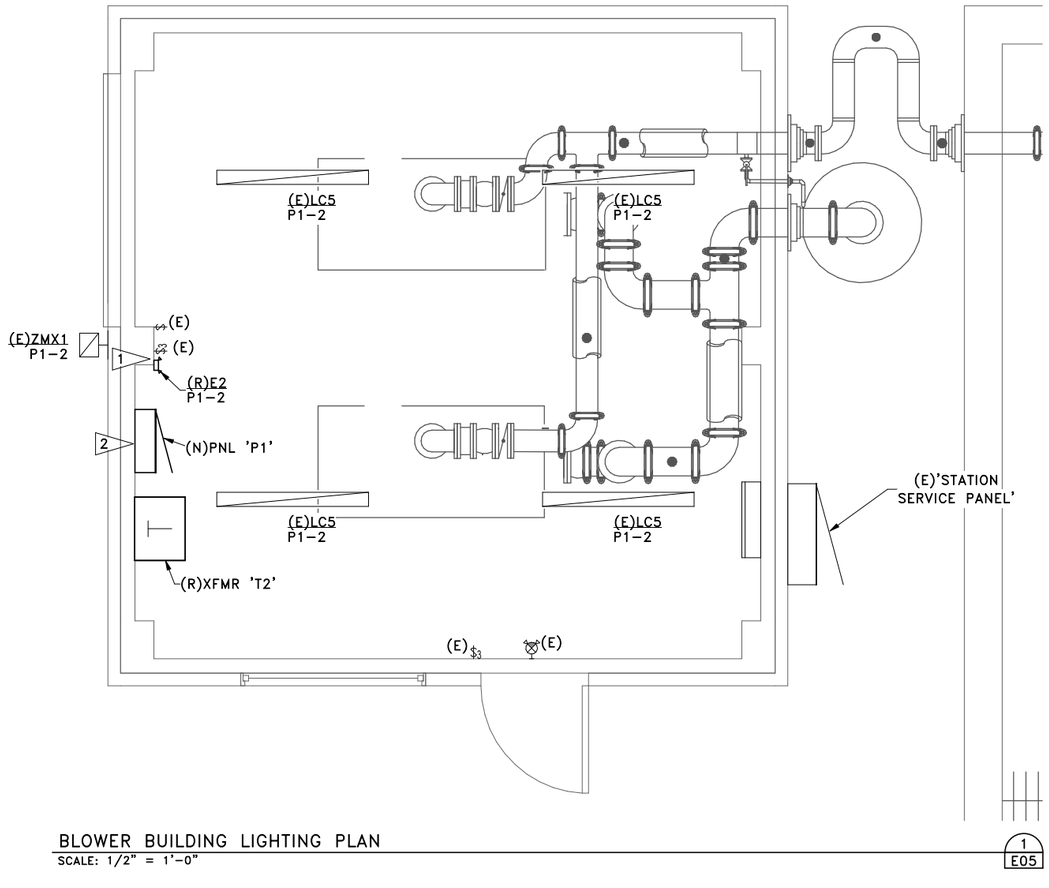
DWG E04

**ELECTRICAL - DEMOLITION PLAN**

HORZ SCALE: N/A VERT SCALE: N/A DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159
SHEET 19 of 25

AWWU PLAN SET
NO. 11321




BLOWER BUILDING LIGHTING PLAN
SCALE: 1/2" = 1'–0"

1
E05

# REFERENCED SHEET NOTES

| REF | NOTE |
|---|---|
| 1 | INSTALL RELOCATED EMERGENCY LIGHTING UNIT AS SHOWN. |
| 2 | CONNECT ALL RELOCATED AND EXISTING LIGHTS TO NEW PANEL 'P1'. MAINTAIN EXISTING LIGHTING CONTROL. SEE NEW PANEL SCHEDULE. |

## GENERAL NOTES

1. RELOCATE ALL LUMINAIRES AND ASSOCIATED WIRING AND CONDUIT AS REQUIRED TO ACCOMODATE ALL NEW EQUIPMENT, CONDUIT AND WIRING.
2. PROVIDE NEW CONDUCTORS AS REQUIRED FOR ALL RECIRCUITED LUMINAIRES AND LIGHTING CONTROL.
3. PROVIDE NEW RACEWAY AS REQUIRED FOR INSTALLATION OF ALL RECIRCUITED LUMINAIRES.
4. PROVIDE NEW RACEWAY AS REQUIRED FOR ALL RECIRCUITED LIGHTING CONTROL DEVICES.
5. PROVIDE UNSWITCHED HOT OF LOCAL LIGHTING CIRCUIT TO ALL EMERGENCY LIGHTS SHOWN ON THE NEW PLANS.
6. COORDINATE LIGHT FIXTURE ELEVATION WITH PROCESS PIPING AND EQUIPMENT. WHERE POSSIBLE LOCATE LIGHTS ABOVE PIPING.

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

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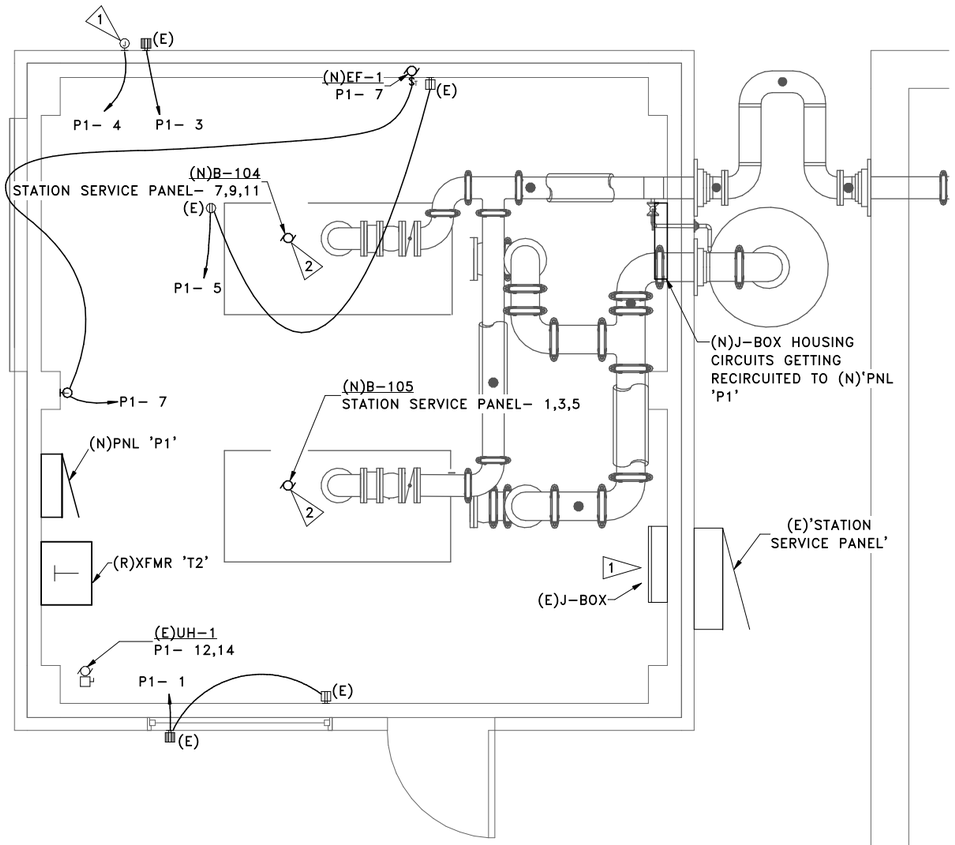
DWG E05

**BLOWER BUILDING LIGHTING PLAN**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159




BLOWER BUILDING POWER AND SIGNAL PLAN
SCALE: 1/2" = 1'–0"

1
E06

GENERAL NOTES

1. PROVIDE NEW CONDUCTORS FOR POWER AND CONTROLS TO ALL EXISTING DEVICES AND EQUIPMENT SHOWN ON THIS PLAN WHICH ARE RECIRCUIT TO THE NEW PANEL 'P1'.
2. PROVIDE NEW CONDUCTORS FOR POWER AND CONTROLS TO NEW DEVICES AND EQUIPMENT DENOTED ON THIS PLAN, UON.
3. EXISTING RACEWAY MAY BE REUSED IF IN GOOD CONDITION AND MEETS CURRENT NEC REQUIREMENTS.
4. PROVIDE NEW RACEWAY AS REQUIRED FOR ALL RECIRCUITED, RELOCATED, AND NEW POWER, CONTROLS, AND INSTRUMENTATION WIRING.

# REFERENCED SHEET NOTES

| REF | NOTE |
|---|---|
| 1 | INTERCEPT EXISTING HEAT TRACE CIRCUIT WIRING AT EXISTING JUNCTION BOX AND EXTEND TO NEW PANELBOARD 'P1' WITH NEW WIRING. |
| 2 | PROVIDE POWER TO NEW BLOWERS WITH INTEGRAL DISCONNECT IN UNIT. CIRCUIT BACK TO (N) PANEL 'P1'. PROVIDE DUCT SEAL IN ALL CONDUIT PENETRATIONS OF BLOWER HOUSING PER THE BLOWER MANUFACTURER'S INSTALLATION INSTRUCTIONS. |

AWWU PLAN SET
NO. 11321

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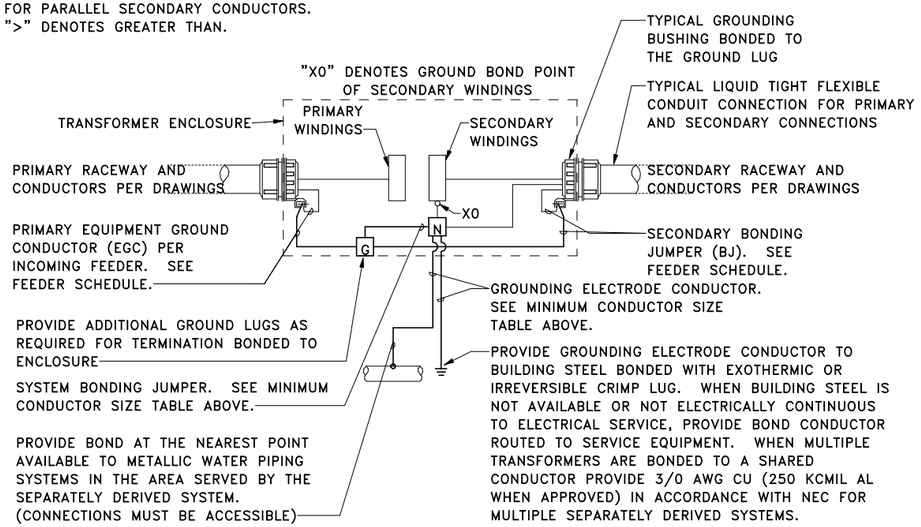
**BLOWER BUILDING POWER AND SIGNAL PLAN**

DWG **E06**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159

| REQUIRED MINIMUM CONDUCTOR SIZE COPPER CONDUCTORS | |
|---|---|
| XFMR SECONDARY | JUMPER OR ELECTRODE |
| 2 AWG OR SMALLER | 8 AWG |
| 1 AWG – 1/0 AWG | 6 AWG |
| 2/0 AWG – 3/0 AWG | 4 AWG |
| > 3/0 AWG – 350 KCMIL | 2 AWG |
| > 350 KCMIL – 600 KCMIL | 1/0 AWG |
| > 600 KCMIL – 1100 KCMIL | 2/0 AWG |
| > 1100 KCMIL | 12.5% * XFMR SECONDARY |

"XFMR SECONDARY" DENOTES THE AREA OF THE LARGEST UNGROUNDED SECONDARY CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL SECONDARY CONDUCTORS.
">" DENOTES GREATER THAN.

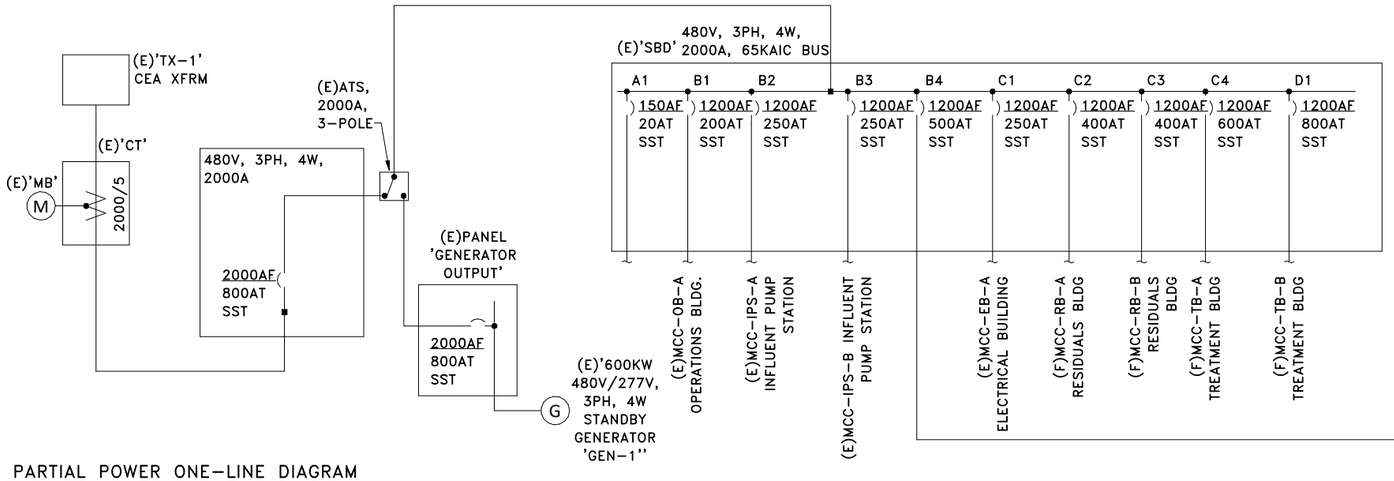



TYPICAL TRANSFORMER GROUNDING ONE–LINE DIAGRAM
SCALE:NONE

| DISTRIBUTION SCCR SCHEDULE |
|---|
| EQUIPMENT SHALL HAVE A SCCR EXCEEDING THE SHORT CIRCUIT AMPS (SCA) OR MINIMUM SCCR, WHICH EVER IS GREATER. EQUIPMENT SHALL BE FULLY RATED. BRANCH CIRCUIT PANELS RATED 225 AMPS OR LESS MAY USE MANUFACTURER TESTED COMBINATIONS PER NEC 240.86(B) AND THE MOTOR LOADS DO NOT EXCEED 1% OF THE LOWEST AIC RATED DEVICE IN THE PANEL PER NEC 240.86(C). |
| CONTRACTOR TO VERIFY EQUIPMENT TO BE PROVIDED WITH SERVING UTILITY PRIOR TO PROCUREMENT. ANY DECREASE OF TRANSFORMER %Z, CONDUCTOR LENGTHS, OR INCREASE IN TRANSFORMER KVA OR CABLE SIZES TO BE REPORTED TO CONTRACT OFFICER FOR RECALCULATION OF SCA PRIOR TO PROCUREMENT. LENGTHS PROVIDED ARE MINIMUM FOR VALID CALCULATED VALUE AND DO NOT REPRESENT ACTUAL FEEDER LENGTH. |

| ASSUMED UTILITY SYSTEM CONFIGURATION (BASIS FOR CALCULATION) | | | | |
|---|---|---|---|---|
| SERVICE TRANSFORMER | | | | |
| KVA | %Z | X/R | SCA (PRI.) | SCA (SEC.) |
| 500 | 3.0 | 3.50 | 1,000,000 | 20,032 |
| | 0 | – FOR FAULT CURRENT | | |
| SERVICE AMPS | CALCULATION ONLY – SERVICE LATERAL | | | FT |
| 2000 | 6EA: (4)400 KCMIL | | | 19 |

| SCCR___PANELS AND MOTORS | | |
|---|---|---|
| EQUIPMENT ID | SCAmps | X/R |
| STATION SERVICE PANEL | 14,396 | 1.85 |
| P1 | 4,618 | 0.94 |

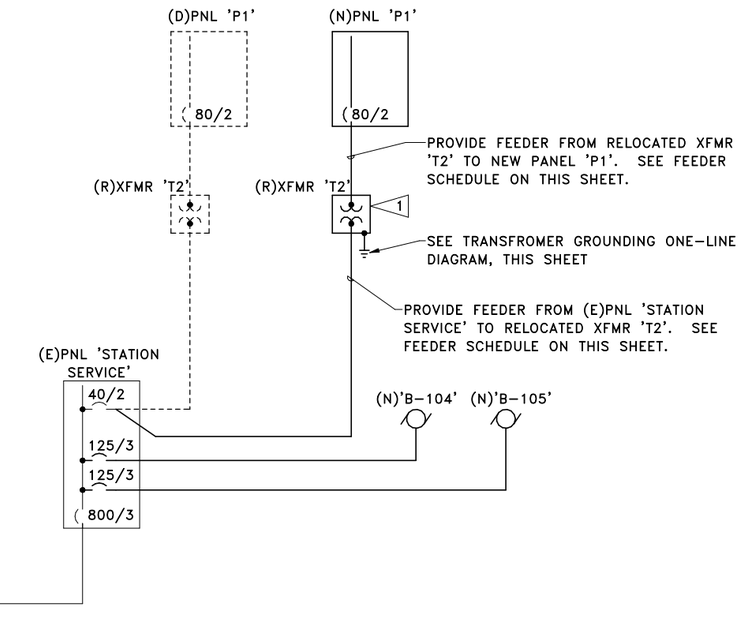



PARTIAL POWER ONE–LINE DIAGRAM
SCALE:NONE

# REFERENCED SHEET NOTES

| REF | NOTE |
|---|---|
| 1 | REMOVE AND SALVAGE EXISTING TRANSFORMER 'T2'. PROTECT TRANSFORMER 'T2' FROM DAMAGE DURING REMOVAL AND STORAGE. REINSTALL TRANSFORMER 'T2' AS SHOWN ON NEW PLANS. |

| FEEDER SCHEDULE | | |
|---|---|---|
| ID | AMPERAGE | FEEDER (MINIMUM) CU UON |
| T2 | 40 | 0.75"C, (2)8 AWG, (1)10 AWG EGC |
| P1 | 80 | 1.25"C, (3)3 AWG, (1)6 AWG BJ |




AWWU PLAN SET
NO. 11321

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

REVISIONS

**RECORD DRAWING** Note: To be filled out on original drawings upon project completion.
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DATE: _____ TITLE: _____
BY: _____
2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____
3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor–provided data appears to represent the project as constructed.
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COMPANY: _____
DATE: _____ TITLE: _____
BY: _____



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REGISTERED PROFESSIONAL ENGINEER
SEAL

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

**BLOWER BUILDING PARTIAL POWER ONE-LINE DIAGRAM**

DWG E07

HORZ SCALE:N/A VERT SCALE:N/A DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159
SHEET 22 of 25

## (N)PANEL "P1" SCHEDULE

VOLTAGE: 240/120V, 1PH, 3W
OPD RATING: 80 A
LOCATION: BLOWER BUILDING
ENCLOSURE: NEMA 1
MOUNTING: SURFACE

| CKT | LOAD DESCRIPTION | AMP | P | A | | B | | P | AMP | LOAD DESCRIPTION | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | REC: RM 437 | 20 | 1 | 0.36 | 0.19 | | | 1 | 20 | LTG/LTGE: RM 437 | 2 |
| 3 | REC: | 20 | 1 | | | 0.18 | 1.90 | 1 | 20 | CONT: HEAT TRACE [1] | 4 |
| 5 | REC: RM 437 | 20 | 1 | 0.36 | 0.00 | | | 1 | 30 | SPARE | 6 |
| 7 | MTR: RM 437 EF-1 (VIA T-STAT) | 15 | 1 | | | 0.43 | 0.00 | 2 | 20 | SPARE | 8 |
| 9 | SPARE | 20 | 2 | 0.00 | 0.00 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | 0.00 | 3.75 | 2 | 50 | MTR: RM 437 UH-1 | 12 |
| 13 | SPARE [3] | 20 | 1 | 0.00 | 3.75 | | | -- | -- | -- | 14 |
| 15 | SPARE [3] | 20 | 1 | | | 0.00 | 0.00 | 2 | 20 | SPARE [1] | 16 |
| 17 | SPARE [3] | 20 | 1 | 0.00 | 0.00 | | | -- | -- | -- | 18 |
| 19 | SPARE | 20 | 1 | | | 0.00 | 0.00 | 1 | 20 | SPARE [1] | 20 |
| 21 | SPARE | 20 | 1 | 0.00 | 0.00 | | | 1 | 20 | SPARE | 22 |
| 23 | SPARE | 20 | 1 | | | 0.00 | 0.00 | 1 | 20 | SPARE | 24 |
| | TOTAL KVA/PHASE: | | | 4.7 | | 6.3 | | | | | |
| | TOTAL AMPS/PHASE: | | | 38.9 | | 52.2 | | | | | |
| | PHASE BALANCE %: A-B \| B-C \| C-A | | | 44 | | 172 | | | | | |

SUMMARY BY LOAD TYPE

| LOAD CLASSIFICATION | CONNECTED | NEC FACTORS | TOTAL NEC |
|---|---|---|---|
| CONT | 2.150 kVA | 125.00% | 2.688 kVA |
| LTG | 0.184 kVA | 125.00% | 0.230 kVA |
| LTGE | 0.009 kVA | 125.00% | 0.011 kVA |
| MTR | 7.680 kVA | 124.41% | 9.555 kVA |
| REC | 0.900 kVA | 100.00% | 0.900 kVA |
| | | | |

PANEL TOTALS

| | |
|---|---|
| CONNECTED KVA: | 10.923 kVA |
| NEC CALCULATED KVA: | 13.384 kVA |
| CONNECTED AMPS: | 46 A |
| NEC CALCULATED AMPS: | 56 A |

## (E)PANEL "STATION SERVICE PANEL" SCHEDULE

VOLTAGE: 480Y/277V, 3PH, 4W
OPD RATING: 500 A
LOCATION:
ENCLOSURE: NEMA 3R
MOUNTING: SURFACE

| CKT | LOAD DESCRIPTION | AMP | P | A | | B | | C | | P | AMP | LOAD DESCRIPTION | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MCA: RM 437 B-105 [2][6] | 125 | 3 | 18.84 | 0.00 | | | | | 3 | 400 | SPARE [4] | 2 |
| 3 | -- | -- | -- | | | 18.84 | 0.00 | | | -- | -- | -- | 4 |
| 5 | -- | -- | -- | | | | | 18.84 | 0.00 | -- | -- | -- | 6 |
| 7 | MCA: RM 437 B-104 [2][6] | 125 | 3 | 18.84 | 0.00 | | | | | 3 | 400 | SPARE [4] | 8 |
| 9 | -- | -- | -- | | | 18.84 | 0.00 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | | | 18.84 | 0.00 | -- | -- | -- | 12 |
| 13 | SPARE [4] | 30 | 3 | 0.00 | 0.00 | | | | | 3 | 400 | SHOP [4] | 14 |
| 15 | -- | -- | -- | | | 0.00 | 0.00 | | | -- | -- | -- | 16 |
| 17 | -- | -- | -- | | | | | 0.00 | 0.00 | -- | -- | -- | 18 |
| 19 | SPARE [4] | 60 | 3 | 0.00 | 0.00 | | | | | 3 | 400 | MCC-2 [4] | 20 |
| 21 | -- | -- | -- | | | 0.00 | 0.00 | | | -- | -- | -- | 22 |
| 23 | -- | -- | -- | | | | | 0.00 | 0.00 | -- | -- | -- | 24 |
| 25 | PNL 'P1' VIA XFMR 'T2' [2][5] | 40 | 2 | 4.66 | 0.00 | | | | | 3 | 400 | MCC-3 [4] | 26 |
| 27 | -- | -- | -- | | | 6.26 | 0.00 | | | -- | -- | -- | 28 |
| 29 | - SPACE - | -- | 1 | | | | | -- | 0.00 | -- | -- | -- | 30 |
| 31 | - SPACE - | -- | 3 | -- | 0.00 | | | | | 3 | 800 | MAIN CKT BREAKER MOUNTED TO BUS | 32 |
| 33 | -- | -- | -- | | | -- | 0.00 | | | -- | -- | -- | 34 |
| 35 | -- | -- | -- | | | | | -- | 0.00 | -- | -- | -- | 36 |
| | TOTAL KVA/PHASE: | | | 42.4 | | 43.9 | | 37.7 | | | | | |
| | TOTAL AMPS/PHASE: | | | 155.5 | | 161.3 | | 136.1 | | | | | |
| | PHASE BALANCE %: A-B \| B-C \| C-A | | | 4 | | 15 | | 11 | | | | | |

SUMMARY BY LOAD TYPE

| LOAD CLASSIFICATION | CONNECTED | NEC FACTORS | TOTAL NEC |
|---|---|---|---|
| CONT | 2.150 kVA | 125.00% | 2.688 kVA |
| LTG | 0.184 kVA | 125.00% | 0.230 kVA |
| LTGE | 0.009 kVA | 125.00% | 0.011 kVA |
| MCA | 113.068 kVA | 100.00% | 113.068 kVA |
| MTR | 7.680 kVA | 124.41% | 9.555 kVA |
| REC | 0.900 kVA | 100.00% | 0.900 kVA |

PANEL TOTALS

| | |
|---|---|
| CONNECTED KVA: | 123.991 kVA |
| NEC CALCULATED KVA: | 126.452 kVA |
| CONNECTED AMPS: | 149 A |
| NEC CALCULATED AMPS: | 152 A |

GENERAL NOTES

1. MATCH MANUFACTURER, MODEL NUMBER, AND AIC RATING OF EXISTING CIRCUITS BREAKERS WHERE NEW CIRCUIT BREAKER IS INSTALLED IN EXISTING PANEL.

PANEL SCHEDULE NOTES

| REF | NOTE |
|---|---|
| 'KEY' | '(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED FROM THE PANEL SCHEDULES DENOTED BY '[#]'. (NOT ALL NUMBERED NOTES ARE REFERENCED.) |
| (A) | REFER TO POWER ONE-LINE DIAGRAMS FOR ADDITIONAL PANEL CONFIGURATION AND REQUIREMENTS. |
| (B) | REFER TO EQUIPMENT SCCR SCHEDULE FOR PANEL SHORT CIRCUIT RATINGS. |
| [1] | PROVIDE 30mA GFPE CIRCUIT BREAKER. |
| [2] | PROVIDE OEM DEVICE THAT CAN BE LOCKED IN THE "OFF" POSITION FOR USE AS DISCONNECT PER NEC. |
| [3] | PROVIDE 6mA GFCI PROTECTED CIRCUIT BREAKER. |
| [4] | EXISTING LOAD TO REMAIN. |
| [5] | NEW LOAD ON EXISTING BREAKER. |
| [6] | PROVIDE CIRCUIT BREAKER FOR NEW LOAD. |

LOAD CLASSIFICATIONS SCHEDULE

NOTES

| | |
|---|---|
| (KEY) | '(x)' DENOTES A GENERAL, NON-REFERENCED, NOTE. NUMBERED NOTES ARE REFERENCED IN THE SCHEDULE. |
| (A) | NOT ALL LOAD CLASSIFICATIONS ARE NECESSARILY USED. ONLY CLASSIFICATIONS FROM LOADS THAT ARE CONNECTED TO EACH PANEL ARE SHOWN IN THE SUMMARY SECTION OF THE PANEL SCHEDULES. |
| (B) | PANELBOARD BUS RATINGS TO EQUAL OR EXCEED OPD RATINGS SHOWN IN PANEL SCHEDULES UNLESS OTHERWISE NOTED. |
| 1 | THE NEC DEMAND PERCENTAGE IS SHOWN AS A WEIGHTED AVERAGE. FOR EXAMPLE 125% OF 100VA PLUS 100% OF 100VA WILL SHOW THE WEIGHTED AVERAGE PERCENTAGE OF 112.5% RESULTING IN 225VA. |

SCHEDULE

| CLASS. | NEC REFERENCE | DESCRIPTION |
|---|---|---|
| CONT | NEC: 210.20(A) | 125% OF THE CONTINUOUS LOAD |
| ETR | NEC: 220.87 | RECORDED DEMAND LOAD * 125%. INDIVIDUAL CIRCUITS WITH 0.00 IN THE KVA/PHASE COLUMNS ARE EXISTING LOADS TO REMAIN WHICH WERE RECORDED PER NEC REQUIREMENTS AND IS INCLUDED IN THE SCHEDULE'S SUMMARY SECTION. |
| LTG | NEC: 210.20(A) | LIGHTING LOADS CONSIDERED TO BE CONTINUOUS. 125% OF THE CONTINOUS LOAD. |
| LTGE | NEC: 210.20(A) | CALCULATED SAME AS 'LTG' BUT EXCLUDED FROM ENERGY LIGHTING POWER DENSITY CALCULATIONS. |
| MTR | NEC: 430.24 | 125% OF THE FULL-LOAD CURRENT RATING OF THE HIGHTEST RATED MOTOR PLUS THE SUM OF THE FULL-LOAD CURRENT RATINGS OF ALL OTHER MOTORS. (SEE NOTE 1) |
| NCDN | NEC: 220.60 | NONCOINCIDENT LOADS: WHERE IT IS UNLIKELY THAT TWO OR MORE NONCOINCIDENT LOADS WILL BE IN USE SIMULTANEOUSLY, THE LARGEST LOAD WILL BE USED. LOADS CLASSIFIED AS NCDN WILL HAVE ZERO LOAD. |
| NCNT | NEC: 210.20(A) | 100% OF THE NON-CONTINUOUS LOAD |
| REC | NEC: 220.44 | NON-DWELLING RECEPTACLE LOADS = FIRST 10KVA OR LESS AT 100% PLUS REMAINDER OVER 10KVA AT 50%. (SEE NOTE 1) |
| MCA | (SEE MTR) | THE LOAD IS BASED ON THE GIVEN MCA (MINIMUM CIRCUIT AMPACITY) WHICH INCLUDES 125% OF THE LARGEST MOTOR OF THE UNIT. 100% OF THE MCA LOAD. |

| ELECTRICAL LOAD SUMMARY |
|---|
| 0 VA DEMOLISHED LIGHTING |
| 169,802 VA DEMOLISHED POWER |
| 169,802 VA TOTAL DEMOLISHED LOAD |
| 0 VA NEW LIGHTING |
| 113,248 VA NEW POWER |
| 113,248 VA TOTAL NEW LOAD |
| DEMOLISHED LOAD IS GREATER THAN NEW LOAD BY 56,554 VA |

AWWU PLAN SET
NO. 11321

**VERIFY SCALE** THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

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|---|---|---|---|
| | | | |

REVISIONS

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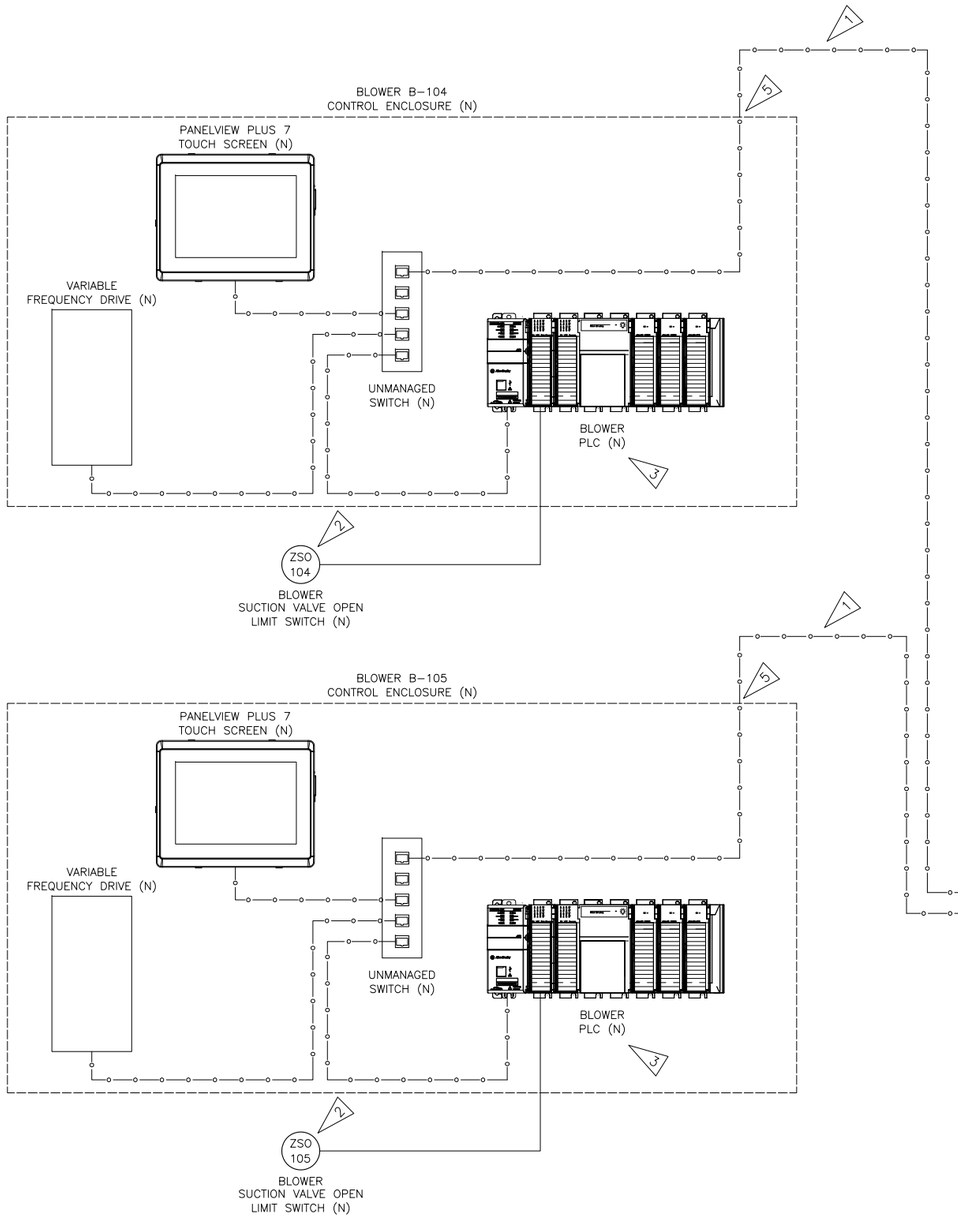
AERATION SYSTEM AND BLOWER UPGRADES

**BLOWER BUILDING PANEL SCHEDULE AND LOAD SUMMARY**

DWG E08

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022 GRID: SE 5013
PROJ. ID.: WM.00159

SHEET 23 of 25

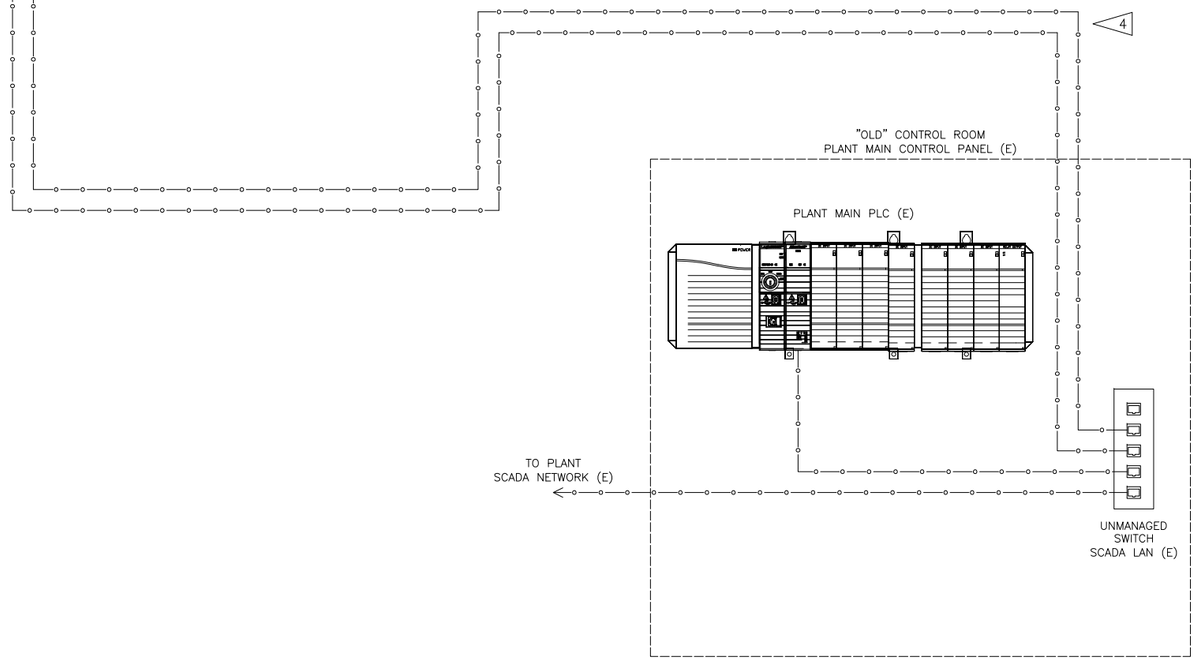



## LEGEND

- EQUIPMENT ENCLOSURE
- HARDWIRED SIGNALS (ANALOG/DISCRETE)
- ETHERNET COMMUNICATION LINK
- LSH 432 — FIELD INSTRUMENT OR CONTROL DEVICE

### SHEET NOTES

1. PROVIDE 2 EA. CAT6 CABLE IN 3/4" RACEWAY FROM CONTROL ROOM PLC PANEL TO EACH BLOWER SYSTEM (INCLUDES 1 SPARE). SPARE CABLES SHALL BE TERMINATED AND TESTED.
2. PROVIDE 2/C #14 W/GND IN CONDUIT FROM BLOWER CONTROL ENCLOSURE FIELD TERMINALS TO VALVE FULL OPEN LIMIT SWITCH. TRANSITION TO LFMC AT DEVICE.
3. PLC SYSTEM SHALL BE ALLEN-BRADLEY COMPACTLOGIX WITH 1769-L33ER PROCESSOR AND I/O CARDS AS REQUIRED.
4. PROVIDE NEW RACEWAY ABOVE DROP CEILING IN LAB AREA.
5. PROVIDE ENVIRONMENTAL SEALS FOR CONDUITS ENTERING BLOWER ENCLOSURE IN ACCORDANCE WITH MANUFACTURER"S INSTALLATION MANUAL.




VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

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|---|---|---|---|
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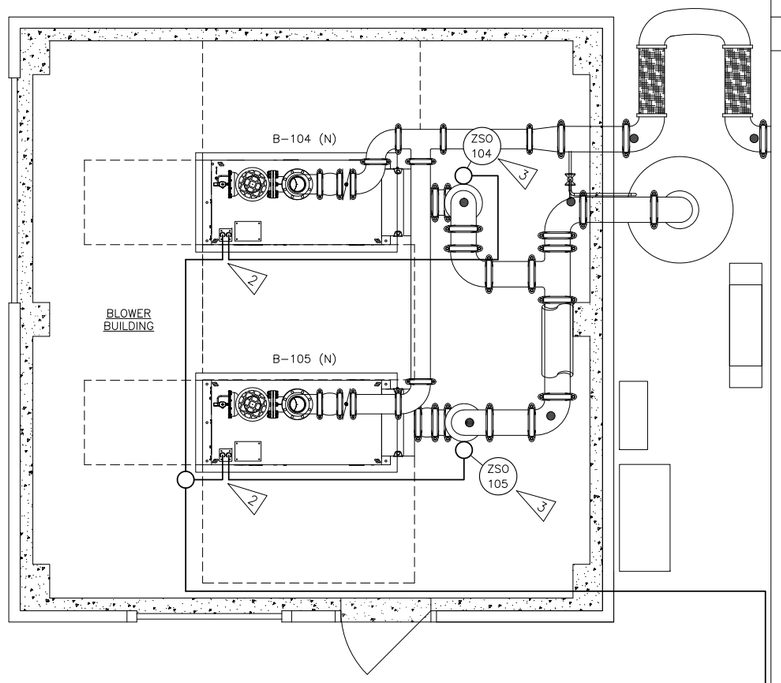
GIRDWOOD WASTEWATER TREATMENT FACILITY
AERATION SYSTEM AND BLOWER UPGRADES

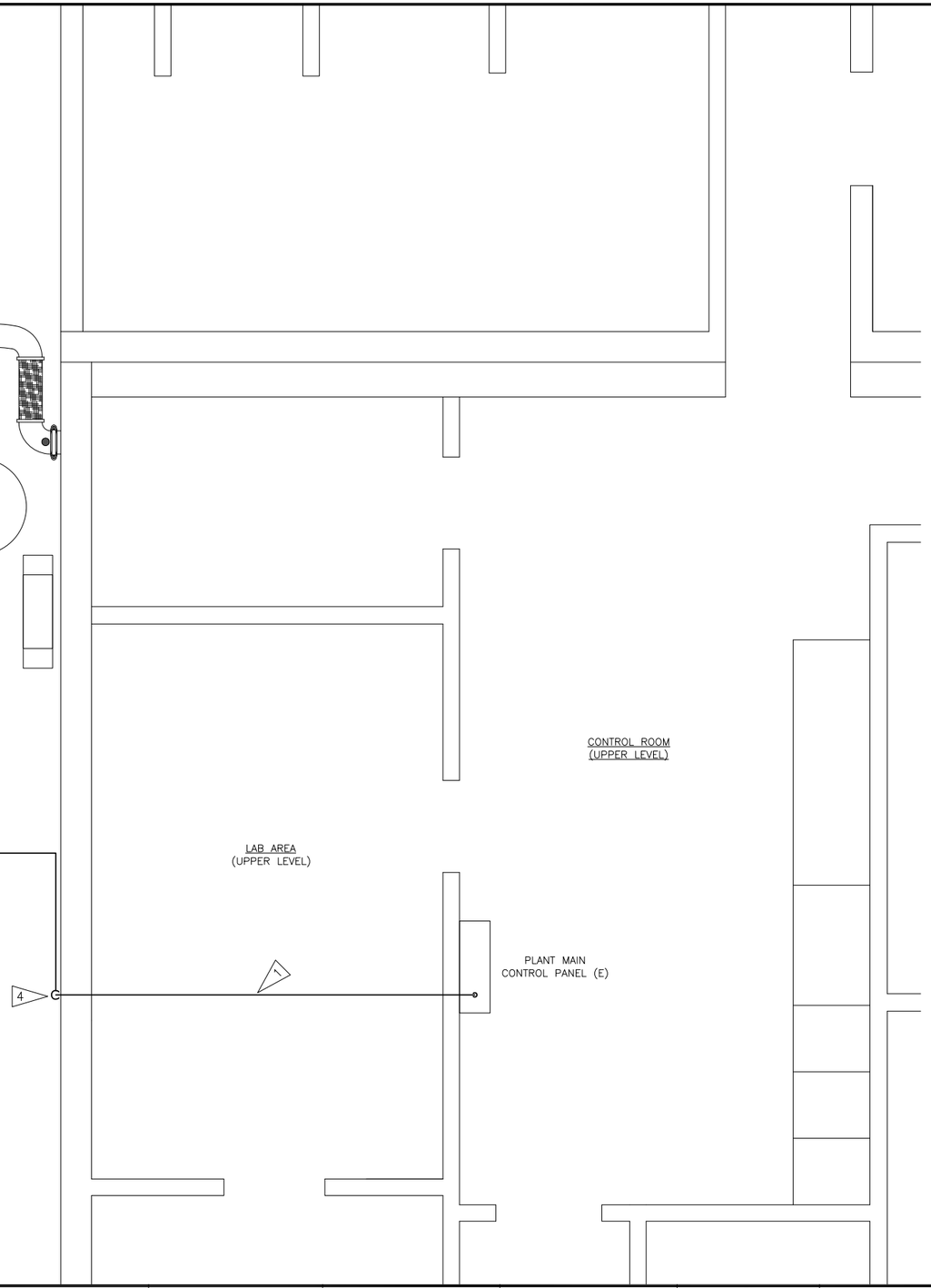
# BLOWER CONTROL BLOCK DIAGRAM

DWG IC01

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

AWWU PLAN SET
NO. 11321




## SHEET NOTES

1. ROUTE CONDUIT VIA DROP CEILING IN LAB AREA. SEE IC01 FOR NETWORK CIRCUIT DIAGRAM.
2. PROVIDE ENVIRONMENTAL SEALS AT BLOWER ENCLOSURE CONDUIT ENTRIES IN ACCORDANCE WITH MANUFACTURER"S INSTALLATION MANUAL.
3. PROVIDE 2/C #14 W/GND IN 3/4" CONDUIT TO VALVE LIMIT SWITCH. TRANSITION TO LFMC AT DEVICE.
4. ROUTE CONDUIT VERTICALLY ALONG EXTERIOR OF BUILDING. PAINT EXPOSED SECTIONS TO MATCH BUILDING.

VERIFY SCALE — IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| | | | |

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**MONITORING AND CONTROL CONDUIT ROUTING**

DWG **IC02**

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: JULY 2022
GRID: SE 5013
PROJ. ID.: WM.00159

SHEET 25 of 25